



QC Development

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May 12, 2017

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT5047
366 Old Long Ridge Road, Stamford, CT 06903
N 41-09-11.2
W 73-35-33.7

Dear Ms. Bachman:

AT&T currently maintains three (3) antennas at the 145-foot level of the existing 152-foot Self Support Tower at 366 Old Long Ridge Road, Stamford, CT. The tower and property are owned by the Long Ridge Fire Company, Inc. AT&T now intends to remove all three (3) Andrew antennas and replace them with three (3) Quintel antennas, also at the 145-foot level of the tower.

This facility was approved by the Connecticut Siting Council in Petition # 985 on February 8, 2011. There were no condition(s) that could feasibly be violated by this modification, including total facility height or mounting restrictions. This modification therefore complies with the aforementioned approval.

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.C.S.A. § 16-50j-73, a copy of this letter is being sent to David R. Martin, Mayor of the City of Stamford, the Stamford Division of Planning & Zoning and the property and tower owner.

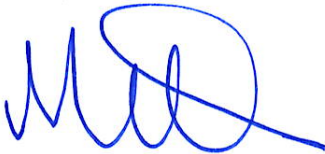
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications 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 Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: The Honorable David R. Martin - as elected official (via e-mail)
Ms. Vinceta Mathur – Associate Planner (via e-mail)
Chief Stuart Teitelbaum - as tower and property owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							22.16%
AT&T GSM	1	283	143	0.0054	880	0.5867	0.09%
AT&T UMTS	2	565	143	0.0217	880	0.5867	0.37%
AT&T UMTS	4	525	143	0.0402	1900	1.0000	0.40%
AT&T LTE	1	1117	143	0.0208	734	0.4893	0.42%
AT&T LTE	2	875	143	0.0335	1900	1.0000	0.34%
Site Total							23.79%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							22.16%
AT&T GSM	1	152	143	0.0029	880	0.5867	0.05%
AT&T UMTS	2	255	143	0.0098	880	0.5867	0.17%
AT&T UMTS	4	368	143	0.0282	1900	1.0000	0.28%
AT&T LTE	1	828	143	0.0154	734	0.4893	0.31%
AT&T LTE	2	3229	143	0.1237	1900	1.0000	1.24%
AT&T LTE	2	1285	143	0.0246	2300	1.0000	0.42%
Site Total							24.63%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880



WIRELESS COMMUNICATIONS FACILITY
CT5047 - LTE 2C/3C (WCS)
STAMFORD NORTH
366 OLD LONG RIDGE ROAD
STAMFORD, CT 06903

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.

2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.

3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.

4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.

5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.

6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.

7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.

8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.

9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.

11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.

13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.

15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.

16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.

17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB- CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.

19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.

20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.

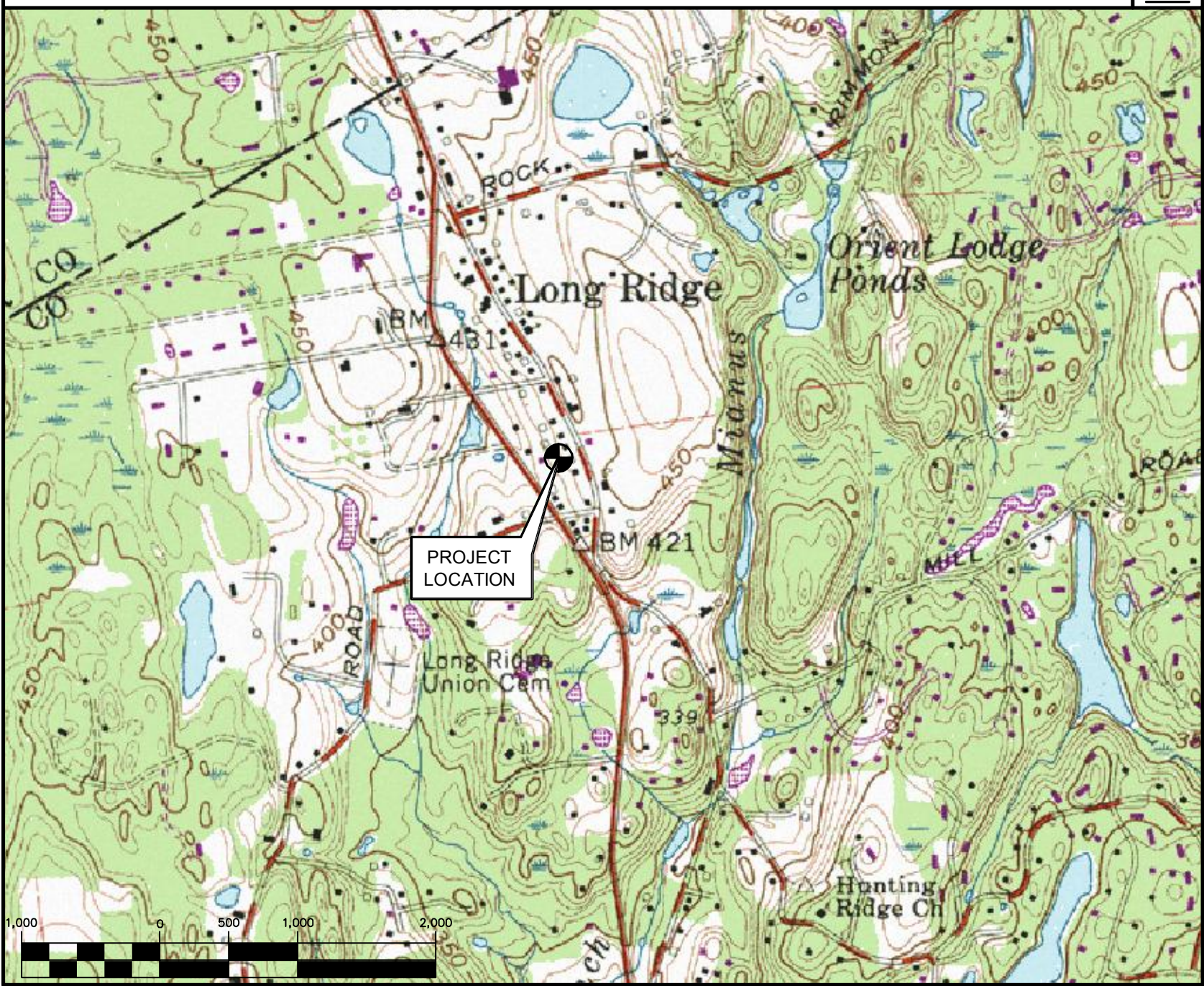
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM:	500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT	TO:	366 OLD LONG RIDGE ROAD STAMFORD, CONNECTICUT
1.	DEPART ENTERPRISE DR TOWARD CAPITOL BLVD	0.4 MI.	
2.	TURN LEFT ONTO CAPITOL BLVD	0.3 MI.	
3.	TURN LEFT ONTO WEST ST	0.3 MI.	
4.	TAKE RAMP LEFT FOR I-91 SOUTH	9.6 MI.	
5.	AT EXIT 17, TAKE RAMP RIGHT FOR CT-15 SOUTH / WILBUR CROSS PKWY TOWARD E. MAIN ST	55.1 MI.	
6.	AT EXIT 34, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR CT-104 / LONG RIDGE RD	0.3 MI.	
7.	TURN RIGHT ONTO CT-104 / LONG RIDGE RD	3.8 MI.	
8.	TURN RIGHT ONTO ERSKINE RD, AND THEN IMMEDIATELY TURN LEFT ONTO OLD LONG RIDGE RD	0.1 MI.	
9.	ARRIVE AT 366 OLD LONG RIDGE RD, STAMFORD, CT 06903-1114		

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
- A. REMOVE AND REPLACE (3) EXISTING ANTENNAS WITH NEW 12-PORT ANTENNAS, (1) PER SECTOR.

B. INSTALL (3) NEW KAEIUS TMA2117F00V1-1 TMA'S BEHIND POS.1 ANTENNA, (1) PER SECTOR.

C. REMOVE (6) EXISTING TRIPLEXERS WITHIN EXISTING COMPOUND.

D. INSTALL (12) NEW PENTAPLEXERS WITHIN EXISTING COMPOUND.

E. INSTALL (6) NEW RRUS-12'S WITHIN EXISTING COMPOUND.

F. INSTALL (3) NEW RRUS-32'S WITHIN EXISTING COMPOUND.

G. INSTALL FIFTEEN (15) NEW AT&T SURGE ARRESTORS WITHIN EXISTING COMPOUND.

H. INSTALL 2ND DUS-41, NEW XMU UNIT & IDL2 UNIT.

I. REMOVE AND REPLACE (1) EXISTING NOKIA GSM CABINET & INSTALL (1) NEW RXAIT CABINET WITHIN EXISTING COMPOUND.

J. INSTALL ±4'x9' CONCRETE SLAB-ON-GRADE WITHIN EXISTING COMPOUND.

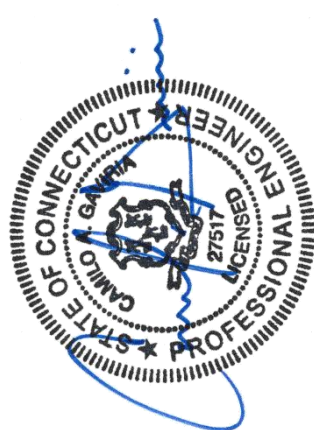
PROJECT INFORMATION

AT&T SITE NUMBER:	CT5047
AT&T SITE NAME:	STAMFORD NORTH
SITE ADDRESS:	366 OLD LONG RIDGE ROAD STAMFORD, CT 06903
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°-09'-11.2" N LONGITUDE: 73°-35'-33.7" W GROUND ELEVATION: ±437' AMSL (THE ABOVE COORDINATES AND GROUND ELEVATION ALONG WITH ELEVATIONS SHOWN HEREIN ARE REFERENCED FROM FAA 2-C SURVEY CERTIFICATION AS PREPARED BY TECTONIC ENGINEERING CONSULTANTS, P.C. DATED AUGUST 29, 2000.)

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND DETAILS	0
B-1	RF BILLS OF MATERIALS	0
C-1	PLANS AND ELEVATION	0
C-2	LTE 2C/3C (WCS) EQUIPMENT DETAILS	0
C-3	LTE 2C/3C (WCS) EQUIPMENT DETAILS	0
E-1	LTE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LTE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

PROFESSIONAL ENGINEER SEAL



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AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY
STAMFORD NORTH
CT5047 - LTE 2C/3C (WCS)
366 OLD LONG RIDGE ROAD
STAMFORD, CT 06903

DATE: 03/10/17

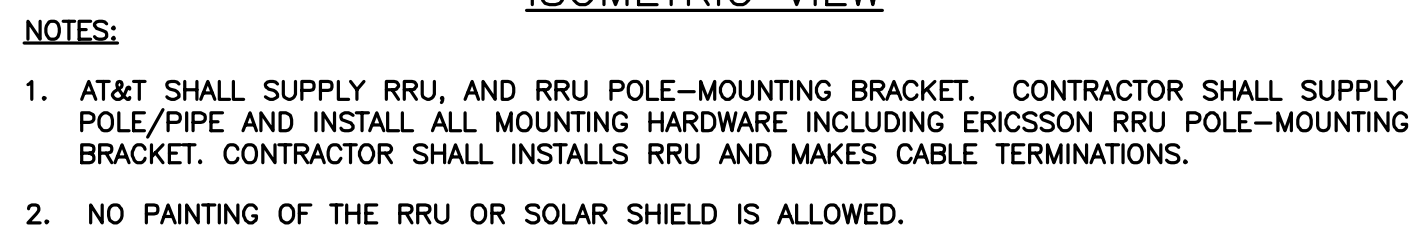
SCALE: AS NOTED

JOB NO. 16034.08

TITLE SHEET

T-1

Sheet No. 1 of 9



1 TYPICAL RRUS MOUNTING DETAILS
N-1 SCALE: NTS

DESIGN BASIS:

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

1. DESIGN CRITERIA:
 - WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90–110 MPH (3 SECOND GUST)
 - RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
 - NOMINAL DESIGN SPEED (OTHER STRUCTURE): 93 MPH (V_{asd}) (EXPOSURE B)/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
 - SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7–10 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 DEDICATED 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 INVESTIGATION 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 THE SAFETY OF ALL PERSONS DURING 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 EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

- A. 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:

- 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:

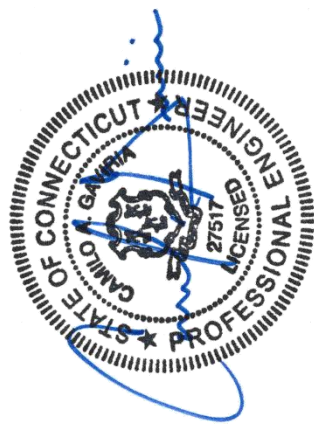
1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED 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.

[illegible]

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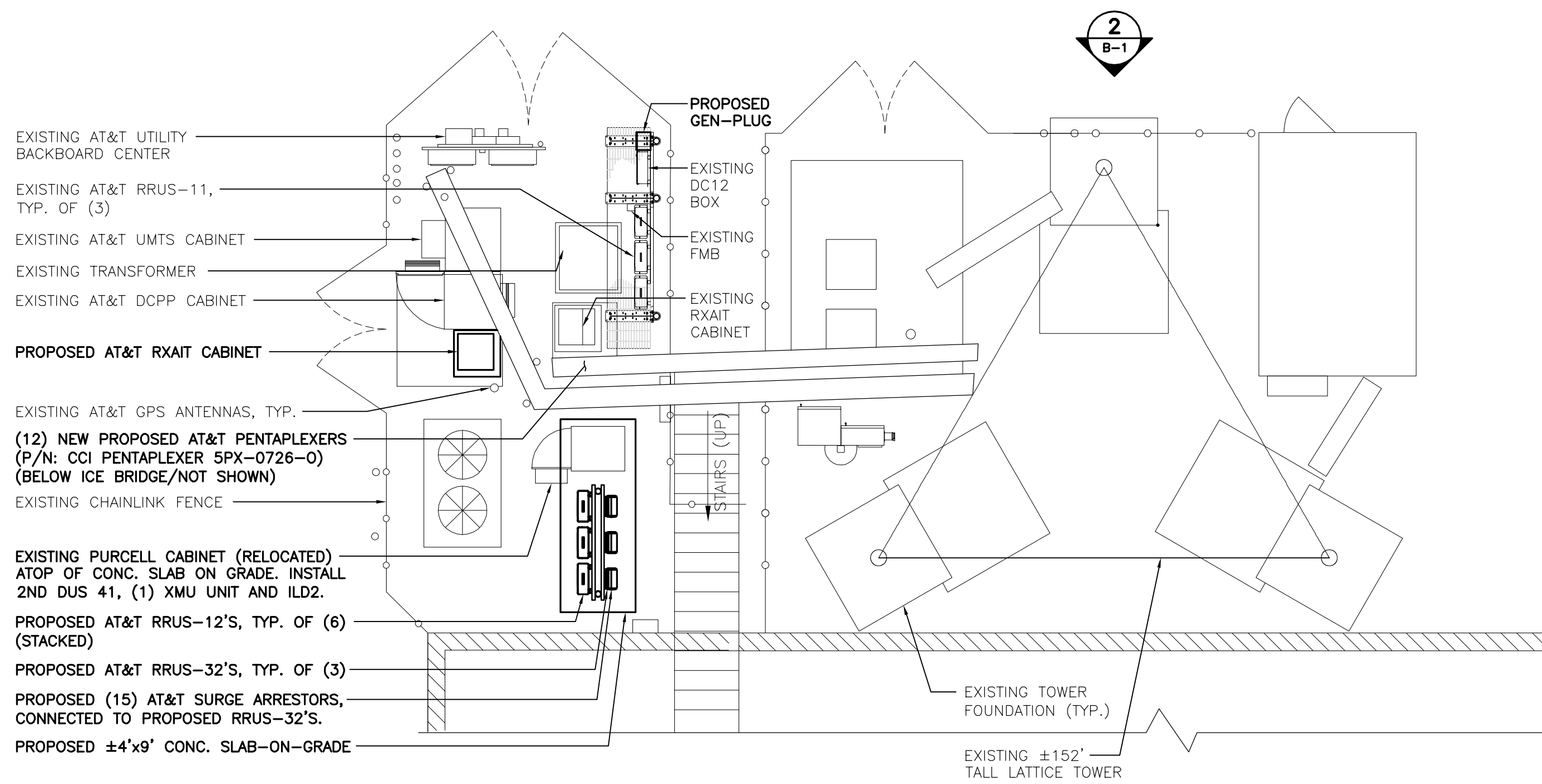
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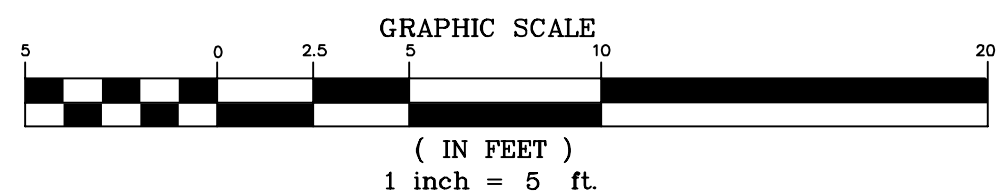
NOTES, SPECIFICATIONS AND DETAILS

N-1

Sheet No. 2 of 9



3 PROPOSED COMPOUND PLAN
SCALE: 1" = 5'



PROPOSED AT&T TMAs
(TYP. OF A TOTAL OF 3)
MOUNTED TO EXISTING LATTICE TOWER.

TOP OF EXISTING LATTICE TOWER
EL. ±152' A.T.B.

AT&T ANTENNAS
EL. ±145' A.T.B.

PROPOSED AT&T PANEL ANTENNAS
(TYP. OF A TOTAL OF 3)
MOUNTED TO EXISTING LATTICE TOWER.

1 5/8" COAX CABLE, TYP. ROUTED FROM EQUIPMENT TO ANTENNA SECTORS

EXISTING CARRIER EQUIPMENT BUILDING

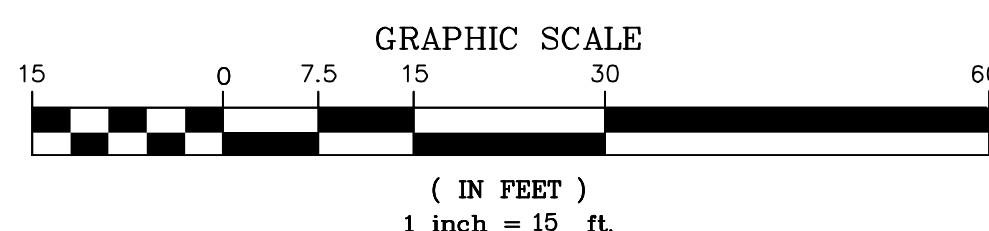
EXISTING FIRE HOUSE.

EXISTING AT&T GPS ANTENNAS, TYP. MOUNTED TO EXISTING AT&T COAX CABLE ICE BRIDGE.

EXISTING AT&T COAX CABLE ICE BRIDGE.

EXISTING AT&T EQUIPMENT CABINETS, TYP. ATOP OF CONC. SLAB-ON-GRADE

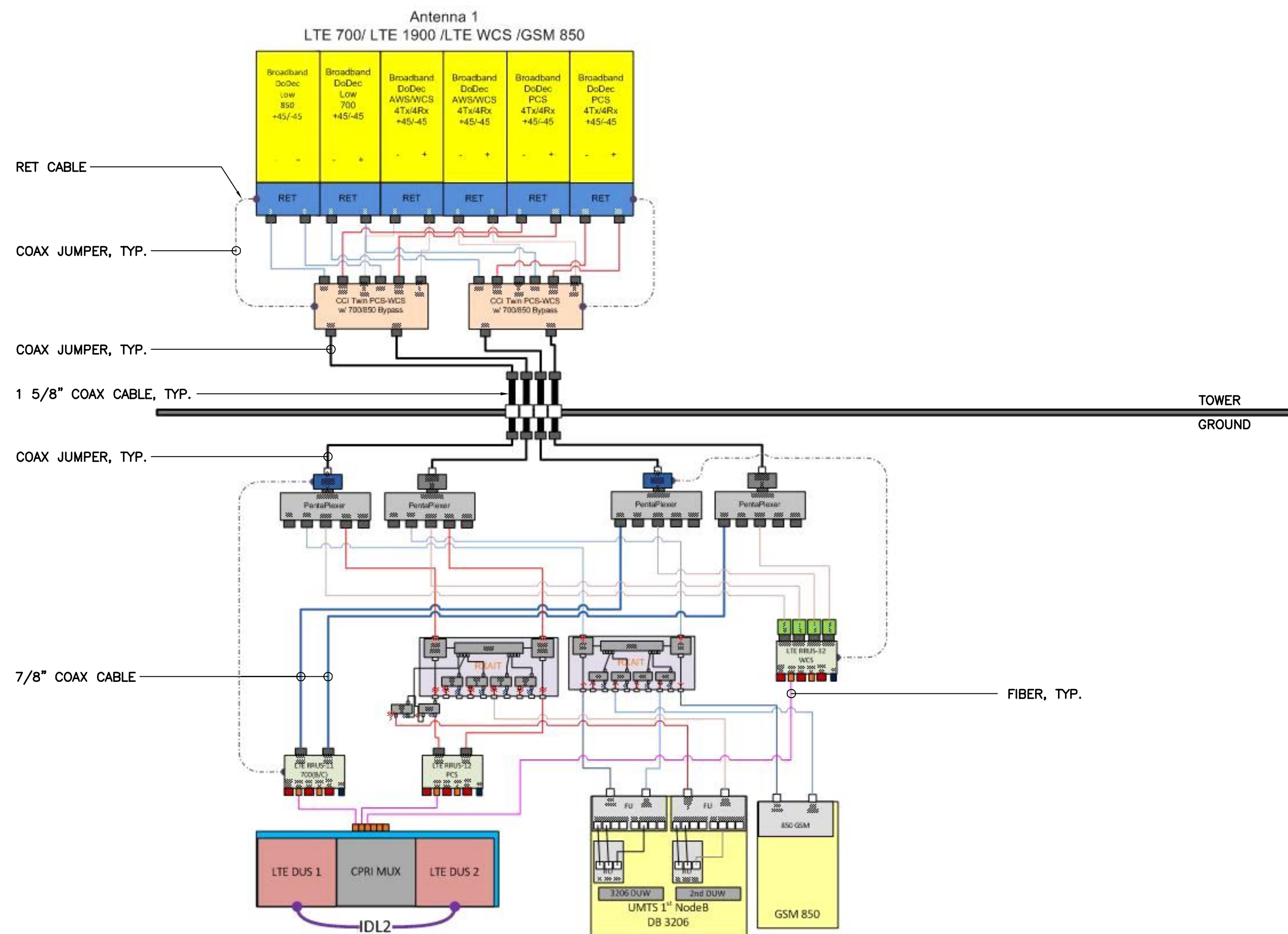
2 SOUTH ELEVATION
SCALE: 1" = 15'-0"



NOTES:

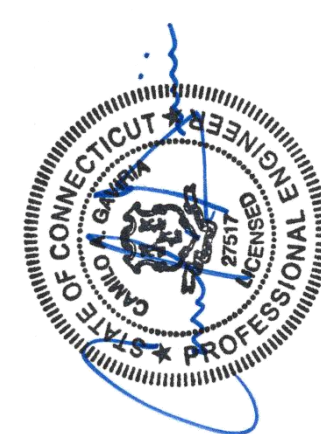
1. INFORMATION SHOWN HEREIN IS FOR USE BY AT&T EQUIPMENT OPERATIONS.
2. THIS B.O.M. DRAWING IS BASED OFF FIELD MEASUREMENTS, CONSTRUCTION DRAWINGS PREPARED BY CENTEK ENGINEERING (REV.0 DATED: 04.19.17), & AT&T RF ANTENNA EQUIPMENT RECOMMENDATION (DATED 03.22.16).

BILL OF MATERIALS - SITE EQUIPMENT			
	QUANTITY	LENGTH	COMMENTS
① UMTS/GSM/LTE	3		(QUINTEL QS66512-2) MOUNTED TO PIPE MAST
② 1/2" COAX JUMPERS	36	6 FT	ROUTE FROM TMA TO ANTENNA
③ 1 5/8" COAX CABLE	12	200 FT	ROUTE FROM TRIPLEXERS TO TMAS
④ RET CABLE	3	3 M	ROUTE FROM ANTENNA TO ANTENNA
⑤ RET CABLE	3	.5 M	ROUTE FROM MOTOR TO MOTOR
⑥ PCS RRU	6		RRUS-12
⑦ WCS RRU	3		RRUS-32



1 PLUMBING DIAGRAM
NOT TO SCALE

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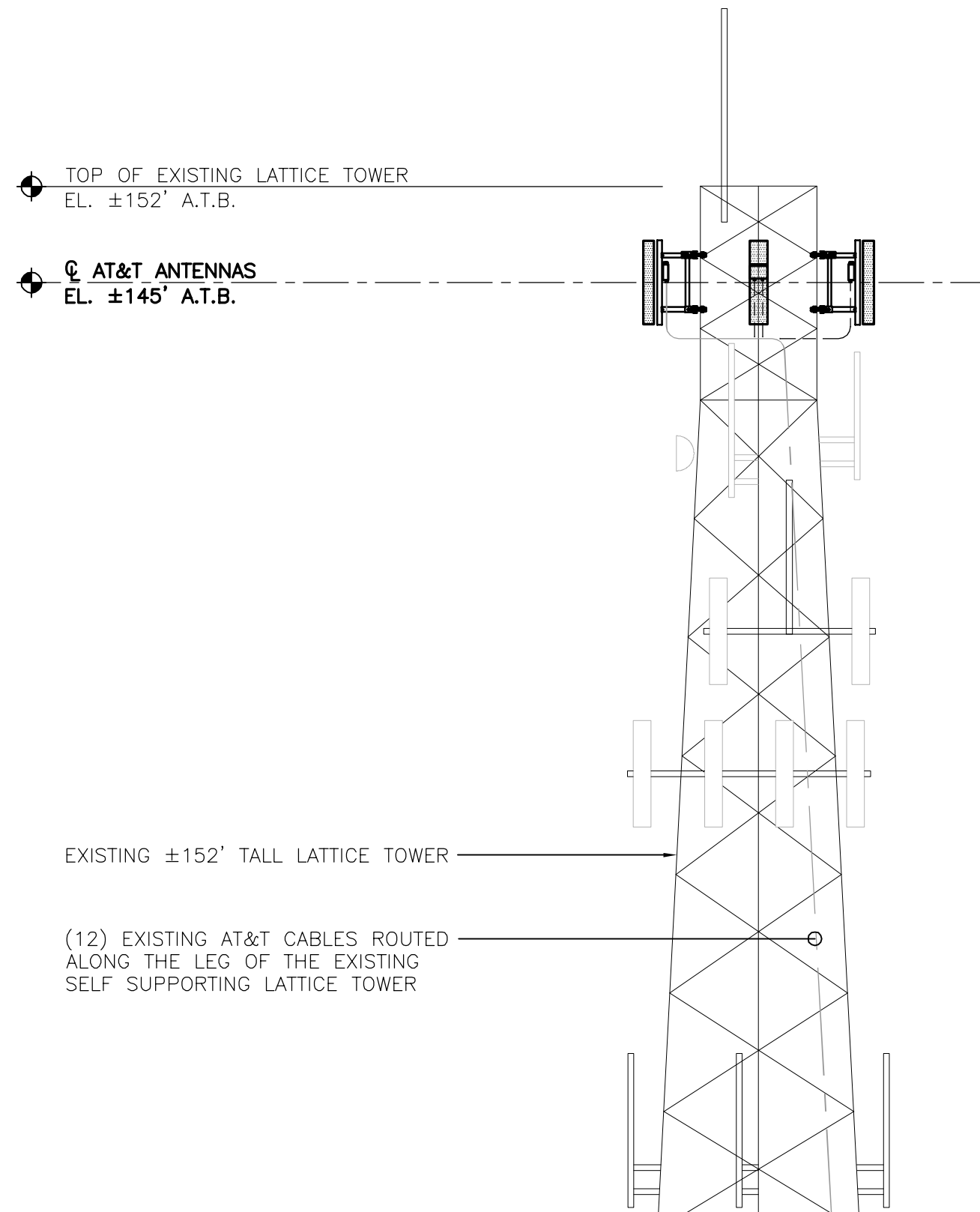
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RF BILLS OF MATERIALS

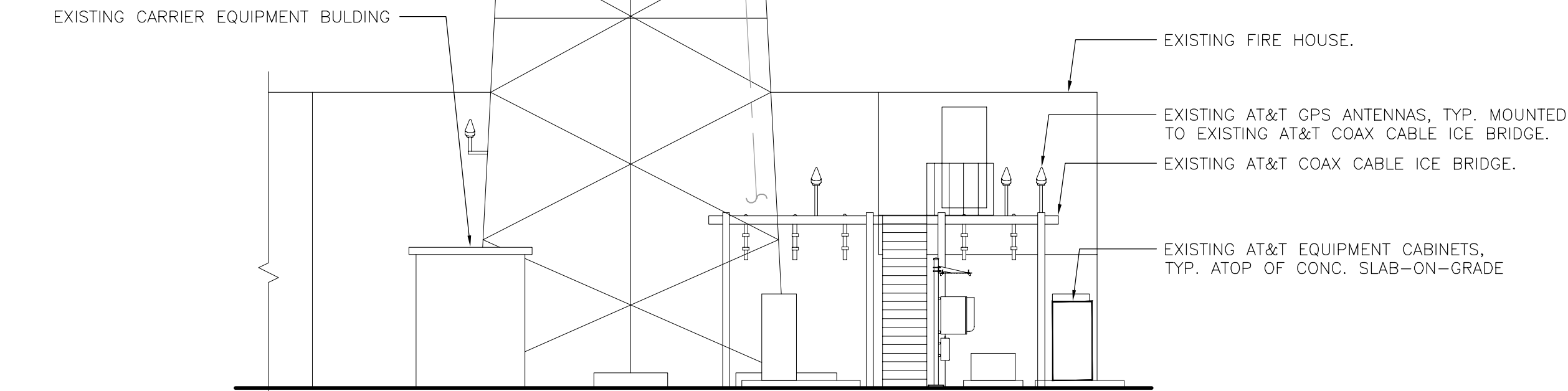
B-1

Sheet No. 3 of 9

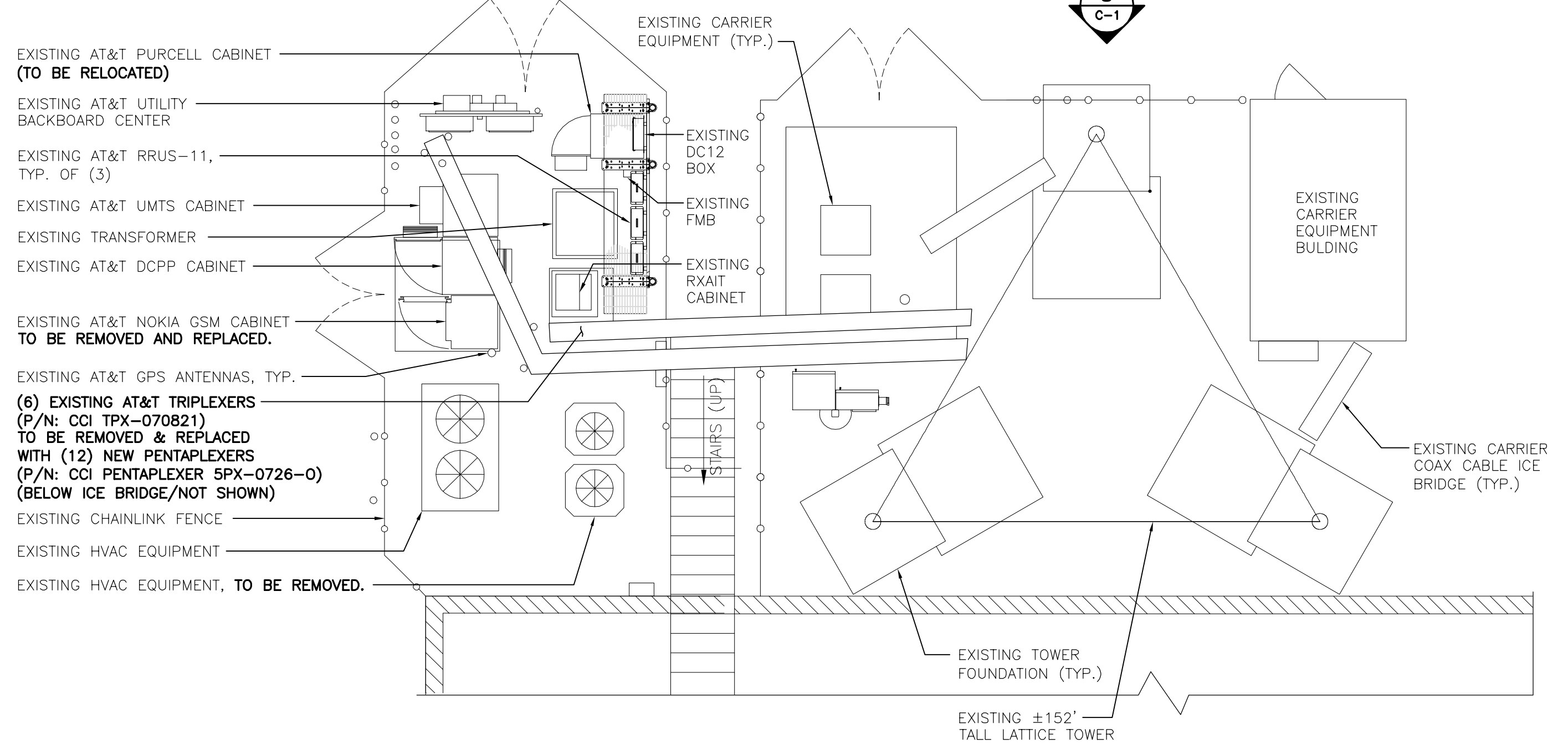
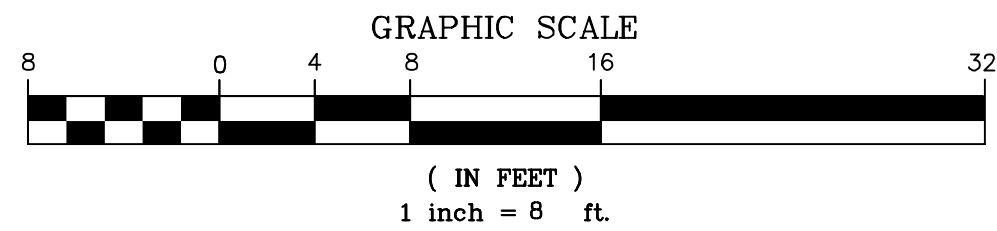


- TOWER STRUCTURAL NOTES:**
- REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., PROJ. NO. 16034.08, DATED FEBRUARY 28, 2017 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AT&T, AND FINAL AT&T RF DATA SHEET.

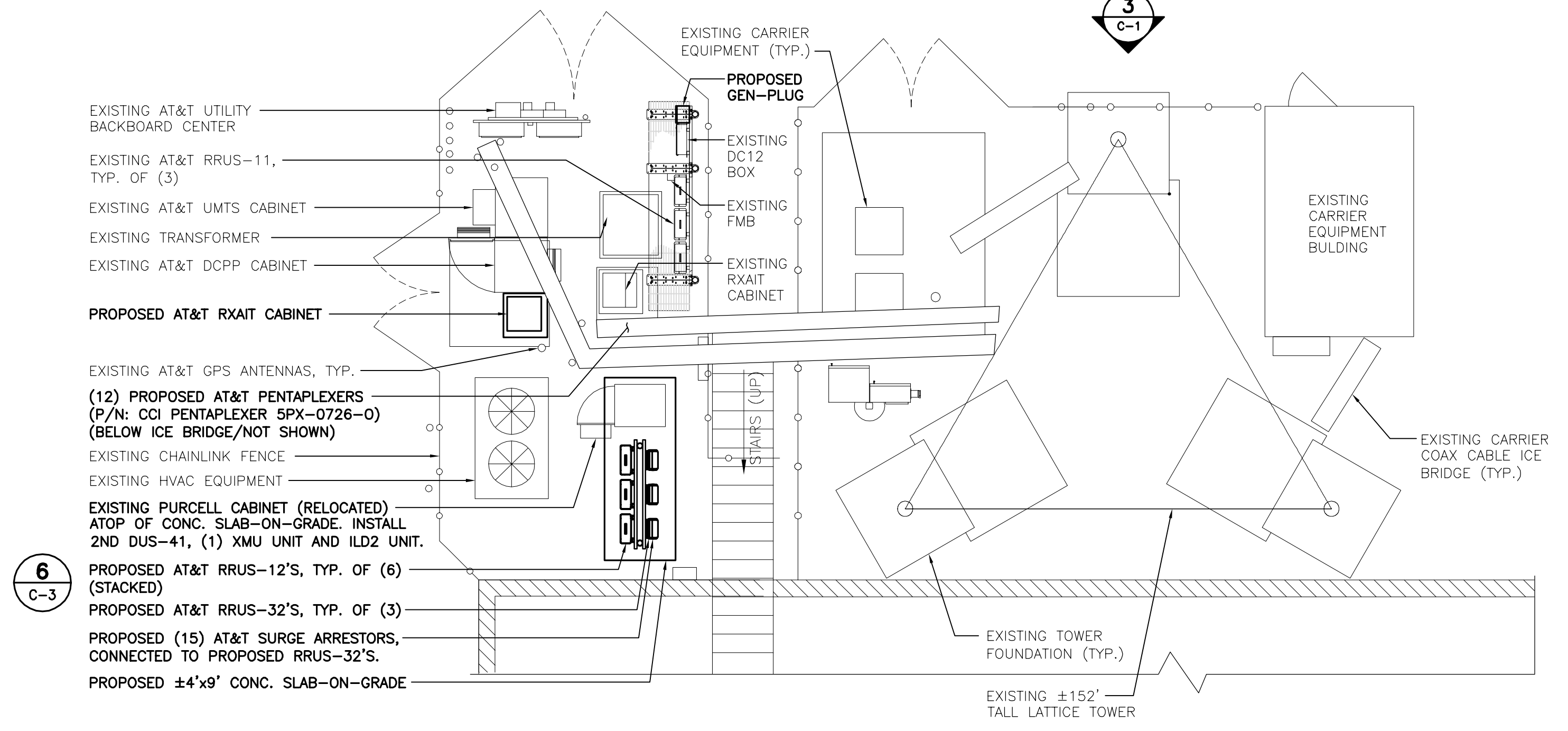
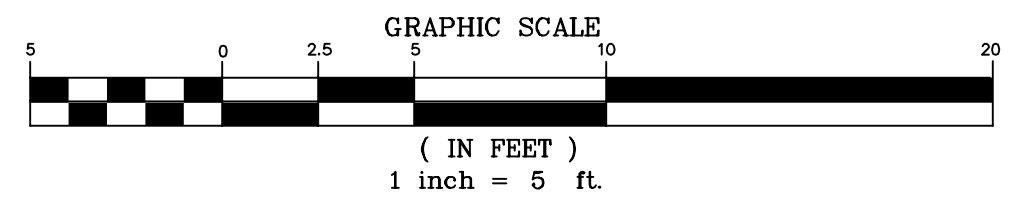
- NOTES:**
- A.T.B. = ABOVE TOWER BASE



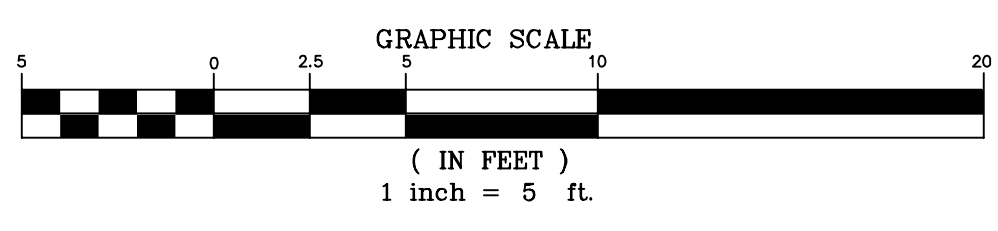
3 SOUTH ELEVATION
C-1
SCALE: 1/8" = 1'-0"



1 EXISTING COMPOUND PLAN
C-1
SCALE: 1" = 5'



2 PROPOSED COMPOUND PLAN
C-1
SCALE: 1" = 5'



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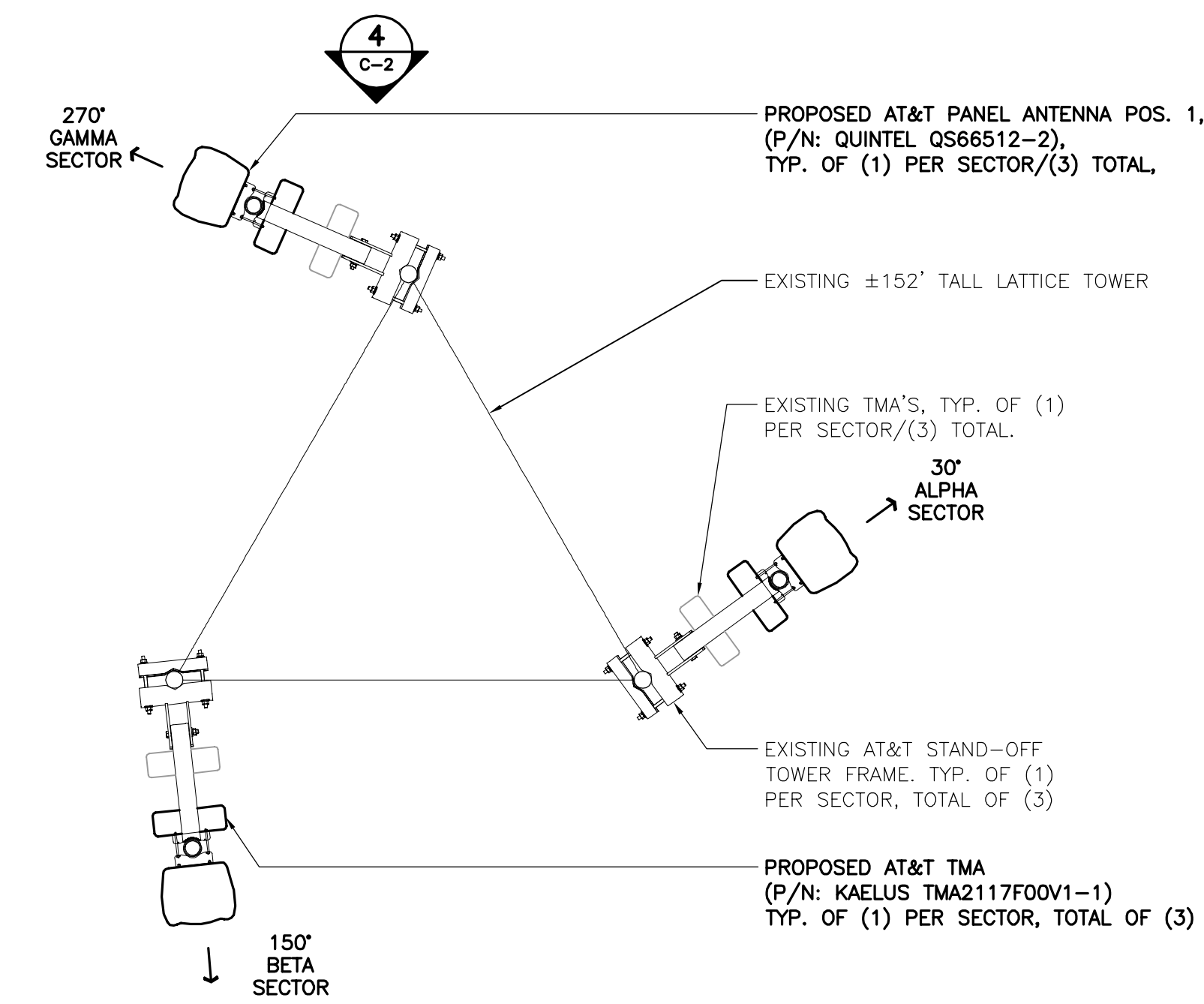
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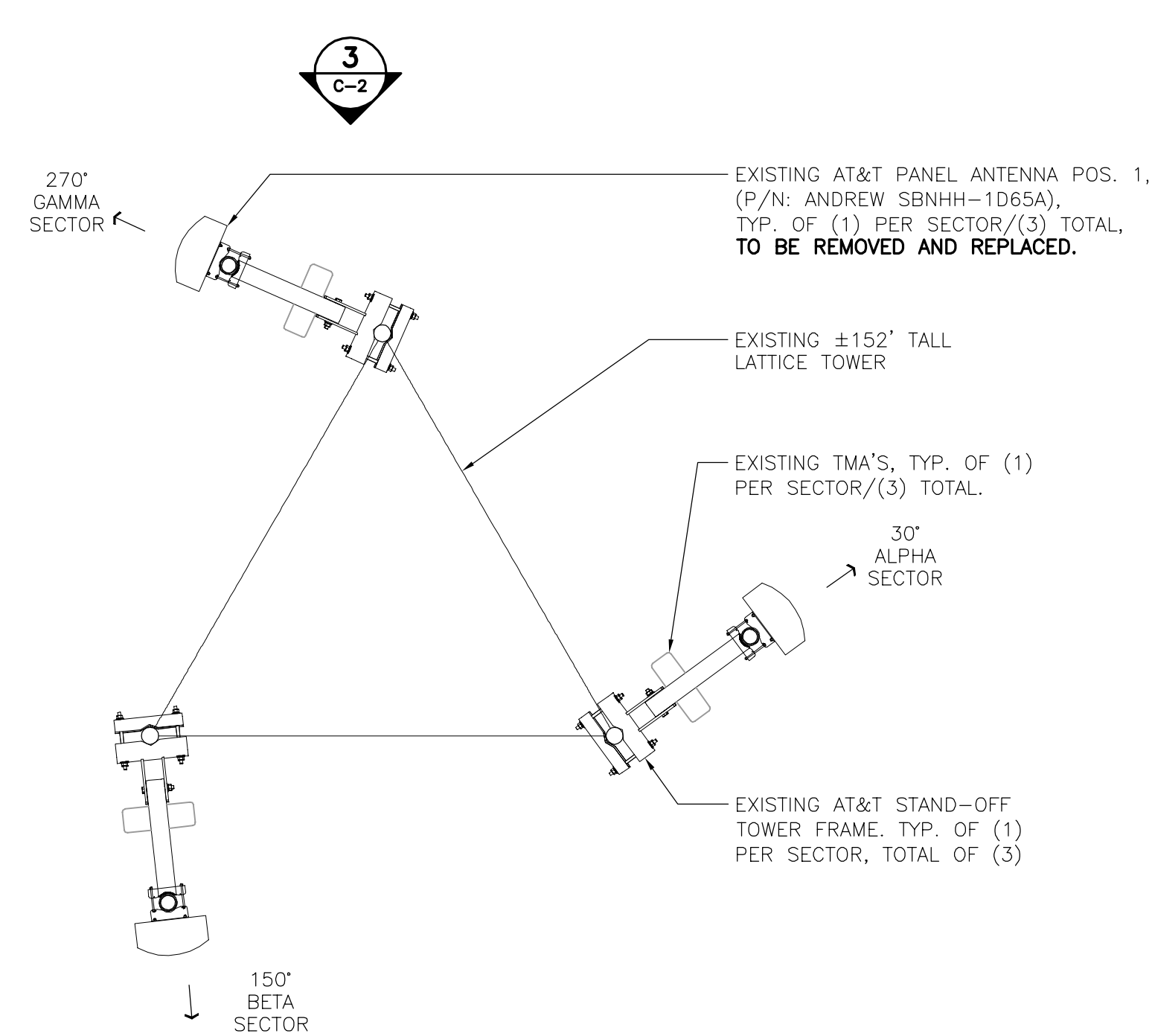
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PLANS AND ELEVATION

