



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

August 2, 2016

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: 857012
AT&T Site ID: CT1029
335 South Washington Street, Plainville, CT 06062
Latitude: 41° 39' 11.03" / Longitude: -72° 52' 36.9"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 122-foot level of the existing 120-foot monopole at 335 South Washington Street in Plainville, CT. The tower is owned by Crown Castle. The property is owned by T6 Unison Site Management LLC. AT&T now intends to replace six (3) antennas with three (3) new 1.9 GHz antennas. These antennas would be installed at the 123-foot level of the tower. AT&T also intends to install three (3) RRU-12s and three (3) RRU-A2s.

This facility was approved by the by the Connecticut Siting Council in Docket No. 281 on June 23, 2004. This approval included the conditions that:

1. The tower shall be designed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS LLC, Omnipoint Communications Inc. d/b/a T-Mobile, Cellco partnership d/b/a Verizon Wireless and other entities, both public and private, but such tower shall not exceed a height of 120 feet above ground level. The height at the top of the antennas shall not exceed a height of 123 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. Robert Lee, Town Manager, Town of Plainville, and the tower, and property owner.

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

Melanie A. Bachman

August 2, 2016

Page 2

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. Robert Lee, Town Manger
Town of Plainville
1 Central Square
Plainville, CT 06062

T6 Unison Site Management LLC
PO Box 75655
Baltimore, MD 21275

Connecticut Siting Council

Decisions

DOCKET NO. 281 – New Cingular Wireless PCS, LLC Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 355 South Washington Street, Plainville, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		June 23, 2004

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 AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at Site B, 355 South Washington Street, Plainville, Connecticut. The Council denies certification of Site A, located off of Town Line Road, Plainville, 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 designed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS LLC, Omnipoint Communications Inc. d/b/a T-Mobile, Cellco partnership d/b/a Verizon Wireless and other entities, both public and private, but such tower shall not exceed a total height of 120 feet above ground level. The height at the top of the antennas shall not exceed a height of 123 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 Plainville 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. The D&M shall include:
 - a. a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, and landscaping;
 - b. specifications for the tower, tower foundation, antennas, equipment building, and security fence; and
 - c. construction plans for site clearing, water drainage, and erosion and sedimentation control 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 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 electromagnetic radio frequency power density is 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 municipal antennas, provided such antennas are compatible with the structural integrity of the tower.

7. If the facility does not initially provide wireless services within one year of completion of construction or 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.

8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved. Any request for extensions of the period shall be filed with the Council not later than sixty days prior to expiration date of the Certificate and shall be served on all parties and intervenors, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.

Pursuant to General Statutes § 16-50p, we hereby direct 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 Hartford Courant and the Bristol Press.

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:

<p><u>Applicant</u></p> <p>AT&T Wireless PCS, LLC d/b/a AT&T Wireless</p>	<p><u>Its Representative</u></p> <p>Christopher B. Fisher, Esq. Cuddy & Feder, LLP 90 Maple Avenue White Plains, NY 10601</p>
<p><u>Intervenor</u></p>	<p><u>Its Representative</u></p>

Omnipoint Communications Inc d/b/a T-Mobile	Stephen J. Humes LeBoeuf, Lamb, Greene & MacRae, LLP Goodwin Square 25 Asylum Street Hartford, CT 06103
<u>Intervenor</u> Cellco Partnership d/b/a Verizon Wireless	<u>Its Representative</u> Kenneth C. Baldwin, Esq. Robinson & Cole, LLP 280 Trumbull Street Hartford, CT 06103-3597
<u>Party</u> Robert S. Bocwinski 1785 St. Andrews Place New Richmond, WI 54017-6050	

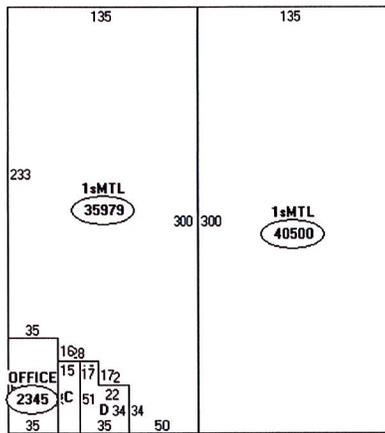
Content Last Modified on 6/14/2005 1:22:27 PM



Property Information

Owner	DISPLAY PROPERTIES LLC
Address	335 S WASHINGTON ST
Mailing Address	335 S WASHINGTON ST PLAINVILLE , CT 06062
Land Use	-
Land Class	C

Census Tract	4205
Neighborhood	811
Zoning	RI
Acreage	8
Utilities	
Lot Setting/ Desc	/ LEVEL



Descriptor
 A: 1sMTL
 35979 sqft
 B: OFFICE
 2345 sqft
 C: OFFICE
 765 sqft
 D: MEZZ/OFF
 1411 sqft
 E: 1sMTL
 40500 sqft

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

	Appraised	Assessed
Buildings	3193300	
Outbuildings		
Improvements		
Extras		
Land	559900	
Total	3753200	2627240
Previous		

Construction Details

Year Built	
Stories	0
Building Style	0
Building Use	0
Building Condition	C
Total Rooms	0
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

EXTERIOR WALLS:

Primary	
Secondary	

INTERIOR WALLS:

Primary	
Secondary	

FLOORS:

Primary	
Secondary	

HEATING/AC:

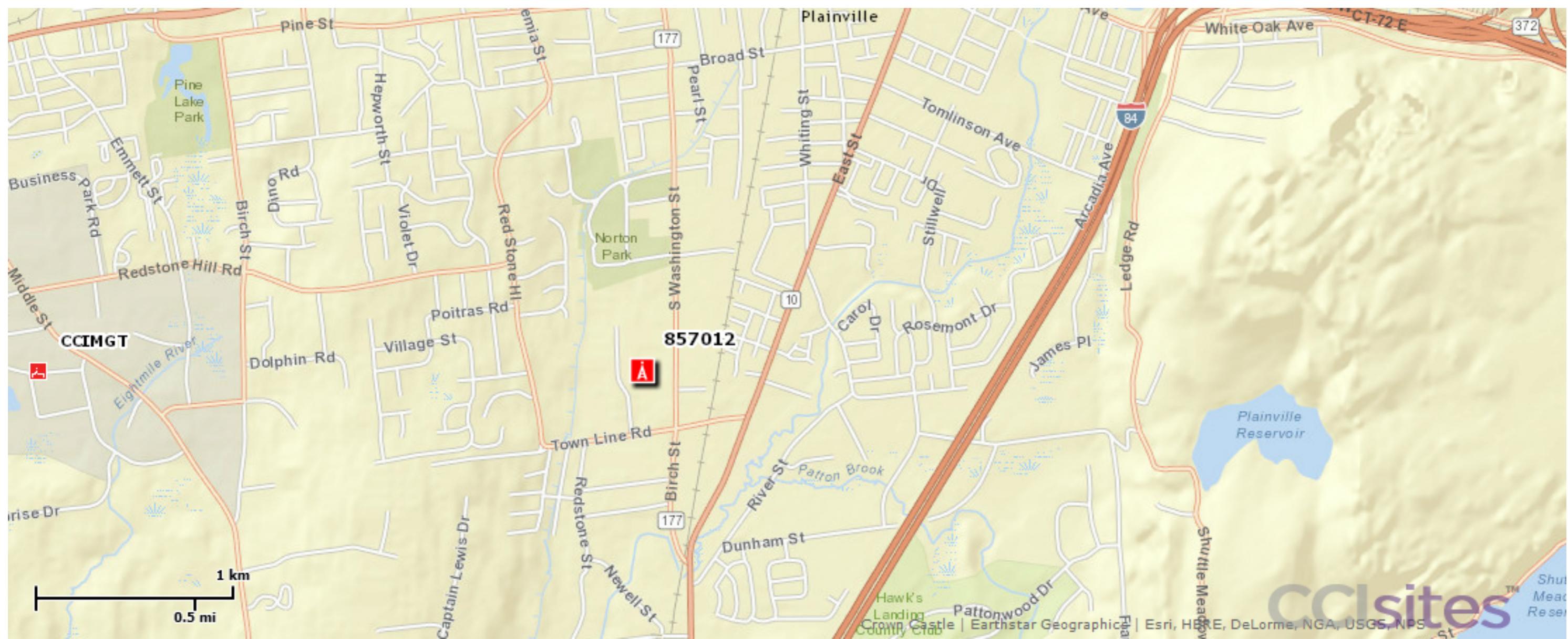
Heating Type	
Heating Fuel	
AC Type	

BUILDING AREA:

Effective Building Area	
Gross Building Area	
Total Living Area	

SALES HISTORY:

Sale Date	20010327
Sale Price	1953260
Book/ Deed	374 357



CCIMGT

857012

ccisites

Esri, HERE, DeLorme, NGA, USGS, NPS



WIRELESS COMMUNICATIONS FACILITY

CT1029 - LTE 2C

PLAINVILLE SOUTH WASHINGTON STREET

CROWN CASTLE SITE NO.: 857012

335 SOUTH WASHINGTON STREET

PLAINVILLE, CT 06062

GENERAL NOTES

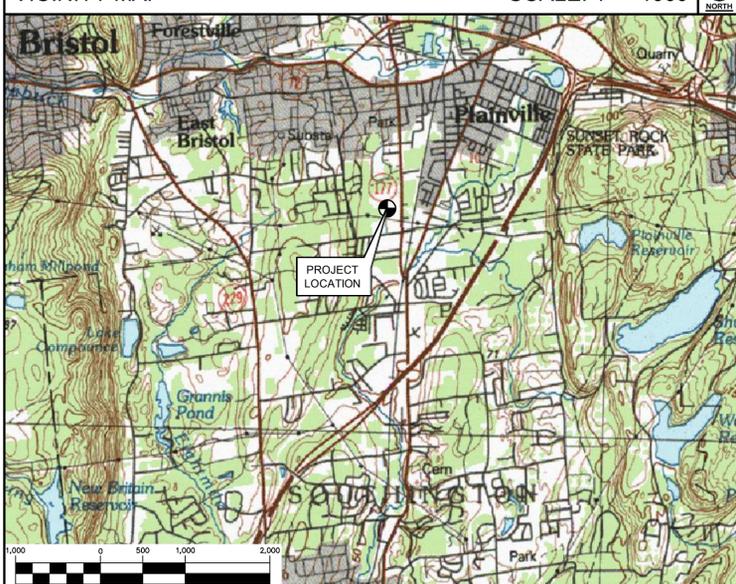
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMENDMENTS, INCLUDING THE TIA/EIA-222 REVISION "F" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES," 2005 CONNECTICUT FIRE SAFETY CODE AND 2009 AMENDMENTS, 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: 335 S WASHINGTON ST PLAINVILLE, CONNECTICUT
1. HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD	0.31 MI
2. TURN LEFT ONTO CAPITAL BLVD	0.27 MI
3. TURN LEFT ONTO WEST ST	0.30 MI
4. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN	1.63 MI
5. MERGE ONTO CT-9 N, EXIT 22 TOWARD NEW BRITAIN	6.58 MI
6. MERGE ONTO CT-72 W, EXIT 28 ON THE LEFT TOWARD BRISTOL	3.71 MI
7. KEEP RIGHT TO TAKE CT-72 W, EXIT 33 TOWARD BRISTOL	1.92 MI
8. TAKE CT-177/N WASHINGTON ST, EXIT 1	0.17 MI
9. TURN LEFT ONTO N WASHINGTON ST/CT-177	0.79 MI
10. TURN RIGHT ONTO S WASHINGTON ST/CT-177	0.01 MI
11. TAKE FIRST LEFT TO STAY ON S WASHINGTON ST/CT-177	0.97 MI
335 SOUTH WASHINGTON ST IS ON THE RIGHT	

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 EXISTING POSITION 2 LTE ANTENNA FOR PROPOSED HEXPORT ANTENNA, (1) PER SECTOR/ (3) TOTAL
 - B. INSTALL (3) NEW RRUS-12+A2 ON EXISTING TOWER MOUNT.

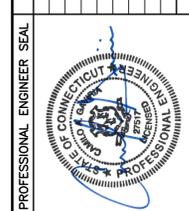
PROJECT INFORMATION

AT&T SITE NUMBER:	CT1212 - LTE 2C
AT&T SITE NAME:	PLAINVILLE SOUTH WASHINGTON STREET
SITE ADDRESS:	CROWN CASTLE SITE NO.: 857012 335 SOUTH WASHINGTON STREET PLAINVILLE, CT 06062
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CEN TEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT. 06405
PROJECT COORDINATES:	LATITUDE: 41°-39'-11.19"N LONGITUDE: 72°-52'-36.91"W GROUND ELEVATION: ±188' AMSL COORDINATES REFERENCED FROM RFDS DOCUMENT AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH PRO

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 2C EQUIPMENT DETAILS	0
E-1	LTE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LTE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

0	REV.	DATE	06/27/16	KAW	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
						DRAWN BY/CHKD BY/DESCRIPTION



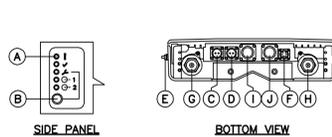
CEN TEK engineering
 (203) 498-0380
 (203) 498-3387
 632 North Branford Road
 Branford, CT 06405
 www.CenTekEng.com

AT&T MOBILITY
 WIRELESS COMMUNICATIONS FACILITY
PLAINVILLE S. WASHINGTON ST
CT1029- LTE 2C
335 SOUTH WASHINGTON STREET
PLAINVILLE, CT 06062

DATE: 06/20/16
 SCALE: AS NOTED
 JOB NO. 16071.09

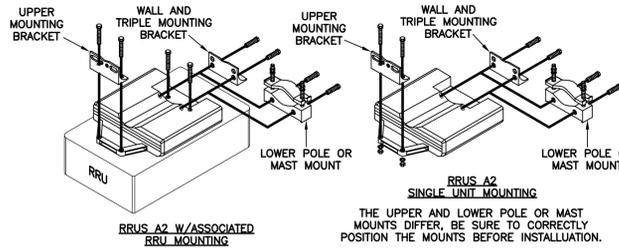
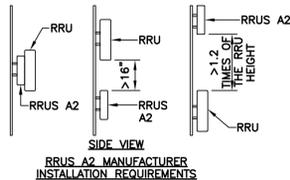
TITLE SHEET

T-1

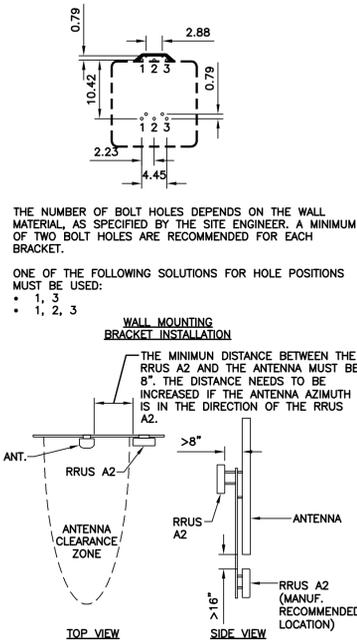


POSITION (ID)	DESCRIPTION	MARKING
A	OPTICAL INDICATORS	I, V, A, G-1, G-2
B	MAINTENANCE	▲
C	-48V DC POWER SUPPLY	POW IN
D	-48V DC POWER SUPPLY TO RRU	POW OUT
E	GROUNDING	⊥
F	RET	RET
G	ANTENNA B	W-B
H	ANTENNA A	W-A
I	OPTICAL CABLE 1	O-1
J	OPTICAL CABLE 2	O-2

- NOTES:**
1. STACKING OF RRU's IS NOT PERMITTED.
 2. NO PAINTING OF RRU OR THE SOLAR SHIELD IS ALLOWED.
 3. A SINGLE RRU A2 CAN BE INSTALLED AS A STAND ALONE UNIT OR MOUNTED TO THE BACK OF ITS ASSOCIATED RRU.



