Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

January 17, 2017

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

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 876343**
AT&T Site ID: CT2158
1919 Boston Post Road, Guilford, CT 06437
Latitude: 41° 18' 1.27"/ Longitude: -72° 42' 29.13"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 106-foot level of the existing 150-foot monopole tower at 1919 Boston Post Road in Guilford, CT. The tower is owned by Crown Castle. The property is owned by Roger Stone. AT&T now intends to replace three (3) RRU11s with three RRU12s.

This facility was approved by the by the Connecticut Siting Council in Docket No. 349 on May 22, 2008. This approval included the conditions that:

> 1.The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the wireless carriers that utilize the existing tower and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Mr. Joseph Mazza, First-Selectman, Town of Guilford, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the 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 replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication 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 its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. Joseph Mazza, First-Selectman
Town of Guilford
31 Park Street
Guilford, CT 06437

Mr. Roger Stone
7103 Gulf of Mexico Boulevard
Marathon, FL 33050

DOCKET NO. 349 – Global Signal Acquisitions II application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1919 Boston Post Road, Guilford, Connecticut.	}	Connecticut
	}	Siting
	}	Council

May 22, 2008

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Global Signal Acquisitions II, hereinafter referred to as the Certificate Holder, for an existing telecommunications facility to be relocated to the site identified as the Alternate Site in the Findings of Fact, located at 1919 Boston Post Road, Guilford, Connecticut. The Council denies certification of the site identified as the Application Site in the Findings of Fact, located at 1919 Boston Post Road, Guilford, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the wireless carriers that utilize the existing tower and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Guilford for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

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

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

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

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

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

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Guilford. Any proposed modifications to this Decision and Order shall likewise be so served.

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

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

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

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

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

The parties and intervenors to this proceeding are:

APPLICANT	**ITS REPRESENTATIVE**
Global Signal Acquisitions II	Julie Kohler, Esq. Carrie Larson, Esq. Cohen and Wolf, P.C.

PARTY	**ITS REPRESENTATIVE**
Anthony Poccia William and Myung Arabolos Margaret Rose Richard and Sandra Wilson	John S. Bennet, Esq. Gould, Larson, Bennet, Wells & McDonnell, P.C.

INTERVENORS	**THEIR REPRESENTATIVE**
Heather Fernandes Diane and Alan Sholomskas Brian Denning Daniel Capozziello Joel and Donna Zemke	John S. Bennet, Esq. Gould, Larson, Bennet, Wells & McDonnell, P.C.

Town of Guilford
Property Listing Report

Parcel ID 079035

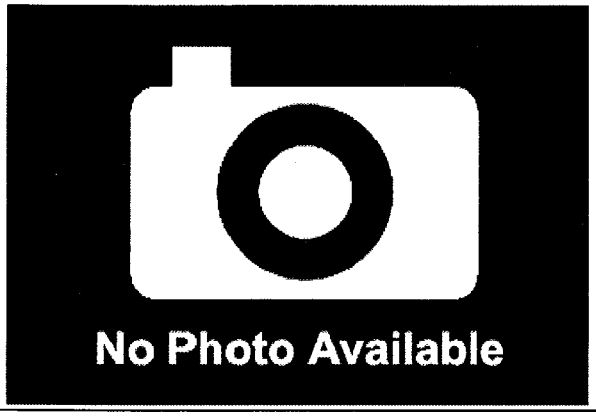
Account

Property Information

Owner	DDR GUILFORD LLC
Address	1919 BOSTON POST RD
Mailing Address	3300 ENTERPRISE PKWY BEACHWOOD , OH 44122
Land Use	- REGIONAL SHOPPING
Land Class	Commercial

Census Tract	1903
Neighborhood	N
Zoning	SCW
Acreage	27.83
Utilities	
Lot Setting/ Desc	/

Photo



PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings	23005859	16104100
Outbuildings	482333	337630
Improvements		
Extras		
Land	6694400	4686080
Total	30182592	21127810
Previous		

Construction Details

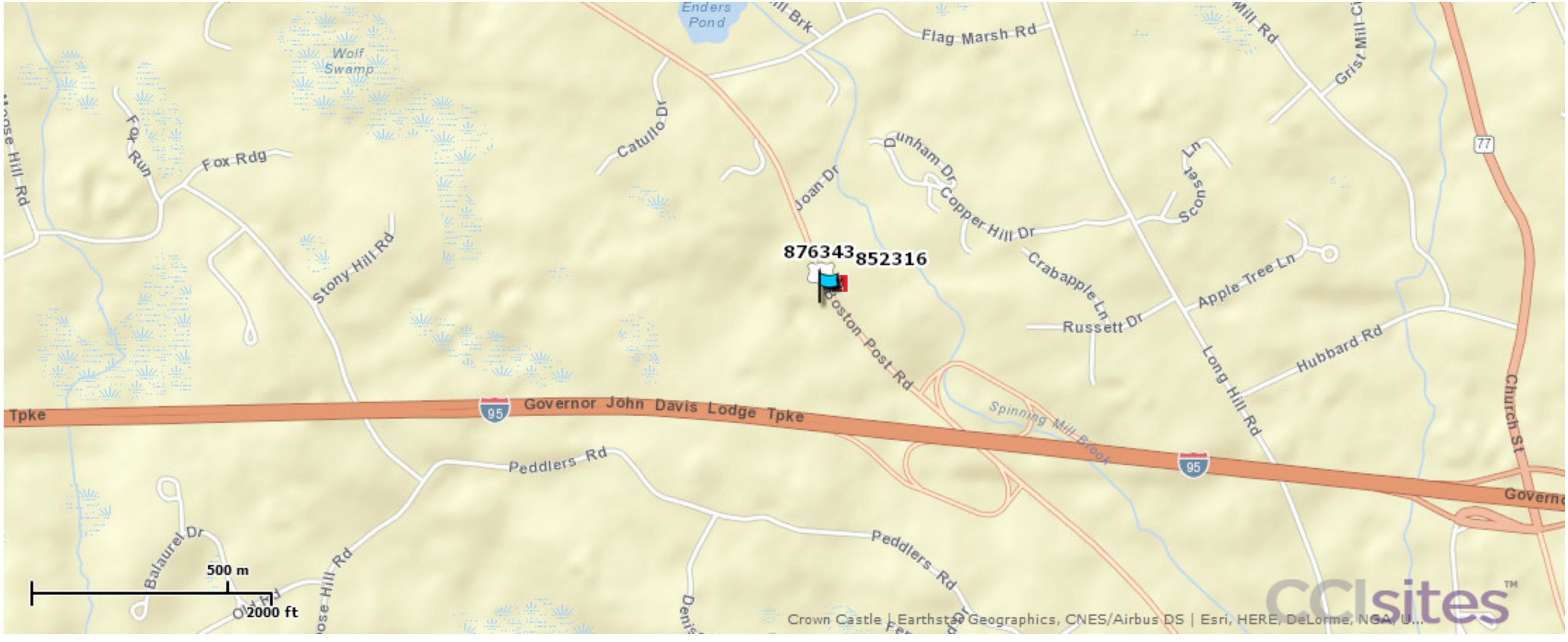
Year Built	2015
Stories	1
Building Style	
Building Use	Neighborhood
Building Condition	GOOD
Total Rooms	0
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	FLAT
Roof Cover	POLY RUBBER

EXTERIOR WALLS:	
Primary	CONCRETE BLOCK
Secondary	
INTERIOR WALLS:	
Primary	
Secondary	
FLOORS:	
Primary	
Secondary	
HEATING/AC:	
Heating Type	
Heating Fuel	
AC Type	

BUILDING AREA:	
Effective Building Area	
Gross Building Area	0
Total Living Area	63416

SALES HISTORY:	
Sale Date	1/28/2015
Sale Price	0
Book/ Page	0879/1141

Report Created On 7/20/2016


Enders Pond
Wolf Swamp
Flag Marsh Rd
Mill Rd
Grist Mill Cir
Fox Run
Fox Rdg
Catullo Dr
Joan Dr
Dunham Dr
Copper Hill Dr
Sconset Ln
77
Stony Hill Rd
876343 852316
Boston Post Rd
Crabapple Ln
Apple Tree Ln
Russett Dr
Hubbard Rd
Long Hill Rd
Church St
Tpke
95
Governor John Davis Lodge Tpke
Spinning Mill Brook
Peddlers Rd
Balaurel Dr
500 m
2000 ft
Crown Castle | Earthstar Geographics, CNES/Airbus DS | Esri, HERE, DeLorme, NGA, U...
CCIsites™

WIRELESS COMMUNICATIONS FACILITY

CT2158 - LTE BWE
GUILFORD
CROWN CASTLE SITE NO.: 876343
1919 BOSTON POST ROAD
GUILFORD, CT 06437

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA–222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD–OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS–BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON–SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB–CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1–800–922–4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

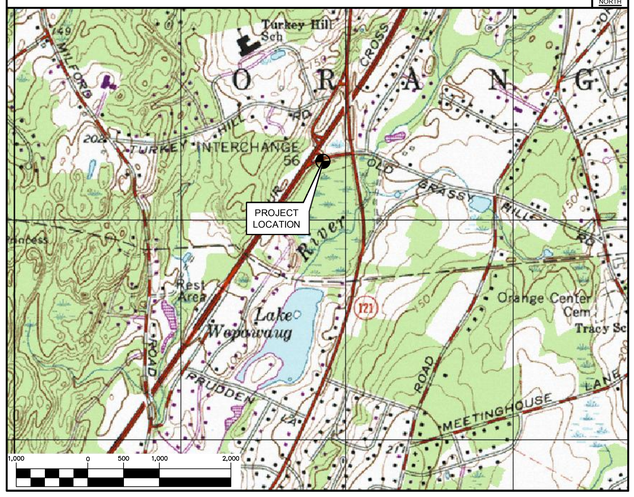
SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT **TO:** 1919 BOSTON POST RD, GUILFORD, CONNECTICUT

1.	TAKE RAMP LEFT FOR I–91 SOUTH	29.0 MI
2.	TAKE RAMP LEFT FOR I–95 NORTH TOWARD NEW LONDON	11.5 MI
3.	AT EXIT 57, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR US–1,	0.4 MI
4.	TURN LEFT ONTO US–1 / BOSTON POST RD	0.5 MI
5.	ARRIVE AT 1919 BOSTON POST RD.	

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

   A. REMOVE AND REPLACE (3) EXISTING RRUS–11'S FOR PROPOSED RRUS–12'S ON EXISTING RRU TOWER MOUNT.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2158
AT&T SITE NAME:	GUILFORD
SITE ADDRESS:	CROWN CASTLE SITE NO.: 876343 1919 BOSTON POST ROAD GUILFORD, CT 06437
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°–18'–01.17" N LONGITUDE: 72°–42'–27.49" W GROUND ELEVATION: ±105' AMSL GROUND ELEVATION REFERENCED FROM GOOGLE EARTH. COORDINATES REFERENCED FROM RFDS DOCUMENTS.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T–1	TITLE SHEET	0
N–1	NOTES AND SPECIFICATIONS	0
C–1	PLANS, ELEVATION AND DETAILS	0
C–2	LTE BWE EQUIPMENT DETAILS	0
E–1	TYPICAL ELECTRICAL DETAILS AND NOTES	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	11/14/16	JTD	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT – CRAIG A. GAUDIOSO – 21541 – PROFESSIONAL ENGINEER

at&t

EMPIRE telecom

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

GUILFORD

CT2158 – LTE BWE

1919 BOSTON POST ROAD

GUILFORD, CT 06437

DATE: 11/14/16

SCALE: AS NOTED

JOB NO. 16071.67

TITLE SHEET

T–1

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 95–115 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 101 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF–SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON CL&P OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325–N
   G. U–BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON–GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:

   A. SHERWIN WILLIAMS POLANE–B
   B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.

2. COAXIAL CABLES:

   A. ONE COAT OF DTM BONDING PRIMER (2–5 MILS. DRY FINISH)
   B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5–5 MILS. DRY FINISH)
   C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI–SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH–PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON–PETROLEUM–BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

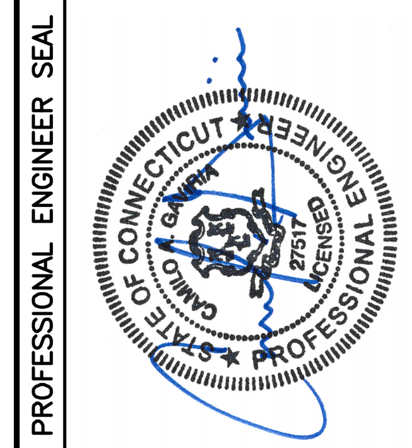
1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	11/14/16	JTD	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL



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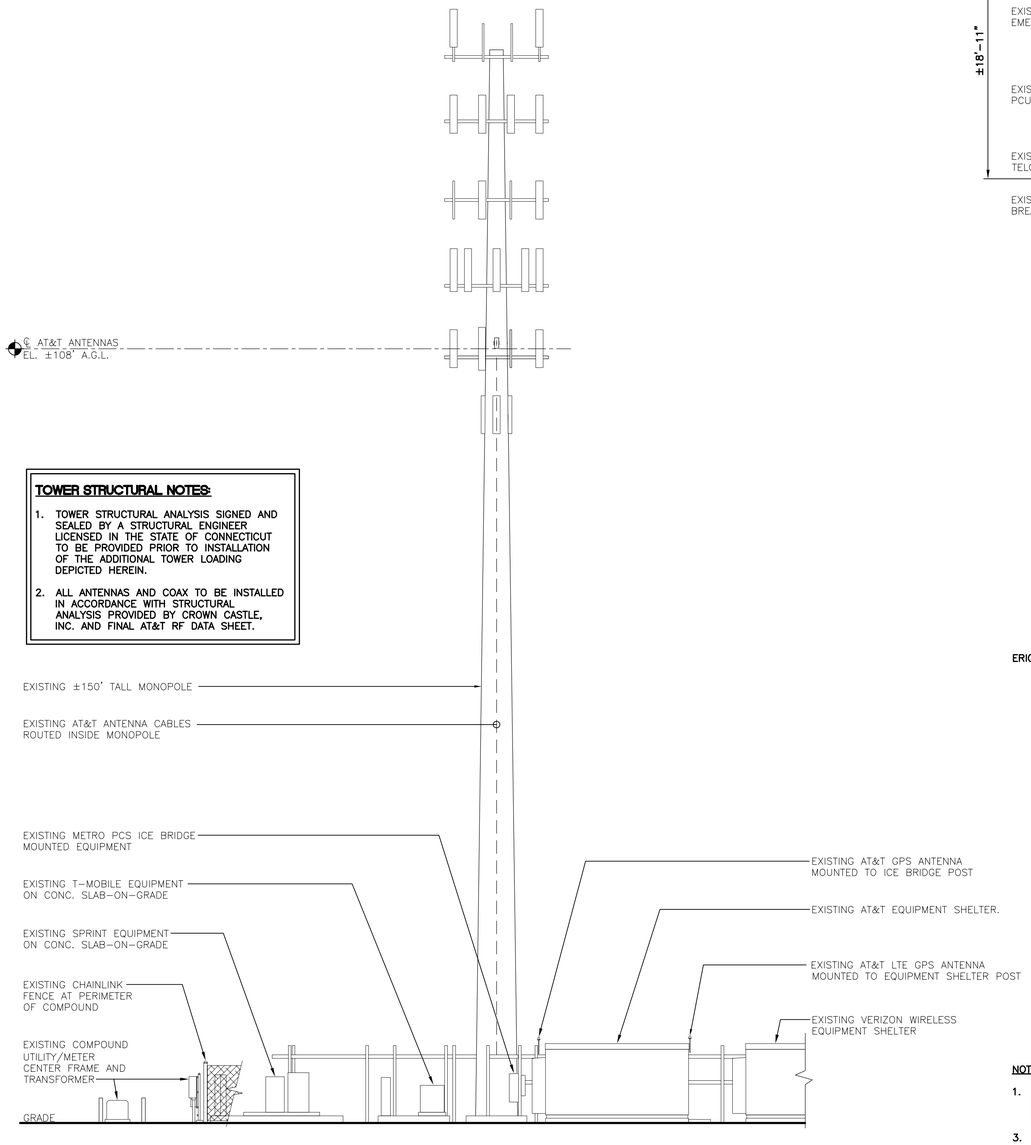
GUILFORD
CT2158 - LTE BWE
1919 BOSTON POST ROAD
GUILFORD, CT 06437

DATE:	11/14/16
SCALE:	AS NOTED
JOB NO.	16071.67

NOTES AND SPECIFICATIONS

N-1



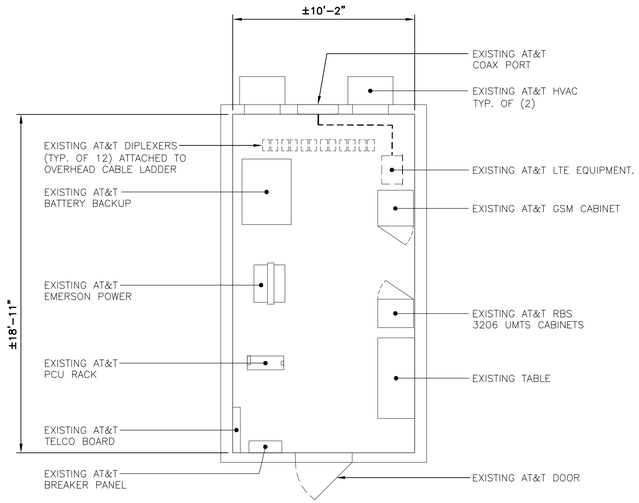
TOWER STRUCTURAL NOTES:

1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE, INC. AND FINAL AT&T RF DATA SHEET.