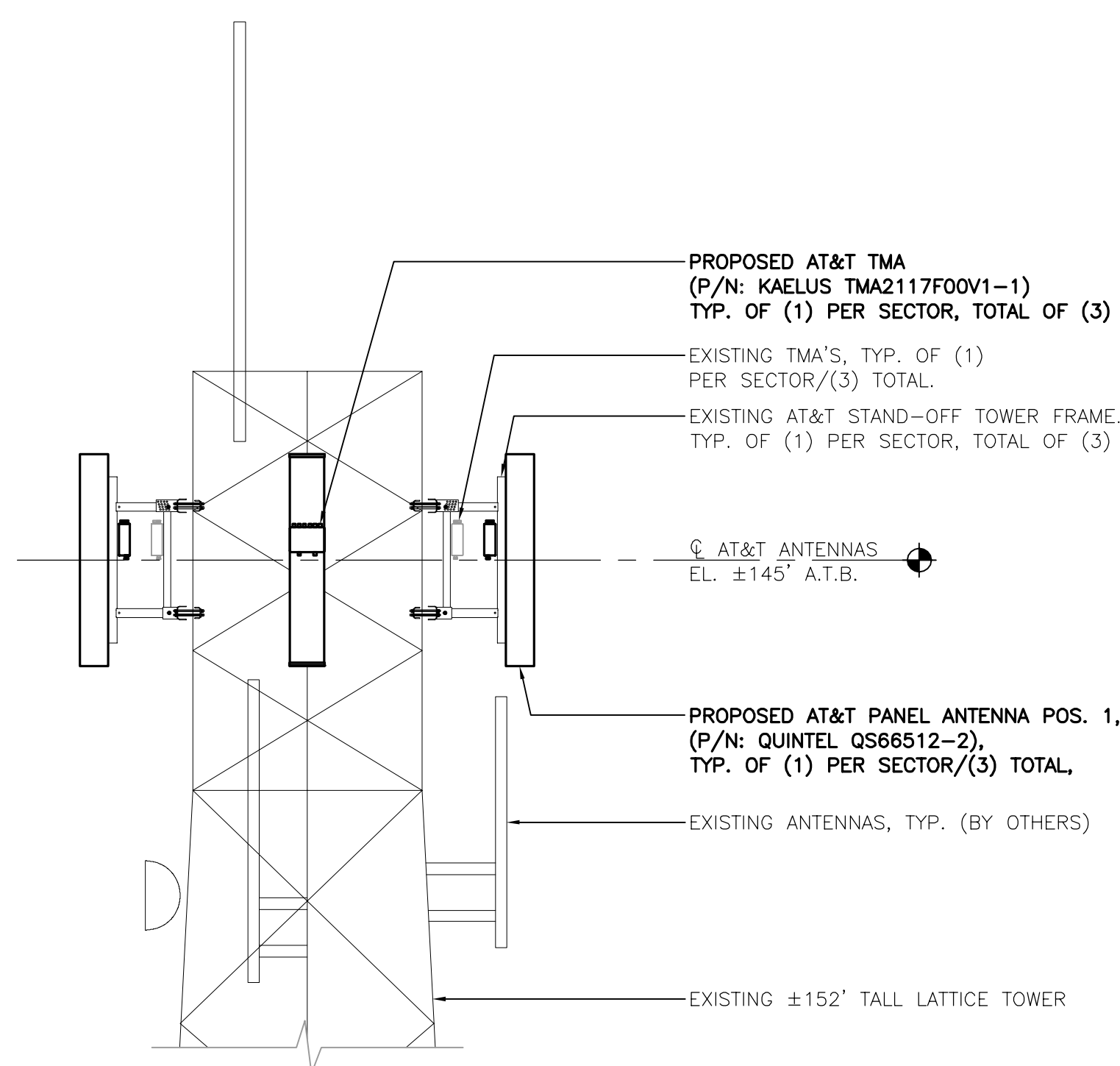
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Sheet No. 4 of 9



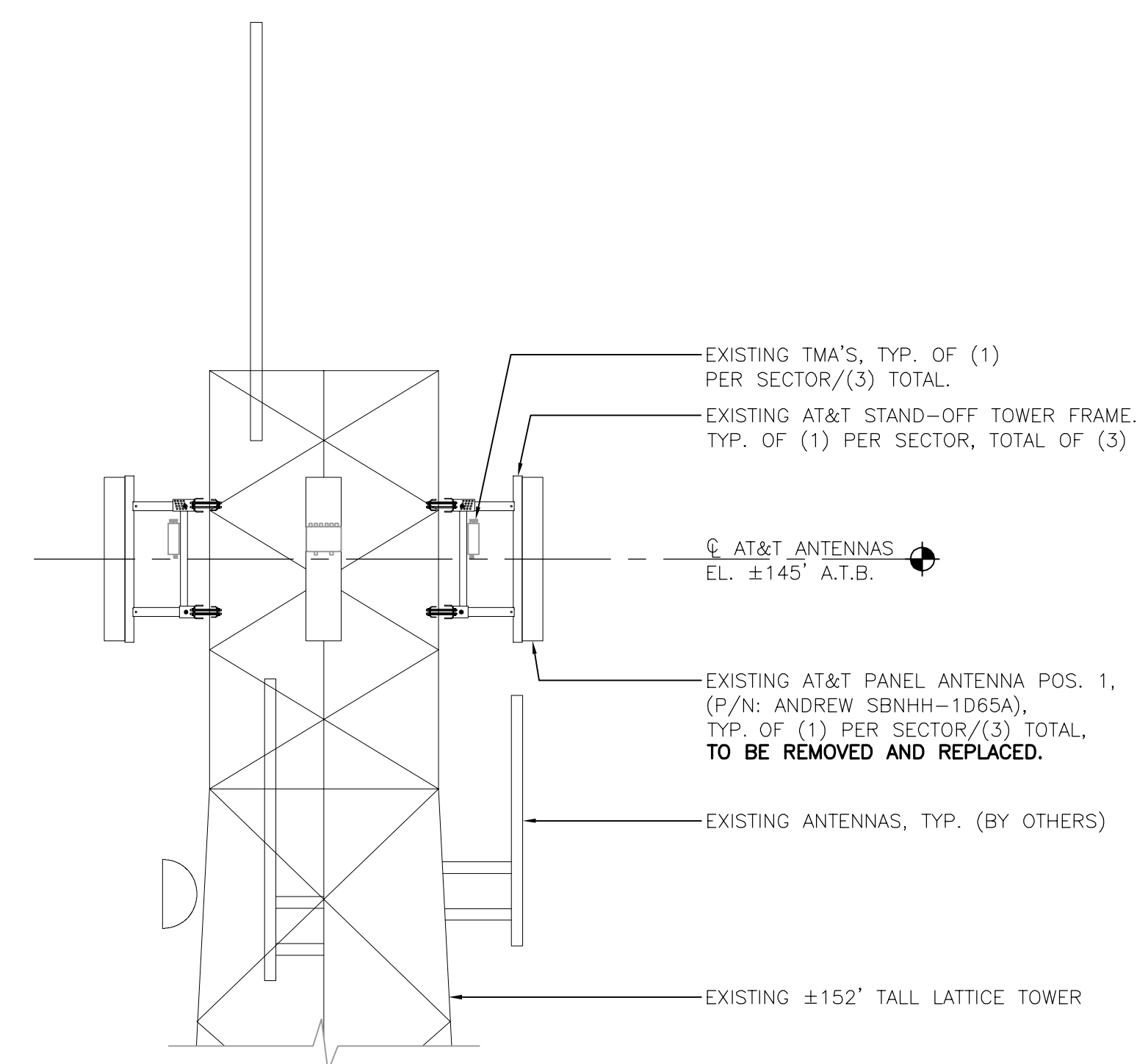
2 PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0" NORTH



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

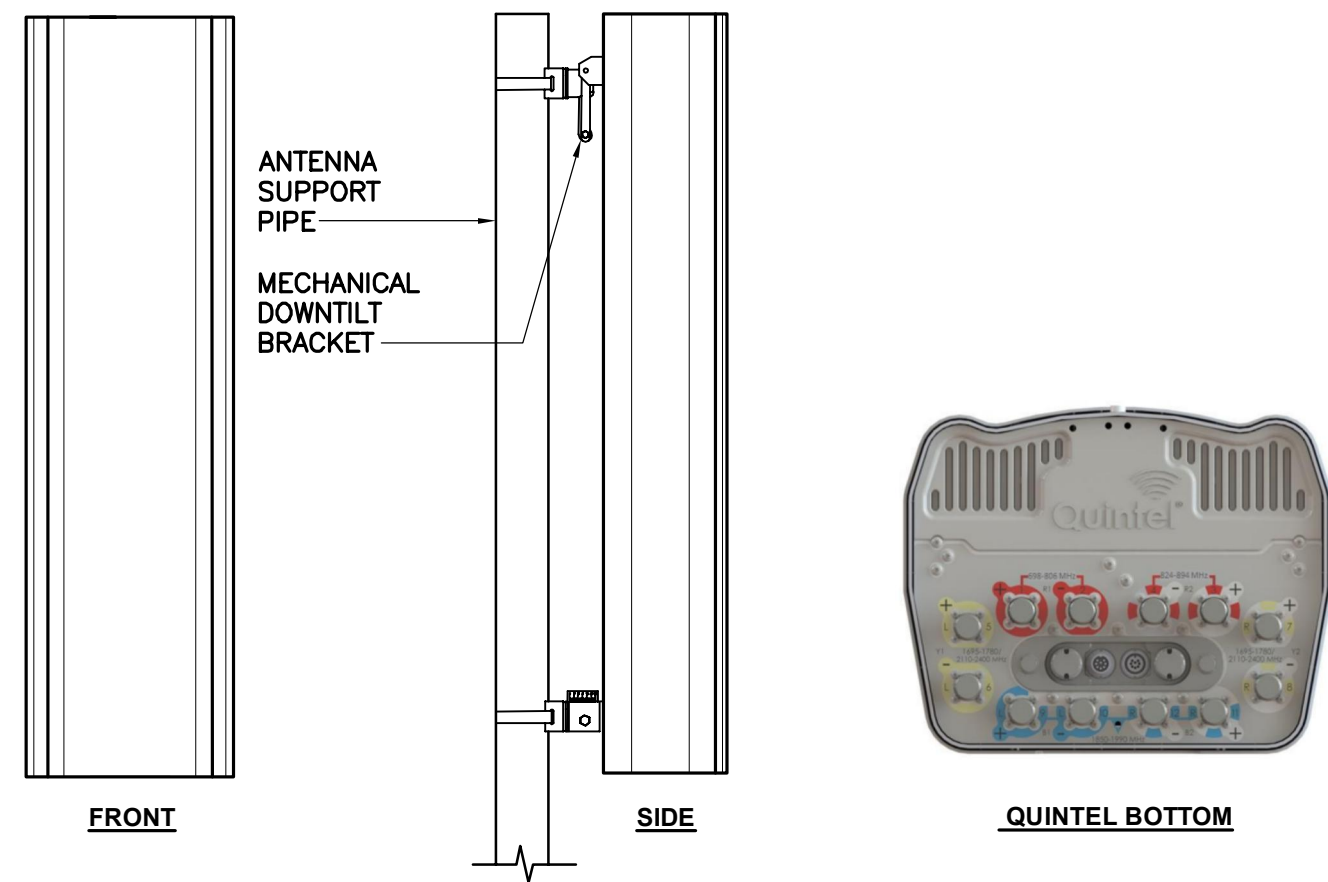


4 PROPOSED ANTENNA SECTOR ELEVATION
SCALE: 1/4" = 1'-0"



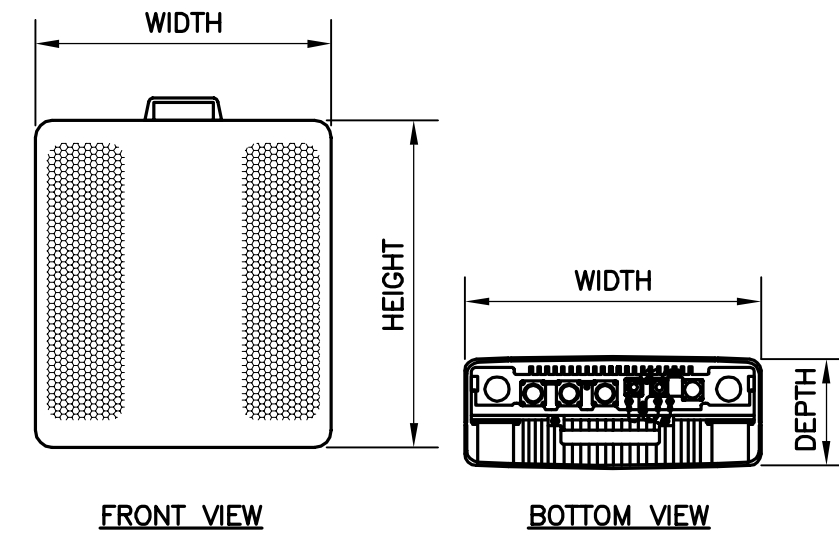
3 EXISTING ANTENNA SECTOR ELEVATION
SCALE: 1/4" = 1'-0"

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Sheet No. 5 of 9			



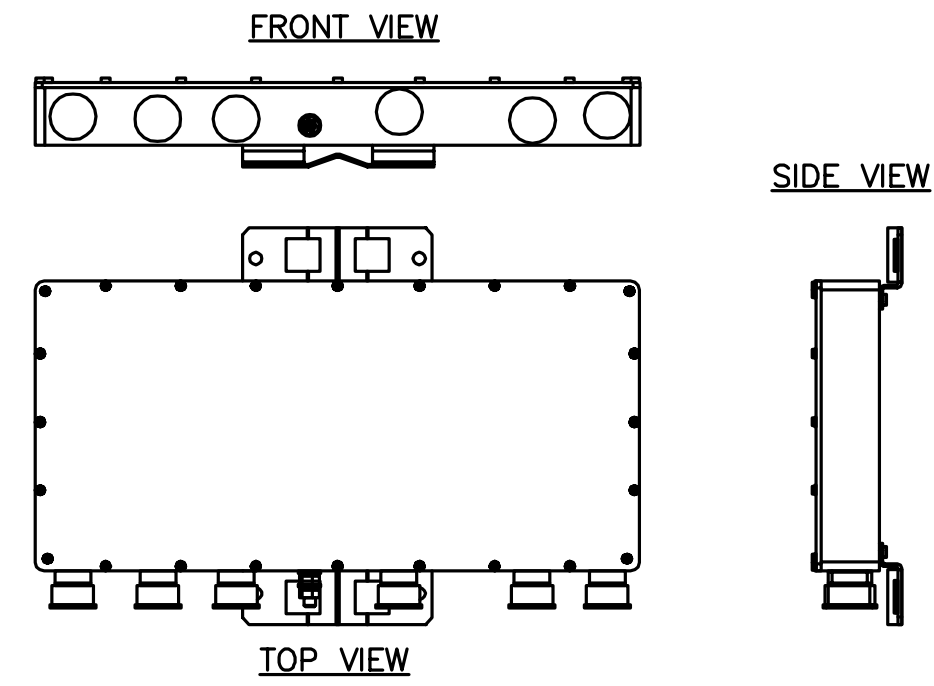
ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTEL MODEL: QS66512-2	72"H x 12"W x 9.6"D	111 LBS.

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



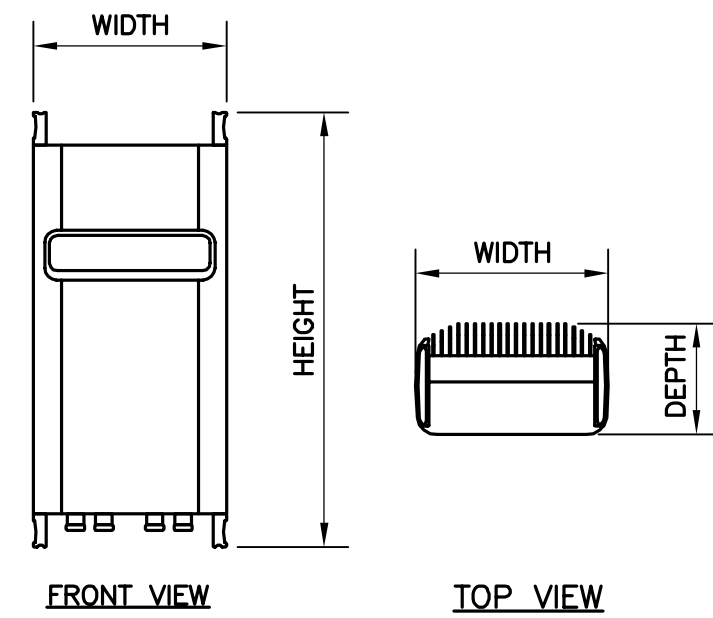
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

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



PENTAPLEXER		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: 5PX-0726-0	11.44"H x 17.44"W x 1.95"D	15.6 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

3 PENTAPLEXER DETAIL
SCALE: NONE



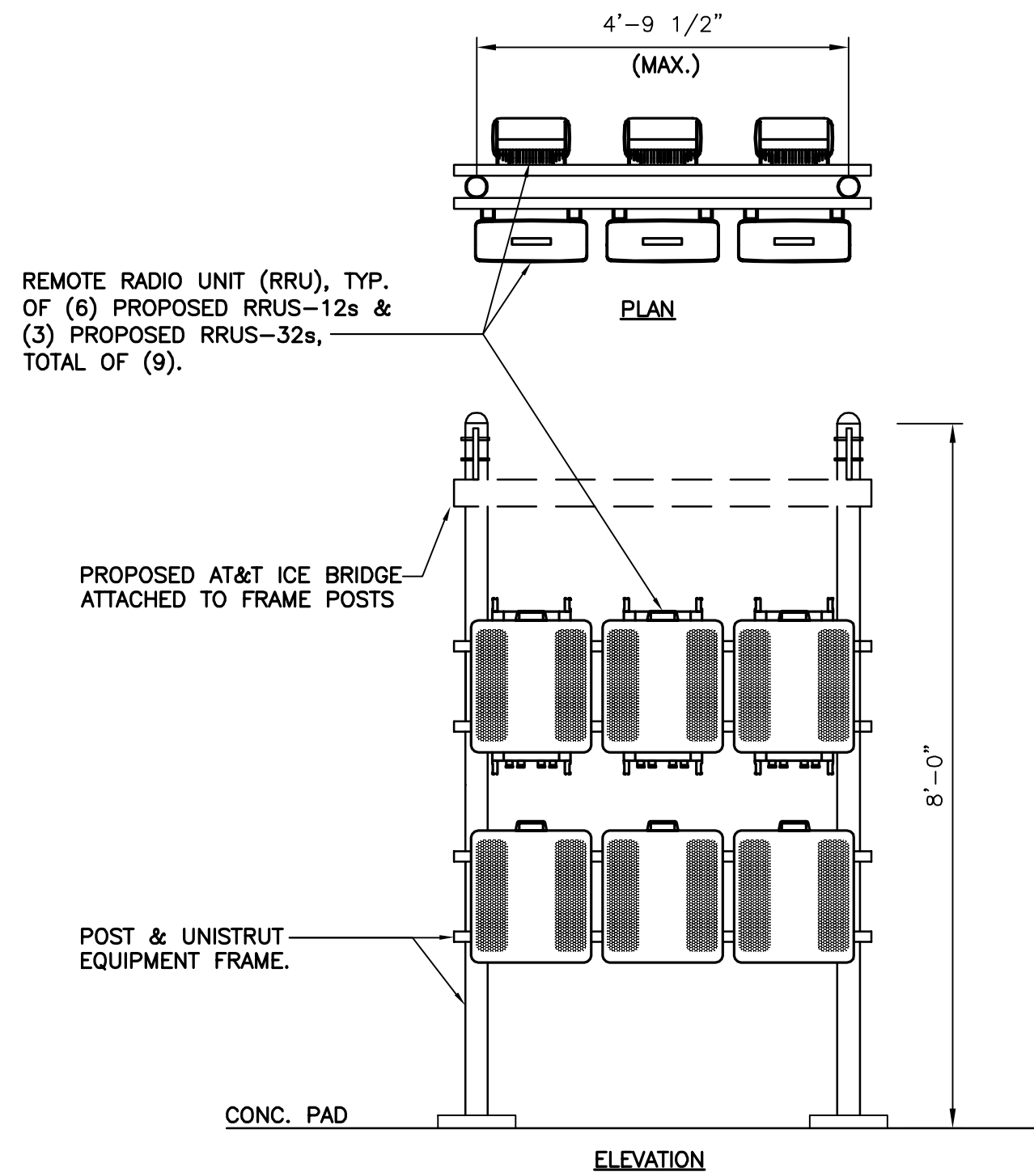
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.			

4 ERICSSON RRUS B2 DETAIL
SCALE: 1" = 1'-0"

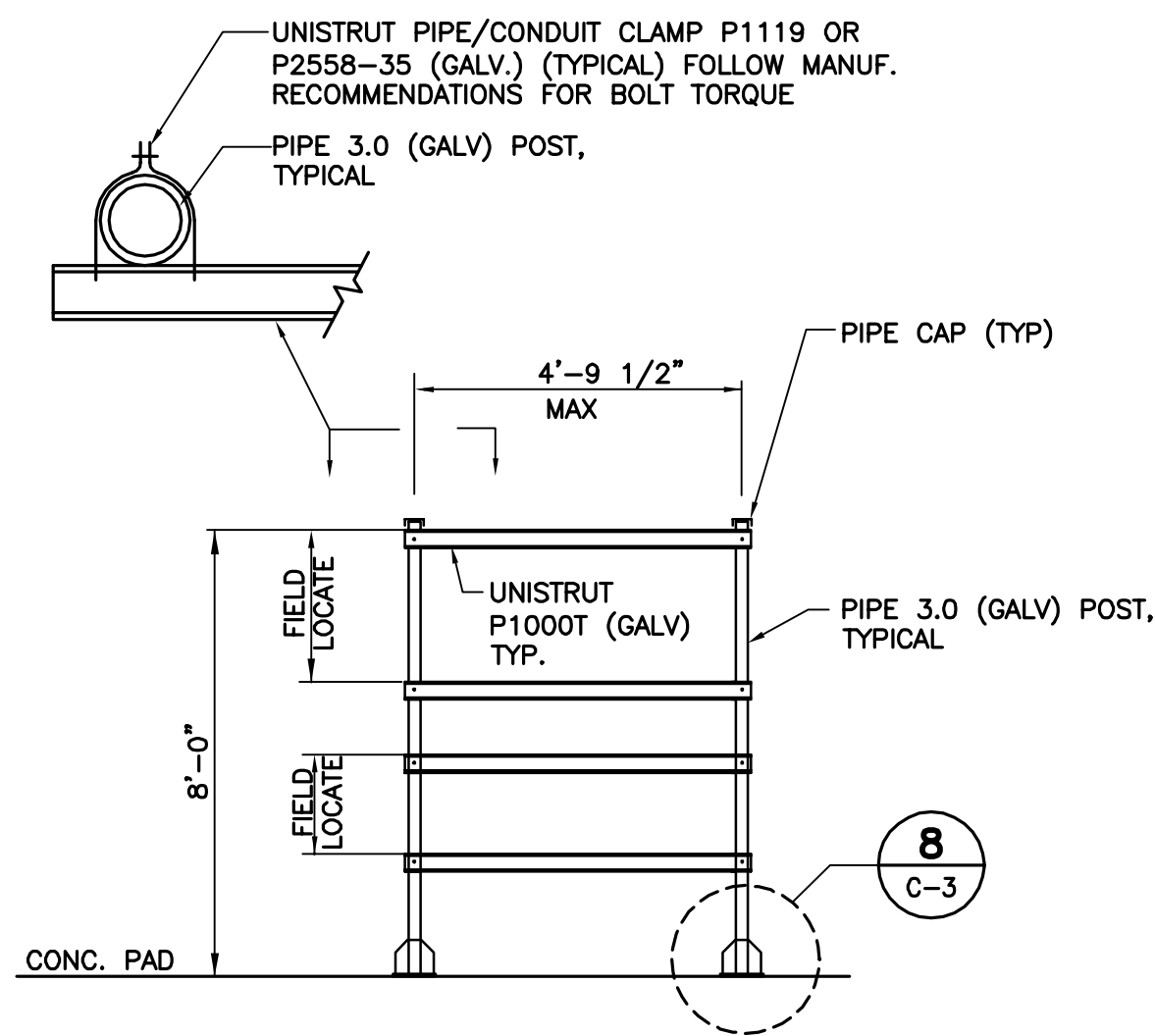


SURGE ARESSTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: COMMSCOPE MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

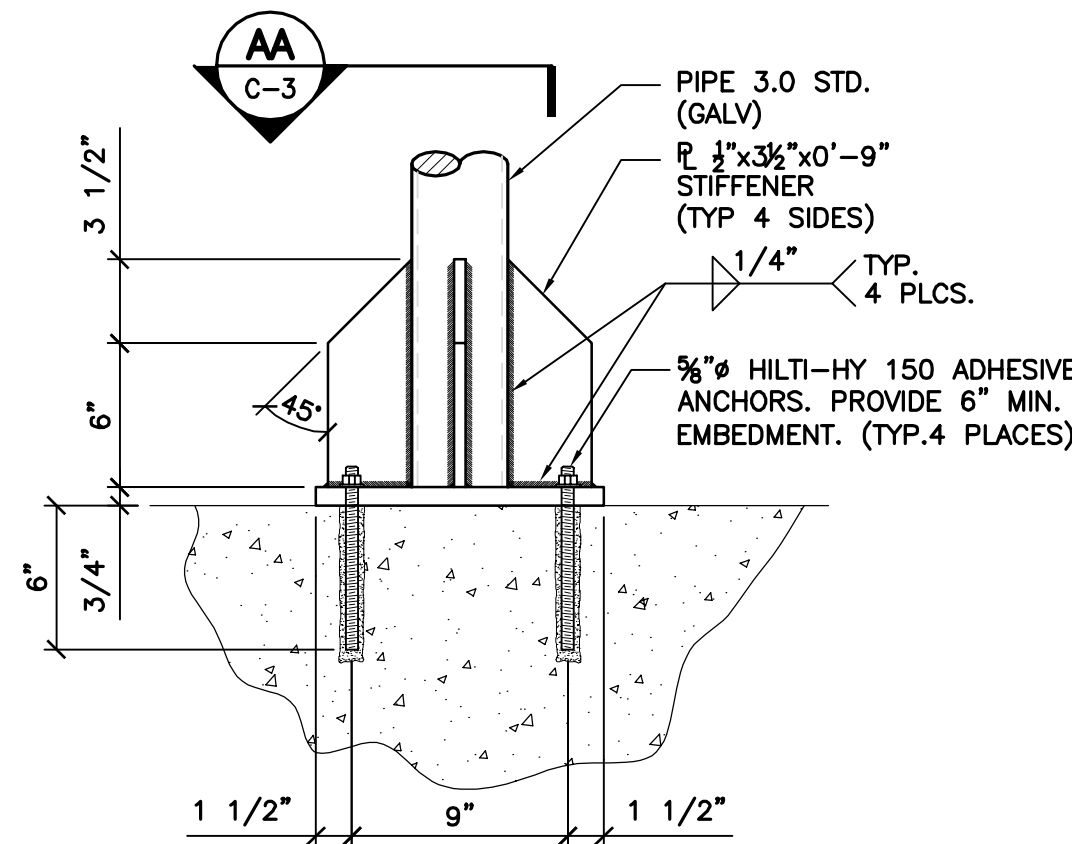
5 COMMSCOPE APTDC-BDFDM-DB DETAIL
SCALE: NOT TO SCALE



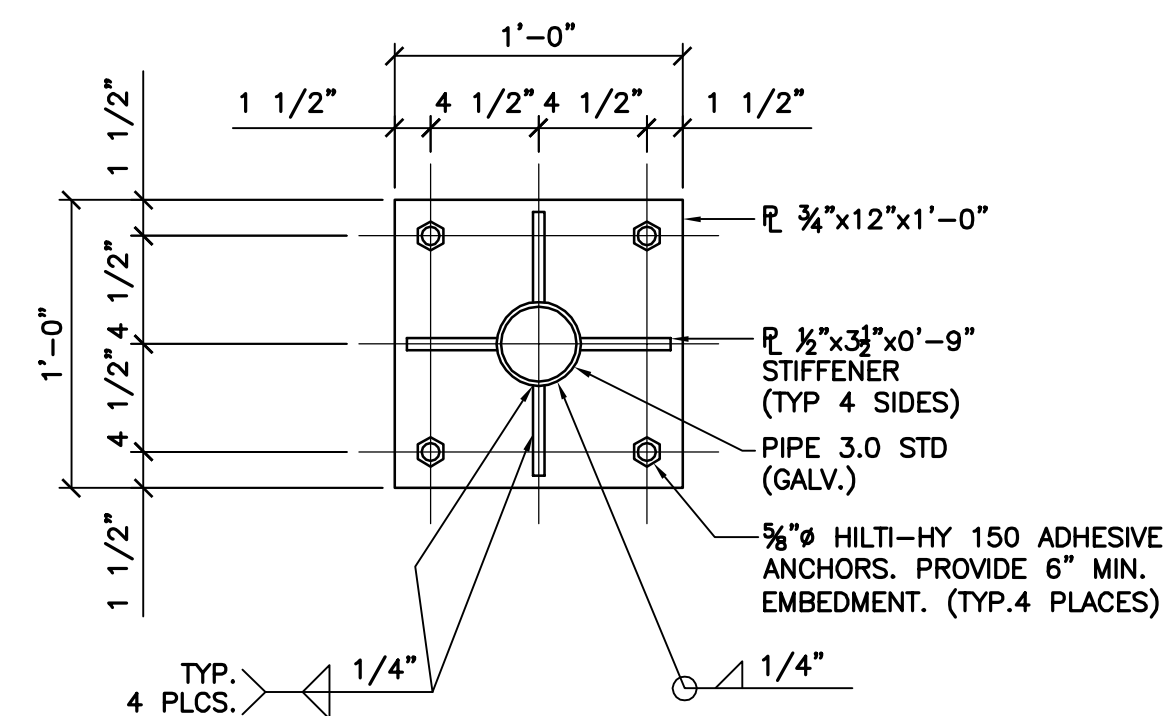
6 EQUIPMENT MOUNTING FRAME DETAIL
NOT TO SCALE



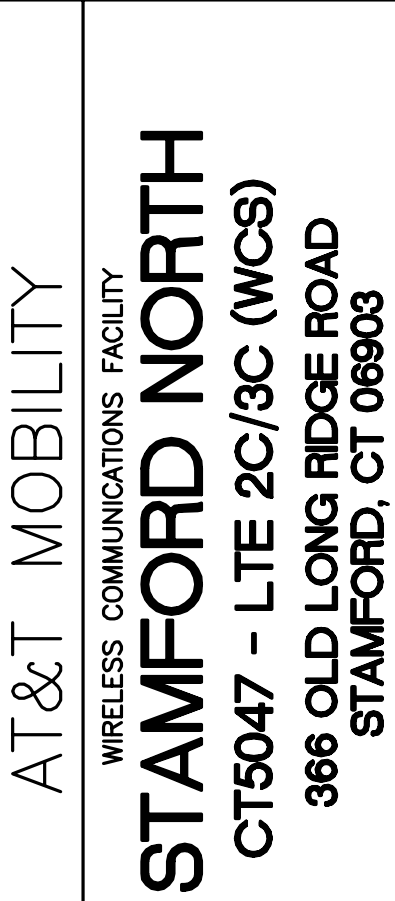
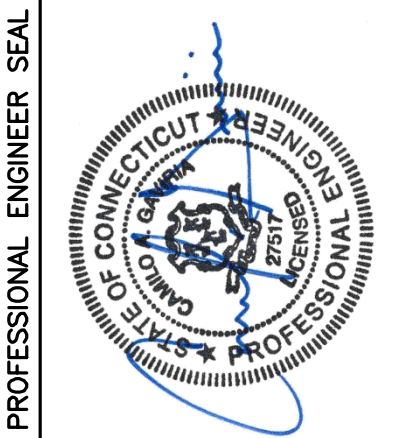
7 EQUIPMENT MOUNTING FRAME DETAIL
NOT TO SCALE



8 FRAME TO CONCRETE CONNECTION DETAIL
NOT TO SCALE



AA FRAME BASE PLATE PLAN DETAIL
NOT TO SCALE



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LTE 2C/3C (WCS)
EQUIPMENT
DETAILS

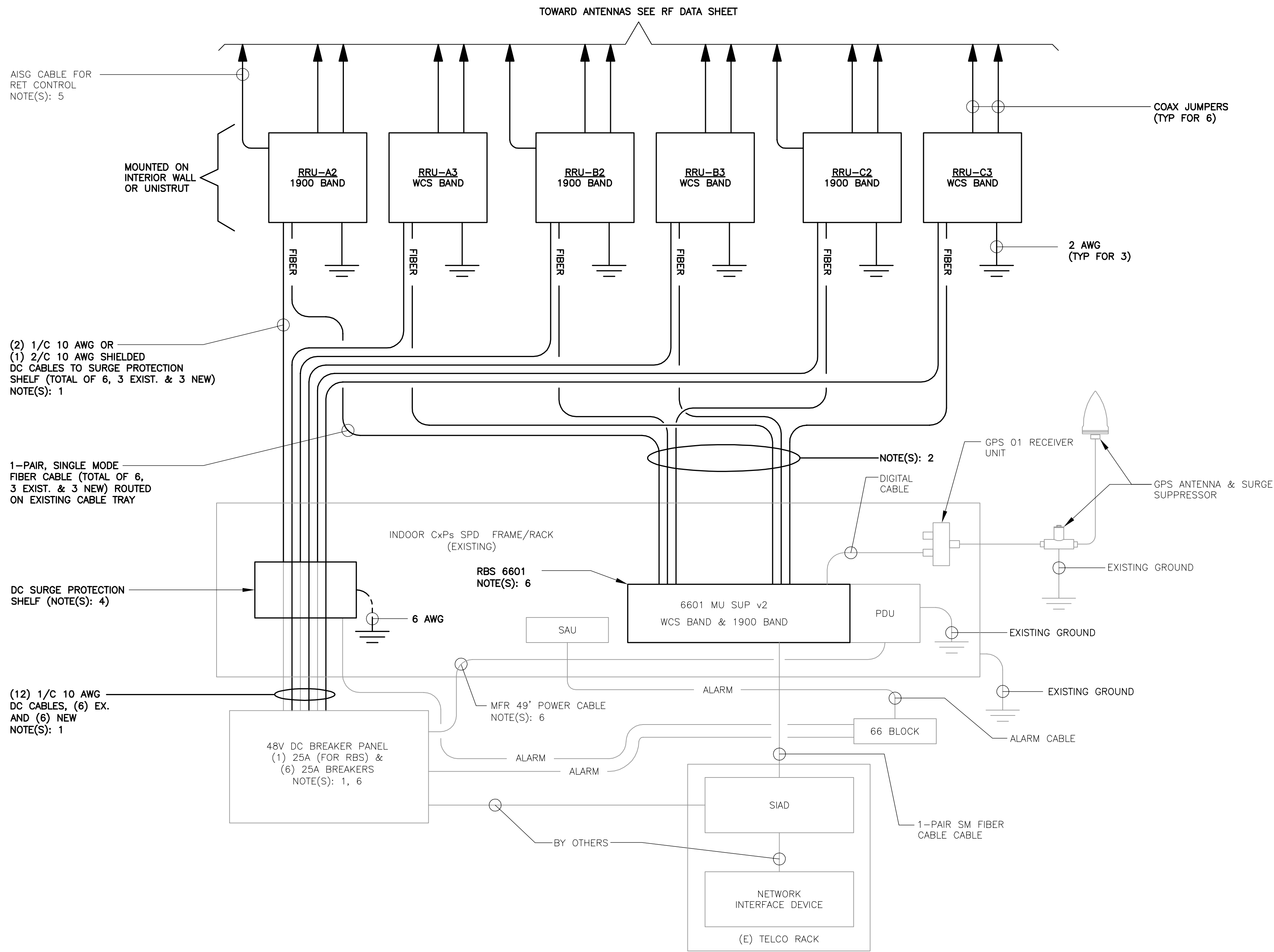
C-3
Sheet No. 6 of 9

1
E-1

LTE SCHEMATIC DIAGRAM
NOT TO SCALE

LTE SCHEMATIC DIAGRAM NOTES:

- BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
- LEAVE COILED AND PROTECTED UNTIL TERMINATED.
- DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
- DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
- FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
- SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
- CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
- SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194", COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/75°C WET INSTALLATION.
- GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
- FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
- RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
- RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.



ELECTRICAL NOTES

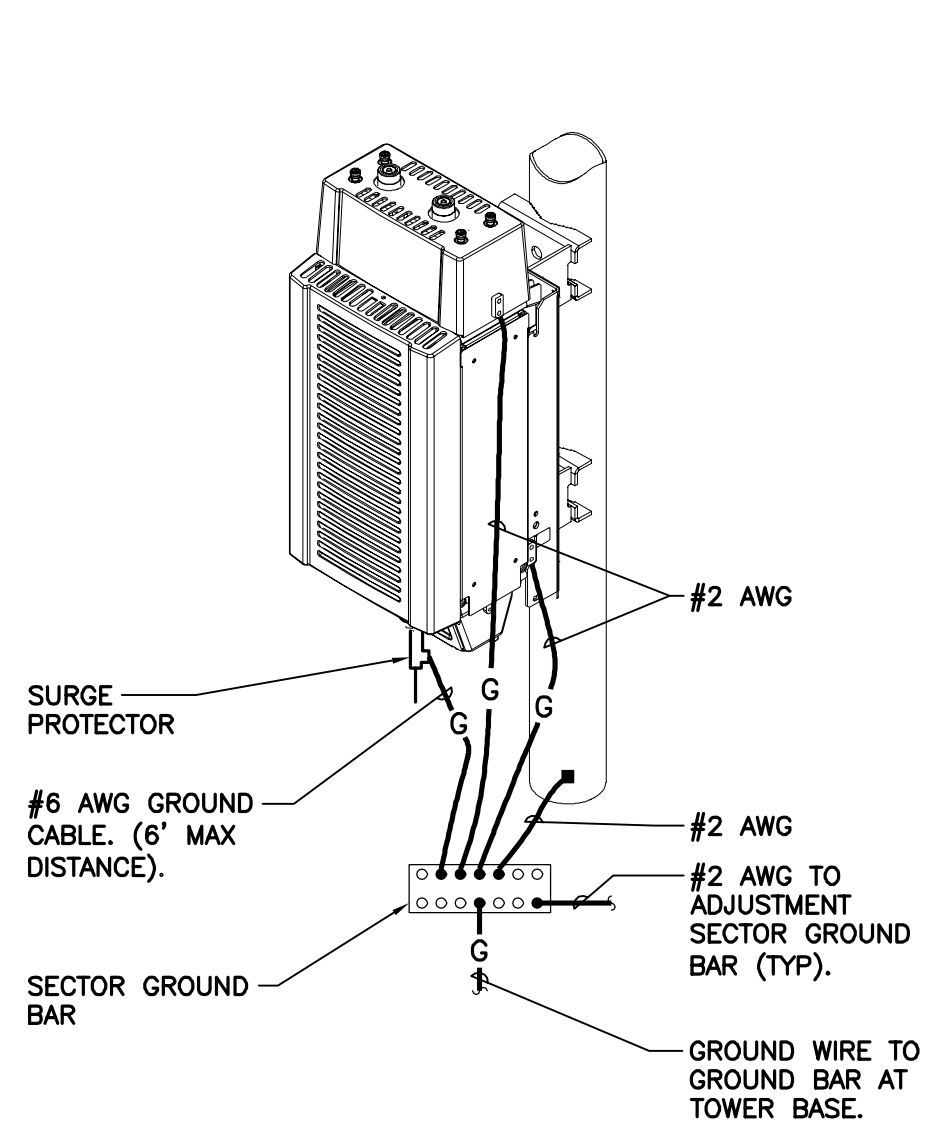
- PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S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

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

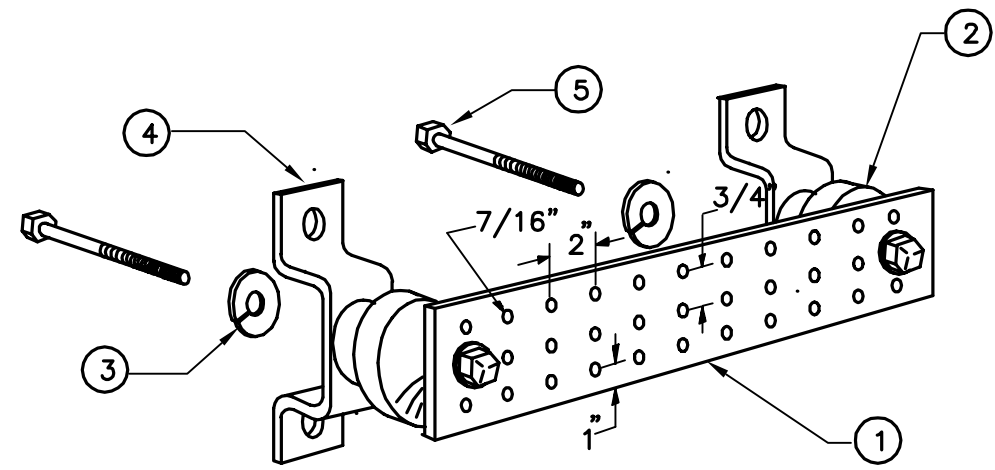
- CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:
TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.
THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:
 - TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
 - CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
 - GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.
- TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.
- THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.
- CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION	
CAG	DRAWN BY CHK'D BY DESCRIPTION
0	04/19/17 KAWUR DATE
REV.	
PROFESSIONAL ENGINEER SEAL	
(203) 488-0360 (203) 488-8387 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	
AT&T MOBILITY WIRELESS COMMUNICATIONS FACILITY STAMFORD NORTH CT5047 - LTE 2C/3C (WCS) 366 OLD LONG RIDGE ROAD STAMFORD, CT 06903	
DATE: 03/10/17	
SCALE: AS NOTED	
JOB NO. 16034.08	
LTE SCHEMATIC DIAGRAM AND NOTES	
E-1	
Sheet No. 7 of 9	

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



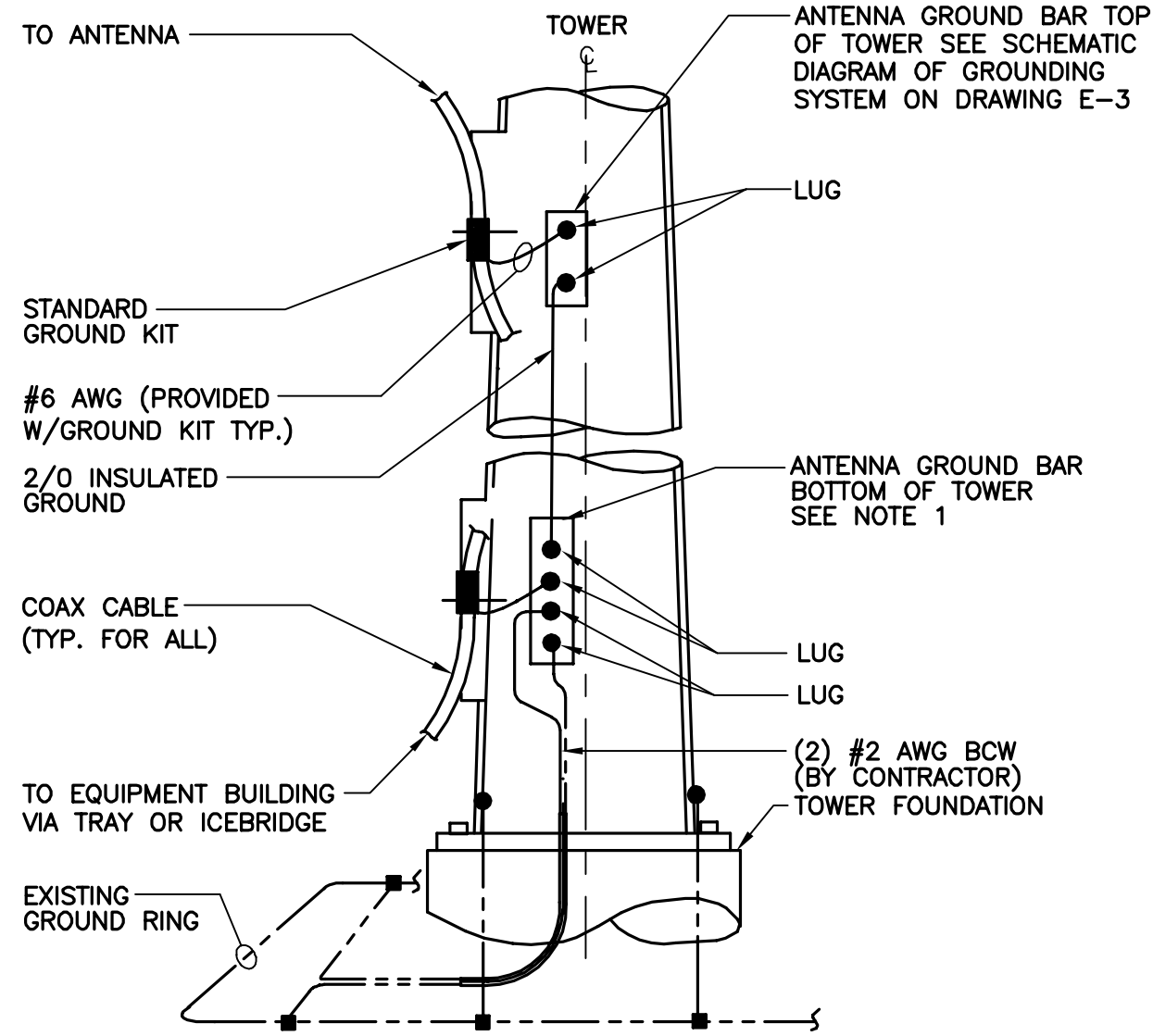
4 RRH POLE MOUNT GROUNDED
E-3 NOT TO SCALE