1 ERICSSON RRU A2 DETAILS
N-1 NOT TO SCALE



NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2003 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2005 CT STATE BUILDING CODE AND 2009 AMENDMENTS.

DESIGN CRITERIA:

- WIND LOAD: PER EIA/TIA 222 F-96 (ANTENNA MOUNTS): 80 MPH (FASTEST MILE), EQUIVALENT TO 100 MPH (3 SECOND GUST)
- BUILDING CLASSIFICATION: II (BASED ON IBC TABLE 1604.5)
- BASIC WIND SPEED (OTHER STRUCTURE): 95 MPH (3 SECOND GUST) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-02) PER 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMMENDMENT.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-02 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

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.

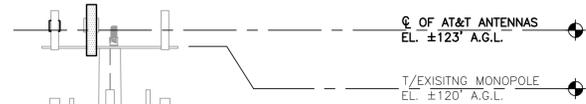
CLEANING:

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.

CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION	CAG	KAWIR	DATE	REV.
0	06/27/16			
0301 468-6500 0303 468-8887 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com				
AT&T MOBILITY WIRELESS COMMUNICATIONS FACILITY PLAINVILLE S. WASHINGTON ST CT1029- LTE 2C 385 SOUTH WASHINGTON STREET PLAINVILLE, CT 06062				
DATE: 06/20/16				
SCALE: AS NOTED				
JOB NO. 16071.09				
NOTES AND SPECIFICATIONS				
N-1 Sheet No. 2 of 7				

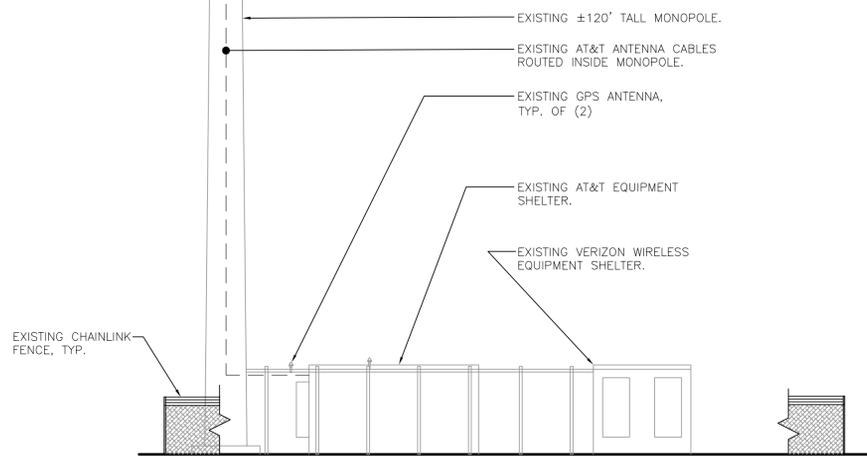


TOWER STRUCTURAL NOTES:

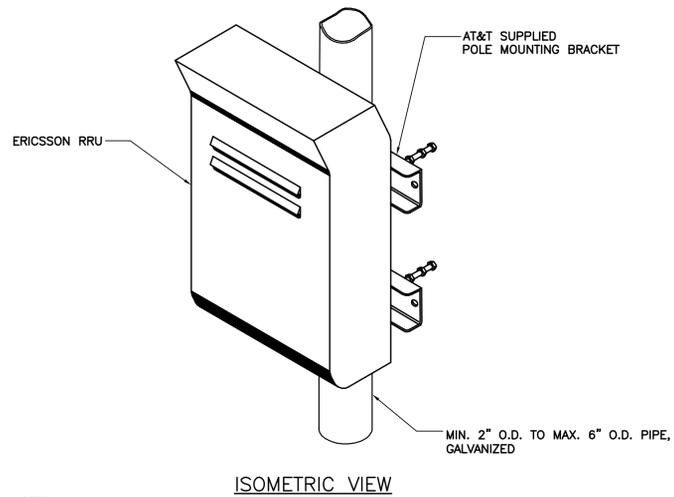
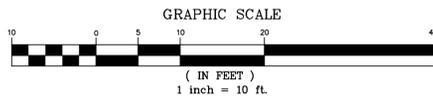
1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE,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

NOTES:

1. OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY.
2. AGL = ABOVE GRADE LEVEL.



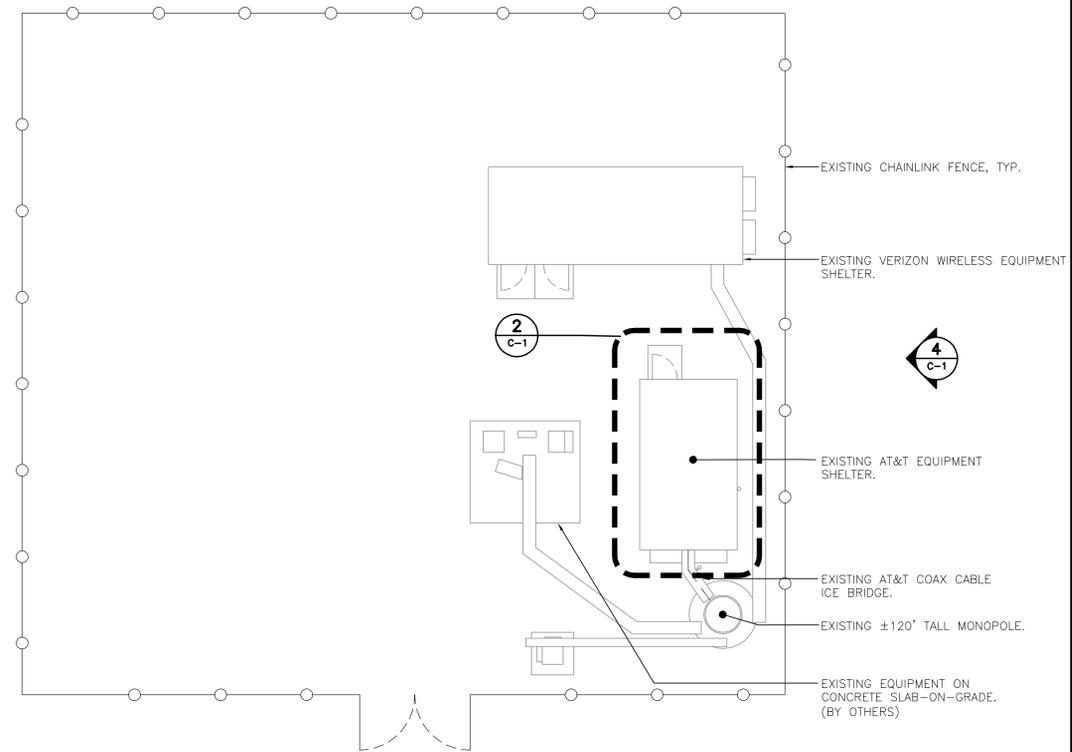
4 NORTHEAST ELEVATION
C-1 SCALE: 1" = 10'



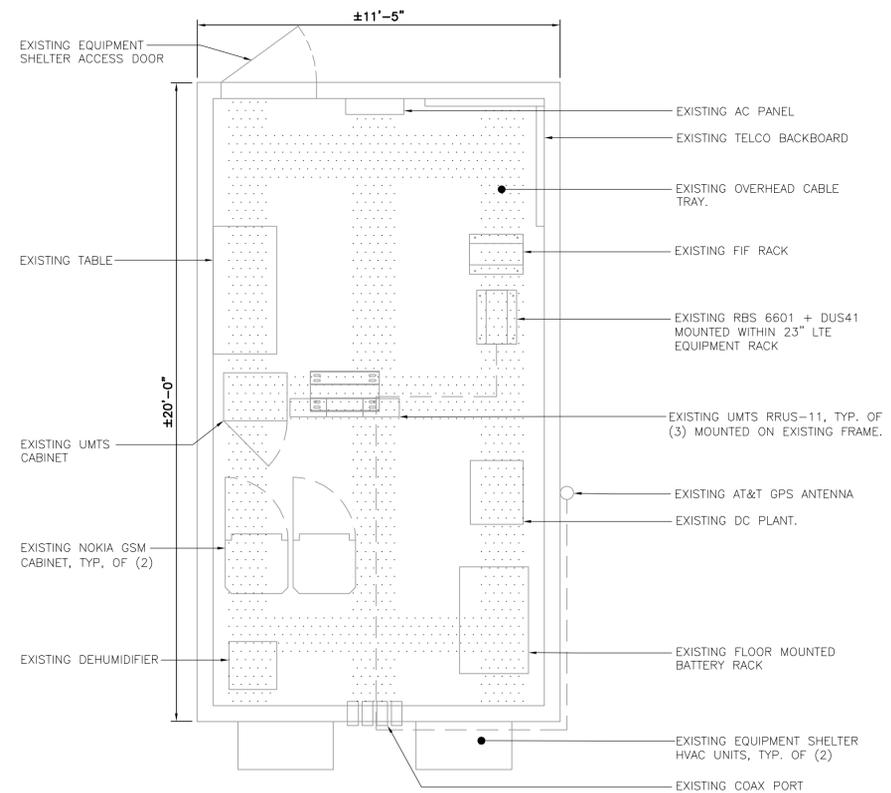
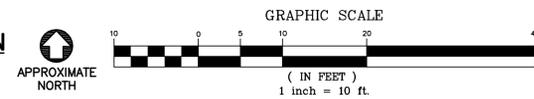
NOTES:

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.

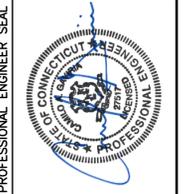
3 TYPICAL RRUS MOUNTING DETAILS
C-1 SCALE: 1 1/2" = 1'-0"



1 COMPOUND PLAN
C-1 SCALE: 1" = 10'



2 EQUIPMENT BUILDING FLOOR PLAN
C-1 SCALE: 3/8" = 1'-0"



CEN TEK engineering
Centered on Solutions™
(203) 498-0390
(203) 498-3397 Fax
652 North Branford Road
Branford, CT 06405
www.CentekEng.com

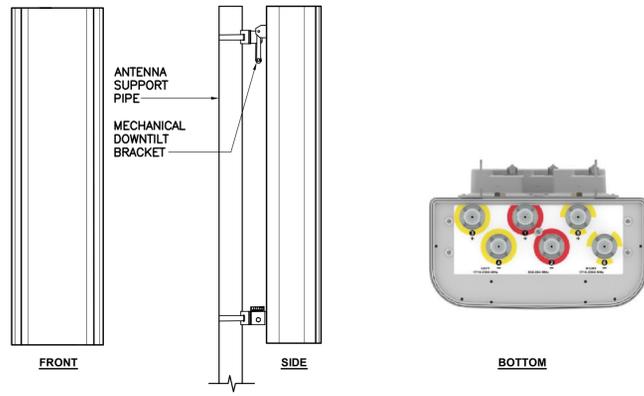
AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
PLAINVILLE S. WASHINGTON ST
CT1029- LTE 2C
395 SOUTH WASHINGTON STREET
PLAINVILLE, CT 06062

DATE: 06/20/16
SCALE: AS NOTED
JOB NO. 16071.09

PLANS, ELEVATION AND DETAILS

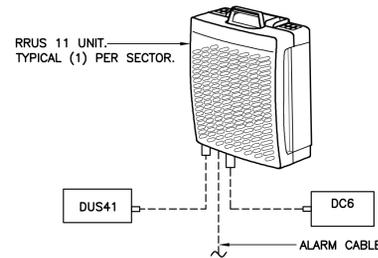
C-1
Sheet No. 3 of 7

REV.	DATE	BY	DESCRIPTION
0	06/27/16	KAW	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
		CAG	DRAWN BY/CHKD BY/DESCRIPTION



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: HPA-65R-BUU-H6	72.3"L x 14.4"W x 7.3"D	42.9 LBS.

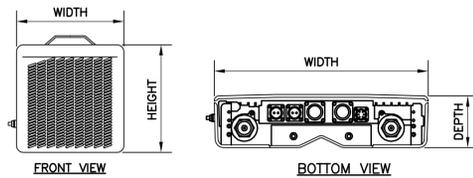
5 PROPOSED ANTENNA DETAIL
C-2 SCALE: 1/2" = 1'-0"



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.

