



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

January 19, 2016

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

**RE: Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 876354**  
**AT&T Site ID: CT2153**  
**515 Post Road East, Westport, CT 06880**  
**Latitude: 41° 8' 24.26" / Longitude: -73° 20' 51.61"**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 120-foot level of the existing 148-foot monopole at 515 Post Road East in Westport, CT. The tower is owned by Crown Castle. The property is owned by the Town of Westport. AT&T now intends to replace three (3) Powerwave with three (3) Quintel new 1.9 GHz antennas, as well as, install three (3) RRU32s, two (2) DC, one (1) Fiber, and one (1) Raycap, and replace six (6) Diplexers with six (6) LGP2140X TMAs.

This facility was approved by the Westport Zoning Board of Appeals in ZBA Case #5347 on January 21, 1997. This approval included waivers regarding tower height and no conditional statements. This approval included the conditions that:

1. Mindful of the mandate of the Telecommunications Act of 1996, The Town shall not unreasonably discriminate among providers of functionally equivalent services; The Town shall encourage collocation of other commercial providers as such services on this monopole. The Town shall retain the discretion to all additional commercial users licensed by the FCC on this monopole.
2. The proposed tower height cannot exceed 150 feet in total height.

This modification complies with the aforementioned condition(s).

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

Melanie A. Bachman

January 19, 2016

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

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

Sincerely,

Jeffrey Barbadora  
Real Estate Specialist  
12 Gill Street, Suite 5800, Woburn, MA 01801  
781-729-0053  
[Jeff.Barbadora@crowncastle.com](mailto:Jeff.Barbadora@crowncastle.com)

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. James Marpe, First Selectman  
110 Myrtle Avenue, Room 310  
Westport, CT 06880

Town of Westport  
110 Myrtle Avenue  
Westport, CT 06880



**Attorneys at Law**

777 Summer Street  
P.O. Box 15859  
Stamford, Connecticut 06901-0859

(203) 327-2000  
Facsimile (203) 353-3392

e.mail: LAWCTS@AOL.COM

February 7, 1997

MICHAEL J. CACACE\*  
MARK P. SANTAGATA  
PAUL T. TUSCH  
KENNETH A. DELLAROCCO\*  
EDWARD F. NEMCHEK\*  
ALICE ANN FITZPATRICK  
RONALD E. KOWALSKI, II  
RUSSELL A. GREEN\*  
AAMINA AHMAD

LEGAL ASSISTANTS  
SONJA WALTON  
JANE E. BARUCCI  
CAROLINE A. TOMAC  
SANDRA MILGRIM

\*ALSO ADMITTED IN NEW YORK

Mr. Stephen Howard  
Property Specialist  
Sprint Spectrum, L.P.  
9 Barnes Industrial Road  
Wallingford, CT 06492

Re: Westport Fire Station/Sprint Site 355

Dear Steve:

As you know, on January 21, 1997, the Westport Zoning Board of Appeals approved the application for a variance for the above-referenced site and on January 23, 1997, the Westport Planning & Zoning Commission approved a site plan/special permit application together with a positive report pursuant to Section 8-24 of the Connecticut General Statutes to the First Selectman on the lease between Sprint Spectrum and the Town of Westport on the above-referenced site. Subsequently, the Fire Chief has requested that the First Selectman place approval of the lease for the site on the agenda of the Board of Selectmen for its February 12 meeting. Upon approval of the lease by the Board of Selectmen, the Fire Chief will be empowered to enter into the proposed lease with Sprint Spectrum, L.P. I have enclosed the resolutions approving the applications from both the Zoning Board of Appeals and the Planning & Zoning Commission.

Although I believe you already have copies of these approvals, I do want to highlight some conditions contained in the approvals which I believe you should be aware of. The Zoning Board of Appeals (ZBA Case # 5347) approval of our variance request contains the following condition:

Mindful of the mandate of the Telecommunications Act of 1996, The Town shall not unreasonably discriminate among providers of functionally equivalent services; The Town shall encourage co-location of other commercial providers as such services on this monopole. The Town shall retain the discretion to allow

Mr. Stephen Howard  
February 7, 1997  
Page Two

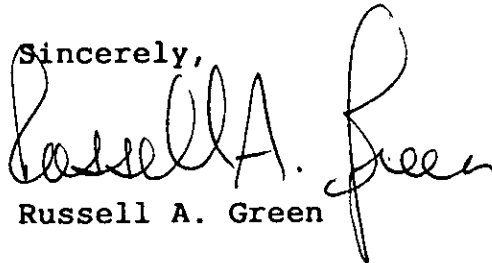
additional commercial users licensed by the  
FCC on this monopole.

The proposed tower can not exceed 150 feet in total height.

The Planning & Zoning Commission in Resolution No. 96-130 incorporated as a condition of approval conformance to ZBA Variance and thereby the above-noted conditions. In addition, both approvals require conformance to the maps and plans submitted with the applications.

Should you have any questions or concerns, please do not hesitate to contact me. Thank you for your attention to this matter.

Sincerely,

A handwritten signature in cursive script that reads "Russell A. Green". The signature is written in black ink and is positioned to the right of the typed name.

Russell A. Green

RAG/glb

Enc.

cc: Julie Reach  
Scott Chasse  
Paul T. Tusch

PNZ\G7206Let.Spr

**PROJECT INFORMATION**

SCOPE OF WORK: • AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR, FOR A TOTAL (3) NEW ANTENNAS. (2) EXISTING ANTENNAS PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (6) EXISTING ANTENNAS TO REMAIN. (1) EXISTING ANTENNA PER SECTOR FOR (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED, (2) EXISTING DIPLEXERS TO BE REMOVED PER SECTOR FOR A TOTAL OF (6) REMOVED DIPLEXERS; (2) EXISTING TMAS TO BE REMOVED PER SECTOR FOR A TOTAL OF (6) TMAS TO BE REMOVED.

• AT&T RRUS: (1) NEW RRUS PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUS; (2) EXISTING RRU PER SECTOR TO BE REUSED, FOR A TOTAL OF (6) EXISTING RRUS.

• AT&T TRIPLEXERS: (2) PROPOSED TRIPLEXERS PER SECTOR FOR A TOTAL OF (6) TRIPLEXERS

• AT&T SQUID: (1) NEW DC6 SURGE, FOR A TOTAL OF (1) NEW SQUID, (1) EXISTING DC-6 SURGE PROTECTOR, FOR A TOTAL OF (1) EXISTING SQUID TO REMAIN.

• AT&T CABLES: (1) NEW FIBER TRUNK & (2) NEW DC TRUNKS.

SITE ADDRESS: 515 POST ROAD EAST  
WESTPORT, CT 06880

LATITUDE: 41.1401589 41° 8' 24.57204"N  
LONGITUDE: -73.3472211 -73° 20' 49.99596"W

USID: 60434

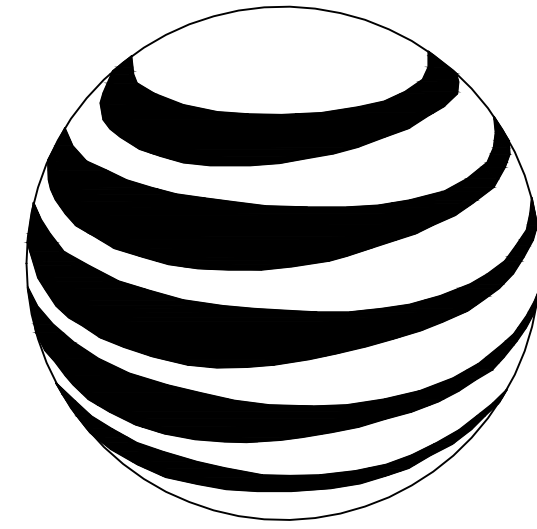
TOWER OWNER: CITY HALL  
125 EAST AVENUE  
NORWALK, CT 06851

TYPE OF SITE: MONOPOLE/INDOOR EQUIPMENT

MONOPOLE HEIGHT: 148-0"±  
RAD CENTER: 120'-0"±

CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY



**at&t**  
**MOBILITY**

**FA CODE: 10035241**  
**SITE NUMBER: CTU2153**  
**SITE NAME: WESTPORT FD**  
**CROWN BU: 876354**

**PROJECT TEAM**

**CLIENT REPRESENTATIVE**

COMPANY: EMPIRE TELECOM  
ADDRESS: 16 ESQUIRE ROAD  
BILLERICA, MA 01821  
CONTACT: DAVID COOPER  
PHONE: 617-639-4908  
EMAIL: dcooper@empiretelecomm.com

**SITE ACQUISITION:**

COMPANY: EMPIRE TELECOM  
ADDRESS: 16 ESQUIRE ROAD  
BILLERICA, MA 01821  
CONTACT: DAVID COOPER  
PHONE: 617-639-4908  
EMAIL: dcooper@empiretelecomm.com

COMPANY: EMPIRE TELECOM  
ADDRESS: 16 ESQUIRE ROAD  
BILLERICA, MA 01821  
CONTACT: DAVID COOPER  
PHONE: 617-639-4908  
EMAIL: dcooper@empiretelecomm.com

**ENGINEERING:**

COMPANY: COM-EX CONSULTANTS, LLC  
ADDRESS: 115 ROUTE 46  
SUITE E39  
MOUNTAIN LAKES, NJ 07046  
CONTACT: NICHOLAS D. BARILE, P.E.  
PHONE: 862-209-4300  
EMAIL: nbarile@comexconsultants.com

**RF ENGINEER:**

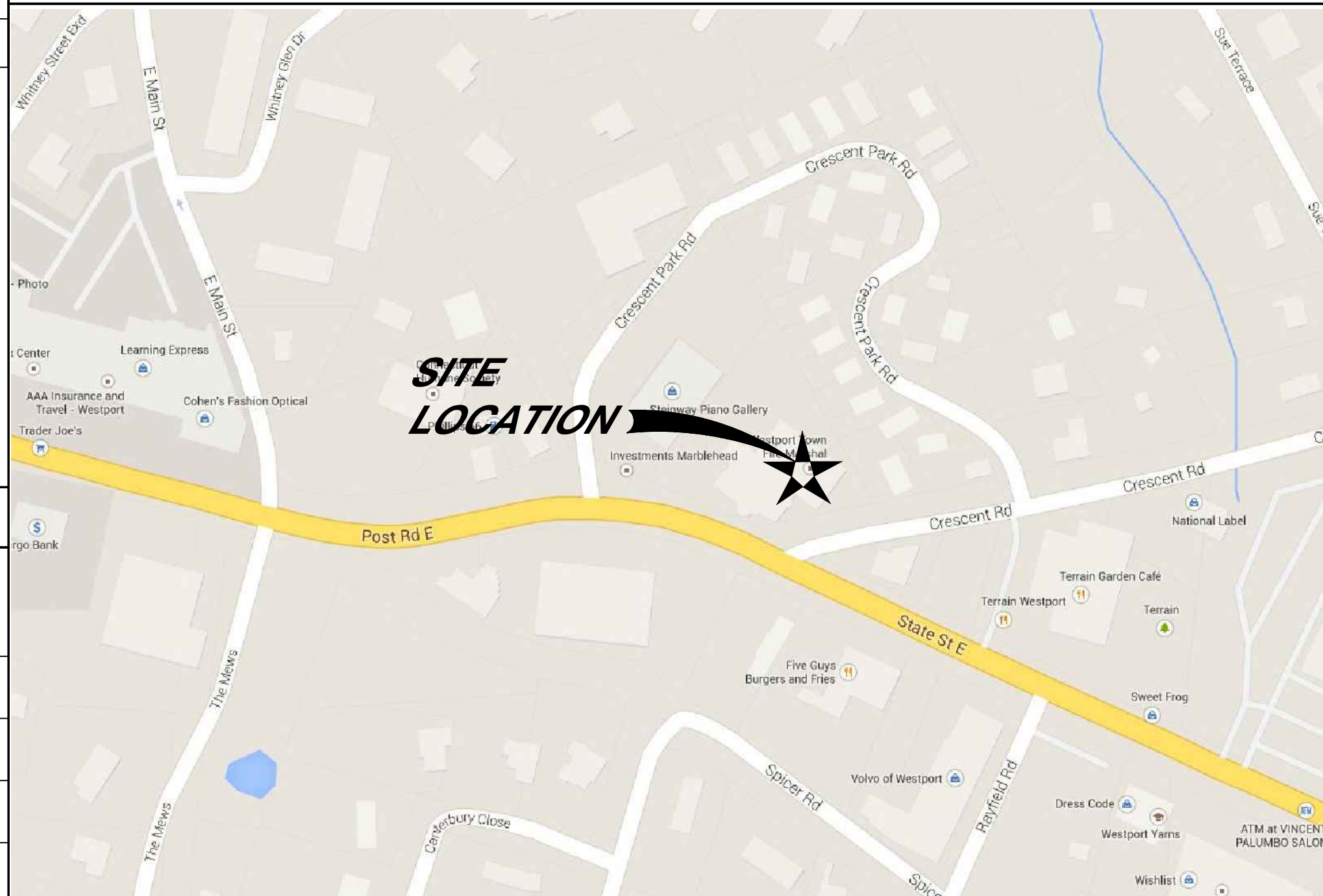
COMPANY: AT&T MOBILITY – NEW ENGLAND  
ADDRESS: 550 COCHITUATE ROAD  
SUITE 550 13 & 14  
FRAMINGHAM, MA 01701  
CONTACT: CAMERON SYME  
PHONE: 508-596-7146  
EMAIL: cs6970@att.com

**CONSTRUCTION MANAGEMENT:**

COMPANY: EMPIRE TELECOM  
ADDRESS: 16 ESQUIRE ROAD  
BILLERICA, MA 01821  
CONTACT: GRZEGORZ "GREG" DORMAN  
PHONE: 484-683-1750  
EMAIL: gdorman@empiretelecomm.com

**VICINITY MAP**

1. HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. 0.3 MILES. TURN LEFT AT CAPITAL BLVD. 0.3 MILES. TURN LEFT AT WEST ST. 0.3 MILES. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN. 9.6 MILES. TAKE EXIT 17 FOR CT-15 S/W CROSS PKWY. 0.4 MILES. MERGE ONTO CT-15 S. 29.8 MILES. TAKE EXIT 52 FOR STATE ROUTE 108 S/STATE ROUTE 8 S TOWARD BRIDGEPORT. 0.7 MILES. FOLLOW SIGNS FOR CT-8 S/BRIDGEPORT AND MERGE ONTO CT-8 S/STATE ROUTE 8 S. 5.3 MILES. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-95 S/N.Y. CITY AND MERGE ONTO I-95 S. 5.6 MILES. TAKE EXIT 19 TOWARD US-1/S PORT. 0.2 MILES. MERGE ONTO PEASE AVE. 0.1 MILES. SLIGHT RIGHT AT US-1 S/POST RD DESTINATION WILL BE ON THE RIGHT. 3.1 MILES.



**GENERAL NOTES**

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

**DRAWING INDEX**

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**APPROVALS**

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

DISCIPLINE:	NAME:	
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		



CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811



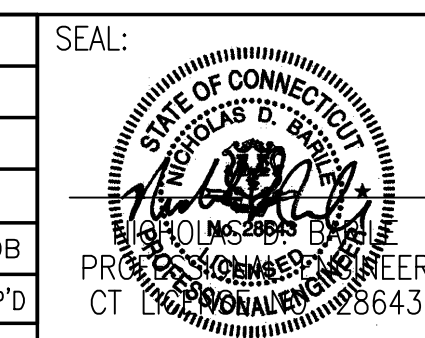
**SITE NUMBER: CTU2153**  
**SITE NAME: WESTPORT FD**

515 POST ROAD EAST  
WESTPORT, CT 06880  
FAIRFIELD COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

0	1/11/16	ISSUED AS FINAL	KCD	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: AM		



<b>AT&amp;T</b>		
DRAWING TITLE: <b>TITLE SHEET</b>		
JOB NUMBER 15183-EMP	DRAWING NUMBER T-1	REV 0

**GROUNDING NOTES:**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

**GENERAL NOTES:**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR - EMPIRE TELECOM  
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER - AT&T MOBILITY  
 OEM - ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR (EMPIRE TELECOM).
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

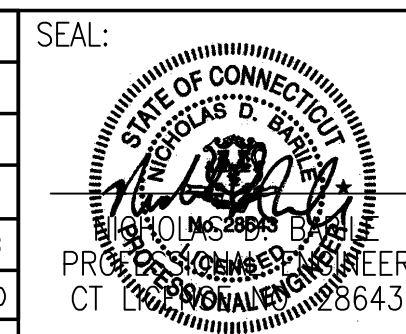
19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
  - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
  - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
  - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
  - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
  - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
  - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
  - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
  - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
  - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
  - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
  - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.
22. 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 AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY TURNING MILL CONSULTANTS, LLC FOR A RECENT UPGRADE DATED 06/26/2013. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.