LEGEND

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

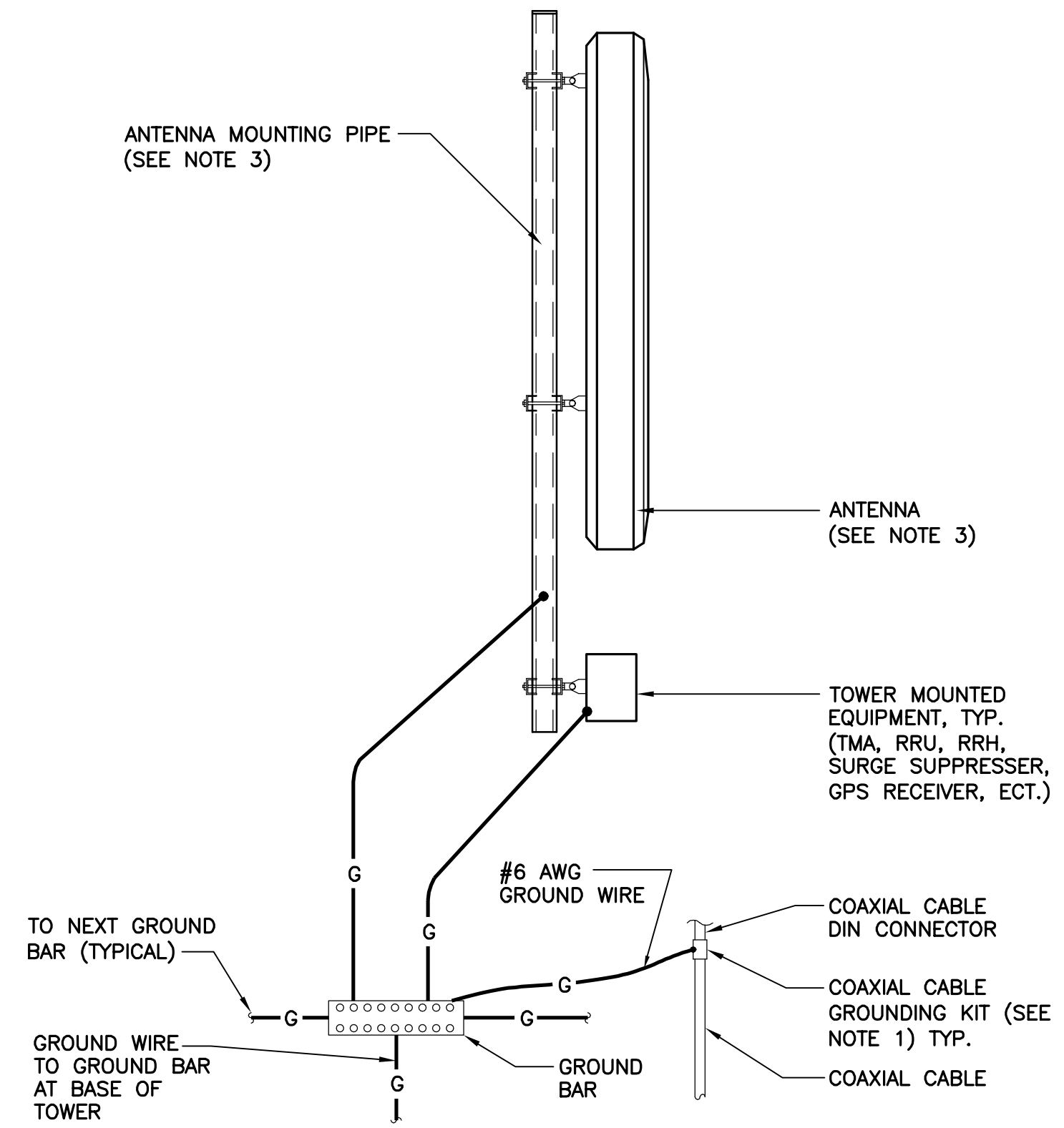
3 GROUND BAR DETAIL
E-3 NOT TO SCALE



NOTES:

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

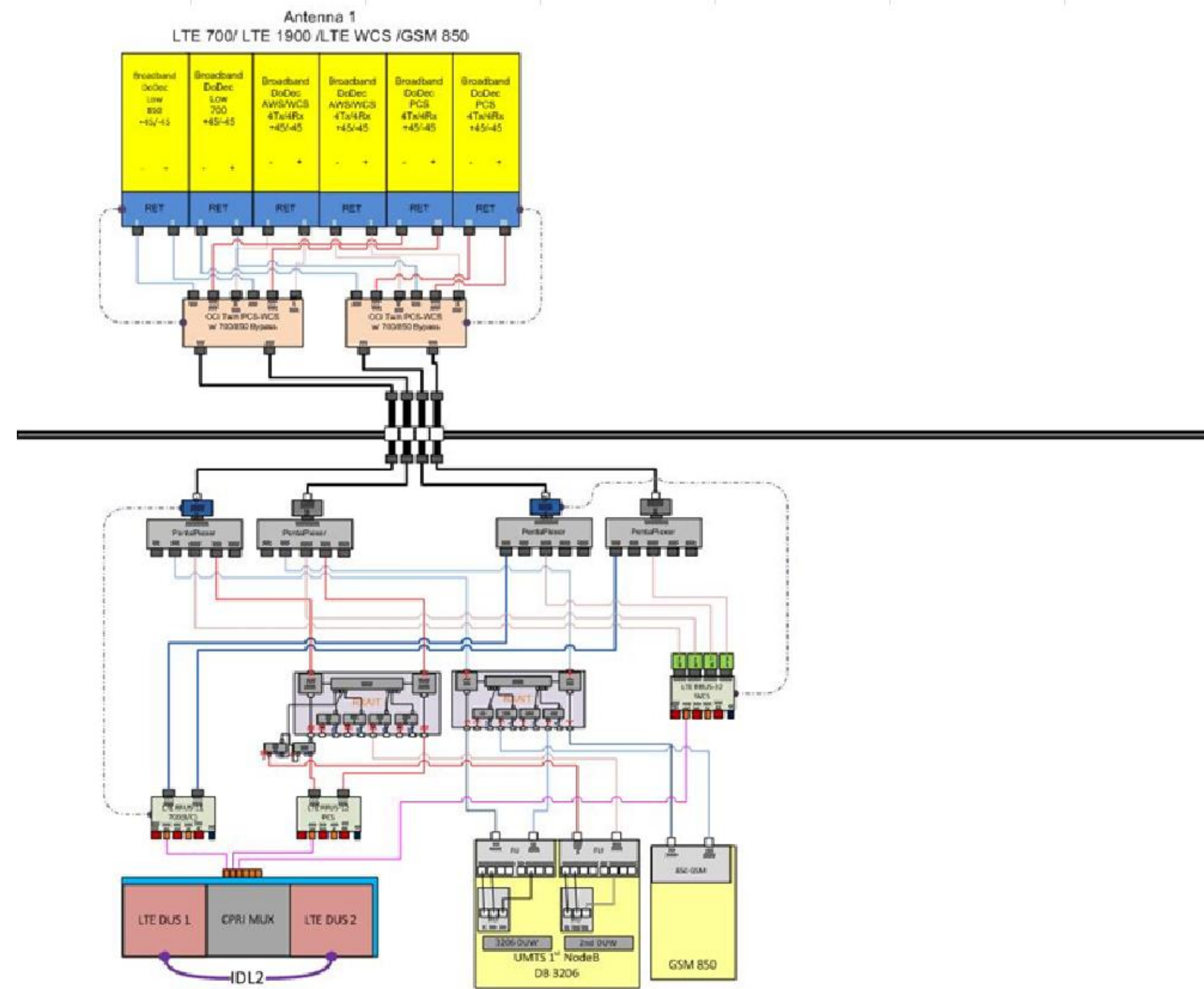
2 ANTENNA CABLE GROUNDED - TOWER
E-3 NOT TO SCALE



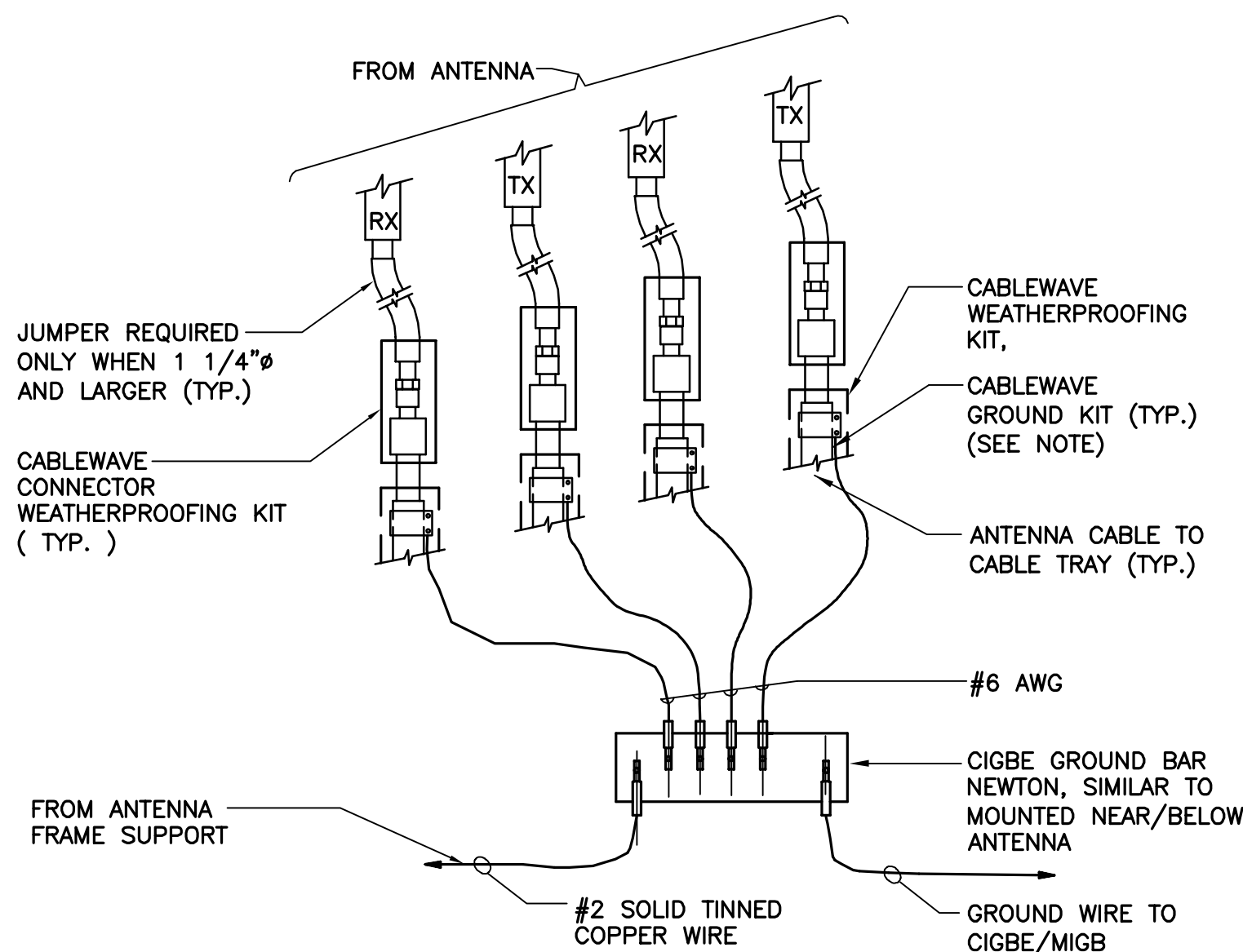
NOTES:

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

1 TYPICAL ANTENNA GROUNDED DETAIL
E-3 NOT TO SCALE



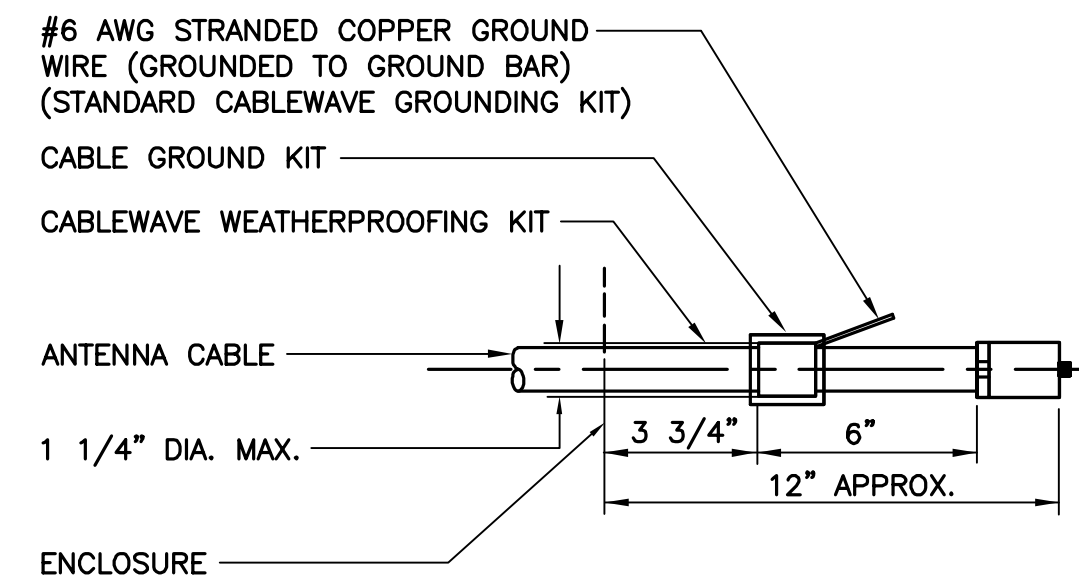
7 RF PLUMBING DIAGRAM
E-3 NOT TO SCALE



NOTE:

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

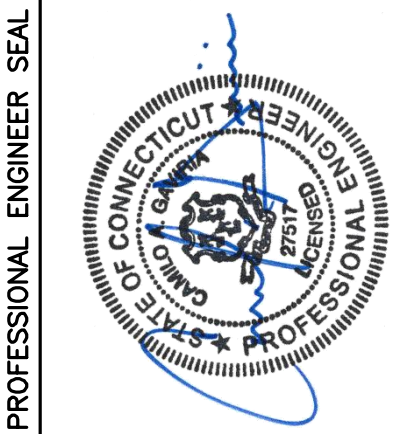
6 CONNECTION OF GROUND WIRES TO GROUND BAR
E-3 NOT TO SCALE



NOTE:

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

5 ANTENNA CABLE GROUNDED DETAIL
E-3 NOT TO SCALE



CENTEX engineering
Centered on Solutions™
(203) 488-0360
(203) 488-8387 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentexEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
STAMFORD NORTH
CT5047 - LTE 2C/3C (WCS)
366 OLD LONG RIDGE ROAD
STAMFORD, CT 06903

DATE: 03/10/17
SCALE: AS NOTED
JOB NO. 16034.08

TYPICAL
ELECTRICAL
DETAILS

E-3
Sheet No. 9 of 9

Structural Analysis Report

152-ft Existing ROHN Lattice Tower

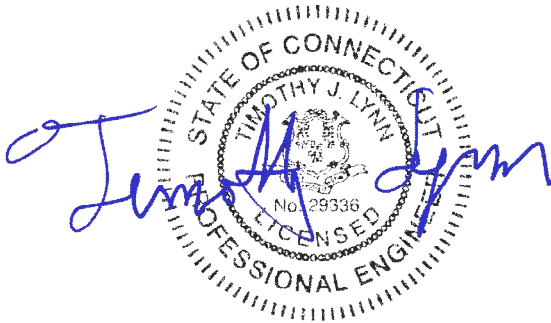
AT&T Mobility – LTE 3C

AT&T Site Ref: CT5047

*366 Old Long Ridge Road
Stamford, CT*

Centek Project No. 16034.08

Date: February 28, 2017



Prepared for:
AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

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- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
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- CONCLUSION

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Introduction

The purpose of this report is to summarize the results of the non-linear, P- Δ structural analysis of the antenna upgrade proposed by AT&T on the existing self-supporting lattice tower located in Stamford, Connecticut.

The host tower is a 152-ft, three legged, tapered steel lattice tower originally designed and manufactured by ROHN file # 24269DB dated May 16, 1989. The manufacturer's drawings and calculations were unavailable for use in this report. The existing tower geometry, structure member sizes, foundation information and tower/foundation reinforcements were obtained from a previous structural report prepared by URS job no. TMO-019/ EVR-001/ VZ5-193 June 16, 2016.

Antenna and appurtenance information were obtained from the aforementioned structural report, visual verification conducted from grade by Centek personnel on February 28, 2017 and an RF data sheet.

The tower consists of seven (7) tapered and one (1) straight vertical sections consisting of structural steel pipe legs conforming to ASTM A572 Gr. 50. Diagonal lateral support bracing consists of structural steel angle shapes conforming to ASTM A36. The vertical tower sections are connected by bolted flange plates while the pipe legs and bracing are connected by welded and bolted gusset connections. The width of the tower face is 6.52-ft at the top and 20.78-ft at the base.

Antenna and Appurtenance Summary

The existing, proposed and future loads considered in this analysis consist of the following:

- EVERSOURCE (Reserved):
Antenna: One (1) dbSpectra DS9A09F36D-N Omni-directional whip antenna and one (1) TTA mounted on one (1) 3-ft side arm to the top of the tower.
Coax Cable: Two (2) 1-5/8" and one (1) 1/2" $\varnothing$ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
Antenna: One (1) 12-ft Omni-directional whip antenna and one (1) filter box mounted on one (1) 3-ft side arm to the top of the tower.
Coax Cable: One (1) 7/8" and one (1) 1/2" $\varnothing$ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
Antenna: One (1) 4-ft $\varnothing$ Dish leg mounted with an elevation of 152-ft above grade.
Coax Cable: One (1) 1-5/8" $\varnothing$ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
Antenna: One (1) 4-ft $\varnothing$ Dish leg mounted with an elevation of 140-ft above grade.
Coax Cable: One (1) 1-5/8" $\varnothing$ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- **SPRINT (Existing):**
Antennas: Three (3) RFS APXVSP18-C panel antennas and six (6) remote radio heads mounted on three (3) boom-gates with a RAD center elevation of ± 128 -ft above the existing tower base.
Coax Cables: Three (3) 1-5/8" $\varnothing$ fiber cables running on the leg/face of the existing tower as specified within Section 3 of this report.
- **T-MOBILE (Reserved):**
Antennas: Three (3) Ericsson AIR32 panel antennas, three (3) Andrew LNX-6515DS panel antennas, three (3) RFS APX16DWV-16DWVS panel antennas, three (3) Ericsson RRUS-11 and three (3) Ericsson RRUS-32 mounted on three (3) V-frames with a RAD center elevation of ± 118 -ft above the existing tower base.
Coax Cables: Twelve (12) 1-5/8" $\varnothing$ coax cables and two (2) 1-1/4" $\varnothing$ fiber cables running on the leg/face of the existing tower as specified within Section 3 of this report.
- **EVERSOURCE (Reserved):**
Antenna: One (1) dbSpectra DS4F03C36D-N Omni-directional whip antenna mounted on one (1) 3-ft side arm with an elevation of 113-ft above grade level.
Coax Cable: Two (2) 1-5/8" $\varnothing$ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- **VERIZON (Existing):**
Antennas: Six (6) Andrew HBXX-6517DS panel antennas, two (2) Andrew LNX-8513DS panel antennas, four (4) Andrew LNX-6514DS panel antennas, three (3) RRH2x40-LTE remote radio heads, three (3) RRH2x60-AWS remote radio heads, three (3) RRH2x60-PCS remote radio heads and three (3) distribution boxes mounted on three (3) T-Frames with a RAD center elevation of ± 98 -ft above the existing tower base.
Coax Cables: Three (3) 1-5/8" $\varnothing$ fiber cables running on the leg/face of the existing tower as specified within Section 3 of this report.
- **UNKNOWN (Existing):**
Antenna: One (1) 8-ft dipole antenna mounted on one (1) 3-ft side arm with an elevation of 72.5-ft above grade.
Coax Cable: One (1) 7/8" $\varnothing$ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- **SPRINT (Existing):**
Antenna: One (1) GPS mounted on one (1) 3-ft side arm with an elevation of 58-ft above grade.
Coax Cable: One (1) 1/2" $\varnothing$ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- **AT&T (Existing to Remain):**
Antennas: Three (3) Kaelus TMA2117F00V1-1 TMAs mounted on three (3) SitePro USF-2U stand-off mounts with a RAD center elevation of ± 145 -ft above the existing tower base.
Coax Cables: Six (6) 1-5/8" $\varnothing$ coax cables running on the leg/face of the existing tower as specified within Section 3 of this report.

- AT&T (Existing to Remove):
Antennas: Three (3) Andrew SBNHH-1D65A panel antennas mounted on three (3) SitePro USF-2U stand-off mounts with a RAD center elevation of ± 145 -ft above the existing tower base.
- **AT&T (Proposed):**
Antennas: Three (3) Quintel QS66512-2 panel antennas and three (3) Kaelus TMA2117F00V1-1 TMAs mounted on three (3) SitePro USF-2U stand-off mounts with a RAD center elevation of ± 145 -ft above the existing tower base.
Coax Cables: Six (6) 1-5/8" $\varnothing$ coax cables running on the leg/face of the existing tower as specified within Section 3 of this report.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.

A n a l y s i s

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC¹ and the wind speed data available in the TIA-222-G-2005 Standard.

T o w e r L o a d i n g

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 0.75" radial ice on the tower structure and its components.

Basic Wind Speed:	Fairfield; v = 90-110 mph (3-second gust)	[Annex B of TIA-222-G-2005]
	Stamford; v = 93 mph (3 second gust)	[Appendix N of the 2016 CT Building Code]
Load Cases:	<u>Load Case 1</u> ; 93 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	[Appendix N of the 2016 CT Building Code]
	<u>Load Case 2</u> ; 50 mph wind speed w/ 0.75" radial ice plus gravity load – used in calculation of tower stresses.	[Annex B of TIA-222-G-2005]

¹ The 2012 International Building Code as amended by the 2016 Connecticut State Building Code (CSBC).

T o w e r C a p a c i t y

- Calculated stresses were found to be within allowable limits. In Load Case 2, per tnxTower "Section Capacity Table", this tower was found to be at **86.2%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T19)	0'-0" - 10'-0"	86.2%	PASS
Diagonal (T13)	50'-0" - 60'-0"	85.0%	PASS

F o u n d a t i o n a n d A n c h o r s

The existing foundation consists of three (3) 4.5-ft Ø x 21.0-ft long reinforced concrete caissons with (1) Willams 150 KSI all thread bar (R71-18) rock anchor per caisson. The sub-grade conditions used in the analysis of the existing foundation were obtained from the aforementioned URS structural report. The tower legs are connected to the three (3) reinforced concrete caissons by means of four (4) 1" Ø ASTM A193-B7 anchor bolts per leg embedded into the concrete foundation structure.

- The tower reactions developed from the governing Load Case 1 of the proposed reinforced tower condition were used in the verification of the foundation and anchor bolts:

Leg Reactions	Vector	Proposed Tower Reactions
Leg	Shear	26 kips
	Compression	208 kips
	Uplift	176 kips
Base	Shear	44 kips
	Compression	37 kips
	Moment	3527 kip-ft

- The anchor bolts were found to be within allowable limits.

Tower Section	Component	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Tension	92.1%	PASS

- The foundation was found to be within allowable limits.

Foundation Type	Design Limit	Limit/FS	Proposed Loading	Result
Reinforced Concrete Caisson w/ Rock Anchor (x3)	Compression	1.00	1.14	PASS
	Uplift	1.00 ⁽¹⁾	1.40	PASS

Note 1: Minimum required Factor of Safety (FS) of 1.0 required per TIA-222-G section 9.4

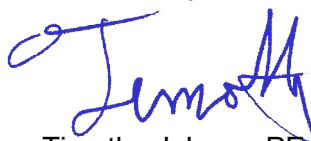
Conclusion

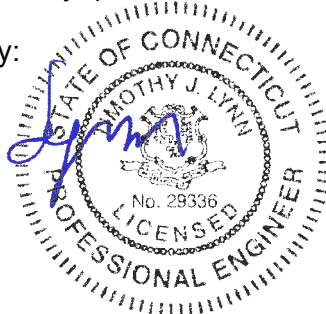
This analysis shows that the subject tower **is adequate** to support the proposed antenna configuration.

The analysis is based, in part, on the information provided to this office by AT&T. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:


 Timothy J. Lynn, PE
 Structural Engineer



*Standard Conditions for Furnishing of
Professional Engineering Services on
Existing Structures*

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

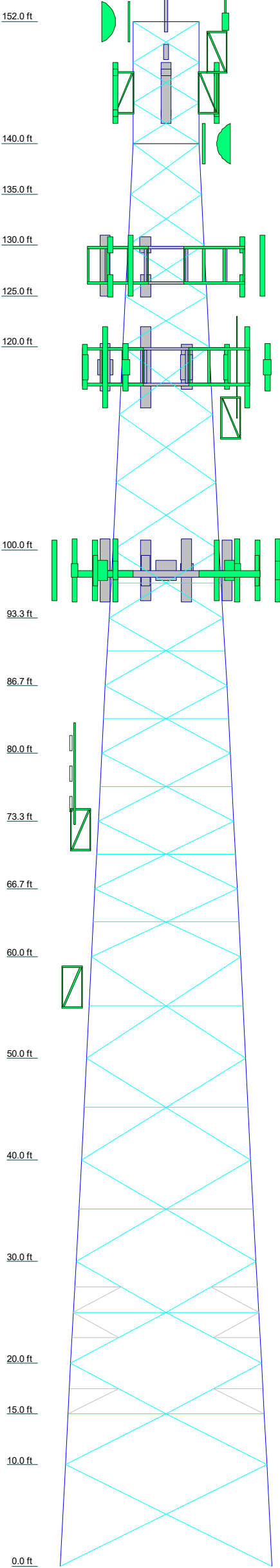
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

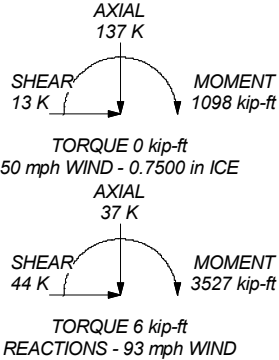
Section	T19	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1			
Legs	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars		A	ROHN 4 X-STR w/ 1/3 HSS5x0.25		ROHN 4 X-STR		ROHN 3 X-STR w/ 1/3 HSS4x0.25		ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3					ROHN 2.5 X-STR					ROHN 2.5 STD		
Leg Grade	A572-50																					
Diagonals	L3 1/2x3 1/2x5/16		L3 1/2x3 1/2x1/4		L3x3x5/16		L3x3x3/8		L3x3x1/4		L2 1/2x2 1/2x5/16		L2 1/2x2 1/2x1/4		L2x2x1/4		L1 1/2x1 1/2x3/16			L1 1/2x1 1/2x1/8		
Diagonal Grade	A36																					
Top Girts	N.A.																					
Horizontals	N.A.		B	N.A.	L3x3x1/4						L2 1/2x2 1/2x1/4		N.A.									
Sec. Horizontals	N.A.				L3x3x1/4						L2 1/2x2 1/2x1/4		N.A.									
Red. Horizontals	N.A.		L2x2x1/4								N.A.											
Red. Diagonals	N.A.		L2x2x1/4								N.A.											
Face Width (ft)	20.7813	19.7761	19.2734	18.7708	17.7343	16.6979	15.6979	14.6979	14	13.3021	12.6042	11.9236	11.2431	10.5625	8.5625	8.0625	7.5625	7.0625	6.5625	6.52083		
# Panels @ (ft)	1 @ 10		4 @ 5		3 @ 10		3 @ 10		9 @ 6.66667		0.7		0.7	0.7	1.1	0.2	0.2	0.2	0.2	3 @ 4		
Weight (K)	16.6	16	0.9	0.9	2.0	1.7	1.4	1.2	0.9	0.9	0.9	0.8	0.7	0.7	1.1	0.2	0.2	0.2	0.2	0.3		



ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 208 K
SHEAR: 26 K

UPLIFT: -176 K
SHEAR: 23 K



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DS9A09F36D-N (Eversource Reserved)	162	APX16DWV-16DWV-S-E-ACU (T-Mobile Reserved)	118
12' x 3" Dia Omni (Unknown Existing)	157	AIR32 (T-Mobile Reserved)	118
4"x4" Pipe Mount (Unknown Existing)	152	LNx-6515DS (T-Mobile Reserved)	118
Tower Top Amplifier (Eversource Reserved)	152	APX16DWV-16DWV-S-E-ACU (T-Mobile Reserved)	118
4-ft Dish (Unknown Existing)	152	AIR32 (T-Mobile Reserved)	118
ROHN 3-ft Side Arm (Unknown Existing)	149	LNx-6515DS (T-Mobile Reserved)	118
Filter Box (Unknown Existing)	149	DS4F03C36D-N (Eversource Reserved)	118
ROHN 3-ft Side Arm (Eversource Reserved)	149	APX16DWV-16DWV-S-E-ACU (T-Mobile Reserved)	118
TMA2117F00V1-1 (ATI Existing)	145	RRUS-11 (T-Mobile Reserved)	118
SitePro USF-2U Stand Off (ATI Existing)	145	ROHN 3-ft Side Arm (Eversource Reserved)	113
SitePro USF-2U Stand Off (ATI Existing)	145	RRH2x60-AWS (Verizon Existing)	98
QS66512-2 (ATI Proposed)	145	RRH2x60-AWS (Verizon Existing)	98
TMA2117F00V1-1 (ATI Proposed)	145	RRH2x60-AWS (Verizon Existing)	98
TMA2117F00V1-1 (ATI Existing)	145	RRH2x60-PCS (Verizon Existing)	98
QS66512-2 (ATI Proposed)	145	RRH2x60-PCS (Verizon Existing)	98
QS66512-2 (ATI Existing)	145	RRH2x60-PCS (Verizon Existing)	98
TMA2117F00V1-1 (ATI Proposed)	145	RRH2x60-PCS (Verizon Existing)	98
TMA2117F00V1-1 (ATI Existing)	145	RRH2x40-07-U (Verizon Existing)	98
TMA2117F00V1-1 (ATI Proposed)	145	RRH2x40-07-U (Verizon Existing)	98
4"x4" Pipe Mount (Unknown Existing)	140	RRH2x40-07-U (Verizon Existing)	98
4-ft Dish (Unknown Existing)	140	DB-T1-6Z-8AB-0Z (Verizon Existing)	98
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	128	DB-T1-6Z-8AB-0Z (Verizon Existing)	98
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	128	DB-T1-6Z-8AB-0Z (Verizon Existing)	98
APXVSP18-C-A20 (Sprint Existing)	128	13-ft T-Frame (Verizon Existing)	98
APXVSP18-C-A20 (Sprint Existing)	128	13-ft T-Frame (Verizon Existing)	98
APXVSP18-C-A20 (Sprint Existing)	128	13-ft T-Frame (Verizon Existing)	98
FD-RRH 4x45 1900 (Sprint Existing)	128	HBXX-6517DS (Verizon Existing)	98
FD-RRH 2x50 800 (Sprint Existing)	128	LNx-8513DS (Verizon Existing)	98
FD-RRH 2x50 800 (Sprint Existing)	128	HBXX-6517DS (Verizon Existing)	98
FD-RRH 2x50 800 (Sprint Existing)	128	LNx-8513DS (Verizon Existing)	98
FD-RRH 4x45 1900 (Sprint Existing)	128	HBXX-6517DS (Verizon Existing)	98
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	128	LNx-6514DS (Verizon Existing)	98
FD-RRH 4x45 1900 (Sprint Existing)	128	HBXX-6517DS (Verizon Existing)	98
RRUS-11 (T-Mobile Reserved)	118	LNx-6514DS (Verizon Existing)	98
RRUS-11 (T-Mobile Reserved)	118	HBXX-6517DS (Verizon Existing)	98
RRUS-32 (T-Mobile Reserved)	118	LNx-6514DS (Verizon Existing)	98
RRUS-32 (T-Mobile Reserved)	118	LNx-6514DS (Verizon Existing)	98
RRUS-32 (T-Mobile Reserved)	118	HBXX-6517DS (Verizon Existing)	98
Rohn 6' x 12' Boom Gate (1) (T-Mobile Reserved)	118	8' dipole antenna (Unknown Existing)	78
Rohn 6' x 12' Boom Gate (1) (T-Mobile Reserved)	118	ROHN 3-ft Side Arm (Unknown Existing)	72.5
AIR32 (T-Mobile Reserved)	118	GPS (Sprint Existing)	58
LNx-6515DS (T-Mobile Reserved)	118	ROHN 3-ft Side Arm (Sprint Existing)	57

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 5 STD. w/ 1/3 HSS6x0.25	B	L2 1/2x2 1/2x3/16

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

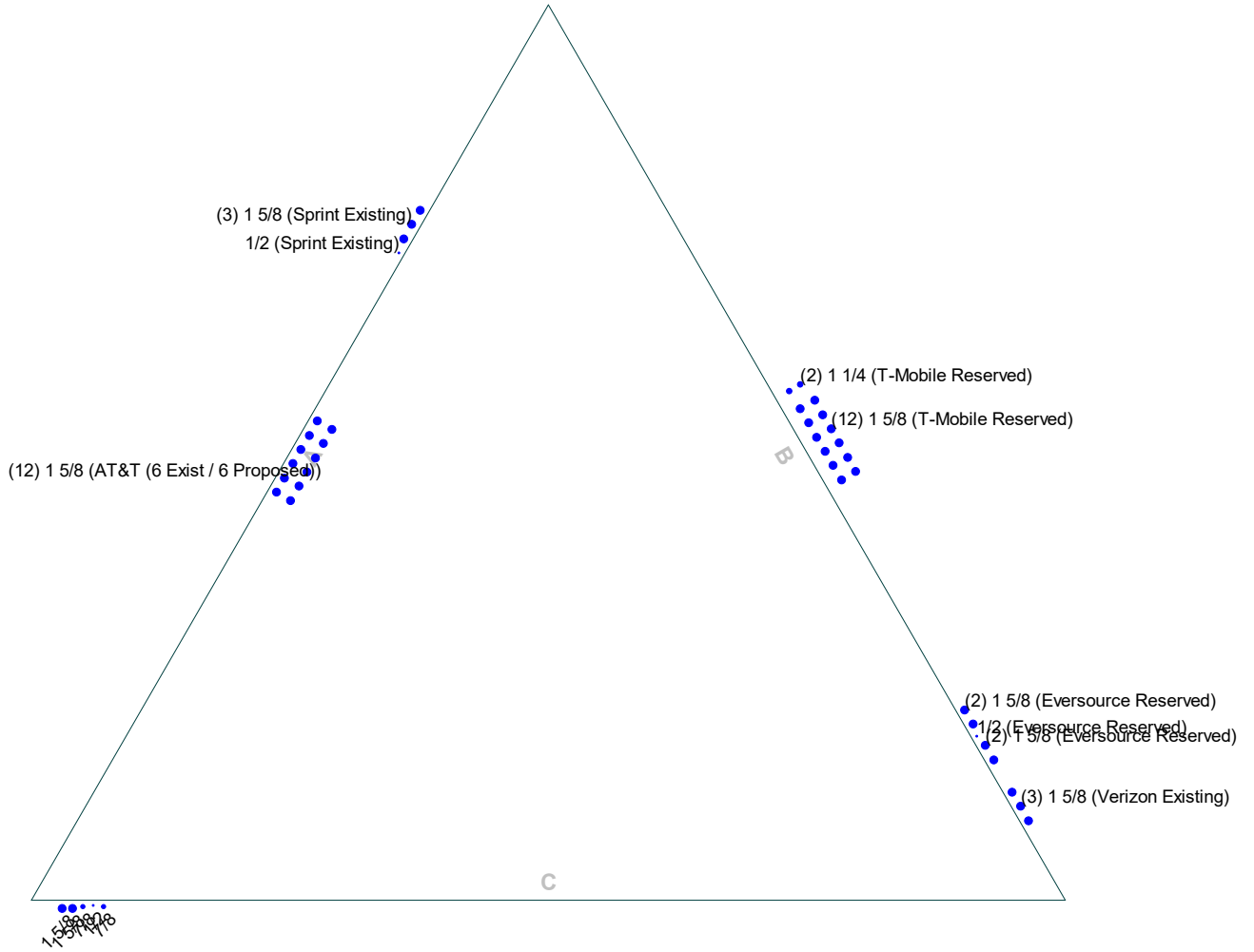
TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class III.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 86.2%

Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587			Job: 16034.08 - CT5047 Project: 152' Lattice Tower - 366 Longridge Road Stamford, CT Client: AT&T Mobility Code: TIA-222-G Path:			Drawn by: T.JL Date: 02/28/17 Scale: NTS Dwg No. E-1
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Feed Line Plan

Round Flat App In Face App Out Face



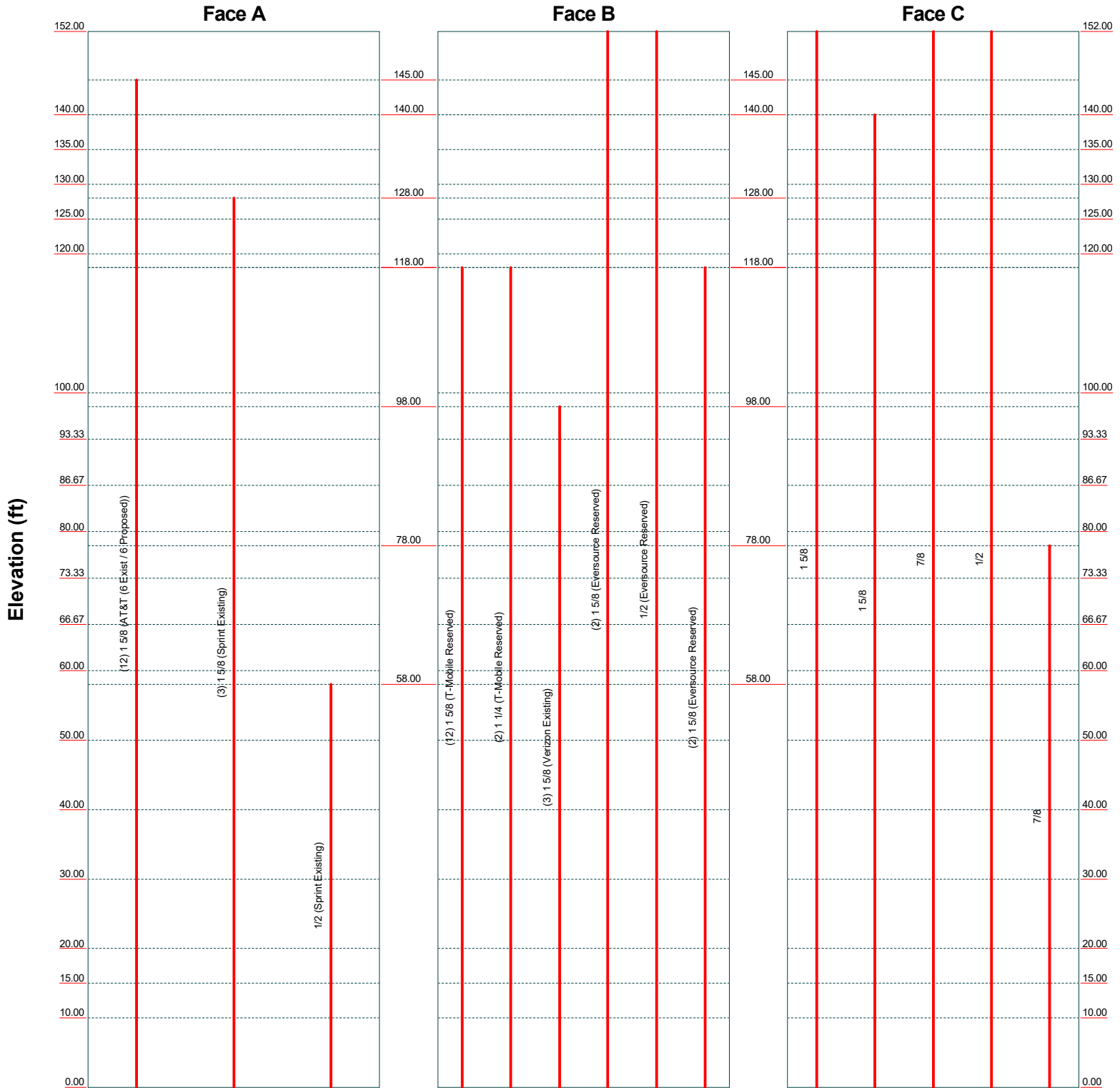
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 63-2 North Branford Rd.
 Branford, CT 06405
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 FAX: (203) 488-8587

Job:	16034.08 - CT5047		
Project:	152' Lattice Tower - 366 Longridge Road Stamford, CT		
Client:	AT&T Mobility	Drawn by:	TJL
Code:	TIA-222-G	Date:	02/28/17
Path:			Scale: NTS
			Dwg No. E-7

Feed Line Distribution Chart

0' - 152'

Round Flat App In Face App Out Face Truss Leg



Centek Engineering Inc.			Job: 16034.08 - CT5047		
63-2 North Branford Rd.			Project: 152' Lattice Tower - 366 Longridge Road Stamford, CT		
Branford, CT 06405			Client: AT&T Mobility	Drawn by: T.J.L.	App'd:
Phone: (203) 488-0580			Code: TIA-222-G	Date: 02/28/17	Scale: NTS
FAX: (203) 488-8587			Path:	Dwg No. E-7	

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Tower Input Data

The main tower is a 3x free standing tower with an overall height of 152.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 6.52 ft at the top and 20.78 ft at the base.

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

The following design criteria apply:

Basic wind speed of 93 mph.

Structure Class III.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

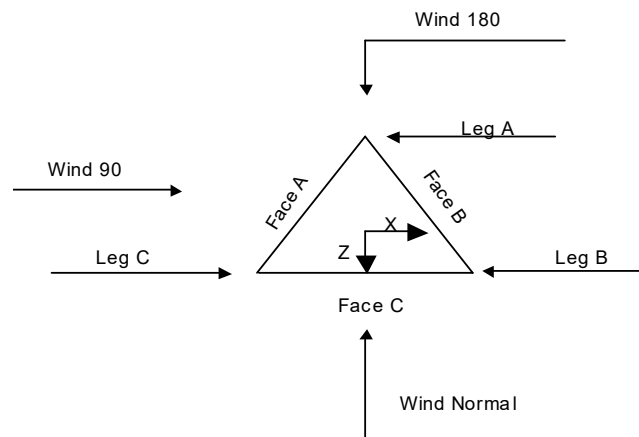
Stress ratio used in tower member design is 1.