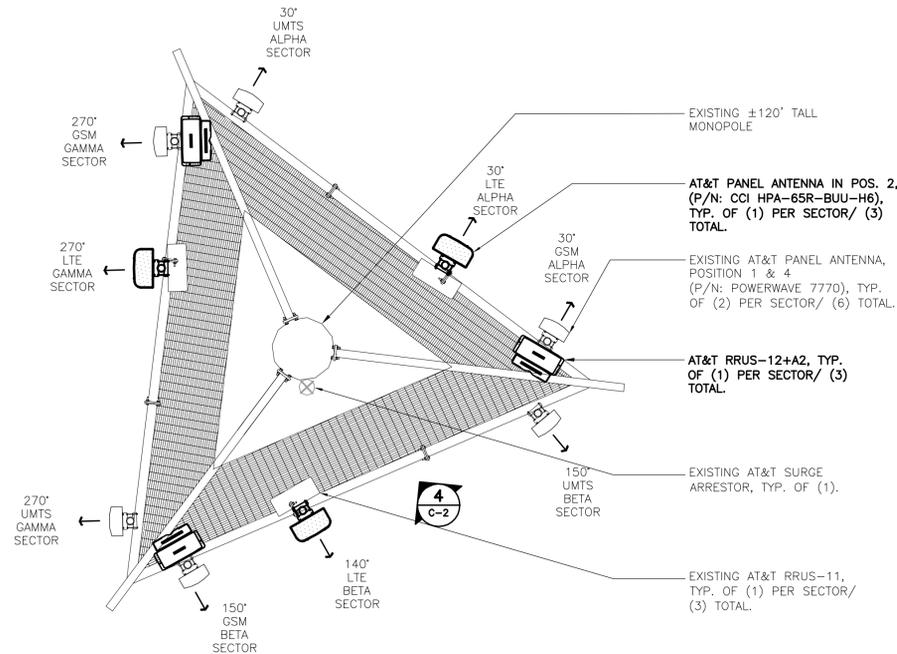
6 ERICSSON RRUS 12 DETAIL
C-2 SCALE: 1" = 1'-0"



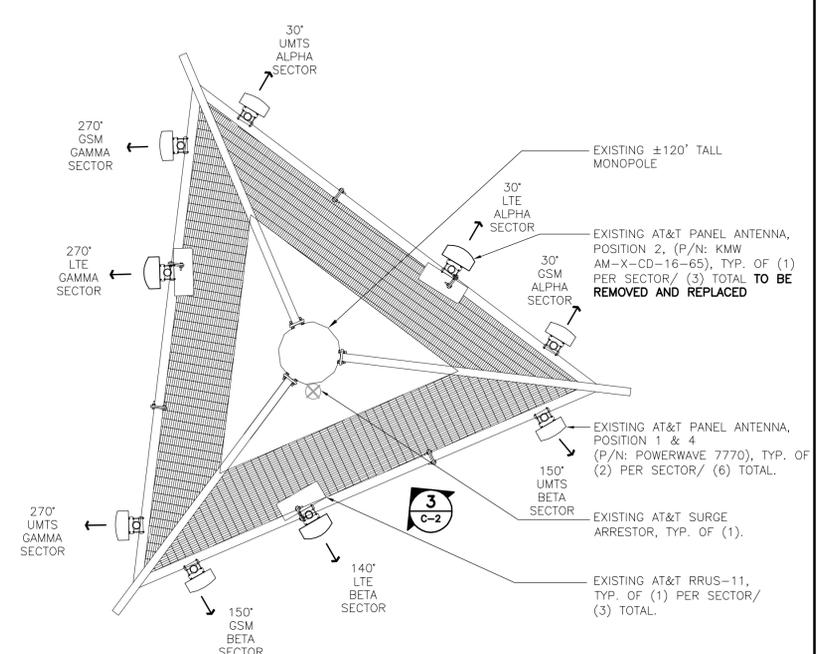
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS A2	16.42"L x 15.19"W x 3.35"D	22.05 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

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

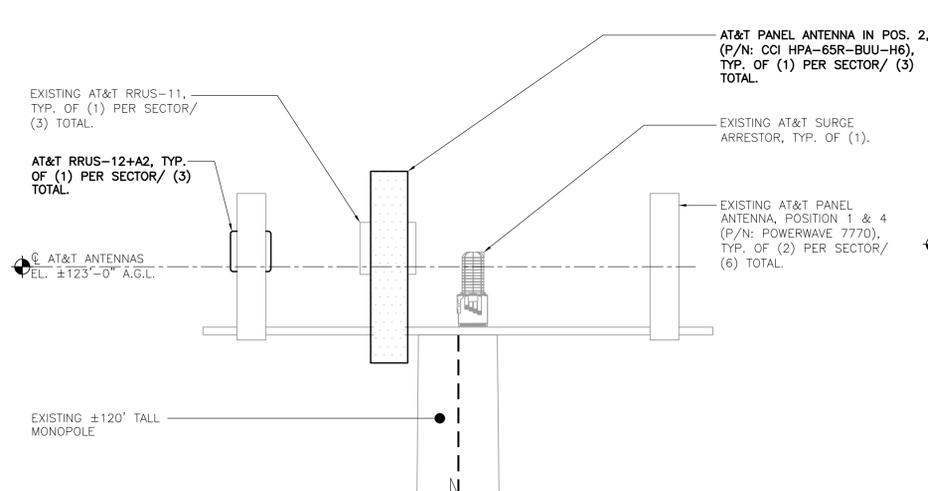
7 ERICSSON RRUS A2 DETAIL
C-2 SCALE: 1" = 1'-0"



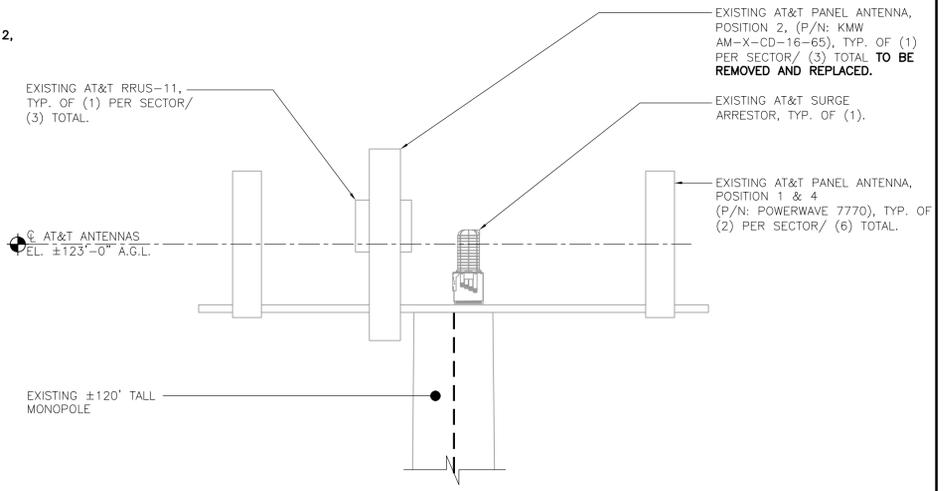
2 PROPOSED ANTENNA PLAN
C-2 SCALE: 1/2" = 1'-0"



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

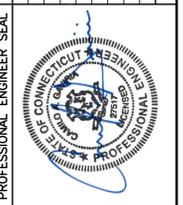


4 PROPOSED ANTENNA PLAN
C-2 SCALE: 3/8" = 1'-0"



3 EXISTING ANTENNA PLAN
C-2 SCALE: 3/8" = 1'-0"

REV	DATE	BY	DESCRIPTION
0	06/27/16	KAW	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION



CENTEK engineering
Centered on Solutions
(203) 498-0380
(203) 498-3387 Fax
632 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
PLAINVILLE S. WASHINGTON ST
CT1029- LTE 2C
335 SOUTH WASHINGTON STREET
PLAINVILLE, CT 06062

DATE: 06/20/16
SCALE: AS NOTED
JOB NO. 16071.09

LTE 2C
EQUIPMENT
DETAILS

C-2
Sheet No. 4 of 7



June 20, 2016

Rebecca Klein
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6525

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT1029
Carrier Site Name: Plainville South Washington St

Crown Castle Designation: **Crown Castle BU Number:** 857012
Crown Castle Site Name: Plainville South Washington St
Crown Castle JDE Job Number: 381332
Crown Castle Work Order Number: 1248222
Crown Castle Application Number: 349094 Rev. 0

Engineering Firm Designation: **B+T Group Project Number:** 93884.003.01

Site Data: **335 South Washington Street, Plainville, Hartford County, CT**
Latitude 41° 39' 11.03", Longitude -72° 52' 36.9"
121 Foot - Monopole Tower

Dear Rebecca Klein,

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 911877, in accordance with application 349094, revision 0.

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:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 80 mph fastest mile.

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.

Jacob Johnson, E.I.T.
Project Engineer

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

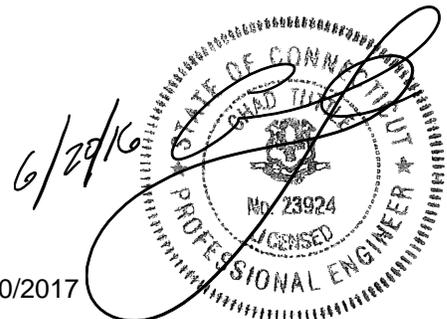


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Antenna and Cable Information

Table 2 - Existing and Reserved Antenna and Cable Information

Table 3 - Design Antenna and Cable Information

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Table 6 – Tower Components vs. Capacity

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 121 ft. Monopole tower mapped by B+T Group in May of 2012. The original design speed and codes are unknown.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

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
121.0	122.0	3	CCI Antennas	HPA-65R-BUU-H6	--	--	--
		3	Ericsson	RRUS 12			
		3	Ericsson	RRUS A2			

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
121.0	122.0	3	Kmw Comm	AM-X-CD-16-65-00T-RET	--	--	3
		6	Powerwave Tech.	LGP 13901			
		1	Raycap	DC6-48-60-18-8F			
		3	Ericsson	RRUS-11	12	1-5/8	1
		3	Powerwave Tech.	1001983			
		6	Powerwave Tech.	LGP13519			
		6	Powerwave Tech.	LGP21401			
	6	Powerwave Tech.	RA21.7770.00	1	1/2		
	121.0	1	--	Platform Mount [LP 601-1]			
	110.0	112.0	3	Alcatel Lucent	RRH2X60-PCS	2	1-5/8
3			Alcatel Lucent	RRH2x60-700			
3			Alcatel Lucent	RRH2x60-AWS			
6			Andrew	SBNHH-1D65B	18	1-5/8	1
2			Rfs Celwave	DB-T1-6Z-8AB-OZ			
6		Antel	LPA-80063-4CF-EDIN-5				
110.0	1	--	Platform Mount [LP 601-1]				
98.0	100.0	3	Andrew	ONEBASE TWIN DUAL DUPLEX TMA	12	1-5/8	1
		6	Ericsson	AIR 21	1	1-1/4	
	98.0	1	--	Platform Mount [LP 601-1]			
86.0	88.0	1	Dragonwave	A-ANT-18G-2-C	2	1/2	1
		1	Dragonwave	A-ANT-11G-3-C			
		3	Argus Tech.	LLPX310R-V1			
		2	Dragonwave	HORIZON DUO			
		3	Raycap	DC6-48-60-18-8F			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
86.0	88.0	3	Samsung Telecomm.	URAS-FLEXIBLE	--	--	1
	86.0	1	--	Side Arm Mount [SO 103-3]			

- Notes:
 1) Existing Equipment
 2) Reserved 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)
<i>Information Not Available</i>						

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate Rev # 0	349094	CCI Sites
Tower Mapping Drawings	B+T Group, Job No: 15301	5121623	CCI Sites
Foundation Mapping Drawings	WEI, Project No: 2009-805	4566996	CCI Sites
Geotech Report	Tectonic Date: 07/15/2005	4566990	CCI Sites
Antenna Configuration	Crown CAD Package	Dated: 06/16/2016	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) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
- 5) The following material grades were assumed:
 - a) Pole Shaft: A572-GR 60
 - b) Base Plate: 50 ksi
 - c) Anchor Rods: A615-J 75

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	121 - 96	Pole	TP27.56x21.26x0.188	1	-5.242	756.899	49.3	Pass
L2	96 - 48	Pole	TP39.56x26.316x0.25	2	-14.260	1448.344	93.9	Pass
L3	48 - 0	Pole	TP51.56x37.786x0.313	3	-25.943	2384.404	89.5	Pass
							Summary	
						Pole (L2)	93.9	Pass
						Rating =	93.9	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	55.7	Pass
1	Base Plate	Base	90.5	Pass
1	Base Foundation (Structure)	Base	47.4	Pass
1	Base Foundation (Soil Interaction)	Base	54.4	Pass

Structure Rating (max from all components) =	93.9%
---	--------------

Notes:

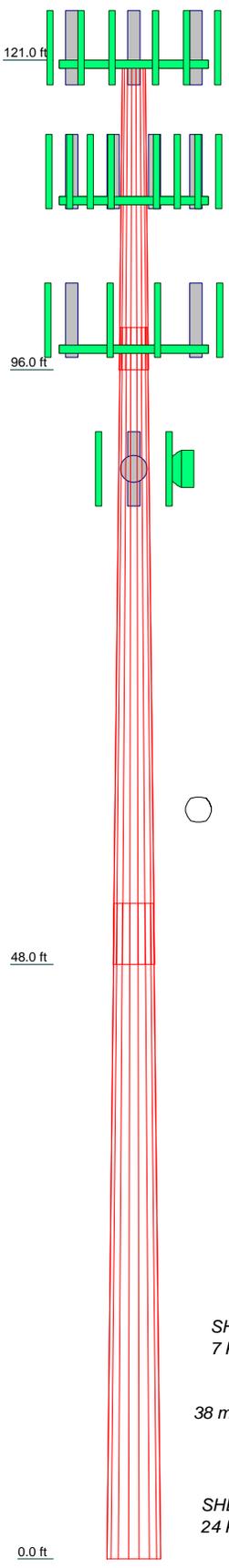
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

Section	1	2	3
Length (ft)	25.000	51.450	52.950
Number of Sides	18	18	18
Thickness (in)	0.188	0.250	0.313
Socket Length (ft)	3.450	4.950	37.786
Top Dia (in)	21.260	26.316	51.560
Bot Dia (in)	27.560	39.560	
Grade		A572-60	
Weight (K)	1.2	4.5	7.9