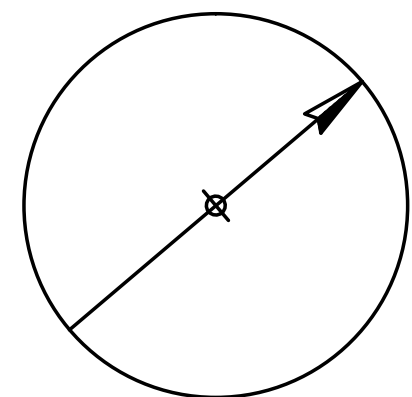
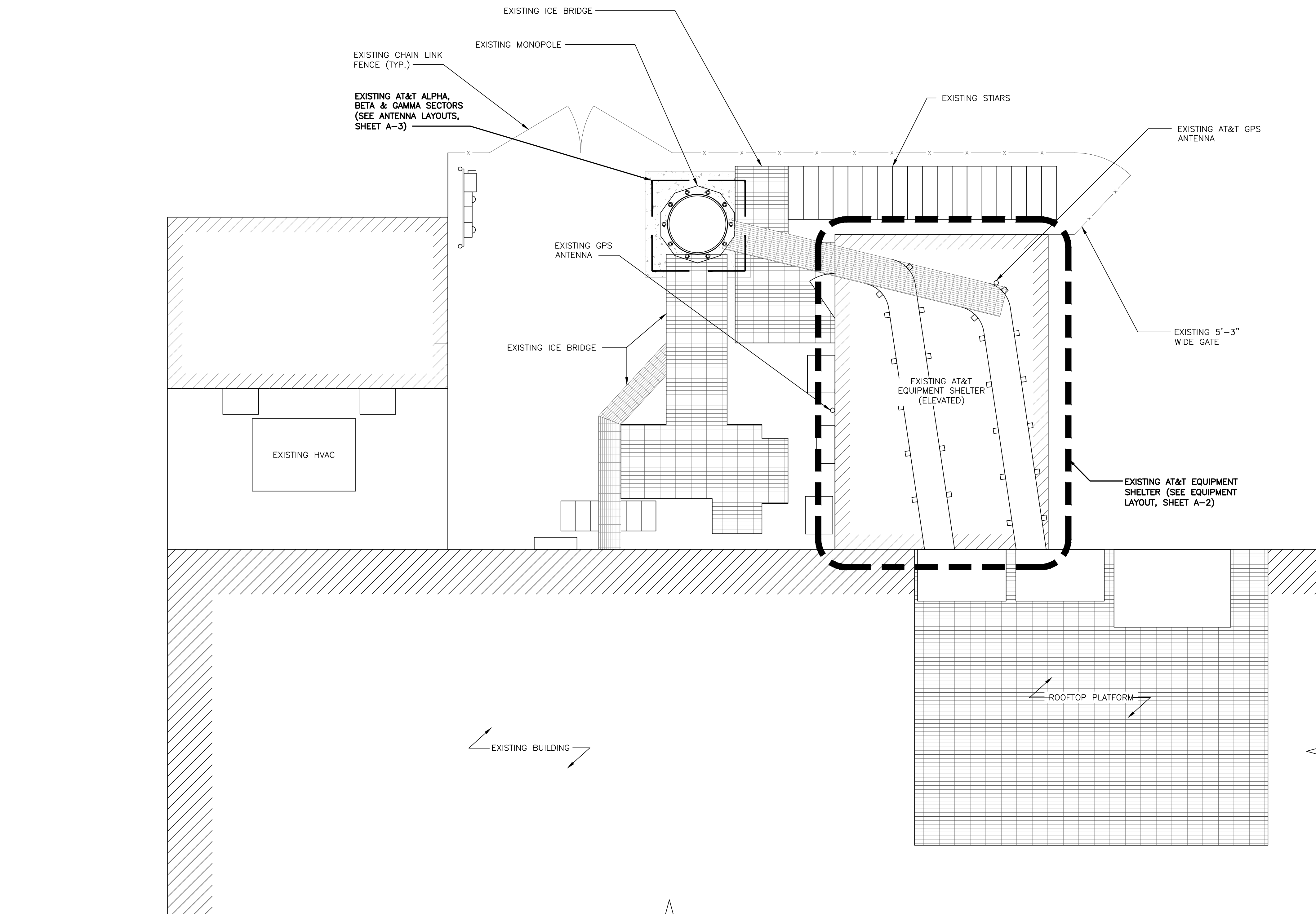
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**SITE NAME: WESTPORT FD**  
 515 POST ROAD EAST  
 WESTPORT, CT 06880  
 FAIRFIELD COUNTY



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NO.	DATE	REVISIONS	BY	CHK	APP'D
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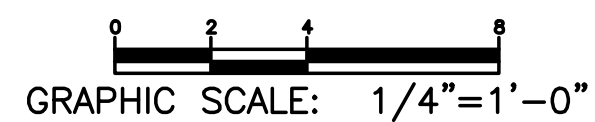
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DRAWING TITLE: <b>GROUNDING &amp; GENERAL NOTES</b>		
JOB NUMBER 15183-EMP	DRAWING NUMBER GN-1	REV 0



NORTH

**COMPOUND LAYOUT**

SCALE: 1/4" = 1'-0"



NOTE:  
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 AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

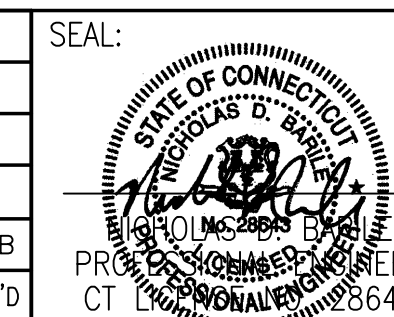
**COM-EX**  
Consultants  
115 ROUTE 46  
SUITE E39  
MOUNTAIN LAKES, NJ 07046  
PHONE: 862.209.4300  
FAX: 862.209.4301

**EMPIRE**  
telecom  
16 ESQUIRE ROAD  
BILLERICA, MA 01821

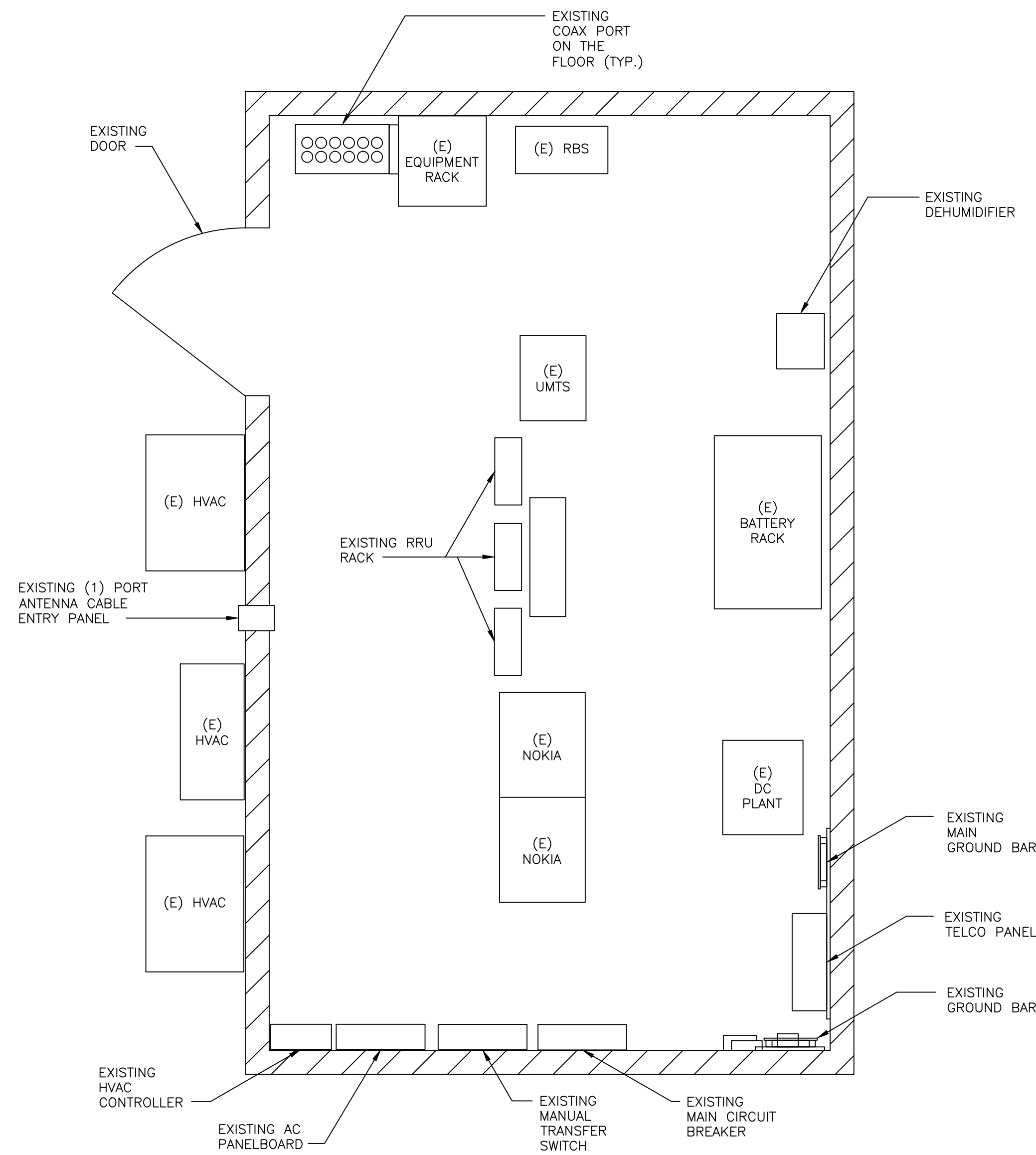
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515 POST ROAD EAST  
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FAIRFIELD COUNTY

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MOBILITY  
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

0	1/11/16	ISSUED AS FINAL	KCD	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: NJM		DRAWN BY: AM



<b>AT&amp;T</b>		
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JOB NUMBER 15183-EMP	DRAWING NUMBER A-1	REV 0

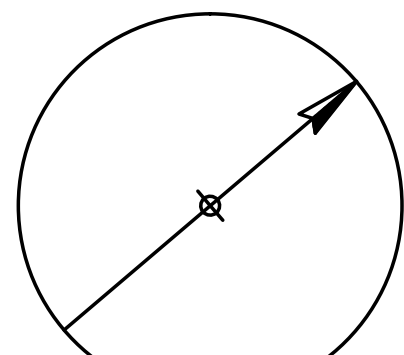


**EXISTING EQUIPMENT LAYOUT**

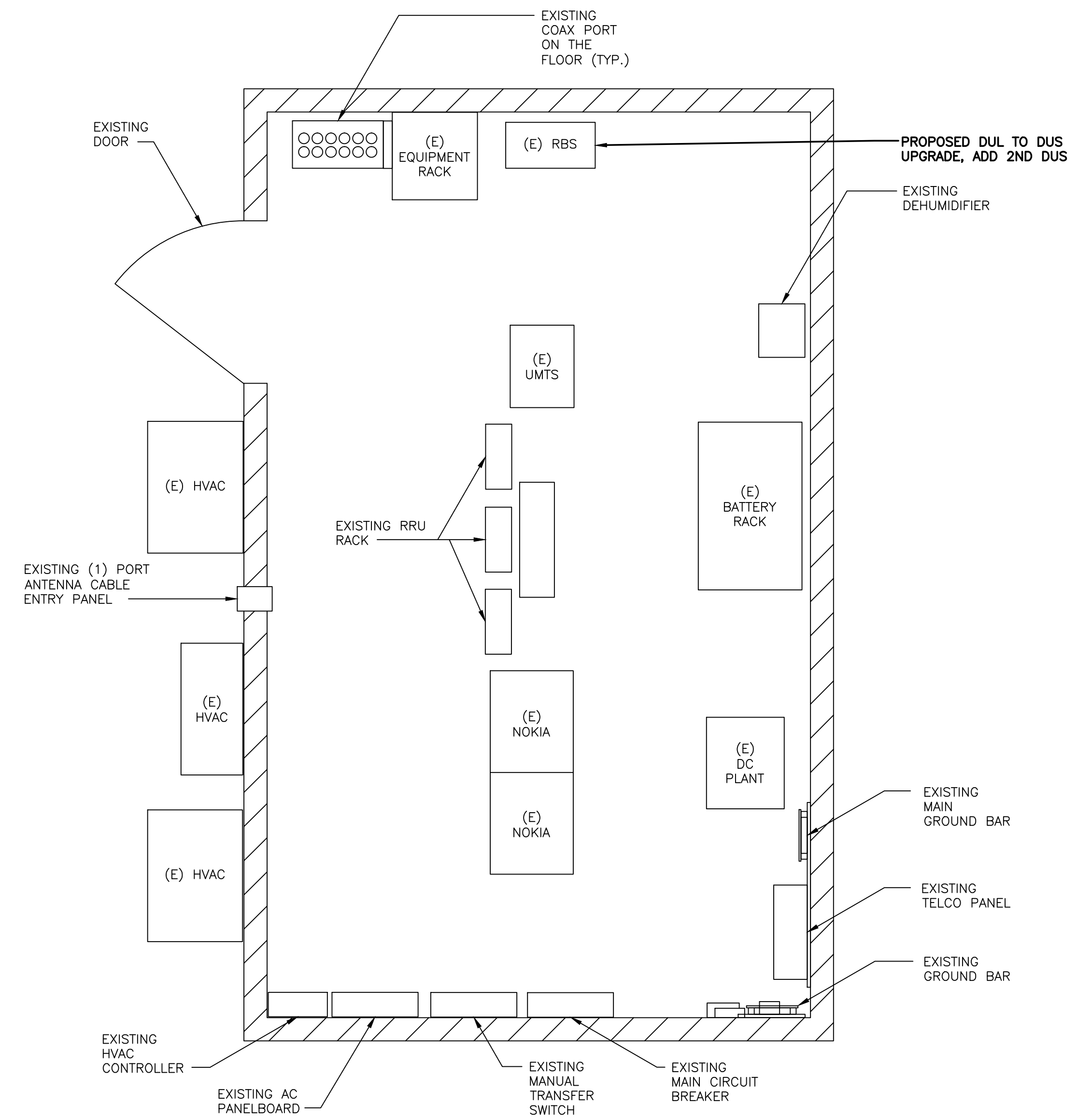
SCALE: 1" = 2'-0"



( IN FEET )  
1/2 Inch = 1 Foot

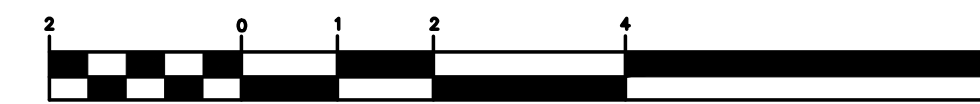


NORTH

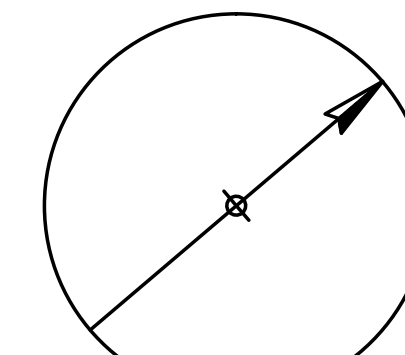


**PROPOSED EQUIPMENT LAYOUT**

SCALE: 1" = 2'-0"