4 C-1 PARTIAL WEST ELEVATION

SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

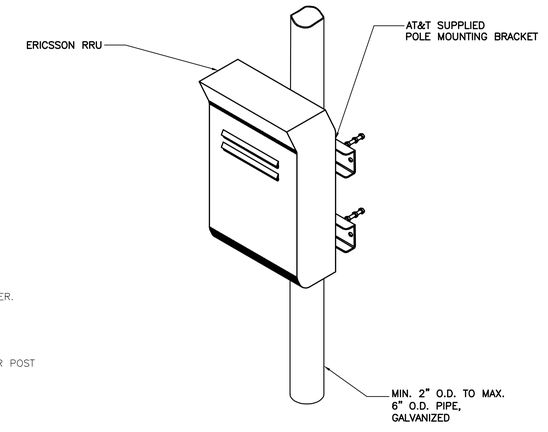


2 C-1 EQUIPMENT BUILDING FLOOR PLAN

SCALE: 1" = 4'-0"

APPROX. NORTH

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1 inch = 4 ft.



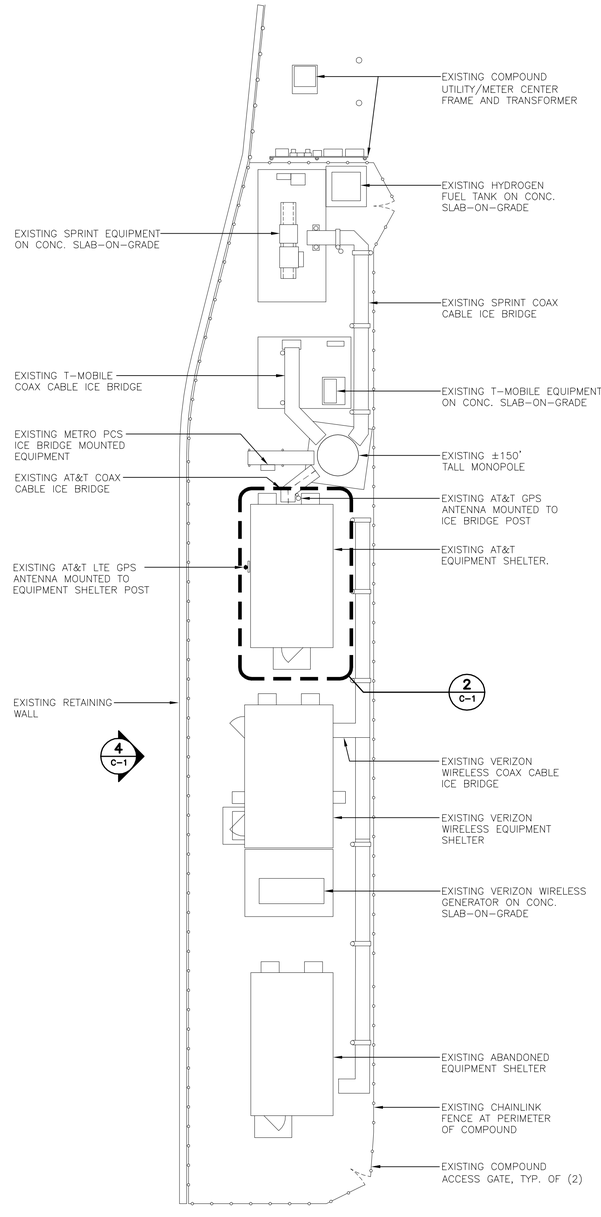
ISOMETRIC VIEW

NOTES:

1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
3. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

3 C-1 TYPICAL RRUS MOUNTING DETAILS

SCALE: 1 1/2" = 1'-0"



1 C-1 COMPOUND PLAN

SCALE: 1" = 10'

APPROX. NORTH

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

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DATE: 11/14/16
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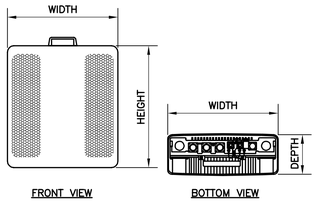
PLANS, ELEVATION AND DETAILS

C-1

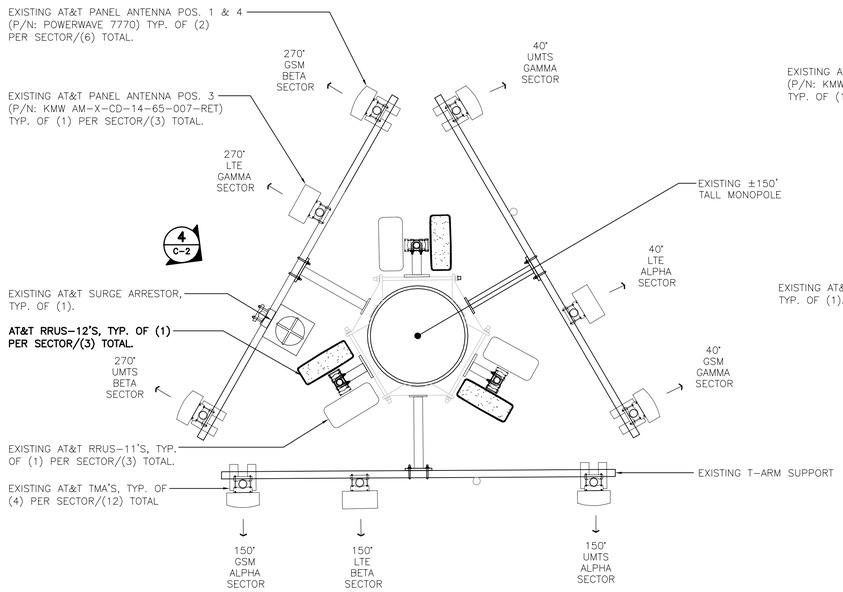
Sheet No. 3 of 5



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

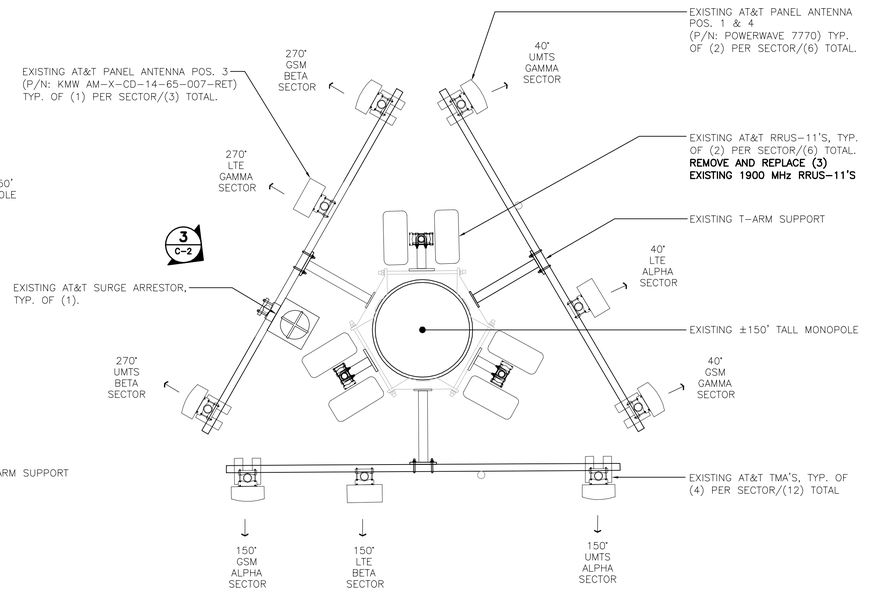
NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

5 C-2 ERICSSON RRUS 12 DETAIL
SCALE: 1" = 1'-0"



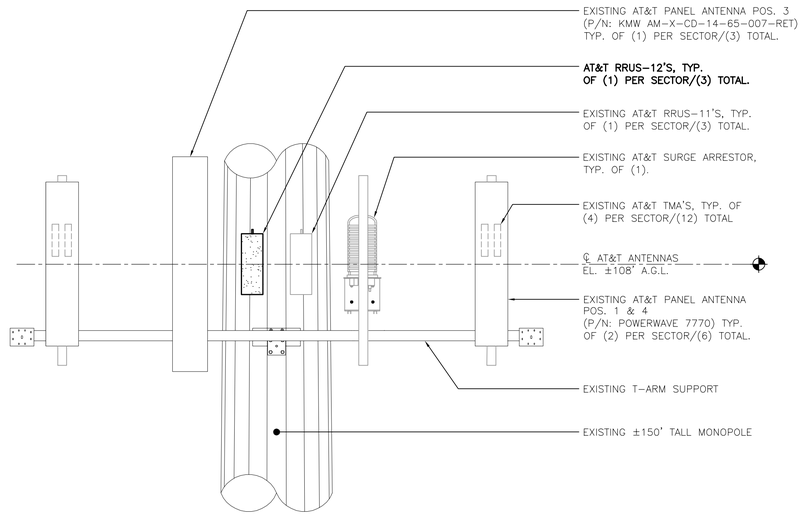
2 C-2 PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH

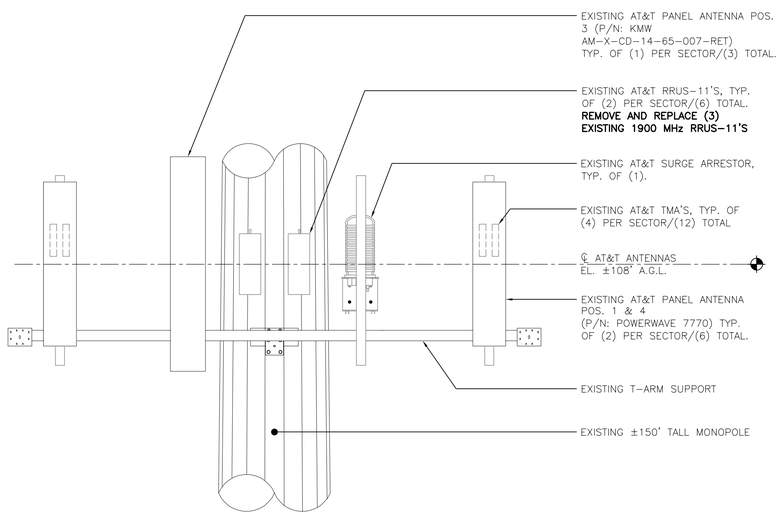


1 C-2 EXISTING ANTENNA PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH



4 C-2 PROPOSED ANTENNA SECTOR ELEVATION
SCALE: 1/2" = 1'-0"



3 C-2 EXISTING ANTENNA SECTOR ELEVATION
SCALE: 1/2" = 1'-0"

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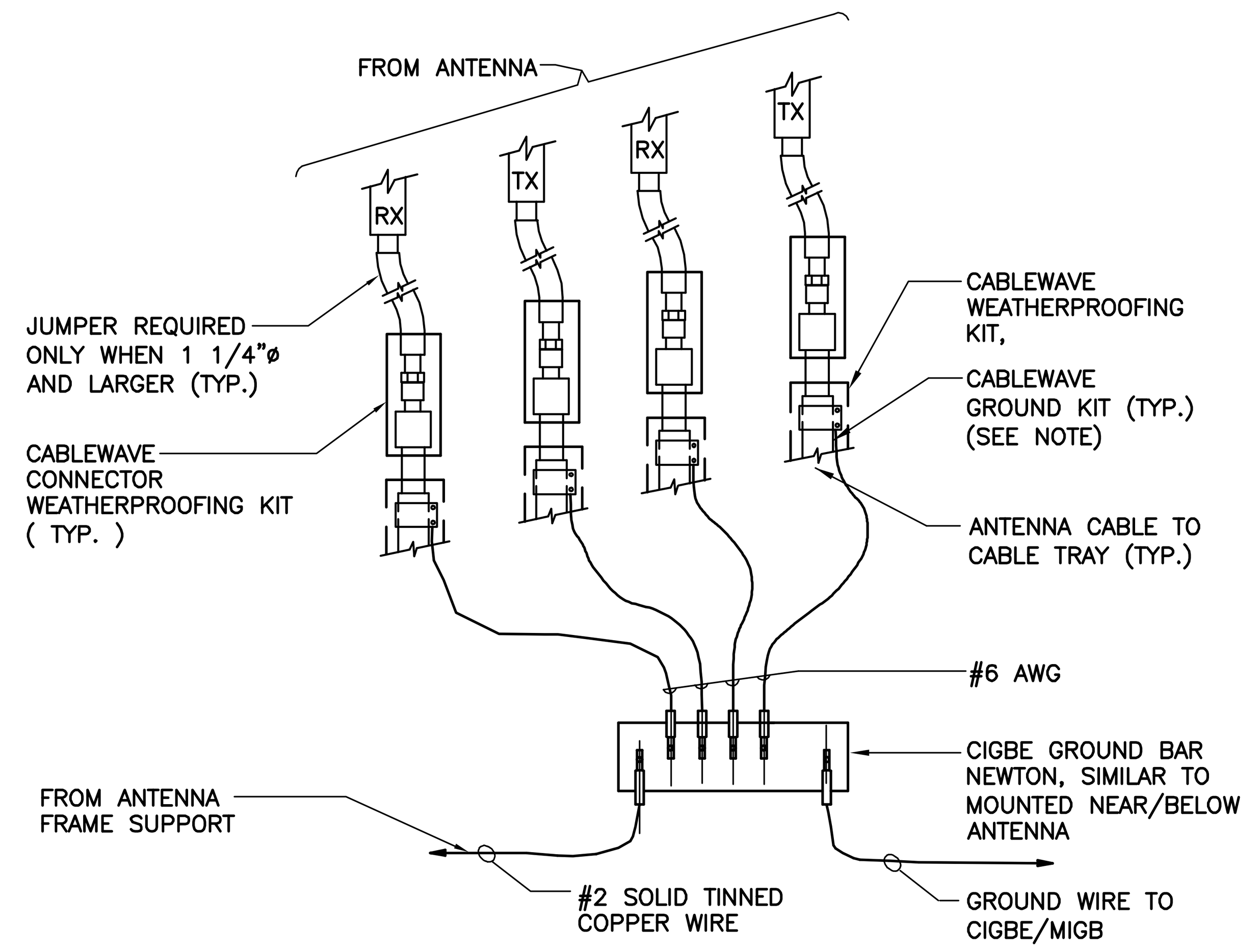
SCALE: AS NOTED
JOB NO. 16071.67