DESIGNED APPURTENANCE LOADING

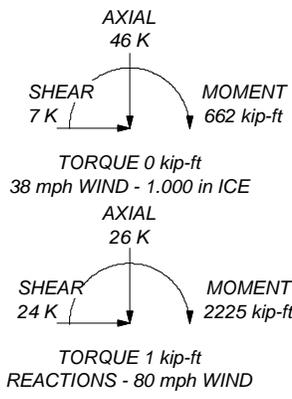
TYPE	ELEVATION	TYPE	ELEVATION
(2) RA21.7770.00 w/ Mount Pipe (E)	121	RRH2X60-PCS (R)	110
(2) RA21.7770.00 w/ Mount Pipe (E)	121	RRH2X60-PCS (R)	110
(2) RA21.7770.00 w/ Mount Pipe (E)	121	RRH2X60-PCS (R)	110
(2) LGP21401 (E)	121	RRH2x60-700 (R)	110
(2) LGP21401 (E)	121	RRH2x60-700 (R)	110
(2) LGP21401 (E)	121	RRH2x60-700 (R)	110
RRUS-11 (E)	121	6' x 2" Mount Pipe (E)	110
RRUS-11 (E)	121	Platform Mount [LP 601-1] (E)	110
RRUS-11 (E)	121	(2) AIR 21 w/ Mount Pipe (E)	98
1001983 (E)	121	(2) AIR 21 w/ Mount Pipe (E)	98
1001983 (E)	121	(2) AIR 21 w/ Mount Pipe (E)	98
1001983 (E)	121	(2) AIR 21 w/ Mount Pipe (E)	98
1001983 (E)	121	ONEBASE TWIN DUAL DUPLEX TMA (E)	98
(2) LGP13519 (E)	121	ONEBASE TWIN DUAL DUPLEX TMA (E)	98
(2) LGP13519 (E)	121	ONEBASE TWIN DUAL DUPLEX TMA (E)	98
HPA-65R-BUU-H6 w/ Mount Pipe (P)	121	ONEBASE TWIN DUAL DUPLEX TMA (E)	98
HPA-65R-BUU-H6 w/ Mount Pipe (P)	121	(2) 6' x 2" Mount Pipe (E)	98
HPA-65R-BUU-H6 w/ Mount Pipe (P)	121	(2) 6' x 2" Mount Pipe (E)	98
RRUS 12 (P)	121	(2) 6' x 2" Mount Pipe (E)	98
RRUS 12 (P)	121	Platform Mount [LP 601-1] (E)	98
RRUS A2 (P)	121	LLPX310R-V1 w/ Mount Pipe (E)	86
RRUS A2 (P)	121	LLPX310R-V1 w/ Mount Pipe (E)	86
RRUS A2 (P)	121	LLPX310R-V1 w/ Mount Pipe (E)	86
RRUS A2 (P)	121	LLPX310R-V1 w/ Mount Pipe (E)	86
6' x 2" Mount Pipe (E-Empty/Photo)	121	HORIZON DUO (E)	86
Platform Mount [LP 601-1] (E)	121	HORIZON DUO (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	DC6-48-60-18-8F (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	DC6-48-60-18-8F (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	DC6-48-60-18-8F (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	URAS-FLEXIBLE (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	URAS-FLEXIBLE (E)	86
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	110	URAS-FLEXIBLE (E)	86
(2) SBNHH-1D65B w/ Mount Pipe (R)	110	Junction Box 12" x 10" x 6" (E-per photo)	86
(2) SBNHH-1D65B w/ Mount Pipe (R)	110	7x2" Pipe Mount (E)	86
(2) SBNHH-1D65B w/ Mount Pipe (R)	110	7x2" Pipe Mount (E)	86
DB-T1-6Z-8AB-0Z (R)	110	7x2" Pipe Mount (E)	86
DB-T1-6Z-8AB-0Z (R)	110	7x2" Pipe Mount (E)	86
RRH2x60-AWS (R)	110	Side Arm Mount [SO 103-3] (E)	86
RRH2x60-AWS (R)	110	A-ANT-18G-2-C (E)	86
RRH2x60-AWS (R)	110	A-ANT-11G-3-C (E)	86

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 93.9%



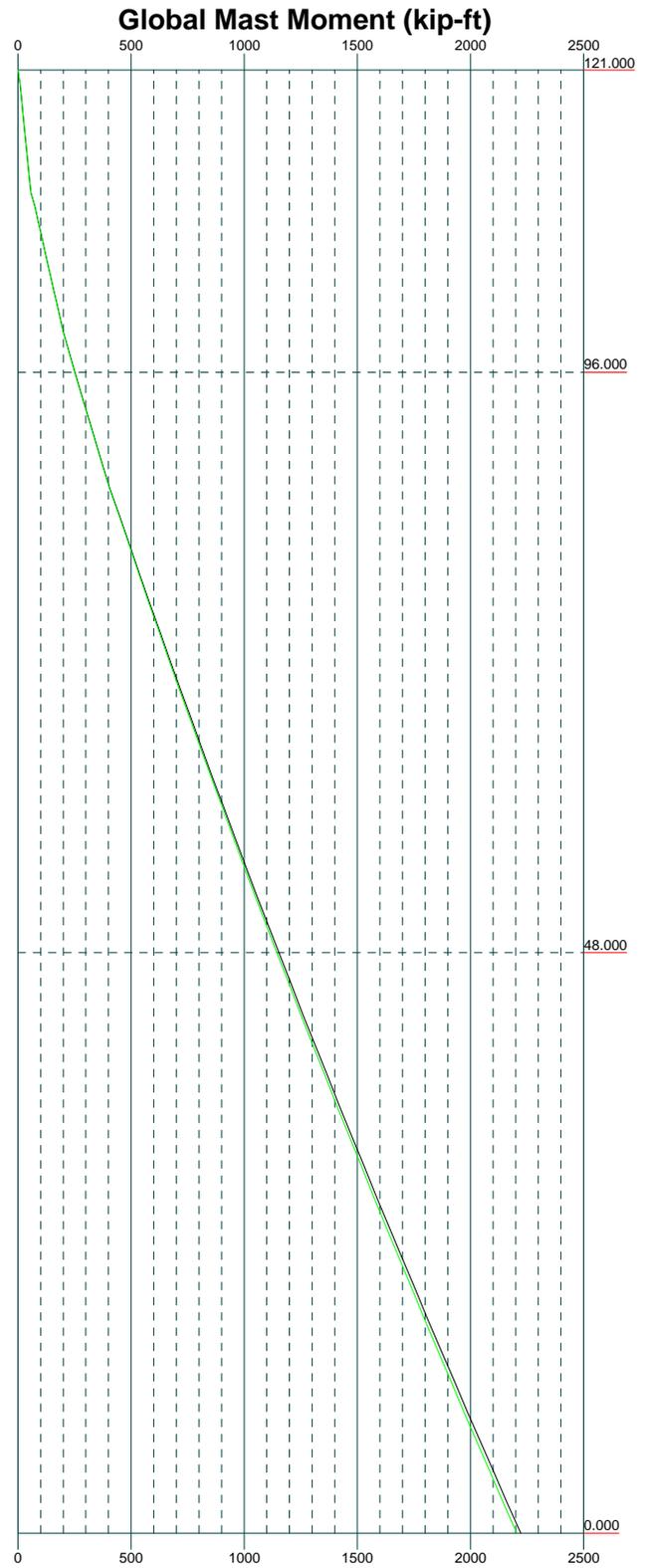
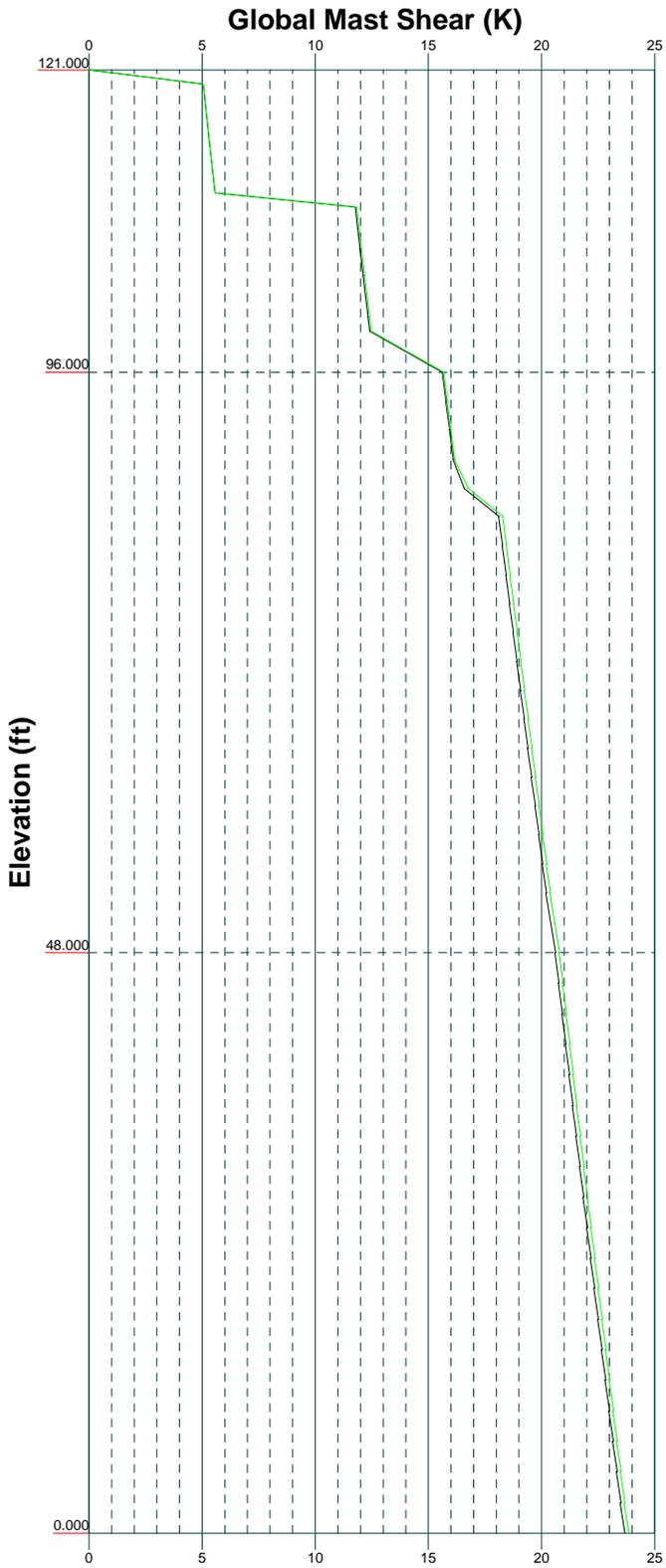
<p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 85701)		
	Project:	Client: Crown Castle	Drawn by: Bhushan
	Code: TIA/EIA-222-F	Date: 06/18/16	Scale: NTS
	Path:	Dwg No: E-1	

Vx

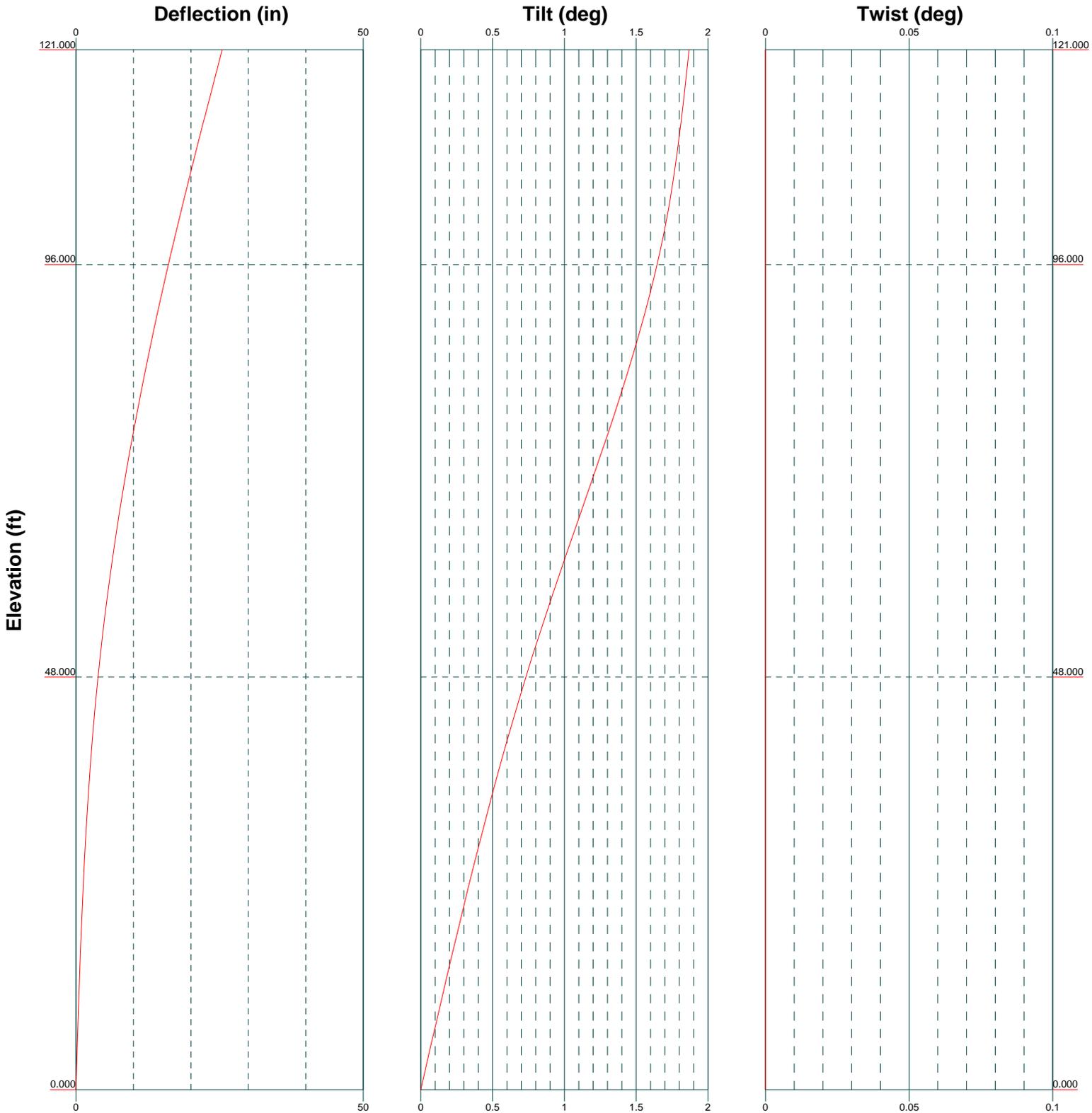
Vz

Mx

Mz



 B+T GRP	B+T Group		
	1717 S. Boulder, Suite 300		
	Tulsa, OK 74119		
	Phone: (918) 587-4630		
	FAX: (918) 295-0265		
Job: 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 85701)			
Project:			
Client: Crown Castle		Drawn by: Bhushan	
Code: TIA/EIA-222-F		Date: 06/18/16	
Path:		App'd:	
		Scale: NTS	
		Dwg No: E-4	