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

Options

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

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Triangular Tower

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	152.00-140.00			6.52	1	12.00
T2	140.00-135.00			6.56	1	5.00
T3	135.00-130.00			7.06	1	5.00
T4	130.00-125.00			7.56	1	5.00
T5	125.00-120.00			8.06	1	5.00
T6	120.00-100.00			8.56	1	20.00
T7	100.00-93.33			10.56	1	6.67
T8	93.33-86.67			11.24	1	6.67
T9	86.67-80.00			11.92	1	6.67
T10	80.00-73.33			12.60	1	6.67
T11	73.33-66.67			13.30	1	6.67
T12	66.67-60.00			14.00	1	6.67
T13	60.00-50.00			14.70	1	10.00
T14	50.00-40.00			15.70	1	10.00
T15	40.00-30.00			16.70	1	10.00
T16	30.00-20.00			17.73	1	10.00
T17	20.00-15.00			18.77	1	5.00
T18	15.00-10.00			19.27	1	5.00
T19	10.00-0.00			19.78	1	10.00

Tower Section Geometry (cont'd)

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	152.00-140.00	4.00	X Brace	No	No	0.0000	0.0000
T2	140.00-135.00	5.00	X Brace	No	No	0.0000	0.0000
T3	135.00-130.00	5.00	X Brace	No	No	0.0000	0.0000
T4	130.00-125.00	5.00	X Brace	No	No	0.0000	0.0000
T5	125.00-120.00	5.00	X Brace	No	No	0.0000	0.0000
T6	120.00-100.00	6.67	X Brace	No	No	0.0000	0.0000
T7	100.00-93.33	6.67	X Brace	No	Yes	0.0000	0.0000
T8	93.33-86.67	6.67	X Brace	No	Yes	0.0000	0.0000
T9	86.67-80.00	6.67	X Brace	No	Yes	0.0000	0.0000
T10	80.00-73.33	6.67	X Brace	No	Yes	0.0000	0.0000
T11	73.33-66.67	6.67	X Brace	No	Yes	0.0000	0.0000
T12	66.67-60.00	6.67	X Brace	No	Yes	0.0000	0.0000
T13	60.00-50.00	10.00	X Brace	No	Yes	0.0000	0.0000
T14	50.00-40.00	10.00	X Brace	No	Yes	0.0000	0.0000
T15	40.00-30.00	10.00	X Brace	No	Yes	0.0000	0.0000
T16	30.00-20.00	5.00	Double K1	No	Yes	0.0000	0.0000
T17	20.00-15.00	5.00	K1 Up	No	Yes	0.0000	0.0000
T18	15.00-10.00	5.00	K Brace Down	No	Yes	0.0000	0.0000
T19	10.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 152.00-140.00	Pipe	ROHN 2 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T2 140.00-135.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 135.00-130.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 130.00-125.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/4	A36 (36 ksi)
T5 125.00-120.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/4	A36 (36 ksi)
T6 120.00-100.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T7 100.00-93.33	Arbitrary Shape	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T8 93.33-86.67	Arbitrary Shape	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T9 86.67-80.00	Arbitrary Shape	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T10 80.00-73.33	Arbitrary Shape	ROHN 3 X-STR w/ 1/3 HSS4x0.25	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T11 73.33-66.67	Arbitrary Shape	ROHN 3 X-STR w/ 1/3 HSS4x0.25	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T12 66.67-60.00	Arbitrary Shape	ROHN 3 X-STR w/ 1/3 HSS4x0.25	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T13 60.00-50.00	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T14 50.00-40.00	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T15 40.00-30.00	Arbitrary Shape	ROHN 4 X-STR w/ 1/3 HSS5x0.25	A572-50 (50 ksi)	Equal Angle	L3x3x3/8	A36 (36 ksi)
T16 30.00-20.00	Arbitrary Shape	ROHN 4 X-STR w/ 1/3 HSS5x0.25	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)

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<i>Tower Elevation ft</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
T17 20.00-15.00	Arbitrary Shape	ROHN 5 STD. w/ 1/3 HSS6x0.25	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T18 15.00-10.00	Arbitrary Shape	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T19 10.00-0.00	Arbitrary Shape	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 152.00-140.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T2 140.00-135.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T16 30.00-20.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T17 20.00-15.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T18 15.00-10.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
T7 100.00-93.33	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 93.33-86.67	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T9 86.67-80.00	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T10 80.00-73.33	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T11 73.33-66.67	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T12 66.67-60.00	Equal Angle	L2 1/2x2 1/2x1/4	A36	Equal Angle		A36

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Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
T13 60.00-50.00	Equal Angle	L2 1/2x2 1/2x1/4	(36 ksi) A36	Equal Angle		(36 ksi) A36
T14 50.00-40.00	Equal Angle	L3x3x1/4	(36 ksi) A36	Equal Angle		(36 ksi) A36
T15 40.00-30.00	Equal Angle	L3x3x1/4	(36 ksi) A36	Equal Angle		(36 ksi) A36

Tower Section Geometry (cont'd)

Tower Elevation	Redundant Bracing Grade	Redundant Type	Redundant Size	K Factor
ft				
T16 30.00-20.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Single Angle Single Angle	L2x2x1/4 L2x2x1/4
T17 20.00-15.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Single Angle Single Angle	L2x2x1/4 L2x2x1/4

Tower Section Geometry (cont'd)

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
T1 152.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 140.00-135.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 135.00-130.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 130.00-125.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 125.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 100.00-93.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 93.33-86.67	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 86.67-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 80.00-73.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 73.33-66.67	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 66.67-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 60.00-50.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

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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 in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
T14	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
50.00-40.00			(36 ksi)						
T15	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
40.00-30.00			(36 ksi)						
T16	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
30.00-20.00			(36 ksi)						
T17	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
20.00-15.00			(36 ksi)						
T18	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
15.00-10.00			(36 ksi)						
T19 10.00-0.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
ft										
T1	Yes	Yes	1	1	1	1	1	1	1	1
152.00-140.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
140.00-135.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
135.00-130.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
130.00-125.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
125.00-120.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
100.00-93.33				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
93.33-86.67				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
86.67-80.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
80.00-73.33				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
73.33-66.67				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
66.67-60.00				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
60.00-50.00				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
50.00-40.00				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
40.00-30.00				1	1	1	1	1	1	1
T16	Yes	Yes	1	1	1	1	1	1	1	1
30.00-20.00				1	1	1	1	1	1	1
T17	Yes	Yes	1	1	1	1	1	1	1	1
20.00-15.00				1	1	1	1	1	1	1

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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 152.00-140.00	Flange	0.0000 A325N	0	0.5000 A325N	1	0.5000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T2 140.00-135.00	Flange	0.6250 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T3 135.00-130.00	Flange	0.0000 A325N	0	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T4 130.00-125.00	Flange	0.0000 A325N	0	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T5 125.00-120.00	Flange	0.0000 A325N	0	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T6 120.00-100.00	Flange	0.6250 A325N	4	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T7 100.00-93.33	Flange	0.7500 A325N	4	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T8 93.33-86.67	Flange	0.0000 A325N	0	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T9 86.67-80.00	Flange	0.0000 A325N	0	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T10 80.00-73.33	Flange	0.8750 A325N	4	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.0000 A325N	0
T11 73.33-66.67	Flange	0.0000 A325N	0	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T12 66.67-60.00	Flange	0.0000 A325N	0	0.5000 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T13 60.00-50.00	Flange	0.8750 A325N	4	0.6250 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.0000 A325N	0	0.0000 A325N	0
T14 50.00-40.00	Flange	0.0000 A325N	0	0.6250 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.0000 A325N	0	0.5000 A325N	2
T15 40.00-30.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.0000 A325N	0	0.5000 A325N	2
T16 30.00-20.00	Flange	0.0000 A325N	0	0.6250 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.5000 A325N	2	0.0000 A325N	0
T17 20.00-15.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.0000 A325N	0	0.0000 A325N	0
T18 15.00-10.00	Flange	0.0000 A325N	0	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.6250 A325N	1	0.0000 A325N	0
T19 10.00-0.00	Flange	0.0000 A325N	0	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325X	0	0.0000 A325N	0	0.0000 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8	C	No	Ar (CaAa)	152.00 - 0.00	1.0000	0.47	1	1	1.9800	1.9800		1.04
1 5/8	C	No	Ar (CaAa)	140.00 - 0.00	1.0000	0.46	1	1	1.9800	1.9800		1.04
7/8	C	No	Ar (CaAa)	152.00 - 0.00	1.0000	0.45	1	1	1.1100	1.1100		0.54
1/2	C	No	Ar (CaAa)	152.00 - 0.00	1.0000	0.44	1	1	0.5800	0.5800		0.25
7/8	C	No	Ar (CaAa)	78.00 - 0.00	1.0000	0.43	1	1	1.1100	1.1100		0.54
1 5/8	A	No	Ar (CaAa)	145.00 - 0.00	-5.0000	0	12	6	1.9800	1.9800		1.04

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
(AT&T (6 Exist / 6 Proposed))												
1 5/8 (Sprint Existing)	A	No	Ar (CaAa)	128.00 - 0.00	1.0000	0.25	3	3	1.9800	1.9800		1.04
1/2 (Sprint Existing)	A	No	Ar (CaAa)	58.00 - 0.00	1.0000	0.22	1	1	0.5800	0.5800		0.25
1 5/8 (T-Mobile Reserved)	B	No	Ar (CaAa)	118.00 - 0.00	3.0000	0	12	6	1.9800	1.9800		1.04
1 1/4 (T-Mobile Reserved)	B	No	Ar (CaAa)	118.00 - 0.00	3.0000	-0.06	2	1	1.5500	1.5500		0.66
1 5/8 (Verizon Existing)	B	No	Ar (CaAa)	98.00 - 0.00	1.0000	0.4	3	3	1.9800	1.9800		1.04
1 5/8 (Eversource Reserved)	B	No	Ar (CaAa)	152.00 - 0.00	1.0000	0.34	2	2	1.9800	1.9800		1.04
1/2 (Eversource Reserved)	B	No	Ar (CaAa)	152.00 - 0.00	1.0000	0.32	1	1	0.5800	0.5800		0.25
1 5/8 (Eversource Reserved)	B	No	Ar (CaAa)	118.00 - 0.00	1.0000	0.3	2	2	1.9800	1.9800		1.04

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	152.00-140.00	A	0.000	0.000	11.880	0.000	0.06
		B	0.000	0.000	5.448	0.000	0.03
		C	0.000	0.000	4.404	0.000	0.02
T2	140.00-135.00	A	0.000	0.000	11.880	0.000	0.06
		B	0.000	0.000	2.270	0.000	0.01
		C	0.000	0.000	2.825	0.000	0.01
T3	135.00-130.00	A	0.000	0.000	11.880	0.000	0.06
		B	0.000	0.000	2.270	0.000	0.01
		C	0.000	0.000	2.825	0.000	0.01
T4	130.00-125.00	A	0.000	0.000	13.662	0.000	0.07
		B	0.000	0.000	2.270	0.000	0.01
		C	0.000	0.000	2.825	0.000	0.01
T5	125.00-120.00	A	0.000	0.000	14.850	0.000	0.08
		B	0.000	0.000	2.270	0.000	0.01
		C	0.000	0.000	2.825	0.000	0.01
T6	120.00-100.00	A	0.000	0.000	59.400	0.000	0.31
		B	0.000	0.000	64.556	0.000	0.33
		C	0.000	0.000	11.300	0.000	0.06
T7	100.00-93.33	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	26.345	0.000	0.14
		C	0.000	0.000	3.767	0.000	0.02
T8	93.33-86.67	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	27.533	0.000	0.14
		C	0.000	0.000	3.767	0.000	0.02

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_AA_A</i> <i>In Face ft²</i>	<i>C_AA_A</i> <i>Out Face ft²</i>	<i>Weight</i> <i>K</i>
T9	86.67-80.00	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	27.533	0.000	0.14
		C	0.000	0.000	3.767	0.000	0.02
T10	80.00-73.33	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	27.533	0.000	0.14
		C	0.000	0.000	4.285	0.000	0.02
T11	73.33-66.67	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	27.533	0.000	0.14
		C	0.000	0.000	4.507	0.000	0.02
T12	66.67-60.00	A	0.000	0.000	19.800	0.000	0.10
		B	0.000	0.000	27.533	0.000	0.14
		C	0.000	0.000	4.507	0.000	0.02
T13	60.00-50.00	A	0.000	0.000	30.164	0.000	0.16
		B	0.000	0.000	41.300	0.000	0.21
		C	0.000	0.000	6.760	0.000	0.03
T14	50.00-40.00	A	0.000	0.000	30.280	0.000	0.16
		B	0.000	0.000	41.300	0.000	0.21
		C	0.000	0.000	6.760	0.000	0.03
T15	40.00-30.00	A	0.000	0.000	30.280	0.000	0.16
		B	0.000	0.000	41.300	0.000	0.21
		C	0.000	0.000	6.760	0.000	0.03
T16	30.00-20.00	A	0.000	0.000	30.280	0.000	0.16
		B	0.000	0.000	41.300	0.000	0.21
		C	0.000	0.000	6.760	0.000	0.03
T17	20.00-15.00	A	0.000	0.000	15.140	0.000	0.08
		B	0.000	0.000	20.650	0.000	0.11
		C	0.000	0.000	3.380	0.000	0.02
T18	15.00-10.00	A	0.000	0.000	15.140	0.000	0.08
		B	0.000	0.000	20.650	0.000	0.11
		C	0.000	0.000	3.380	0.000	0.02
T19	10.00-0.00	A	0.000	0.000	30.280	0.000	0.16
		B	0.000	0.000	41.300	0.000	0.21
		C	0.000	0.000	6.760	0.000	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_AA_A</i> <i>In Face ft²</i>	<i>C_AA_A</i> <i>Out Face ft²</i>	<i>Weight</i> <i>K</i>
T1	152.00-140.00	A	2.176	0.000	0.000	17.553	0.000	0.50
		B		0.000	0.000	24.042	0.000	0.35
		C		0.000	0.000	20.069	0.000	0.35
T2	140.00-135.00	A	2.163	0.000	0.000	17.532	0.000	0.50
		B		0.000	0.000	9.982	0.000	0.15
		C		0.000	0.000	11.475	0.000	0.20
T3	135.00-130.00	A	2.155	0.000	0.000	17.519	0.000	0.49
		B		0.000	0.000	9.960	0.000	0.14
		C		0.000	0.000	11.443	0.000	0.20
T4	130.00-125.00	A	2.146	0.000	0.000	23.324	0.000	0.59
		B		0.000	0.000	9.938	0.000	0.14
		C		0.000	0.000	11.410	0.000	0.20
T5	125.00-120.00	A	2.138	0.000	0.000	27.176	0.000	0.65
		B		0.000	0.000	9.914	0.000	0.14
		C		0.000	0.000	11.376	0.000	0.20
T6	120.00-100.00	A	2.115	0.000	0.000	108.404	0.000	2.56
		B		0.000	0.000	152.895	0.000	3.07
		C		0.000	0.000	45.138	0.000	0.79
T7	100.00-93.33	A	2.088	0.000	0.000	36.016	0.000	0.85

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_A In Face ft²</i>	<i>C_AA_A Out Face ft²</i>	<i>Weight K</i>
		B		0.000	0.000	63.848	0.000	1.24
		C		0.000	0.000	14.901	0.000	0.26
T8	93.33-86.67	A	2.073	0.000	0.000	35.952	0.000	0.84
		B		0.000	0.000	67.502	0.000	1.30
		C		0.000	0.000	14.822	0.000	0.25
T9	86.67-80.00	A	2.057	0.000	0.000	35.882	0.000	0.84
		B		0.000	0.000	67.302	0.000	1.29
		C		0.000	0.000	14.737	0.000	0.25
T10	80.00-73.33	A	2.040	0.000	0.000	35.808	0.000	0.83
		B		0.000	0.000	67.087	0.000	1.28
		C		0.000	0.000	17.068	0.000	0.29
T11	73.33-66.67	A	2.021	0.000	0.000	35.728	0.000	0.83
		B		0.000	0.000	66.855	0.000	1.27
		C		0.000	0.000	17.983	0.000	0.30
T12	66.67-60.00	A	2.001	0.000	0.000	35.640	0.000	0.82
		B		0.000	0.000	66.603	0.000	1.26
		C		0.000	0.000	17.849	0.000	0.30
T13	60.00-50.00	A	1.973	0.000	0.000	56.899	0.000	1.28
		B		0.000	0.000	99.376	0.000	1.86
		C		0.000	0.000	26.493	0.000	0.43
T14	50.00-40.00	A	1.934	0.000	0.000	57.471	0.000	1.27
		B		0.000	0.000	98.638	0.000	1.83
		C		0.000	0.000	26.101	0.000	0.42
T15	40.00-30.00	A	1.886	0.000	0.000	57.063	0.000	1.25
		B		0.000	0.000	97.736	0.000	1.80
		C		0.000	0.000	25.621	0.000	0.41
T16	30.00-20.00	A	1.824	0.000	0.000	56.533	0.000	1.22
		B		0.000	0.000	96.563	0.000	1.75
		C		0.000	0.000	24.997	0.000	0.39
T17	20.00-15.00	A	1.760	0.000	0.000	27.995	0.000	0.60
		B		0.000	0.000	47.682	0.000	0.85
		C		0.000	0.000	12.179	0.000	0.18
T18	15.00-10.00	A	1.702	0.000	0.000	27.749	0.000	0.59
		B		0.000	0.000	47.136	0.000	0.83
		C		0.000	0.000	11.888	0.000	0.18
T19	10.00-0.00	A	1.553	0.000	0.000	54.237	0.000	1.11
		B		0.000	0.000	91.485	0.000	1.55
		C		0.000	0.000	22.286	0.000	0.31

Feed Line Center of Pressure

<i>Section</i>	<i>Elevation</i>	<i>CP_x</i>	<i>CP_z</i>	<i>CP_x</i>	<i>CP_z</i>
	<i>ft</i>	<i>in</i>	<i>in</i>	<i>Ice</i>	<i>Ice</i>
				<i>in</i>	<i>in</i>
T1	152.00-140.00	-1.1335	0.3792	-1.1673	1.1095
T2	140.00-135.00	-2.3705	-0.2015	-1.9092	0.8983
T3	135.00-130.00	-2.7163	-0.2495	-2.3069	1.0613
T4	130.00-125.00	-2.9537	-0.9038	-2.4081	0.5774
T5	125.00-120.00	-3.1682	-1.3445	-2.5194	0.2837
T6	120.00-100.00	0.6784	-2.4029	-0.2892	-0.6941
T7	100.00-93.33	1.5366	-2.1617	0.3664	-0.5570
T8	93.33-86.67	1.8403	-2.1112	0.5788	-0.4843
T9	86.67-80.00	1.8991	-2.2125	0.5953	-0.5122
T10	80.00-73.33	1.7910	-2.1794	0.3251	-0.3389
T11	73.33-66.67	1.7807	-2.2285	0.2120	-0.2766
T12	66.67-60.00	1.8289	-2.3201	0.2170	-0.2975
T13	60.00-50.00	1.8839	-2.5357	0.1225	-0.5840

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	Client	AT&T Mobility	Designed by	TJL

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
T14	50.00-40.00	1.9304	-2.6697	0.1092	-0.6960
T15	40.00-30.00	1.9903	-2.7946	0.1347	-0.7672
T16	30.00-20.00	1.9193	-2.7328	0.1600	-0.7687
T17	20.00-15.00	1.9873	-2.8566	0.2088	-0.8594
T18	15.00-10.00	1.9270	-2.7863	0.2473	-0.8959
T19	10.00-0.00	2.1526	-3.1385	0.4109	-1.1336

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	1 5/8	140.00 - 152.00	0.6000	0.5476
T1	3	7/8	140.00 - 152.00	0.6000	0.5476
T1	4	1/2	140.00 - 152.00	0.6000	0.5476
T1	6	1 5/8	140.00 - 145.00	0.6000	0.5476
T1	12	1 5/8	140.00 - 152.00	0.6000	0.5476
T1	13	1/2	140.00 - 152.00	0.6000	0.5476
T2	1	1 5/8	135.00 - 140.00	0.6000	0.5331
T2	2	1 5/8	135.00 - 140.00	0.6000	0.5331
T2	3	7/8	135.00 - 140.00	0.6000	0.5331
T2	4	1/2	135.00 - 140.00	0.6000	0.5331
T2	6	1 5/8	135.00 - 140.00	0.6000	0.5331
T2	12	1 5/8	135.00 - 140.00	0.6000	0.5331
T2	13	1/2	135.00 - 140.00	0.6000	0.5331
T3	1	1 5/8	130.00 - 135.00	0.6000	0.6000
T3	2	1 5/8	130.00 - 135.00	0.6000	0.6000
T3	3	7/8	130.00 - 135.00	0.6000	0.6000
T3	4	1/2	130.00 - 135.00	0.6000	0.6000
T3	6	1 5/8	130.00 - 135.00	0.6000	0.6000
T3	12	1 5/8	130.00 - 135.00	0.6000	0.6000
T3	13	1/2	130.00 - 135.00	0.6000	0.6000
T4	1	1 5/8	125.00 - 130.00	0.6000	0.6000
T4	2	1 5/8	125.00 - 130.00	0.6000	0.6000

<i>tnxTower</i> Centex Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	16034.08 - CT5047	Page	13 of 59
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	Client	AT&T Mobility	Designed by	TJL

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T4	3	7/8	125.00 - 130.00	0.6000	0.6000
T4	4	1/2	125.00 - 130.00	0.6000	0.6000
T4	6	1 5/8	125.00 - 130.00	0.6000	0.6000
T4	7	1 5/8	125.00 - 128.00	0.6000	0.6000
T4	12	1 5/8	125.00 - 130.00	0.6000	0.6000
T4	13	1/2	125.00 - 130.00	0.6000	0.6000
T5	1	1 5/8	120.00 - 125.00	0.6000	0.6000
T5	2	1 5/8	120.00 - 125.00	0.6000	0.6000
T5	3	7/8	120.00 - 125.00	0.6000	0.6000
T5	4	1/2	120.00 - 125.00	0.6000	0.6000
T5	6	1 5/8	120.00 - 125.00	0.6000	0.6000
T5	7	1 5/8	120.00 - 125.00	0.6000	0.6000
T5	12	1 5/8	120.00 - 125.00	0.6000	0.6000
T5	13	1/2	120.00 - 125.00	0.6000	0.6000
T6	1	1 5/8	100.00 - 120.00	0.6000	0.6000
T6	2	1 5/8	100.00 - 120.00	0.6000	0.6000
T6	3	7/8	100.00 - 120.00	0.6000	0.6000
T6	4	1/2	100.00 - 120.00	0.6000	0.6000
T6	6	1 5/8	100.00 - 120.00	0.6000	0.6000
T6	7	1 5/8	100.00 - 120.00	0.6000	0.6000
T6	9	1 5/8	100.00 - 118.00	0.6000	0.6000
T6	10	1 1/4	100.00 - 118.00	0.6000	0.6000
T6	12	1 5/8	100.00 - 120.00	0.6000	0.6000
T6	13	1/2	100.00 - 120.00	0.6000	0.6000
T6	14	1 5/8	100.00 - 118.00	0.6000	0.6000
T7	1	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	2	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	3	7/8	93.33 - 100.00	0.6000	0.6000
T7	4	1/2	93.33 - 100.00	0.6000	0.6000
T7	6	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	7	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	9	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	10	1 1/4	93.33 - 100.00	0.6000	0.6000
T7	11	1 5/8	93.33 - 98.00	0.6000	0.6000
T7	12	1 5/8	93.33 - 100.00	0.6000	0.6000
T7	13	1/2	93.33 - 100.00	0.6000	0.6000
T7	14	1 5/8	93.33 - 100.00	0.6000	0.6000

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	Client	AT&T Mobility	Designed by	TJL

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T8	1	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	2	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	3	7/8	86.67 - 93.33	0.6000	0.6000
T8	4	1/2	86.67 - 93.33	0.6000	0.6000
T8	6	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	7	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	9	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	10	1 1/4	86.67 - 93.33	0.6000	0.6000
T8	11	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	12	1 5/8	86.67 - 93.33	0.6000	0.6000
T8	13	1/2	86.67 - 93.33	0.6000	0.6000
T8	14	1 5/8	86.67 - 93.33	0.6000	0.6000
T9	1	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	2	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	3	7/8	80.00 - 86.67	0.6000	0.6000
T9	4	1/2	80.00 - 86.67	0.6000	0.6000
T9	6	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	7	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	9	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	10	1 1/4	80.00 - 86.67	0.6000	0.6000
T9	11	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	12	1 5/8	80.00 - 86.67	0.6000	0.6000
T9	13	1/2	80.00 - 86.67	0.6000	0.6000
T9	14	1 5/8	80.00 - 86.67	0.6000	0.6000
T10	1	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	2	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	3	7/8	73.33 - 80.00	0.6000	0.6000
T10	4	1/2	73.33 - 80.00	0.6000	0.6000
T10	5	7/8	73.33 - 78.00	0.6000	0.6000
T10	6	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	7	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	9	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	10	1 1/4	73.33 - 80.00	0.6000	0.6000
T10	11	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	12	1 5/8	73.33 - 80.00	0.6000	0.6000
T10	13	1/2	73.33 - 80.00	0.6000	0.6000
T10	14	1 5/8	73.33 - 80.00	0.6000	0.6000
T11	1	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	2	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	3	7/8	66.67 - 73.33	0.6000	0.6000
T11	4	1/2	66.67 - 73.33	0.6000	0.6000
T11	5	7/8	66.67 - 73.33	0.6000	0.6000
T11	6	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	7	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	9	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	10	1 1/4	66.67 - 73.33	0.6000	0.6000
T11	11	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	12	1 5/8	66.67 - 73.33	0.6000	0.6000
T11	13	1/2	66.67 - 73.33	0.6000	0.6000
T11	14	1 5/8	66.67 - 73.33	0.6000	0.6000
T12	1	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	2	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	3	7/8	60.00 - 66.67	0.6000	0.6000
T12	4	1/2	60.00 - 66.67	0.6000	0.6000
T12	5	7/8	60.00 - 66.67	0.6000	0.6000
T12	6	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	7	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	9	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	10	1 1/4	60.00 - 66.67	0.6000	0.6000
T12	11	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	12	1 5/8	60.00 - 66.67	0.6000	0.6000
T12	13	1/2	60.00 - 66.67	0.6000	0.6000

<i>tnxTower</i> Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	16034.08 - CT5047	Page	15 of 59
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	Client	AT&T Mobility	Designed by	TJL

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T12	14	1 5/8	60.00 - 66.67	0.6000	0.6000
T13	1	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	2	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	3	7/8	50.00 - 60.00	0.6000	0.6000
T13	4	1/2	50.00 - 60.00	0.6000	0.6000
T13	5	7/8	50.00 - 60.00	0.6000	0.6000
T13	6	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	7	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	8	1/2	50.00 - 58.00	0.6000	0.6000
T13	9	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	10	1 1/4	50.00 - 60.00	0.6000	0.6000
T13	11	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	12	1 5/8	50.00 - 60.00	0.6000	0.6000
T13	13	1/2	50.00 - 60.00	0.6000	0.6000
T13	14	1 5/8	50.00 - 60.00	0.6000	0.6000
T14	1	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	2	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	3	7/8	40.00 - 50.00	0.6000	0.6000
T14	4	1/2	40.00 - 50.00	0.6000	0.6000
T14	5	7/8	40.00 - 50.00	0.6000	0.6000
T14	6	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	7	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	8	1/2	40.00 - 50.00	0.6000	0.6000
T14	9	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	10	1 1/4	40.00 - 50.00	0.6000	0.6000
T14	11	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	12	1 5/8	40.00 - 50.00	0.6000	0.6000
T14	13	1/2	40.00 - 50.00	0.6000	0.6000
T14	14	1 5/8	40.00 - 50.00	0.6000	0.6000
T15	1	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	2	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	3	7/8	30.00 - 40.00	0.6000	0.6000
T15	4	1/2	30.00 - 40.00	0.6000	0.6000
T15	5	7/8	30.00 - 40.00	0.6000	0.6000
T15	6	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	7	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	8	1/2	30.00 - 40.00	0.6000	0.6000
T15	9	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	10	1 1/4	30.00 - 40.00	0.6000	0.6000
T15	11	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	12	1 5/8	30.00 - 40.00	0.6000	0.6000
T15	13	1/2	30.00 - 40.00	0.6000	0.6000
T15	14	1 5/8	30.00 - 40.00	0.6000	0.6000
T16	1	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	2	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	3	7/8	20.00 - 30.00	0.6000	0.6000
T16	4	1/2	20.00 - 30.00	0.6000	0.6000
T16	5	7/8	20.00 - 30.00	0.6000	0.6000
T16	6	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	7	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	8	1/2	20.00 - 30.00	0.6000	0.6000
T16	9	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	10	1 1/4	20.00 - 30.00	0.6000	0.6000
T16	11	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	12	1 5/8	20.00 - 30.00	0.6000	0.6000
T16	13	1/2	20.00 - 30.00	0.6000	0.6000
T16	14	1 5/8	20.00 - 30.00	0.6000	0.6000
T17	1	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	2	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	3	7/8	15.00 - 20.00	0.6000	0.6000
T17	4	1/2	15.00 - 20.00	0.6000	0.6000
T17	5	7/8	15.00 - 20.00	0.6000	0.6000

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	Client	AT&T Mobility	Designed by	TJL

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T17	6	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	7	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	8	1/2	15.00 - 20.00	0.6000	0.6000
T17	9	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	10	1 1/4	15.00 - 20.00	0.6000	0.6000
T17	11	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	12	1 5/8	15.00 - 20.00	0.6000	0.6000
T17	13	1/2	15.00 - 20.00	0.6000	0.6000
T17	14	1 5/8	15.00 - 20.00	0.6000	0.6000
T18	1	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	2	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	3	7/8	10.00 - 15.00	0.6000	0.6000
T18	4	1/2	10.00 - 15.00	0.6000	0.6000
T18	5	7/8	10.00 - 15.00	0.6000	0.6000
T18	6	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	7	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	8	1/2	10.00 - 15.00	0.6000	0.6000
T18	9	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	10	1 1/4	10.00 - 15.00	0.6000	0.6000
T18	11	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	12	1 5/8	10.00 - 15.00	0.6000	0.6000
T18	13	1/2	10.00 - 15.00	0.6000	0.6000
T18	14	1 5/8	10.00 - 15.00	0.6000	0.6000
T19	1	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	2	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	3	7/8	0.00 - 10.00	0.6000	0.6000
T19	4	1/2	0.00 - 10.00	0.6000	0.6000
T19	5	7/8	0.00 - 10.00	0.6000	0.6000
T19	6	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	7	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	8	1/2	0.00 - 10.00	0.6000	0.6000
T19	9	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	10	1 1/4	0.00 - 10.00	0.6000	0.6000
T19	11	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	12	1 5/8	0.00 - 10.00	0.6000	0.6000
T19	13	1/2	0.00 - 10.00	0.6000	0.6000
T19	14	1 5/8	0.00 - 10.00	0.6000	0.6000

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i>	<i>Azimuth Adjustment</i>	<i>Placement</i>		<i>C_AA_A Front</i>	<i>C_AA_A Side</i>	<i>Weight</i>
			<i>ft ft ft</i>	<i>°</i>	<i>ft</i>		<i>ft²</i>	<i>ft²</i>	<i>K</i>
QS66512-2 (AT&T Proposed)	A	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	8.13 8.59 9.05	6.80 7.27 7.72	0.11 0.17 0.23
QS66512-2 (AT&T Proposed)	B	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	8.13 8.59 9.05	6.80 7.27 7.72	0.11 0.17 0.23
QS66512-2 (AT&T Proposed)	C	From Leg	2.00 0.00	0.0000	145.00	No Ice 1/2" Ice	8.13 8.59	6.80 7.27	0.11 0.17

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	Client AT&T Mobility	Designed by TJL

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
TMA2117F00V1-1 (AT&T Proposed)	A	From Leg	0.00 2.00 0.00 2.00	0.0000	145.00	1" Ice 9.05 No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	7.72 0.30 0.37 0.45	0.23 0.02 0.02 0.03
TMA2117F00V1-1 (AT&T Proposed)	B	From Leg	2.00 0.00 2.00	0.0000	145.00	No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	0.30 0.37 0.45	0.02 0.02 0.03
TMA2117F00V1-1 (AT&T Proposed)	C	From Leg	2.00 0.00 2.00	0.0000	145.00	No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	0.30 0.37 0.45	0.02 0.02 0.03
TMA2117F00V1-1 (AT&T Existing)	A	From Leg	2.00 0.00 -2.00	0.0000	145.00	No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	0.30 0.37 0.45	0.02 0.02 0.03
TMA2117F00V1-1 (AT&T Existing)	B	From Leg	2.00 0.00 -2.00	0.0000	145.00	No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	0.30 0.37 0.45	0.02 0.02 0.03
TMA2117F00V1-1 (AT&T Existing)	C	From Leg	2.00 0.00 -2.00	0.0000	145.00	No Ice 0.83 1/2" Ice 0.95 1" Ice 1.07	0.30 0.37 0.45	0.02 0.02 0.03
SitePro USF-2U Stand Off (AT&T Existing)	A	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 3.50 1/2" Ice 5.00 1" Ice 6.50	3.50 5.00 6.50	0.13 0.17 0.22
SitePro USF-2U Stand Off (AT&T Existing)	B	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 3.50 1/2" Ice 5.00 1" Ice 6.50	3.50 5.00 6.50	0.13 0.17 0.22
SitePro USF-2U Stand Off (AT&T Existing)	C	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 3.50 1/2" Ice 5.00 1" Ice 6.50	3.50 5.00 6.50	0.13 0.17 0.22
APXVSPP18-C-A20 (Sprint Existing)	A	From Leg	3.00 -6.00 0.00	0.0000	128.00	No Ice 8.02 1/2" Ice 8.48 1" Ice 8.94	5.28 5.74 6.20	0.06 0.11 0.16
APXVSPP18-C-A20 (Sprint Existing)	B	From Leg	3.00 -6.00 0.00	0.0000	128.00	No Ice 8.02 1/2" Ice 8.48 1" Ice 8.94	5.28 5.74 6.20	0.06 0.11 0.16
APXVSPP18-C-A20 (Sprint Existing)	C	From Leg	3.00 -6.00 0.00	0.0000	128.00	No Ice 8.02 1/2" Ice 8.48 1" Ice 8.94	5.28 5.74 6.20	0.06 0.11 0.16
FD-RRH 2x50 800 (Sprint Existing)	A	From Leg	3.00 -2.00 2.00	0.0000	128.00	No Ice 2.06 1/2" Ice 2.24 1" Ice 2.43	1.93 2.11 2.29	0.06 0.09 0.11
FD-RRH 2x50 800 (Sprint Existing)	B	From Leg	3.00 -2.00 2.00	0.0000	128.00	No Ice 2.06 1/2" Ice 2.24 1" Ice 2.43	1.93 2.11 2.29	0.06 0.09 0.11
FD-RRH 2x50 800 (Sprint Existing)	C	From Leg	3.00 -2.00 2.00	0.0000	128.00	No Ice 2.06 1/2" Ice 2.24 1" Ice 2.43	1.93 2.11 2.29	0.06 0.09 0.11
FD-RRH 4x45 1900 (Sprint Existing)	A	From Leg	3.00 -2.00 -2.00	0.0000	128.00	No Ice 2.32 1/2" Ice 2.52 1" Ice 2.74	2.38 2.59 2.80	0.06 0.08 0.11
FD-RRH 4x45 1900 (Sprint Existing)	B	From Leg	3.00 -2.00 -2.00	0.0000	128.00	No Ice 2.32 1/2" Ice 2.52 1" Ice 2.74	2.38 2.59 2.80	0.06 0.08 0.11
FD-RRH 4x45 1900 (Sprint Existing)	C	From Leg	3.00 -2.00 -2.00	0.0000	128.00	No Ice 2.32 1/2" Ice 2.52 1" Ice 2.74	2.38 2.59 2.80	0.06 0.08 0.11
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	A	From Leg	1.00 0.00	0.0000	128.00	No Ice 16.60 1/2" Ice 19.80	16.60 19.80	0.56 0.70

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	Client AT&T Mobility	Designed by TJL

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	B	From Leg	0.00 1.00 0.00 0.00	0.0000	128.00	1" Ice 23.00 No Ice 16.60 1/2" Ice 19.80	23.00 16.60 19.80	0.84 0.56 0.70
Rohn 6' x 12' Boom Gate (1) (Sprint Existing)	C	From Leg	0.00 1.00 0.00 0.00	0.0000	128.00	1" Ice 23.00 No Ice 16.60 1/2" Ice 19.80	23.00 16.60 19.80	0.84 0.56 0.70
AIR32 (T-Mobile Reserved)	A	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 23.00 No Ice 6.51 1/2" Ice 6.89	23.00 4.71 5.07	0.84 0.13 0.18
LNx-6515DS (T-Mobile Reserved)	A	From Leg	0.00 3.00 -2.00 0.00	0.0000	118.00	1" Ice 7.27 No Ice 11.45 1/2" Ice 12.06	5.43 7.70 8.29	0.23 0.06 0.12
APX16DWV-16DWV-S-E-A CU (T-Mobile Reserved)	A	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 12.69 No Ice 6.08 1/2" Ice 6.44	8.89 2.00 2.33	0.19 0.04 0.07
AIR32 (T-Mobile Reserved)	B	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 6.80 No Ice 6.51 1/2" Ice 6.89	2.66 4.71 5.07	0.11 0.13 0.18
LNx-6515DS (T-Mobile Reserved)	B	From Leg	0.00 3.00 -2.00 0.00	0.0000	118.00	1" Ice 7.27 No Ice 11.45 1/2" Ice 12.06	5.43 7.70 8.29	0.23 0.06 0.12
APX16DWV-16DWV-S-E-A CU (T-Mobile Reserved)	B	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 12.69 No Ice 6.08 1/2" Ice 6.44	8.89 2.00 2.33	0.19 0.04 0.07
AIR32 (T-Mobile Reserved)	C	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 6.80 No Ice 6.51 1/2" Ice 6.89	2.66 4.71 5.07	0.11 0.13 0.18
LNx-6515DS (T-Mobile Reserved)	C	From Leg	0.00 3.00 -2.00 0.00	0.0000	118.00	1" Ice 7.27 No Ice 11.45 1/2" Ice 12.06	5.43 7.70 8.29	0.23 0.06 0.12
APX16DWV-16DWV-S-E-A CU (T-Mobile Reserved)	C	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 12.69 No Ice 6.08 1/2" Ice 6.44	8.89 2.00 2.33	0.19 0.04 0.07
RRUS-11 (T-Mobile Reserved)	A	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 6.80 No Ice 2.57 1/2" Ice 2.76	2.66 1.07 1.21	0.11 0.05 0.07
RRUS-11 (T-Mobile Reserved)	B	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 2.97 No Ice 2.57 1/2" Ice 2.76	1.36 1.07 1.21	0.09 0.05 0.07
RRUS-11 (T-Mobile Reserved)	C	From Leg	0.00 3.00 -6.00 0.00	0.0000	118.00	1" Ice 2.97 No Ice 2.57 1/2" Ice 2.76	1.36 1.07 1.21	0.09 0.05 0.07
RRUS-32 (T-Mobile Reserved)	A	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 2.97 No Ice 3.31 1/2" Ice 3.56	1.36 2.42 2.64	0.09 0.08 0.10
RRUS-32 (T-Mobile Reserved)	B	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 3.81 No Ice 3.31 1/2" Ice 3.56	2.86 2.42 2.64	0.14 0.08 0.10
RRUS-32 (T-Mobile Reserved)	C	From Leg	0.00 3.00 2.00 0.00	0.0000	118.00	1" Ice 3.81 No Ice 3.31 1/2" Ice 3.56	2.86 2.42 2.64	0.14 0.08 0.10
Rohn 6' x 12' Boom Gate (1) (T-Mobile Reserved)	A	From Leg	0.00 1.00 0.00 0.00	0.0000	118.00	1" Ice 3.81 No Ice 16.60 1/2" Ice 19.80	2.86 16.60 19.80	0.14 0.56 0.70
Rohn 6' x 12' Boom Gate (1) (T-Mobile Reserved)	B	From Leg	0.00 1.00 0.00 0.00	0.0000	118.00	1" Ice 23.00 No Ice 16.60 1/2" Ice 19.80	23.00 16.60 19.80	0.84 0.56 0.70

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	Client AT&T Mobility	Designed by TJL

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
Rohn 6' x 12' Boom Gate (1) (T-Mobile Reserved)	C	From Leg	0.00 1.00 0.00 0.00	0.0000	118.00	1" Ice 23.00 No Ice 16.60 1/2" Ice 19.80 1" Ice 23.00	23.00 16.60 19.80 23.00	0.84 0.56 0.70 0.84
HBXX-6517DS (Verizon Existing)	A	From Leg	3.00 -6.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-8513DS (Verizon Existing)	A	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.05 0.10 0.15
HBXX-6517DS (Verizon Existing)	A	From Leg	3.00 2.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-8513DS (Verizon Existing)	A	From Leg	3.00 6.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.05 0.10 0.15
HBXX-6517DS (Verizon Existing)	B	From Leg	3.00 -6.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-6514DS (Verizon Existing)	B	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.04 0.09 0.15
HBXX-6517DS (Verizon Existing)	B	From Leg	3.00 2.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-6514DS (Verizon Existing)	B	From Leg	3.00 6.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.04 0.09 0.15
HBXX-6517DS (Verizon Existing)	C	From Leg	3.00 -6.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-6514DS (Verizon Existing)	C	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.04 0.09 0.15
HBXX-6517DS (Verizon Existing)	C	From Leg	3.00 2.00 0.00	0.0000	98.00	No Ice 8.53 1/2" Ice 9.00 1" Ice 9.48	5.24 5.71 6.18	0.05 0.10 0.16
LNx-6514DS (Verizon Existing)	C	From Leg	3.00 6.00 0.00	0.0000	98.00	No Ice 8.17 1/2" Ice 8.63 1" Ice 9.10	5.41 5.86 6.33	0.04 0.09 0.15
RRH2x60-AWS (Verizon Existing)	A	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 3.36 1/2" Ice 3.61 1" Ice 3.88	2.03 2.26 2.50	0.06 0.08 0.11
RRH2x60-AWS (Verizon Existing)	B	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 3.36 1/2" Ice 3.61 1" Ice 3.88	2.03 2.26 2.50	0.06 0.08 0.11
RRH2x60-AWS (Verizon Existing)	C	From Leg	3.00 -2.00 0.00	0.0000	98.00	No Ice 3.36 1/2" Ice 3.61 1" Ice 3.88	2.03 2.26 2.50	0.06 0.08 0.11
RRH2x60-PCS (Verizon Existing)	A	From Leg	3.00 -6.00 0.00	0.0000	98.00	No Ice 2.15 1/2" Ice 2.34 1" Ice 2.54	1.35 1.50 1.67	0.06 0.07 0.09
RRH2x60-PCS (Verizon Existing)	B	From Leg	3.00 -6.00 0.00	0.0000	98.00	No Ice 2.15 1/2" Ice 2.34 1" Ice 2.54	1.35 1.50 1.67	0.06 0.07 0.09
RRH2x60-PCS (Verizon Existing)	C	From Leg	3.00 -6.00	0.0000	98.00	No Ice 2.15 1/2" Ice 2.34	1.35 1.50	0.06 0.07

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	Client AT&T Mobility	Designed by TJL

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RRH2x40-07-U (Verizon Existing)	A	From Leg	0.00 3.00 2.00 0.00	0.0000	98.00	1" Ice 2.54 No Ice 1.93 1/2" Ice 2.10 1" Ice 2.28	1.67 1.05 1.19 1.33	0.09 0.05 0.07 0.09
RRH2x40-07-U (Verizon Existing)	B	From Leg	0.00 3.00 2.00 0.00	0.0000	98.00	No Ice 1.93 1/2" Ice 2.10 1" Ice 2.28	1.05 1.19 1.33	0.05 0.07 0.09
RRH2x40-07-U (Verizon Existing)	C	From Leg	0.00 3.00 2.00 0.00	0.0000	98.00	No Ice 1.93 1/2" Ice 2.10 1" Ice 2.28	1.05 1.19 1.33	0.05 0.07 0.09
DB-T1-6Z-8AB-0Z (Verizon Existing)	A	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 4.80 1/2" Ice 5.07 1" Ice 5.35	2.00 2.19 2.39	0.04 0.08 0.12
DB-T1-6Z-8AB-0Z (Verizon Existing)	B	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 4.80 1/2" Ice 5.07 1" Ice 5.35	2.00 2.19 2.39	0.04 0.08 0.12
DB-T1-6Z-8AB-0Z (Verizon Existing)	C	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 4.80 1/2" Ice 5.07 1" Ice 5.35	2.00 2.19 2.39	0.04 0.08 0.12
13-ft T-Frame (Verizon Existing)	A	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 11.70 1/2" Ice 16.40 1" Ice 21.10	11.70 16.40 21.10	0.53 0.74 0.96
13-ft T-Frame (Verizon Existing)	B	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 11.70 1/2" Ice 16.40 1" Ice 21.10	11.70 16.40 21.10	0.53 0.74 0.96
13-ft T-Frame (Verizon Existing)	C	From Leg	0.00 1.00 0.00 0.00	0.0000	98.00	No Ice 11.70 1/2" Ice 16.40 1" Ice 21.10	11.70 16.40 21.10	0.53 0.74 0.96
12' x 3" Dia Omni (Unknown Existing)	A	From Leg	0.00 3.00 0.00 0.00	0.0000	157.00	No Ice 3.60 1/2" Ice 4.83 1" Ice 6.08	3.60 4.83 6.08	0.04 0.06 0.09
ROHN 3-ft Side Arm (Unknown Existing)	A	From Leg	0.00 2.00 0.00 0.00	0.0000	149.00	No Ice 3.10 1/2" Ice 5.00 1" Ice 6.90	3.10 5.00 6.90	0.07 0.10 0.13
Filter Box (Unknown Existing)	A	From Leg	0.00 2.00 0.00 0.00	0.0000	149.00	No Ice 0.92 1/2" Ice 1.05 1" Ice 1.19	0.64 0.77 0.90	0.02 0.02 0.03
4'x4" Pipe Mount (Unknown Existing)	B	From Leg	0.00 0.50 0.00 0.00	0.0000	140.00	No Ice 1.18 1/2" Ice 1.58 1" Ice 1.84	1.18 1.58 1.84	0.04 0.06 0.07
4'x4" Pipe Mount (Unknown Existing)	C	From Leg	0.00 0.50 0.00 0.00	0.0000	152.00	No Ice 1.17 1/2" Ice 1.58 1" Ice 1.84	1.17 1.58 1.84	0.04 0.06 0.07
8' dipole antenna (Unknown Existing)	C	From Leg	0.00 3.00 0.00 0.00	0.0000	78.00	No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00	2.00 3.00 4.00	0.01 0.02 0.03
ROHN 3-ft Side Arm (Unknown Existing)	C	From Leg	0.00 2.00 0.00 0.00	0.0000	72.50	No Ice 3.10 1/2" Ice 5.00 1" Ice 6.90	3.10 5.00 6.90	0.07 0.10 0.13
GPS (Sprint Existing)	C	From Leg	0.00 3.00 0.00 0.00	0.0000	58.00	No Ice 1.00 1/2" Ice 1.50 1" Ice 2.00	1.00 1.50 2.00	0.01 0.01 0.02
ROHN 3-ft Side Arm (Sprint Existing)	C	From Leg	0.00 2.00 0.00 0.00	0.0000	57.00	No Ice 3.10 1/2" Ice 5.00 1" Ice 6.90	3.10 5.00 6.90	0.07 0.10 0.13
DS9A09F36D-N (Eversource Reserved)	B	From Leg	0.00 3.00 0.00 0.00	0.0000	162.00	No Ice 5.78 1/2" Ice 7.73	5.78 7.73	0.05 0.09