LTE BWE EQUIPMENT DETAILS

C-2

Sheet No. 4 of 5

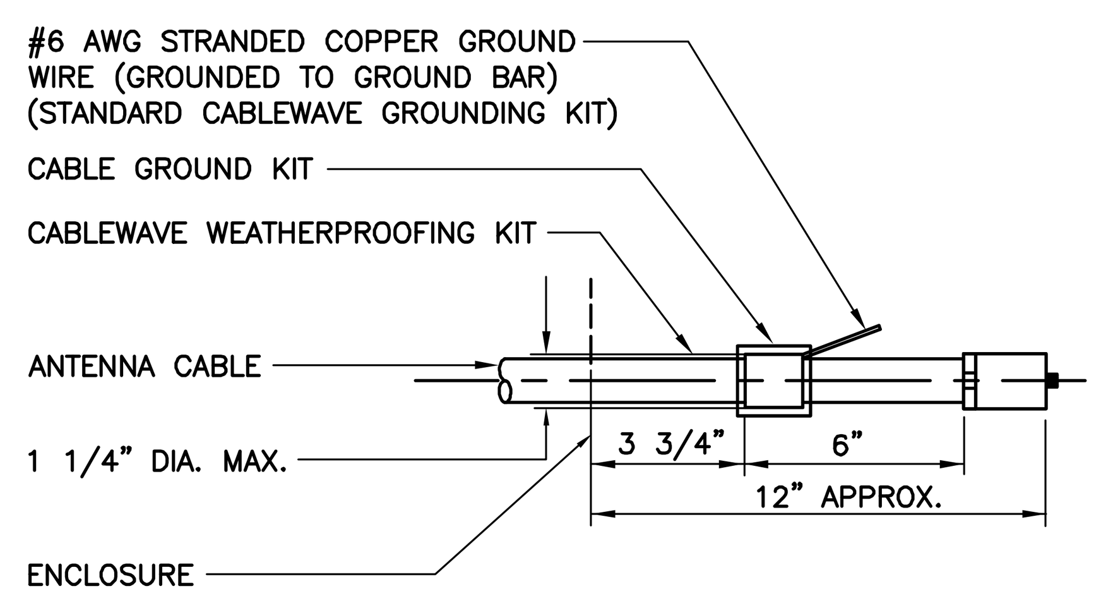


NOTE:

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

5 E-1 CONNECTION OF GROUND WIRES TO GROUND BAR

NOT TO SCALE

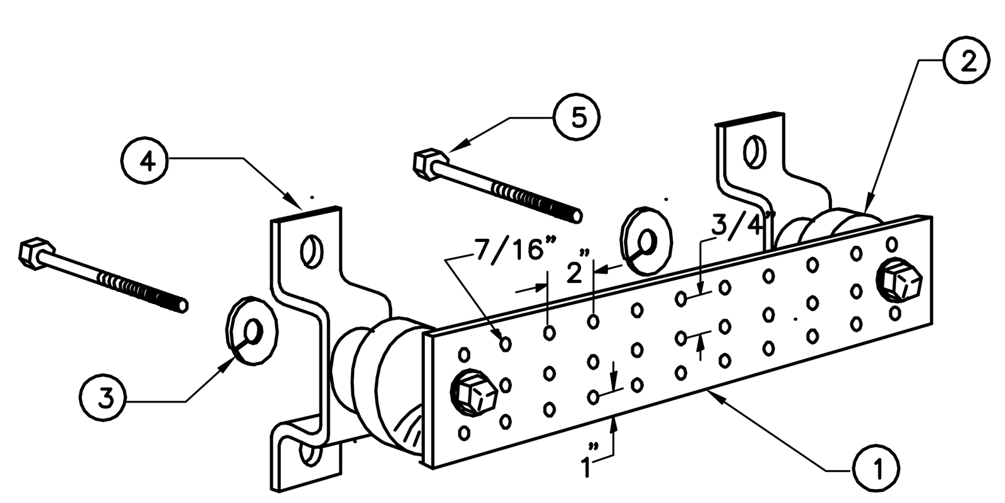


NOTE:

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

4 E-1 ANTENNA CABLE GROUNDING DETAIL

NOT TO SCALE

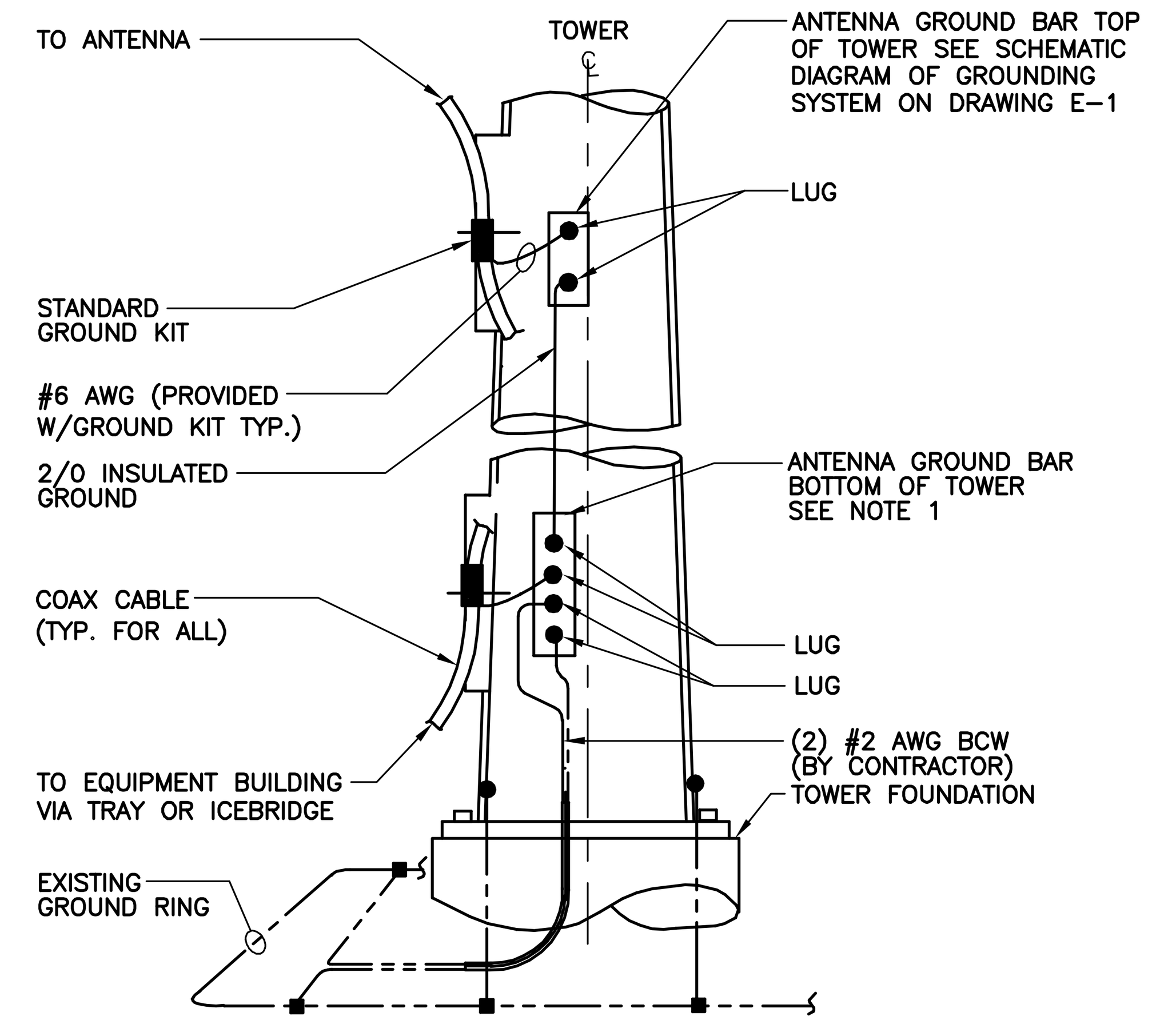


LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061–4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015–8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A–6056.
5. STAINLESS STEEL SECURITY SCREWS.

3 E-1 GROUND BAR DETAIL

NOT TO SCALE

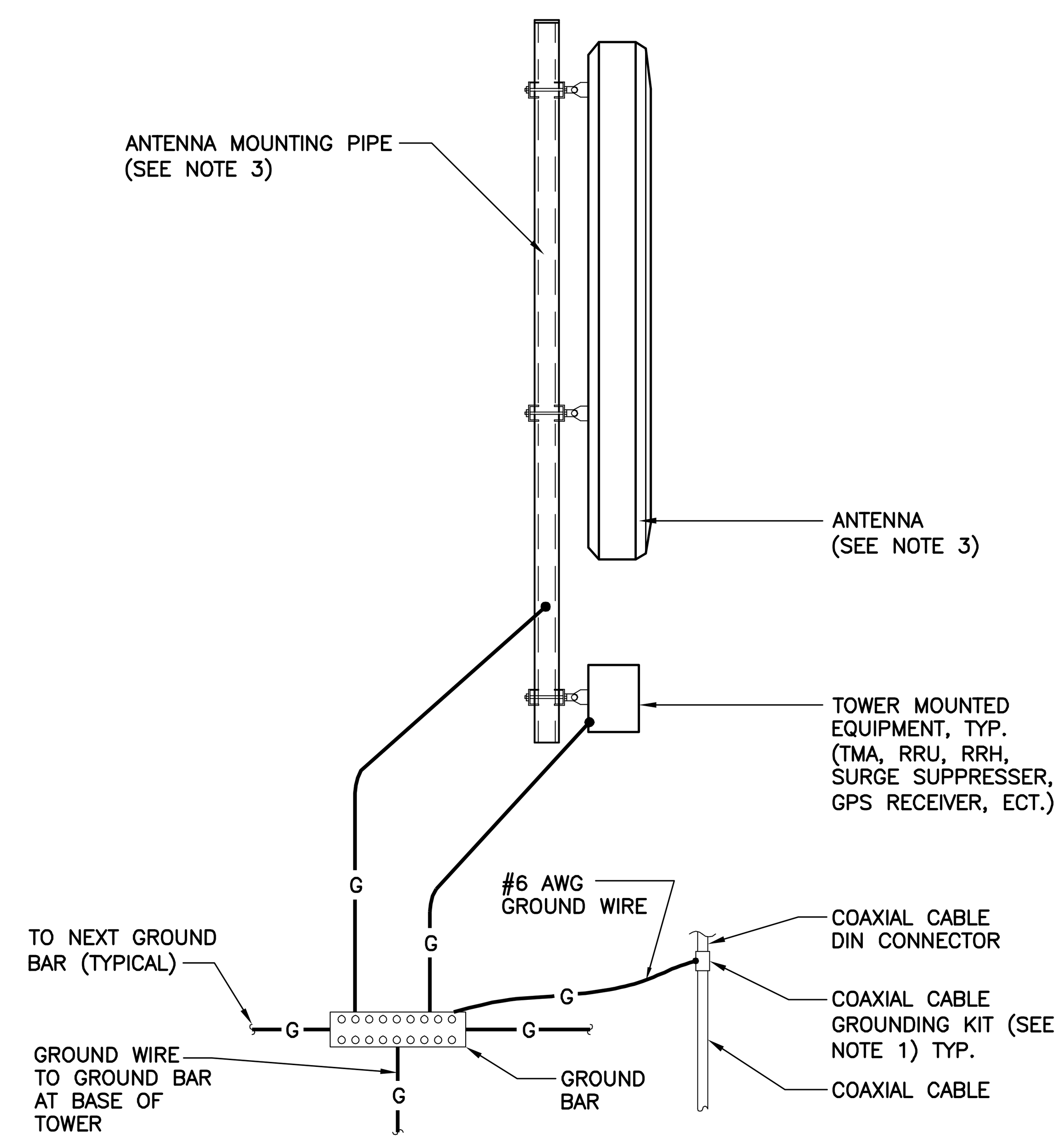


NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

2 E-1 ANTENNA CABLE GROUNDING – TOWER

NOT TO SCALE



NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 E-1 TYPICAL ANTENNA GROUNDING DETAIL

NOT TO SCALE

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. A REPORT OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT–BOLT TYPE CONNECTORS, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON–CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250–122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3–POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

   TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

   THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

   1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
   2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
   3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

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TYPICAL ELECTRICAL DETAILS AND NOTES

E-1

December 21, 2016

Kevin Morrow
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btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT2158
	Carrier Site Name:	Guilford
Crown Castle Designation:	**Crown Castle BU Number:**	876343
	Crown Castle Site Name:	Guilford West Stone Property
	Crown Castle JDE Job Number:	408503
	Crown Castle Work Order Number:	1339241
	Crown Castle Application Number:	368685 Rev. 2
Engineering Firm Designation:	**B+T Group Project Number:**	84701.006.01
Site Data:	**1919 Boston Post Rd., Guilford, New Haven County, CT** **Latitude *41° 18' 1.27"*, Longitude *-72° 42' 29.13"*** **149 Foot - Monopole Tower**	

Dear Kevin Morrow,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 983148, in accordance with application 368685, revision 2.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

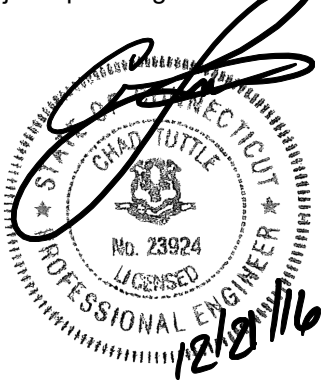
All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