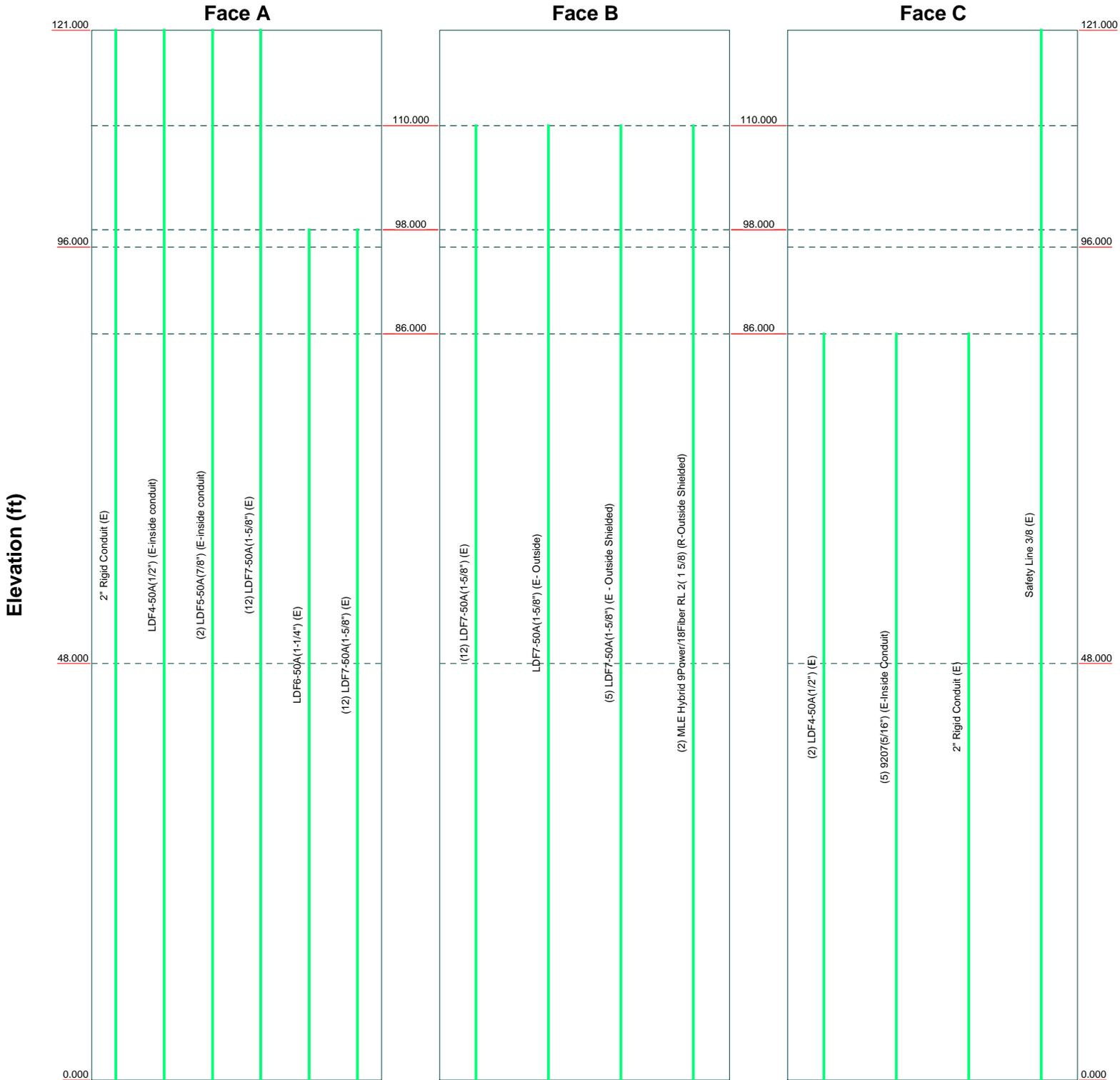


 <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 85701)		
	Project:		
	Client: Crown Castle	Drawn by: Bhushan	App'd:
	Code: TIA/EIA-222-F	Date: 06/18/16	Scale: NTS
	Path:	Dwg No: E-5	

Feed Line Distribution Chart

0' - 121'

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



<p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 85701)		
	Project:		
	Client: Crown Castle	Drawn by: Bhushan	App'd:
	Code: TIA/EIA-222-F	Date: 06/18/16	Scale: NTS
	Path:	Dwg No. E-7	

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 1 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Basic wind speed of 80 mph.

Nominal ice thickness of 1.000 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 38 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

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	121.000-96.000	25.000	3.450	18	21.260	27.560	0.188	0.750	A572-60 (60 ksi)
L2	96.000-48.000	51.450	4.950	18	26.316	39.560	0.250	1.000	A572-60 (60 ksi)
L3	48.000-0.000	52.950		18	37.786	51.560	0.313	1.250	A572-60 (60 ksi)

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 2 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	21.588	12.541	703.548	7.481	10.800	65.143	1408.022	6.272	3.412	18.196
	27.985	16.290	1542.017	9.717	14.000	110.140	3086.062	8.147	4.521	24.11
L2	27.623	20.683	1775.365	9.253	13.368	132.804	3553.065	10.343	4.192	16.766
	40.170	31.192	6089.667	13.955	20.096	303.022	12187.346	15.599	6.523	26.09
L3	39.676	37.169	6594.148	13.303	19.195	343.532	13196.974	18.588	6.100	19.521
	52.355	50.831	16866.014	18.193	26.192	643.926	33754.220	25.420	8.525	27.279

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 121.000-96.000				1	1	1			
L2 96.000-48.000				1	1	1			
L3 48.000-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
B										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
2" Rigid Conduit (E)	A	No	Inside Pole	121.000 - 0.000	1	No Ice	0.000	0.003
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003
						2" Ice	0.000	0.003
						4" Ice	0.000	0.003
LDF4-50A(1/2") (E-inside conduit)	A	No	Inside Pole	121.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF5-50A(7/8") (E-inside conduit)	A	No	Inside Pole	121.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF7-50A(1-5/8") (E)	A	No	Inside Pole	121.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 4 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R	A_F	C_{AA} In Face	C_{AA} Out Face	Weight K
			ft^2	ft^2	ft^2	ft^2	
L1	121.000-96.000	A	0.000	0.000	0.000	0.000	0.357
		B	0.000	0.000	0.000	2.772	0.237
		C	0.000	0.000	0.000	0.938	0.005
L2	96.000-48.000	A	0.000	0.000	0.000	0.000	1.150
		B	0.000	0.000	0.000	9.504	0.811
		C	0.000	0.000	0.000	1.800	0.242
L3	48.000-0.000	A	0.000	0.000	0.000	0.000	1.150
		B	0.000	0.000	0.000	9.504	0.811
		C	0.000	0.000	0.000	1.800	0.303

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R	A_F	C_{AA} In Face	C_{AA} Out Face	Weight K
				ft^2	ft^2	ft^2	ft^2	
L1	121.000-96.000	A	1.153	0.000	0.000	0.000	0.000	0.357
		B		0.000	0.000	0.000	6.000	0.735
		C		0.000	0.000	0.000	6.702	0.036
L2	96.000-48.000	A	1.096	0.000	0.000	0.000	0.000	1.150
		B		0.000	0.000	0.000	20.571	2.518
		C		0.000	0.000	0.000	12.867	0.301
L3	48.000-0.000	A	1.000	0.000	0.000	0.000	0.000	1.150
		B		0.000	0.000	0.000	20.030	2.389
		C		0.000	0.000	0.000	12.326	0.359

Feed Line Center of Pressure

Section	Elevation ft	CP_X	CP_Z	CP_X Ice	CP_Z Ice
		in	in	in	in
L1	121.000-96.000	0.096	0.108	-0.014	0.291
L2	96.000-48.000	0.192	0.163	0.158	0.396
L3	48.000-0.000	0.196	0.166	0.170	0.412

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C_{AA} Front	C_{AA} Side	Weight K
			Horz Lateral ft	Vert ft			ft^2	ft^2	
(2) RA21.7770.00 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	121.000	No Ice	5.002	0.060
			0.000				1/2" Ice	5.960	0.114
			1.000				1" Ice	6.747	0.175

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)		Page		5 of 17	
	Project				Date		17:27:27 06/18/16	
	Client		Crown Castle		Designed by		Bhushan	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
(2) RA21.7770.00 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	121.000	2" Ice	9.310	8.370	0.322
							4" Ice	11.721	11.872	0.746
							No Ice	7.031	5.002	0.060
							1/2" Ice	7.608	5.960	0.114
							1" Ice	8.165	6.747	0.175
(2) RA21.7770.00 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	121.000	2" Ice	9.310	8.370	0.322
							4" Ice	11.721	11.872	0.746
							No Ice	7.031	5.002	0.060
							1/2" Ice	7.608	5.960	0.114
							1" Ice	8.165	6.747	0.175
(2) LGP21401 (E)	A	From Leg	4.000	0.000	0.000	121.000	2" Ice	9.310	8.370	0.322
							4" Ice	11.721	11.872	0.746
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
(2) LGP21401 (E)	B	From Leg	4.000	0.000	0.000	121.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
(2) LGP21401 (E)	C	From Leg	4.000	0.000	0.000	121.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
RRUS-11 (E)	A	From Leg	4.000	0.000	0.000	121.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	3.249	1.373	0.048
							1/2" Ice	3.491	1.551	0.068
							1" Ice	3.741	1.738	0.092
RRUS-11 (E)	B	From Leg	4.000	0.000	0.000	121.000	2" Ice	4.268	2.138	0.150
							4" Ice	5.426	3.042	0.310
							No Ice	3.249	1.373	0.048
							1/2" Ice	3.491	1.551	0.068
							1" Ice	3.741	1.738	0.092
RRUS-11 (E)	C	From Leg	4.000	0.000	0.000	121.000	2" Ice	4.268	2.138	0.150
							4" Ice	5.426	3.042	0.310
							No Ice	3.249	1.373	0.048
							1/2" Ice	3.491	1.551	0.068
							1" Ice	3.741	1.738	0.092
1001983 (E)	A	From Leg	4.000	0.000	0.000	121.000	2" Ice	4.268	2.138	0.150
							4" Ice	5.426	3.042	0.310
							No Ice	0.205	0.094	0.002
							1/2" Ice	0.270	0.146	0.004
							1" Ice	0.344	0.207	0.006
1001983 (E)	B	From Leg	4.000	0.000	0.000	121.000	2" Ice	0.518	0.355	0.015
							4" Ice	0.969	0.754	0.051
							No Ice	0.205	0.094	0.002
							1/2" Ice	0.270	0.146	0.004
							1" Ice	0.344	0.207	0.006
1001983 (E)	C	From Leg	4.000	0.000	0.000	121.000	2" Ice	0.518	0.355	0.015
							4" Ice	0.969	0.754	0.051
							No Ice	0.205	0.094	0.002
							1/2" Ice	0.270	0.146	0.004
							1" Ice	0.344	0.207	0.006
			1.000				2" Ice	0.518	0.355	0.015
			1.000				4" Ice	0.969	0.754	0.051

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)						Page 6 of 17		
	Project						Date 17:27:27 06/18/16		
	Client Crown Castle						Designed by Bhushan		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			Horz Lateral ft	Vert ft						
(2) LGP13519 (E)	A	From Leg	4.000	0.000	0.000	121.000	No Ice	0.338	0.207	0.005
			0.000				1/2" Ice	0.422	0.280	0.008
			1.000				1" Ice	0.515	0.362	0.012
							2" Ice	0.726	0.551	0.024
							4" Ice	1.252	1.034	0.071
(2) LGP13519 (E)	B	From Leg	4.000	0.000	0.000	121.000	No Ice	0.338	0.207	0.005
			0.000				1/2" Ice	0.422	0.280	0.008
			1.000				1" Ice	0.515	0.362	0.012
							2" Ice	0.726	0.551	0.024
							4" Ice	1.252	1.034	0.071
(2) LGP13519 (E)	C	From Leg	4.000	0.000	0.000	121.000	No Ice	0.338	0.207	0.005
			0.000				1/2" Ice	0.422	0.280	0.008
			1.000				1" Ice	0.515	0.362	0.012
							2" Ice	0.726	0.551	0.024
							4" Ice	1.252	1.034	0.071
HPA-65R-BUU-H6 w/ Mount Pipe (P)	A	From Leg	4.000	0.000	0.000	121.000	No Ice	10.598	8.113	0.077
			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe (P)	B	From Leg	4.000	0.000	0.000	121.000	No Ice	10.598	8.113	0.077
			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe (P)	C	From Leg	4.000	0.000	0.000	121.000	No Ice	10.598	8.113	0.077
			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
RRUS 12 (P)	A	From Leg	4.000	0.000	0.000	121.000	No Ice	3.669	1.488	0.058
			0.000				1/2" Ice	3.926	1.673	0.081
			1.000				1" Ice	4.191	1.866	0.108
							2" Ice	4.747	2.280	0.171
							4" Ice	5.963	3.211	0.344
RRUS 12 (P)	B	From Leg	4.000	0.000	0.000	121.000	No Ice	3.669	1.488	0.058
			0.000				1/2" Ice	3.926	1.673	0.081
			1.000				1" Ice	4.191	1.866	0.108
							2" Ice	4.747	2.280	0.171
							4" Ice	5.963	3.211	0.344
RRUS 12 (P)	C	From Leg	4.000	0.000	0.000	121.000	No Ice	3.669	1.488	0.058
			0.000				1/2" Ice	3.926	1.673	0.081
			1.000				1" Ice	4.191	1.866	0.108
							2" Ice	4.747	2.280	0.171
							4" Ice	5.963	3.211	0.344
RRUS A2 (P)	A	From Leg	4.000	0.000	0.000	121.000	No Ice	2.411	0.533	0.022
			0.000				1/2" Ice	2.619	0.665	0.035
			1.000				1" Ice	2.837	0.806	0.050
							2" Ice	3.297	1.114	0.088
							4" Ice	4.322	1.833	0.203
RRUS A2 (P)	B	From Leg	4.000	0.000	0.000	121.000	No Ice	2.411	0.533	0.022
			0.000				1/2" Ice	2.619	0.665	0.035
			1.000				1" Ice	2.837	0.806	0.050
							2" Ice	3.297	1.114	0.088
							4" Ice	4.322	1.833	0.203
RRUS A2 (P)	C	From Leg	4.000	0.000	0.000	121.000	No Ice	2.411	0.533	0.022
			0.000				1/2" Ice	2.619	0.665	0.035