( IN FEET )  
1/2 Inch = 1 Foot



NORTH

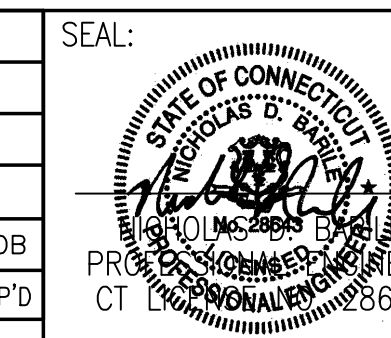
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MOBILITY  
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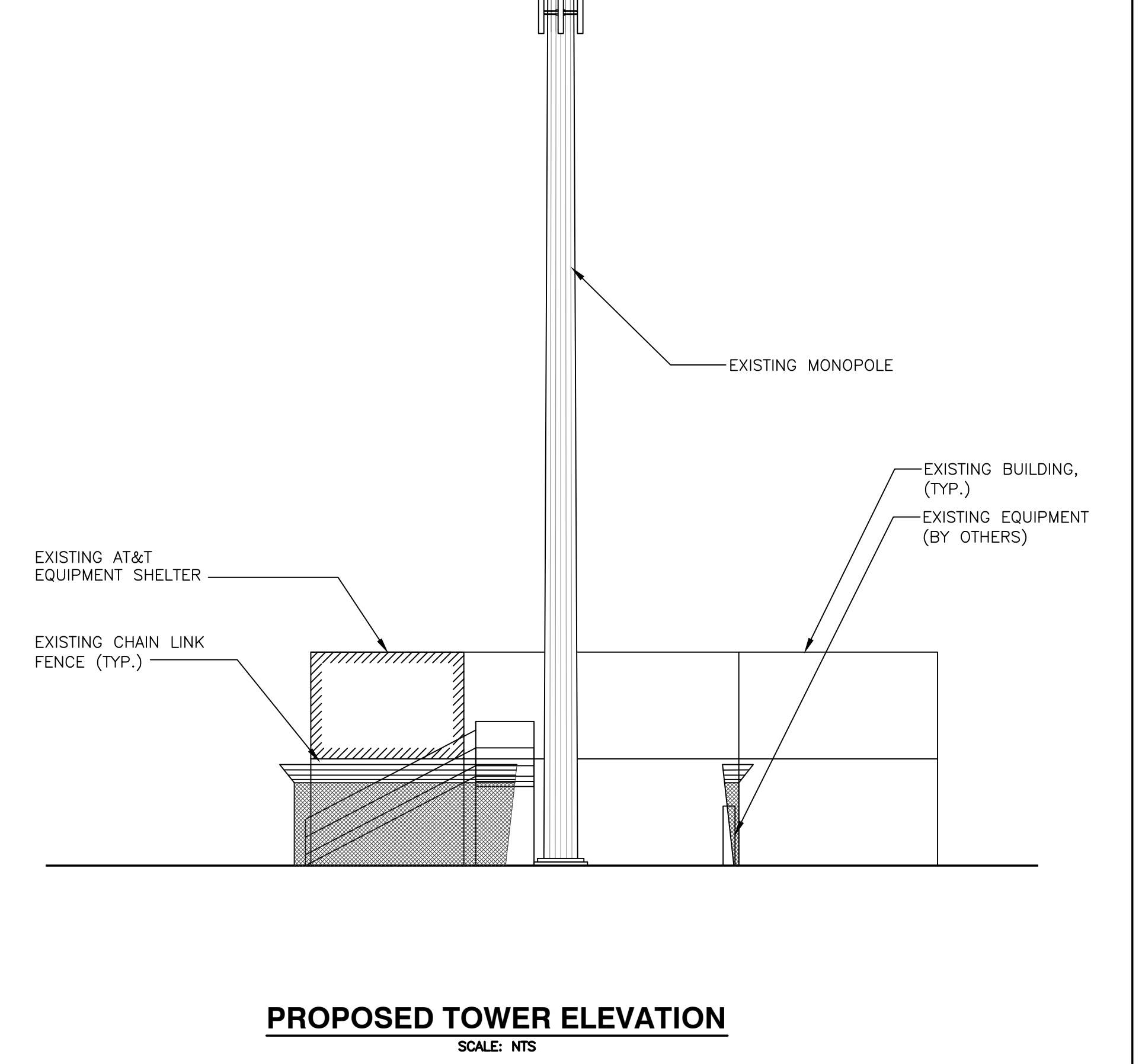
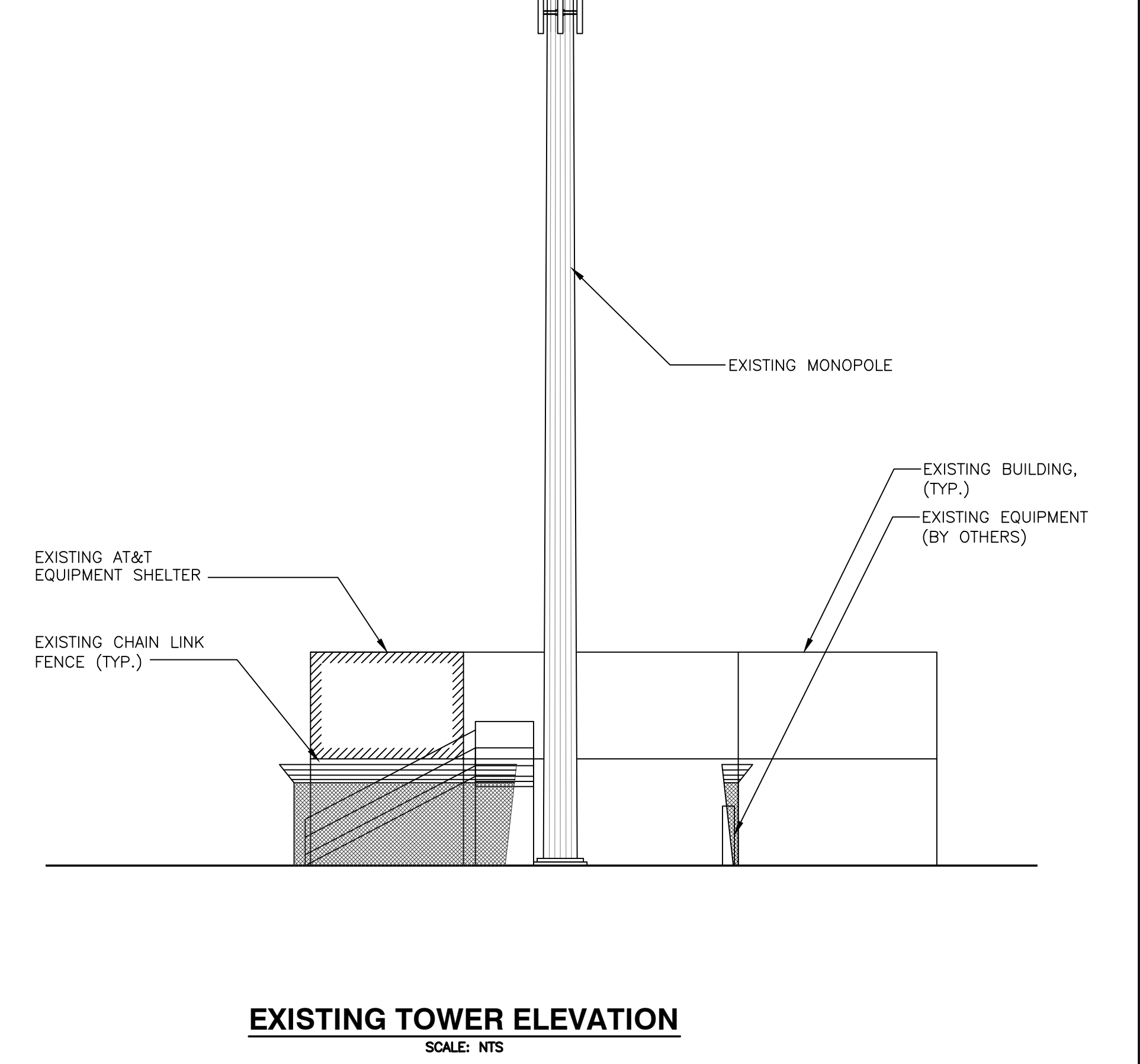
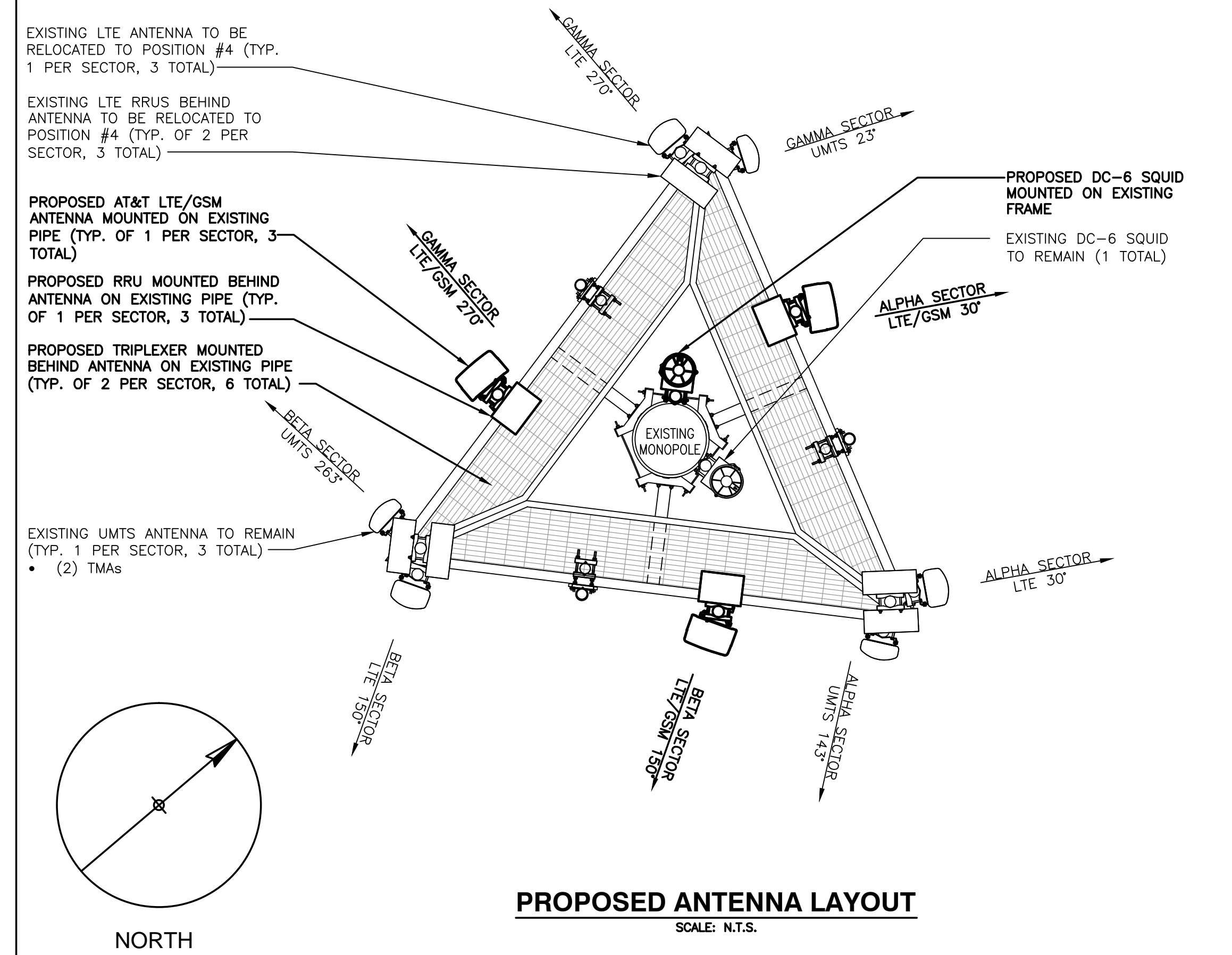
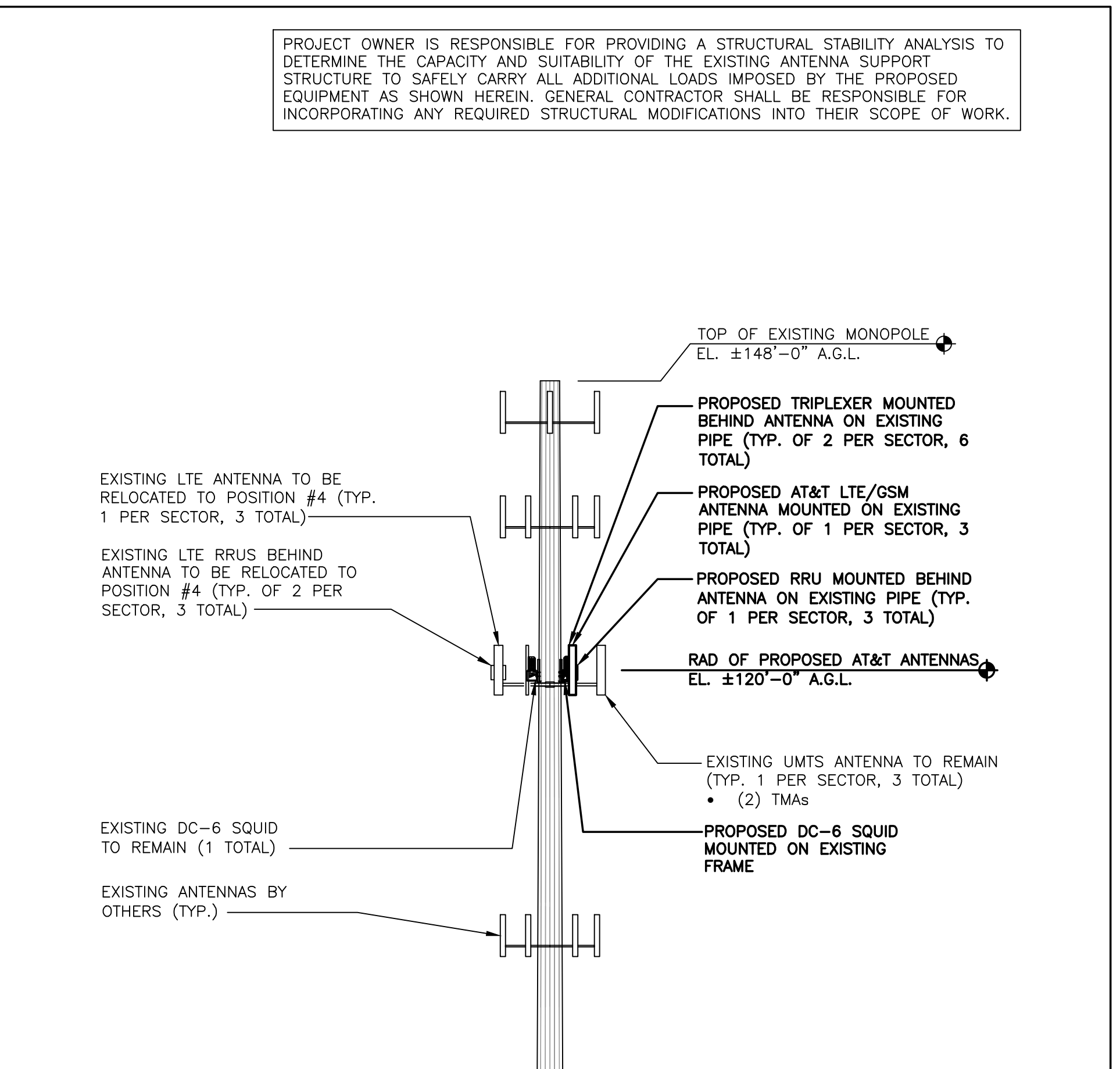
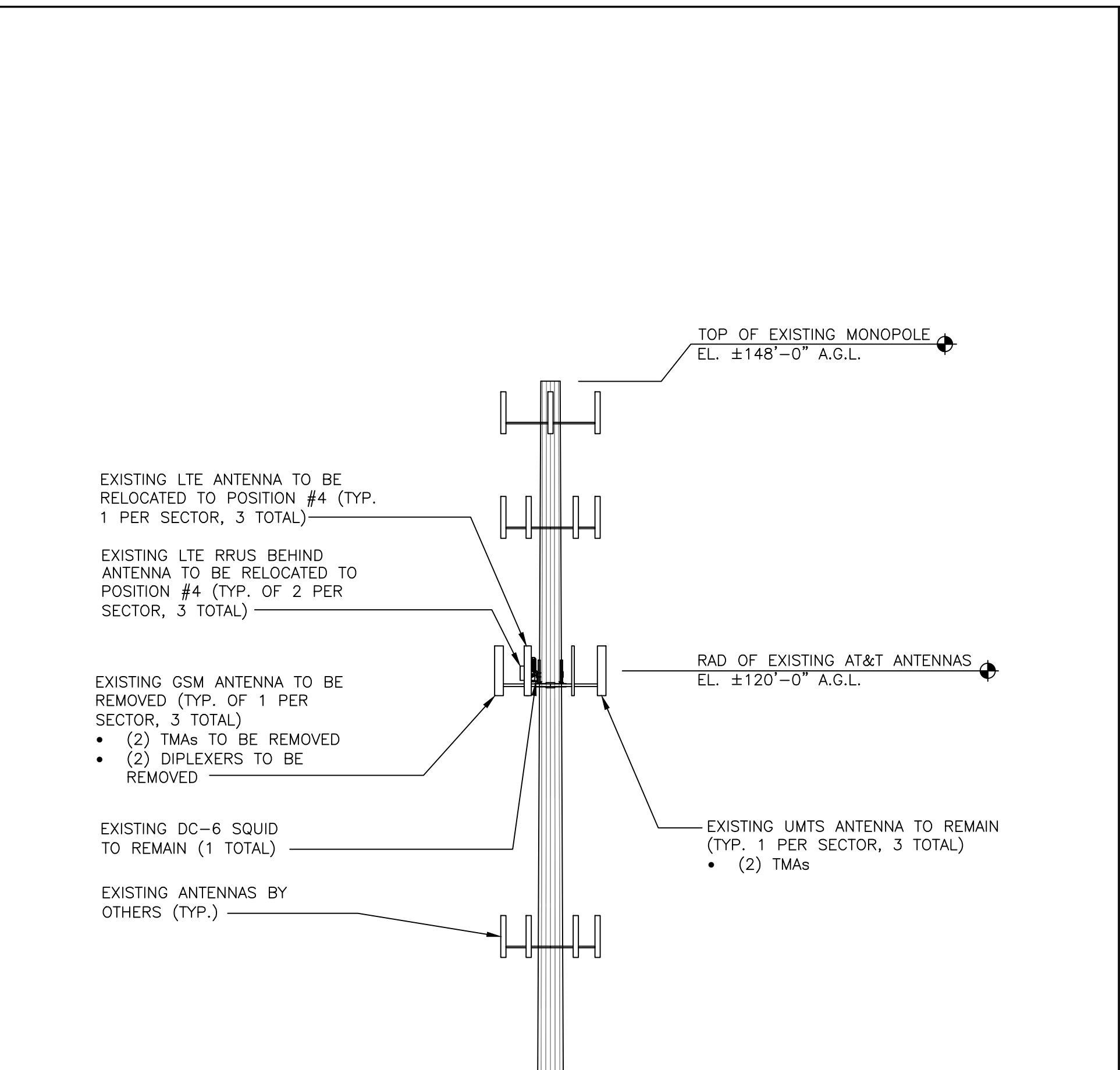
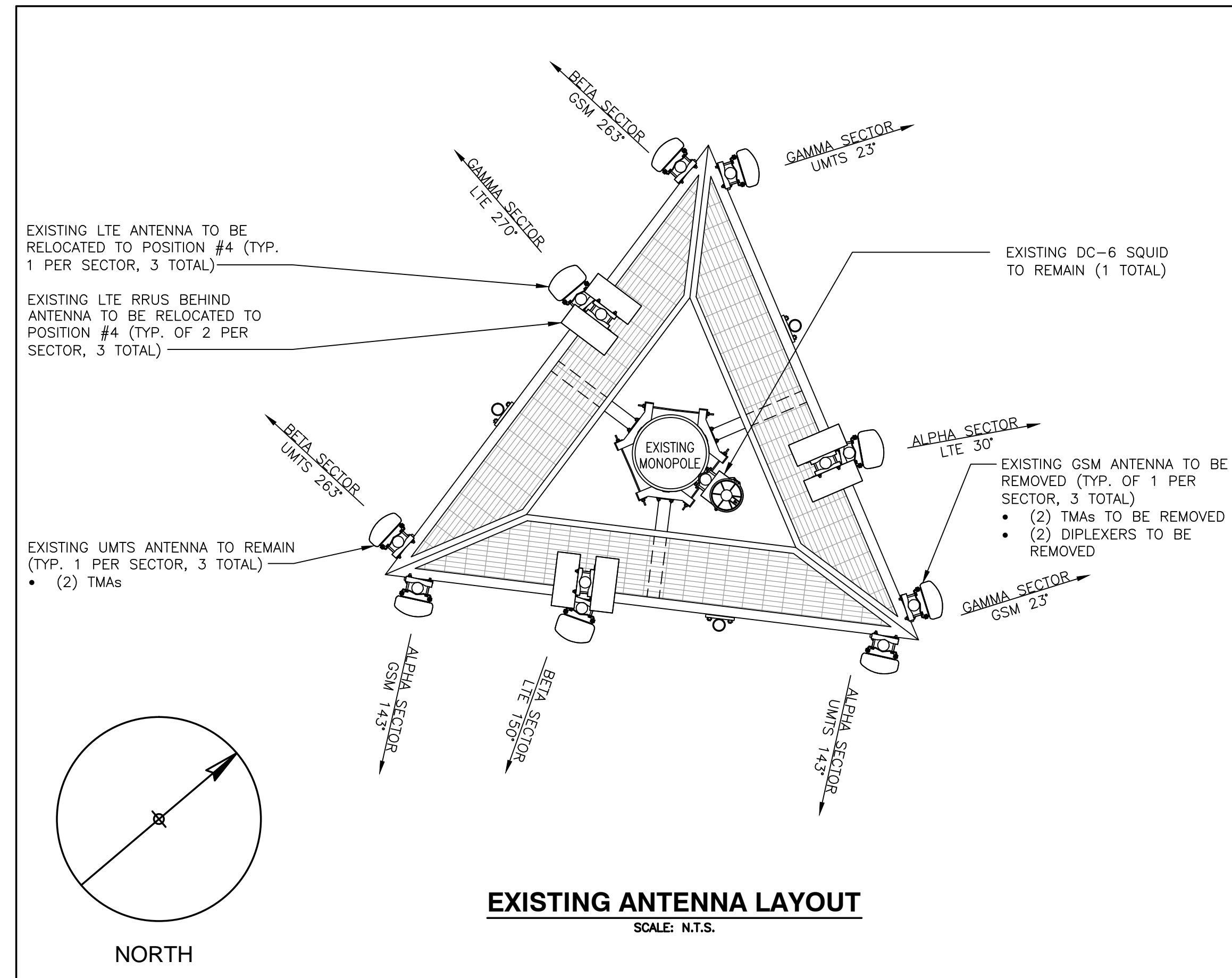
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<b>AT&amp;T</b>		
DRAWING TITLE: <b>EQUIPMENT LAYOUT</b>		
JOB NUMBER 15183-EMP	DRAWING NUMBER A-2	REV 0



PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.



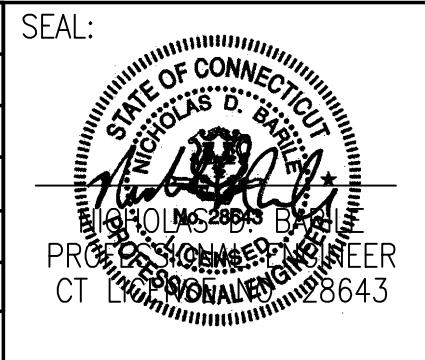
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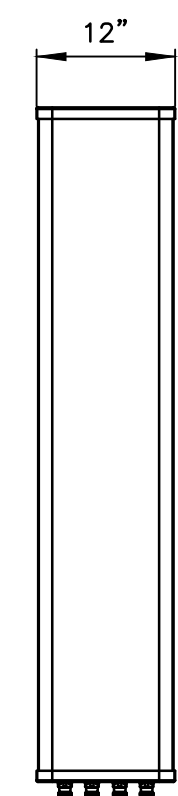
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**SITE NAME: WESTPORT FD**  
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WESTPORT, CT 06880  
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MOBILITY  
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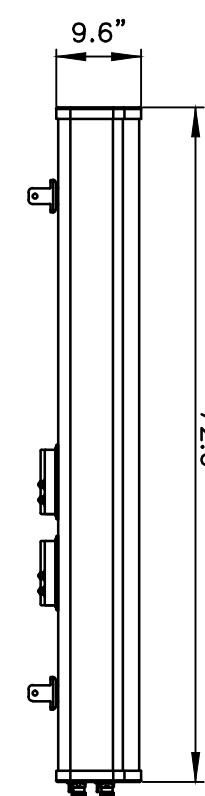
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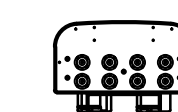
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DRAWING TITLE: <b>ANTENNA LAYOUTS &amp; ELEVATIONS</b>		
JOB NUMBER 15183-EMP	DRAWING NUMBER A-3	REV 0



FRONT VIEW



SIDE VIEW

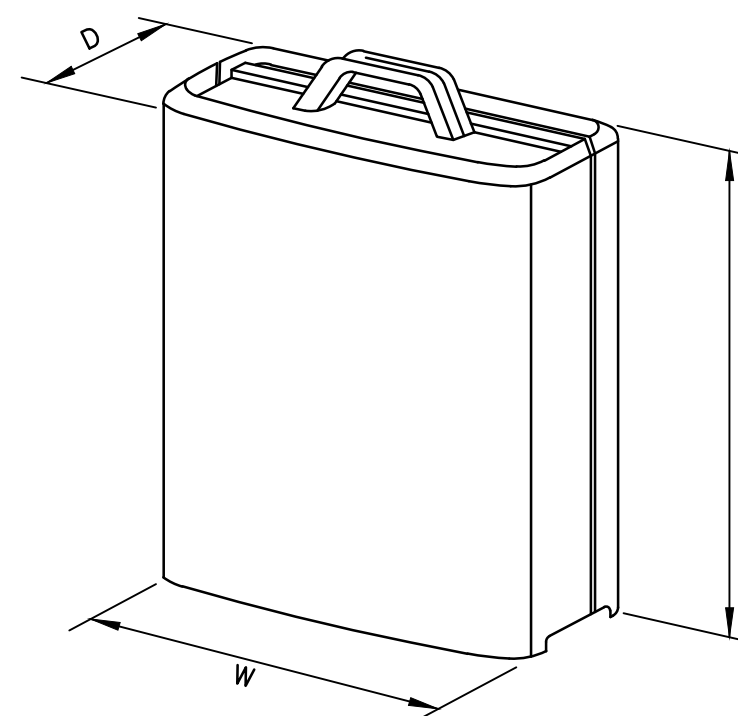


BOTTOM VIEW

MANUFACTURER	QUINTEL
MODEL	QS66512-3
WEIGHT	47.6 LBS

**LTE ANTENNA DETAIL**

SCALE: N.T.S.

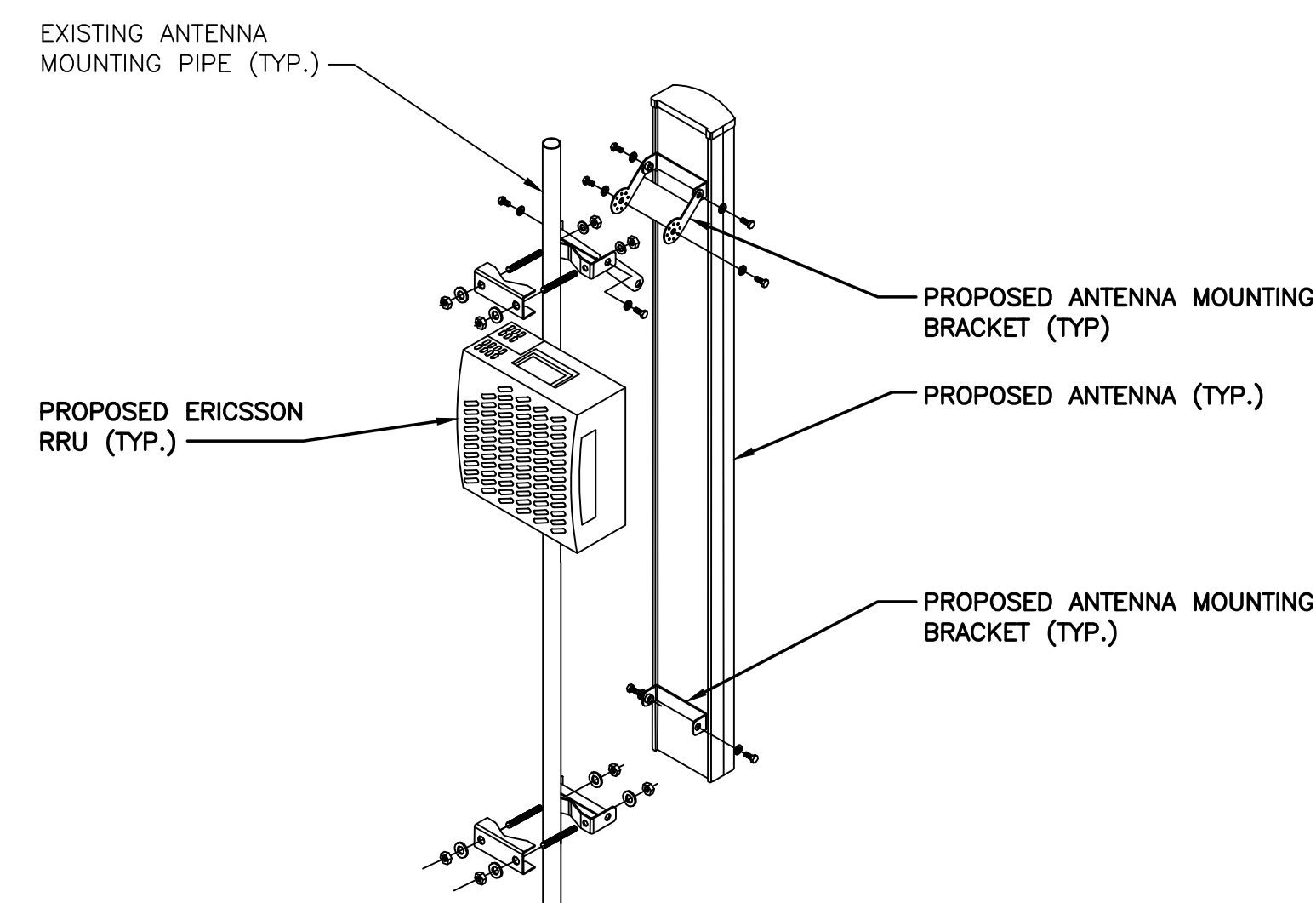


MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-32	29.9"x13.3"x9.5"	77 LBS

\*DENOTES EXISTING.

**RRUS DETAIL**

SCALE: N.T.S.



**ANTENNA AND RRU MOUNTING DETAIL**

SCALE: N.T.S.

**EXISTING ANTENNA SCHEDULE**

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	-	-	-
	A3	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	-	-	-
	B3	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	-	-	-
	G3	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
	G4	POWERWAVE	7770	55"x11"x5"

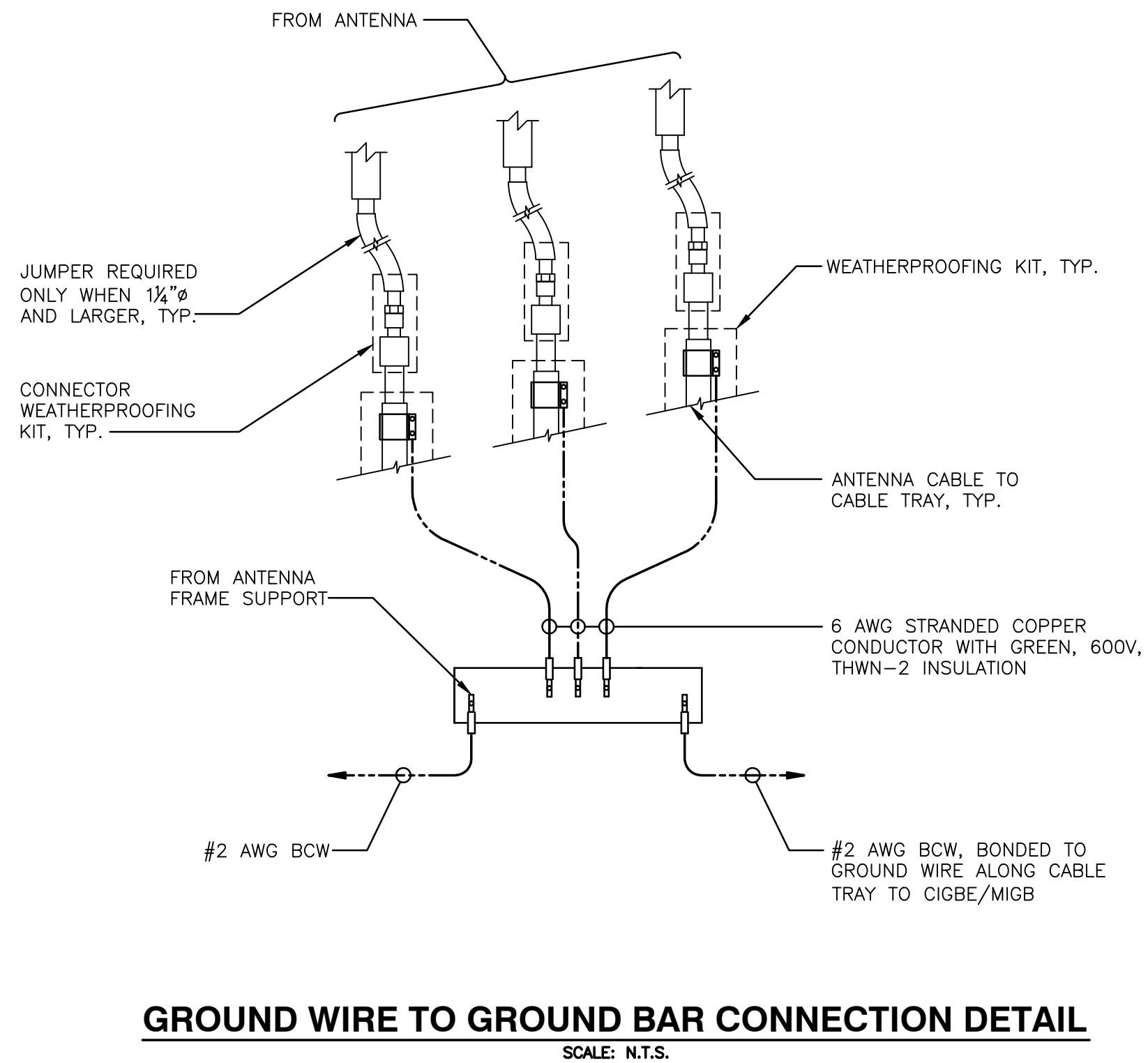
**FINAL ANTENNA SCHEDULE**

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	QUINTEL	QS66512-3	72"x12"x9.6"
	A3	-	-	-
	A4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	QUINTEL	QS66512-3	72"x12"x9.6"
	B3	-	-	-
	B4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	QUINTEL	QS66512-3	72"x12"x9.6"
	G3	-	-	-
	G4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"