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	Client	AT&T Mobility	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
Tower Top Amplifier (Eversource Reserved)	B	From Leg	0.00	0.0000	152.00	1" Ice 9.71	9.71	0.15
			3.00			No Ice 2.67	1.03	0.04
			0.00			1/2" Ice 2.87	1.17	0.06
			0.00			1" Ice 3.08	1.32	0.08
ROHN 3-ft Side Arm (Eversource Reserved)	B	From Leg	2.00	0.0000	149.00	No Ice 3.10	3.10	0.07
			0.00			1/2" Ice 5.00	5.00	0.10
			0.00			1" Ice 6.90	6.90	0.13
			3.00			No Ice 2.00	2.00	0.02
DS4F03C36D-N (Eversource Reserved)	B	From Leg	0.00	0.0000	118.00	1/2" Ice 3.02	3.02	0.03
			0.00			1" Ice 4.07	4.07	0.05
			2.00		113.00	No Ice 3.10	3.10	0.07
			0.00			1/2" Ice 5.00	5.00	0.10
ROHN 3-ft Side Arm (Eversource Reserved)	B	From Leg	0.00	0.0000		1" Ice 6.90	6.90	0.13

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
4-ft Dish (Unknown Existing)	B	Paraboloid w/o Radome	From Leg	2.00	0.0000		140.00	4.00	No Ice 3.14	0.10
				0.00					1/2" Ice 3.41	0.10
				0.00					1" Ice 3.68	0.12
4-ft Dish (Unknown Existing)	C	Paraboloid w/o Radome	From Leg	2.00	0.0000		152.00	4.00	No Ice 3.14	0.10
				0.00					1/2" Ice 3.41	0.10
				0.00					1" Ice 3.68	0.12

Tower Pressures - No Ice

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T1 152.00-140.00	146.00	1.101	24	80.875	A	6.631	4.750	4.750	41.74	11.880	0.000
					B	6.631	4.750		41.74	5.448	0.000
					C	6.631	4.750		41.74	4.404	0.000
T2 140.00-135.00	137.50	1.082	23	35.262	A	3.106	2.400	2.400	43.59	11.880	0.000
					B	3.106	2.400		43.59	2.270	0.000
					C	3.106	2.400		43.59	2.825	0.000
T3 135.00-130.00	132.50	1.071	23	37.762	A	2.142	2.400	2.400	52.83	11.880	0.000
					B	2.142	2.400		52.83	2.270	0.000
					C	2.142	2.400		52.83	2.825	0.000
T4 130.00-125.00	127.50	1.059	23	40.262	A	2.248	2.400	2.400	51.63	13.662	0.000
					B	2.248	2.400		51.63	2.270	0.000

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Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T5 125.00-120.00	122.50	1.047	23	42.762	C	2.248	2.400		51.63	2.825	0.000
					A	2.355	2.400	2.400	50.47	14.850	0.000
					B	2.355	2.400		50.47	2.270	0.000
					C	2.355	2.400		50.47	2.825	0.000
T6 120.00-100.00	110.00	1.016	22	196.048	A	11.370	9.599	9.599	45.78	59.400	0.000
					B	11.370	9.599		45.78	64.556	0.000
					C	11.370	9.599		45.78	11.300	0.000
T7 100.00-93.33	96.67	0.979	21	74.285	A	10.950	0.000	3.534	32.27	19.800	0.000
					B	10.950	0.000		32.27	26.345	0.000
					C	10.950	0.000		32.27	3.767	0.000
T8 93.33-86.67	90.00	0.959	21	78.822	A	11.332	0.000	3.534	31.19	19.800	0.000
					B	11.332	0.000		31.19	27.533	0.000
					C	11.332	0.000		31.19	3.767	0.000
T9 86.67-80.00	83.33	0.938	20	83.359	A	11.723	0.000	3.534	30.14	19.800	0.000
					B	11.723	0.000		30.14	27.533	0.000
					C	11.723	0.000		30.14	3.767	0.000
T10 80.00-73.33	76.67	0.916	20	88.302	A	12.741	0.000	4.174	32.76	19.800	0.000
					B	12.741	0.000		32.76	27.533	0.000
					C	12.741	0.000		32.76	4.285	0.000
T11 73.33-66.67	70.00	0.892	19	92.954	A	13.137	0.000	4.174	31.78	19.800	0.000
					B	13.137	0.000		31.78	27.533	0.000
					C	13.137	0.000		31.78	4.507	0.000
T12 66.67-60.00	63.33	0.867	19	97.607	A	13.546	0.000	4.174	30.81	19.800	0.000
					B	13.546	0.000		30.81	27.533	0.000
					C	13.546	0.000		30.81	4.507	0.000
T13 60.00-50.00	55.00	0.833	18	155.734	A	11.976	7.512	7.512	38.55	30.164	0.000
					B	11.976	7.512		38.55	41.300	0.000
					C	11.976	7.512		38.55	6.760	0.000
T14 50.00-40.00	45.00	0.787	17	165.734	A	13.251	7.512	7.512	36.18	30.280	0.000
					B	13.251	7.512		36.18	41.300	0.000
					C	13.251	7.512		36.18	6.760	0.000
T15 40.00-30.00	35.00	0.732	16	175.916	A	21.865	0.000	7.931	36.27	30.280	0.000
					B	21.865	0.000		36.27	41.300	0.000
					C	21.865	0.000		36.27	6.760	0.000
T16 30.00-20.00	25.00	0.7	15	186.281	A	28.806	0.000	7.931	27.53	30.280	0.000
					B	28.806	0.000		27.53	41.300	0.000
					C	28.806	0.000		27.53	6.760	0.000
T17 20.00-15.00	17.50	0.7	15	97.431	A	14.207	0.000	4.852	34.15	15.140	0.000
					B	14.207	0.000		34.15	20.650	0.000
					C	14.207	0.000		34.15	3.380	0.000
T18 15.00-10.00	12.50	0.7	15	100.566	A	16.553	0.000	6.383	38.56	15.140	0.000
					B	16.553	0.000		38.56	20.650	0.000
					C	16.553	0.000		38.56	3.380	0.000
T19 10.00-0.00	5.00	0.7	15	208.671	A	25.541	0.000	12.765	49.98	30.280	0.000
					B	25.541	0.000		49.98	41.300	0.000
					C	25.541	0.000		49.98	6.760	0.000

Tower Pressure - With Ice

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1	146.00	1.101	6	2.1756	85.226	A	6.631	31.923	13.453	34.89	17.553	0.000

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			
152.00-140.00						B	6.631	31.923		34.89	24.042	0.000
						C	6.631	31.923		34.89	20.069	0.000
T2	137.50	1.082	6	2.1626	37.066	A	3.106	14.201	6.010	34.73	17.532	0.000
140.00-135.00						B	3.106	14.201		34.73	9.982	0.000
						C	3.106	14.201		34.73	11.475	0.000
T3	132.50	1.071	6	2.1546	39.560	A	2.142	12.151	5.997	41.95	17.519	0.000
135.00-130.00						B	2.142	12.151		41.95	9.960	0.000
						C	2.142	12.151		41.95	11.443	0.000
T4	127.50	1.059	6	2.1464	42.053	A	2.248	12.417	5.983	40.80	23.324	0.000
130.00-125.00						B	2.248	12.417		40.80	9.938	0.000
						C	2.248	12.417		40.80	11.410	0.000
T5	122.50	1.047	6	2.1378	44.546	A	2.355	12.683	5.969	39.69	27.176	0.000
125.00-120.00						B	2.355	12.683		39.69	9.914	0.000
						C	2.355	12.683		39.69	11.376	0.000
T6	110.00	1.016	6	2.1149	203.106	A	11.370	47.769	23.722	40.11	108.404	0.000
120.00-100.00						B	11.370	47.769		40.11	152.895	0.000
						C	11.370	47.769		40.11	45.138	0.000
T7 100.00-93.33	96.67	0.979	5	2.0877	76.608	A	14.049	12.387	6.632	25.09	36.016	0.000
						B	14.049	12.387		25.09	63.848	0.000
						C	14.049	12.387		25.09	14.901	0.000
T8 93.33-86.67	90.00	0.959	5	2.0729	81.128	A	14.408	12.932	6.610	24.18	35.952	0.000
						B	14.408	12.932		24.18	67.502	0.000
						C	14.408	12.932		24.18	14.822	0.000
T9 86.67-80.00	83.33	0.938	5	2.0570	85.648	A	14.776	13.476	6.587	23.31	35.882	0.000
						B	14.776	13.476		23.31	67.302	0.000
						C	14.776	13.476		23.31	14.737	0.000
T10 80.00-73.33	76.67	0.916	5	2.0399	90.571	A	15.769	13.981	7.202	24.21	35.808	0.000
						B	15.769	13.981		24.21	67.087	0.000
						C	15.769	13.981		24.21	17.068	0.000
T11 73.33-66.67	70.00	0.892	5	2.0214	95.203	A	16.137	14.494	7.174	23.42	35.728	0.000
						B	16.137	14.494		23.42	66.855	0.000
						C	16.137	14.494		23.42	17.983	0.000
T12 66.67-60.00	63.33	0.867	5	2.0013	99.834	A	16.517	15.005	7.145	22.67	35.640	0.000
						B	16.517	15.005		22.67	66.603	0.000
						C	16.517	15.005		22.67	17.849	0.000
T13 60.00-50.00	55.00	0.833	5	1.9733	159.027	A	11.976	30.668	14.101	33.07	56.899	0.000
						B	11.976	30.668		33.07	99.376	0.000
						C	11.976	30.668		33.07	26.493	0.000
T14 50.00-40.00	45.00	0.787	4	1.9341	168.961	A	13.251	31.055	13.970	31.53	57.471	0.000
						B	13.251	31.055		31.53	98.638	0.000
						C	13.251	31.055		31.53	26.101	0.000
T15 40.00-30.00	35.00	0.732	4	1.8861	179.064	A	26.064	17.521	12.130	27.83	57.063	0.000
						B	26.064	17.521		27.83	97.736	0.000
						C	26.064	17.521		27.83	25.621	0.000
T16 30.00-20.00	25.00	0.7	4	1.8237	189.324	A	32.866	29.166	11.991	19.33	56.533	0.000
						B	32.866	29.166		19.33	96.563	0.000
						C	32.866	29.166		19.33	24.997	0.000
T17 20.00-15.00	17.50	0.7	4	1.7598	98.900	A	16.166	11.882	6.811	24.28	27.995	0.000
						B	16.166	11.882		24.28	47.682	0.000
						C	16.166	11.882		24.28	12.179	0.000
T18 15.00-10.00	12.50	0.7	4	1.7015	101.985	A	18.447	11.411	8.276	27.72	27.749	0.000
						B	18.447	11.411		27.72	47.136	0.000
						C	18.447	11.411		27.72	11.888	0.000
T19 10.00-0.00	5.00	0.7	4	1.5526	211.261	A	28.997	11.335	16.221	40.22	54.237	0.000
						B	28.997	11.335		40.22	91.485	0.000
						C	28.997	11.335		40.22	22.286	0.000

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation	z	K_Z	q_z	A_G	F a c e	A_F	A_R	A_{leg}	Leg %	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2
<i>ft</i>	<i>ft</i>		<i>psf</i>	<i>ft^2</i>		<i>ft^2</i>	<i>ft^2</i>	<i>ft^2</i>			
T1 152.00-140.00	146.00	1.101	9	80.875	A	6.631	4.750	4.750	41.74	11.880	0.000
					B	6.631	4.750		41.74	5.448	0.000
					C	6.631	4.750		41.74	4.404	0.000
T2 140.00-135.00	137.50	1.082	8	35.262	A	3.106	2.400	2.400	43.59	11.880	0.000
					B	3.106	2.400		43.59	2.270	0.000
					C	3.106	2.400		43.59	2.825	0.000
T3 135.00-130.00	132.50	1.071	8	37.762	A	2.142	2.400	2.400	52.83	11.880	0.000
					B	2.142	2.400		52.83	2.270	0.000
					C	2.142	2.400		52.83	2.825	0.000
T4 130.00-125.00	127.50	1.059	8	40.262	A	2.248	2.400	2.400	51.63	13.662	0.000
					B	2.248	2.400		51.63	2.270	0.000
					C	2.248	2.400		51.63	2.825	0.000
T5 125.00-120.00	122.50	1.047	8	42.762	A	2.355	2.400	2.400	50.47	14.850	0.000
					B	2.355	2.400		50.47	2.270	0.000
					C	2.355	2.400		50.47	2.825	0.000
T6 120.00-100.00	110.00	1.016	8	196.048	A	11.370	9.599	9.599	45.78	59.400	0.000
					B	11.370	9.599		45.78	64.556	0.000
					C	11.370	9.599		45.78	11.300	0.000
T7 100.00-93.33	96.67	0.979	8	74.285	A	10.950	0.000	3.534	32.27	19.800	0.000
					B	10.950	0.000		32.27	26.345	0.000
					C	10.950	0.000		32.27	3.767	0.000
T8 93.33-86.67	90.00	0.959	8	78.822	A	11.332	0.000	3.534	31.19	19.800	0.000
					B	11.332	0.000		31.19	27.533	0.000
					C	11.332	0.000		31.19	3.767	0.000
T9 86.67-80.00	83.33	0.938	7	83.359	A	11.723	0.000	3.534	30.14	19.800	0.000
					B	11.723	0.000		30.14	27.533	0.000
					C	11.723	0.000		30.14	3.767	0.000
T10 80.00-73.33	76.67	0.916	7	88.302	A	12.741	0.000	4.174	32.76	19.800	0.000
					B	12.741	0.000		32.76	27.533	0.000
					C	12.741	0.000		32.76	4.285	0.000
T11 73.33-66.67	70.00	0.892	7	92.954	A	13.137	0.000	4.174	31.78	19.800	0.000
					B	13.137	0.000		31.78	27.533	0.000
					C	13.137	0.000		31.78	4.507	0.000
T12 66.67-60.00	63.33	0.867	7	97.607	A	13.546	0.000	4.174	30.81	19.800	0.000
					B	13.546	0.000		30.81	27.533	0.000
					C	13.546	0.000		30.81	4.507	0.000
T13 60.00-50.00	55.00	0.833	7	155.734	A	11.976	7.512	7.512	38.55	30.164	0.000
					B	11.976	7.512		38.55	41.300	0.000
					C	11.976	7.512		38.55	6.760	0.000
T14 50.00-40.00	45.00	0.787	6	165.734	A	13.251	7.512	7.512	36.18	30.280	0.000
					B	13.251	7.512		36.18	41.300	0.000
					C	13.251	7.512		36.18	6.760	0.000
T15 40.00-30.00	35.00	0.732	6	175.916	A	21.865	0.000	7.931	36.27	30.280	0.000
					B	21.865	0.000		36.27	41.300	0.000
					C	21.865	0.000		36.27	6.760	0.000
T16 30.00-20.00	25.00	0.7	5	186.281	A	28.806	0.000	7.931	27.53	30.280	0.000
					B	28.806	0.000		27.53	41.300	0.000
					C	28.806	0.000		27.53	6.760	0.000
T17 20.00-15.00	17.50	0.7	5	97.431	A	14.207	0.000	4.852	34.15	15.140	0.000
					B	14.207	0.000		34.15	20.650	0.000
					C	14.207	0.000		34.15	3.380	0.000
T18 15.00-10.00	12.50	0.7	5	100.566	A	16.553	0.000	6.383	38.56	15.140	0.000
					B	16.553	0.000		38.56	20.650	0.000
					C	16.553	0.000		38.56	3.380	0.000

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
ft	ft		psf	ft ²		ft ²	ft ²	ft ²			
T19 10.00-0.00	5.00	0.7	5	208.671	A	25.541	0.000	12.765	49.98	30.280	0.000
					B	25.541	0.000		49.98	41.300	0.000
					C	25.541	0.000		49.98	6.760	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 152.00-140.00	0.11	0.33	A	0.141	2.806	24	1	1	9.322	0.79	66.17	C
			B	0.141	2.806		1	1	9.322			
			C	0.141	2.806		1	1	9.322			
T2 140.00-135.00	0.09	0.21	A	0.156	2.749	23	1	1	4.469	0.45	89.49	C
			B	0.156	2.749		1	1	4.469			
			C	0.156	2.749		1	1	4.469			
T3 135.00-130.00	0.09	0.18	A	0.12	2.884	23	1	1	3.499	0.40	79.89	C
			B	0.12	2.884		1	1	3.499			
			C	0.12	2.884		1	1	3.499			
T4 130.00-125.00	0.10	0.22	A	0.115	2.903	23	1	1	3.604	0.42	84.63	C
			B	0.115	2.903		1	1	3.604			
			C	0.115	2.903		1	1	3.604			
T5 125.00-120.00	0.10	0.22	A	0.111	2.919	23	1	1	3.711	0.44	87.85	C
			B	0.111	2.919		1	1	3.711			
			C	0.111	2.919		1	1	3.711			
T6 120.00-100.00	0.70	1.13	A	0.107	2.936	22	1	1	16.790	2.44	121.86	C
			B	0.107	2.936		1	1	16.790			
			C	0.107	2.936		1	1	16.790			
T7 100.00-93.33	0.26	0.67	A	0.147	2.781	21	1	1	10.950	1.09	163.13	C
			B	0.147	2.781		1	1	10.950			
			C	0.147	2.781		1	1	10.950			
T8 93.33-86.67	0.27	0.69	A	0.144	2.795	21	1	1	11.332	1.10	164.93	C
			B	0.144	2.795		1	1	11.332			
			C	0.144	2.795		1	1	11.332			
T9 86.67-80.00	0.27	0.71	A	0.141	2.806	20	1	1	11.723	1.10	164.53	C
			B	0.141	2.806		1	1	11.723			
			C	0.141	2.806		1	1	11.723			
T10 80.00-73.33	0.27	0.78	A	0.144	2.793	20	1	1	12.741	1.12	168.22	C
			B	0.144	2.793		1	1	12.741			
			C	0.144	2.793		1	1	12.741			
T11 73.33-66.67	0.27	0.89	A	0.141	2.804	19	1	1	13.137	1.12	167.31	C
			B	0.141	2.804		1	1	13.137			
			C	0.141	2.804		1	1	13.137			
T12 66.67-60.00	0.27	0.92	A	0.139	2.813	19	1	1	13.546	1.10	165.65	C
			B	0.139	2.813		1	1	13.546			
			C	0.139	2.813		1	1	13.546			
T13 60.00-50.00	0.41	1.17	A	0.125	2.865	18	1	1	16.145	1.43	142.82	C
			B	0.125	2.865		1	1	16.145			
			C	0.125	2.865		1	1	16.145			
T14 50.00-40.00	0.41	1.38	A	0.125	2.865	17	1	1	17.455	1.40	140.38	C
			B	0.125	2.865		1	1	17.455			
			C	0.125	2.865		1	1	17.455			
T15 40.00-30.00	0.41	1.69	A	0.124	2.868	16	1	1	21.865	1.48	147.78	C
			B	0.124	2.868		1	1	21.865			
			C	0.124	2.868		1	1	21.865			
T16 30.00-20.00	0.41	1.98	A	0.155	2.755	15	1	1	28.806	1.63	162.71	C
			B	0.155	2.755		1	1	28.806			

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T17 20.00-15.00	0.20	0.86	C A B	0.155 0.146 0.146	2.755 2.787 2.787	15	1 1 1	1 1 1	28.806 14.207 14.207	0.81	162.51	C
T18 15.00-10.00	0.20	0.89	C A B	0.146 0.165 0.165	2.787 2.719 2.719	15	1 1 1	1 1 1	14.207 16.553 16.553	0.88	176.43	C
T19 10.00-0.00	0.41	1.63	C A B	0.165 0.122 0.122	2.719 2.876 2.876	15	1 1 1	1 1 1	16.553 25.541 25.541	1.55	155.11	C
Sum Weight:	5.22	16.57	C	0.122	2.876		1	OTM	25.541 1402.84 kip-ft	20.75		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 152.00-140.00	0.11	0.33	A B C	0.141 0.141 0.141	2.806 2.806 2.806	24	0.8 0.8 0.8	1 1 1	7.996 7.996 7.996	0.72	59.88	C
T2 140.00-135.00	0.09	0.21	A B C	0.156 0.156 0.156	2.749 2.749 2.749	23	0.8 0.8 0.8	1 1 1	3.848 3.848 3.848	0.41	82.69	C
T3 135.00-130.00	0.09	0.18	A B C	0.12 0.12 0.12	2.884 2.884 2.884	23	0.8 0.8 0.8	1 1 1	3.070 3.070 3.070	0.38	75.02	C
T4 130.00-125.00	0.10	0.22	A B C	0.115 0.115 0.115	2.903 2.903 2.903	23	0.8 0.8 0.8	1 1 1	3.154 3.154 3.154	0.40	79.55	C
T5 125.00-120.00	0.10	0.22	A B C	0.111 0.111 0.111	2.919 2.919 2.919	23	0.8 0.8 0.8	1 1 1	3.240 3.240 3.240	0.41	82.55	C
T6 120.00-100.00	0.70	1.13	A B C	0.107 0.107 0.107	2.936 2.936 2.936	22	0.8 0.8 0.8	1 1 1	14.516 14.516 14.516	2.31	115.62	C
T7 100.00-93.33	0.26	0.67	A B C	0.147 0.147 0.147	2.781 2.781 2.781	21	0.8 0.8 0.8	1 1 1	8.760 8.760 8.760	0.98	146.68	C
T8 93.33-86.67	0.27	0.69	A B C	0.144 0.144 0.144	2.795 2.795 2.795	21	0.8 0.8 0.8	1 1 1	9.066 9.066 9.066	0.99	148.17	C
T9 86.67-80.00	0.27	0.71	A B C	0.141 0.141 0.141	2.806 2.806 2.806	20	0.8 0.8 0.8	1 1 1	9.378 9.378 9.378	0.98	147.50	C
T10 80.00-73.33	0.27	0.78	A B C	0.144 0.144 0.144	2.793 2.793 2.793	20	0.8 0.8 0.8	1 1 1	10.193 10.193 10.193	1.00	150.23	C
T11 73.33-66.67	0.27	0.89	A B C	0.141 0.141 0.141	2.804 2.804 2.804	19	0.8 0.8 0.8	1 1 1	10.510 10.510 10.510	0.99	149.17	C
T12 66.67-60.00	0.27	0.92	A B	0.139 0.139	2.813 2.813	19	0.8 0.8	1 1	10.837 10.837	0.98	147.41	C

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	plf	
T13	0.41	1.17	C	0.139	2.813		0.8	1	10.837			
60.00-50.00			A	0.125	2.865	18	0.8	1	13.750	1.32	132.30	C
			B	0.125	2.865		0.8	1	13.750			
			C	0.125	2.865		0.8	1	13.750			
T14	0.41	1.38	A	0.125	2.865	17	0.8	1	14.805	1.29	129.40	C
50.00-40.00			B	0.125	2.865		0.8	1	14.805			
			C	0.125	2.865		0.8	1	14.805			
T15	0.41	1.69	A	0.124	2.868	16	0.8	1	17.492	1.31	130.89	C
40.00-30.00			B	0.124	2.868		0.8	1	17.492			
			C	0.124	2.868		0.8	1	17.492			
T16	0.41	1.98	A	0.155	2.755	15	0.8	1	23.045	1.42	142.28	C
30.00-20.00			B	0.155	2.755		0.8	1	23.045			
			C	0.155	2.755		0.8	1	23.045			
T17	0.20	0.86	A	0.146	2.787	15	0.8	1	11.366	0.71	142.11	C
20.00-15.00			B	0.146	2.787		0.8	1	11.366			
			C	0.146	2.787		0.8	1	11.366			
T18	0.20	0.89	A	0.165	2.719	15	0.8	1	13.242	0.77	153.25	C
15.00-10.00			B	0.165	2.719		0.8	1	13.242			
			C	0.165	2.719		0.8	1	13.242			
T19	0.41	1.63	A	0.122	2.876	15	0.8	1	20.433	1.36	136.20	C
10.00-0.00			B	0.122	2.876		0.8	1	20.433			
			C	0.122	2.876		0.8	1	20.433			
Sum Weight:	5.22	16.57						OTM	1282.31 kip-ft	18.75		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	plf	
T1	0.11	0.33	A	0.141	2.806	24	0.85	1	8.328	0.74	61.45	C
152.00-140.00			B	0.141	2.806		0.85	1	8.328			
			C	0.141	2.806		0.85	1	8.328			
T2	0.09	0.21	A	0.156	2.749	23	0.85	1	4.004	0.42	84.39	C
140.00-135.00			B	0.156	2.749		0.85	1	4.004			
			C	0.156	2.749		0.85	1	4.004			
T3	0.09	0.18	A	0.12	2.884	23	0.85	1	3.177	0.38	76.24	C
135.00-130.00			B	0.12	2.884		0.85	1	3.177			
			C	0.12	2.884		0.85	1	3.177			
T4	0.10	0.22	A	0.115	2.903	23	0.85	1	3.267	0.40	80.82	C
130.00-125.00			B	0.115	2.903		0.85	1	3.267			
			C	0.115	2.903		0.85	1	3.267			
T5	0.10	0.22	A	0.111	2.919	23	0.85	1	3.357	0.42	83.88	C
125.00-120.00			B	0.111	2.919		0.85	1	3.357			
			C	0.111	2.919		0.85	1	3.357			
T6	0.70	1.13	A	0.107	2.936	22	0.85	1	15.084	2.34	117.18	C
120.00-100.00			B	0.107	2.936		0.85	1	15.084			
			C	0.107	2.936		0.85	1	15.084			
T7	0.26	0.67	A	0.147	2.781	21	0.85	1	9.308	1.01	150.79	C
100.00-93.33			B	0.147	2.781		0.85	1	9.308			
			C	0.147	2.781		0.85	1	9.308			
T8	0.27	0.69	A	0.144	2.795	21	0.85	1	9.632	1.02	152.36	C
93.33-86.67			B	0.144	2.795		0.85	1	9.632			

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	plf	
T9 86.67-80.00	0.27	0.71	C	0.144	2.795		0.85	1	9.632			
			A	0.141	2.806	20	0.85	1	9.965	1.01	151.75	C
			B	0.141	2.806		0.85	1	9.965			
			C	0.141	2.806		0.85	1	9.965			
T10 80.00-73.33	0.27	0.78	A	0.144	2.793	20	0.85	1	10.830	1.03	154.73	C
			B	0.144	2.793		0.85	1	10.830			
			C	0.144	2.793		0.85	1	10.830			
T11 73.33-66.67	0.27	0.89	A	0.141	2.804	19	0.85	1	11.166	1.02	153.71	C
			B	0.141	2.804		0.85	1	11.166			
			C	0.141	2.804		0.85	1	11.166			
T12 66.67-60.00	0.27	0.92	A	0.139	2.813	19	0.85	1	11.514	1.01	151.97	C
			B	0.139	2.813		0.85	1	11.514			
			C	0.139	2.813		0.85	1	11.514			
T13 60.00-50.00	0.41	1.17	A	0.125	2.865	18	0.85	1	14.348	1.35	134.93	C
			B	0.125	2.865		0.85	1	14.348			
			C	0.125	2.865		0.85	1	14.348			
T14 50.00-40.00	0.41	1.38	A	0.125	2.865	17	0.85	1	15.468	1.32	132.14	C
			B	0.125	2.865		0.85	1	15.468			
			C	0.125	2.865		0.85	1	15.468			
T15 40.00-30.00	0.41	1.69	A	0.124	2.868	16	0.85	1	18.585	1.35	135.11	C
			B	0.124	2.868		0.85	1	18.585			
			C	0.124	2.868		0.85	1	18.585			
T16 30.00-20.00	0.41	1.98	A	0.155	2.755	15	0.85	1	24.485	1.47	147.38	C
			B	0.155	2.755		0.85	1	24.485			
			C	0.155	2.755		0.85	1	24.485			
T17 20.00-15.00	0.20	0.86	A	0.146	2.787	15	0.85	1	12.076	0.74	147.21	C
			B	0.146	2.787		0.85	1	12.076			
			C	0.146	2.787		0.85	1	12.076			
T18 15.00-10.00	0.20	0.89	A	0.165	2.719	15	0.85	1	14.070	0.80	159.04	C
			B	0.165	2.719		0.85	1	14.070			
			C	0.165	2.719		0.85	1	14.070			
T19 10.00-0.00	0.41	1.63	A	0.122	2.876	15	0.85	1	21.710	1.41	140.93	C
			B	0.122	2.876		0.85	1	21.710			
			C	0.122	2.876		0.85	1	21.710			
Sum Weight:	5.22	16.57						OTM	1312.44 kip-ft	19.25		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	plf	
T1 152.00-140.00	1.19	2.60	A	0.452	1.97	6	1	1	27.713	0.45	37.49	C
			B	0.452	1.97		1	1	27.713			
			C	0.452	1.97		1	1	27.713			
T2 140.00-135.00	0.84	1.24	A	0.467	1.947	6	1	1	12.588	0.23	45.33	C
			B	0.467	1.947		1	1	12.588			
			C	0.467	1.947		1	1	12.588			
T3 135.00-130.00	0.84	0.98	A	0.361	2.146	6	1	1	9.681	0.22	43.70	C
			B	0.361	2.146		1	1	9.681			
			C	0.361	2.146		1	1	9.681			
T4 130.00-125.00	0.93	1.04	A	0.349	2.174	6	1	1	9.891	0.24	47.33	C
			B	0.349	2.174		1	1	9.891			

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T5 125.00-120.00	0.99	1.07	C	0.349	2.174		1	1	9.891			
			A	0.338	2.201	6	1	1	10.111	0.25	49.71	C
			B	0.338	2.201		1	1	10.111			
			C	0.338	2.201		1	1	10.111			
T6 120.00-100.00	6.42	4.59	A	0.291	2.32	6	1	1	39.851	1.30	64.87	C
			B	0.291	2.32		1	1	39.851			
			C	0.291	2.32		1	1	39.851			
T7 100.00-93.33	2.35	2.52	A	0.345	2.183	5	1	1	21.657	0.53	78.84	C
			B	0.345	2.183		1	1	21.657			
			C	0.345	2.183		1	1	21.657			
T8 93.33-86.67	2.39	2.61	A	0.337	2.202	5	1	1	22.313	0.53	79.88	C
			B	0.337	2.202		1	1	22.313			
			C	0.337	2.202		1	1	22.313			
T9 86.67-80.00	2.38	2.69	A	0.33	2.22	5	1	1	22.980	0.53	79.22	C
			B	0.33	2.22		1	1	22.980			
			C	0.33	2.22		1	1	22.980			
T10 80.00-73.33	2.40	2.87	A	0.328	2.223	5	1	1	24.273	0.53	80.01	C
			B	0.328	2.223		1	1	24.273			
			C	0.328	2.223		1	1	24.273			
T11 73.33-66.67	2.40	3.04	A	0.322	2.24	5	1	1	24.920	0.53	79.33	C
			B	0.322	2.24		1	1	24.920			
			C	0.322	2.24		1	1	24.920			
T12 66.67-60.00	2.38	3.12	A	0.316	2.255	5	1	1	25.579	0.52	78.05	C
			B	0.316	2.255		1	1	25.579			
			C	0.316	2.255		1	1	25.579			
T13 60.00-50.00	3.58	3.88	A	0.268	2.384	5	1	1	30.060	0.70	69.85	C
			B	0.268	2.384		1	1	30.060			
			C	0.268	2.384		1	1	30.060			
T14 50.00-40.00	3.53	4.21	A	0.262	2.401	4	1	1	31.514	0.67	67.29	C
			B	0.262	2.401		1	1	31.514			
			C	0.262	2.401		1	1	31.514			
T15 40.00-30.00	3.45	4.70	A	0.243	2.457	4	1	1	36.286	0.67	66.84	C
			B	0.243	2.457		1	1	36.286			
			C	0.243	2.457		1	1	36.286			
T16 30.00-20.00	3.36	6.20	A	0.328	2.225	4	1	1	50.600	0.71	71.03	C
			B	0.328	2.225		1	1	50.600			
			C	0.328	2.225		1	1	50.600			
T17 20.00-15.00	1.63	2.75	A	0.284	2.341	4	1	1	23.224	0.35	69.31	C
			B	0.284	2.341		1	1	23.224			
			C	0.284	2.341		1	1	23.224			
T18 15.00-10.00	1.59	2.86	A	0.293	2.315	4	1	1	25.256	0.36	71.56	C
			B	0.293	2.315		1	1	25.256			
			C	0.293	2.315		1	1	25.256			
T19 10.00-0.00	2.97	4.07	A	0.191	2.627	4	1	1	35.491	0.63	62.80	C
			B	0.191	2.627		1	1	35.491			
			C	0.191	2.627		1	1	35.491			
Sum Weight:	45.62	57.05						OTM	706.28 kip-ft	9.93		

Tower Forces - With Ice - Wind 60 To Face

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1 152.00-140.00	1.19	2.60	A	0.452	1.97	6	0.8	1	26.387	0.44	36.38	C
			B	0.452	1.97		0.8	1	26.387			
			C	0.452	1.97		0.8	1	26.387			
T2 140.00-135.00	0.84	1.24	A	0.467	1.947	6	0.8	1	11.967	0.22	44.12	C
			B	0.467	1.947		0.8	1	11.967			
			C	0.467	1.947		0.8	1	11.967			
T3 135.00-130.00	0.84	0.98	A	0.361	2.146	6	0.8	1	9.252	0.21	42.79	C
			B	0.361	2.146		0.8	1	9.252			
			C	0.361	2.146		0.8	1	9.252			
T4 130.00-125.00	0.93	1.04	A	0.349	2.174	6	0.8	1	9.442	0.23	46.37	C
			B	0.349	2.174		0.8	1	9.442			
			C	0.349	2.174		0.8	1	9.442			
T5 125.00-120.00	0.99	1.07	A	0.338	2.201	6	0.8	1	9.640	0.24	48.71	C
			B	0.338	2.201		0.8	1	9.640			
			C	0.338	2.201		0.8	1	9.640			
T6 120.00-100.00	6.42	4.59	A	0.291	2.32	6	0.8	1	37.577	1.27	63.63	C
			B	0.291	2.32		0.8	1	37.577			
			C	0.291	2.32		0.8	1	37.577			
T7 100.00-93.33	2.35	2.52	A	0.345	2.183	5	0.8	1	18.847	0.50	74.67	C
			B	0.345	2.183		0.8	1	18.847			
			C	0.345	2.183		0.8	1	18.847			
T8 93.33-86.67	2.39	2.61	A	0.337	2.202	5	0.8	1	19.432	0.50	75.66	C
			B	0.337	2.202		0.8	1	19.432			
			C	0.337	2.202		0.8	1	19.432			
T9 86.67-80.00	2.38	2.69	A	0.33	2.22	5	0.8	1	20.025	0.50	74.95	C
			B	0.33	2.22		0.8	1	20.025			
			C	0.33	2.22		0.8	1	20.025			
T10 80.00-73.33	2.40	2.87	A	0.328	2.223	5	0.8	1	21.119	0.50	75.56	C
			B	0.328	2.223		0.8	1	21.119			
			C	0.328	2.223		0.8	1	21.119			
T11 73.33-66.67	2.40	3.04	A	0.322	2.24	5	0.8	1	21.693	0.50	74.86	C
			B	0.322	2.24		0.8	1	21.693			
			C	0.322	2.24		0.8	1	21.693			
T12 66.67-60.00	2.38	3.12	A	0.316	2.255	5	0.8	1	22.276	0.49	73.56	C
			B	0.316	2.255		0.8	1	22.276			
			C	0.316	2.255		0.8	1	22.276			
T13 60.00-50.00	3.58	3.88	A	0.268	2.384	5	0.8	1	27.665	0.68	67.65	C
			B	0.268	2.384		0.8	1	27.665			
			C	0.268	2.384		0.8	1	27.665			
T14 50.00-40.00	3.53	4.21	A	0.262	2.401	4	0.8	1	28.864	0.65	64.98	C
			B	0.262	2.401		0.8	1	28.864			
			C	0.262	2.401		0.8	1	28.864			
T15 40.00-30.00	3.45	4.70	A	0.243	2.457	4	0.8	1	31.073	0.62	62.50	C
			B	0.243	2.457		0.8	1	31.073			
			C	0.243	2.457		0.8	1	31.073			
T16 30.00-20.00	3.36	6.20	A	0.328	2.225	4	0.8	1	44.026	0.66	66.29	C
			B	0.328	2.225		0.8	1	44.026			
			C	0.328	2.225		0.8	1	44.026			
T17 20.00-15.00	1.63	2.75	A	0.284	2.341	4	0.8	1	19.990	0.32	64.41	C
			B	0.284	2.341		0.8	1	19.990			
			C	0.284	2.341		0.8	1	19.990			
T18 15.00-10.00	1.59	2.86	A	0.293	2.315	4	0.8	1	21.566	0.33	66.03	C
			B	0.293	2.315		0.8	1	21.566			
			C	0.293	2.315		0.8	1	21.566			
T19 10.00-0.00	2.97	4.07	A	0.191	2.627	4	0.8	1	29.692	0.58	57.87	C
			B	0.191	2.627		0.8	1	29.692			
			C	0.191	2.627		0.8	1	29.692			
Sum Weight:	45.62	57.05						OTM	679.14 kip-ft	9.46		

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	Client AT&T Mobility	Designed by TJL

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 152.00-140.00	1.19	2.60	A	0.452	1.97	6	0.85	1	26.719	0.44	36.66	C
			B	0.452	1.97		0.85	1	26.719			
			C	0.452	1.97		0.85	1	26.719			
T2 140.00-135.00	0.84	1.24	A	0.467	1.947	6	0.85	1	12.122	0.22	44.43	C
			B	0.467	1.947		0.85	1	12.122			
			C	0.467	1.947		0.85	1	12.122			
T3 135.00-130.00	0.84	0.98	A	0.361	2.146	6	0.85	1	9.359	0.22	43.02	C
			B	0.361	2.146		0.85	1	9.359			
			C	0.361	2.146		0.85	1	9.359			
T4 130.00-125.00	0.93	1.04	A	0.349	2.174	6	0.85	1	9.554	0.23	46.61	C
			B	0.349	2.174		0.85	1	9.554			
			C	0.349	2.174		0.85	1	9.554			
T5 125.00-120.00	0.99	1.07	A	0.338	2.201	6	0.85	1	9.758	0.24	48.96	C
			B	0.338	2.201		0.85	1	9.758			
			C	0.338	2.201		0.85	1	9.758			
T6 120.00-100.00	6.42	4.59	A	0.291	2.32	6	0.85	1	38.146	1.28	63.94	C
			B	0.291	2.32		0.85	1	38.146			
			C	0.291	2.32		0.85	1	38.146			
T7 100.00-93.33	2.35	2.52	A	0.345	2.183	5	0.85	1	19.550	0.50	75.71	C
			B	0.345	2.183		0.85	1	19.550			
			C	0.345	2.183		0.85	1	19.550			
T8 93.33-86.67	2.39	2.61	A	0.337	2.202	5	0.85	1	20.152	0.51	76.72	C
			B	0.337	2.202		0.85	1	20.152			
			C	0.337	2.202		0.85	1	20.152			
T9 86.67-80.00	2.38	2.69	A	0.33	2.22	5	0.85	1	20.763	0.51	76.02	C
			B	0.33	2.22		0.85	1	20.763			
			C	0.33	2.22		0.85	1	20.763			
T10 80.00-73.33	2.40	2.87	A	0.328	2.223	5	0.85	1	21.908	0.51	76.67	C
			B	0.328	2.223		0.85	1	21.908			
			C	0.328	2.223		0.85	1	21.908			
T11 73.33-66.67	2.40	3.04	A	0.322	2.24	5	0.85	1	22.500	0.51	75.98	C
			B	0.322	2.24		0.85	1	22.500			
			C	0.322	2.24		0.85	1	22.500			
T12 66.67-60.00	2.38	3.12	A	0.316	2.255	5	0.85	1	23.102	0.50	74.69	C
			B	0.316	2.255		0.85	1	23.102			
			C	0.316	2.255		0.85	1	23.102			
T13 60.00-50.00	3.58	3.88	A	0.268	2.384	5	0.85	1	28.264	0.68	68.20	C
			B	0.268	2.384		0.85	1	28.264			
			C	0.268	2.384		0.85	1	28.264			
T14 50.00-40.00	3.53	4.21	A	0.262	2.401	4	0.85	1	29.526	0.66	65.56	C
			B	0.262	2.401		0.85	1	29.526			
			C	0.262	2.401		0.85	1	29.526			
T15 40.00-30.00	3.45	4.70	A	0.243	2.457	4	0.85	1	32.376	0.64	63.58	C
			B	0.243	2.457		0.85	1	32.376			
			C	0.243	2.457		0.85	1	32.376			
T16 30.00-20.00	3.36	6.20	A	0.328	2.225	4	0.85	1	45.670	0.67	67.48	C
			B	0.328	2.225		0.85	1	45.670			
			C	0.328	2.225		0.85	1	45.670			
T17 20.00-15.00	1.63	2.75	A	0.284	2.341	4	0.85	1	20.799	0.33	65.64	C
			B	0.284	2.341		0.85	1	20.799			
			C	0.284	2.341		0.85	1	20.799			
T18	1.59	2.86	A	0.293	2.315	4	0.85	1	22.489	0.34	67.41	C

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	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
15.00-10.00			B	0.293	2.315		0.85	1	22.489			
			C	0.293	2.315		0.85	1	22.489			
T19	2.97	4.07	A	0.191	2.627	4	0.85	1	31.142	0.59	59.10	C
10.00-0.00			B	0.191	2.627		0.85	1	31.142			
			C	0.191	2.627		0.85	1	31.142			
Sum Weight:	45.62	57.05						OTM	685.92 kip-ft	9.58		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.11	0.33	A	0.141	2.806	9	1	1	9.322	0.29	23.95	C
152.00-140.00			B	0.141	2.806		1	1	9.322			
			C	0.141	2.806		1	1	9.322			
T2	0.09	0.21	A	0.156	2.749	8	1	1	4.469	0.16	32.39	C
140.00-135.00			B	0.156	2.749		1	1	4.469			
			C	0.156	2.749		1	1	4.469			
T3	0.09	0.18	A	0.12	2.884	8	1	1	3.499	0.14	28.92	C
135.00-130.00			B	0.12	2.884		1	1	3.499			
			C	0.12	2.884		1	1	3.499			
T4	0.10	0.22	A	0.115	2.903	8	1	1	3.604	0.15	30.63	C
130.00-125.00			B	0.115	2.903		1	1	3.604			
			C	0.115	2.903		1	1	3.604			
T5	0.10	0.22	A	0.111	2.919	8	1	1	3.711	0.16	31.80	C
125.00-120.00			B	0.111	2.919		1	1	3.711			
			C	0.111	2.919		1	1	3.711			
T6	0.70	1.13	A	0.107	2.936	8	1	1	16.790	0.88	44.10	C
120.00-100.00			B	0.107	2.936		1	1	16.790			
			C	0.107	2.936		1	1	16.790			
T7	0.26	0.67	A	0.147	2.781	8	1	1	10.950	0.39	59.04	C
100.00-93.33			B	0.147	2.781		1	1	10.950			
			C	0.147	2.781		1	1	10.950			
T8	0.27	0.69	A	0.144	2.795	8	1	1	11.332	0.40	59.70	C
93.33-86.67			B	0.144	2.795		1	1	11.332			
			C	0.144	2.795		1	1	11.332			
T9	0.27	0.71	A	0.141	2.806	7	1	1	11.723	0.40	59.55	C
86.67-80.00			B	0.141	2.806		1	1	11.723			
			C	0.141	2.806		1	1	11.723			
T10	0.27	0.78	A	0.144	2.793	7	1	1	12.741	0.41	60.89	C
80.00-73.33			B	0.144	2.793		1	1	12.741			
			C	0.144	2.793		1	1	12.741			
T11	0.27	0.89	A	0.141	2.804	7	1	1	13.137	0.40	60.56	C
73.33-66.67			B	0.141	2.804		1	1	13.137			
			C	0.141	2.804		1	1	13.137			
T12	0.27	0.92	A	0.139	2.813	7	1	1	13.546	0.40	59.96	C
66.67-60.00			B	0.139	2.813		1	1	13.546			
			C	0.139	2.813		1	1	13.546			
T13	0.41	1.17	A	0.125	2.865	7	1	1	16.145	0.52	51.69	C
60.00-50.00			B	0.125	2.865		1	1	16.145			
			C	0.125	2.865		1	1	16.145			
T14	0.41	1.38	A	0.125	2.865	6	1	1	17.455	0.51	50.81	C

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
50.00-40.00			B	0.125	2.865		1	1	17.455			
			C	0.125	2.865		1	1	17.455			
T15	0.41	1.69	A	0.124	2.868	6	1	1	21.865	0.53	53.49	C
40.00-30.00			B	0.124	2.868		1	1	21.865			
			C	0.124	2.868		1	1	21.865			
T16	0.41	1.98	A	0.155	2.755	5	1	1	28.806	0.59	58.89	C
30.00-20.00			B	0.155	2.755		1	1	28.806			
			C	0.155	2.755		1	1	28.806			
T17	0.20	0.86	A	0.146	2.787	5	1	1	14.207	0.29	58.82	C
20.00-15.00			B	0.146	2.787		1	1	14.207			
			C	0.146	2.787		1	1	14.207			
T18	0.20	0.89	A	0.165	2.719	5	1	1	16.553	0.32	63.86	C
15.00-10.00			B	0.165	2.719		1	1	16.553			
			C	0.165	2.719		1	1	16.553			
T19	0.41	1.63	A	0.122	2.876	5	1	1	25.541	0.56	56.14	C
10.00-0.00			B	0.122	2.876		1	1	25.541			
			C	0.122	2.876		1	1	25.541			
Sum Weight:	5.22	16.57						OTM	507.75 kip-ft	7.51		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	0.11	0.33	A	0.141	2.806	9	0.8	1	7.996	0.26	21.67	C
152.00-140.00			B	0.141	2.806		0.8	1	7.996			
			C	0.141	2.806		0.8	1	7.996			
T2	0.09	0.21	A	0.156	2.749	8	0.8	1	3.848	0.15	29.93	C
140.00-135.00			B	0.156	2.749		0.8	1	3.848			
			C	0.156	2.749		0.8	1	3.848			
T3	0.09	0.18	A	0.12	2.884	8	0.8	1	3.070	0.14	27.15	C
135.00-130.00			B	0.12	2.884		0.8	1	3.070			
			C	0.12	2.884		0.8	1	3.070			
T4	0.10	0.22	A	0.115	2.903	8	0.8	1	3.154	0.14	28.79	C
130.00-125.00			B	0.115	2.903		0.8	1	3.154			
			C	0.115	2.903		0.8	1	3.154			
T5	0.10	0.22	A	0.111	2.919	8	0.8	1	3.240	0.15	29.88	C
125.00-120.00			B	0.111	2.919		0.8	1	3.240			
			C	0.111	2.919		0.8	1	3.240			
T6	0.70	1.13	A	0.107	2.936	8	0.8	1	14.516	0.84	41.85	C
120.00-100.00			B	0.107	2.936		0.8	1	14.516			
			C	0.107	2.936		0.8	1	14.516			
T7	0.26	0.67	A	0.147	2.781	8	0.8	1	8.760	0.35	53.09	C
100.00-93.33			B	0.147	2.781		0.8	1	8.760			
			C	0.147	2.781		0.8	1	8.760			
T8	0.27	0.69	A	0.144	2.795	8	0.8	1	9.066	0.36	53.63	C
93.33-86.67			B	0.144	2.795		0.8	1	9.066			
			C	0.144	2.795		0.8	1	9.066			
T9	0.27	0.71	A	0.141	2.806	7	0.8	1	9.378	0.36	53.38	C
86.67-80.00			B	0.141	2.806		0.8	1	9.378			
			C	0.141	2.806		0.8	1	9.378			
T10	0.27	0.78	A	0.144	2.793	7	0.8	1	10.193	0.36	54.38	C