Description	Face or Leg	Offset Type	Offsets:			Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral	Vert				
			ft	ft	ft	ft	ft ²	ft ²	K
					1.000	1" Ice	2.837	0.806	0.050
						2" Ice	3.297	1.114	0.088
						4" Ice	4.322	1.833	0.203
6' x 2" Mount Pipe (E-Empty/Photo)	C	From Leg	2.000	0.000	121.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 601-1] (E)	C	None		0.000	121.000	No Ice	28.470	28.470	1.122
						1/2" Ice	33.590	33.590	1.514
						1" Ice	38.710	38.710	1.905
						2" Ice	48.950	48.950	2.689
						4" Ice	69.430	69.430	4.255
B									
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	110.000	No Ice	7.242	7.213	0.038
			0.000			1/2" Ice	7.713	7.909	0.104
			2.000			1" Ice	8.194	8.622	0.176
						2" Ice	9.187	10.104	0.343
						4" Ice	11.312	13.335	0.794
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	110.000	No Ice	7.242	7.213	0.038
			0.000			1/2" Ice	7.713	7.909	0.104
			2.000			1" Ice	8.194	8.622	0.176
						2" Ice	9.187	10.104	0.343
						4" Ice	11.312	13.335	0.794
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	110.000	No Ice	7.242	7.213	0.038
			0.000			1/2" Ice	7.713	7.909	0.104
			2.000			1" Ice	8.194	8.622	0.176
						2" Ice	9.187	10.104	0.343
						4" Ice	11.312	13.335	0.794
(2) SBNHH-1D65B w/ Mount Pipe (R)	A	From Leg	4.000	0.000	110.000	No Ice	8.637	7.071	0.066
			0.000			1/2" Ice	9.293	8.260	0.135
			2.000			1" Ice	9.917	9.170	0.212
						2" Ice	11.190	11.006	0.394
						4" Ice	13.855	15.043	0.903
(2) SBNHH-1D65B w/ Mount Pipe (R)	B	From Leg	4.000	0.000	110.000	No Ice	8.637	7.071	0.066
			0.000			1/2" Ice	9.293	8.260	0.135
			2.000			1" Ice	9.917	9.170	0.212
						2" Ice	11.190	11.006	0.394
						4" Ice	13.855	15.043	0.903
(2) SBNHH-1D65B w/ Mount Pipe (R)	C	From Leg	4.000	0.000	110.000	No Ice	8.637	7.071	0.066
			0.000			1/2" Ice	9.293	8.260	0.135
			2.000			1" Ice	9.917	9.170	0.212
						2" Ice	11.190	11.006	0.394
						4" Ice	13.855	15.043	0.903
DB-T1-6Z-8AB-0Z (R)	A	From Leg	4.000	0.000	110.000	No Ice	5.600	2.333	0.044
			0.000			1/2" Ice	5.915	2.558	0.080
			2.000			1" Ice	6.240	2.791	0.120
						2" Ice	6.914	3.284	0.213
						4" Ice	8.365	4.373	0.455
DB-T1-6Z-8AB-0Z (R)	B	From Leg	4.000	0.000	110.000	No Ice	5.600	2.333	0.044
			0.000			1/2" Ice	5.915	2.558	0.080
			2.000			1" Ice	6.240	2.791	0.120
						2" Ice	6.914	3.284	0.213
						4" Ice	8.365	4.373	0.455
RRH2x60-AWS (R)	A	From Leg	4.000	0.000	110.000	No Ice	3.957	1.816	0.060
			0.000			1/2" Ice	4.272	2.075	0.083
			2.000			1" Ice	4.596	2.360	0.109

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)		Page		8 of 17	
	Project				Date		17:27:27 06/18/16	
	Client		Crown Castle		Designed by		Bhushan	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
RRH2x60-AWS (R)	B	From Leg	4.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	3.957	1.816	0.060
							1/2" Ice	4.272	2.075	0.083
							1" Ice	4.596	2.360	0.109
RRH2x60-AWS (R)	C	From Leg	4.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	3.957	1.816	0.060
							1/2" Ice	4.272	2.075	0.083
							1" Ice	4.596	2.360	0.109
RRH2X60-PCS (R)	A	From Leg	4.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	2.567	2.011	0.055
							1/2" Ice	2.791	2.218	0.075
							1" Ice	3.025	2.435	0.099
RRH2X60-PCS (R)	B	From Leg	4.000	0.000	0.000	110.000	2" Ice	3.517	2.894	0.155
							4" Ice	4.606	3.915	0.313
							No Ice	2.567	2.011	0.055
							1/2" Ice	2.791	2.218	0.075
							1" Ice	3.025	2.435	0.099
RRH2X60-PCS (R)	C	From Leg	4.000	0.000	0.000	110.000	2" Ice	3.517	2.894	0.155
							4" Ice	4.606	3.915	0.313
							No Ice	2.567	2.011	0.055
							1/2" Ice	2.791	2.218	0.075
							1" Ice	3.025	2.435	0.099
RRH2x60-700 (R)	A	From Leg	4.000	0.000	0.000	110.000	2" Ice	3.517	2.894	0.155
							4" Ice	4.606	3.915	0.313
							No Ice	3.957	1.816	0.060
							1/2" Ice	4.272	2.075	0.083
							1" Ice	4.596	2.360	0.109
RRH2x60-700 (R)	B	From Leg	4.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	3.957	1.816	0.060
							1/2" Ice	4.272	2.075	0.083
							1" Ice	4.596	2.360	0.109
RRH2x60-700 (R)	C	From Leg	4.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	3.957	1.816	0.060
							1/2" Ice	4.272	2.075	0.083
							1" Ice	4.596	2.360	0.109
6' x 2" Mount Pipe (E)	A	From Leg	1.000	0.000	0.000	110.000	2" Ice	5.271	2.957	0.173
							4" Ice	6.722	4.253	0.354
							No Ice	1.425	1.425	0.022
							1/2" Ice	1.925	1.925	0.033
							1" Ice	2.294	2.294	0.048
Platform Mount [LP 601-1] (E)	C	None			0.000	110.000	2" Ice	3.060	3.060	0.090
							4" Ice	4.702	4.702	0.231
							No Ice	28.470	28.470	1.122
							1/2" Ice	33.590	33.590	1.514
							1" Ice	38.710	38.710	1.905
B (2) AIR 21 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	98.000	2" Ice	48.950	48.950	2.689
							4" Ice	69.430	69.430	4.255
							No Ice	6.624	5.470	0.100
							1/2" Ice	7.131	6.281	0.155
							1" Ice	7.637	7.039	0.217
							2" Ice	8.678	8.609	0.363

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)		Page 9 of 17	
	Project		Date 17:27:27 06/18/16	
	Client Crown Castle		Designed by Bhushan	

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral	Vert					
(2) AIR 21 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	98.000	4" Ice	10.885	11.963	0.777	
			0.000			No Ice	6.624	5.470	0.100	
			2.000			1/2" Ice	7.131	6.281	0.155	
						1" Ice	7.637	7.039	0.217	
						2" Ice	8.678	8.609	0.363	
(2) AIR 21 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	98.000	4" Ice	10.885	11.963	0.777	
			0.000			No Ice	6.624	5.470	0.100	
			2.000			1/2" Ice	7.131	6.281	0.155	
						1" Ice	7.637	7.039	0.217	
						2" Ice	8.678	8.609	0.363	
ONEBASE TWIN DUAL DUPLEX TMA (E)	A	From Leg	4.000	0.000	98.000	4" Ice	10.885	11.963	0.777	
			0.000			No Ice	0.674	0.306	0.011	
			2.000			1/2" Ice	0.786	0.392	0.016	
						1" Ice	0.908	0.486	0.022	
						2" Ice	1.176	0.699	0.040	
ONEBASE TWIN DUAL DUPLEX TMA (E)	B	From Leg	4.000	0.000	98.000	4" Ice	1.816	1.231	0.103	
			0.000			No Ice	0.674	0.306	0.011	
			2.000			1/2" Ice	0.786	0.392	0.016	
						1" Ice	0.908	0.486	0.022	
						2" Ice	1.176	0.699	0.040	
ONEBASE TWIN DUAL DUPLEX TMA (E)	C	From Leg	4.000	0.000	98.000	4" Ice	1.816	1.231	0.103	
			0.000			No Ice	0.674	0.306	0.011	
			2.000			1/2" Ice	0.786	0.392	0.016	
						1" Ice	0.908	0.486	0.022	
						2" Ice	1.176	0.699	0.040	
(2) 6' x 2" Mount Pipe (E)	A	From Leg	4.000	0.000	98.000	4" Ice	1.816	1.231	0.103	
			0.000			No Ice	1.425	1.425	0.022	
			0.000			1/2" Ice	1.925	1.925	0.033	
						1" Ice	2.294	2.294	0.048	
						2" Ice	3.060	3.060	0.090	
(2) 6' x 2" Mount Pipe (E)	B	From Leg	4.000	0.000	98.000	4" Ice	4.702	4.702	0.231	
			0.000			No Ice	1.425	1.425	0.022	
			0.000			1/2" Ice	1.925	1.925	0.033	
						1" Ice	2.294	2.294	0.048	
						2" Ice	3.060	3.060	0.090	
(2) 6' x 2" Mount Pipe (E)	C	From Leg	4.000	0.000	98.000	4" Ice	4.702	4.702	0.231	
			0.000			No Ice	1.425	1.425	0.022	
			0.000			1/2" Ice	1.925	1.925	0.033	
						1" Ice	2.294	2.294	0.048	
						2" Ice	3.060	3.060	0.090	
Platform Mount [LP 601-1] (E)	C	None		0.000	98.000	4" Ice	4.702	4.702	0.231	
						No Ice	28.470	28.470	1.122	
						1/2" Ice	33.590	33.590	1.514	
						1" Ice	38.710	38.710	1.905	
						2" Ice	48.950	48.950	2.689	
B					4" Ice	69.430	69.430	4.255		
LLPX310R-V1 w/ Mount Pipe (E)	A	From Leg	2.000	0.000	86.000	4" Ice	8.704	8.131	0.544	
			0.000			No Ice	5.065	2.983	0.045	
			2.000			1/2" Ice	5.480	3.526	0.083	
						1" Ice	5.905	4.086	0.126	
						2" Ice	6.788	5.313	0.232	
LLPX310R-V1 w/ Mount Pipe (E)	B	From Leg	2.000	0.000	86.000	4" Ice	8.704	8.131	0.544	
			0.000			No Ice	5.065	2.983	0.045	
			2.000			1/2" Ice	5.480	3.526	0.083	
						1" Ice	5.905	4.086	0.126	
						2" Ice	6.788	5.313	0.232	
					4" Ice	8.704	8.131	0.544		