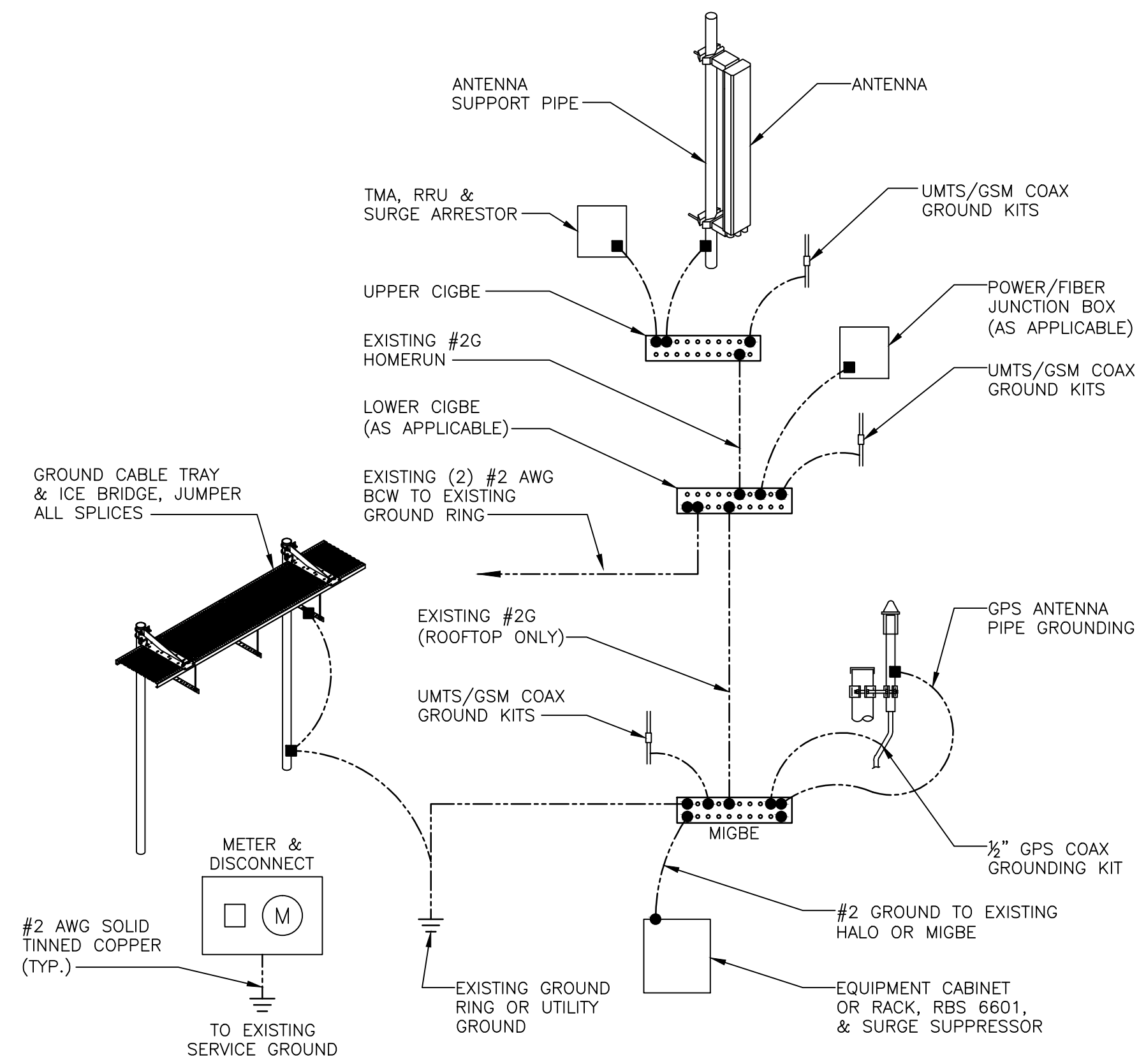
**PROPOSED RRU SCHEDULE**

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"	-	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
BETA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"	-	-
	ERICSSON	RRUS-12 (EXISTING)	20.4"x18.5"x9.5"	-	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
GAMMA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"	-	-
	ERICSSON	RRUS-12 (EXISTING)	20.4"x18.5"x9.5"	-	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-

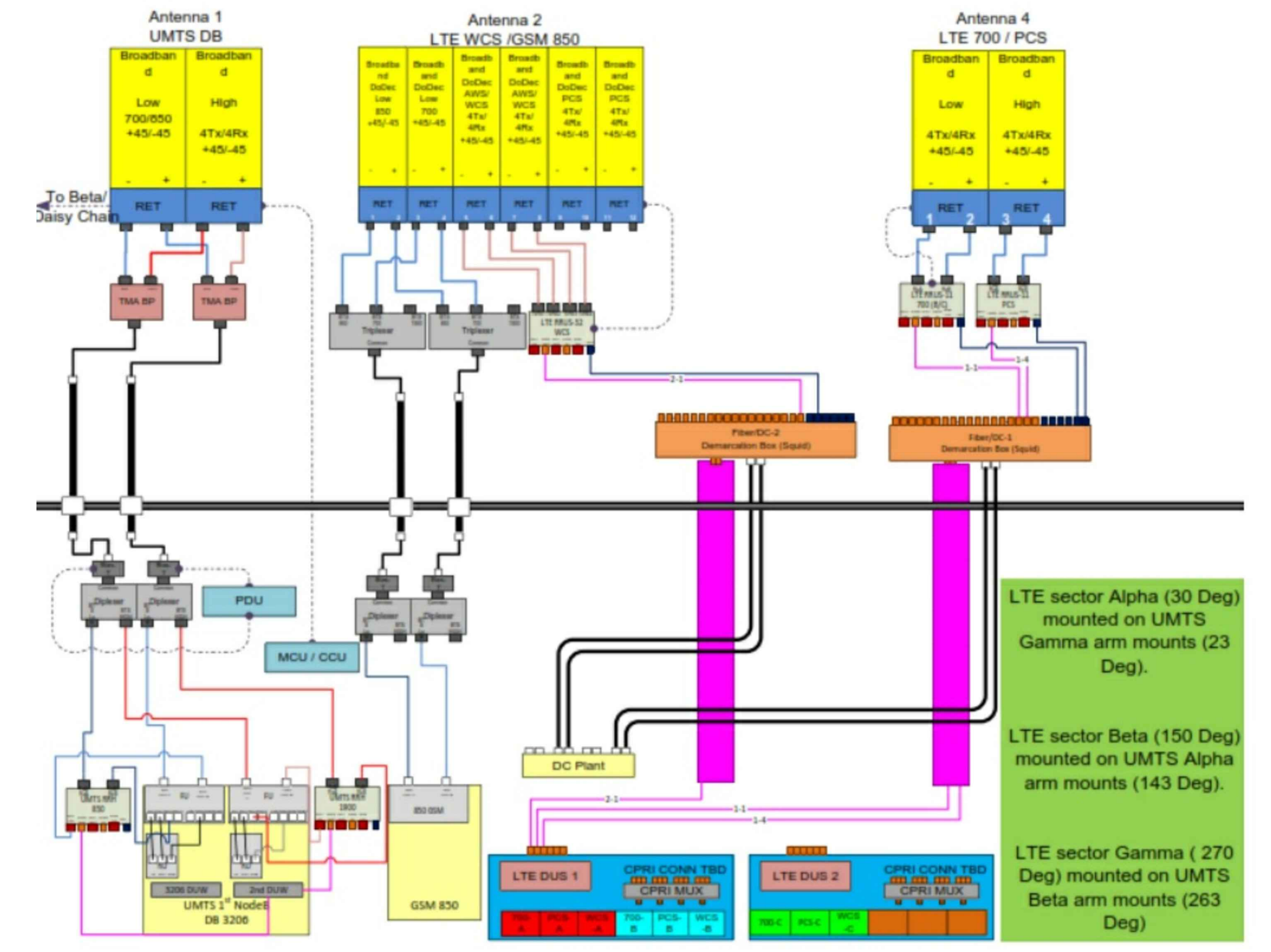
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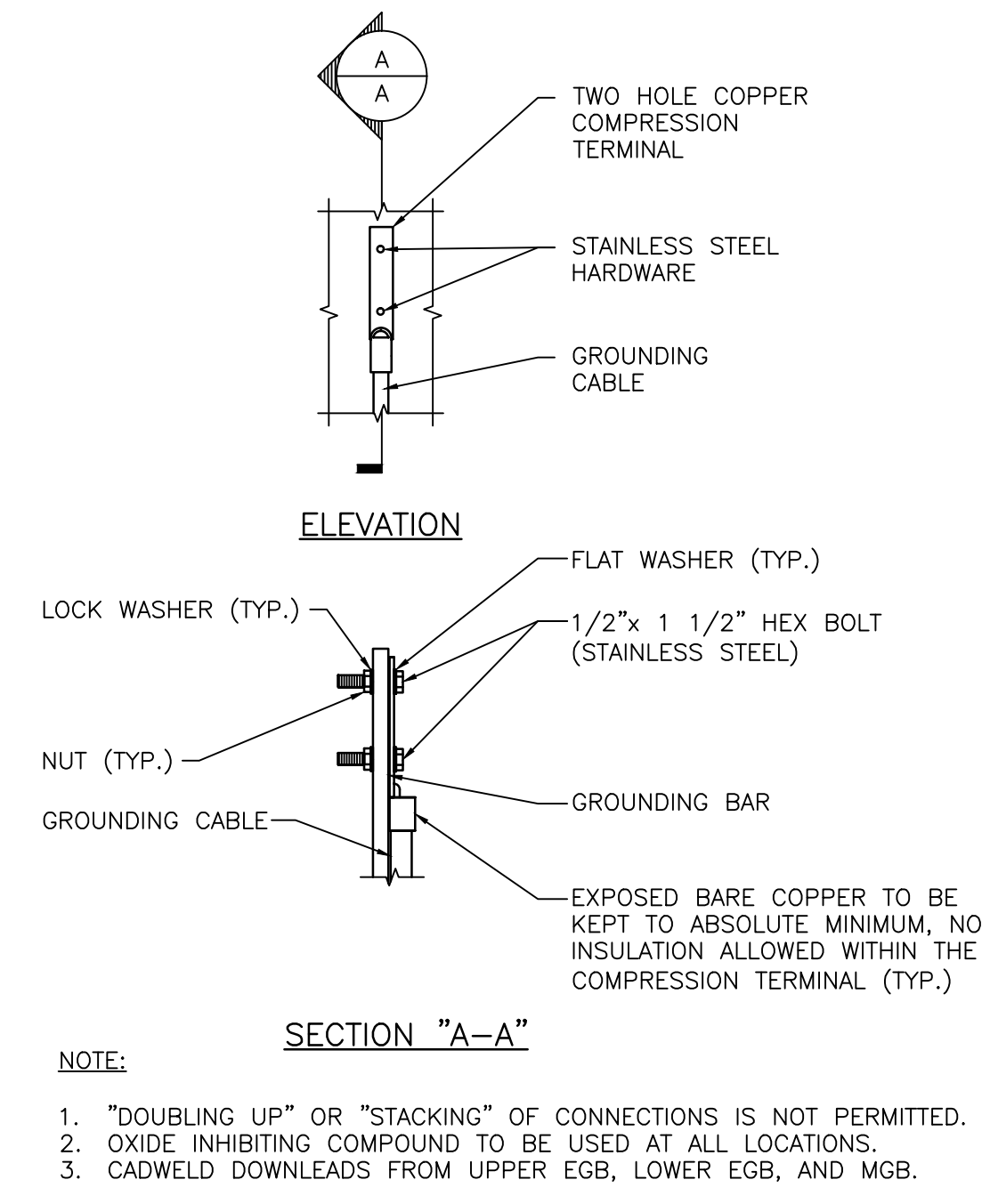
**GROUND WIRE TO GROUND BAR CONNECTION DETAIL**  
SCALE: N.T.S.



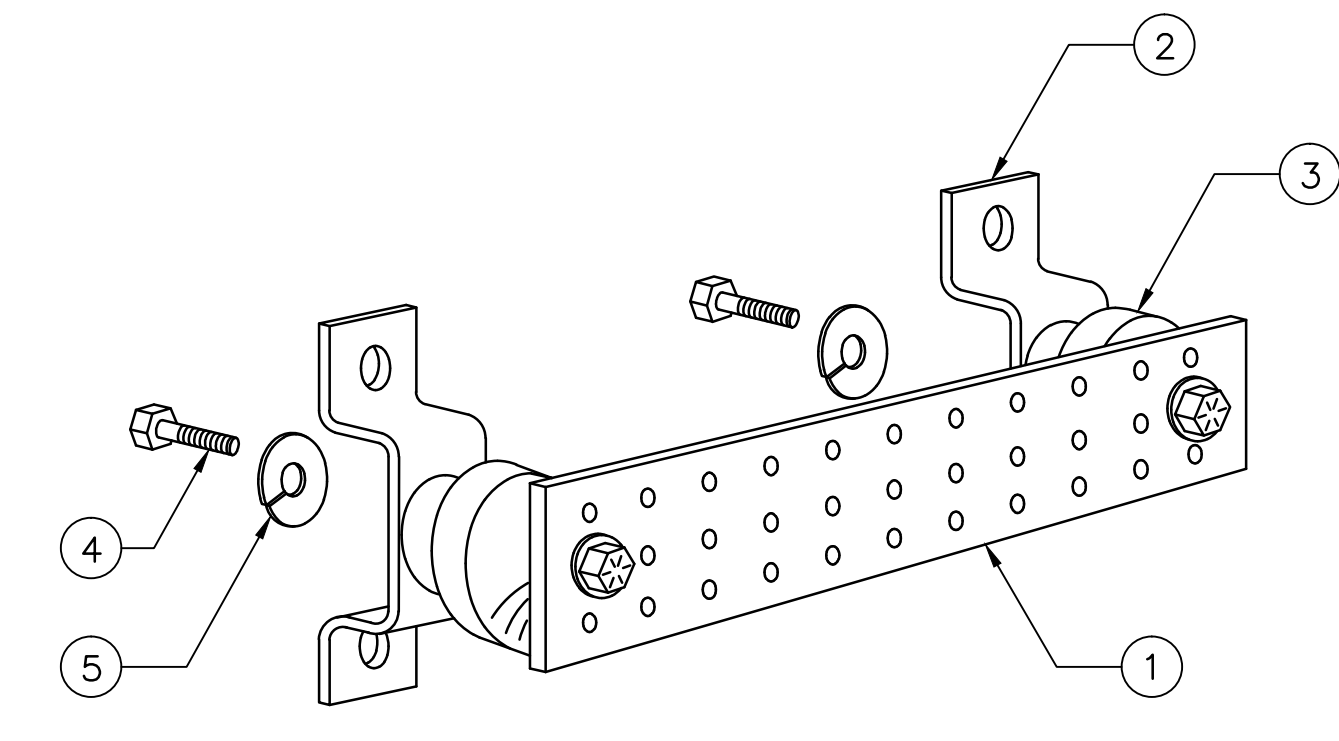
**GROUNDING RISER DIAGRAM**  
SCALE: N.T.S.



**TYPICAL PLUMBING DIAGRAM (PER SECTOR)**  
SCALE: N.T.S.



**TYPICAL GROUND BAR CONNECTION DETAIL**  
SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x 1/4")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	5/8"-11x1" H.H.C.S.
5	4	5/8" LOCK WASHER

- NOTES:
- EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION
- SECTION "P" - SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
  - GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
  - TELCO GROUND BAR
  - COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
  - +24V POWER SUPPLY RETURN BAR (#2)
  - 48V POWER SUPPLY RETURN BAR (#2)
  - RECTIFIER FRAMES
- SECTION "A" - SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
  - EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
  - METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
  - BUILDING STEEL (IF AVAILABLE) (#2)

**GROUND BAR DETAIL**  
SCALE: N.T.S.



ENGINEERING INNOVATION

Velocitel, Inc., d.b.a. FDH Velocitel  
6521 Meridien Drive, Suite 107  
Raleigh, North Carolina 27616  
(919) 755-1012

Date: **December 7, 2015**

Rebecca Klein  
Crown Castle  
525 Alderman Lane  
Fort Mill, SC 29715

**Subject: Structural Analysis Report**

**Carrier Designation:** **AT&T Mobility Co-Locate**  
**Carrier Site Number:** CT2153  
**Carrier Site Name:** Westport FD

**Crown Castle Designation:** **Crown Castle BU Number:** 876354  
**Crown Castle Site Name:** WESTPORT FIRE DEPARTMENT  
**Crown Castle JDE Job Number:** 358042  
**Crown Castle Work Order Number:** 1160781  
**Crown Castle Application Number:** 322279 Rev. 0

**Engineering Firm Designation:** **FDH Velocitel Project Number:** 15TGPG1400

**Site Data:** **515 POST ROAD EAST, WESTPORT, Fairfield County, CT**  
**Latitude 41° 8' 24.26", Longitude -73° 20' 51.61"**  
**148 Foot - Monopole Tower**

Dear Rebecca Klein,

FDH Velocitel is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural ‘Statement of Work’ and the terms of Crown Castle Purchase Order Number 851155, in accordance with application 322279, revision 0.