Jason Brock, E.I.
Project Engineer

Chad Tuttle, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017



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1) INTRODUCTION

This tower is a 149 ft. Monopole tower designed by Engineered Endeavors Inc. in June of 2008. The tower was originally designed for a wind speed of 115 mph per TIA-222-G.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 101 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category C.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
106.0	108.0	3	Ericsson	RRUS 12	--	--	--
		12	Powerwave Tech.	7020.00			
		6	Powerwave Tech.	7770.00			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
148.0	148.0	3	Andrew	ETW200VS12UB	6 1 1	1-5/8 1-1/4 7/8	1
		3	Ericsson	Ericsson Air 21 B2A B4P			
		3	Ericsson	Ericsson Air 21 B4A B2P			
		1	--	Sector Mount [SM 901-3]			
139.0	140.0	12	Decibel	DB848H90E-XY	12	1-5/8	2
	139.0	1	--	Sector Mount [SM 901-3]			
129.0	129.0	1	--	Side Arm Mount [SO 102-3]	--	--	1
	127.0	3	Alcatel Lucent	TME-800MHZ RRH			
	123.0	3	Alcatel Lucent	TME-1900MHz RRH (65MHz)			
128.0	130.0	3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER	4	1-1/4	1
		3	Alcatel Lucent	TD-RRH8x20-25			
		9	RFS Celwave	ACU-A20-N			
		3	RFS Celwave	APXVSPP18-C-A20			
		3	RFS Celwave	APXVTM14-C-120			
	128.0	1	--	Sector Mount [SM 901-3]			
116.0	118.0	3	Alcatel Lucent	RRH2x40-AWS	12 1	1-5/8 1-1/4	1
		4	Andrew	DB846F65ZAXY			
		1	Antel	BXA-171063-12BF			
		3	Antel	BXA-171063-12CF-EDIN-2			
		1	Antel	BXA-171063-8BF-2			
		1	Antel	BXA-171085-12BF-2			
		3	Antel	BXA-70063/6CF-2			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		2	Decibel	DB846H80E-SX			
		1	Maxrad	GPS-TMG-26NMS			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			
		6	RFS Celwave	FD9R6004/2C-3L			
	116.0	1	--	Sector Mount [SM 901-3]			
110.0	110.0	3	Ericsson	RRUS 11	--	--	1
		1	--	Side Arm Mount [SO 102-3]			
106.0	108.0	**6**	**Powerwave Tech.**	**RA21.7770.00**	**--**	**--**	**3**
		1	**Raycap**	**DC6-48-60-18-8F**			
		1	KMW Comm.	AM-X-CD-14-65-00T-RET	12 2 2	1-5/8 3/8 3/4	1
		2	KMW Comm.	AM-X-CD-16-65-00T-RET			
		12	Powerwave Tech.	LGP21401			
		1	Raycap	DC6-48-60-18-8F			
	106.0	1	--	Sector Mount [SM 901-3]			
98.0	98.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8	1

Notes:
1) Existing Equipment
2) Abandoned Equipment; Considered In This Analysis
3) Equipment To Be Removed; Not Considered In This Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150	150	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
140	140	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
130	130	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
120	120	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
110	110	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate Rev # 2	368685	CCI Sites
Tower Manufacturer Drawing	EEI, Project No: 15475	2302343	CCI Sites
Foundation Drawing	EEI, Project No: 15475	2302348	CCI Sites
Geotech Report	Terracon, Project No: J2085178	2302346	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 12/19/2016	CCI Sites

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Mount areas and weights are assumed based on photographs provided.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149 - 135.04	Pole	TP26.77x22x0.188	1	-4.910	1019.370	8.7	Pass
L2	135.04 - 92.17	Pole	TP40.91x25.056x0.25	2	-18.964	1969.410	56.2	Pass
L3	92.17 - 45.21	Pole	TP56.31x38.489x0.313	3	-31.374	3237.200	67.4	Pass
L4	45.21 - 0	Pole	TP71x53.118x0.375	4	-52.962	4862.940	64.1	Pass
							Summary	
						Pole (L3)	67.4	Pass
						Rating =	67.4	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	39.1	Pass
1	Base Plate	Base	36.3	Pass
1	Base Foundation (Structure)	Base	61.9	Pass
1	Base Foundation (Soil Interaction)	Base	21.0	Pass

Structure Rating (max from all components) =	67.4%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

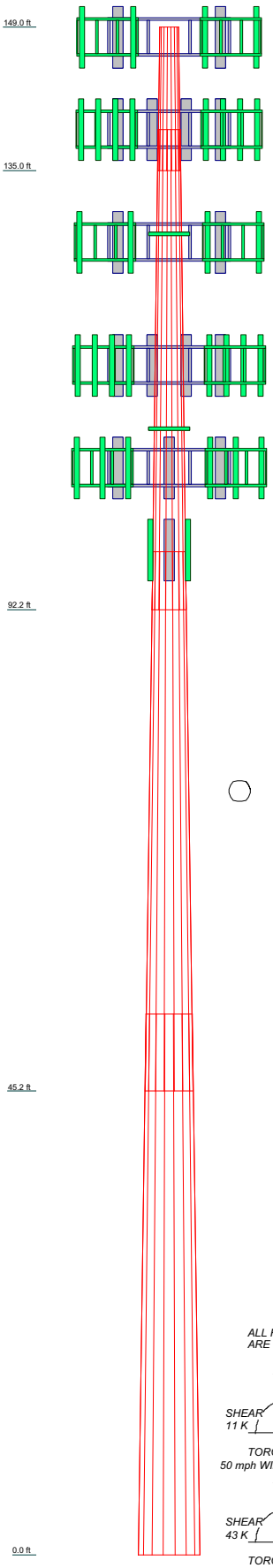
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	13.960	18	0.188	3.920	22.000	26.770		0.7
2	46.790	18	0.250	5.670	25.056	40.910		4.1
3	52.630	18	0.313	7.580	38.489	56.310	A572-65	8.4
4	52.790	18	0.375		53.118	71.000		13.2
								26.4



ALL REACTIONS ARE FACTORED

AXIAL 91 K

SHEAR 11 K *MOMENT 1188 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 0.750 in ICE

AXIAL 53 K

SHEAR 43 K *MOMENT 4461 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 101 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	148	BXA-171063-8BF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	148	BXA-171085-12BF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	148	BXA-171063-12BF w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
ETW200VS12UB (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (E)	116
ETW200VS12UB (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (E)	116
ETW200VS12UB (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (E)	116
(2) 8' x 2" Pipe Mount (E)	148	GPS-TMG-26NMS (E)	116
(2) 8' x 2" Pipe Mount (E)	148	(2) FD9R6004/2C-3L (E)	116
(2) 8' x 2" Pipe Mount (E)	148	(2) FD9R6004/2C-3L (E)	116
Sector Mount [SM 901-3] (E)	148	(2) FD9R6004/2C-3L (E)	116
(4) DB848H90E-XY w/ Mount Pipe (AB)	139	DB-T1-6Z-8AB-0Z (E)	116
(4) DB848H90E-XY w/ Mount Pipe (AB)	139	RRH2x40-AWS (E)	116
(4) DB848H90E-XY w/ Mount Pipe (AB)	139	RRH2x40-AWS (E)	116
Sector Mount [SM 901-3] (AB)	139	RRH2x40-AWS (E)	116
TME-800MHZ RRH (E)	129	Sector Mount [SM 901-3] (E)	116
TME-800MHZ RRH (E)	129	RRUS 11 (E)	110
TME-800MHZ RRH (E)	129	RRUS 11 (E)	110
TME-1900MHz RRH (65MHz) (E)	129	RRUS 11 (E)	110
TME-1900MHz RRH (65MHz) (E)	129	4' x 2" Pipe Mount (E)	110
TME-1900MHz RRH (65MHz) (E)	129	4' x 2" Pipe Mount (E)	110
6' x 2" Mount Pipe (E)	129	4' x 2" Pipe Mount (E)	110
6' x 2" Mount Pipe (E)	129	Side Arm Mount [SO 102-3] (E)	110
6' x 2" Mount Pipe (E)	129	AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
Side Arm Mount [SO 102-3] (E)	129	AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
APXVTM14-C-120 w/ Mount Pipe (E)	128	AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	106
APXVTM14-C-120 w/ Mount Pipe (E)	128	(4) LGP21401 (E)	106
APXVTM14-C-120 w/ Mount Pipe (E)	128	(4) LGP21401 (E)	106
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	(4) LGP21401 (E)	106
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	DC6-48-60-18-8F (E)	106
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	(2) 7770.00 w/ Mount Pipe (P)	106
TD-RRH8x20-25 (E)	128	(2) 7770.00 w/ Mount Pipe (P)	106
TD-RRH8x20-25 (E)	128	(2) 7770.00 w/ Mount Pipe (P)	106
TD-RRH8x20-25 (E)	128	(4) 7020.00 (P)	106
(3) ACU-A20-N (E)	128	(4) 7020.00 (P)	106
(3) ACU-A20-N (E)	128	(4) 7020.00 (P)	106
(3) ACU-A20-N (E)	128	RRUS 12 (P)	106
800 EXTERNAL NOTCH FILTER (E)	128	RRUS 12 (P)	106
800 EXTERNAL NOTCH FILTER (E)	128	RRUS 12 (P)	106
800 EXTERNAL NOTCH FILTER (E)	128	8' x 2" Pipe Mount (E)	106
(2) 8' x 2" Pipe Mount (E)	128	8' x 2" Pipe Mount (E)	106
(2) 8' x 2" Pipe Mount (E)	128	8' x 2" Pipe Mount (E)	106
(2) 8' x 2" Pipe Mount (E)	128	Sector Mount [SM 901-3] (E)	106
Sector Mount [SM 901-3] (E)	128	APXV18-206517S-C w/ Mount Pipe (E)	98
(2) DB846F65ZAXY w/ Mount Pipe (E)	116	APXV18-206517S-C w/ Mount Pipe (E)	98
(2) DB846H80E-SX w/ Mount Pipe (E)	116	APXV18-206517S-C w/ Mount Pipe (E)	98
(2) DB846F65ZAXY w/ Mount Pipe (E)	116		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 101 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 67.4%

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Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84701.006.01 - GUILFORD WEST STONE PROPERTY, CT (BU# 87634		
Project:		
Client: Crown Castle	Drawn by: Harisha	App'd:
Code: TIA-222-G	Date: 12/20/16	Scale: NTS
Path:		Dwg No. E-1

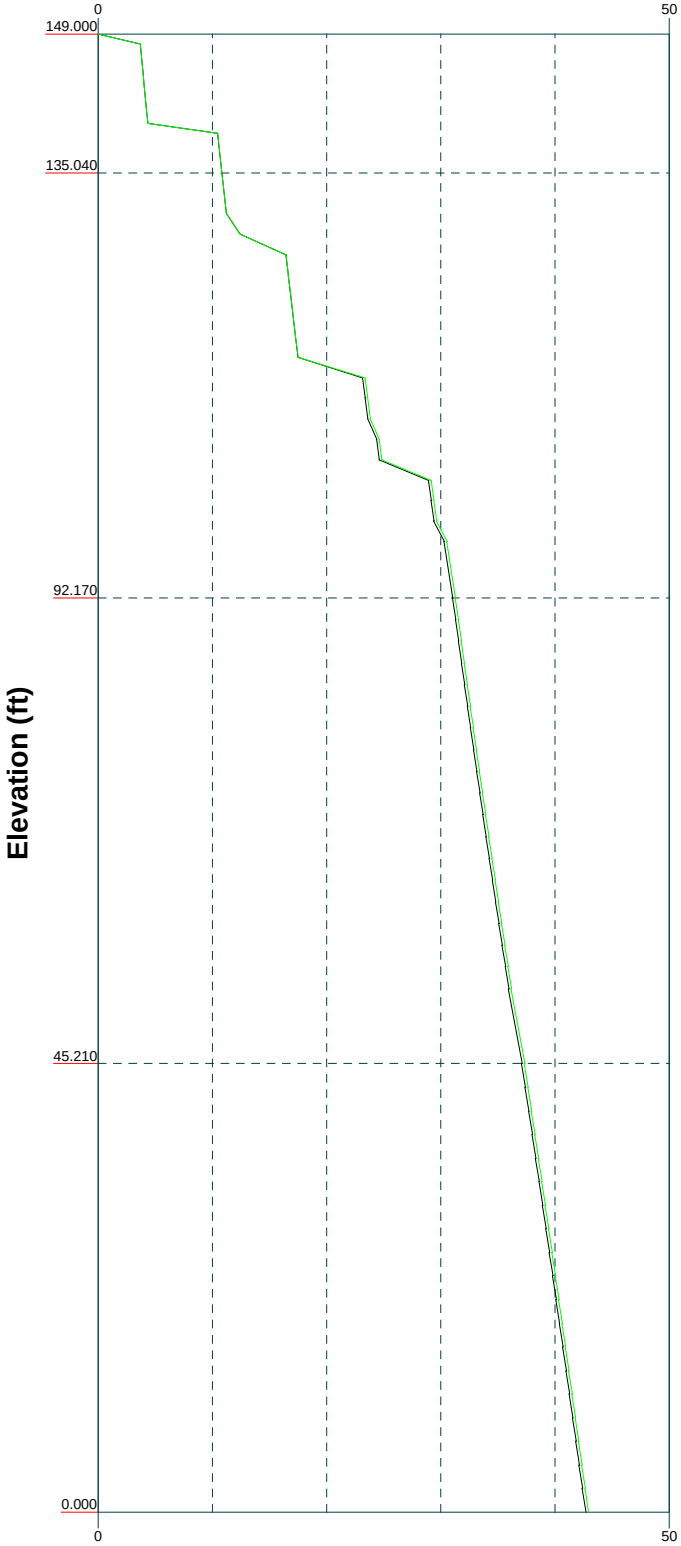
TIA-222-G - 101 mph/50 mph 0.750 in Ice Exposure C