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 10 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						°
LLPX310R-V1 w/ Mount Pipe (E)	C	From Leg	2.000	0.000	0.000	86.000	No Ice	5.065	2.983	0.045
			0.000	0.000			1/2" Ice	5.480	3.526	0.083
			2.000	0.000			1" Ice	5.905	4.086	0.126
							2" Ice	6.788	5.313	0.232
							4" Ice	8.704	8.131	0.544
HORIZON DUO (E)	A	From Leg	2.000	0.000	0.000	86.000	No Ice	0.547	0.343	0.007
			0.000	0.000			1/2" Ice	0.648	0.426	0.012
			2.000	0.000			1" Ice	0.759	0.518	0.018
							2" Ice	1.005	0.728	0.036
							4" Ice	1.601	1.252	0.097
HORIZON DUO (E)	B	From Leg	2.000	0.000	0.000	86.000	No Ice	0.547	0.343	0.007
			0.000	0.000			1/2" Ice	0.648	0.426	0.012
			2.000	0.000			1" Ice	0.759	0.518	0.018
							2" Ice	1.005	0.728	0.036
							4" Ice	1.601	1.252	0.097
DC6-48-60-18-8F (E)	A	From Leg	2.000	0.000	0.000	86.000	No Ice	1.467	1.467	0.019
			0.000	0.000			1/2" Ice	1.667	1.667	0.037
			2.000	0.000			1" Ice	1.878	1.878	0.057
							2" Ice	2.333	2.333	0.105
							4" Ice	3.378	3.378	0.239
DC6-48-60-18-8F (E)	B	From Leg	2.000	0.000	0.000	86.000	No Ice	1.467	1.467	0.019
			0.000	0.000			1/2" Ice	1.667	1.667	0.037
			2.000	0.000			1" Ice	1.878	1.878	0.057
							2" Ice	2.333	2.333	0.105
							4" Ice	3.378	3.378	0.239
DC6-48-60-18-8F (E)	C	From Leg	2.000	0.000	0.000	86.000	No Ice	1.467	1.467	0.019
			0.000	0.000			1/2" Ice	1.667	1.667	0.037
			2.000	0.000			1" Ice	1.878	1.878	0.057
							2" Ice	2.333	2.333	0.105
							4" Ice	3.378	3.378	0.239
URAS-FLEXIBLE (E)	A	From Leg	2.000	0.000	0.000	86.000	No Ice	1.804	0.778	0.033
			0.000	0.000			1/2" Ice	1.988	0.918	0.045
			2.000	0.000			1" Ice	2.180	1.067	0.058
							2" Ice	2.589	1.391	0.094
							4" Ice	3.512	2.143	0.201
URAS-FLEXIBLE (E)	B	From Leg	2.000	0.000	0.000	86.000	No Ice	1.804	0.778	0.033
			0.000	0.000			1/2" Ice	1.988	0.918	0.045
			2.000	0.000			1" Ice	2.180	1.067	0.058
							2" Ice	2.589	1.391	0.094
							4" Ice	3.512	2.143	0.201
URAS-FLEXIBLE (E)	C	From Leg	2.000	0.000	0.000	86.000	No Ice	1.804	0.778	0.033
			0.000	0.000			1/2" Ice	1.988	0.918	0.045
			2.000	0.000			1" Ice	2.180	1.067	0.058
							2" Ice	2.589	1.391	0.094
							4" Ice	3.512	2.143	0.201
Junction Box 12" x 10" x 6" (E-per photo)	B	From Face	1.000	0.000	0.000	86.000	No Ice	1.167	0.700	0.010
			0.000	0.000			1/2" Ice	1.314	0.821	0.019
			0.000	0.000			1" Ice	1.469	0.951	0.030
							2" Ice	1.806	1.236	0.059
							4" Ice	2.584	1.910	0.150
7"x2" Pipe Mount (E)	A	From Leg	2.000	0.000	0.000	86.000	No Ice	1.663	1.663	0.026
			0.000	0.000			1/2" Ice	2.391	2.391	0.039
			2.000	0.000			1" Ice	2.825	2.825	0.056
							2" Ice	3.706	3.706	0.105
							4" Ice	5.578	5.578	0.266
7"x2" Pipe Mount (E)	B	From Leg	2.000	0.000	0.000	86.000	No Ice	1.663	1.663	0.026
			0.000	0.000			1/2" Ice	2.391	2.391	0.039

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 11 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			2.000				1" Ice 2.825	2.825	0.056
							2" Ice 3.706	3.706	0.105
							4" Ice 5.578	5.578	0.266
7x2" Pipe Mount (E)	C	From Leg	2.000		0.000	86.000	No Ice 1.663	1.663	0.026
			0.000				1/2" Ice 2.391	2.391	0.039
			2.000				1" Ice 2.825	2.825	0.056
							2" Ice 3.706	3.706	0.105
							4" Ice 5.578	5.578	0.266
Side Arm Mount [SO 103-3] (E)	C	None			0.000	86.000	No Ice 9.500	9.500	0.224
							1/2" Ice 11.800	11.800	0.317
							1" Ice 14.100	14.100	0.410
							2" Ice 18.700	18.700	0.596
							4" Ice 27.900	27.900	0.968
B									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz Lateral	Vert						
				ft	ft	°	°	ft	ft	ft ²	K
A-ANT-18G-2-C (E)	A	Paraboloid w/Shroud (HP)	From Leg	2.000		30.000		86.000	2.175	No Ice 3.715	0.027
				0.000						1/2" Ice 4.006	0.048
				2.000						1" Ice 4.296	0.068
										2" Ice 4.876	0.109
										4" Ice 6.037	0.192
A-ANT-11G-3-C (E)	B	Paraboloid w/Shroud (HP)	From Leg	2.000		30.000		86.000	3.021	No Ice 7.170	0.050
				0.000						1/2" Ice 7.570	0.090
				2.000						1" Ice 7.970	0.130
										2" Ice 8.770	0.200
										4" Ice 10.370	0.360
AB											

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 12 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Comb. No.	Description
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	121 - 96	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-14.116	-0.963	0.056
			Max. Mx	5	-5.257	-199.034	-0.661
			Max. My	2	-5.246	0.515	199.739
			Max. Vy	5	12.405	-199.034	-0.661
			Max. Vx	2	-12.471	0.515	199.739
			Max. Torque	7			0.340
L2	96 - 48	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-29.872	-3.911	-1.309
			Max. Mx	5	-14.275	-1043.708	-5.209
			Max. My	2	-14.262	4.703	1051.537
			Max. Vy	11	-20.220	1042.962	6.035
			Max. Vx	2	-20.400	4.703	1051.537
			Max. Torque	12			-1.033
L3	48 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-45.882	-7.237	-3.355
			Max. Mx	5	-25.943	-2205.081	-11.036
			Max. My	2	-25.943	10.176	2222.578
			Max. Vy	11	-23.685	2204.362	12.769
			Max. Vx	2	-23.860	10.176	2222.578
			Max. Torque	13			-1.053

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 13 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	20	45.882	-3.369	-5.880
	Max. H _x	11	25.963	23.664	0.132
	Max. H _z	2	25.963	0.113	23.839
	Max. M _x	2	2222.578	0.113	23.839
	Max. M _z	5	2205.081	-23.641	-0.102
	Max. Torsion	6	0.905	-20.493	-11.973
	Min. Vert	1	25.963	0.000	0.000
	Min. H _x	5	25.963	-23.641	-0.102
	Min. H _z	8	25.963	-0.082	-23.807
	Min. M _x	8	-2220.717	-0.082	-23.807
	Min. M _z	11	-2204.362	23.664	0.132
	Min. Torsion	13	-1.053	11.888	20.698

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	25.963	0.000	0.000	0.478	-1.334	0.000
Dead+Wind 0 deg - No Ice	25.963	-0.113	-23.839	-2222.578	10.176	0.965
Dead+Wind 30 deg - No Ice	25.963	11.658	-20.629	-1922.628	-1087.395	0.733
Dead+Wind 60 deg - No Ice	25.963	20.437	-11.817	-1100.680	-1905.825	0.253
Dead+Wind 90 deg - No Ice	25.963	23.641	0.102	11.036	-2205.081	-0.441
Dead+Wind 120 deg - No Ice	25.963	20.493	11.973	1118.037	-1912.222	-0.905
Dead+Wind 150 deg - No Ice	25.963	11.831	20.665	1928.208	-1105.363	-0.841
Dead+Wind 180 deg - No Ice	25.963	0.082	23.807	2220.717	-10.178	-0.834
Dead+Wind 210 deg - No Ice	25.963	-11.722	20.614	1922.242	1090.370	-0.714
Dead+Wind 240 deg - No Ice	25.963	-20.432	11.893	1108.458	1902.675	-0.300
Dead+Wind 270 deg - No Ice	25.963	-23.664	-0.132	-12.769	2204.362	0.666
Dead+Wind 300 deg - No Ice	25.963	-20.524	-12.048	-1123.877	1912.341	1.005
Dead+Wind 330 deg - No Ice	25.963	-11.888	-20.698	-1930.208	1107.712	1.053
Dead+Ice+Temp	45.882	0.000	0.000	3.355	-7.237	0.000
Dead+Wind 0 deg+Ice+Temp	45.882	-0.027	-6.783	-652.588	-4.477	0.225
Dead+Wind 30 deg+Ice+Temp	45.882	3.328	-5.871	-564.207	-328.895	0.187
Dead+Wind 60 deg+Ice+Temp	45.882	5.824	-3.367	-322.057	-570.171	0.086
Dead+Wind 90 deg+Ice+Temp	45.882	6.735	0.024	5.944	-658.390	-0.075
Dead+Wind 120 deg+Ice+Temp	45.882	5.837	3.404	332.804	-571.730	-0.189
Dead+Wind 150 deg+Ice+Temp	45.882	3.369	5.880	572.098	-333.258	-0.178
Dead+Wind 180 deg+Ice+Temp	45.882	0.019	6.776	658.667	-9.417	-0.192
Dead+Wind 210 deg+Ice+Temp	45.882	-3.344	5.868	570.659	315.767	-0.183
Dead+Wind 240 deg+Ice+Temp	45.882	-5.823	3.387	330.587	555.492	-0.097
Dead+Wind 270 deg+Ice+Temp	45.882	-6.741	-0.031	0.168	644.313	0.133
Dead+Wind 300 deg+Ice+Temp	45.882	-5.845	-3.423	-327.801	557.844	0.214
Dead+Wind 330 deg+Ice+Temp	45.882	-3.383	-5.888	-566.068	319.979	0.232
Dead+Wind 0 deg - Service	25.963	-0.044	-9.312	-868.686	3.141	0.378
Dead+Wind 30 deg - Service	25.963	4.554	-8.058	-751.404	-425.983	0.287
Dead+Wind 60 deg - Service	25.963	7.983	-4.616	-430.040	-745.963	0.099
Dead+Wind 90 deg - Service	25.963	9.235	0.040	4.610	-862.968	-0.173
Dead+Wind 120 deg - Service	25.963	8.005	4.677	437.422	-748.474	-0.355
Dead+Wind 150 deg - Service	25.963	4.621	8.072	754.186	-433.013	-0.330
Dead+Wind 180 deg - Service	25.963	0.032	9.300	868.550	-4.817	-0.328
Dead+Wind 210 deg - Service	25.963	-4.579	8.052	751.845	425.470	-0.281
Dead+Wind 240 deg - Service	25.963	-7.981	4.646	433.672	743.058	-0.118
Dead+Wind 270 deg - Service	25.963	-9.244	-0.051	-4.697	861.012	0.262

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 14 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

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+Wind 300 deg - Service	25.963	-8.017	-4.706	-439.116	746.847	0.396
Dead+Wind 330 deg - Service	25.963	-4.644	-8.085	-754.378	432.256	0.414

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-25.963	0.000	0.000	25.963	0.000	0.000%
2	-0.113	-25.963	-23.839	0.113	25.963	23.839	0.000%
3	11.658	-25.963	-20.629	-11.658	25.963	20.629	0.000%
4	20.437	-25.963	-11.817	-20.437	25.963	11.817	0.000%
5	23.641	-25.963	0.102	-23.641	25.963	-0.102	0.000%
6	20.493	-25.963	11.973	-20.493	25.963	-11.973	0.000%
7	11.831	-25.963	20.665	-11.831	25.963	-20.665	0.000%
8	0.082	-25.963	23.807	-0.082	25.963	-23.807	0.000%
9	-11.722	-25.963	20.614	11.722	25.963	-20.614	0.000%
10	-20.432	-25.963	11.893	20.432	25.963	-11.893	0.000%
11	-23.664	-25.963	-0.132	23.664	25.963	0.132	0.000%
12	-20.524	-25.963	-12.048	20.524	25.963	12.048	0.000%
13	-11.888	-25.963	-20.698	11.888	25.963	20.698	0.000%
14	0.000	-45.882	0.000	-0.000	45.882	-0.000	0.000%
15	-0.027	-45.882	-6.783	0.027	45.882	6.783	0.000%
16	3.328	-45.882	-5.871	-3.328	45.882	5.871	0.000%
17	5.824	-45.882	-3.367	-5.824	45.882	3.367	0.000%
18	6.735	-45.882	0.024	-6.735	45.882	-0.024	0.000%
19	5.837	-45.882	3.404	-5.837	45.882	-3.404	0.000%
20	3.369	-45.882	5.880	-3.369	45.882	-5.880	0.000%
21	0.019	-45.882	6.776	-0.019	45.882	-6.776	0.000%
22	-3.344	-45.882	5.868	3.344	45.882	-5.868	0.000%
23	-5.823	-45.882	3.387	5.823	45.882	-3.387	0.000%
24	-6.741	-45.882	-0.031	6.741	45.882	0.031	0.000%
25	-5.845	-45.882	-3.423	5.845	45.882	3.423	0.000%
26	-3.383	-45.882	-5.888	3.383	45.882	5.888	0.000%
27	-0.044	-25.963	-9.312	0.044	25.963	9.312	0.000%
28	4.554	-25.963	-8.058	-4.554	25.963	8.058	0.000%
29	7.983	-25.963	-4.616	-7.983	25.963	4.616	0.000%
30	9.235	-25.963	0.040	-9.235	25.963	-0.040	0.000%
31	8.005	-25.963	4.677	-8.005	25.963	-4.677	0.000%
32	4.621	-25.963	8.072	-4.621	25.963	-8.072	0.000%
33	0.032	-25.963	9.300	-0.032	25.963	-9.300	0.000%
34	-4.579	-25.963	8.052	4.579	25.963	-8.052	0.000%
35	-7.981	-25.963	4.646	7.981	25.963	-4.646	0.000%
36	-9.244	-25.963	-0.051	9.244	25.963	0.051	0.000%
37	-8.017	-25.963	-4.706	8.017	25.963	4.706	0.000%
38	-4.644	-25.963	-8.085	4.644	25.963	8.085	0.000%

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 15 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

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	0.00027347
3	Yes	5	0.00000001	0.00026987
4	Yes	5	0.00000001	0.00026539
5	Yes	4	0.00000001	0.00012285
6	Yes	5	0.00000001	0.00026350
7	Yes	5	0.00000001	0.00027590
8	Yes	4	0.00000001	0.00044831
9	Yes	5	0.00000001	0.00026143
10	Yes	5	0.00000001	0.00026759
11	Yes	4	0.00000001	0.00045380
12	Yes	5	0.00000001	0.00027815
13	Yes	5	0.00000001	0.00026237
14	Yes	4	0.00000001	0.00002416
15	Yes	5	0.00000001	0.00011913
16	Yes	5	0.00000001	0.00018703
17	Yes	5	0.00000001	0.00018505
18	Yes	5	0.00000001	0.00012006
19	Yes	5	0.00000001	0.00018817
20	Yes	5	0.00000001	0.00019140
21	Yes	5	0.00000001	0.00012011
22	Yes	5	0.00000001	0.00018049
23	Yes	5	0.00000001	0.00018259
24	Yes	5	0.00000001	0.00011731
25	Yes	5	0.00000001	0.00018434
26	Yes	5	0.00000001	0.00018058
27	Yes	4	0.00000001	0.00008775
28	Yes	5	0.00000001	0.00003283
29	Yes	4	0.00000001	0.00098672
30	Yes	4	0.00000001	0.00005116
31	Yes	4	0.00000001	0.00097175
32	Yes	5	0.00000001	0.00003409
33	Yes	4	0.00000001	0.00009734
34	Yes	4	0.00000001	0.00095764
35	Yes	4	0.00000001	0.00099724
36	Yes	4	0.00000001	0.00009218
37	Yes	5	0.00000001	0.00003433
38	Yes	4	0.00000001	0.00096180