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

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

The analysis has been performed in accordance with the TIA/EIA-222-F and the 2005 Connecticut State Building Code based upon a wind speed of 85 mph fastest mile with a wind pressure increase factor of 1.15 resulting in a 91.2 mph fastest mile.

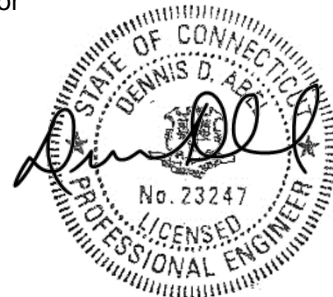
We at *FDH Velocitel* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Brian Apple, EI  
Project Engineer I

Reviewed by:

Dennis D. Abel, PE  
Director of Structural Engineering  
CT PE License No. 23247



12-07-2015

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**1) INTRODUCTION**

This tower is a 148 ft Monopole tower designed by Paul J. Ford and Company in February of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F. The tower has been modified multiple times in the past to accommodate additional loading. The tower has been reinforced per reinforcement drawings prepared by Paul J. Ford and Company in February of 2008, which consisted of the installation of (24) new base plate stiffeners. The tower was again reinforced per reinforcement drawings prepared by Sabre in April of 2011, and consisted of shaft reinforcement from 0' to 72.17'.

**2) ANALYSIS CRITERIA**

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 91.2 mph with no ice (adjusted from an 85 mph fastest mile with a 1.15 wind pressure factor applied), 37.6 mph with 0.75 inch ice thickness and 50 mph under service loads.

**Table 1 - Proposed Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
120.0	120.0	3	quintel tech	QS66512-3 w/ Mount Pipe	2 1	3/4 3/8	--
		6	powerwave tech	7020.00			
		3	ericsson	RRUS 32			
		3	ericsson	RRUS 11			
		1	raycap	DC6-48-60-18-8F			

**Table 2 - Existing and Reserved Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
148.0	160.0	1	decibel	DB420	3 2 6	1-1/4 1/2 5/16	1
	152.0	2	andrew	VHLP800-11			
	151.0	3	argus technologies	LLPX310R w/ Mount Pipe			
	148.0	3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		9	rfs celwave	ACU-A20-N			
		9	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		3	alcatel lucent	800MHZ RRH			
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	samsung telecom	FDD_R6_RRH			
		1	crown mounts	Platform Mount [LP 1201-1]			
144.0	144.0	1	andrew	VHLP2.5-10W			
		1	crown mounts	Pipe Mount [PM 602-1]			
120.0	120.0	3	powerwave tech	7770.00 w/ Mount Pipe	--	--	3
		6	powerwave tech	LGP13519			
		3	ericsson	RRUS-11			
		3	powerwave tech	7770.00 w/ Mount Pipe			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		3	powerwave tech	P65-16-XLH-RR w/ Mount Pipe	2 1	5/8 3/8	
		6	powerwave tech	LGP2140X			
		3	ericsson	RRUS-11			
		1	raycap	DC6-48-60-18-8F			
		1	crown mounts	Platform Mount [LP 1201-1]			
96.0	110.0	1	rfs / celwave	PD220	8 5	7/8 1/2	1
	108.0	1	decibel	DB205-A			
	107.0	1	decibel	DB420-B			
		1	decibel	DB224			
	105.0	2	rfs / celwave	PD1110			
		2	rfs / celwave	PD201-1			
	96.0	1	andrew	DB806E-XT			
	90.0	3	crown mounts	Platform Mount [LP 1201-1]			
82.0	82.0	3	rfs / celwave	APXV18-206516S-C-A20 w/ Mount Pipe	--	--	2
		3	andrew	LNx-6515DS-VTM w/ Mount Pipe			
		3	commscope	ATSBT-BOTTOM-FM-4G			
		3	rfs / celwave	APXV18-206516S-C-A20 w/ Mount Pipe	18 6	7/8 1-1/4	1
		3	andrew	ETW190VS12UB			
		3	rfs / celwave	ATMAA1412D-1A20			
		1	crown mounts	Platform Mount [LP 1201-1]			
72.0	72.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8	1
		1	crown mounts	Side Arm Mount [SO 102-1]			
53.0	56.0	1	radiall/larsen	BSA150B	2	1/2	1
	53.0	1	crown mounts	Side Arm Mount [SO 702-1]			
	50.0	1	radiall/larsen	BSA150B			
50.0	50.0	1	trimble	BULLET III	1	1/2	1

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment
- 3) Equipment to be Removed, Not Considered in this Analysis

**Table 3 - Design Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	148.0	12	unknown	08980 H90	--	--
140.0	140.0	2	unknown	084200	--	--
120.0	120.0	12	unknown	ALP9212N	--	--

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
100.0	100.0	1	unknown	08230	--	--
		1	unknown	P01100	--	--
		1	unknown	P01109	--	--
		4	unknown	P01142	--	--
		1	unknown	P0220	--	--
50.0	50.0	2	unknown	CHANNEL MASTERS	--	--
15.0	15.0	1	unknown	GPS	--	--

### 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Tower Engineering Professionals	1531886	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford & Company	1448194	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford & Company	1446984	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford & Company	2848812	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Sabre	2971196	CCISITES
4-POST-MODIFICATION INSPECTION	Paul J. Ford & Company	2485808	CCISITES
4-POST-MODIFICATION INSPECTION	Tower Engineering Professionals	2971197	CCISITES

#### 3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

#### 3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts, and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating winds loads as allowed by TIA/EIA-222-F.

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



4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	148 - 143	Pole	TP23.015x22x0.25	Pole	8.6%	Pass
L2	143 - 138	Pole	TP24.03x23.015x0.25	Pole	14.8%	Pass
L3	138 - 133	Pole	TP25.045x24.03x0.25	Pole	20.7%	Pass
L4	133 - 128	Pole	TP26.06x25.045x0.25	Pole	26.3%	Pass
L5	128 - 123	Pole	TP27.075x26.06x0.25	Pole	31.5%	Pass
L6	123 - 118	Pole	TP28.09x27.075x0.25	Pole	38.6%	Pass
L7	118 - 113	Pole	TP29.105x28.09x0.25	Pole	47.5%	Pass
L8	113 - 108	Pole	TP30.12x29.105x0.25	Pole	55.9%	Pass
L9	108 - 104.5	Pole	TP31.643x30.12x0.25	Pole	61.5%	Pass
L10	104.5 - 99.5	Pole	TP31.346x30.331x0.375	Pole	42.2%	Pass
L11	99.5 - 94.5	Pole	TP32.361x31.346x0.375	Pole	46.6%	Pass
L12	94.5 - 89.5	Pole	TP33.376x32.361x0.375	Pole	50.9%	Pass
L13	89.5 - 84.5	Pole	TP34.391x33.376x0.375	Pole	54.9%	Pass
L14	84.5 - 79.5	Pole	TP35.406x34.391x0.375	Pole	59.6%	Pass
L15	79.5 - 74.5	Pole	TP36.421x35.406x0.375	Pole	64.4%	Pass
L16	74.5 - 70.41	Pole	TP37.251x36.421x0.375	Pole	68.2%	Pass
L17	70.41 - 70.16	Pole	TP37.302x37.251x0.375	Pole	68.4%	Pass
L18	70.16 - 65.16	Pole	TP38.317x37.302x0.375	Pole	72.8%	Pass
L19	65.16 - 63.91	Pole	TP38.571x38.317x0.375	Pole	73.9%	Pass
L20	63.91 - 63.66	Pole	TP38.622x38.571x0.375	Pole	74.1%	Pass
L21	63.66 - 63.25	Pole	TP39.72x38.622x0.375	Pole	74.5%	Pass
L22	63.25 - 57.25	Pole	TP39.173x37.955x0.4375	Pole	67.3%	Pass
L23	57.25 - 52.47	Pole	TP40.143x39.173x0.4375	Pole	69.9%	Pass
L24	52.47 - 52.22	Pole	TP40.194x40.143x0.4375	Pole	70.1%	Pass
L25	52.22 - 47.22	Pole	TP41.209x40.194x0.4375	Pole	73.2%	Pass
L26	47.22 - 42.22	Pole	TP42.224x41.209x0.4375	Pole	76.1%	Pass
L27	42.22 - 37.22	Pole	TP43.239x42.224x0.4375	Pole	78.9%	Pass
L28	37.22 - 35.13	Pole	TP43.665x43.239x0.4375	Pole	80.0%	Pass
L29	35.13 - 34.88	Pole + Reinf.	TP43.716x43.665x0.6375	Reinf. 3 Tension Rupture	76.1%	Pass
L30	34.88 - 34.5	Pole + Reinf.	TP44.959x43.716x0.6375	Reinf. 3 Tension Rupture	76.3%	Pass
L31	34.5 - 27.75	Pole	TP44.287x42.917x0.5	Pole	73.5%	Pass
L32	27.75 - 25.88	Pole	TP44.667x44.287x0.5	Pole	74.0%	Pass
L33	25.88 - 25.75	Pole	TP44.693x44.667x0.5	Pole	79.3%	Pass
L34	25.75 - 25.63	Pole + Reinf.	TP44.718x44.693x0.75	Reinf. 1 Tension Rupture	71.7%	Pass
L35	25.63 - 25.5	Pole + Reinf.	TP44.744x44.718x0.75	Reinf. 1 Tension Rupture	71.7%	Pass
L36	25.5 - 20.5	Pole + Reinf.	TP45.759x44.744x0.75	Reinf. 1 Tension Rupture	73.6%	Pass
L37	20.5 - 15.5	Pole + Reinf.	TP46.774x45.759x0.7375	Reinf. 1 Tension Rupture	75.4%	Pass
L38	15.5 - 10.5	Pole + Reinf.	TP47.789x46.774x0.7375	Reinf. 1 Tension Rupture	77.0%	Pass
L39	10.5 - 5.5	Pole + Reinf.	TP48.804x47.789x0.725	Reinf. 1 Tension Rupture	78.6%	Pass
L40	5.5 - 0.5	Pole + Reinf.	TP49.819x48.804x0.725	Reinf. 1 Tension Rupture	80.1%	Pass
L41	0.5 - 0	Pole + Reinf.	TP49.92x49.819x0.725	Reinf. 1 Tension Rupture	80.2%	Pass
L42	148 - 143	Pole	TP23.015x22x0.25	Pole	8.6%	Pass
L43	143 - 138	Pole	TP24.03x23.015x0.25	Pole	14.8%	Pass
L44	138 - 133	Pole	TP25.045x24.03x0.25	Pole	20.7%	Pass
L45	133 - 128	Pole	TP26.06x25.045x0.25	Pole	26.3%	Pass
					Summary	
				Pole	80.0%	Pass
				Reinforcement	80.2%	Pass
				Overall	80.2%	Pass

**Table 6 - Tower Component Stresses vs. Capacity – LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	90.6	Pass
1	Base Plate	0	54.7	Pass
1	Base Foundation (Structural)	0	68.1	Pass
1	Base Foundation (Soil Interaction)	0	97.5	Pass

<b>Structure Rating (max from all components) =</b>	<b>97.5%</b>
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Notes:

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

#### 4.1) Recommendations

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

**APPENDIX A**  
**TNXTOWER OUTPUT**

**DESIGNED APPURTENANCE LOADING**

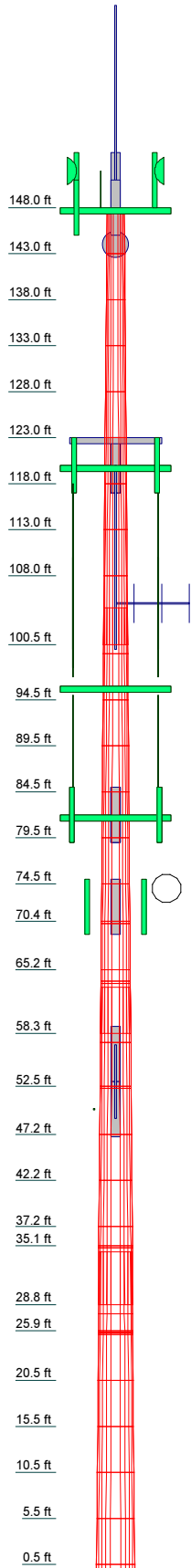
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	148	Platform Mount [LP 1201-1]	120
DB420	148	QS66512-3 w/ Mount Pipe	120
LLPX310R w/ Mount Pipe	148	QS66512-3 w/ Mount Pipe	120
LLPX310R w/ Mount Pipe	148	QS66512-3 w/ Mount Pipe	120
LLPX310R w/ Mount Pipe	148	DB224	96
(2) APXVSP18-C-A20 w/ Mount Pipe	148	(2) PD1110	96
APXVSP18-C-A20 w/ Mount Pipe	148	PD201-1	96
(6) ACU-A20-N	148	PD201-1	96
(3) ACU-A20-N	148	DB806E-XT	96
(6) PCS 1900MHz 4x45W-65MHz	148	(2) PD83-1	96
(3) PCS 1900MHz 4x45W-65MHz	148	PD83-1	96
(2) 800MHZ RRH	148	(3) 6' x 2" Mount Pipe	96
800MHZ RRH	148	(4) 6' x 2" Mount Pipe	96
(2) 800 EXTERNAL NOTCH FILTER	148	(2) 6' x 2" Mount Pipe	96
800 EXTERNAL NOTCH FILTER	148	Platform Mount [LP 1201-1]	96
FDD_R6_RRH	148	PD220	96
FDD_R6_RRH	148	DB205-A	96
FDD_R6_RRH	148	DB420-B	96
6' x 2" Mount Pipe	148	LNx-6515DS-VTM w/ Mount Pipe	82
6' x 2" Mount Pipe	148	LNx-6515DS-VTM w/ Mount Pipe	82
6' x 2" Mount Pipe	148	LNx-6515DS-VTM w/ Mount Pipe	82
Platform Mount [LP 1201-1]	148	ATSBT-BOTTOM-FM-4G	82
VHLP800-11	148	ATSBT-BOTTOM-FM-4G	82
VHLP800-11	148	ATSBT-BOTTOM-FM-4G	82
Pipe Mount [PM 602-1]	144	APXV18-206516S-C-A20 w/ Mount Pipe	82
VHLP2-5-10W	144	APXV18-206516S-C-A20 w/ Mount Pipe	82
(2) 7020.00	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
(2) 7020.00	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
(2) 7020.00	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
RRUS 32	120	ETW190VS12UB	82
RRUS 32	120	ETW190VS12UB	82
RRUS 32	120	ETW190VS12UB	82
RRUS 11	120	ATMAA1412D-1A20	82
RRUS 11	120	ATMAA1412D-1A20	82
RRUS 11	120	ATMAA1412D-1A20	82
DC6-48-60-18-8F	120	ATMAA1412D-1A20	82
7770.00 w/ Mount Pipe	120	Pipe Mount	82
7770.00 w/ Mount Pipe	120	Pipe Mount	82
7770.00 w/ Mount Pipe	120	Pipe Mount	82
P65-16-XLH-RR w/ Mount Pipe	120	Platform Mount [LP 1201-1]	82
P65-16-XLH-RR w/ Mount Pipe	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
P65-16-XLH-RR w/ Mount Pipe	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
(2) LGP2140X	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
(2) LGP2140X	120	APXV18-206516S-C-A20 w/ Mount Pipe	82
RRUS-11	120	Side Arm Mount [SO 102-3]	72
RRUS-11	120	800 10504 w/ Mount Pipe	72
RRUS-11	120	800 10504 w/ Mount Pipe	72
DC6-48-60-18-8F	120	800 10504 w/ Mount Pipe	72
6' x 2" Horizontal Mount Pipe	120	Side Arm Mount [SO 702-1]	53
6' x 2" Horizontal Mount Pipe	120	BSA150B	53
6' x 2" Horizontal Mount Pipe	120	BSA150B	53
Pipe Mount	120	8' x 2" Pipe Mount	53
Pipe Mount	120	BULLET III	50
Pipe Mount	120		

**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi			

**TOWER DESIGN NOTES**

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 91.20 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37.60 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50.00 mph wind.