Vx Vz

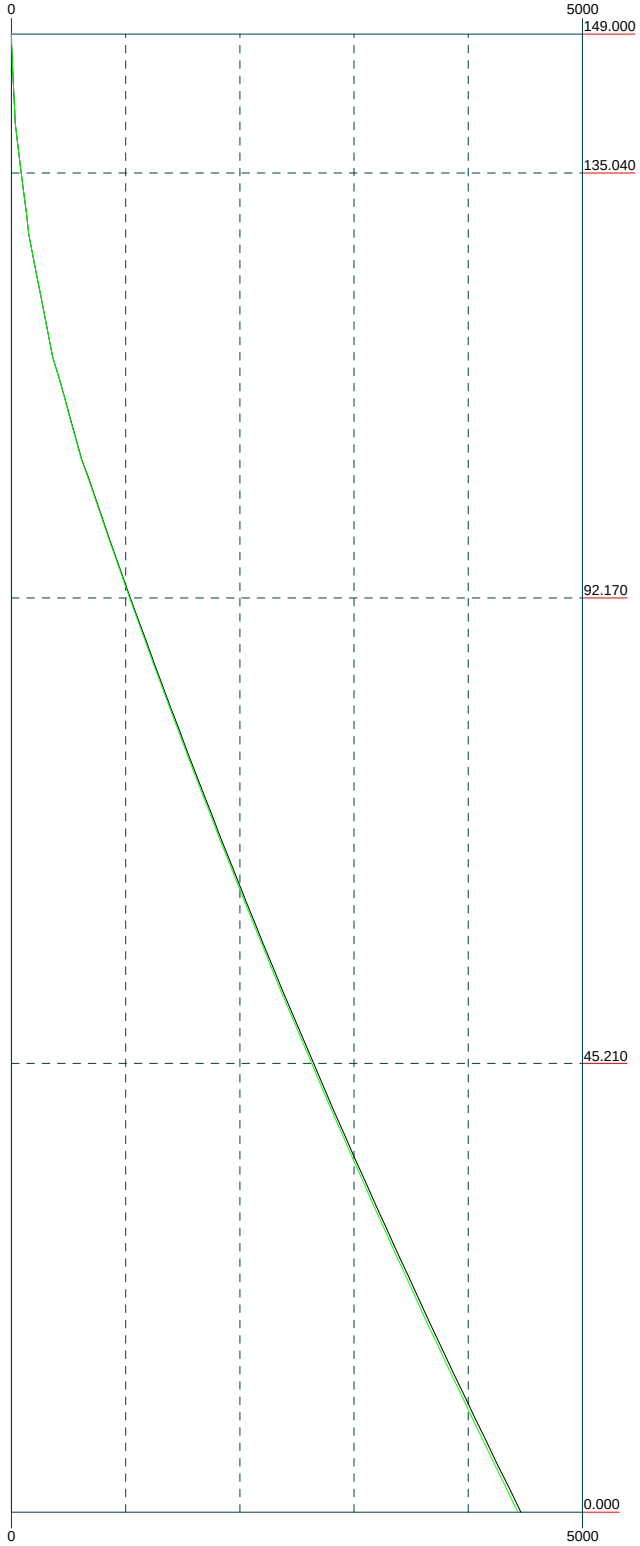
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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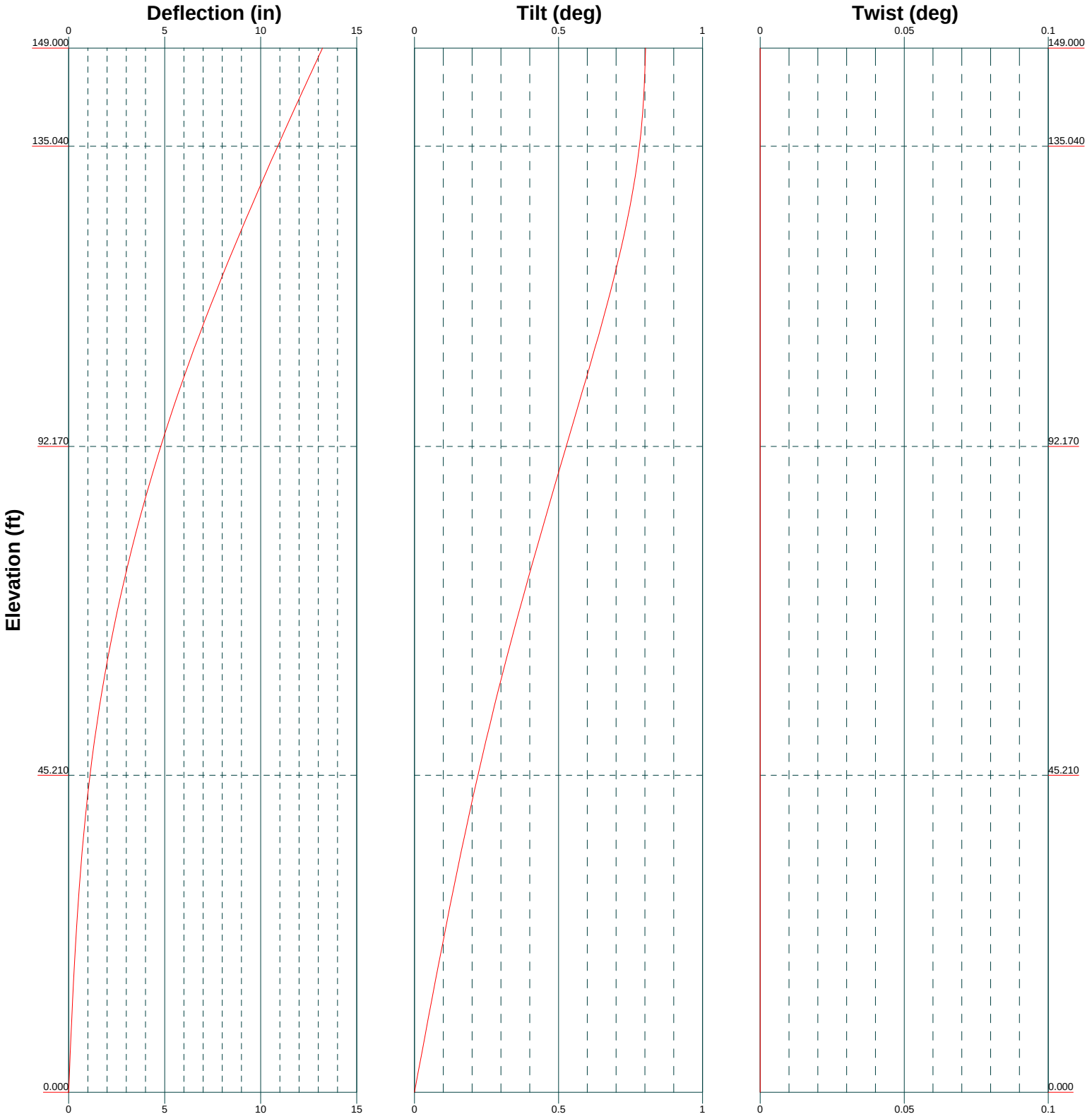
Job: ***84701.006.01 - GUILFORD WEST STONE PROPERTY, CT (BU# 87634***		
Project:		
Client: Crown Castle	Drawn by: Harisha	App'd:
Code: TIA-222-G	Date: 12/20/16	Scale: NTS
Path:		Dwg No. E-4

TIA-222-G - Service - 60 mph

Maximum Values



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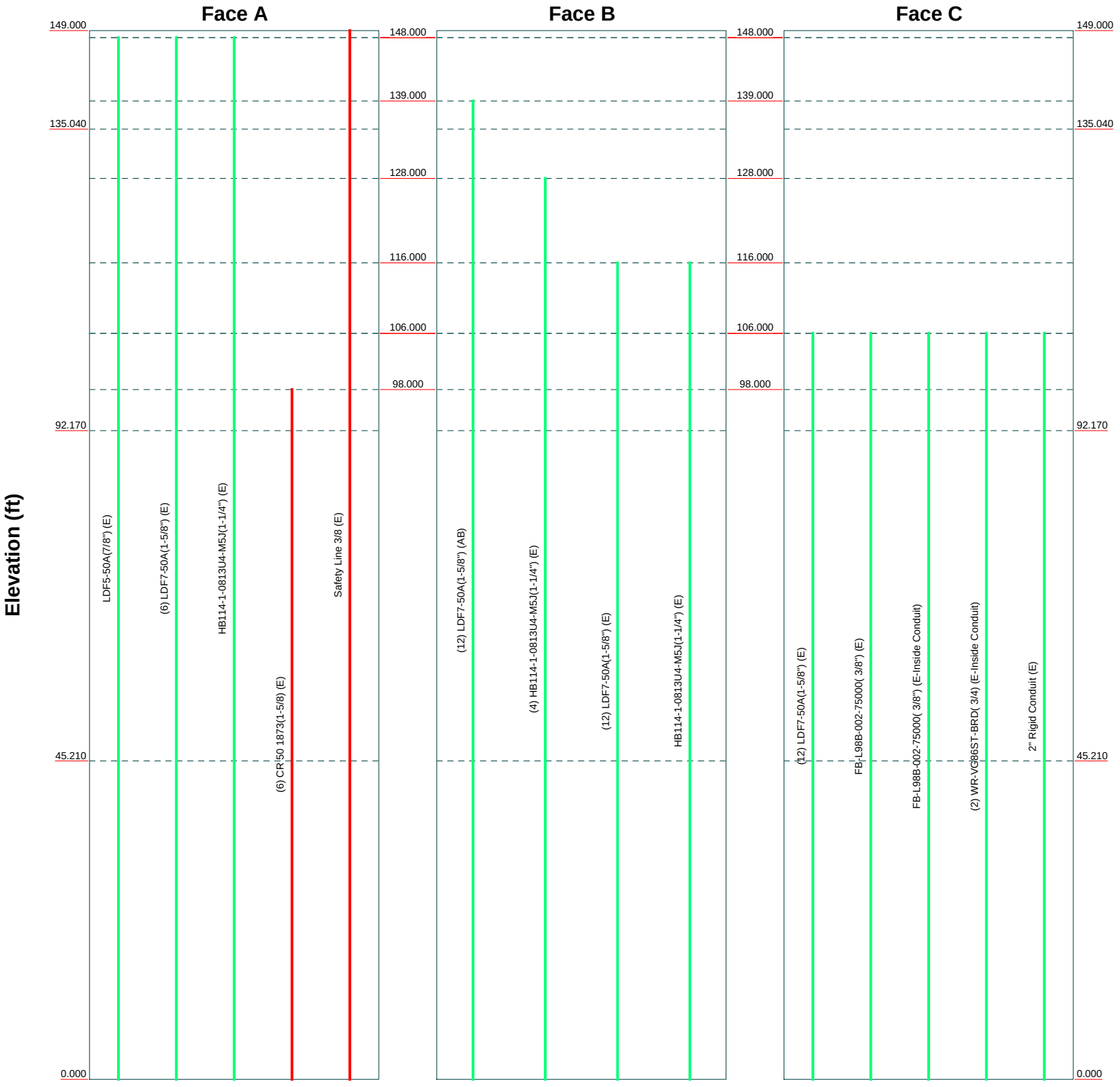
Job: 84701.006.01 - GUILFORD WEST STONE PROPERTY, CT (BU# 87634		
Project:		
Client: Crown Castle	Drawn by: Harisha	App'd:
Code: TIA-222-G	Date: 12/20/16	Scale: NTS
Path:		Dwg No. E-5

Feed Line Distribution Chart
0' - 149'

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



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Job: ***84701.006.01 - GUILFORD WEST STONE PROPERTY, CT (BU# 87634***		
Project:		
Client: Crown Castle	Drawn by: Harisha	App'd:
Code: TIA-222-G	Date: 12/20/16	Scale: NTS
Path:		Dwg No. E-7

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 101 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tapered Pole Section Geometry

Section	*Elevation* ft	*Section Length* ft	*Splice Length* ft	*Number of Sides*	*Top Diameter* in	*Bottom Diameter* in	*Wall Thickness* in	*Bend Radius* in	*Pole Grade*
L1	149.000-135.040	13.960	3.920	18	22.000	26.770	0.188	0.750	A572-65 (65 ksi)
L2	135.040-92.170	46.790	5.670	18	25.056	40.910	0.250	1.000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	92.170-45.210	52.630	7.580	18	38.489	56.310	0.313	1.250	A572-65 (65 ksi)
L4	45.210-0.000	52.790		18	53.118	71.000	0.375	1.500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	22.339	12.981	780.301	7.743	11.176	69.819	1561.628	6.492	3.542	18.891
	27.183	15.820	1412.320	9.437	13.599	103.853	2826.498	7.911	4.382	23.368
L2	26.791	19.683	1530.144	8.806	12.728	120.217	3062.300	9.843	3.970	15.879
	41.541	32.264	6738.861	14.434	20.782	324.260	13486.589	16.135	6.760	27.041
L3	41.032	37.866	6972.278	13.553	19.552	356.596	13953.731	18.937	6.224	19.917
	57.179	55.543	22003.933	19.879	28.605	769.221	44036.819	27.777	9.361	29.954
L4	56.545	62.778	22063.670	18.724	26.984	817.654	44156.373	31.395	8.689	23.17
	72.095	84.061	52972.567	25.072	36.068	1468.686	106014.838	42.039	11.836	31.563

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 149.000-135.040				1	1	1			
L2 135.040-92.170				1	1	1			
L3 92.170-45.210				1	1	1			
L4 45.210-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
hh CR 50 1873(1-5/8) (E) *hh*	A	Surface Ar (CaAa)	98.000 - 0.000	6	6	-0.500 -0.350	1.980		0.001
Safety Line 3/8 (E) *hh*	A	Surface Ar (CaAa)	149.000 - 0.000	1	1	0.420 0.430	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF5-50A(7/8") (E)	A	No	Inside Pole	148.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
LDF7-50A(1-5/8") (E)	A	No	Inside Pole	148.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
HB114-1-0813U4-M5J(1 -1/4") (E) *hh*	A	No	Inside Pole	148.000 - 0.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
LDF7-50A(1-5/8") (AB) *hh*	B	No	Inside Pole	139.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
HB114-1-0813U4-M5J(1 -1/4") (E) *hh*	B	No	Inside Pole	128.000 - 0.000	4	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
LDF7-50A(1-5/8") (E)	B	No	Inside Pole	116.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
HB114-1-0813U4-M5J(1 -1/4") (E) *hh*	B	No	Inside Pole	116.000 - 0.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
LDF7-50A(1-5/8") (E)	C	No	Inside Pole	106.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
FB-L98B-002-75000(3/8") (E)	C	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
FB-L98B-002-75000(3/8") (E-Inside Conduit)	C	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
WR-VG86ST-BRD(3/4) (E-Inside Conduit)	C	No	Inside Pole	106.000 - 0.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
2" Rigid Conduit (E) *hh*	C	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.003
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.000-135.040	A	0.000	0.000	0.523	0.000	0.087
		B	0.000	0.000	0.000	0.000	0.039
		C	0.000	0.000	0.000	0.000	0.000
L2	135.040-92.170	A	0.000	0.000	8.534	0.000	0.315
		B	0.000	0.000	0.000	0.000	0.857
		C	0.000	0.000	0.000	0.000	0.193
L3	92.170-45.210	A	0.000	0.000	57.549	0.000	0.547
		B	0.000	0.000	0.000	0.000	1.206
		C	0.000	0.000	0.000	0.000	0.654
L4	45.210-0.000	A	0.000	0.000	55.405	0.000	0.527
		B	0.000	0.000	0.000	0.000	1.161

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	0.000	0.630

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.000-135.040	A	1.735	0.000	0.000	5.369	0.000	0.149
		B		0.000	0.000	0.000	0.000	0.039
		C		0.000	0.000	0.000	0.000	0.000
L2	135.040-92.170	A	1.695	0.000	0.000	27.674	0.000	0.640
		B		0.000	0.000	0.000	0.000	0.857
		C		0.000	0.000	0.000	0.000	0.193
L3	92.170-45.210	A	1.612	0.000	0.000	107.323	0.000	1.796
		B		0.000	0.000	0.000	0.000	1.206
		C		0.000	0.000	0.000	0.000	0.654
L4	45.210-0.000	A	1.445	0.000	0.000	101.629	0.000	1.659
		B		0.000	0.000	0.000	0.000	1.161
		C		0.000	0.000	0.000	0.000	0.630

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.000-135.040	-0.009	-0.055	-0.068	-0.429
L2	135.040-92.170	-0.268	0.048	-0.395	-0.291
L3	92.170-45.210	-1.319	0.461	-1.578	0.278
L4	45.210-0.000	-1.382	0.483	-1.740	0.316

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	20	Safety Line 3/8	135.04 - 149.00	1.0000	1.0000
L1	18	CR 50 1873(1-5/8)	135.04 - 98.00	1.0000	1.0000
L2	18	CR 50 1873(1-5/8)	92.17 - 98.00	1.0000	1.0000
L2	20	Safety Line 3/8	92.17 - 135.04	1.0000	1.0000
L3	18	CR 50 1873(1-5/8)	45.21 - 92.17	1.0000	1.0000
L3	20	Safety Line 3/8	45.21 - 92.17	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
ERICSSON AIR 21 B2A	A	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B2A	B	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B2A	C	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B4A	A	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B4A	B	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B4A	C	From Leg	4.000	0.000	148.000	No Ice	6.329	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
(E)			0.000			1" Ice	7.214	7.131	0.233
ETW200VS12UB	A	From Leg	4.000	0.000	148.000	No Ice	0.158	0.404	0.011
(E)			0.000			1/2" Ice	0.213	0.486	0.015
			0.000			1" Ice	0.276	0.575	0.019
ETW200VS12UB	B	From Leg	4.000	0.000	148.000	No Ice	0.158	0.404	0.011
(E)			0.000			1/2" Ice	0.213	0.486	0.015
			0.000			1" Ice	0.276	0.575	0.019
ETW200VS12UB	C	From Leg	4.000	0.000	148.000	No Ice	0.158	0.404	0.011
(E)			0.000			1/2" Ice	0.213	0.486	0.015
			0.000			1" Ice	0.276	0.575	0.019
(2) 8' x 2" Pipe Mount	A	From Leg	4.000	0.000	148.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			2.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Pipe Mount	B	From Leg	4.000	0.000	148.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			2.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Pipe Mount	C	From Leg	4.000	0.000	148.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			2.000			1" Ice	3.401	3.401	0.063
Sector Mount [SM 901-3]	C	None		0.000	148.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	17.160	17.160	1.432
						1" Ice	21.420	21.420	1.607
hh									
(4) DB848H90E-XY w/	A	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(AB)			1.000			1" Ice	8.816	13.564	0.219
(4) DB848H90E-XY w/	B	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(AB)			1.000			1" Ice	8.816	13.564	0.219
(4) DB848H90E-XY w/	C	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(AB)			1.000			1" Ice	8.816	13.564	0.219
Sector Mount [SM 901-3]	C	None		0.000	139.000	No Ice	12.900	12.900	1.257
(AB)						1/2" Ice	17.160	17.160	1.432
						1" Ice	21.420	21.420	1.607
hh									
TME-800MHZ RRH	A	From Leg	1.000	0.000	129.000	No Ice	2.134	1.773	0.053