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	121 - 96	25.452	32	1.867	0.003
L2	99.45 - 48	17.292	32	1.693	0.002
L3	52.95 - 0	4.630	32	0.827	0.001

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 16 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
121.000	(2) RA21.7770.00 w/ Mount Pipe	32	25.452	1.867	0.003	17132
110.000	(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe	32	21.199	1.794	0.002	7787
98.000	(2) AIR 21 w/ Mount Pipe	32	16.778	1.675	0.002	3938
88.000	A-ANT-18G-2-C	32	13.414	1.524	0.002	3454
86.000	LLPX310R-V1 w/ Mount Pipe	32	12.781	1.490	0.002	3376

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	121 - 96	65.003	13	4.770	0.007
L2	99.45 - 48	44.186	13	4.325	0.006
L3	52.95 - 0	11.842	13	2.115	0.002

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
121.000	(2) RA21.7770.00 w/ Mount Pipe	13	65.003	4.770	0.007	6804
110.000	(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe	13	54.153	4.583	0.006	3091
98.000	(2) AIR 21 w/ Mount Pipe	13	42.873	4.280	0.006	1561
88.000	A-ANT-18G-2-C	13	34.285	3.896	0.005	1366
86.000	LLPX310R-V1 w/ Mount Pipe	13	32.670	3.808	0.005	1334

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _a	Kl/r	F _a	A	Actual P	Allow. P _a	Ratio P
	ft		ft	ft		ksi	in ²	K	K	P _a
L1	121 - 96 (1)	TP27.56x21.26x0.188	25.000	0.000	0.0	36.000	15.773	-5.242	567.816	0.009
L2	96 - 48 (2)	TP39.56x26.316x0.25	51.450	0.000	0.0	36.000	30.181	-14.260	1086.530	0.013
L3	48 - 0 (3)	TP51.56x37.786x0.313	52.950	0.000	0.0	35.190	50.831	-25.943	1788.750	0.015

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 93884.003.01 - PLAINVILLE SOUTH WASHINGTON ST, CT (BU# 857012)	Page 17 of 17
	Project	Date 17:27:27 06/18/16
	Client Crown Castle	Designed by Bhushan

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	121 - 96 (1)	TP27.56x21.26x0.188	200.112	23.262	36.000	0.646	0.000	0.000	36.000	0.000
L2	96 - 48 (2)	TP39.56x26.316x0.25	1053.05	44.553	36.000	1.238	0.000	0.000	36.000	0.000
L3	48 - 0 (3)	TP51.56x37.786x0.313	2225.47 8 5	41.473	35.190	1.179	0.000	0.000	35.190	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	121 - 96 (1)	TP27.56x21.26x0.188	12.504	0.793	24.000	0.066	0.340	0.019	24.000	0.001
L2	96 - 48 (2)	TP39.56x26.316x0.25	20.431	0.677	24.000	0.056	1.025	0.021	24.000	0.001
L3	48 - 0 (3)	TP51.56x37.786x0.313	23.890	0.470	24.000	0.039	1.053	0.010	24.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	121 - 96 (1)	0.009	0.646	0.000	0.066	0.001	0.657	1.333	H1-3+VT ✓
L2	96 - 48 (2)	0.013	1.238	0.000	0.056	0.001	1.252	1.333	H1-3+VT ✓
L3	48 - 0 (3)	0.015	1.179	0.000	0.039	0.000	1.193	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF* P_{allow} K	% Capacity	Pass Fail
L1	121 - 96	Pole	TP27.56x21.26x0.188	1	-5.242	756.899	49.3	Pass
L2	96 - 48	Pole	TP39.56x26.316x0.25	2	-14.260	1448.344	93.9	Pass
L3	48 - 0	Pole	TP51.56x37.786x0.313	3	-25.943	2384.404	89.5	Pass
Summary								
Pole (L2)							93.9	Pass
RATING =							93.9	Pass

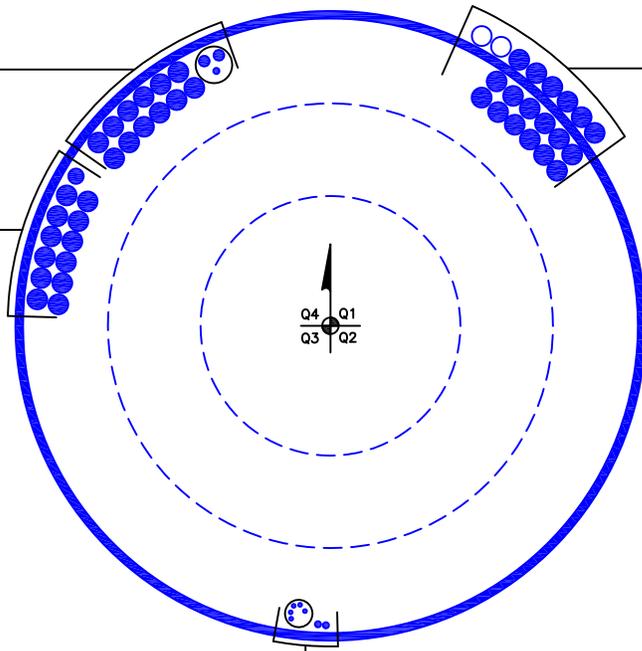
APPENDIX B
BASE LEVEL DRAWING

(INSTALLED-IN CONDUIT)
(1) 1/2" TO 121 FT LEVEL
(2) 7/8" TO 121 FT LEVEL
(INSTALLED)
(12) 1-5/8" TO 121 FT LEVEL

(RESERVED)
(2) 1-5/8" TO 110 FT LEVEL
(INSTALLED)
(18) 1-5/8" TO 110 FT LEVEL

(INSTALLED)
(1) 1-1/4" TO 98 FT LEVEL
(12) 1-5/8" TO 98 FT LEVEL

(INSTALLED-IN 2" CONDUIT)
(5) 5/16" TO 86 FT LEVEL
(INSTALLED)
(2) 1/2" TO 86 FT LEVEL



BUSINESS UNIT: 857012

APPENDIX C
ADDITIONAL CALCULATIONS

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

TIA Rev F

Site Data

BU#:	857012
Site Name:	PLAINVILLE SOUTH WASH
App #:	349094 Rev# 0
Pole Manufacturer:	Other

Reactions		
Moment:	2225	ft-kips
Axial:	26	kips
Shear:	24	kips

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	60.56	in

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

Anchor Rod Results

Maximum Rod Tension:	108.6 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	55.7% Pass

Rigid
Service, ASD
Fy*ASIF

Plate Data		
Diam:	66	in
Thick:	2	in
Grade:	50	ksi
Single-Rod B-eff:	10.23	in

Base Plate Results

Base Plate Stress:	45.2 ksi	Flexural Check
Allowable Plate Stress:	50.0 ksi	
Base Plate Stress Ratio:	90.5% Pass	

Rigid
Service ASD
0.75*Fy*ASIF
Y.L. Length:
31.77

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

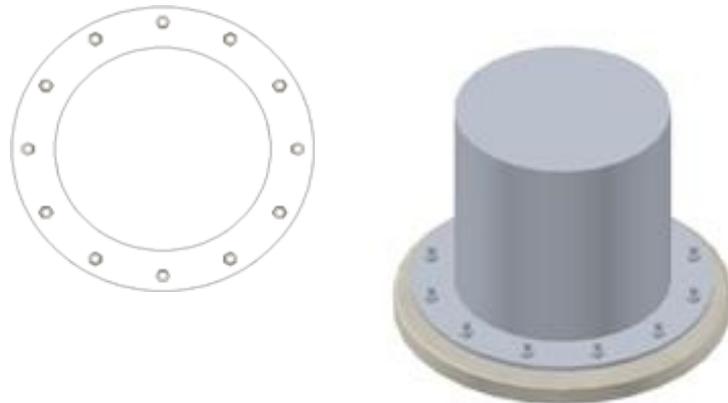
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check:	n/a
----------------------------	-----

Pole Data		
Diam:	51.56	in
Thick:	0.3125	in
Grade:	60	ksi
# of Sides:	18	"0" IF Round
Fu	76	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor	
ASIF:	1.333



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

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

BU:	857012
Site Name:	PLAINVILLE SOUTH WASHINGTON ST, CT
App Number:	349094 Rev# 0
Work Order:	1248222

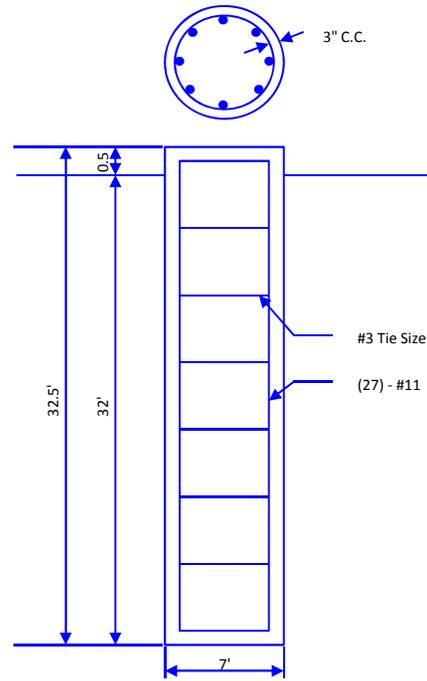


Monopole Drilled Pier

Input

Criteria	
TIA Revision:	F
ACI 318 Revision:	2002
Seismic Category:	B
Forces	
Compression	26 kips
Shear	24 kips
Moment	2225 k-ft
Swelling Force	0 kips
Foundation Dimensions	
Pier Diameter:	7 ft
Ext. above grade:	0.5 ft
Depth below grade:	32 ft
Material Properties	
Number of Rebar:	27
Rebar Size:	11
Tie Size	3
Rebar tensile strength:	60 ksi
Concrete Strength:	3000 psi
Ultimate Concrete Strain	0.003 in/in
Clear Cover to Ties:	3 in

Soil Profile: soil



Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Friction (ksf)	Ultimate Comp. Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	3.5	0	3.5	55	0	0	0	0	0	
2	9.5	3.5	13	55		33	0.315	0.315	0	
3	6	13	19	45		28	0.5	0.5	0	
4	4	19	23	55		33	0.64	0.64	0	
5	2	23	25	40		28	0.755	0.755	0	
6	7	25	32	40		28	0	0	6.4	

Analysis Results

Soil Lateral Capacity	
Depth to Zero Shear:	7.57 ft
Max Moment, Mu:	2376.65 k-ft
Soil Safety Factor:	3.68
Safety Factor Req'd:	2
RATING:	54.4%

Soil Axial Capacity	
Skin Friction (k):	110.64 kips
End Bearing (k):	123.15 kips
Comp. Capacity (k), φCn:	233.79 kips
Comp. (k), Cu:	33.80 kips
RATING:	14.5%

Concrete/Steel Check

Mu (from soil analysis)	3089.64 k-ft
φMn	6514.24 k-ft
RATING:	47.4%
rho provided	0.76
rho required	0.33 OK
Rebar Spacing	7.41
Spacing required	22.56 OK
Dev. Length required	24.18
Dev. Length provided	61.78 OK

Overall Foundation Rating: 54.4%



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT1029

Plainville South Washington St
335 South Washington Street
Plainville, CT 06062

July 12, 2016

EBI Project Number: 6216003216

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	8.61 %



July 12, 2016

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

Emissions Analysis for Site: **CT1029 – Plainville South Washington St**

EBI Consulting was directed to analyze the proposed AT&T facility located at **335 South Washington Street, Plainville, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 public 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 public 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.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. 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 done for the proposed AT&T Wireless antenna facility located at **335 South Washington Street, Plainville, 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.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 6) 2 GSM channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.



- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Powerwave 7770** and the **CCI HPA-65R-BUU-H6** 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.
- 10) The antenna mounting height centerlines of the proposed antennas are **123 feet** above ground level (AGL) for **Sector A**, **123 feet** above ground level (AGL) for **Sector B** and **123 feet** above ground level (AGL) for Sector C.
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	0.73 %	Antenna B1 MPE%	0.73 %	Antenna C1 MPE%	0.73 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A2 MPE%	2.00 %	Antenna B2 MPE%	2.00 %	Antenna C2 MPE%	2.00 %
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A3 MPE%	0.73 %	Antenna B3 MPE%	0.73 %	Antenna C3 MPE%	0.73 %

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	3.45 %
Verizon Wireless	4.84 %
T-Mobile	0.04 %
Clearwire	0.28 %
MetroPCS	0.00 %
Site Total MPE %:	8.61 %

AT&T Sector A Total:	3.45 %
AT&T Sector B Total:	3.45 %
AT&T Sector C Total:	3.45 %
Site Total:	8.61 %

AT&T _ Max Values Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	123	2.18	850 MHz	567	0.38 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	123	3.45	1900 MHz (PCS)	1000	0.34 %
AT&T 700 MHz LTE	2	940.05	123	4.94	700 MHz	467	1.06 %
AT&T 1900 MHz (PCS) LTE	2	1,791.23	123	9.41	1900 MHz (PCS)	1000	0.94 %
AT&T 850 MHz GSM	2	414.12	123	2.18	850 MHz	567	0.38 %
AT&T 1900 MHz (PCS) GSM	2	656.33	123	3.45	1900 MHz (PCS)	1000	0.34 %
						Total:*	3.45 %

NOTE: Totals may vary by .01% due to summing of remainders



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public 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 public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	3.45 %
Sector B:	3.45 %
Sector C:	3.45 %
AT&T Maximum Total (per sector):	3.45 %
Site Total:	8.61 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **8.61 %** of the allowable FCC established general public 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.