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
2	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
3	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
4	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
5	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
6	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
7	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
8	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
9	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
10	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
11	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
12	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
13	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
14	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
15	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
16	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
17	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
18	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
19	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
20	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
21	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
22	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
23	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
24	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
25	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
26	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
27	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
28	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
29	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
30	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
31	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
32	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
33	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
34	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
35	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
36	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
37	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
38	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
39	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
40	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3
41	5.0000	12	0.2500	4.0000	28.105428.090327.075326.060225.045224.030123.015122.0000	30.120429.105428.090327.075326.060225.045224.030123.0151	0.3	0.3



**FDH VELOCITEL**  
ENGINEERING INNOVATION

Tower Analysis

**Velocitel, Inc., d.b.a. FDH Velocitel**

6521 Meridien Drive, Suite 107  
Raleigh, North Carolina 27616  
Phone: 9197551012  
FAX: 9197551031

**Job: 876354, WESTPORT FIRE DEPARTMENT**

Project: 15TGGP1400

Client: Crown Castle	Drawn by: BApple	App'd:
Code: TIA/EIA-222-F	Date: 12/04/15	Scale: NTS
Path:	Dwg No. E-1	

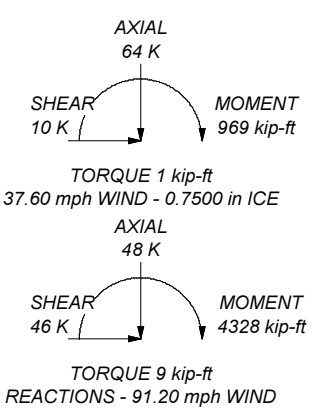
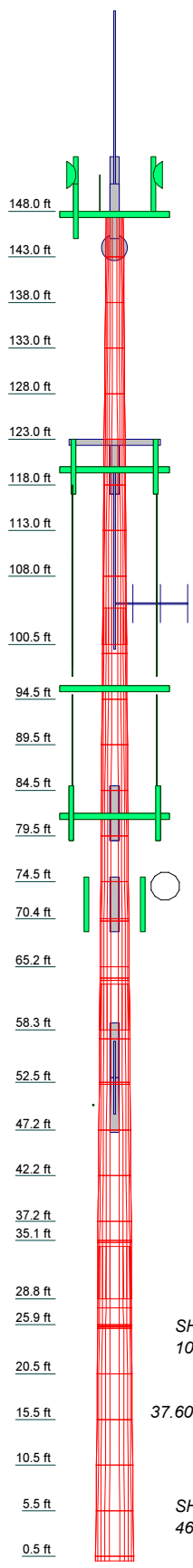
**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi			

**TOWER DESIGN NOTES**

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 91.20 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37.60 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50.00 mph wind.

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
2		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
3		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
4		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
5		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
6		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
7		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
8		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
9		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
10		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
11		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
12		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
13		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
14		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
15		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
16		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
17		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
18		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
19		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
20		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
21		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
22		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
23		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
24		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
25		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
26		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
27		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
28		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
29		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
30		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
31		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
32		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
33		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
34		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
35		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
36		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
37		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
38		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
39		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
40		12	0.2500	4.0000	28.030	28.030	A607-60	0.3
41		12	0.2500	4.0000	28.030	28.030	A607-60	0.3



<p>ENGINEERING INNOVATION</p> <p>Tower Analysis</p>	<p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridian Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>		<p>Job: <b>876354, WESTPORT FIRE DEPARTMENT</b></p> <p>Project: <b>15TGP1400</b></p>		
	<p>Client: Crown Castle</p> <p>Code: TIA/EIA-222-F</p> <p>Path:</p>	<p>Drawn by: BApple</p> <p>Date: 12/04/15</p>	<p>App'd:</p> <p>Scale: NTS</p> <p>Dwg No. E-1</p>	<p><small>C:\Users\BApple\Desktop\Roadside\Tower\876354 WESTPORT FIRE DEPARTMENT AT&amp;T - 12-04-2015 8A - Eg Th.dwg</small></p>	

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 1 of 48
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	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

## Tower Input Data

There is a pole section.

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

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 91.20 mph.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 pcf.

A wind speed of 37.60 mph is used in combination with ice.

Temperature drop of 50.00 °F.

Deflections calculated using a wind speed of 50.00 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

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

## Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys ✓ Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Use TIA-222-G Tension Splice Capacity Exemption	Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feedline Torque Include Angle Block Shear Check <div style="background-color: #e0e0e0; text-align: center; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
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## Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	148.0000-143.000	5.0000	0.00	12	22.0000	23.0151	0.2500	1.0000	A607-60 (60 ksi)
L2	143.0000-138.000	5.0000	0.00	12	23.0151	24.0301	0.2500	1.0000	A607-60 (60 ksi)
L3	138.0000-133.000	5.0000	0.00	12	24.0301	25.0452	0.2500	1.0000	A607-60 (60 ksi)
L4	133.0000-128.000	5.0000	0.00	12	25.0452	26.0602	0.2500	1.0000	A607-60 (60 ksi)
L5	128.0000-123.000	5.0000	0.00	12	26.0602	27.0753	0.2500	1.0000	A607-60

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	2 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L6	123.0000-118.0000	5.0000	0.00	12	27.0753	28.0903	0.2500	1.0000	(60 ksi) A607-60
L7	118.0000-113.0000	5.0000	0.00	12	28.0903	29.1054	0.2500	1.0000	(60 ksi) A607-60
L8	113.0000-108.0000	5.0000	0.00	12	29.1054	30.1204	0.2500	1.0000	(60 ksi) A607-60
L9	108.0000-100.5000	7.5000	4.00	12	30.1204	31.6430	0.2500	1.0000	(60 ksi) A607-60
L10	100.5000-99.5000	5.0000	0.00	12	30.3310	31.3460	0.3750	1.5000	(60 ksi) A607-60
L11	99.5000-94.5000	5.0000	0.00	12	31.3460	32.3610	0.3750	1.5000	(60 ksi) A607-60
L12	94.5000-89.5000	5.0000	0.00	12	32.3610	33.3761	0.3750	1.5000	(60 ksi) A607-60
L13	89.5000-84.5000	5.0000	0.00	12	33.3761	34.3911	0.3750	1.5000	(60 ksi) A607-60
L14	84.5000-79.5000	5.0000	0.00	12	34.3911	35.4061	0.3750	1.5000	(60 ksi) A607-60
L15	79.5000-74.5000	5.0000	0.00	12	35.4061	36.4211	0.3750	1.5000	(60 ksi) A607-60
L16	74.5000-70.4100	4.0900	0.00	12	36.4211	37.2514	0.3750	1.5000	(60 ksi) A607-60
L17	70.4100-70.1600	0.2500	0.00	12	37.2514	37.3022	0.3750	1.5000	(60 ksi) A607-60
L18	70.1600-65.1600	5.0000	0.00	12	37.3022	38.3172	0.3750	1.5000	(60 ksi) A607-60
L19	65.1600-63.9100	1.2500	0.00	12	38.3172	38.5710	0.3750	1.5000	(60 ksi) A607-60
L20	63.9100-63.6600	0.2500	0.00	12	38.5710	38.6217	0.3750	1.5000	(60 ksi) A607-60
L21	63.6600-58.2500	5.4100	5.00	12	38.6217	39.7200	0.3750	1.5000	(60 ksi) A607-60
L22	58.2500-57.2500	6.0000	0.00	12	37.9550	39.1731	0.4375	1.7500	(60 ksi) A607-60
L23	57.2500-52.4700	4.7800	0.00	12	39.1731	40.1435	0.4375	1.7500	(60 ksi) A607-60
L24	52.4700-52.2200	0.2500	0.00	12	40.1435	40.1942	0.4375	1.7500	(60 ksi) A607-60
L25	52.2200-47.2200	5.0000	0.00	12	40.1942	41.2093	0.4375	1.7500	(60 ksi) A607-60
L26	47.2200-42.2200	5.0000	0.00	12	41.2093	42.2244	0.4375	1.7500	(60 ksi) A607-60
L27	42.2200-37.2200	5.0000	0.00	12	42.2244	43.2395	0.4375	1.7500	(60 ksi) A607-60
L28	37.2200-35.1250	2.0950	0.00	12	43.2395	43.6648	0.4375	1.7500	(60 ksi) A607-60
L29	35.1250-34.8750	0.2500	0.00	12	43.6648	43.7155	0.6375	2.5500	(60 ksi) A607-60
L30	34.8750-28.7500	6.1250	5.75	12	43.7155	44.9590	0.6375	2.5500	(60 ksi) A607-60
L31	28.7500-27.7500	6.7500	0.00	12	42.9167	44.2869	0.5000	2.0000	(60 ksi) A607-60
L32	27.7500-25.8750	1.8750	0.00	12	44.2869	44.6675	0.5000	2.0000	(60 ksi) A607-60
L33	25.8750-25.7500	0.1250	0.00	12	44.6675	44.6929	0.5000	2.0000	(60 ksi) A607-60
L34	25.7500-25.6250	0.1250	0.00	12	44.6929	44.7182	0.7500	3.0000	(60 ksi) A607-60
L35	25.6250-25.5000	0.1250	0.00	12	44.7182	44.7436	0.7500	3.0000	(60 ksi) A607-60

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 3 of 48
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	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	25.5000-20.5000	5.0000	0.00	12	44.7436	45.7586	0.7500	3.0000	A607-60 (60 ksi)
L37	20.5000-15.5000	5.0000	0.00	12	45.7586	46.7736	0.7375	2.9500	A607-60 (60 ksi)
L38	15.5000-10.5000	5.0000	0.00	12	46.7736	47.7885	0.7375	2.9500	A607-60 (60 ksi)
L39	10.5000-5.5000	5.0000	0.00	12	47.7885	48.8035	0.7250	2.9000	A607-60 (60 ksi)
L40	5.5000-0.5000	5.0000	0.00	12	48.8035	49.8185	0.7250	2.9000	A607-60 (60 ksi)
L41	0.5000-0.0000	0.5000		12	49.8185	49.9200	0.7250	2.9000	A607-60 (60 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	22.7761	17.5087	1057.2060	7.7865	11.3960	92.7699	2142.1860	8.6173	5.2260	20.904
	23.8269	18.3259	1212.2378	8.1499	11.9218	101.6825	2456.3223	9.0194	5.4980	21.992
L2	23.8269	18.3259	1212.2378	8.1499	11.9218	101.6825	2456.3223	9.0194	5.4980	21.992
	24.8778	19.1430	1381.7299	8.5133	12.4476	111.0038	2799.7593	9.4216	5.7701	23.08
L3	24.8778	19.1430	1381.7299	8.5133	12.4476	111.0038	2799.7593	9.4216	5.7701	23.08
	25.9287	19.9601	1566.3271	8.8767	12.9734	120.7338	3173.8034	9.8238	6.0421	24.168
L4	25.9287	19.9601	1566.3271	8.8767	12.9734	120.7338	3173.8034	9.8238	6.0421	24.168
	26.9795	20.7772	1766.6742	9.2401	13.4992	130.8726	3579.7609	10.2259	6.3141	25.257
L5	26.9795	20.7772	1766.6742	9.2401	13.4992	130.8726	3579.7609	10.2259	6.3141	25.257
	28.0304	21.5943	1983.4160	9.6034	14.0250	141.4202	4018.9385	10.6281	6.5862	26.345
L6	28.0304	21.5943	1983.4160	9.6034	14.0250	141.4202	4018.9385	10.6281	6.5862	26.345
	29.0812	22.4115	2217.1971	9.9668	14.5508	152.3765	4492.6424	11.0302	6.8582	27.433
L7	29.0812	22.4115	2217.1971	9.9668	14.5508	152.3765	4492.6424	11.0302	6.8582	27.433
	30.1321	23.2286	2468.6624	10.3302	15.0766	163.7415	5002.1793	11.4324	7.1302	28.521
L8	30.1321	23.2286	2468.6624	10.3302	15.0766	163.7415	5002.1793	11.4324	7.1302	28.521
	31.1830	24.0457	2738.4566	10.6936	15.6024	175.5153	5548.8555	11.8346	7.4023	29.609
L9	31.1830	24.0457	2738.4566	10.6936	15.6024	175.5153	5548.8555	11.8346	7.4023	29.609
	32.7592	25.2714	3178.9251	11.2387	16.3911	193.9425	6441.3640	12.4378	7.8103	31.241
L10	32.2416	36.1718	4143.0743	10.7242	15.7114	263.6980	8394.9918	17.8027	7.1237	18.997
	32.4518	37.3975	4578.6593	11.0876	16.2372	281.9854	9277.6051	18.4059	7.3957	19.722
L11	32.4518	37.3975	4578.6593	11.0876	16.2372	281.9854	9277.6051	18.4059	7.3957	19.722
	33.5026	38.6231	5043.7523	11.4510	16.7630	300.8859	10220.0095	19.0091	7.6678	20.447
L12	33.5026	38.6231	5043.7523	11.4510	16.7630	300.8859	10220.0095	19.0091	7.6678	20.447
	34.5534	39.8488	5539.3202	11.8144	17.2888	320.3994	11224.1644	19.6124	7.9398	21.173
L13	34.5534	39.8488	5539.3202	11.8144	17.2888	320.3994	11224.1644	19.6124	7.9398	21.173
	35.6043	41.0744	6066.3302	12.1778	17.8146	340.5261	12292.0296	20.2156	8.2118	21.898
L14	35.6043	41.0744	6066.3302	12.1778	17.8146	340.5261	12292.0296	20.2156	8.2118	21.898
	36.6551	42.3001	6625.7493	12.5411	18.3404	361.2659	13425.5645	20.8188	8.4838	22.624
L15	36.6551	42.3001	6625.7493	12.5411	18.3404	361.2659	13425.5645	20.8188	8.4838	22.624
	37.7059	43.5257	7218.5447	12.9045	18.8662	382.6188	14626.7286	21.4220	8.7559	23.349
L16	37.7059	43.5257	7218.5447	12.9045	18.8662	382.6188	14626.7286	21.4220	8.7559	23.349
	38.5655	44.5283	7728.9441	13.2018	19.2962	400.5413	15660.9362	21.9155	8.9784	23.942
L17	38.5655	44.5283	7728.9441	13.2018	19.2962	400.5413	15660.9362	21.9155	8.9784	23.942
	38.6181	44.5896	7760.8992	13.2199	19.3225	401.6501	15725.6858	21.9456	8.9920	23.979
L18	38.6181	44.5896	7760.8992	13.2199	19.3225	401.6501	15725.6858	21.9456	8.9920	23.979
	39.6689	45.8152	8418.6319	13.5833	19.8483	424.1483	17058.4307	22.5489	9.2640	24.704
L19	39.6689	45.8152	8418.6319	13.5833	19.8483	424.1483	17058.4307	22.5489	9.2640	24.704
	39.9316	46.1217	8588.6757	13.6742	19.9798	429.8686	17402.9856	22.6997	9.3320	24.885
L20	39.9316	46.1217	8588.6757	13.6742	19.9798	429.8686	17402.9856	22.6997	9.3320	24.885





<p style="text-align: center;"><b><i>tnxTower</i></b></p> <p style="text-align: center;"><b><i>Velocitel, Inc., d.b.a. FDH</i></b> <b><i>Velocitel</i></b> <i>6521 Meridien Drive, Suite 107</i> <i>Raleigh, North Carolina 27616</i> <i>Phone: 9197551012</i> <i>FAX: 9197551031</i></p>	<p><b>Job</b></p> <p style="text-align: center;">876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p style="text-align: center;">5 of 48</p>
	<p><b>Project</b></p> <p style="text-align: center;">15TGPG1400</p>	<p><b>Date</b></p> <p style="text-align: center;">15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p style="text-align: center;">Crown Castle</p>	<p><b>Designed by</b></p> <p style="text-align: center;">BApple</p>

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor <math>A_f</math></i>	<i>Adjust. Factor <math>A_r</math></i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i>
<i>ft</i>	<i>ft<sup>2</sup></i>	<i>in</i>					<i>in</i>	<i>in</i>
L5 128.0000-123.0000				1	1	1		
L6 123.0000-118.0000				1	1	1		
L7 118.0000-113.0000				1	1	1		
L8 113.0000-108.0000				1	1	1		
L9 108.0000-100.5000				1	1	1		
L10 100.5000-99.5000				1	1	1		
L11 99.5000-94.5000				1	1	1		
L12 94.5000-89.5000				1	1	1		
L13 89.5000-84.5000				1	1	1		
L14 84.5000-79.5000				1	1	1		
L15 79.5000-74.5000				1	1	1		
L16 74.5000-70.4100				1	1	1		
L17 70.4100-70.1600				1	1	1		
L18 70.1600-65.1600				1	1	1		
L19 65.1600-63.9100				1	1	1		
L20 63.9100-63.6600				1	1	1		
L21 63.6600-58.2500				1	1	1		
L22 58.2500-57.2500				1	1	1		
L23 57.2500-52.4700				1	1	1		
L24 52.4700-52.2200				1	1	1		

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	6 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor <math>A_f</math></i>	<i>Adjust. Factor <math>A_r</math></i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals in</i>	<i>Double Angle Stitch Bolt Spacing Horizontals in</i>
<i>ft</i>	<i>ft<sup>2</sup></i>	<i>in</i>						
00								
L25				1	1	1		
52.2200-47.22								
00								
L26				1	1	1		
47.2200-42.22								
00								
L27				1	1	1		
42.2200-37.22								
00								
L28				1	1	1		
37.2200-35.12								
50								
L29				1	1	0.965503		
35.1250-34.87								
50								
L30				1	1	0.96501		
34.8750-28.75								
00								
L31				1	1	1		
28.7500-27.75								
00								
L32				1	1	1		
27.7500-25.87								
50								
L33				1	1	1		
25.8750-25.75								
00								
L34				1	1	0.976971		
25.7500-25.62								
50								
L35				1	1	0.976792		
25.6250-25.50								
00								
L36				1	1	0.969798		
25.5000-20.50								
00								
L37				1	1	0.979171		
20.5000-15.50								
00								
L38				1	1	0.972673		
15.5000-10.50								
00								
L39				1	1	0.982858		
10.5000-5.500								
0								
L40				1	1	0.976796		
5.5000-0.5000								
L41				1	1	0.976203		
0.5000-0.0000								