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	Project 152' Lattice Tower - 366 Longridge Road Stamford, CT	Date 13:43:25 02/28/17
	Client AT&T Mobility	Designed by TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	<i>F</i> <i>a</i> <i>c</i> <i>e</i>	<i>e</i>	<i>C_F</i>	<i>q_z</i> <i>psf</i>	<i>D_F</i>	<i>D_R</i>	<i>A_E</i> <i>ft</i> ²	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	Ctrl. Face
80.00-73.33			B	0.144	2.793		0.8	1	10.193			
			C	0.144	2.793		0.8	1	10.193			
T11	0.27	0.89	A	0.141	2.804	7	0.8	1	10.510	0.36	53.99	C
73.33-66.67			B	0.141	2.804		0.8	1	10.510			
			C	0.141	2.804		0.8	1	10.510			
T12	0.27	0.92	A	0.139	2.813	7	0.8	1	10.837	0.36	53.35	C
66.67-60.00			B	0.139	2.813		0.8	1	10.837			
			C	0.139	2.813		0.8	1	10.837			
T13	0.41	1.17	A	0.125	2.865	7	0.8	1	13.750	0.48	47.89	C
60.00-50.00			B	0.125	2.865		0.8	1	13.750			
			C	0.125	2.865		0.8	1	13.750			
T14	0.41	1.38	A	0.125	2.865	6	0.8	1	14.805	0.47	46.83	C
50.00-40.00			B	0.125	2.865		0.8	1	14.805			
			C	0.125	2.865		0.8	1	14.805			
T15	0.41	1.69	A	0.124	2.868	6	0.8	1	17.492	0.47	47.37	C
40.00-30.00			B	0.124	2.868		0.8	1	17.492			
			C	0.124	2.868		0.8	1	17.492			
T16	0.41	1.98	A	0.155	2.755	5	0.8	1	23.045	0.51	51.50	C
30.00-20.00			B	0.155	2.755		0.8	1	23.045			
			C	0.155	2.755		0.8	1	23.045			
T17	0.20	0.86	A	0.146	2.787	5	0.8	1	11.366	0.26	51.44	C
20.00-15.00			B	0.146	2.787		0.8	1	11.366			
			C	0.146	2.787		0.8	1	11.366			
T18	0.20	0.89	A	0.165	2.719	5	0.8	1	13.242	0.28	55.47	C
15.00-10.00			B	0.165	2.719		0.8	1	13.242			
			C	0.165	2.719		0.8	1	13.242			
T19	0.41	1.63	A	0.122	2.876	5	0.8	1	20.433	0.49	49.30	C
10.00-0.00			B	0.122	2.876		0.8	1	20.433			
			C	0.122	2.876		0.8	1	20.433			
Sum Weight:	5.22	16.57						OTM	464.12 kip-ft	6.78		

Tower Forces - Service - Wind 90 To Face

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	<i>F</i> <i>a</i> <i>c</i> <i>e</i>	<i>e</i>	<i>C_F</i>	<i>q_z</i> <i>psf</i>	<i>D_F</i>	<i>D_R</i>	<i>A_E</i> <i>ft</i> ²	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	Ctrl. Face
T1	0.11	0.33	A	0.141	2.806	9	0.85	1	8.328	0.27	22.24	C
152.00-140.00			B	0.141	2.806		0.85	1	8.328			
			C	0.141	2.806		0.85	1	8.328			
T2	0.09	0.21	A	0.156	2.749	8	0.85	1	4.004	0.15	30.54	C
140.00-135.00			B	0.156	2.749		0.85	1	4.004			
			C	0.156	2.749		0.85	1	4.004			
T3	0.09	0.18	A	0.12	2.884	8	0.85	1	3.177	0.14	27.59	C
135.00-130.00			B	0.12	2.884		0.85	1	3.177			
			C	0.12	2.884		0.85	1	3.177			
T4	0.10	0.22	A	0.115	2.903	8	0.85	1	3.267	0.15	29.25	C
130.00-125.00			B	0.115	2.903		0.85	1	3.267			
			C	0.115	2.903		0.85	1	3.267			
T5	0.10	0.22	A	0.111	2.919	8	0.85	1	3.357	0.15	30.36	C
125.00-120.00			B	0.111	2.919		0.85	1	3.357			
			C	0.111	2.919		0.85	1	3.357			
T6	0.70	1.13	A	0.107	2.936	8	0.85	1	15.084	0.85	42.41	C

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	Client AT&T Mobility	Designed by TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
120.00-100.00			B	0.107	2.936		0.85	1	15.084			
			C	0.107	2.936		0.85	1	15.084			
T7	0.26	0.67	A	0.147	2.781	8	0.85	1	9.308	0.36	54.58	C
100.00-93.33			B	0.147	2.781		0.85	1	9.308			
			C	0.147	2.781		0.85	1	9.308			
T8	0.27	0.69	A	0.144	2.795	8	0.85	1	9.632	0.37	55.15	C
93.33-86.67			B	0.144	2.795		0.85	1	9.632			
			C	0.144	2.795		0.85	1	9.632			
T9	0.27	0.71	A	0.141	2.806	7	0.85	1	9.965	0.37	54.93	C
86.67-80.00			B	0.141	2.806		0.85	1	9.965			
			C	0.141	2.806		0.85	1	9.965			
T10	0.27	0.78	A	0.144	2.793	7	0.85	1	10.830	0.37	56.00	C
80.00-73.33			B	0.144	2.793		0.85	1	10.830			
			C	0.144	2.793		0.85	1	10.830			
T11	0.27	0.89	A	0.141	2.804	7	0.85	1	11.166	0.37	55.63	C
73.33-66.67			B	0.141	2.804		0.85	1	11.166			
			C	0.141	2.804		0.85	1	11.166			
T12	0.27	0.92	A	0.139	2.813	7	0.85	1	11.514	0.37	55.00	C
66.67-60.00			B	0.139	2.813		0.85	1	11.514			
			C	0.139	2.813		0.85	1	11.514			
T13	0.41	1.17	A	0.125	2.865	7	0.85	1	14.348	0.49	48.84	C
60.00-50.00			B	0.125	2.865		0.85	1	14.348			
			C	0.125	2.865		0.85	1	14.348			
T14	0.41	1.38	A	0.125	2.865	6	0.85	1	15.468	0.48	47.83	C
50.00-40.00			B	0.125	2.865		0.85	1	15.468			
			C	0.125	2.865		0.85	1	15.468			
T15	0.41	1.69	A	0.124	2.868	6	0.85	1	18.585	0.49	48.90	C
40.00-30.00			B	0.124	2.868		0.85	1	18.585			
			C	0.124	2.868		0.85	1	18.585			
T16	0.41	1.98	A	0.155	2.755	5	0.85	1	24.485	0.53	53.34	C
30.00-20.00			B	0.155	2.755		0.85	1	24.485			
			C	0.155	2.755		0.85	1	24.485			
T17	0.20	0.86	A	0.146	2.787	5	0.85	1	12.076	0.27	53.28	C
20.00-15.00			B	0.146	2.787		0.85	1	12.076			
			C	0.146	2.787		0.85	1	12.076			
T18	0.20	0.89	A	0.165	2.719	5	0.85	1	14.070	0.29	57.56	C
15.00-10.00			B	0.165	2.719		0.85	1	14.070			
			C	0.165	2.719		0.85	1	14.070			
T19	0.41	1.63	A	0.122	2.876	5	0.85	1	21.710	0.51	51.01	C
10.00-0.00			B	0.122	2.876		0.85	1	21.710			
			C	0.122	2.876		0.85	1	21.710			
Sum Weight:	5.22	16.57						OTM	475.03 kip-ft	6.97		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	5.79					
Bracing Weight	10.78					
Total Member Self-Weight	16.57			-4.02	-3.17	
Total Weight	31.21			-4.02	-3.17	

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Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 0 deg - No Ice		-0.01	-27.43	-2196.19	-2.24	2.60
Wind 30 deg - No Ice		12.99	-22.40	-1816.38	-1058.32	0.95
Wind 60 deg - No Ice		22.03	-12.69	-1037.38	-1799.64	-0.83
Wind 90 deg - No Ice		25.95	-0.03	-9.25	-2108.08	-2.51
Wind 120 deg - No Ice		23.81	13.65	1083.00	-1910.78	-3.79
Wind 150 deg - No Ice		12.96	22.41	1809.99	-1052.98	-3.43
Wind 180 deg - No Ice		0.01	25.37	2060.02	-5.21	-2.35
Wind 210 deg - No Ice		-12.93	22.40	1808.20	1043.13	-0.75
Wind 240 deg - No Ice		-23.80	13.63	1080.30	1901.62	1.19
Wind 270 deg - No Ice		-25.95	-0.06	-12.83	2101.29	2.51
Wind 300 deg - No Ice		-22.05	-12.72	-1040.60	1794.81	3.19
Wind 330 deg - No Ice		-13.01	-22.41	-1818.13	1054.65	3.24
Member Ice	40.48					
Total Weight Ice	130.80			-30.38	-24.77	
Wind 0 deg - Ice		-0.00	-12.84	-1081.57	-24.55	0.12
Wind 30 deg - Ice		6.25	-10.80	-920.59	-541.61	0.38
Wind 60 deg - Ice		10.72	-6.18	-541.67	-912.38	0.52
Wind 90 deg - Ice		12.49	-0.01	-32.16	-1056.56	0.50
Wind 120 deg - Ice		11.14	6.40	492.19	-938.02	0.34
Wind 150 deg - Ice		6.24	10.80	860.29	-539.74	0.12
Wind 180 deg - Ice		0.00	12.35	991.19	-25.36	-0.11
Wind 210 deg - Ice		-6.23	10.80	859.79	489.18	-0.32
Wind 240 deg - Ice		-11.13	6.39	491.45	887.63	-0.45
Wind 270 deg - Ice		-12.49	-0.02	-33.17	1006.87	-0.50
Wind 300 deg - Ice		-10.72	-6.19	-542.59	863.25	-0.40
Wind 330 deg - Ice		-6.26	-10.80	-921.09	492.81	-0.18
Total Weight	31.21			-4.02	-3.17	
Wind 0 deg - Service		-0.00	-9.93	-792.00	0.26	0.94
Wind 30 deg - Service		4.70	-8.11	-654.53	-381.98	0.34
Wind 60 deg - Service		7.97	-4.59	-372.57	-650.30	-0.30
Wind 90 deg - Service		9.39	-0.01	-0.45	-761.94	-0.91
Wind 120 deg - Service		8.62	4.94	394.88	-690.52	-1.37
Wind 150 deg - Service		4.69	8.11	658.01	-380.05	-1.24
Wind 180 deg - Service		0.01	9.18	748.50	-0.82	-0.85
Wind 210 deg - Service		-4.68	8.11	657.36	378.62	-0.27
Wind 240 deg - Service		-8.61	4.93	393.90	689.34	0.43
Wind 270 deg - Service		-9.39	-0.02	-1.75	761.61	0.91
Wind 300 deg - Service		-7.98	-4.60	-373.74	650.68	1.15
Wind 330 deg - Service		-4.71	-8.11	-655.16	382.79	1.17

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+ Wind 0 deg - Service
40	Dead+ Wind 30 deg - Service
41	Dead+ Wind 60 deg - Service
42	Dead+ Wind 90 deg - Service
43	Dead+ Wind 120 deg - Service
44	Dead+ Wind 150 deg - Service
45	Dead+ Wind 180 deg - Service
46	Dead+ Wind 210 deg - Service
47	Dead+ Wind 240 deg - Service
48	Dead+ Wind 270 deg - Service
49	Dead+ Wind 300 deg - Service
50	Dead+ Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
T1	152 - 140	Leg	Max Tension	7	2.64	-0.12	-0.00
			Max. Compression	31	-3.97	0.02	0.00
			Max. Mx	10	-2.16	-0.20	-0.01
			Max. My	12	-0.57	-0.00	0.20
			Max. Vy	18	-0.32	0.11	0.00
			Max. Vx	24	-0.33	-0.00	0.13
		Diagonal	Max Tension	24	1.28	0.00	0.00
			Max. Compression	12	-1.30	0.00	0.00
			Max. Mx	31	0.35	0.02	0.00
			Max. My	27	0.05	0.02	-0.00
			Max. Vy	31	-0.03	0.02	0.00
			Max. Vx	27	-0.00	0.00	0.00
		Top Girt	Max Tension	10	0.07	0.00	0.00
			Max. Compression	7	-0.07	0.00	0.00
			Max. Mx	26	-0.01	-0.08	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T2	140 - 135	Leg	Max. My	28	-0.01	0.00	0.00		
			Max. Vy	26	0.05	0.00	0.00		
			Max. Vx	28	-0.00	0.00	0.00		
			Max Tension	7	5.10	-0.01	0.00		
			Max. Compression	10	-6.76	-0.05	-0.00		
			Max. Mx	22	4.55	0.07	0.00		
		Diagonal	Max. My	24	-0.76	0.00	-0.04		
			Max. Vy	10	0.04	0.01	0.00		
			Max. Vx	2	-0.03	0.03	0.01		
			Max Tension	24	1.44	0.00	0.00		
			Max. Compression	12	-1.46	0.00	0.00		
			Max. Mx	30	0.16	0.03	-0.00		
		Top Girt	Max. My	28	-0.27	0.02	-0.00		
			Max. Vy	29	0.03	0.03	-0.00		
			Max. Vx	27	0.00	0.00	0.00		
			Max Tension	3	0.07	0.00	0.00		
			Max. Compression	22	-0.09	0.00	0.00		
			Max. Mx	26	-0.03	-0.08	0.00		
T3	135 - 130	Leg	Max. My	33	-0.02	0.00	0.00		
			Max. Vy	26	-0.05	0.00	0.00		
			Max. Vx	33	0.00	0.00	0.00		
			Max Tension	7	7.46	0.06	0.00		
			Max. Compression	10	-9.47	0.35	-0.00		
			Max. Mx	6	7.22	-0.39	0.00		
		Diagonal	Max. My	25	-0.81	-0.02	0.30		
			Max. Vy	6	0.12	-0.39	0.00		
			Max. Vx	24	-0.09	-0.02	0.30		
			Max Tension	12	1.47	0.00	0.00		
			Max. Compression	2	-1.46	0.00	0.00		
			Max. Mx	32	0.47	0.03	-0.00		
		Leg	Max. My	32	0.25	0.03	0.00		
			Max. Vy	32	0.03	0.03	-0.00		
			Max. Vx	32	0.00	0.00	0.00		
			Max Tension	7	10.52	-0.38	0.00		
			Max. Compression	10	-13.71	0.09	-0.00		
			Max. Mx	14	10.02	0.63	-0.00		
T4	130 - 125	Diagonal	Max. My	12	-0.83	-0.02	0.60		
			Max. Vy	6	-0.52	-0.39	0.00		
			Max. Vx	24	0.46	-0.02	0.30		
			Max Tension	13	2.15	0.00	0.00		
			Max. Compression	12	-2.22	0.00	0.00		
			Max. Mx	32	0.22	0.03	0.00		
		Leg	Max. My	28	-0.34	0.03	-0.01		
			Max. Vy	33	0.04	0.03	0.00		
			Max. Vx	28	-0.00	0.00	0.00		
			Max Tension	7	13.84	-0.10	0.01		
			Max. Compression	10	-18.14	0.52	0.00		
			Max. Mx	22	13.22	-0.58	-0.00		
		T5	125 - 120	Diagonal	Max. My	5	-1.94	-0.02	-0.53
					Max. Vy	14	0.12	-0.58	0.01
					Max. Vx	20	0.10	-0.03	-0.51
					Max Tension	12	2.44	0.00	0.00
					Max. Compression	12	-2.41	0.00	0.00
					Max. Mx	33	0.66	0.04	-0.00
Leg	Max. My			27	0.04	0.03	-0.01		
	Max. Vy			32	0.04	0.04	-0.00		
	Max. Vx			27	-0.00	0.00	0.00		
	Max Tension			7	34.45	0.06	0.01		
	Max. Compression			10	-42.57	0.18	0.01		
	Max. Mx			22	18.57	0.99	-0.00		
T6	120 - 100			Leg	Max. Mv	16	-2.17	-0.03	-0.99

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	100 - 93.3333	Diagonal	Max. Vy	22	-0.80	-0.58	-0.00
			Max. Vx	4	-0.76	-0.03	-0.53
			Max Tension	12	4.45	0.00	0.00
			Max. Compression	12	-4.48	0.00	0.00
			Max. Mx	31	1.14	0.07	0.01
			Max. My	27	0.07	0.06	-0.01
		Leg	Max. Vy	29	0.05	0.07	0.01
			Max. Vx	27	-0.00	0.00	0.00
			Max Tension	7	42.60	-0.21	0.00
			Max. Compression	10	-52.71	-0.25	0.00
			Max. Mx	14	39.94	0.56	-0.00
			Max. My	16	-4.18	-0.02	-0.66
		Diagonal	Max. Vy	14	0.84	-0.47	-0.00
			Max. Vx	20	0.72	0.01	-0.21
			Max Tension	13	6.03	0.03	0.00
			Max. Compression	12	-6.20	0.00	0.00
			Max. Mx	27	1.32	0.10	0.01
			Max. My	33	-1.95	0.08	0.01
		Secondary Horizontal	Max. Vy	29	0.07	0.09	-0.01
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	23	0.94	0.00	0.00
			Max. Compression	10	-0.98	0.02	0.01
			Max. Mx	32	-0.28	0.08	0.01
			Max. My	28	0.09	0.08	0.01
T8	93.3333 - 86.6667	Leg	Max. Vy	32	-0.07	0.08	0.01
			Max. Vx	30	-0.00	0.00	0.00
			Max Tension	7	52.03	0.19	0.00
			Max. Compression	10	-64.00	-0.22	-0.00
			Max. Mx	10	-63.95	0.34	0.00
			Max. My	8	-6.09	-0.04	0.20
		Diagonal	Max. Vy	10	-0.20	0.34	0.00
			Max. Vx	8	-0.10	-0.04	0.20
			Max Tension	13	6.13	0.03	0.00
			Max. Compression	12	-6.27	0.00	0.00
			Max. Mx	27	1.72	0.09	-0.01
			Max. My	29	-1.70	0.08	-0.01
		Secondary Horizontal	Max. Vy	29	0.07	0.09	-0.01
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	10	1.11	0.02	-0.00
			Max. Compression	10	-1.11	0.00	0.00
			Max. Mx	36	-0.09	0.07	0.01
			Max. My	28	0.07	0.07	0.02
T9	86.6667 - 80	Leg	Max. Vy	36	-0.07	0.07	0.01
			Max. Vx	30	-0.00	0.00	0.00
			Max Tension	7	61.82	0.15	-0.00
			Max. Compression	10	-74.85	-0.26	-0.00
			Max. Mx	10	-74.80	0.36	0.00
			Max. My	8	-6.50	-0.05	0.25
		Diagonal	Max. Vy	10	0.20	0.36	0.00
			Max. Vx	8	-0.12	-0.05	0.25
			Max Tension	13	6.30	0.04	0.00
			Max. Compression	12	-6.51	0.00	0.00
			Max. Mx	27	1.59	0.12	0.01
			Max. My	33	-2.12	0.10	0.01
		Secondary Horizontal	Max. Vy	29	0.08	0.11	-0.01
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	10	1.30	0.02	-0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	80 - 73.3333	Leg	Max. Compression	10	-1.30	0.00	0.00
			Max. Mx	27	0.20	0.10	0.01
			Max. My	28	0.04	0.10	0.02
			Max. Vy	27	0.07	0.10	0.01
			Max. Vx	30	-0.00	0.00	0.00
			Max Tension	7	71.59	0.18	0.00
			Max. Compression	10	-85.86	-0.29	-0.01
			Max. Mx	10	-85.80	0.51	-0.00
			Max. My	8	-6.96	-0.05	0.34
			Max. Vy	10	-0.27	0.51	-0.00
		Diagonal	Max. Vx	8	-0.15	-0.05	0.34
			Max Tension	13	6.47	0.04	-0.00
			Max. Compression	12	-6.64	0.00	0.00
			Max. Mx	27	1.85	0.11	-0.01
			Max. My	28	-1.08	0.10	-0.01
		Secondary Horizontal	Max. Vy	29	0.08	0.11	-0.01
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	10	1.49	0.02	0.00
			Max. Compression	10	-1.49	0.00	0.00
			Max. Mx	36	-0.06	0.09	0.02
T11	73.3333 - 66.6667	Leg	Max. My	28	0.03	0.09	0.02
			Max. Vy	36	-0.07	0.09	0.02
			Max. Vx	30	-0.00	0.00	0.00
			Max Tension	7	81.07	0.19	-0.00
			Max. Compression	10	-96.61	-0.38	0.00
		Diagonal	Max. Mx	10	-96.55	0.56	-0.00
			Max. My	8	-7.42	-0.06	0.34
			Max. Vy	10	0.30	0.56	-0.00
			Max. Vx	24	0.19	-0.05	0.34
			Max Tension	13	6.64	0.05	-0.00
			Max. Compression	12	-6.94	0.00	0.00
			Max. Mx	27	1.62	0.15	0.02
			Max. My	28	-1.55	0.14	-0.02
			Max. Vy	29	0.09	0.15	-0.02
			Max. Vx	28	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	10	1.68	0.02	0.00
			Max. Compression	10	-1.68	0.00	0.00
			Max. Mx	32	-0.05	0.12	0.02
			Max. My	28	0.01	0.12	0.02
			Max. Vy	32	-0.08	0.12	0.02
T12	66.6667 - 60	Leg	Max. Vx	38	-0.00	0.00	0.00
			Max Tension	7	90.49	0.27	0.00
			Max. Compression	10	-107.62	-0.48	-0.01
			Max. Mx	10	-107.55	0.63	0.00
			Max. My	25	-6.04	-0.04	0.41
		Diagonal	Max. Vy	10	0.35	0.63	0.00
			Max. Vx	8	-0.18	-0.06	0.40
			Max Tension	13	6.92	0.05	-0.00
			Max. Compression	12	-7.10	0.00	0.00
			Max. Mx	27	2.20	0.13	-0.02
			Max. My	29	-1.84	0.12	-0.02
			Max. Vy	29	0.09	0.13	-0.02
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	10	1.87	0.03	0.00
		Secondary Horizontal	Max. Compression	10	-1.87	0.00	0.00
			Max. Mx	37	0.05	0.10	0.02
			Max. My	28	0.02	0.10	0.02

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T13	60 - 50	Leg	Max. Vy	36	-0.08	0.10	0.02
			Max. Vx	30	-0.00	0.00	0.00
			Max Tension	7	102.15	0.33	0.00
			Max. Compression	10	-120.98	-0.85	-0.00
			Max. Mx	10	-120.88	1.16	-0.00
			Max. My	8	-8.59	-0.14	0.98
		Diagonal	Max. Vy	10	0.42	1.16	-0.00
			Max. Vx	8	-0.27	-0.14	0.98
			Max Tension	13	7.96	0.07	0.00
			Max. Compression	12	-8.22	0.00	0.00
			Max. Mx	29	1.54	0.21	0.02
			Max. My	30	-3.13	0.18	-0.03
		Secondary Horizontal	Max. Vy	29	0.10	0.21	-0.02
			Max. Vx	30	-0.01	0.00	0.00
			Max Tension	10	2.10	0.03	-0.00
			Max. Compression	10	-2.10	0.00	0.00
			Max. Mx	38	-0.03	0.14	0.02
			Max. My	28	-0.01	0.14	0.02
T14	50 - 40	Leg	Max. Vy	38	-0.09	0.14	0.02
			Max. Vx	38	-0.00	0.00	0.00
			Max Tension	23	116.20	0.58	-0.01
			Max. Compression	10	-137.08	-0.70	0.00
			Max. Mx	10	-136.99	1.25	0.00
			Max. My	8	-8.99	-0.14	0.98
		Diagonal	Max. Vy	10	-0.46	1.25	0.00
			Max. Vx	8	0.29	-0.14	0.98
			Max Tension	13	8.15	0.10	-0.00
			Max. Compression	12	-8.56	0.00	0.00
			Max. Mx	27	2.45	0.22	0.03
			Max. My	28	2.78	0.21	-0.03
		Secondary Horizontal	Max. Vy	29	0.11	0.21	-0.02
			Max. Vx	28	0.01	0.00	0.00
			Max Tension	10	2.38	0.05	-0.01
			Max. Compression	10	-2.38	0.00	0.00
			Max. Mx	28	0.58	0.16	0.02
			Max. My	28	0.01	0.15	0.03
T15	40 - 30	Leg	Max. Vy	30	-0.10	0.16	0.02
			Max. Vx	30	-0.01	0.00	0.00
			Max Tension	23	129.89	0.52	-0.01
			Max. Compression	10	-153.27	-1.93	-0.01
			Max. Mx	10	-153.27	-1.93	-0.01
			Max. My	8	-10.16	-0.21	0.96
		Diagonal	Max. Vy	10	0.71	1.52	0.01
			Max. Vx	8	-0.28	-0.21	0.96
			Max Tension	13	8.34	0.11	-0.00
			Max. Compression	12	-8.67	0.00	0.00
			Max. Mx	29	1.38	0.29	0.03
			Max. My	30	-3.43	0.26	-0.03
		Secondary Horizontal	Max. Vy	29	0.13	0.29	-0.03
			Max. Vx	30	-0.01	0.00	0.00
			Max Tension	10	2.66	0.04	0.00
			Max. Compression	10	-2.66	0.00	0.00
			Max. Mx	38	-0.08	0.21	0.03
			Max. My	28	-0.08	0.21	0.03
T16	30 - 20	Leg	Max. Vy	38	-0.11	0.21	0.03
			Max. Vx	30	-0.01	0.00	0.00
			Max Tension	23	142.49	1.46	-0.00
			Max. Compression	10	-168.48	1.54	-0.02

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T17	20 - 15	Diagonal	Max. Mx	27	-88.63	-2.92	0.00
			Max. My	8	-10.63	-0.21	0.96
			Max. Vy	10	-1.76	2.44	0.01
			Max. Vx	9	-0.32	-0.12	0.38
			Max Tension	25	8.95	0.05	0.00
			Max. Compression	12	-9.46	0.00	0.00
			Max. Mx	10	7.40	0.14	-0.00
			Max. My	36	-3.26	0.04	0.02
			Max. Vy	27	-0.07	0.11	0.01
			Max. Vx	36	-0.00	0.00	0.00
		Horizontal	Max Tension	10	2.92	0.07	0.03
			Max. Compression	10	-2.92	0.00	0.00
			Max. Mx	29	1.09	0.18	0.09
			Max. My	29	-1.11	0.18	0.09
			Max. Vy	29	0.11	0.18	0.09
		Redund Horiz 1 Bracing	Max. Vx	29	0.01	0.00	0.00
			Max Tension	10	2.92	0.00	0.00
			Max. Compression	10	-2.92	0.00	0.00
			Max. Mx	35	1.48	-0.04	0.00
			Max. My	28	1.41	0.00	0.00
		Redund Diag 1 Bracing	Max. Vy	35	0.03	0.00	0.00
			Max. Vx	28	-0.00	0.00	0.00
			Max Tension	10	1.70	0.00	0.00
			Max. Compression	10	-1.70	0.00	0.00
			Max. Mx	28	-0.06	-0.04	0.00
T18	15 - 10	Leg	Max. My	27	0.13	0.00	0.00
			Max. Vy	28	0.03	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
			Max Tension	23	155.58	2.14	-0.01
			Max. Compression	10	-184.00	3.40	0.02
		Diagonal	Max. Mx	10	-184.00	3.40	0.02
			Max. My	20	-12.02	0.16	-0.56
			Max. Vy	10	-2.46	3.40	0.02
			Max. Vx	20	-0.46	0.16	-0.56
			Max Tension	12	8.82	0.16	-0.00
		Redund Horiz 1 Bracing	Max. Compression	13	-8.74	0.00	0.00
			Max. Mx	10	8.04	0.17	-0.00
			Max. My	36	-3.33	0.04	0.02
			Max. Vy	27	-0.07	0.12	0.01
			Max. Vx	33	0.00	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	10	3.19	0.00	0.00
			Max. Compression	10	-3.19	0.00	0.00
			Max. Mx	30	0.39	-0.04	0.00
			Max. My	28	1.50	0.00	0.00
			Max. Vy	30	0.03	0.00	0.00
		Leg	Max. Vx	28	0.00	0.00	0.00
			Max Tension	10	1.85	0.00	0.00
			Max. Compression	10	-1.85	0.00	0.00
			Max. Mx	28	-0.34	-0.05	0.00
			Max. My	27	0.13	0.00	0.00
		Leg	Max. Vy	28	0.03	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
			Max Tension	23	156.30	-0.10	0.01
			Max. Compression	10	-185.34	0.28	0.01
			Max. Mx	35	-92.21	1.24	0.01
		Leg	Max. My	8	-12.11	-0.13	1.92
			Max. Vy	35	-0.30	1.24	0.01

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T19	10 - 0	Diagonal	Max. Vx	8	-0.54	-0.13	1.92
			Max Tension	13	8.60	0.00	0.00
			Max. Compression	12	-8.82	0.00	0.00
			Max. Mx	27	0.99	-0.28	0.00
			Max. My	27	-1.14	0.00	-0.01
			Max. Vy	27	0.10	0.00	0.00
		Horizontal	Max. Vx	27	0.00	0.00	0.00
			Max Tension	10	3.21	0.04	0.04
			Max. Compression	10	-3.21	0.00	0.00
			Max. Mx	27	-0.26	0.18	0.17
			Max. My	27	0.22	0.18	0.17
			Max. Vy	27	-0.09	0.18	0.17
		Leg	Max. Vx	27	-0.02	0.00	0.00
			Max Tension	23	169.08	-0.44	-0.02
			Max. Compression	10	-200.36	-0.00	-0.00
			Max. Mx	35	-100.29	1.24	0.01
			Max. My	8	-12.65	-0.13	1.92
			Max. Vy	14	-0.16	-0.47	0.02
		Diagonal	Max. Vx	8	0.31	-0.13	1.92
			Max Tension	12	9.42	0.00	0.00
			Max. Compression	12	-9.82	0.00	0.00
			Max. Mx	28	2.43	0.26	0.04
			Max. My	27	3.03	0.25	-0.04
			Max. Vy	28	0.13	0.25	-0.04
			Max. Vx	27	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	207.78	22.89	-13.27
	Max. H _x	18	207.78	22.89	-13.27
	Max. H _z	5	-153.15	-16.59	11.54
	Min. Vert	7	-175.66	-19.82	11.48
	Min. H _x	7	-175.66	-19.82	11.48
	Min. H _z	18	207.78	22.89	-13.27
Leg B	Max. Vert	10	208.48	-22.86	-13.39
	Max. H _x	23	-175.65	19.79	11.58
	Max. H _z	25	-153.16	16.51	11.71
	Min. Vert	23	-175.65	19.79	11.58
	Min. H _x	10	208.48	-22.86	-13.39
	Min. H _z	10	208.48	-22.86	-13.39
Leg A	Max. Vert	2	208.40	0.12	26.47
	Max. H _x	20	13.54	3.67	1.02
	Max. H _z	2	208.40	0.12	26.47
	Min. Vert	15	-174.47	-0.10	-22.84
	Min. H _x	8	13.22	-3.66	0.99
	Min. H _z	15	-174.47	-0.10	-22.84

Tower Mast Reaction Summary

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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	31.21	0.00	0.00	-4.02	-3.17	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	37.45	-0.02	-43.89	-3525.90	-2.36	4.19
0.9 Dead+1.6 Wind 0 deg - No Ice	28.09	-0.02	-43.89	-3521.23	-1.39	4.18
1.2 Dead+1.6 Wind 30 deg - No Ice	37.45	20.78	-35.84	-2915.91	-1698.68	1.52
0.9 Dead+1.6 Wind 30 deg - No Ice	28.09	20.78	-35.84	-2911.83	-1696.05	1.52
1.2 Dead+1.6 Wind 60 deg - No Ice	37.45	35.25	-20.31	-1664.68	-2889.44	-1.34
0.9 Dead+1.6 Wind 60 deg - No Ice	28.09	35.25	-20.31	-1661.83	-2885.63	-1.34
1.2 Dead+1.6 Wind 90 deg - No Ice	37.45	41.51	-0.05	-13.27	-3384.84	-4.03
0.9 Dead+1.6 Wind 90 deg - No Ice	28.09	41.51	-0.05	-12.05	-3380.55	-4.02
1.2 Dead+1.6 Wind 120 deg - No Ice	37.45	38.10	21.85	1741.10	-3067.87	-6.09
0.9 Dead+1.6 Wind 120 deg - No Ice	28.09	38.10	21.85	1740.61	-3063.89	-6.08
1.2 Dead+1.6 Wind 150 deg - No Ice	37.45	20.73	35.86	2908.89	-1690.08	-5.52
0.9 Dead+1.6 Wind 150 deg - No Ice	28.09	20.73	35.86	2907.23	-1687.46	-5.51
1.2 Dead+1.6 Wind 180 deg - No Ice	37.45	0.02	40.60	3310.53	-7.11	-3.79
0.9 Dead+1.6 Wind 180 deg - No Ice	28.09	0.02	40.60	3308.47	-6.15	-3.78
1.2 Dead+1.6 Wind 210 deg - No Ice	37.45	-20.69	35.84	2906.02	1676.78	-1.21
0.9 Dead+1.6 Wind 210 deg - No Ice	28.09	-20.69	35.84	2904.37	1676.08	-1.21
1.2 Dead+1.6 Wind 240 deg - No Ice	37.45	-38.08	21.81	1736.77	3055.66	1.90
0.9 Dead+1.6 Wind 240 deg - No Ice	28.09	-38.08	21.81	1736.28	3053.61	1.90
1.2 Dead+1.6 Wind 270 deg - No Ice	37.45	-41.51	-0.10	-19.01	3376.47	4.02
0.9 Dead+1.6 Wind 270 deg - No Ice	28.09	-41.51	-0.10	-17.79	3374.09	4.02
1.2 Dead+1.6 Wind 300 deg - No Ice	37.45	-35.28	-20.35	-1669.88	2884.21	5.13
0.9 Dead+1.6 Wind 300 deg - No Ice	28.09	-35.28	-20.35	-1667.02	2882.31	5.12
1.2 Dead+1.6 Wind 330 deg - No Ice	37.45	-20.82	-35.86	-2918.74	1695.30	5.21
0.9 Dead+1.6 Wind 330 deg - No Ice	28.09	-20.82	-35.86	-2914.66	1694.59	5.21
1.2 Dead+1.0 Ice+1.0 Temp	137.04	0.00	-0.00	-31.50	-25.69	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	137.04	-0.00	-12.84	-1097.79	-25.53	0.15
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	137.04	6.25	-10.80	-934.54	-550.02	0.39
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	137.04	10.72	-6.18	-550.20	-926.12	0.50
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	137.04	12.49	-0.01	-33.39	-1072.36	0.46
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	137.04	11.14	6.40	498.46	-952.07	0.28
1.2 Dead+1.0 Wind 150	137.04	6.24	10.80	871.88	-548.11	0.07

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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
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	137.04	0.00	12.35	1004.66	-26.35	-0.15
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	137.04	-6.23	10.80	871.36	495.57	-0.33
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	137.04	-11.13	6.39	497.71	899.70	-0.44
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	137.04	-12.49	-0.02	-34.42	1020.70	-0.46
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	137.04	-10.72	-6.19	-551.13	875.03	-0.35
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	137.04	-6.26	-10.80	-935.05	499.26	-0.13
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	31.21	-0.00	-9.93	-800.03	-2.84	0.94
Dead+Wind 30 deg - Service	31.21	4.70	-8.11	-662.13	-386.33	0.35
Dead+Wind 60 deg - Service	31.21	7.97	-4.59	-379.27	-655.53	-0.30
Dead+Wind 90 deg - Service	31.21	9.39	-0.01	-5.93	-767.52	-0.91
Dead+Wind 120 deg - Service	31.21	8.62	4.94	390.68	-695.86	-1.38
Dead+Wind 150 deg - Service	31.21	4.69	8.11	654.67	-384.39	-1.24
Dead+Wind 180 deg - Service	31.21	0.01	9.18	745.47	-3.92	-0.86
Dead+Wind 210 deg - Service	31.21	-4.68	8.11	654.02	376.75	-0.28
Dead+Wind 240 deg - Service	31.21	-8.61	4.93	389.70	688.48	0.43
Dead+Wind 270 deg - Service	31.21	-9.39	-0.02	-7.23	761.00	0.91
Dead+Wind 300 deg - Service	31.21	-7.98	-4.60	-380.44	649.71	1.16
Dead+Wind 330 deg - Service	31.21	-4.71	-8.11	-662.76	380.93	1.18

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	0.00	-31.21	0.00	0.00	31.21	0.00	0.000%
2	-0.02	-37.45	-43.89	0.02	37.45	43.89	0.001%
3	-0.02	-28.09	-43.89	0.02	28.09	43.89	0.000%
4	20.78	-37.45	-35.84	-20.78	37.45	35.84	0.000%
5	20.78	-28.09	-35.84	-20.78	28.09	35.84	0.000%
6	35.25	-37.45	-20.31	-35.25	37.45	20.31	0.000%
7	35.25	-28.09	-20.31	-35.25	28.09	20.31	0.000%
8	41.51	-37.45	-0.05	-41.51	37.45	0.05	0.000%
9	41.51	-28.09	-0.05	-41.51	28.09	0.05	0.000%
10	38.10	-37.45	21.85	-38.10	37.45	-21.85	0.001%
11	38.10	-28.09	21.85	-38.10	28.09	-21.85	0.000%
12	20.73	-37.45	35.86	-20.73	37.45	-35.86	0.000%
13	20.73	-28.09	35.86	-20.73	28.09	-35.86	0.000%
14	0.02	-37.45	40.60	-0.02	37.45	-40.60	0.000%
15	0.02	-28.09	40.60	-0.02	28.09	-40.60	0.000%
16	-20.69	-37.45	35.84	20.69	37.45	-35.84	0.000%
17	-20.69	-28.09	35.84	20.69	28.09	-35.84	0.000%
18	-38.08	-37.45	21.81	38.08	37.45	-21.81	0.003%
19	-38.08	-28.09	21.81	38.08	28.09	-21.81	0.000%
20	-41.51	-37.45	-0.10	41.51	37.45	0.10	0.000%
21	-41.51	-28.09	-0.10	41.51	28.09	0.10	0.000%
22	-35.28	-37.45	-20.35	35.28	37.45	20.35	0.000%
23	-35.28	-28.09	-20.35	35.28	28.09	20.35	0.000%
24	-20.82	-37.45	-35.86	20.82	37.45	35.86	0.000%
25	-20.82	-28.09	-35.86	20.82	28.09	35.86	0.000%
26	0.00	-137.04	0.00	-0.00	137.04	0.00	0.000%
27	-0.00	-137.04	-12.84	0.00	137.04	12.84	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
28	6.25	-137.04	-10.80	-6.25	137.04	10.80	0.000%
29	10.72	-137.04	-6.18	-10.72	137.04	6.18	0.000%
30	12.49	-137.04	-0.01	-12.49	137.04	0.01	0.000%
31	11.14	-137.04	6.40	-11.14	137.04	-6.40	0.000%
32	6.24	-137.04	10.80	-6.24	137.04	-10.80	0.000%
33	0.00	-137.04	12.35	-0.00	137.04	-12.35	0.000%
34	-6.23	-137.04	10.80	6.23	137.04	-10.80	0.000%
35	-11.13	-137.04	6.39	11.13	137.04	-6.39	0.000%
36	-12.49	-137.04	-0.02	12.49	137.04	0.02	0.000%
37	-10.72	-137.04	-6.19	10.72	137.04	6.19	0.000%
38	-6.26	-137.04	-10.80	6.26	137.04	10.80	0.000%
39	-0.00	-31.21	-9.93	0.00	31.21	9.93	0.000%
40	4.70	-31.21	-8.11	-4.70	31.21	8.11	0.000%
41	7.97	-31.21	-4.59	-7.97	31.21	4.59	0.000%
42	9.39	-31.21	-0.01	-9.39	31.21	0.01	0.000%
43	8.62	-31.21	4.94	-8.62	31.21	-4.94	0.000%
44	4.69	-31.21	8.11	-4.69	31.21	-8.11	0.000%
45	0.01	-31.21	9.18	-0.01	31.21	-9.18	0.000%
46	-4.68	-31.21	8.11	4.68	31.21	-8.11	0.000%
47	-8.61	-31.21	4.93	8.61	31.21	-4.93	0.000%
48	-9.39	-31.21	-0.02	9.39	31.21	0.02	0.000%
49	-7.98	-31.21	-4.60	7.98	31.21	4.60	0.000%
50	-4.71	-31.21	-8.11	4.71	31.21	8.11	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000443
3	Yes	4	0.00000001	0.00000437
4	Yes	4	0.00000001	0.00000581
5	Yes	4	0.00000001	0.00000536
6	Yes	4	0.00000001	0.00000824
7	Yes	4	0.00000001	0.00000744
8	Yes	4	0.00000001	0.00000585
9	Yes	4	0.00000001	0.00000531
10	Yes	4	0.00000001	0.00000411
11	Yes	4	0.00000001	0.00000440
12	Yes	4	0.00000001	0.00000574
13	Yes	4	0.00000001	0.00000558
14	Yes	4	0.00000001	0.00000815
15	Yes	4	0.00000001	0.00000736
16	Yes	4	0.00000001	0.00000574
17	Yes	4	0.00000001	0.00000532
18	Yes	4	0.00000001	0.00000443
19	Yes	4	0.00000001	0.00000437
20	Yes	4	0.00000001	0.00000586
21	Yes	4	0.00000001	0.00000532
22	Yes	4	0.00000001	0.00000827
23	Yes	4	0.00000001	0.00000747
24	Yes	4	0.00000001	0.00000582
25	Yes	4	0.00000001	0.00000563
26	Yes	5	0.00000001	0.00007551
27	Yes	4	0.00079833	0.00015710
28	Yes	4	0.00080708	0.00015827

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29	Yes	4	0.00080994	0.00015889
30	Yes	4	0.00081048	0.00015855
31	Yes	4	0.00080696	0.00015774
32	Yes	4	0.00083368	0.00015998
33	Yes	4	0.00084857	0.00016123
34	Yes	4	0.00085019	0.00016082
35	Yes	4	0.00083379	0.00015923
36	Yes	4	0.00084003	0.00016021
37	Yes	4	0.00083424	0.00016033
38	Yes	4	0.00082061	0.00015910
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	152 - 140	2.919	43	0.1544	0.0078
T2	140 - 135	2.528	43	0.1519	0.0054
T3	135 - 130	2.368	43	0.1498	0.0047
T4	130 - 125	2.210	43	0.1473	0.0041
T5	125 - 120	2.054	43	0.1439	0.0037
T6	120 - 100	1.902	43	0.1396	0.0034
T7	100 - 93.3333	1.340	39	0.1186	0.0024
T8	93.3333 - 86.6667	1.172	39	0.1120	0.0021
T9	86.6667 - 80	1.014	39	0.1043	0.0018
T10	80 - 73.3333	0.867	39	0.0958	0.0015
T11	73.3333 - 66.6667	0.730	39	0.0882	0.0013
T12	66.6667 - 60	0.605	39	0.0800	0.0011
T13	60 - 50	0.492	39	0.0712	0.0010
T14	50 - 40	0.342	39	0.0584	0.0008
T15	40 - 30	0.227	39	0.0448	0.0007
T16	30 - 20	0.135	39	0.0335	0.0005
T17	20 - 15	0.068	39	0.0219	0.0004
T18	15 - 10	0.039	39	0.0160	0.0003
T19	10 - 0	0.019	43	0.0107	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
162.00	DS9A09F36D-N	43	2.919	0.1544	0.0078	801906
157.00	12' x 3" Dia Omni	43	2.919	0.1544	0.0078	801906
152.00	4-ft Dish	43	2.919	0.1544	0.0078	801906

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i>	<i>Tilt</i>	<i>Twist</i>	<i>Radius of Curvature</i>
<i>ft</i>			<i>in</i>	<i>°</i>	<i>°</i>	<i>ft</i>
149.00	ROHN 3-ft Side Arm	43	2.821	0.1539	0.0071	801906
145.00	QS66512-2	43	2.691	0.1532	0.0063	572787
140.00	4-ft Dish	43	2.528	0.1519	0.0054	189540
128.00	APXVSPP18-C-A20	43	2.147	0.1460	0.0039	132807
118.00	AIR32	43	1.843	0.1377	0.0033	81027
113.00	ROHN 3-ft Side Arm	43	1.697	0.1326	0.0030	68416
98.00	HBXX-6517DS	39	1.289	0.1166	0.0023	50742
78.00	8' dipole antenna	39	0.824	0.0935	0.0014	48532
72.50	ROHN 3-ft Side Arm	39	0.714	0.0873	0.0012	43965
58.00	GPS	39	0.459	0.0686	0.0009	48146
57.00	ROHN 3-ft Side Arm	39	0.444	0.0674	0.0009	45048

Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation</i>	<i>Horz. Deflection</i>	<i>Gov. Load Comb.</i>	<i>Tilt</i>	<i>Twist</i>
	<i>ft</i>	<i>in</i>		<i>°</i>	<i>°</i>
T1	152 - 140	12.877	10	0.6781	0.0344
T2	140 - 135	11.160	10	0.6676	0.0241
T3	135 - 130	10.452	10	0.6594	0.0207
T4	130 - 125	9.759	10	0.6486	0.0181
T5	125 - 120	9.069	10	0.6339	0.0164
T6	120 - 100	8.401	10	0.6155	0.0151
T7	100 - 93.3333	5.919	10	0.5235	0.0106
T8	93.3333 - 86.6667	5.178	10	0.4945	0.0093
T9	86.6667 - 80	4.478	10	0.4609	0.0081
T10	80 - 73.3333	3.826	10	0.4233	0.0068
T11	73.3333 - 66.6667	3.222	10	0.3896	0.0056
T12	66.6667 - 60	2.671	10	0.3531	0.0050
T13	60 - 50	2.170	10	0.3143	0.0043
T14	50 - 40	1.511	10	0.2577	0.0035
T15	40 - 30	1.001	10	0.1974	0.0029
T16	30 - 20	0.595	10	0.1476	0.0023
T17	20 - 15	0.299	10	0.0966	0.0016
T18	15 - 10	0.174	10	0.0706	0.0012
T19	10 - 0	0.085	10	0.0473	0.0007

Critical Deflections and Radius of Curvature - Design Wind

<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i>	<i>Tilt</i>	<i>Twist</i>	<i>Radius of Curvature</i>
<i>ft</i>			<i>in</i>	<i>°</i>	<i>°</i>	<i>ft</i>
162.00	DS9A09F36D-N	10	12.877	0.6781	0.0344	207084
157.00	12' x 3" Dia Omni	10	12.877	0.6781	0.0344	207084
152.00	4-ft Dish	10	12.877	0.6781	0.0344	207084
149.00	ROHN 3-ft Side Arm	10	12.447	0.6762	0.0313	207084
145.00	QS66512-2	10	11.874	0.6731	0.0279	147917
140.00	4-ft Dish	10	11.160	0.6676	0.0241	46723
128.00	APXVSPP18-C-A20	10	9.482	0.6432	0.0173	31021
118.00	AIR32	10	8.139	0.6071	0.0146	18617
113.00	ROHN 3-ft Side Arm	10	7.495	0.5846	0.0134	15663
98.00	HBXX-6517DS	10	5.692	0.5148	0.0102	11579

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
78.00	8' dipole antenna	10	3.640	0.4129	0.0064	11036
72.50	ROHN 3-ft Side Arm	10	3.150	0.3853	0.0055	9899
58.00	GPS	10	2.028	0.3030	0.0041	10766
57.00	ROHN 3-ft Side Arm	10	1.959	0.2974	0.0040	10112

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	152	Diagonal	A325N	0.5000	1	1.28	5.87	0.218	✓	Member Bearing
		Top Girt	A325N	0.5000	1	0.07	4.13	0.018	✓	Member Bearing
T2	140	Leg	A325N	0.6250	4	1.28	20.71	0.062	✓	Bolt Tension
		Diagonal	A325N	0.5000	1	1.46	7.95	0.184	✓	Bolt Shear
		Top Girt	A325N	0.5000	1	0.07	4.13	0.017	✓	Member Bearing
T3	135	Diagonal	A325N	0.5000	1	1.47	7.95	0.185	✓	Bolt Shear
T4	130	Diagonal	A325N	0.5000	1	2.22	7.95	0.279	✓	Bolt Shear
T5	125	Diagonal	A325N	0.5000	1	2.44	7.95	0.306	✓	Bolt Shear
T6	120	Leg	A325N	0.6250	4	4.78	20.71	0.231	✓	Bolt Tension
		Diagonal	A325N	0.5000	1	4.48	7.95	0.564	✓	Bolt Shear
T7	100	Leg	A325N	0.7500	4	10.65	29.82	0.357	✓	Bolt Tension
		Diagonal	A325X	0.5000	1	6.20	9.72	0.638	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.49	7.95	0.062	✓	Bolt Shear
T8	93.3333	Diagonal	A325X	0.5000	1	6.27	9.72	0.645	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.55	7.95	0.070	✓	Bolt Shear
T9	86.6667	Diagonal	A325X	0.5000	1	6.51	9.72	0.670	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.65	7.95	0.082	✓	Bolt Shear
T10	80	Leg	A325N	0.8750	4	17.90	40.59	0.441	✓	Bolt Tension
		Diagonal	A325X	0.5000	1	6.64	9.72	0.683	✓	Bolt Shear
T11	73.3333	Diagonal	A325X	0.5000	1	6.94	9.72	0.714	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.84	7.95	0.105	✓	Bolt Shear
T12	66.6667	Diagonal	A325X	0.5000	1	7.10	9.72	0.731	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.93	7.95	0.117	✓	Bolt Shear
T13	60	Leg	A325N	0.8750	4	25.54	40.59	0.629	✓	Bolt Tension
		Diagonal	A325N	0.6250	1	7.96	11.31	0.704	✓	Member Bearing
T14	50	Diagonal	A325N	0.6250	1	8.56	12.43	0.689	✓	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	1.19	7.95	0.149	✓	Bolt Shear
T15	40	Leg	A325N	1.0000	4	32.47	53.01	0.613	✓	Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T16	30	Diagonal	A325N	0.6250	1	8.67	12.43	0.698 ✓	1	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	1.33	7.95	0.167 ✓	1	Bolt Shear
		Diagonal	A325N	0.6250	1	9.46	12.43	0.761 ✓	1	Bolt Shear
		Horizontal	A325N	0.5000	2	1.46	7.95	0.184 ✓	1	Bolt Shear
T17	20	Leg	A325N	1.0000	4	38.90	53.01	0.734 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	8.82	11.31	0.779 ✓	1	Member Bearing
T18	15	Diagonal	A325X	0.6250	1	8.60	11.31	0.761 ✓	1	Member Bearing
		Horizontal	A325N	0.6250	1	3.21	7.83	0.411 ✓	1	Member Bearing
T19	10	Diagonal	A325X	0.6250	1	9.42	14.14	0.666 ✓	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	ROHN 2 STD	12.00	4.00	61.0 K=1.00	1.0745	-3.97	36.84	0.108 ¹ ✓
T2	140 - 135	ROHN 2.5 STD	5.01	5.01	63.4 K=1.00	1.7040	-6.76	57.14	0.118 ¹ ✓
T3	135 - 130	ROHN 2.5 STD	5.01	5.01	63.4 K=1.00	1.7040	-9.47	57.14	0.166 ¹ ✓
T4	130 - 125	ROHN 2.5 STD	5.01	5.01	63.4 K=1.00	1.7040	-13.71	57.14	0.240 ¹ ✓
T5	125 - 120	ROHN 2.5 STD	5.01	5.01	63.4 K=1.00	1.7040	-18.14	57.14	0.318 ¹ ✓
T6	120 - 100	ROHN 2.5 X-STR	20.03	6.68	86.7 K=1.00	2.2535	-42.57	58.52	0.728 ¹ ✓
T7	100 - 93.3333	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.44	44.5 K=1.00	3.2966	-52.71	128.34	0.411 ¹ ✓
T8	93.3333 - 86.6667	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.44	44.4 K=1.00	3.2966	-64.00	128.41	0.498 ¹ ✓
T9	86.6667 - 80	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.43	44.4 K=1.00	3.2966	-74.85	128.47	0.583 ¹ ✓
T10	80 - 73.3333	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.43	37.1 K=1.00	3.9980	-85.86	162.66	0.528 ¹ ✓
T11	73.3333 - 66.6667	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.42	37.1 K=1.00	3.9980	-96.61	162.71	0.594 ¹ ✓
T12	66.6667 - 60	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.42	37.0 K=1.00	3.9980	-107.62	162.74	0.661 ¹ ✓
T13	60 - 50	ROHN 4 X-STR	10.02	5.17	42.0 K=1.00	4.4074	-120.98	174.29	0.694 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T14	50 - 40	ROHN 4 X-STR	10.02	5.16	42.0 K=1.00	4.4074	-137.08	174.38	0.786 ¹
T15	40 - 30	ROHN 4 X-STR w/ 1/3 HSS5x0.25	10.02	5.16	43.1 K=1.00	5.6510	-153.27	222.03	0.690 ¹
T16	30 - 20	ROHN 4 X-STR w/ 1/3 HSS5x0.25	10.02	2.50	20.9 K=1.00	5.6510	-168.47	246.29	0.684 ¹
T17	20 - 15	ROHN 5 STD. w/ 1/3 HSS6x0.25	5.01	2.50	16.7 K=1.00	5.7741	-184.00	254.59	0.723 ¹
T18	15 - 10	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	5.01	5.01	28.4 K=1.00	6.5386	-185.34	277.39	0.668 ¹
T19	10 - 0	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	10.02	10.02	56.8 K=1.00	6.5386	-200.35	232.43	0.862 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	L1 1/2x1 1/2x1/8	7.68	3.60	146.0 K=1.00	0.3594	-1.30	3.81	0.342 ¹
T2	140 - 135	L1 1/2x1 1/2x3/16	8.45	4.11	168.0 K=1.00	0.5273	-1.46	4.22	0.346 ¹
T3	135 - 130	L1 1/2x1 1/2x3/16	8.86	4.31	176.4 K=1.00	0.5273	-1.46	3.83	0.382 ¹
T4	130 - 125	L1 1/2x1 1/2x1/4	9.28	4.52	185.7 K=1.00	0.6875	-2.22	4.50	0.494 ¹
T5	125 - 120	L1 1/2x1 1/2x1/4	9.70	4.73	194.5 K=1.00	0.6875	-2.41	4.11	0.586 ¹
T6	120 - 100	L2x2x1/4	12.21	6.04	185.3 K=1.00	0.9380	-4.48	6.17	0.726 ¹
T7	100 - 93.3333	L2 1/2x2 1/2x1/4	12.78	6.31	154.2 K=1.00	1.1900	-6.20	11.30	0.548 ¹
T8	93.3333 - 86.6667	L2 1/2x2 1/2x1/4	13.37	6.60	161.3 K=1.00	1.1900	-6.27	10.33	0.607 ¹
T9	86.6667 - 80	L2 1/2x2 1/2x1/4	13.96	6.90	168.6 K=1.00	1.1900	-6.51	9.46	0.688 ¹
T10	80 - 73.3333	L2 1/2x2 1/2x1/4	14.57	7.18	175.5 K=1.00	1.1900	-6.64	8.73	0.761 ¹
T11	73.3333 - 66.6667	L2 1/2x2 1/2x5/16	15.19	7.49	183.9 K=1.00	1.4600	-6.94	9.76	0.711 ¹
T12	66.6667 - 60	L2 1/2x2 1/2x5/16	15.82	7.81	191.6 K=1.00	1.4600	-7.10	8.99	0.790 ¹
T13	60 - 50	L3x3x1/4	18.19	9.05	183.4 K=1.00	1.4400	-8.22	9.67	0.850 ¹
T14	50 - 40	L3x3x5/16	19.04	9.47	192.9 K=1.00	1.7800	-8.56	10.81	0.792 ¹
T15	40 - 30	L3x3x3/8	19.91	9.90	202.4 K=1.00	2.1100	-8.67	11.63	0.745 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	KL/R > 200 (C) - 186 L3x3x5/16	10.64	10.16	132.2 K=1.00	1.7800	-9.46	22.97	0.412 ¹ ✓
T17	20 - 15	L3 1/2x3 1/2x1/4	10.64	10.16	115.9 K=1.04	1.6900	-8.74	26.99	0.324 ¹ ✓
T18	15 - 10	L3 1/2x3 1/2x1/4	11.08	10.47	181.1 K=1.00	1.6900	-8.82	11.64	0.758 ¹ ✓
T19	10 - 0	L3 1/2x3 1/2x5/16	22.61	11.11	193.1 K=1.00	2.0900	-9.82	12.66	0.776 ¹ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L3x3x1/4	18.25	8.76	163.9 K=0.92	1.4400	-2.92	12.11	0.241 ¹ ✓
T18	15 - 10	L2 1/2x2 1/2x3/16	19.27	9.27	224.8 K=1.00	0.9020	-3.21	4.03	0.797 ¹ ✓
		KL/R > 200 (C) - 238							

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T7	100 - 93.3333	L2 1/2x2 1/2x1/4	10.89	10.29	145.0 K=0.90	1.1900	-0.98	12.79	0.076 ¹ ✓
T8	93.3333 - 86.6667	L2 1/2x2 1/2x1/4	11.57	10.98	151.5 K=0.88	1.1900	-1.11	11.71	0.095 ¹ ✓
T9	86.6667 - 80	L2 1/2x2 1/2x1/4	12.25	11.66	158.1 K=0.87	1.1900	-1.30	10.76	0.121 ¹ ✓
T10	80 - 73.3333	L2 1/2x2 1/2x1/4	12.94	12.63	167.4 K=0.85	1.1900	-1.49	9.59	0.155 ¹ ✓
T11	73.3333 - 66.6667	L2 1/2x2 1/2x1/4	13.64	13.00	170.9 K=0.84	1.1900	-1.68	9.20	0.182 ¹ ✓
T12	66.6667 - 60	L2 1/2x2 1/2x1/4	14.34	13.69	177.6 K=0.83	1.1900	-1.87	8.52	0.219 ¹ ✓
T13	60 - 50	L2 1/2x2 1/2x1/4	15.18	14.81	188.3 K=0.81	1.1900	-2.10	7.58	0.277 ¹ ✓
T14	50 - 40	L3x3x1/4	16.18	15.47	169.0 K=0.85	1.4400	-2.38	11.39	0.209 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T15	40 - 30	L3x3x1/4	17.20	16.47	176.9 K=0.83	1.4400	-2.66	10.39	0.256 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	L2x2x1/8	6.52	6.11	184.6 K=1.00	0.4844	-0.07	3.21	0.022 ¹ ✓
T2	140 - 135	L2x2x1/8	6.56	6.16	185.8 K=1.00	0.4844	-0.09	3.17	0.028 ¹ ✓

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L2x2x1/4	4.56	4.37	134.0 K=1.00	0.9380	-2.92	11.81	0.247 ¹ ✓
T17	20 - 15	L2x2x1/4	4.82	4.58	140.4 K=1.00	0.9380	-3.19	10.74	0.297 ¹ ✓

¹ P_u / φP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L2x2x1/4	5.32	5.09	156.2 K=1.00	0.9380	-1.70	8.68	0.196 ¹ ✓
T17	20 - 15	L2x2x1/4	5.54	5.27	161.7 K=1.00	0.9380	-1.85	8.10	0.228 ¹ ✓

¹ P_u / φP_n controls

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Tension Checks

Leg Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	ROHN 2 STD	12.00	4.00	61.0	1.0745	2.64	48.35	0.055 ¹
T2	140 - 135	ROHN 2.5 STD	5.01	5.01	63.4	1.7040	5.10	76.68	0.067 ¹
T3	135 - 130	ROHN 2.5 STD	5.01	5.01	63.4	1.7040	7.46	76.68	0.097 ¹
T4	130 - 125	ROHN 2.5 STD	5.01	5.01	63.4	1.7040	10.52	76.68	0.137 ¹
T5	125 - 120	ROHN 2.5 STD	5.01	5.01	63.4	1.7040	13.84	76.68	0.180 ¹
T6	120 - 100	ROHN 2.5 X-STR	20.03	6.68	86.7	2.2535	34.45	101.41	0.340 ¹
T7	100 - 93.3333	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.23	41.8	3.2966	42.60	148.35	0.287 ¹
T8	93.3333 - 86.6667	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.24	41.9	3.2966	52.03	148.35	0.351 ¹
T9	86.6667 - 80	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	6.68	3.25	42.0	3.2966	61.82	148.35	0.417 ¹
T10	80 - 73.3333	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.25	35.2	3.9980	71.59	179.91	0.398 ¹
T11	73.3333 - 66.6667	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.25	35.2	3.9980	81.07	179.91	0.451 ¹
T12	66.6667 - 60	ROHN 3 X-STR w/ 1/3 HSS4x0.25	6.68	3.26	35.3	3.9980	90.49	179.91	0.503 ¹
T13	60 - 50	ROHN 4 X-STR	10.02	4.84	39.4	4.4074	102.15	198.34	0.515 ¹
T14	50 - 40	ROHN 4 X-STR	10.02	4.85	39.4	4.4074	116.20	198.34	0.586 ¹
T15	40 - 30	ROHN 4 X-STR w/ 1/3 HSS5x0.25	10.02	4.86	40.6	5.6510	129.89	254.29	0.511 ¹
T16	30 - 20	ROHN 4 X-STR w/ 1/3 HSS5x0.25	10.02	2.50	20.9	5.6510	142.49	254.29	0.560 ¹
T17	20 - 15	ROHN 5 STD. w/ 1/3 HSS6x0.25	5.01	2.50	16.7	5.7741	155.58	259.83	0.599 ¹
T18	15 - 10	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	5.01	5.01	28.4	6.5386	156.30	294.24	0.531 ¹
T19	10 - 0	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	10.02	10.02	56.8	6.5386	169.08	294.24	0.575 ¹

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	L1 1/2x1 1/2x1/8	7.68	3.60	144.1	0.3594	1.28	11.64	0.110 ¹
T2	140 - 135	L1 1/2x1 1/2x3/16	8.45	4.11	163.1	0.5273	1.44	17.09	0.084 ¹
T3	135 - 130	L1 1/2x1 1/2x3/16	8.86	4.31	170.9	0.5273	1.47	17.09	0.086 ¹
T4	130 - 125	L1 1/2x1 1/2x1/4	9.28	4.52	182.3	0.6875	2.15	22.27	0.096 ¹
T5	125 - 120	L1 1/2x1 1/2x1/4	9.70	4.73	190.9	0.6875	2.44	22.27	0.109 ¹
T6	120 - 100	L2x2x1/4	11.66	5.76	170.1	0.9380	4.45	30.39	0.147 ¹
T7	100 - 93.3333	L2 1/2x2 1/2x1/4	12.78	6.31	147.6	1.1900	6.03	38.56	0.156 ¹
T8	93.3333 - 86.6667	L2 1/2x2 1/2x1/4	13.37	6.60	154.4	1.1900	6.13	38.56	0.159 ¹
T9	86.6667 - 80	L2 1/2x2 1/2x1/4	13.96	6.90	161.4	1.1900	6.30	38.56	0.163 ¹
T10	80 - 73.3333	L2 1/2x2 1/2x1/4	14.57	7.18	168.1	1.1900	6.47	38.56	0.168 ¹
T11	73.3333 - 66.6667	L2 1/2x2 1/2x5/16	15.19	7.49	177.1	1.4600	6.64	47.30	0.140 ¹
T12	66.6667 - 60	L2 1/2x2 1/2x5/16	15.82	7.81	184.6	1.4600	6.92	47.30	0.146 ¹
T13	60 - 50	L3x3x1/4	18.19	9.05	173.9	1.4400	7.96	46.66	0.171 ¹
T14	50 - 40	L3x3x5/16	19.04	9.47	183.4	1.7800	8.15	57.67	0.141 ¹
T15	40 - 30	L3x3x3/8	19.91	9.90	193.8	2.1100	8.34	68.36	0.122 ¹
T16	30 - 20	L3x3x5/16	10.64	10.16	135.5	1.7800	8.95	57.67	0.155 ¹
T17	20 - 15	L3 1/2x3 1/2x1/4	10.64	10.16	114.6	1.6900	8.82	54.76	0.161 ¹
T18	15 - 10	L3 1/2x3 1/2x1/4	11.08	10.47	118.1	1.6900	8.60	54.76	0.157 ¹
T19	10 - 0	L3 1/2x3 1/2x5/16	22.61	11.11	184.1	2.0900	9.42	67.72	0.139 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L3x3x1/4	18.25	8.76	172.8	1.4400	2.92	46.66	0.063 ¹
T18	15 - 10	L2 1/2x2 1/2x3/16	19.27	9.27	217.4	0.9020	3.21	29.22	0.110 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
									✓

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T7	100 - 93.3333	L2 1/2x2 1/2x1/4	10.89	10.29	165.8	1.1900	0.94	38.56	0.024 ¹ ✓
T8	93.3333 - 86.6667	L2 1/2x2 1/2x1/4	11.57	10.98	176.5	1.1900	1.11	38.56	0.029 ¹ ✓
T9	86.6667 - 80	L2 1/2x2 1/2x1/4	12.25	11.66	187.1	1.1900	1.30	38.56	0.034 ¹ ✓
T10	80 - 73.3333	L2 1/2x2 1/2x1/4	12.94	12.63	197.1	1.1900	1.49	38.56	0.039 ¹ ✓
T11	73.3333 - 66.6667	L2 1/2x2 1/2x1/4	13.64	13.00	208.0	1.1900	1.68	38.56	0.043 ¹ ✓
T12	66.6667 - 60	L2 1/2x2 1/2x1/4	14.34	13.69	218.9	1.1900	1.87	38.56	0.048 ¹ ✓
T13	60 - 50	L2 1/2x2 1/2x1/4	15.18	14.81	231.1	1.1900	2.10	38.56	0.054 ¹ ✓
T14	50 - 40	L3x3x1/4	16.18	15.47	204.0	1.4400	2.38	46.66	0.051 ¹ ✓
T15	40 - 30	L3x3x1/4	17.20	16.47	216.8	1.4400	2.66	46.66	0.057 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	152 - 140	L2x2x1/8	6.52	6.11	121.2	0.4844	0.07	15.69	0.005 ¹ ✓
T2	140 - 135	L2x2x1/8	6.56	6.16	122.0	0.4844	0.07	15.69	0.004 ¹ ✓

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L2x2x1/4	4.56	4.37	86.0	0.9380	2.92	30.39	0.096 ¹ ✓
T17	20 - 15	L2x2x1/4	4.82	4.58	90.2	0.9380	3.19	30.39	0.105 ¹ ✓

¹ P_u / φP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	30 - 20	L2x2x1/4	5.32	5.09	100.3	0.9380	1.70	30.39	0.056 ¹ ✓
T17	20 - 15	L2x2x1/4	5.54	5.27	103.8	0.9380	1.85	30.39	0.061 ¹ ✓

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	152 - 140	Leg	ROHN 2 STD	2	-3.97	36.84	10.8	Pass
T2	140 - 135	Leg	ROHN 2.5 STD	26	-6.76	57.14	11.8	Pass
T3	135 - 130	Leg	ROHN 2.5 STD	38	-9.47	57.14	16.6	Pass
T4	130 - 125	Leg	ROHN 2.5 STD	47	-13.71	57.14	24.0	Pass
T5	125 - 120	Leg	ROHN 2.5 STD	56	-18.14	57.14	31.8	Pass
T6	120 - 100	Leg	ROHN 2.5 X-STR	65	-42.57	58.52	72.8	Pass
T7	100 - 93.3333	Leg	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	86	-52.71	128.34	41.1	Pass
T8	93.3333 - 86.6667	Leg	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	98	-64.00	128.41	49.8	Pass
T9	86.6667 - 80	Leg	ROHN 2.5 X-STR w/ 1/3 HSS3.5x0.3	110	-74.85	128.47	58.3	Pass
T10	80 - 73.3333	Leg	ROHN 3 X-STR w/ 1/3 HSS4x0.25	122	-85.86	162.66	52.8	Pass
T11	73.3333 - 66.6667	Leg	ROHN 3 X-STR w/ 1/3 HSS4x0.25	134	-96.61	162.71	59.4	Pass
T12	66.6667 - 60	Leg	ROHN 3 X-STR w/ 1/3 HSS4x0.25	146	-107.62	162.74	66.1	Pass
T13	60 - 50	Leg	ROHN 4 X-STR	158	-120.98	174.29	69.4	Pass
T14	50 - 40	Leg	ROHN 4 X-STR	170	-137.08	174.38	78.6	Pass
T15	40 - 30	Leg	ROHN 4 X-STR w/ 1/3 HSS5x0.25	182	-153.27	222.03	69.0	Pass
T16	30 - 20	Leg	ROHN 4 X-STR w/ 1/3 HSS5x0.25	194	-168.47	246.29	68.4	Pass
T17	20 - 15	Leg	ROHN 5 STD. w/ 1/3 HSS6x0.25	236	-184.00	254.59	72.3 73.4 (b)	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail
T18	15 - 10	Leg	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	260	-185.34	277.39	66.8	Pass
T19	10 - 0	Leg	ROHN 5 STD. w/ (3) 1.5"x0.5" Bars	269	-200.35	232.43	86.2	Pass
T1	152 - 140	Diagonal	L1 1/2x1 1/2x1/8	9	-1.30	3.81	34.2	Pass
T2	140 - 135	Diagonal	L1 1/2x1 1/2x3/16	33	-1.46	4.22	34.6	Pass
T3	135 - 130	Diagonal	L1 1/2x1 1/2x3/16	43	-1.46	3.83	38.2	Pass
T4	130 - 125	Diagonal	L1 1/2x1 1/2x1/4	51	-2.22	4.50	49.4	Pass
T5	125 - 120	Diagonal	L1 1/2x1 1/2x1/4	60	-2.41	4.11	58.6	Pass
T6	120 - 100	Diagonal	L2x2x1/4	69	-4.48	6.17	72.6	Pass
T7	100 - 93.3333	Diagonal	L2 1/2x2 1/2x1/4	90	-6.20	11.30	54.8	Pass
							63.8 (b)	
T8	93.3333 - 86.6667	Diagonal	L2 1/2x2 1/2x1/4	102	-6.27	10.33	60.7	Pass
							64.5 (b)	
T9	86.6667 - 80	Diagonal	L2 1/2x2 1/2x1/4	114	-6.51	9.46	68.8	Pass
T10	80 - 73.3333	Diagonal	L2 1/2x2 1/2x1/4	126	-6.64	8.73	76.1	Pass
T11	73.3333 - 66.6667	Diagonal	L2 1/2x2 1/2x5/16	138	-6.94	9.76	71.1	Pass
							71.4 (b)	
T12	66.6667 - 60	Diagonal	L2 1/2x2 1/2x5/16	150	-7.10	8.99	79.0	Pass
T13	60 - 50	Diagonal	L3x3x1/4	162	-8.22	9.67	85.0	Pass
T14	50 - 40	Diagonal	L3x3x5/16	174	-8.56	10.81	79.2	Pass
T15	40 - 30	Diagonal	L3x3x3/8	186	-8.67	11.63	74.5	Pass
T16	30 - 20	Diagonal	L3x3x5/16	204	-9.46	22.97	41.2	Pass
							76.1 (b)	
T17	20 - 15	Diagonal	L3 1/2x3 1/2x1/4	249	-8.74	26.99	32.4	Pass
							77.9 (b)	
T18	15 - 10	Diagonal	L3 1/2x3 1/2x1/4	264	-8.82	11.64	75.8	Pass
							76.1 (b)	
T19	10 - 0	Diagonal	L3 1/2x3 1/2x5/16	273	-9.82	12.66	77.6	Pass
T16	30 - 20	Horizontal	L3x3x1/4	196	-2.92	12.11	24.1	Pass
T18	15 - 10	Horizontal	L2 1/2x2 1/2x3/16	238	-3.21	4.03	79.7	Pass
T7	100 - 93.3333	Secondary Horizontal	L2 1/2x2 1/2x1/4	95	-0.98	12.79	7.6	Pass
T8	93.3333 - 86.6667	Secondary Horizontal	L2 1/2x2 1/2x1/4	106	-1.11	11.71	9.5	Pass
T9	86.6667 - 80	Secondary Horizontal	L2 1/2x2 1/2x1/4	118	-1.30	10.76	12.1	Pass
T10	80 - 73.3333	Secondary Horizontal	L2 1/2x2 1/2x1/4	130	-1.49	9.59	15.5	Pass
T11	73.3333 - 66.6667	Secondary Horizontal	L2 1/2x2 1/2x1/4	143	-1.68	9.20	18.2	Pass
T12	66.6667 - 60	Secondary Horizontal	L2 1/2x2 1/2x1/4	154	-1.87	8.52	21.9	Pass
T13	60 - 50	Secondary Horizontal	L2 1/2x2 1/2x1/4	166	-2.10	7.58	27.7	Pass
T14	50 - 40	Secondary Horizontal	L3x3x1/4	178	-2.38	11.39	20.9	Pass
T15	40 - 30	Secondary Horizontal	L3x3x1/4	190	-2.66	10.39	25.6	Pass
T1	152 - 140	Top Girt	L2x2x1/8	5	-0.07	3.21	2.2	Pass
T2	140 - 135	Top Girt	L2x2x1/8	30	-0.09	3.17	2.8	Pass
T16	30 - 20	Redund Horz 1 Bracing	L2x2x1/4	221	-2.92	11.81	24.7	Pass
T17	20 - 15	Redund Horz 1 Bracing	L2x2x1/4	247	-3.19	10.74	29.7	Pass
T16	30 - 20	Redund Diag 1 Bracing	L2x2x1/4	222	-1.70	8.68	19.6	Pass
T17	20 - 15	Redund Diag 1 Bracing	L2x2x1/4	248	-1.85	8.10	22.8	Pass
							Summary	
							Leg (T19)	86.2 Pass
							Diagonal (T13)	85.0 Pass
							Horizontal (T18)	79.7 Pass
							Secondary Horizontal (T13)	27.7 Pass

<i>tnxTower</i> <i>Centek Engineering Inc.</i> <i>63-2 North Branford Rd.</i> <i>Branford, CT 06405</i> <i>Phone: (203) 488-0580</i> <i>FAX: (203) 488-8587</i>	Job	16034.08 - CT5047	Page	59 of 59
	Project	152' Lattice Tower - 366 Longridge Road Stamford, CT	Date	13:43:25 02/28/17
	Client	AT&T Mobility	Designed by	TJL

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Size</i>	<i>Critical Element</i>	<i>P K</i>	<i>ϕP_{allow} K</i>	<i>% Capacity</i>	<i>Pass Fail</i>
						Top Girt (T2)	2.8	Pass
						Redund Horz 1 Bracing (T17)	29.7	Pass
						Redund Diag 1 Bracing (T17)	22.8	Pass
						Bolt Checks	77.9	Pass
						RATING =	86.2	Pass

Program Version 7.0.5.1 - 2/1/2016 File:J:\Jobs\1603400.WI\08_Stamford North CT5047\04_Structural\Tower\Backup Documentation\ERI Files\152' Lattice Tower Stamford, CT.eri

Subject:

Anchor Bolt Analysis

Location:

152-ft ROHN Lattice Tower
 Stamford, CT

Rev. 0: 2/28/17

Prepared by: T.J.L. Checked by: C.F.C.
 Job No. 16034.08

Anchor Bolt and Base Plate Analysis:

Input Data:

Tower Reactions:

Tension Force =	Tension := 176-kips	(Input From tnxTower)
Compression Force =	Compression := 208-kips	(Input From tnxTower)
Shear Force =	Shear := 26-kips	(Input From tnxTower)

Anchor Bolt Data:

ASTMA193-B7

Number of Anchor Bolts =	N := 4	(User Input)
Bolt Ultimate Strength =	$F_u := 125\text{-ksi}$	(User Input)
Bolt Yield Strength =	$F_y := 105\text{-ksi}$	(User Input)
Bolt Modulus =	E := 29000-ksi	(User Input)
Diameter of Anchor Bolts =	D := 1-in	(User Input)
Threads per Inch =	n := 8	(User Input)
	$\eta := 0.55$	For grouted Base Plate per TIA-222-G Section 4.9.9

Anchor Bolt Analysis:

Calculated Anchor Bolt Properties:

Gross Area of Bolt = $A_g := \frac{\pi}{4} \cdot D^2 = 0.785 \cdot \text{in}^2$

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot \text{in}}{n} \right)^2 = 0.606 \cdot \text{in}^2$

Net Diameter = $D_n := \frac{2 \cdot \sqrt{A_n}}{\sqrt{\pi}} = 0.878 \cdot \text{in}$

Radius of Gyration of Bolt = $r := \frac{D_n}{4} = 0.22 \cdot \text{in}$

Section Modulus of Bolt = $S_x := \frac{\pi \cdot D_n^3}{32} = 0.066 \cdot \text{in}^3$

Check Anchor Bolt Tension Force:

Maximum Tensile Force = $T_{\text{Max}} := \frac{\text{Tension}}{N} = 44 \cdot \text{kips}$

Maximum Compressive Force = $C_{\text{Max}} := \frac{\text{Compression}}{N} = 52 \cdot \text{kips}$

Maximum Shear Force = $V_{\text{Max}} := \frac{\text{Shear}}{N} = 6.5 \cdot \text{kips}$

Design Tensile Strength = $\Phi R_{nt} := 0.8 \cdot F_u \cdot A_n = 60.574 \cdot \text{k}$

Bolt % of Capacity = $\frac{\left(T_{\text{Max}} + \frac{V_{\text{Max}}}{\eta} \right)}{\Phi R_{nt}} \cdot 100 = 92.1$

Condition1 = $\text{Condition1} := \text{if} \left[\frac{\left(T_{\text{Max}} + \frac{V_{\text{Max}}}{\eta} \right)}{\Phi R_{nt}} \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right]$

Condition1 = "OK"

Caisson Foundation:

Input Data:

Tower Data

Uplift = Uplift := 176-kips (User Input)
 Compression = Comp := 208-kips (User Input)
 Shear Force = Shear := 26-kips (User Input)
 Tower Height = H_t := 152-ft (User Input)

Footing Data:

Length of Caisson = L_c := 21-ft (User Input)
 Extension of Caisson Above Grade = L_{cag} := 0.5-ft (User Input)
 Diameter of Caisson = d_c := 4.5-ft (User Input)
 Length of Caisson Above Wate Table = $L_{c.AWT}$:= 8-ft (User Input)
 Length of Caisson Below Wate Table = $L_{c.BWT}$:= 13-ft (User Input)
 Length of Pad = L_p := 5-ft (User Input)
 Width of Pad = W_p := 5-ft (User Input)
 Thickness of Pad = t_p := 5-ft (User Input)

Rock Anchor Data:

Williams 150 KSI All-Thread Bar (R71-18)

Rock Anchor Quantity per Leg = $RA_{Quantity}$:= 1 (User Input)
 Lock off Load = RA_{Lock_Load} := 135-kips (User Input)

From Design Documents
 prepared by AECOM and
 Field Visit Inspection Report
 prepared by Centek dated
 10.6.2016

Material Properties:

Concrete Compressive Strength = f_c := 4000-psi (User Input)
 Steel Reinforcement Yield Strength = f_y := 60000-psi (User Input)
 Ultimate Skin Friction = μ := 0.82-ksf (User Input)
 Ultimate Soil Bearing Capacity = q_u := 14000-psf (User Input)
 Unit Weight of Soil = γ_{soil} := 120-pcf (User Input)
 Unit Weight of Concrete = γ_{conc} := 150-pcf (User Input)
 Depth to Neglect = n := 5-ft (User Input)
 Resistance Factor for Bearing = $\Phi_{sBearing}$:= 0.75 (TIA-222-G 9.4.1)
 Resistance Factor for Friction = $\Phi_{sFriction}$:= 0.75 (TIA-222-G 9.4.1)
 Resistance Factor for Pullout in Rock = $\Phi_{sPullout}$:= 0.5 (TIA-222-G 9.4.1)

Calculated Properties:

Adjusted Concrete Unit Weight =

$$\gamma_c := \gamma_{\text{conc}} - 62.4 \text{ pcf} = 87.6 \text{ pcf}$$

Weight of Concrete Caisson (no water) =

$$WT_{c,\text{comp}} := \frac{\pi}{4} \cdot d_c^2 (L_c - t_p) \cdot \gamma_{\text{conc}} + L_p \cdot W_p \cdot t_p \cdot \gamma_{\text{conc}} = 56.92 \text{ kip}$$

Weight of Concrete Caisson (water) =

$$WT_{c,\text{uplift}} := \left[\frac{\pi}{4} \cdot d_c^2 (L_{c,\text{AWT}} - t_p) + L_p \cdot W_p \cdot t_p \right] \cdot \gamma_{\text{conc}} + \left(d_c^2 L_{c,\text{BWT}} \right) \cdot \gamma_c = 49 \text{ kip}$$

Check Uplift:

Uplift Resistance from Concrete Weight =

$$\text{Uplift}_{\text{conc}} := WT_{c,\text{uplift}} \cdot 0.9 = 44.071 \text{ kips}$$

Uplift Resistance from Skin Friction =

$$\text{Uplift}_{\text{SF}} := \pi \cdot d_c \cdot (L_c - L_{\text{cag}} - n) \cdot \mu \cdot \Phi_{\text{Friction}} = 134.763 \text{ kips}$$

Uplift Resistance from Rock Anchor =

$$\text{Uplift}_{\text{RA}} := RA_{\text{Lock_Load}} \cdot RA_{\text{Quantity}} \cdot \Phi_{\text{Pullout}} = 67.5 \text{ kips}$$

Total Uplift Resistance =

$$\text{Uplift}_R := \text{Uplift}_{\text{conc}} + \text{Uplift}_{\text{SF}} + \text{Uplift}_{\text{RA}} = 246.333 \text{ kips}$$

Uplift Check =

$$\frac{\text{Uplift}}{\text{Uplift}_R} = 71.45\%$$

$$\text{Uplift_Check} := \text{if} \left(\frac{\text{Uplift}_R}{\text{Uplift}} \geq 1.0, \text{"Okay"}, \text{"No Good"} \right)$$

Uplift_Check = "Okay"

Check Compression:

Total Compression Force =

$$\text{Comp}_{\text{tot}} := WT_{c,\text{comp}} + \text{Comp} = 264.92 \text{ kips}$$

Compression Resistance from Bearing =

$$\text{Comp}_{\text{bearing}} := \frac{\pi}{4} \cdot d_c^2 \cdot q_u \cdot \Phi_{\text{Bearing}} = 166.995 \text{ kips}$$

Compression Resistance from Skin Friction =

$$\text{Comp}_{\text{SF}} := \pi \cdot d_c \cdot (L_c - L_{\text{cag}} - n) \cdot \mu \cdot \Phi_{\text{Friction}} = 134.763 \text{ kips}$$

Total Compression Resistance =

$$\text{Comp}_R := \text{Comp}_{\text{bearing}} + \text{Comp}_{\text{SF}} = 301.758 \text{ kips}$$

Compression Check =

$$\frac{\text{Comp}_{\text{tot}}}{\text{Comp}_R} = 87.79\%$$

$$\text{Compression_Check} := \text{if} \left(\frac{\text{Comp}_R}{\text{Comp}_{\text{tot}}} \geq 1.0, \text{"Okay"}, \text{"No Good"} \right)$$

Compression_Check = "Okay"

Section 1 - RFDS GENERAL INFORMATION											
RFDS NAME: CTV5047		DATE: 5/26/2016		RF DESIGN ENG: Omair Mohammed		RF PERF ENG:		RFDS PROGRAM TYPE: 2017 LTE Next Carrier			
ISSUE: Bronze Standard		Approved? (Y/N): Yes		RF DESIGN PHONE: 860-721-4315		RF PERF PHONE:		RFDS TECHNOLOGY: LTE 3C			
REVISION: Preliminary		RF MANAGER: Cameron Syme		RF DESIGN EMAIL: OM636@US.ATT.COM		RF PERF EMAIL:		State: Preliminary			
INITIATIVE / PROJECT: LTE 3C WCS w/ Bronze Standard						TRIDENT:		Status: Approved			
						GSM FREQUENCY: 850		RFDS ID: 1244695			
						UMTS FREQUENCY: 850,1900		Version: 1.00			
						LTE FREQUENCY: 700,1900,WCS		Created By: om636a			
								Date Created: 5/26/2016			
								Date Updated: 5/26/2016			
								Updated By: om636a			
								I-PLAN JOB # 1: NER-RCTB-16-01911		Product Group Sub Group #1: LTE Next Carrier LTE 3C	
								I-PLAN JOB # 2:		Product Group Sub Group #2:	
		I-PLAN JOB # 3:		Product Group Sub Group #3:							
		I-PLAN JOB # 4:		Product Group Sub Group #4:							
Section 2 - LOCATION INFORMATION											
USID: 24480		FA LOCATION CODE: 10092209		LOCATION NAME: STAMFORD NORTH		ORACLE PRJT #1:		PACE JOB #1: MRCTB019073			
REGION: NORTHEAST		MARKET CLUSTER: NEW ENGLAND		MARKET: CONNECTICUT		ORACLE PRJT # 2:		PACE JOB #2:			
ADDRESS: 366 OLD LONG RIDGE ROAD		CITY: STAMFORD		STATE: CT		ORACLE PRJT # 3:		PACE JOB #3:			
ZIP CODE: 06903		COUNTY: FAIRFIELD		MSA / RSA:		ORACLE PRJT # 4:		PACE JOB #4:			
LATITUDE (D-M-S): 41d 9m 10.05084s		LONGITUDE (D-M-S): -73d -35m -35.15604s		LAT (DEC DEG.): 41.1527919		SEARCH RING NAME:					
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION: CT 15 SOUTH TO EXIT 34 RIGHT ON LONG RIDGE RD LONGRIDGE RD APPROX 5 MILES TO ERSKINE RT ON ERSKIN LEFT ON OLD LONG RIDGE RD.						SEARCH RING ID:		CASPR INITIATIVE #1:			
						BTA:		CASPR INITIATIVE #2:			
						LONG (DEC DEG.): -73.5930989		CASPR INITIATIVE #3:			
						BORDER CELL WITH CONTOUR COORD:		CASPR INITIATIVE #4:			
						AM STUDY REQ'D (Y/N): No					
						FREQ COORD:					
Section 3 - LICENSE COVERAGE/FILING INFORMATION											
CGSA - NO FILING TRIGGERED? (Yes/No): No		CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:					
CGSA - MINOR FILING NEEDED? (Yes/No): No		CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:							
CGSA - MAJOR FILING NEEDED? (Yes/No): Yes		CGSA SCORECARD UPDATED:									
Section 4 - TOWER/REGULATORY INFORMATION											
STRUCTURE AT&T OWNED?: Yes		GROUND ELEVATION (ft):		STRUCTURE TYPE: SELF SUPPORT		MARKET LOCATION 700 MHz Band:					
ADDITIONAL REGULATORY?: Yes		HEIGHT OVERALL (ft): 152.00		FCC ASR NUMBER: NR		MARKET LOCATION 850 MHz Band:					
SUB-LEASE RIGHTS?: Yes		STRUCTURE HEIGHT (ft): 152.00				MARKET LOCATION 1900 MHz Band:					
LIGHTING TYPE: NOT REQUIRED						MARKET LOCATION AWS Band:					
						MARKET LOCATION WCS Band:					
						MARKET LOCATION Future Band:					
Section 5 - E-911 INFORMATION - existing											
		PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A	E-911	STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR B		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR C		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR D		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO		1088250476				
SECTOR E											
SECTOR F											
OMNI											
Section 5 - E-911 INFORMATION - final											
		PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A	E-911	STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR B		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR C		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO_MAM		0				
SECTOR D		STAMFORD EMERGENCY COMMUNICATION CENTER	1396		INTRADO		1088250476				
SECTOR E											
SECTOR F											
OMNI											

Section 6 - RBS GENERAL INFORMATION - existing																				
	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS															
RBS ID:	24728	219756	210684	336081	362958															
CTS COMMON ID:	321X5047	321D5047	5047	CTU5047	CTL05047															
BT A/TID:	321P	321G	321U	321W	321L															
4-DIGIT SITE ID:	5047	5047	5047	8047	05047															
COW OR TOY?:	No	No	No	No	No															
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED															
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL															
BTS LOCATION ID:	GROUND	GROUND	INTERNAL	INTERNAL	INTERNAL															
ORIGINATING CO:	CINGULAR	CINGULAR	CINGULAR	CINGULAR	CINGULAR															
CELLULAR NETWORK:	GOLD	GOLD	GOLD	GOLD	GOLD															
OPS DISTRICT:	CT-South	CT-South	CT-South	CT-South	CT-South															
RF DISTRICT:	NPO Triage	NPO Triage	Bridgeport	NPO Triage	NPO Triage															
OPS ZONE:	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS															
RF ZONE:	Hotseat	Hotseat	BBP01	BBP01	Hotseat															
BASE STATION TYPE:	BASE	OVERLAY	BASE	OVERLAY	BASE															
EQUIPMENT NAME:	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH															
DISASTER PRIORITY:	0	3	0	3	3															
Section 6 - RBS GENERAL INFORMATION - final																				
	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS															
RBS ID:	24728	219756	210684	336081	362958															
CTS COMMON ID:	321X5047	321D5047	5047	CTU5047	CTL05047															
BT A/TID:	321P	321G	321U	321W	321L															
4-DIGIT SITE ID:	5047	5047	5047	8047	05047															
COW OR TOY?:	No	No	No	No	No															
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED															
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL															
BTS LOCATION ID:	GROUND	GROUND	INTERNAL	INTERNAL	INTERNAL															
ORIGINATING CO:	CINGULAR	CINGULAR	CINGULAR	CINGULAR	CINGULAR															
CELLULAR NETWORK:	GOLD	GOLD	GOLD	GOLD	GOLD															
OPS DISTRICT:	CT-South	CT-South	CT-South	CT-South	CT-South															
RF DISTRICT:	NPO Triage	NPO Triage	Bridgeport	NPO Triage	NPO Triage															
OPS ZONE:	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS	NE_CT_5_FRFD_W_CS															
RF ZONE:	Hotseat	Hotseat	BBP01	BBP01	Hotseat															
BASE STATION TYPE:	BASE	OVERLAY	BASE	OVERLAY	BASE															
EQUIPMENT NAME:	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH	STAMFORD NORTH															
DISASTER PRIORITY:	0	3	0	3	3															