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			0.000					1/2" Ice	2.320	1.946	0.074
			-2.000					1" Ice	2.512	2.127	0.098
TME-800MHZ RRH	B	From Leg	1.000			0.000	129.000	No Ice	2.134	1.773	0.053
(E)			0.000					1/2" Ice	2.320	1.946	0.074
			-2.000					1" Ice	2.512	2.127	0.098
TME-800MHZ RRH	C	From Leg	1.000			0.000	129.000	No Ice	2.134	1.773	0.053
(E)			0.000					1/2" Ice	2.320	1.946	0.074
			-2.000					1" Ice	2.512	2.127	0.098
TME-1900MHz RRH	A	From Leg	1.000			0.000	129.000	No Ice	2.313	2.375	0.060
(65MHz)			0.000					1/2" Ice	2.517	2.581	0.084
(E)			-6.000					1" Ice	2.728	2.794	0.111
TME-1900MHz RRH	B	From Leg	1.000			0.000	129.000	No Ice	2.313	2.375	0.060
(65MHz)			0.000					1/2" Ice	2.517	2.581	0.084
(E)			-6.000					1" Ice	2.728	2.794	0.111
TME-1900MHz RRH	C	From Leg	1.000			0.000	129.000	No Ice	2.313	2.375	0.060
(65MHz)			0.000					1/2" Ice	2.517	2.581	0.084
(E)			-6.000					1" Ice	2.728	2.794	0.111
6' x 2" Mount Pipe	A	From Leg	0.500			0.000	129.000	No Ice	1.425	1.425	0.022
(E)			0.000					1/2" Ice	1.925	1.925	0.033
			0.000					1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	0.500			0.000	129.000	No Ice	1.425	1.425	0.022
(E)			0.000					1/2" Ice	1.925	1.925	0.033
			0.000					1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	0.500			0.000	129.000	No Ice	1.425	1.425	0.022
(E)			0.000					1/2" Ice	1.925	1.925	0.033
			0.000					1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 102-3]	C	None				0.000	129.000	No Ice	3.000	3.000	0.081
(E)								1/2" Ice	3.480	3.480	0.111
								1" Ice	3.960	3.960	0.141
hh											
APXVTM14-C-120 w/	A	From Leg	4.000			0.000	128.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000					1/2" Ice	7.031	5.754	0.131
(E)			2.000					1" Ice	7.473	6.472	0.193
APXVTM14-C-120 w/	B	From Leg	4.000			0.000	128.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000					1/2" Ice	7.031	5.754	0.131
(E)			2.000					1" Ice	7.473	6.472	0.193
APXVTM14-C-120 w/	C	From Leg	4.000			0.000	128.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000					1/2" Ice	7.031	5.754	0.131
(E)			2.000					1" Ice	7.473	6.472	0.193
APXVSPP18-C-A20 w/	A	From Leg	4.000			0.000	128.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000					1/2" Ice	8.822	8.127	0.151
(E)			2.000					1" Ice	9.346	9.021	0.227
APXVSPP18-C-A20 w/	B	From Leg	4.000			0.000	128.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000					1/2" Ice	8.822	8.127	0.151
(E)			2.000					1" Ice	9.346	9.021	0.227
APXVSPP18-C-A20 w/	C	From Leg	4.000			0.000	128.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000					1/2" Ice	8.822	8.127	0.151
(E)			2.000					1" Ice	9.346	9.021	0.227
TD-RRH8x20-25	A	From Leg	4.000			0.000	128.000	No Ice	4.045	1.535	0.070
(E)			0.000					1/2" Ice	4.298	1.714	0.097
			2.000					1" Ice	4.557	1.901	0.128
TD-RRH8x20-25	B	From Leg	4.000			0.000	128.000	No Ice	4.045	1.535	0.070
(E)			0.000					1/2" Ice	4.298	1.714	0.097
			2.000					1" Ice	4.557	1.901	0.128
TD-RRH8x20-25	C	From Leg	4.000			0.000	128.000	No Ice	4.045	1.535	0.070
(E)			0.000					1/2" Ice	4.298	1.714	0.097
			2.000					1" Ice	4.557	1.901	0.128

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) ACU-A20-N	A	From Leg	4.000	0.000	128.000	No Ice	0.067	0.117	0.001
(E)			0.000			1/2" Ice	0.104	0.162	0.002
			2.000			1" Ice	0.148	0.215	0.004
(3) ACU-A20-N	B	From Leg	4.000	0.000	128.000	No Ice	0.067	0.117	0.001
(E)			0.000			1/2" Ice	0.104	0.162	0.002
			2.000			1" Ice	0.148	0.215	0.004
(3) ACU-A20-N	C	From Leg	4.000	0.000	128.000	No Ice	0.067	0.117	0.001
(E)			0.000			1/2" Ice	0.104	0.162	0.002
			2.000			1" Ice	0.148	0.215	0.004
800 EXTERNAL NOTCH	A	From Leg	4.000	0.000	128.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
(E)			2.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH	B	From Leg	4.000	0.000	128.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
(E)			2.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH	C	From Leg	4.000	0.000	128.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
(E)			2.000			1" Ice	0.873	0.483	0.024
(2) 8' x 2" Pipe Mount	A	From Leg	4.000	0.000	128.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Pipe Mount	B	From Leg	4.000	0.000	128.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Pipe Mount	C	From Leg	4.000	0.000	128.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
Sector Mount [SM 901-3]	C	None		0.000	128.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	17.160	17.160	1.432
						1" Ice	21.420	21.420	1.607
hh									
(2) DB846F65ZAXY w/	A	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.832	9.010	0.114
(E)			2.000			1" Ice	8.348	9.912	0.189
(2) DB846H80E-SX w/	B	From Leg	4.000	0.000	116.000	No Ice	5.331	7.735	0.041
Mount Pipe			0.000			1/2" Ice	5.888	8.930	0.099
(E)			2.000			1" Ice	6.412	9.843	0.165
(2) DB846F65ZAXY w/	C	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.832	9.010	0.114
(E)			2.000			1" Ice	8.348	9.912	0.189
BXA-171063-8BF-2 w/	A	From Leg	4.000	0.000	116.000	No Ice	3.179	3.353	0.029
Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.061
(E)			2.000			1" Ice	3.930	4.595	0.099
BXA-171085-12BF-2 w/	B	From Leg	4.000	0.000	116.000	No Ice	4.971	5.228	0.040
Mount Pipe			0.000			1/2" Ice	5.521	6.389	0.086
(E)			2.000			1" Ice	6.036	7.261	0.139
BXA-171063-12BF w/	C	From Leg	4.000	0.000	116.000	No Ice	4.971	5.228	0.040
Mount Pipe			0.000			1/2" Ice	5.521	6.389	0.086
(E)			2.000			1" Ice	6.036	7.261	0.139
BXA-70063/6CF-2 w/ Mount	A	From Leg	4.000	0.000	116.000	No Ice	7.806	5.398	0.042
Pipe			0.000			1/2" Ice	8.357	6.546	0.101
(E)			2.000			1" Ice	8.872	7.409	0.168
BXA-70063/6CF-2 w/ Mount	B	From Leg	4.000	0.000	116.000	No Ice	7.806	5.398	0.042
Pipe			0.000			1/2" Ice	8.357	6.546	0.101
(E)			2.000			1" Ice	8.872	7.409	0.168
BXA-70063/6CF-2 w/ Mount	C	From Leg	4.000	0.000	116.000	No Ice	7.806	5.398	0.042
Pipe			0.000			1/2" Ice	8.357	6.546	0.101

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			2.000					1" Ice	8.872	7.409	0.168
BXA-171063-12CF-EDIN-2	A	From Leg	4.000			0.000	116.000	No Ice	5.029	5.289	0.041
w/ Mount Pipe			0.000					1/2" Ice	5.583	6.459	0.087
(E)			2.000					1" Ice	6.103	7.348	0.140
BXA-171063-12CF-EDIN-2	B	From Leg	4.000			0.000	116.000	No Ice	5.029	5.289	0.041
w/ Mount Pipe			0.000					1/2" Ice	5.583	6.459	0.087
(E)			2.000					1" Ice	6.103	7.348	0.140
BXA-171063-12CF-EDIN-2	C	From Leg	4.000			0.000	116.000	No Ice	5.029	5.289	0.041
w/ Mount Pipe			0.000					1/2" Ice	5.583	6.459	0.087
(E)			2.000					1" Ice	6.103	7.348	0.140
GPS-TMG-26NMS	B	From Leg	4.000			0.000	116.000	No Ice	0.133	0.133	0.001
(E)			0.000					1/2" Ice	0.183	0.183	0.002
			2.000					1" Ice	0.239	0.239	0.005
(2) FD9R6004/2C-3L	A	From Leg	4.000			0.000	116.000	No Ice	0.314	0.076	0.003
(E)			0.000					1/2" Ice	0.386	0.119	0.005
			2.000					1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	B	From Leg	4.000			0.000	116.000	No Ice	0.314	0.076	0.003
(E)			0.000					1/2" Ice	0.386	0.119	0.005
			2.000					1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	C	From Leg	4.000			0.000	116.000	No Ice	0.314	0.076	0.003
(E)			0.000					1/2" Ice	0.386	0.119	0.005
			2.000					1" Ice	0.466	0.169	0.009
DB-T1-6Z-8AB-0Z	A	From Leg	4.000			0.000	116.000	No Ice	4.800	2.000	0.044
(E)			0.000					1/2" Ice	5.070	2.193	0.080
			2.000					1" Ice	5.348	2.393	0.120
RRH2x40-AWS	A	From Leg	4.000			0.000	116.000	No Ice	2.161	1.420	0.044
(E)			0.000					1/2" Ice	2.360	1.590	0.061
			2.000					1" Ice	2.565	1.768	0.082
RRH2x40-AWS	B	From Leg	4.000			0.000	116.000	No Ice	2.161	1.420	0.044
(E)			0.000					1/2" Ice	2.360	1.590	0.061
			2.000					1" Ice	2.565	1.768	0.082
RRH2x40-AWS	C	From Leg	4.000			0.000	116.000	No Ice	2.161	1.420	0.044
(E)			0.000					1/2" Ice	2.360	1.590	0.061
			2.000					1" Ice	2.565	1.768	0.082
Sector Mount [SM 901-3]	C	None				0.000	116.000	No Ice	12.900	12.900	1.257
(E)								1/2" Ice	17.160	17.160	1.432
								1" Ice	21.420	21.420	1.607
hh											
RRUS 11	A	From Leg	1.000			0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000					1/2" Ice	2.992	1.334	0.068
			0.000					1" Ice	3.207	1.490	0.092
RRUS 11	B	From Leg	1.000			0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000					1/2" Ice	2.992	1.334	0.068
			0.000					1" Ice	3.207	1.490	0.092
RRUS 11	C	From Leg	1.000			0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000					1/2" Ice	2.992	1.334	0.068
			0.000					1" Ice	3.207	1.490	0.092
4' x 2" Pipe Mount	A	From Leg	0.500			0.000	110.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	B	From Leg	0.500			0.000	110.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	0.500			0.000	110.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
Side Arm Mount [SO 102-3]	C	None				0.000	110.000	No Ice	3.000	3.000	0.081

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)								1/2" Ice	3.480	3.480	0.111
								1" Ice	3.960	3.960	0.141
hh											
AM-X-CD-16-65-00T-RET	A	From Leg	4.000			0.000	106.000	No Ice	8.262	6.304	0.074
w/ Mount Pipe			0.000					1/2" Ice	8.822	7.479	0.139
(E)			2.000					1" Ice	9.346	8.368	0.212
AM-X-CD-16-65-00T-RET	B	From Leg	4.000			0.000	106.000	No Ice	8.262	6.304	0.074
w/ Mount Pipe			0.000					1/2" Ice	8.822	7.479	0.139
(E)			2.000					1" Ice	9.346	8.368	0.212
AM-X-CD-14-65-00T-RET	C	From Leg	4.000			0.000	106.000	No Ice	5.232	4.015	0.035
w/ Mount Pipe			0.000					1/2" Ice	5.618	4.633	0.080
(E)			2.000					1" Ice	6.012	5.257	0.131
(4) LGP21401	A	From Leg	4.000			0.000	106.000	No Ice	1.104	0.207	0.014
(E)			0.000					1/2" Ice	1.239	0.274	0.021
			2.000					1" Ice	1.381	0.348	0.030
(4) LGP21401	B	From Leg	4.000			0.000	106.000	No Ice	1.104	0.207	0.014
(E)			0.000					1/2" Ice	1.239	0.274	0.021
			2.000					1" Ice	1.381	0.348	0.030
(4) LGP21401	C	From Leg	4.000			0.000	106.000	No Ice	1.104	0.207	0.014
(E)			0.000					1/2" Ice	1.239	0.274	0.021
			2.000					1" Ice	1.381	0.348	0.030
DC6-48-60-18-8F	A	From Leg	4.000			0.000	106.000	No Ice	0.917	0.917	0.019
(E)			0.000					1/2" Ice	1.458	1.458	0.037
			2.000					1" Ice	1.643	1.643	0.057
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000			0.000	106.000	No Ice	5.746	4.254	0.055
(P)			0.000					1/2" Ice	6.179	5.014	0.103
			2.000					1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000			0.000	106.000	No Ice	5.746	4.254	0.055
(P)			0.000					1/2" Ice	6.179	5.014	0.103
			2.000					1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000			0.000	106.000	No Ice	5.746	4.254	0.055
(P)			0.000					1/2" Ice	6.179	5.014	0.103
			2.000					1" Ice	6.607	5.711	0.157
(4) 7020.00	A	From Leg	4.000			0.000	106.000	No Ice	0.102	0.175	0.002
(P)			0.000					1/2" Ice	0.147	0.239	0.005
			2.000					1" Ice	0.199	0.311	0.009
(4) 7020.00	B	From Leg	4.000			0.000	106.000	No Ice	0.102	0.175	0.002
(P)			0.000					1/2" Ice	0.147	0.239	0.005
			2.000					1" Ice	0.199	0.311	0.009
(4) 7020.00	C	From Leg	4.000			0.000	106.000	No Ice	0.102	0.175	0.002
(P)			0.000					1/2" Ice	0.147	0.239	0.005
			2.000					1" Ice	0.199	0.311	0.009
RRUS 12	A	From Leg	4.000			0.000	106.000	No Ice	3.145	1.285	0.058
(P)			0.000					1/2" Ice	3.365	1.438	0.081
			2.000					1" Ice	3.592	1.600	0.108
RRUS 12	B	From Leg	4.000			0.000	106.000	No Ice	3.145	1.285	0.058
(P)			0.000					1/2" Ice	3.365	1.438	0.081
			2.000					1" Ice	3.592	1.600	0.108
RRUS 12	C	From Leg	4.000			0.000	106.000	No Ice	3.145	1.285	0.058
(P)			0.000					1/2" Ice	3.365	1.438	0.081
			2.000					1" Ice	3.592	1.600	0.108
8' x 2" Pipe Mount	A	From Leg	4.000			0.000	106.000	No Ice	1.900	1.900	0.029
(E)			0.000					1/2" Ice	2.728	2.728	0.044
			0.000					1" Ice	3.401	3.401	0.063
8' x 2" Pipe Mount	B	From Leg	4.000			0.000	106.000	No Ice	1.900	1.900	0.029
(E)			0.000					1/2" Ice	2.728	2.728	0.044
			0.000					1" Ice	3.401	3.401	0.063

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
8' x 2" Pipe Mount	C	From Leg	4.000	0.000	106.000	No Ice	1.900	1.900	0.029
(E)			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
Sector Mount [SM 901-3]	C	None		0.000	106.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	17.160	17.160	1.432
						1" Ice	21.420	21.420	1.607
hh									
APXV18-206517S-C w/	A	From Leg	0.500	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
APXV18-206517S-C w/	B	From Leg	0.500	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
APXV18-206517S-C w/	C	From Leg	0.500	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
hh									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	149 - 135.04	Pole	Max Tension	14	0.000	0.000	0.000
			Max. Compression	26	-13.014	0.008	0.048
			Max. Mx	20	-4.914	43.414	0.002
			Max. My	2	-4.910	-0.003	43.425
			Max. Vy	20	-10.455	43.414	0.002
			Max. Vx	2	-10.457	-0.003	43.425
			Max. Torque	6			-0.001
L2	135.04 - 92.17	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.277	0.014	1.933
			Max. Mx	8	-18.986	-860.698	1.883
			Max. My	2	-18.964	-1.479	865.813
			Max. Vy	20	-30.308	860.489	-0.889
			Max. Vx	2	-30.547	-1.479	865.813
			Max. Torque	10			0.726
L3	92.17 - 45.21	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.992	2.294	1.479
			Max. Mx	20	-31.385	2351.726	-3.763
			Max. My	2	-31.374	-3.742	2367.197
			Max. Vy	20	-35.966	2351.726	-3.763
			Max. Vx	2	-36.204	-3.742	2367.197
			Max. Torque	10			0.725
L4	45.21 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.932	5.917	0.688
			Max. Mx	20	-52.962	4434.364	-7.183
			Max. My	2	-52.962	-6.116	4461.270
			Max. Vy	20	-42.706	4434.364	-7.183
			Max. Vx	2	-42.939	-6.116	4461.270
			Max. Torque	10			0.724

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	90.932	11.426	-0.011
	Max. H_x	20	52.984	42.679	-0.059
	Max. H_z	2	52.984	-0.059	42.913
	Max. M_x	2	4461.270	-0.059	42.913
	Max. M_z	8	4432.042	-42.679	0.059
	Max. Torsion	10	0.724	-36.932	-21.405
	Min. Vert	11	39.738	-36.932	-21.405
	Min. H_x	8	52.984	-42.679	0.059
	Min. H_z	14	52.984	0.059	-42.913
	Min. M_x	14	-4461.076	0.059	-42.913
	Min. M_z	20	-4434.364	42.679	-0.059
	Min. Torsion	22	-0.723	36.932	21.405

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	44.153	0.000	0.000	-0.069	0.954	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	52.984	0.059	-42.913	-4461.270	-6.116	0.487
0.9 Dead+1.6 Wind 0 deg - No Ice	39.738	0.059	-42.913	-4435.359	-6.367	0.485
1.2 Dead+1.6 Wind 30 deg - No Ice	52.984	21.391	-37.193	-3867.230	-2221.727	0.147
0.9 Dead+1.6 Wind 30 deg - No Ice	39.738	21.391	-37.193	-3844.763	-2209.122	0.147
1.2 Dead+1.6 Wind 60 deg - No Ice	52.984	36.991	-21.508	-2236.999	-3841.732	-0.232
0.9 Dead+1.6 Wind 60 deg - No Ice	39.738	36.991	-21.508	-2223.991	-3819.726	-0.231
1.2 Dead+1.6 Wind 90 deg - No Ice	52.984	42.679	-0.059	-7.376	-4432.042	-0.551
0.9 Dead+1.6 Wind 90 deg - No Ice	39.738	42.679	-0.059	-7.306	-4406.612	-0.548
1.2 Dead+1.6 Wind 120 deg - No Ice	52.984	36.932	21.405	2224.206	-3834.466	-0.724
0.9 Dead+1.6 Wind 120 deg - No Ice	39.738	36.932	21.405	2211.326	-3812.503	-0.720
1.2 Dead+1.6 Wind 150 deg - No Ice	52.984	21.288	37.134	3859.771	-2209.126	-0.703
0.9 Dead+1.6 Wind 150 deg - No Ice	39.738	21.288	37.134	3837.401	-2196.595	-0.699
1.2 Dead+1.6 Wind 180 deg - No Ice	52.984	-0.059	42.913	4461.076	8.443	-0.492
0.9 Dead+1.6 Wind 180 deg - No Ice	39.738	-0.059	42.913	4435.219	8.106	-0.489
1.2 Dead+1.6 Wind 210 deg - No Ice	52.984	-21.391	37.193	3867.034	2224.052	-0.147
0.9 Dead+1.6 Wind 210 deg - No Ice	39.738	-21.391	37.193	3844.622	2210.859	-0.146
1.2 Dead+1.6 Wind 240 deg - No Ice	52.984	-36.991	21.508	2236.804	3844.055	0.237
0.9 Dead+1.6 Wind 240 deg -	39.738	-36.991	21.508	2223.851	3821.461	0.236

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice 1.2 Dead+1.6 Wind 270 deg - No Ice	52.984	-42.679	0.059	7.183	4434.364	0.555
0.9 Dead+1.6 Wind 270 deg - No Ice	39.738	-42.679	0.059	7.167	4408.347	0.553
1.2 Dead+1.6 Wind 300 deg - No Ice	52.984	-36.932	-21.405	-2224.396	3836.790	0.723
0.9 Dead+1.6 Wind 300 deg - No Ice	39.738	-36.932	-21.405	-2211.464	3814.239	0.720
1.2 Dead+1.6 Wind 330 deg - No Ice	52.984	-21.288	-37.134	-3859.962	2211.452	0.698
0.9 Dead+1.6 Wind 330 deg - No Ice	39.738	-21.288	-37.134	-3837.539	2198.333	0.694
1.2 Dead+1.0 Ice+1.0 Temp	90.932	0.000	0.000	-0.688	5.917	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	90.932	0.011	-11.465	-1186.746	4.739	0.128
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	90.932	5.723	-9.935	-1028.561	-585.582	0.045
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	90.932	9.901	-5.742	-594.996	-1017.354	-0.050
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	90.932	11.426	-0.011	-2.225	-1174.884	-0.131
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	90.932	9.889	5.723	590.919	-1015.960	-0.178
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	90.932	5.703	9.924	1025.505	-583.168	-0.176
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	90.932	-0.011	11.465	1185.084	7.528	-0.128
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	90.932	-5.723	9.935	1026.898	597.849	-0.045
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	90.932	-9.901	5.742	593.334	1029.620	0.050
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	90.932	-11.426	0.011	0.563	1187.149	0.131
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	90.932	-9.889	-5.723	-592.581	1028.226	0.178
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	90.932	-5.703	-9.924	-1027.166	595.434	0.176
Dead+Wind 0 deg - Service	44.153	0.012	-8.469	-877.611	-0.466	0.097
Dead+Wind 30 deg - Service	44.153	4.221	-7.340	-760.760	-436.285	0.029
Dead+Wind 60 deg - Service	44.153	7.300	-4.245	-440.086	-754.944	-0.046
Dead+Wind 90 deg - Service	44.153	8.423	-0.012	-1.512	-871.057	-0.109
Dead+Wind 120 deg - Service	44.153	7.288	4.224	437.446	-753.512	-0.143
Dead+Wind 150 deg - Service	44.153	4.201	7.328	759.169	-433.805	-0.138
Dead+Wind 180 deg - Service	44.153	-0.012	8.469	877.451	2.398	-0.097
Dead+Wind 210 deg - Service	44.153	-4.221	7.340	760.600	438.217	-0.029
Dead+Wind 240 deg - Service	44.153	-7.300	4.245	439.926	756.876	0.046
Dead+Wind 270 deg - Service	44.153	-8.423	0.012	1.352	872.989	0.109
Dead+Wind 300 deg - Service	44.153	-7.288	-4.224	-437.606	755.444	0.143
Dead+Wind 330 deg - Service	44.153	-4.201	-7.328	-759.329	435.738	0.138

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-44.153	0.000	0.000	44.153	0.000	0.000%
2	0.059	-52.984	-42.913	-0.059	52.984	42.913	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
3	0.059	-39.738	-42.913	-0.059	39.738	42.913	0.000%
4	21.391	-52.984	-37.193	-21.391	52.984	37.193	0.000%
5	21.391	-39.738	-37.193	-21.391	39.738	37.193	0.000%
6	36.991	-52.984	-21.508	-36.991	52.984	21.508	0.000%
7	36.991	-39.738	-21.508	-36.991	39.738	21.508	0.000%
8	42.679	-52.984	-0.059	-42.679	52.984	0.059	0.000%
9	42.679	-39.738	-0.059	-42.679	39.738	0.059	0.000%
10	36.932	-52.984	21.405	-36.932	52.984	-21.405	0.000%
11	36.932	-39.738	21.405	-36.932	39.738	-21.405	0.000%
12	21.288	-52.984	37.134	-21.288	52.984	-37.134	0.000%
13	21.288	-39.738	37.134	-21.288	39.738	-37.134	0.000%
14	-0.059	-52.984	42.913	0.059	52.984	-42.913	0.000%
15	-0.059	-39.738	42.913	0.059	39.738	-42.913	0.000%
16	-21.391	-52.984	37.193	21.391	52.984	-37.193	0.000%
17	-21.391	-39.738	37.193	21.391	39.738	-37.193	0.000%
18	-36.991	-52.984	21.508	36.991	52.984	-21.508	0.000%
19	-36.991	-39.738	21.508	36.991	39.738	-21.508	0.000%
20	-42.679	-52.984	0.059	42.679	52.984	-0.059	0.000%
21	-42.679	-39.738	0.059	42.679	39.738	-0.059	0.000%
22	-36.932	-52.984	-21.405	36.932	52.984	21.405	0.000%
23	-36.932	-39.738	-21.405	36.932	39.738	21.405	0.000%
24	-21.288	-52.984	-37.134	21.288	52.984	37.134	0.000%
25	-21.288	-39.738	-37.134	21.288	39.738	37.134	0.000%
26	0.000	-90.932	0.000	0.000	90.932	0.000	0.000%
27	0.011	-90.932	-11.465	-0.011	90.932	11.465	0.000%
28	5.723	-90.932	-9.935	-5.723	90.932	9.935	0.000%
29	9.901	-90.932	-5.742	-9.901	90.932	5.742	0.000%
30	11.426	-90.932	-0.011	-11.426	90.932	0.011	0.000%
31	9.889	-90.932	5.723	-9.889	90.932	-5.723	0.000%
32	5.703	-90.932	9.924	-5.703	90.932	-9.924	0.000%
33	-0.011	-90.932	11.465	0.011	90.932	-11.465	0.000%
34	-5.723	-90.932	9.935	5.723	90.932	-9.935	0.000%
35	-9.901	-90.932	5.742	9.901	90.932	-5.742	0.000%
36	-11.426	-90.932	0.011	11.426	90.932	-0.011	0.000%
37	-9.889	-90.932	-5.723	9.889	90.932	5.723	0.000%
38	-5.703	-90.932	-9.924	5.703	90.932	9.924	0.000%
39	0.012	-44.153	-8.469	-0.012	44.153	8.469	0.000%
40	4.221	-44.153	-7.340	-4.221	44.153	7.340	0.000%
41	7.300	-44.153	-4.245	-7.300	44.153	4.245	0.000%
42	8.423	-44.153	-0.012	-8.423	44.153	0.012	0.000%
43	7.288	-44.153	4.224	-7.288	44.153	-4.224	0.000%
44	4.201	-44.153	7.328	-4.201	44.153	-7.328	0.000%
45	-0.012	-44.153	8.469	0.012	44.153	-8.469	0.000%
46	-4.221	-44.153	7.340	4.221	44.153	-7.340	0.000%
47	-7.300	-44.153	4.245	7.300	44.153	-4.245	0.000%
48	-8.423	-44.153	0.012	8.423	44.153	-0.012	0.000%
49	-7.288	-44.153	-4.224	7.288	44.153	4.224	0.000%
50	-4.201	-44.153	-7.328	4.201	44.153	7.328	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00007683
3	Yes	4	0.00000001	0.00004385

4	Yes	5	0.00000001	0.00011237
5	Yes	5	0.00000001	0.00004828
6	Yes	5	0.00000001	0.00011249
7	Yes	5	0.00000001	0.00004836
8	Yes	4	0.00000001	0.00008495
9	Yes	4	0.00000001	0.00004888
10	Yes	5	0.00000001	0.00011019
11	Yes	5	0.00000001	0.00004738
12	Yes	5	0.00000001	0.00011242
13	Yes	5	0.00000001	0.00004840
14	Yes	4	0.00000001	0.00005542
15	Yes	4	0.00000001	0.00002912
16	Yes	5	0.00000001	0.00011192
17	Yes	5	0.00000001	0.00004807
18	Yes	5	0.00000001	0.00011171
19	Yes	5	0.00000001	0.00004800
20	Yes	4	0.00000001	0.00006137
21	Yes	4	0.00000001	0.00003312
22	Yes	5	0.00000001	0.00011254
23	Yes	5	0.00000001	0.00004846
24	Yes	5	0.00000001	0.00011040
25	Yes	5	0.00000001	0.00004742
26	Yes	4	0.00000001	0.00000001
27	Yes	5	0.00000001	0.00006963
28	Yes	5	0.00000001	0.00008231
29	Yes	5	0.00000001	0.00008216
30	Yes	5	0.00000001	0.00006888
31	Yes	5	0.00000001	0.00008128
32	Yes	5	0.00000001	0.00008160
33	Yes	5	0.00000001	0.00006918
34	Yes	5	0.00000001	0.00008227
35	Yes	5	0.00000001	0.00008216
36	Yes	5	0.00000001	0.00006938
37	Yes	5	0.00000001	0.00008257
38	Yes	5	0.00000001	0.00008249
39	Yes	4	0.00000001	0.00001010
40	Yes	4	0.00000001	0.00004626
41	Yes	4	0.00000001	0.00004641
42	Yes	4	0.00000001	0.00001015
43	Yes	4	0.00000001	0.00004395
44	Yes	4	0.00000001	0.00004694
45	Yes	4	0.00000001	0.00001001
46	Yes	4	0.00000001	0.00004564
47	Yes	4	0.00000001	0.00004533
48	Yes	4	0.00000001	0.00001008
49	Yes	4	0.00000001	0.00004716
50	Yes	4	0.00000001	0.00004432

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.04	13.218	39	0.801	0.000
L2	138.96 - 92.17	11.539	39	0.792	0.000
L3	97.84 - 45.21	5.468	39	0.569	0.000
L4	52.79 - 0	1.482	39	0.261	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	13.050	0.801	0.000	45379
139.000	(4) DB848H90E-XY w/ Mount Pipe	39	11.545	0.792	0.000	23733
129.000	TME-800MHZ RRH	39	9.921	0.762	0.000	15512
128.000	APXVTM14-C-120 w/ Mount Pipe	39	9.763	0.758	0.000	15033
116.000	(2) DB846F65ZAXY w/ Mount Pipe	39	7.929	0.694	0.000	10971
110.000	RRUS 11	39	7.069	0.655	0.000	9665
106.000	AM-X-CD-16-65-00T-RET w/ Mount Pipe	39	6.520	0.627	0.000	8954
98.000	APXV18-206517S-C w/ Mount Pipe	39	5.488	0.570	0.000	7905