Section 7 - RBS SPECIFIC INFORMATION - existing																				
	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS															
MSC:																				
BSC/RNC/MME POOL ID:	BRPTCTBSC01	BRPTCTBSC01	BRPTCTDARNC001	BRPTCTDARNC001	FF01															
LAC:	05010	05010	05999	05999																
RAC:																				
EQUIPMENT VENDOR:	NOKIA	NOKIA	ERICSSON	ERICSSON	ERICSSON															
EQUIPMENT TYPE:	ULTRASITE	ULTRASITE	3206 INDOOR	3206 INDOOR	6601 INDOOR MUJ															
BASEBAND CONFIGURATION:																				
LOCATION:																				
CABINET LOCATION:																				
MARKET STATE CODE:					CT															
AGPS:	Yes	Yes	Yes	Yes	Yes															
NODE B NUMBER:	0	0	0	0	5047															
PARENT NAME:	BRPTCTBSC01	BRPTCTBSC01	BRPTCTDARNC001	BRPTCTDARNC001	FF01															
Section 7 - RBS SPECIFIC INFORMATION - final																				
	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS															
MSC:																				
BSC/RNC/MME POOL ID:	BRPTCTBSC01	BRPTCTBSC01	BRPTCTDARNC001	BRPTCTDARNC001	FF01															
LAC:	05010	05010	05999	05999																
RAC:																				
EQUIPMENT VENDOR:	NOKIA	NOKIA	ERICSSON	ERICSSON	ERICSSON															
EQUIPMENT TYPE:	ULTRASITE	ULTRASITE	3206 INDOOR	3206 INDOOR	6601 INDOOR MUJ															
BASEBAND CONFIGURATION:																				
LOCATION:																				
CABINET LOCATION:																				
MARKET STATE CODE:					CT															
AGPS:	Yes	Yes	Yes	Yes	Yes															
NODE B NUMBER:	0	0	0	0	5047															
PARENT NAME:	BRIDGEPORT BSC 01	BRIDGEPORT BSC 01	BRIDGEPORT CT RNC001	BRIDGEPORT CT RNC001																

Section 8 - RBS INDIVIDUAL INFORMATION - existing																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
RBS ID	219756	24728	210684	336081	362958	362958																
CELL ID/BCF	321G5047	321P5047	CTV5047	CTV5047	CTL05047	CTL05047																
CTS COMMON ID	321D5047	321X5047	5047	CTU5047	CTL05047	CTL05047																
Section 8 - RBS INDIVIDUAL INFORMATION - final																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
RBS ID	219756	24728	210684	336081	362958	362958	362958															
CELL ID/BCF	321G5047	321P5047	CTV5047	CTV5047	CTL05047	CTL05047	CTL05047															
CTS COMMON ID	321D5047	321X5047	5047	CTU5047	CTL05047	CTL05047	CTL05047															

Section 9 - SOFT SECTOR ID - existing																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
USEID (excluding Hard Sector)	24480.850.25G.1	24480.1900.25G.1	24480.850.3G.1	24480.1900.3G.2	24480.700.4G.1	24480.1900.4G.tmp1																
SECTOR A SOFT SECTOR ID	321G50471	321P50471	CTV50471	CTU50477	CTL05047_7A_1	CTL05047_9A_1																
SECTOR B	321G50472	321P50474	CTV50472	CTU50478	CTL05047_7B_1	CTL05047_9B_1																
SECTOR C	321G50473	321P50475	CTV50473	CTU50479	CTL05047_7C_1	CTL05047_9C_1																
SECTOR D																						
SECTOR E																						
SECTOR F																						
OMNI																						
Section 9 - SOFT SECTOR ID - final																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
USEID (excluding Hard Sector)	24480.850.25G.1	24480.1900.25G.1	24480.850.3G.1	24480.1900.3G.2	24480.700.4G.1	24480.1900.4G.tmp	24480.WCS.4G.tmp1															
SECTOR A SOFT SECTOR ID	321G50471	321P50471	CTV50471	CTU50477	CTL05047_7A_1	CTL05047_9A_1	CTL05047_3A_1															
SECTOR B	321G50472	321P50474	CTV50472	CTU50478	CTL05047_7B_1	CTL05047_9B_1	CTL05047_3B_1															
SECTOR C	321G50473	321P50475	CTV50473	CTU50479	CTL05047_7C_1	CTL05047_9C_1	CTL05047_3C_1															
SECTOR D																						
SECTOR E																						
SECTOR F																						
OMNI																						

Section 9 - Cell Number - existing																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
USEID (excluding Hard Sector)	24480.850.25G.1	24480.1900.25G.1	24480.850.3G.1	24480.1900.3G.2	24480.700.4G.1	24480.1900.4G.tmp1																
SECTOR A CELL NUMBER	0	0	0	0	15	8																
SECTOR B	0	0	0	0	16	9																
SECTOR C	0	0	0	0	17	10																
SECTOR D																						
SECTOR E																						
SECTOR F																						
OMNI																						
Section 9 - Cell Number - final																						
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS															
USEID (excluding Hard Sector)	24480.850.25G.1	24480.1900.25G.1	24480.850.3G.1	24480.1900.3G.2	24480.700.4G.1	24480.1900.4G.tmp1	24480.WCS.4G.tmp1															
SECTOR A CELL NUMBER	0	0	0	0	15	8	149															
SECTOR B	0	0	0	0	16	9	150															
SECTOR C	0	0	0	0	17	10	151															
SECTOR D																						
SECTOR E																						
SECTOR F																						
OMNI																						

Section 10 - CID/SAC - existing																								
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS																	
SECTOR A CID/SAC	50471	50471	50471	50477																				
SECTOR B	50472	50474	50472	50478																				
SECTOR C	50473	50475	50473	50479																				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
Section 10 - CID/SAC - final																								
	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST WCS																	
SECTOR A CID/SAC	50471	50471	50471	50477																				
SECTOR B	50472	50474	50472	50478																				
SECTOR C	50473	50475	50473	50479																				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
Section 11 - CURRENT RADIO COUNTS existing																								
	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 1ST FUTURE		
SECTOR A RADIO COUNTS																								
SECTOR B																								
SECTOR C																								
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
																	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS	LTE 2ND WCS	LTE 2ND FUTURE		
SECTOR A RADIO COUNTS																								
SECTOR B																								
SECTOR C																								
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 12 - CURRENT T1 COUNTS existing																								
	GSM 1ST Cabinet	GSM 2ND Cabinet	UMTS 1ST Cabinet	UMTS 2ND Cabinet	UMTS 3RD Cabinet	UMTS 4TH Cabinet	UMTS 5TH Cabinet	UMTS 6TH Cabinet	LTE 1ST Cabinet	LTE 2ND Cabinet	LTE 3RD Cabinet	LTE 4TH Cabinet												
# T1s																								
LINK PROFILE																								
RF COMBINING																								
FIBER or ETHERNET?																								
Tx Board Model																								
Tx Board QTY																								
RAX/ECU Board Model																								
RAX/ECU Board QTY																								
BBU Board Model																								
BBU Board QTY																								
RRU - location																								
FIBER JUMPER																								
DC CABLE																								
DC/Fiber Dem. Box																								
Bundled Fiber Cable																								
Bundled DC Cable																								
Section 13 - NEW/PROPOSED RADIO COUNTS																								
	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 1ST FUTURE		
SECTOR A RADIO COUNTS																								
SECTOR B																								
SECTOR C																								
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
SECTOR A RADIO COUNTS																	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS	LTE 2ND WCS	LTE 2ND FUTURE		
SECTOR B																								
SECTOR C																								
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
Section 14 - NEW/PROPOSED T1 COUNTS																								
	GSM 1ST Cabinet	GSM 2ND Cabinet	UMTS 1ST Cabinet	UMTS 2ND Cabinet	UMTS 3RD Cabinet	UMTS 4TH Cabinet	UMTS 5TH Cabinet	UMTS 6TH Cabinet	LTE 1ST Cabinet	LTE 2ND Cabinet	LTE 3RD Cabinet	LTE 4TH Cabinet												
# T1s																								
LINK PROFILE																								
RF COMBINING																								
FIBER or ETHERNET?																								
Tx Board Model																								
Tx Board QTY																								
RAX/ECU Board Model																								
RAX/ECU Board QTY																								
BBU Board Model																								
BBU Board QTY																								
RRU - location																								
FIBER JUMPER																								
DC CABLE																								
DC/Fiber Dem. Box																								
Bundled Fiber Cable																								
Bundled DC Cable																								

Section 15A - CURRENT SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	SBNH+1D65A						
ANTENNA VENDOR	Andrew						
ANTENNA SIZE (H x W x D)	55X11.9X7.1						
ANTENNA WEIGHT	33.5						
AZIMUTH	30						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	5	BOFDM-DBW Broadband (4) +					
DIPLEXER (QTY/MODEL)	2	CCI Triplexer - TPX-970821					
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH					
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1	TMA2117F00V1-1					
CURRENT INJECTORS FOR TMA (QTY/MODEL)	1	K SBT 782-10253					
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	RRUS-11					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-12					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXA/IT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	24480.A.850.3G.1	24480.A.850.3G.1	CTV50471	CTV50471		UMTS 850	1D65A_855MHz_05DT	12.9	30	5	None	RFS 1-5/8	180.046089						255.27		1	
	PORT 2	G.1, 24480.A.850.25	24480.A.850.25	321G50471	321G50471		GSM 850	1D65A_855MHz_05DT	12.9	30	5	None	RFS 1-5/8	180.046089	RxA/IT 850				11.22	152.4		1	
	PORT 3	24480.A.1900.3 G.2	24480.A.1900.3 G.2	CTU50477	CTU50477		UMTS 1900	1D65A_1930MHz_04DT	17.2	30	4	None	RFS 1-5/8	180.046089						368.13		2	
	PORT 4	24480.A.700.4G.1	24480.A.700.4G.1	CTL05047_7A_1	CTL05047_7A_1		LTE 700	1D65A_725MHz_02DT	12.7	30	2	Bottom	RFS 1-5/8	180.046089						827.9421		1	
	PORT 5	24480.A.1900.4 G.tmp1	24480.A.1900.4 G.1	CTL05047_9A_1	CTL05047_9A_1		LTE 1900	1D65A_1930MHz_02DT	16.8	30	2	Bottom	RFS 1-5/8	180.046089	RxA/IT 1900	1	LLC 1900		3228.4941		1		
	PORT 6																						

Section 15B - CURRENT SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	SBNH-1D65A						
ANTENNA VENDOR	Andrew						
ANTENNA SIZE (H x W x D)	55X11.9X7.1						
ANTENNA WEIGHT	33.5						
AZIMUTH	150						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	5	BOFDM-DBW Broadband (4) +					
DIPLEXER (QTY/MODEL)	2	CCI Triplexer - TPX-070821					
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH					
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1	TMA2117F00V1-1					
CURRENT INJECTORS FOR TMA (QTY/MODEL)	1	K SBT 782-10253					
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	RRUS-11					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-12					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	24480.B.850.3G.1	24480.B.850.3G.1	CTV50472	CTV50472		UMTS 850	1D65A_855MHz_07DT	12.9	150	7	None	RFS 1-5/8	180.046089					255.27		9		
	PORT 2	G.1, 24480.B.850.25	24480.B.850.25 G.1	321G50472	321G50472		GSM 850	1D65A_855MHz_07DT	12.9	150	7	None	RFS 1-5/8	180.046089	RxAIT 850			11.22	152.4		9		
	PORT 3	24480.B.1900.3 G.2	24480.B.1900.3 G.2	CTU50478	CTU50478		UMTS 1900	1D65A_1930MHz_02DT	17.2	150	5	None	RFS 1-5/8	180.046089					368.13		10		
	PORT 4	24480.B.700.4G.1	24480.B.700.4G.1	CTL05047_7B_1	CTL05047_7B_1		LTE 700	1D65A_725MHz_04DT	12.7	150	4	Bottom	RFS 1-5/8	180.046089					827.9421		9		
	PORT 5	24480.B.1900.4 G.tmp1	24480.B.1900.4 G.1	CTL05047_9B_1	CTL05047_9B_1		LTE 1900	1D65A_1930MHz_02DT	16.8	150	2	Bottom	RFS 1-5/8	180.046089	RxAIT 1900	1	LLC 1900		3228.4941		9		
	PORT 6																						

Section 15C - CURRENT SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	SBNH-1D65A						
ANTENNA VENDOR	Andrew						
ANTENNA SIZE (H x W x D)	55X11.9X7.1						
ANTENNA WEIGHT	33.5						
AZIMUTH	270						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	5	BOFDM-DBW Broadband (4) +					
DIPLEXER (QTY/MODEL)	2	CCI Triplexer - TPX-970821					
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH					
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1	TMA2117F00V1-1					
CURRENT INJECTORS FOR TMA (QTY/MODEL)	1	K SBT 782-10253					
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	RRUS-11					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-12					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 1	24480.C.850.3G.1	24480.C.850.3G.1	CTV50473	CTV50473		UMTS 850	1D65A_855MHz_02DT	12.9	270	2	None	RFS 1-5/8	180.046089					255.27			17	
	PORT 2	G.1, 24480.C.850.25	24480.C.850.25	321G50473	321G50473		GSM 850	1D65A_855MHz_02DT	12.9	270	2	None	RFS 1-5/8	180.046089	RxAIT 850				11.22	152.4			17
	PORT 3	24480.C.1900.3G.2	24480.C.1900.3G.2	CTU50479	CTU50479		UMTS 1900	1D65A_1930MHz_02DT	17.2	270	2	None	RFS 1-5/8	180.046089					368.13			18	
	PORT 4	24480.C.700.4G.1	24480.C.700.4G.1	CTL05047_7C_1	CTL05047_7C_1		LTE 700	1D65A_725MHz_02DT	12.7	270	2	Bottom	RFS 1-5/8	180.046089					827.9421			17	
	PORT 5	24480.C.1900.4G.1	24480.C.1900.4G.1	CTL05047_9C_1	CTL05047_9C_1		LTE 1900	1D65A_1930MHz_02DT	16.8	270	2	Bottom	RFS 1-5/8	180.046089	RxAIT 1900	1	LLC 1900		3228.4941			17	
	PORT 6																						

Section 16A - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS		ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?		Yes						
ANTENNA MAKE - MODEL		QS66512-2						
ANTENNA VENDOR		Quintel						
ANTENNA SIZE (H x W x D)		72X12X9.6						
ANTENNA WEIGHT		111						
AZIMUTH		30						
MAGNETIC DECLINATION								
RADIATION CENTER (feet)		145						
ANTENNA TIP HEIGHT		147						
MECHANICAL DOWN TILT		0						
FEEDER AMOUNT								
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)								
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)								
Antenna RET Motor (QTY/MODEL)		Internal						
SURGE ARRESTOR (QTY/MODEL)		5						
DIPLEXER (QTY/MODEL)		4						
DUPLER (QTY/MODEL)								
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH						
DC BLOCK (QTY/MODEL)								
TMA/LNA (QTY/MODEL)		1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)		1						
PDU FOR TMA (QTY/MODEL)								
FILTER (QTY/MODEL)								
SQUID (QTY/MODEL)								
FIBER TRUNK (QTY/MODEL)								
DC TRUNK (QTY/MODEL)								
RRH - 700 band (QTY/MODEL)								
RRH - 850 band (QTY/MODEL)								
RRH - 1900 band (QTY/MODEL)								
RRH - AWS band (QTY/MODEL)								
RRH - WCS band (QTY/MODEL)		1	RRUS-32					
Additional RRH #1 - any band (QTY/MODEL)								
Additional RRH #2 - any band (QTY/MODEL)								
Additional Component 1 (QTY/MODEL)								
Additional Component 2 (QTY/MODEL)								
Additional Component 3 (QTY/MODEL)								
Local Market Note 1		Space limited site						
Local Market Note 2								
Local Market Note 3		DUS-1 - 7A: 7C:X1P1:X1P2:BD2 XMU-1 - PA: WA: PC: JWC: D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 4		24480.AWCS.4 G.1	CTL05047_3A_1	CTL05047_3A_1		LTE WCS	2_2365MHz_DT	17	30	2	Bottom	RFS 1-5/8	180.046089					1285.2866			1	

Section 16B - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS		ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?		Yes						
ANTENNA MAKE - MODEL		QS66512-2						
ANTENNA VENDOR		Quintel						
ANTENNA SIZE (H x W x D)		72X12X9.6						
ANTENNA WEIGHT		111						
AZIMUTH		150						
MAGNETIC DECLINATION								
RADIATION CENTER (feet)		145						
ANTENNA TIP HEIGHT		147						
MECHANICAL DOWNTILT		0						
FEEDER AMOUNT								
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)								
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)								
Antenna RET Motor (QTY/MODEL)		Internal						
SURGE ARRESTOR (QTY/MODEL)		5						
DIPLEXER (QTY/MODEL)		4						
DUPLER (QTY/MODEL)								
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH						
DC BLOCK (QTY/MODEL)								
TMA/LNA (QTY/MODEL)		1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)		1						
PDU FOR TMA (QTY/MODEL)								
FILTER (QTY/MODEL)								
SQUID (QTY/MODEL)								
FIBER TRUNK (QTY/MODEL)								
DC TRUNK (QTY/MODEL)								
RRH - 700 band (QTY/MODEL)								
RRH - 850 band (QTY/MODEL)								
RRH - 1900 band (QTY/MODEL)								
RRH - AWS band (QTY/MODEL)								
RRH - WCS band (QTY/MODEL)		1	RRUS-32					
Additional RRH #1 - any band (QTY/MODEL)								
Additional RRH #2 - any band (QTY/MODEL)								
Additional Component 1 (QTY/MODEL)								
Additional Component 2 (QTY/MODEL)								
Additional Component 3 (QTY/MODEL)								
Local Market Note 1		Space limited site						
Local Market Note 2								
Local Market Note 3		DUS-1 - 7A: 7C:X1P1X1P2:BD2 XMU-1 - PA: WA: PC: 3WC:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 4		24480.B.WCS.4 G.1	CTL05047_3B_1	CTL05047_3B_1		LTE WCS	2_2365MHz_02 DT	17	150	2	Bottom	RFS 1-5/8	180.046089					1285.2866			9	

Section 16C - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS		ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?		Yes						
ANTENNA MAKE - MODEL		QS66512-2						
ANTENNA VENDOR		Quintel						
ANTENNA SIZE (H x W x D)		72X12X9.6						
ANTENNA WEIGHT		111						
AZIMUTH		270						
MAGNETIC DECLINATION								
RADIATION CENTER (feet)		145						
ANTENNA TIP HEIGHT		147						
MECHANICAL DOWNTILT		0						
FEEDER AMOUNT								
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)								
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)								
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)								
Antenna RET Motor (QTY/MODEL)		Internal						
SURGE ARRESTOR (QTY/MODEL)		5						
DIPLEXER (QTY/MODEL)		4						
DUPLER (QTY/MODEL)								
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH						
DC BLOCK (QTY/MODEL)								
TMA/LNA (QTY/MODEL)		1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)		1						
PDU FOR TMA (QTY/MODEL)								
FILTER (QTY/MODEL)								
SQUID (QTY/MODEL)								
FIBER TRUNK (QTY/MODEL)								
DC TRUNK (QTY/MODEL)								
RRH - 700 band (QTY/MODEL)								
RRH - 850 band (QTY/MODEL)								
RRH - 1900 band (QTY/MODEL)								
RRH - AWS band (QTY/MODEL)								
RRH - WCS band (QTY/MODEL)		1	RRUS-32					
Additional RRH #1 - any band (QTY/MODEL)								
Additional RRH #2 - any band (QTY/MODEL)								
Additional Component 1 (QTY/MODEL)								
Additional Component 2 (QTY/MODEL)								
Additional Component 3 (QTY/MODEL)								
Local Market Note 1		Space limited site						
Local Market Note 2								
Local Market Note 3		DUS-1 - 7A: 7C:X1P1X1P2:BD2 XMU-1 - PA: WA: PC: 3WC:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 4		24480.C.WCS.4 G.1	CTL05047_3C_1	CTL05047_3C_1		LTE WCS	2_2365MHz_02 DT	17	270	2	Bottom	RFS 1-5/8	180.046089					1285.2866			17	

Section 17A - FINAL SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	Q566512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	72X12X9.6						
ANTENNA WEIGHT	111						
AZIMUTH	30						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	10 BDFDM-DBW Broadband (8) +						
DIPLEXER (QTY/MODEL)	4 CCI Pentaplexer SPX-0726-O						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 K SBT 782-10253						
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)	1 RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1 - Space limited site							
Local Market Note 2							
Local Market Note 3	DUS-1 - 7A_7C_X1P1-X1P2-202 XMU-1 - PA_WA_PC_WC_000000-D1E-D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXA/IT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 1	24480.A.850.3G.1	24480.A.850.3G.1	CTV50471	CTV50471		UMTS 850	2_840MHz_050T	13.5	30	5	None	RFS 1-5/8	180.046089					255.27			1	
	PORT 2	G.1, 24480.A.850.25	24480.A.850.25	321G50471	321G50471		GSM 850	2_840MHz_050T	13.5	30	5	None	RFS 1-5/8	180.046089	RxA/IT 850				11.22	152.4		1	
	PORT 3	G.2, 24480.A.1900.3	24480.A.1900.3	CTU50477	CTU50477		UMTS 1900	2_1930MHz_04DT	16	30	4	None	RFS 1-5/8	180.046089					368.13			2	
	PORT 4	G.1mp1, 24480.A.WCS.4	24480.A.WCS.4	CTL05047_3A_1	CTL05047_3A_1		LTE WCS	2_2355MHz_02DT	17	30	2	Bottom	RFS 1-5/8	180.046089					1285.2866			1	
	PORT 5	G.1, 24480.A.700.4G.	24480.A.700.4G.	CTL05047_7A_1	CTL05047_7A_1		LTE 700	2_722MHz_02DT	13	30	2	Bottom	RFS 1-5/8	180.046089					827.9421			1	
	PORT 6	G.1mp1, 24480.A.1900.4	24480.A.1900.4	CTL05047_9A_1	CTL05047_9A_1		LTE 1900	2_1930MHz_02DT	16	30	2	Bottom	RFS 1-5/8	180.046089	RxA/IT 1900	1	LLC 1900		3228.4941			1	

Section 17B - FINAL SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	Q566512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	72X12X9.6						
ANTENNA WEIGHT	111						
AZIMUTH	150						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	10 BDFDM-DBW Broadband (8) +						
DIPLEXER (QTY/MODEL)	4 CCI Pentaplexer SPX-0726-Q						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 K SBT 782-10253						
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)	1 RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Space limited site						
Local Market Note 2							
Local Market Note 3	DUS-1 - 7A...7C-X1P1-X1P2-202 XMM-1 - PA...WA...PC...WC...D1E-D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXA/T KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 1	24480.B.850.3G.1	24480.B.850.3G.1	CTV50472	CTV50472		UMTS 850	2_840MHz_07D T	13.5	150	7	None	RFS 1-5/8	180.046089					255.27			9	
	PORT 2	24480.B.850.25 G.1	24480.B.850.25 G.1	321G50472	321G50472		GSM 850	2_840MHz_07D T	13.5	150	7	None	RFS 1-5/8	180.046089	RxA/T 850				11.22	152.4		9	
	PORT 3	24480.B.1900.3 G.2	24480.B.1900.3 G.2	CTU50478	CTU50478		UMTS 1900	2_1930MHz_05 DT	16	150	5	None	RFS 1-5/8	180.046089					368.13			10	
	PORT 4	24480.B.WCS.4 G.1mp1	24480.B.WCS.4 G.1	CTL05047_3B_1	CTL05047_3B_1		LTE WCS	2_2355MHz_02 DT	17	150	2	Bottom	RFS 1-5/8	180.046089					1285.2866			9	
	PORT 5	24480.B.700.4G.1	24480.B.700.4G.1	CTL05047_7B_1	CTL05047_7B_1		LTE 700	2_722MHz_04D T	13	150	4	Bottom	RFS 1-5/8	180.046089					827.9421			9	
	PORT 6	24480.B.1900.4 G.1mp1	24480.B.1900.4 G.1	CTL05047_9B_1	CTL05047_9B_1		LTE 1900	2_1930MHz_02 DT	16	150	2	Bottom	RFS 1-5/8	180.046089	RxA/T 1900	1	LLC 1900		3228.4941			9	

Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	Q566512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	72X12X9.6						
ANTENNA WEIGHT	111						
AZIMUTH	270						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	145						
ANTENNA TIP HEIGHT	147						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)	10 BDFDM-DBW Broadband (8) +						
DIPLEXER (QTY/MODEL)	4 CCI Pentaplexer SPX-0726-Q						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 K SBT 782-10253						
PDU FOR TMA5 (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)	1 RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Space limited site						
Local Market Note 2							
Local Market Note 3	DUS-1 - 7A...7C-X1P1-X1P2-202 XMM-1 - PA...WA...PC...WC...D1E-D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AolI)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXA/T KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (cssng)
ANTENNA POSITION 1	PORT 1	24480.C.850.3G.1	24480.C.850.3G.1	CTV50473	CTV50473		UMTS 850	2_840MHz_02D T	13.5	270	2	None	RFS 1-5/8	180.046089					255.27			17	
	PORT 2	G.1, 24480.C.850.25	24480.C.850.25	321G50473	321G50473		GSM 850	2_840MHz_02D T	13.5	270	2	None	RFS 1-5/8	180.046089	RxA/T 850				11.22	152.4			17
	PORT 3	G.2, 24480.C.1900.3	24480.C.1900.3	CTU50479	CTU50479		UMTS 1900	2_1930MHz_02 DT	16	270	2	None	RFS 1-5/8	180.046089					368.13			18	
	PORT 4	G.1mp1, 24480.C.WCS.4	24480.C.WCS.4	CTL05047_3C_1	CTL05047_3C_1		LTE WCS	2_2355MHz_02 DT	17	270	2	Bottom	RFS 1-5/8	180.046089					1285.2866			17	
	PORT 5	24480.C.700.4G.1	24480.C.700.4G.1	CTL05047_7C_1	CTL05047_7C_1		LTE 700	2_722MHz_02D T	13	270	2	Bottom	RFS 1-5/8	180.046089					827.9421			17	
	PORT 6	G.1mp1, 24480.C.1900.4	24480.C.1900.4	CTL05047_9C_1	CTL05047_9C_1		LTE 1900	2_1930MHz_02 DT	16	270	2	Bottom	RFS 1-5/8	180.046089	RxA/T 1900	1	LLC 1900		3228.4941			17	

- Provides 12 antenna Ports in a slim-line form factor
- Optimized Azimuth patterns for Min Inter-Sector Interference
- Industry leading Minimal Wind-Load design

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- AWS & PCS Cross band PIM >159dBc

The Quintel MultiServ™ Multiband 12 Port Antenna with patented QTilt™ technology uniquely delivers four independent services in a single slim-line antenna. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS66512-2 also provides 4x1695-1780+2110-2400MHz & 4x1850-1990MHz ports as two side-by-side (CLA-2X) arrays, each set of 4 ports having independent tilt for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4 Ports 9-12
Operating Frequency (MHz)	698-806*	824-894	1695-1780 and 2110-2400			1850-1990
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth ¹	67°	64°	68°	63°	58°	69°
Elevation beamwidth ¹	12°	10°	6.5°	5.5°	4.5°	5.5°
Gain ¹ (dBi)	13.2	13.5	16.2	16.5	17.0	16.0
Polarization	±45°	±45°	±45°			±45°
			±45°			±45°
Electrical down-tilt range	2°-10°	2°-10°	2° – 7°			2° – 7°
Upper SLL (20° > mainbeam) ¹	-17dB	-19dB	-18dB	-18B	-18dB	-16dB
Front to Back Ratio(180°±10°) ¹	≥27dB	≥29dB	≥28dB	≥28dB	≥28dB	≥27dB
Port to Port isolation ¹	≥28dB	≥30dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)	>18dB	>16dB	>20dB	>20dB	>18dB	>20dB
Max Power handling (per any port)	500 watts	500 watts	250 watts			250 watts
Total Composite Power (all ports)	1750 watts					
PIM (3 rd Order) (2x43dBm)	>153dBc	>153dBc	>153dBc			>153dBc
XBand PIM (3 rd Order) (2x43dBm)	>159dBc					

¹ Typical Performance across frequency and Downtilt. *Products Ordered after Jan 2016 will be 698-806MHz



Mechanical Characteristics

Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	111lbs (50.3kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area	2.96ft ² (0.275m ²)
Wind Load @160km/h (45m/s)	Front: 587N (132 lbs), Side: 382N (86 lbs)
Operating Temperature	-40°C to +65°C

Fully Integrated RET Characteristics

AISG Standards	V1.1, V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge immunity	IEC 61000-4-5:2005 4KV(AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	1in/1out.
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves

All specifications are subject to change without notice. Please contact your Quintel representative for complete information.



RET Configuration

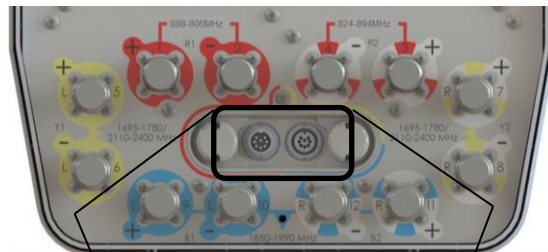
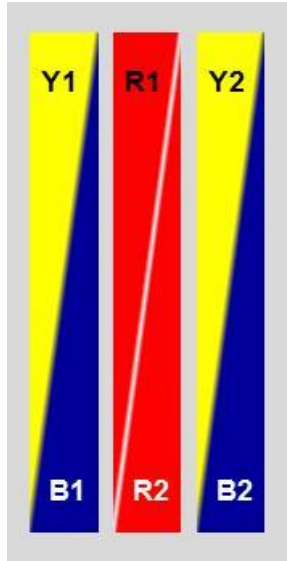
The Quintel MultiServ™ Multiband 12 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 12-Port array topology consists of 3 radiating arrays:

R1/R2 – 698-894MHz
Y1/B1 – 1695-2400MHz
Y2/B2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-806
R2	3-4	824-894
Y1	5-6	1695-1780+ 2110-2400
Y2	7-8	1695-1780+ 2110-2400
B1	9-10	1850-1990
B2	11-12	1850-1990



AISG I/O Configuration

RET Device	Band	RF Ports
1	698-806	1-2
2	824-894	3-4
3	AWS/WCS	5-8
4	PCS	9-12

Multiband Optimization

The Quintel MultiServ™ Multiband 12 Port Antenna is an ideal solution for independently optimizing multiple services when rapidly introducing new technologies. Technology agnostic, each pair of ports provides flexibility for existing and future technologies such as CDMA/EVDO, GSM/EDGE, UMTS/HSPA, and LTE and advanced 2T4R and 4T4R MIMO implementations at high-bands.

The tilt of each service is controlled independently via internal RET actuators compliant to AISG1.1, AISG2.0 and 3GPP protocols. The QS66512-2 provides a total of 4 independent tilts:

- 1x(698-806MHz)
- 1x(824-894MHz)
- 1x Left & Right Array (1695-1780 and 2110-2400MHz)
- 1x Left & Right Array (1850-1990MHz)

Design Optimization

All Quintel antennas use the same mechanical mounting brackets thus making maintenance swaps easy and future proof. All Quintel Antennas also have Azimuth patterns optimized with network design and deployment in mind. The 3dB Azimuth beamwidth is ~65° as with most Antennas, but we have optimized how the pattern rolls-off and where the sidelobes emerge such that there is minimal Inter-Sector Interference when 3x sectors are deployed. For interference limited networks, we can deliver 25% more capacity.

The QS66512-2 12-Port antenna has been designed for delivering best in class, maximum PIM performance. This includes using 4.3-10.0 connectors externally and internally for all array diplexing filters used with our QTilt™ technology.

About Quintel

Quintel is a leading innovator in the design, development, and delivery of network-efficient antenna solutions for wireless operators worldwide. The company's products enable global wireless operators to independently deploy and optimize multiple air interfaces or services on a single standard antenna platform. Quintel is the only antenna maker whose products can increase a wireless network's capacity and provide additional services, without increasing the number or size of antennas. Quintel is headquartered in Rochester, New York with additional offices throughout North America and Europe. More information about Quintel is available at www.quintelsolutions.com.

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info@quintelsolutions.com

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TMA2117F00V1-1

PCS / WCS Dual Band Twin TMA, with 700/850 bypass, AISG2.0

Designed to be deployed in co-located PCS & WCS systems with wideband antennas, the Kaelus TMA provides internal diplexing and gain in both bands while allowing 700/850 services to pass through to a separate antenna, thereby saving hardware costs.

PRODUCT FEATURES

- Improved base station sensitivity through gain in PCS and WCS bands
- Hardware and software configuration using AISG “Personality” upload
- High Linearity and low noise performance; Bypass provided for 700/850MHz services
- Fail safe bypass mode with lightning protection

TECHNICAL SPECIFICATIONS

Downlink Path, Band 1	PCS
Passband	1930 - 1990
Insertion Loss	0.5dB typ
Return Loss	18dB min
Max Average input power (W)	160
Max PEP Input Power (W)	2000
Intermodulation, 2 x 43dBm TX carriers (dBc)	-153dBc max
Uplink Path, Band 1	
Passband	1850 - 1910
Gain (dB)	3dB to 13dB in 1dB steps
Gain window	+/- 1dB max
Return Loss (Operating)	18dB min
Return Loss (Bypass)	12dB min
Noise Figure	1.4dB typ
Bypass Loss	2.5dB typ

Output IP3	+30dBm typ
Maximum input power with no damage	+12dBm max
Downlink Path, Band 2	WCS
Passband	2350 - 2360
Insertion Loss	0.5dB typ
Return Loss	18dB min
Max Average input power (W)	120
Max PEP Input Power (W)	1200
Intermodulation, 2 x 43dBm TX carriers (dBc)	-153dBc max
Uplink Path, Band 2	
Passband	2305 - 2315
Gain (dB)	2dB to 12dB in 1dB steps
Gain window	+/- 1dB max
Return Loss (dB Min, Operating)	18
Return Loss (dB Min Bypass)	12
Noise Figure	1.7dB typ
Rejection @ Freq x (dBc Min)	2324.54 - 2341.285MHz (27.5dB min)
Bypass (Insertion) Loss	3.3dB typ
Output IP3	+30dBm typ
Maximum input power with no damage	+12dBm max
Bypass Passband	698 – 896MHz
Insertion Loss	0.35dB typ
Return loss, all ports	18dB min
Continuous average power	200
Peak envelope power	2000
Intermodulation @ antenna port	-153dBc max

CURRENT ALARM MODE (DEFAULT MODE SELECTED ON THE ABSENCE OF AISG PACKETS)

DC Supply Voltage (VDC min)	8.5
DC Supply Voltage (VDC max)	30
Supply Current, Normal operation	250 +/- 20mA per port (programmable)

AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)

AISG Version	2
AISG Supply Current	400mA @ 8.5V, 120mA @ 30V typical
AISG Connector	IEC60130-9, 8-pin female
AISG Connector Current rating	< 4A peak, 2A continuous, pin 6
Field firmware upgradable	Yes

ENVIRONMENTAL

Temperature range	-40°C to +65°C -40° to +149°F
Environmental sealing	IP67
Lightning protection	RF port: +/- 5kA max (8/20us), AISG port: +/- 2kA max (8/20us) IEC61312-1
MTBF	>1,000,000 hours
Compliance	EMC:EN301 489, Ingress ETSI EN 300 019 class 4.1, RoHS

MECHANICAL

Connectors	DIN 4.3-10 (F) x 8 long shank, AISG (F) x 1
Dimensions, H x D x W	216 x 300 x 107mm 8.46 x 11.81 x 4.21in
Finish	Powder coated, light grey (RAL7035)
Weight	8 kg 17.6lbs est
Mounting	Pole / wall bracket supplied with two metal clamps for 45-178 mm diameter poles

ELECTRICAL BLOCK DIAGRAM

366 OLD LONG RIDGE ROAD

Location 366 OLD LONG RIDGE ROAD

Mblu 002/ 6549/ / /

Acct# 002-6549

Owner LONG RIDGE FIRE CO INC

Assessment \$1,381,680

Appraisal \$1,973,840

PID 24275

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$1,682,510	\$291,330	\$1,973,840
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$1,177,750	\$203,930	\$1,381,680

Owner of Record

Owner LONG RIDGE FIRE CO INC
Co-Owner
Address 366 OLD LONG RIDGE RD
STAMFORD, CT 06903-1133

Sale Price \$0
Certificate
Book & Page 0686/ 581
Sale Date 01/14/1953
Instrument 25

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
LONG RIDGE FIRE CO INC	\$0		0686/ 581	25	01/14/1953

Building Information

Building 1 : Section 1

Year Built: 1956
Living Area: 8,569

Building Photo

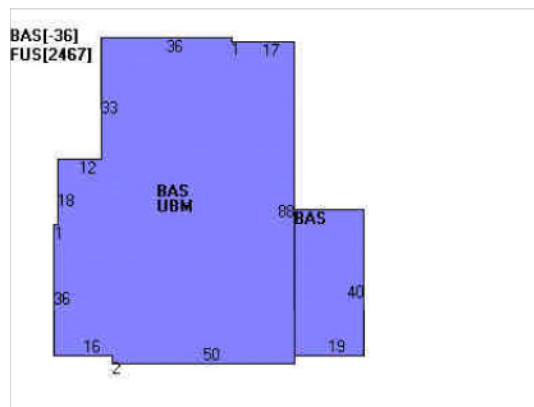
Building Attributes	
Field	Description
STYLE	Fire Station
Stories:	1
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	

Roof Structure	Gable/Hip
Roof Cover	Asph/F GlS/Cmp
Interior Wall 1	Minimum
Interior Wall 2	Drywall/Plaste
Interior Floor 1	Concrete Slab
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial A/C
Bldg Use	Exmpt Comm MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	902C
Heat/AC	Heat/AC Pkgs
Frame Type	FireProofSteel
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Mn Wall
Rooms/Prtns	Average
Wall Height	11
% Comn Wall	



(<http://images.vgsi.com/photos/StamfordCTPhotos//\00\07\72\71.jpg>)

Building Layout



Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	6,102	6,102
FUS	Upper Story, Finished	2,467	2,467
UBM	Basement, Unfinished	5,378	0
		13,947	8,569

Extra Features

Extra Features				<u>Legend</u>
Code	Description	Size	Value	Bldg #
OH1	Door Overhd Co	4 UNITS	\$10,500	1
H04	Air Con/Sfla	9620 S.F	\$23,450	1

Land

Land Use

Use Code 902C
Description Exmpt Comm MDL-94
Zone RA2
Neighborhood 0100
Alt Land Appr No

Land Line Valuation

Size (Acres) 0.49
Depth
Assessed Value \$203,930
Appraised Value \$291,330

Category**Outbuildings**

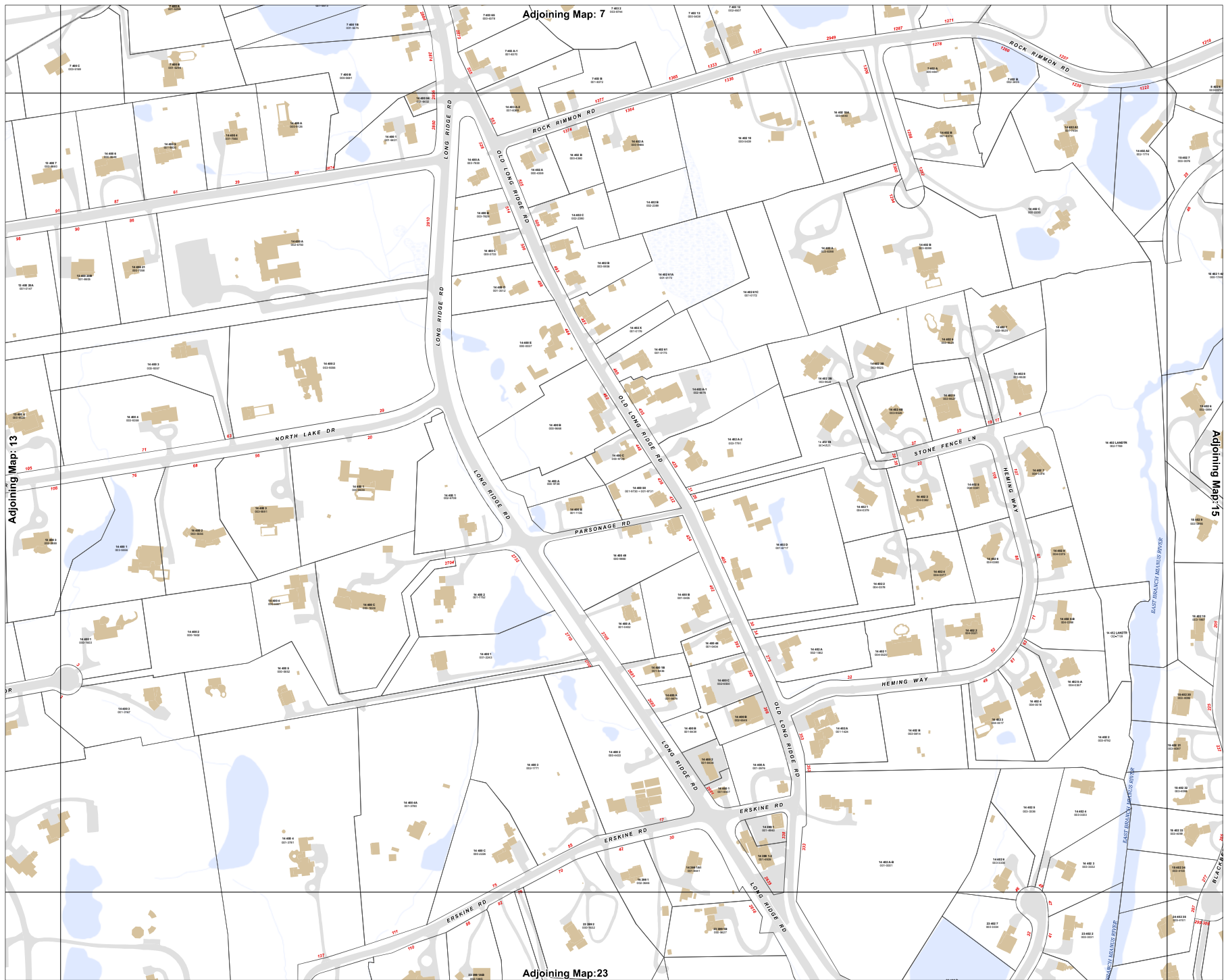
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
LP6	Patio Asphlt			480 S.F.	\$1,260	1
FC1	Shed Wood			108 S.F.	\$1,220	1
FC1	Shed Wood			560 S.F.	\$6,300	1
RG4	Gar 1.0 Det			1008 S.F.	\$37,800	1
CEL1	Cell Tower			3 SITES	\$419,630	1
CSHD	Cell Equipment			56 S.F.	\$1,890	1

Valuation History

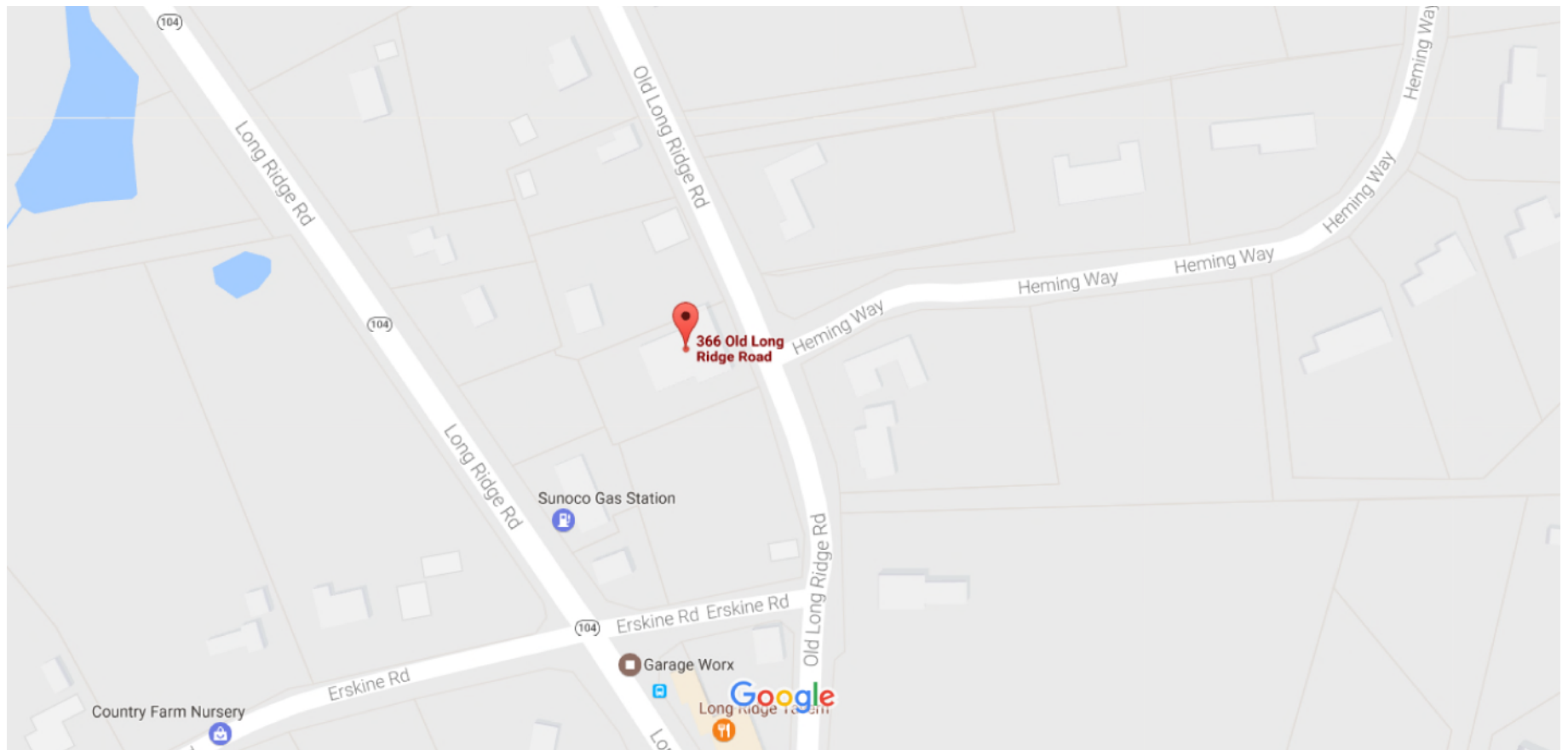
Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$1,682,510	\$291,330	\$1,973,840
2015	\$1,682,510	\$291,330	\$1,973,840
2014	\$1,682,510	\$291,330	\$1,973,840

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$1,177,750	\$203,930	\$1,381,680
2015	\$1,177,750	\$203,930	\$1,381,680
2014	\$1,177,750	\$203,930	\$1,381,680

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Google Maps 366 Old Long Ridge Rd



Map data ©2017 Google 100 ft