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.04	67.190	2	4.076	0.002
L2	138.96 - 92.17	58.658	2	4.029	0.002
L3	97.84 - 45.21	27.805	2	2.893	0.001
L4	52.79 - 0	7.534	2	1.330	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	66.336	4.074	0.002	9005
139.000	(4) DB848H90E-XY w/ Mount Pipe	2	58.692	4.030	0.002	4709
129.000	TME-800MHZ RRH	2	50.438	3.877	0.002	3074
128.000	APXVTM14-C-120 w/ Mount Pipe	2	49.632	3.855	0.002	2979
116.000	(2) DB846F65ZAXY w/ Mount Pipe	2	40.314	3.530	0.002	2173
110.000	RRUS 11	2	35.942	3.331	0.002	1913
106.000	AM-X-CD-16-65-00T-RET w/ Mount Pipe	2	33.151	3.191	0.001	1772
98.000	APXV18-206517S-C w/ Mount Pipe	2	27.905	2.899	0.001	1563

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	149 - 135.04 (1)	TP26.77x22x0.188	13.960	0.000	0.0	15.023	-4.910	1019.370	0.005
L2	135.04 - 92.17 (2)	TP40.91x25.056x0.25	46.790	0.000	0.0	30.739	-18.964	1969.410	0.010
L3	92.17 - 45.21 (3)	TP56.31x38.489x0.313	52.630	0.000	0.0	52.997	-31.374	3237.200	0.010
L4	45.21 - 0 (4)	TP71x53.118x0.375	52.790	0.000	0.0	84.061	-52.962	4862.940	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	149 - 135.04 (1)	TP26.77x22x0.188	43.425	529.362	0.082	0.000	529.362	0.000
L2	135.04 - 92.17 (2)	TP40.91x25.056x0.25	865.817	1571.017	0.551	0.000	1571.017	0.000
L3	92.17 - 45.21 (3)	TP56.31x38.489x0.313	2367.200	3563.867	0.664	0.000	3563.867	0.000
L4	45.21 - 0 (4)	TP71x53.118x0.375	4461.275	7080.275	0.630	0.000	7080.275	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	149 - 135.04 (1)	TP26.77x22x0.188	10.457	509.685	0.021	0.001	1060.017	0.000
L2	135.04 - 92.17 (2)	TP40.91x25.056x0.25	30.547	984.705	0.031	0.488	3145.875	0.000
L3	92.17 - 45.21 (3)	TP56.31x38.489x0.313	36.204	1618.600	0.022	0.487	7136.450	0.000
L4	45.21 - 0 (4)	TP71x53.118x0.375	42.940	2431.470	0.018	0.487	14177.833	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149 - 135.04 (1)	0.005	0.082	0.000	0.021	0.000	0.087 ✔	1.000	4.8.2 ✔
L2	135.04 - 92.17 (2)	0.010	0.551	0.000	0.031	0.000	0.562 ✔	1.000	4.8.2 ✔
L3	92.17 - 45.21 (3)	0.010	0.664	0.000	0.022	0.000	0.674 ✔	1.000	4.8.2 ✔

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
L4	45.21 - 0 (4)	0.011	0.630	0.000	0.018	0.000	0.641 ✔	1.000	4.8.2 ✔

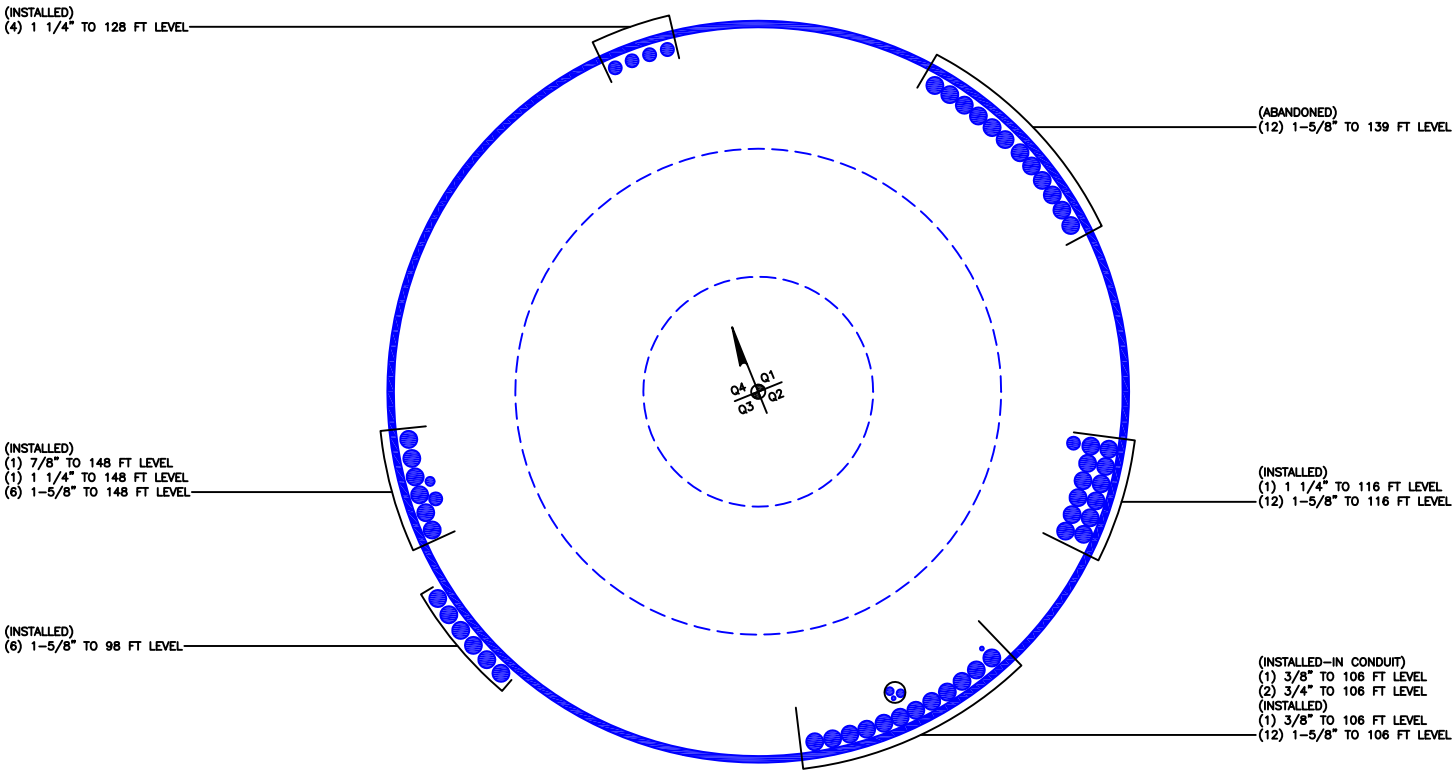
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	149 - 135.04	Pole	TP26.77x22x0.188	1	-4.910	1019.370	8.7	Pass
L2	135.04 - 92.17	Pole	TP40.91x25.056x0.25	2	-18.964	1969.410	56.2	Pass
L3	92.17 - 45.21	Pole	TP56.31x38.489x0.313	3	-31.374	3237.200	67.4	Pass
L4	45.21 - 0	Pole	TP71x53.118x0.375	4	-52.962	4862.940	64.1	Pass
							Summary	
						Pole (L3)	67.4	Pass
						RATING =	**67.4**	**Pass**

Program Version 7.0.5.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT:876343

APPENDIX C

ADDITIONAL CALCULATIONS

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

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	*876343*
Site Name:	*GUILFORD WEST STONE PROPEI*
App #:	*368685 Rev. 2*
Pole Manufacturer:	*Other*

Reactions		
Mu:	4461	ft-kips
Axial, Pu:	53	kips
Shear, Vu:	43	kips
Eta Factor, ɳ	0.5	TIA G (Fig. 4-4)

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

Anchor Rod Data		
Qty:	28	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	79	in

Anchor Rod Results

Max Rod (Cu+ Vu/ɳ):	101.8	Kips	Rigid
Allowable Axial, Φ*Fu*Anet:	260.0	Kips	AISC LRFD
Anchor Rod Stress Ratio:	39.1%	**Pass**	φ*Tn

Plate Data		
Diam:	85	in
Thick:	2.75	in
Grade:	50	ksi
Single-Rod B-eff:	8.05	in

Base Plate Results

	Flexural Check		Rigid
Base Plate Stress:	16.3	ksi	AISC LRFD
Allowable Plate Stress:	45.0	ksi	φ*Fy
Base Plate Stress Ratio:	36.3%	**Pass**	Y.L. Length:
			34.64

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

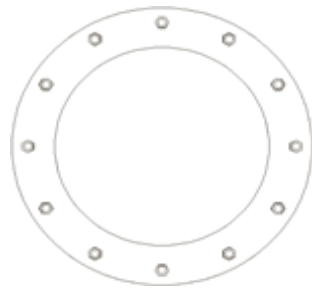
Stiffener Results

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

Pole Results

Pole Punching Shear Check:	n/a

Pole Data		
Diam:	71	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None



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

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

PROJECT	**876343 - GUILFORD WEST STONE PROPERTY, CT**			
SUBJECT	**Foundation Analysis**			
DATE	**12-20-16**	PAGE 1	OF 1	

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Monopole Pad & Pier Foundation Analysis

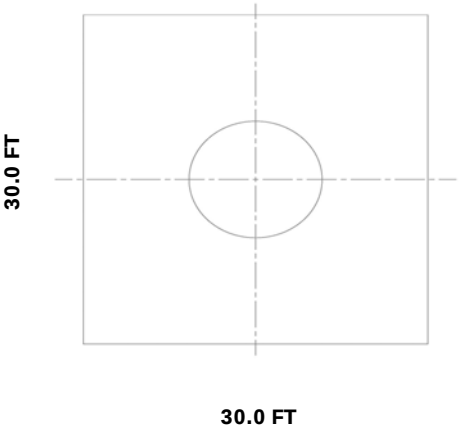
Rev. Type: G

Design Loads:

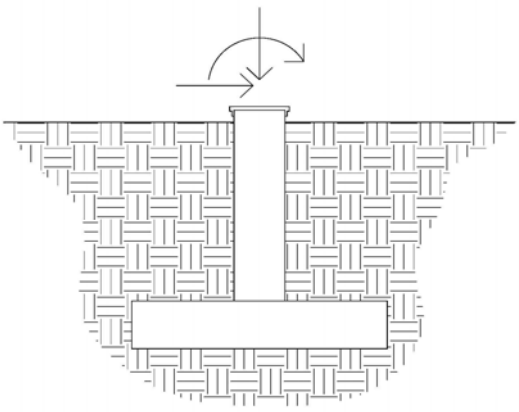
	Input factored loads	
Shear:	43.0	kips
Moment:	4,461.0	ft-kips
Tower Height:	149.0	ft
Tower Weight:	53.0	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	71.00	in
Bearing Depth:	12.0	ft
Pad Width:	30.0	ft
Neglected Depth:	3.3	ft
Thickness:	3.0	ft
Pier Diameter:	8.5	ft
Pier Height Above Grade:	1.0	ft
BP Dist. Above Pier:	3.0	in
Clear Cover:	3.0	in
Pier Rebar Size:	9	
Pier Rebar Quanity:	48	
Pad Rebar Size:	8	
Pad Rebar Quanity:	34	
Pier Tie Size:	4	
Tie Quanity:	20	
Rebar Yield Strength:	60000	psi
Concrete Strength:	4000	psi
Concrete Unit Weight:	0.15	kcf



Elevation Overview



Soil Data:

	Allowable Values	
Soil Unit Weight:	0.120	kcf
Ult. Bearing Capacity:	17.440	ksf
Angle of Friction:	30.000	deg
Cohesion:	0.000	ksf
Passive Pressure:	0.000	ksf
Base Friction:	0.500	

** Notes:

Summary of Results

Req'd Pier Diam.	OK
Overturning	21.0%
Shear Capacity	6.3%
Bearing	20.4%
Pad Shear - 1-way	61.9%
Pad Shear - 2-way	6.3%
Pad Moment Capacity	40.9%
Pier Moment Capacity	50.8%

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2158

Guilford
1919 Boston Post Road
Guilford, CT 6437

January 9, 2017

Centerline Communications Project Number: 950006-013

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.88 %**

January 9, 2017

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2158 – Guilford**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **1919 Boston Post Road, Guilford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **1919 Boston Post Road, Guilford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
UMTS	1900 MHz (PCS)	2	30
LTE	700 MHz	2	60
LTE	1900 MHz (PCS)	2	60
GSM	850 MHz	2	30
Technology	Frequency Band	2	30
Technology	Frequency Band	2	30
Technology	Frequency Band	2	30

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make	Antenna Centerline (ft)
A	1	Powerwave 7770	108
A	2	KMW AM-X-CD-16-65-00T-RET	108
A	3	Powerwave 7770	108
B	1	Powerwave 7770	108
B	2	KMW AM-X-CD-16-65-00T-RET	108
B	3	Powerwave 7770	108
C	1	Powerwave 7770	108
C	2	KMW AM-X-CD-14-65-00T-RET	108
C	3	Powerwave 7770	108

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz / 1900 MHz	11.4 / 13.4	4	120	2,140.89	0.96
Antenna A2	KMW AM-X-CD-16-65-00T-RET	700 MHz / 1900 MHz (PCS)	13.35 / 15.25	4	240	6,614.85	3.31
Antenna A3	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.50
						Sector A Composite MPE%	**4.77**
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz	11.4 / 13.4	4	120	2,140.89	0.96
Antenna B2	KMW AM-X-CD-16-65-00T-RET	700 MHz / 1900 MHz (PCS)	13.35 / 15.25	4	240	6,614.85	3.31
Antenna B3	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.50
						Sector B Composite MPE%	**4.77**
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz	11.4 / 13.4	4	120	2,140.89	0.96
Antenna C2	KMW AM-X-CD-14-65-00T-RET	700 MHz / 1900 MHz (PCS)	11.85 / 14.15	4	240	4,957.50	2.44
Antenna C3	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.50
						Sector C Composite MPE%	**3.90**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is Sector A & B. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**4.77 %**
Verizon	3.63 %
MetroPCS	0.72 %
T-Mobile	0.02 %
Nextel	0.32 %
Sprint	0.42 %
Site Total MPE %:	**9.88 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	4.77 %
AT&T Sector B Total:	4.77 %
AT&T Sector C Total:	3.90 %
Site Total:	9.88 %

Table 5: Site MPE Summary

Per FCC OET 65, carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sector with the largest calculated MPE% is Sector A & B.

AT&T _ Frequency Band / Technology	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	108	2.86	850 MHz	567	0.50%
AT&T 1900 MHz (PCS) UMTS	2	656.33	108	4.54	1900 MHz (PCS)	1000	0.45%
AT&T 700 MHz LTE	2	1,297.63	108	8.97	700 MHz	467	1.92%
AT&T 1900 MHz (PCS) LTE	2	2,009.79	108	13.89	1900 MHz (PCS)	1000	1.39%
AT&T 850 MHz GSM	2	414.12	108	2.86	850 MHz	567	0.50%
						Total:	4.77%

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	4.77 %
Sector B:	4.77 %
Sector C:	3.90 %
AT&T Maximum Total (per sector):	4.77 %
Site Total:	9.88 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.88 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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