**Feed Line/Linear Appurtenances - Entered As Round Or Flat**



<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 8 of 48
	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
*** WR-VG86ST-BRD (3/4")	C	No	CaAa (Out Of Face)	120.0000 - 8.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0774 0.1774 0.2774 0.4774 0.8774	0.59 1.37 2.76 7.37 23.92
FB-L98B-034-XXX(3/8)	C	No	CaAa (Out Of Face)	120.0000 - 8.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0394 0.1394 0.2394 0.4394 0.8394	0.06 0.60 1.76 5.91 21.53
FB-L98B-002-XXX(3/8)	C	No	CaAa (Out Of Face)	120.0000 - 8.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0394 0.1394 0.2394 0.4394 0.8394	0.06 0.61 1.77 5.91 21.54
WR-VG82ST-BRDA(5/8")	C	No	CaAa (Out Of Face)	120.0000 - 8.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0645 0.1645 0.2645 0.4645 0.8645	0.31 1.01 2.32 6.77 23.01
LDF7-50A(1-5/8")	C	No	Inside Pole	120.0000 - 8.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.82 0.82 0.82 0.82 0.82
*** *** LDF4-50A(1/2")	A	No	Inside Pole	96.0000 - 8.0000	5	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.15 0.15 0.15 0.15 0.15
LDF5-50A(7/8)	A	No	Inside Pole	96.0000 - 8.0000	8	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.33 0.33 0.33 0.33 0.33
*** *** LDF5-50A(7/8)	B	No	Inside Pole	82.0000 - 8.0000	18	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.33 0.33 0.33 0.33 0.33
LCF114-50J(1-1/4")	B	No	Inside Pole	82.0000 - 8.0000	6	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.70 0.70 0.70 0.70 0.70
*** *** HJ7-50A(1-5/8")	C	No	Inside Pole	72.0000 - 8.0000	6	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	1.04 1.04 1.04 1.04 1.04
*** *** LDF4-50A(1/2")	A	No	Inside Pole	53.0000 - 8.0000	2	No Ice 1/2" Ice	0.0000 0.0000	0.15 0.15

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	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
						1" Ice	0.15
						2" Ice	0.15
						4" Ice	0.15
LDF4-50A(1/2")	A	No	Inside Pole	50.0000 - 8.0000	1	No Ice	0.15
						1/2" Ice	0.15
						1" Ice	0.15
						2" Ice	0.15
						4" Ice	0.15
***							
***							
* Flat Plate Reinforcement *							
***							
***							
6" x 1.25" Flat Plate (F)	A	No	CaAa (Out Of Face)	25.7500 - 0.0000	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
						2" Ice	0.00
						4" Ice	0.00
6" x 1.25" Flat Plate (F)	B	No	CaAa (Out Of Face)	25.7500 - 0.0000	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
						2" Ice	0.00
						4" Ice	0.00
6" x 1.25" Flat Plate (F)	A	No	CaAa (Out Of Face)	34.5000 - 25.7500	1	No Ice	25.52
						1/2" Ice	26.96
						1" Ice	28.74
						2" Ice	33.34
						4" Ice	46.69
6" x 1.25" Flat Plate (F)	B	No	CaAa (Out Of Face)	34.5000 - 25.7500	1	No Ice	25.52
						1/2" Ice	26.96
						1" Ice	28.74
						2" Ice	33.34
						4" Ice	46.69
6" x 1.25" Flat Plate (F)	A	No	CaAa (Out Of Face)	35.1250 - 34.5000	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
						2" Ice	0.00
						4" Ice	0.00
6" x 1.25" Flat Plate (F)	B	No	CaAa (Out Of Face)	35.1250 - 34.5000	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
						2" Ice	0.00
						4" Ice	0.00
***							
***							
6" x 1.25" Flat Plate (F)	C	No	CaAa (Out Of Face)	25.7500 - 0.0000	2	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
						2" Ice	0.00
						4" Ice	0.00
6" x 1.25" Flat Plate (F)	C	No	CaAa (Out Of Face)	28.5000 - 25.7500	2	No Ice	25.52
						1/2" Ice	26.96
						1" Ice	28.74
						2" Ice	33.34
						4" Ice	46.69
***							
***							
6" x 1.25" Flat Plate (F)	C	No	CaAa (Out Of Face)	25.7500 - 23.1250	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00

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	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub>		Weight plf
						ft <sup>2</sup> /ft		
6" x 1.25" Flat Plate (F)	C	No	CaAa (Out Of Face)	35.1250 - 25.7500	1	2" Ice	0.6528	0.00
						4" Ice	1.0972	0.00
						No Ice	0.2083	25.52
						1/2" Ice	0.3194	26.96
						1" Ice	0.4306	28.74
						2" Ice	0.6528	33.34
4" Ice	1.0972	46.69						
***								
***								
6" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	55.2290 - 35.1250	1	No Ice	0.1667	20.42
						1/2" Ice	0.2778	21.76
						1" Ice	0.3889	23.44
						2" Ice	0.6111	27.85
						4" Ice	1.0556	40.81
6" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	55.2290 - 35.1250	1	No Ice	0.1667	20.42
						1/2" Ice	0.2778	21.76
						1" Ice	0.3889	23.44
						2" Ice	0.6111	27.85
						4" Ice	1.0556	40.81
6" x 1" Flat Plate (F)	C	No	CaAa (Out Of Face)	55.2290 - 35.1250	1	No Ice	0.1667	20.42
						1/2" Ice	0.2778	21.76
						1" Ice	0.3889	23.44
						2" Ice	0.6111	27.85
						4" Ice	1.0556	40.81
***								
***								
4.5" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	72.1670 - 62.1670	1	No Ice	0.1667	15.31
						1/2" Ice	0.2778	16.46
						1" Ice	0.3889	17.95
						2" Ice	0.6111	21.97
						4" Ice	1.0556	34.15
4.5" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	72.1670 - 62.1670	1	No Ice	0.1667	15.31
						1/2" Ice	0.2778	16.46
						1" Ice	0.3889	17.95
						2" Ice	0.6111	21.97
						4" Ice	1.0556	34.15
4.5" x 1" Flat Plate (F)	C	No	CaAa (Out Of Face)	72.1670 - 62.1670	1	No Ice	0.1667	15.31
						1/2" Ice	0.2778	16.46
						1" Ice	0.3889	17.95
						2" Ice	0.6111	21.97
						4" Ice	1.0556	34.15
***								

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub>	A <sub>F</sub>	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face	Weight K
			ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	
L1	148.0000-143.0000 0	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.188	0.01
L2	143.0000-138.0000 0	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.188	0.01
L3	138.0000-133.0000 0	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.188	0.01
L4	133.0000-128.0000	A	0.000	0.000	0.000	0.000	0.02

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	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_A A_A$ In Face ft <sup>2</sup>	$C_A A_A$ Out Face ft <sup>2</sup>	Weight K
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.188	0.01
L5	128.0000-123.000	A	0.000	0.000	0.000	0.000	0.02
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.188	0.01
L6	123.0000-118.000	A	0.000	0.000	0.000	0.000	0.02
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.784	0.04
L7	118.0000-113.000	A	0.000	0.000	0.000	0.000	0.02
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.678	0.07
L8	113.0000-108.000	A	0.000	0.000	0.000	0.000	0.02
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.678	0.07
L9	108.0000-100.500	A	0.000	0.000	0.000	0.000	0.03
	0	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.517	0.11
L10	100.5000-99.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.336	0.01
L11	99.5000-94.5000	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.678	0.07
L12	94.5000-89.5000	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.678	0.07
L13	89.5000-84.5000	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.678	0.07
L14	84.5000-79.5000	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	1.678	0.07
L15	79.5000-74.5000	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.05
		C	0.000	0.000	0.000	1.678	0.07
L16	74.5000-70.4100	A	0.000	0.000	0.000	0.293	0.06
		B	0.000	0.000	0.000	0.293	0.07
		C	0.000	0.000	0.000	1.665	0.09
L17	70.4100-70.1600	A	0.000	0.000	0.000	0.042	0.01
		B	0.000	0.000	0.000	0.042	0.01
		C	0.000	0.000	0.000	0.126	0.01
L18	70.1600-65.1600	A	0.000	0.000	0.000	0.833	0.11
		B	0.000	0.000	0.000	0.833	0.13
		C	0.000	0.000	0.000	2.511	0.18
L19	65.1600-63.9100	A	0.000	0.000	0.000	0.208	0.03
		B	0.000	0.000	0.000	0.208	0.03
		C	0.000	0.000	0.000	0.628	0.04
L20	63.9100-63.6600	A	0.000	0.000	0.000	0.042	0.01
		B	0.000	0.000	0.000	0.042	0.01
		C	0.000	0.000	0.000	0.126	0.01
L21	63.6600-58.2500	A	0.000	0.000	0.000	0.249	0.06
		B	0.000	0.000	0.000	0.249	0.08
		C	0.000	0.000	0.000	2.064	0.13
L22	58.2500-57.2500	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.336	0.02
L23	57.2500-52.4700	A	0.000	0.000	0.000	0.460	0.09
		B	0.000	0.000	0.000	0.460	0.10
		C	0.000	0.000	0.000	2.064	0.15
L24	52.4700-52.2200	A	0.000	0.000	0.000	0.042	0.01
		B	0.000	0.000	0.000	0.042	0.01



<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p style="text-align: center;">6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p style="text-align: center;">876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p style="text-align: center;">12 of 48</p>
	<p><b>Project</b></p> <p style="text-align: center;">15TGPG1400</p>	<p><b>Date</b></p> <p style="text-align: center;">15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p style="text-align: center;">Crown Castle</p>	<p><b>Designed by</b></p> <p style="text-align: center;">BApple</p>

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L25	52.2200-47.2200	C	0.000	0.000	0.000	0.126	0.01
		A	0.000	0.000	0.000	0.833	0.14
		B	0.000	0.000	0.000	0.833	0.15
L26	47.2200-42.2200	C	0.000	0.000	0.000	2.511	0.20
		A	0.000	0.000	0.000	0.833	0.14
		B	0.000	0.000	0.000	0.833	0.15
L27	42.2200-37.2200	C	0.000	0.000	0.000	2.511	0.20
		A	0.000	0.000	0.000	0.833	0.14
		B	0.000	0.000	0.000	0.833	0.15
L28	37.2200-35.1250	C	0.000	0.000	0.000	2.511	0.20
		A	0.000	0.000	0.000	0.349	0.06
		B	0.000	0.000	0.000	0.349	0.06
L29	35.1250-34.8750	C	0.000	0.000	0.000	1.052	0.09
		A	0.000	0.000	0.000	0.052	0.00
		B	0.000	0.000	0.000	0.052	0.00
L30	34.8750-28.7500	C	0.000	0.000	0.000	0.136	0.01
		A	0.000	0.000	0.000	1.276	0.19
		B	0.000	0.000	0.000	1.276	0.21
L31	28.7500-27.7500	C	0.000	0.000	0.000	3.331	0.28
		A	0.000	0.000	0.000	0.208	0.03
		B	0.000	0.000	0.000	0.208	0.04
L32	27.7500-25.8750	C	0.000	0.000	0.000	0.856	0.08
		A	0.000	0.000	0.000	0.391	0.06
		B	0.000	0.000	0.000	0.391	0.07
L33	25.8750-25.7500	C	0.000	0.000	0.000	1.801	0.18
		A	0.000	0.000	0.000	0.026	0.00
		B	0.000	0.000	0.000	0.026	0.00
L34	25.7500-25.6250	C	0.000	0.000	0.000	0.120	0.01
		A	0.000	0.000	0.000	0.026	0.00
		B	0.000	0.000	0.000	0.026	0.00
L35	25.6250-25.5000	C	0.000	0.000	0.000	0.120	0.00
		A	0.000	0.000	0.000	0.026	0.00
		B	0.000	0.000	0.000	0.026	0.00
L36	25.5000-20.5000	C	0.000	0.000	0.000	0.120	0.00
		A	0.000	0.000	0.000	1.042	0.04
		B	0.000	0.000	0.000	1.042	0.05
L37	20.5000-15.5000	C	0.000	0.000	0.000	4.256	0.10
		A	0.000	0.000	0.000	1.042	0.04
		B	0.000	0.000	0.000	1.042	0.05
L38	15.5000-10.5000	C	0.000	0.000	0.000	3.761	0.10
		A	0.000	0.000	0.000	1.042	0.04
		B	0.000	0.000	0.000	1.042	0.05
L39	10.5000-5.5000	C	0.000	0.000	0.000	3.761	0.10
		A	0.000	0.000	0.000	1.042	0.02
		B	0.000	0.000	0.000	1.042	0.03
L40	5.5000-0.5000	C	0.000	0.000	0.000	2.847	0.05
		A	0.000	0.000	0.000	1.042	0.00
		B	0.000	0.000	0.000	1.042	0.00
L41	0.5000-0.0000	C	0.000	0.000	0.000	2.083	0.00
		A	0.000	0.000	0.000	0.104	0.00
		B	0.000	0.000	0.000	0.104	0.00
		C	0.000	0.000	0.000	0.208	0.00

**Feed Line/Linear Appurtenances Section Areas - With Ice**

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
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<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	13 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L1	148.0000-143.0000	A	0.896	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.084	0.02
L2	143.0000-138.0000	A	0.892	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.080	0.02
L3	138.0000-133.0000	A	0.889	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.076	0.02
L4	133.0000-128.0000	A	0.885	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.072	0.02
L5	128.0000-123.0000	A	0.880	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.068	0.02
L6	123.0000-118.0000	A	0.876	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	3.412	0.06
L7	118.0000-113.0000	A	0.872	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.908	0.12
L8	113.0000-108.0000	A	0.867	0.000	0.000	0.000	0.000	0.02
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.880	0.11
L9	108.0000-100.5000	A	0.861	0.000	0.000	0.000	0.000	0.03
	0	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.265	0.17
L10	100.5000-99.5000	A	0.857	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.369	0.02
L11	99.5000-94.5000	A	0.854	0.000	0.000	0.000	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.799	0.11
L12	94.5000-89.5000	A	0.848	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.767	0.11
L13	89.5000-84.5000	A	0.843	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.733	0.11
L14	84.5000-79.5000	A	0.837	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	6.697	0.11
L15	79.5000-74.5000	A	0.830	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	0.000	0.000	0.05
		C		0.000	0.000	0.000	6.659	0.11
L16	74.5000-70.4100	A	0.824	0.000	0.000	0.000	0.615	0.06
		B		0.000	0.000	0.000	0.615	0.07
		C		0.000	0.000	0.000	6.032	0.13
L17	70.4100-70.1600	A	0.821	0.000	0.000	0.000	0.087	0.01
		B		0.000	0.000	0.000	0.087	0.01
		C		0.000	0.000	0.000	0.418	0.01
L18	70.1600-65.1600	A	0.817	0.000	0.000	0.000	1.742	0.12
		B		0.000	0.000	0.000	1.742	0.14
		C		0.000	0.000	0.000	8.324	0.23
L19	65.1600-63.9100	A	0.813	0.000	0.000	0.000	0.434	0.03
		B		0.000	0.000	0.000	0.434	0.03
		C		0.000	0.000	0.000	2.073	0.06
L20	63.9100-63.6600	A	0.812	0.000	0.000	0.000	0.087	0.01
		B		0.000	0.000	0.000	0.087	0.01
		C		0.000	0.000	0.000	0.414	0.01
L21	63.6600-58.2500	A	0.807	0.000	0.000	0.000	0.517	0.06

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p>876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p>14 of 48</p>
	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
		B		0.000	0.000	0.000	0.517	0.08
		C		0.000	0.000	0.000	7.573	0.18
L22	58.2500-57.2500	A	0.802	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	1.304	0.03
L23	57.2500-52.4700	A	0.797	0.000	0.000	0.000	0.949	0.10
		B		0.000	0.000	0.000	0.949	0.11
		C		0.000	0.000	0.000	7.125	0.20
L24	52.4700-52.2200	A	0.793	0.000	0.000	0.000	0.086	0.01
		B		0.000	0.000	0.000	0.086	0.01
		C		0.000	0.000	0.000	0.407	0.01
L25	52.2200-47.2200	A	0.788	0.000	0.000	0.000	1.709	0.15
		B		0.000	0.000	0.000	1.709	0.16
		C		0.000	0.000	0.000	8.113	0.25
L26	47.2200-42.2200	A	0.778	0.000	0.000	0.000	1.698	0.15
		B		0.000	0.000	0.000	1.698	0.16
		C		0.000	0.000	0.000	8.042	0.25
L27	42.2200-37.2200	A	0.767	0.000	0.000	0.000	1.685	0.15
		B		0.000	0.000	0.000	1.685	0.16
		C		0.000	0.000	0.000	7.964	0.25
L28	37.2200-35.1250	A	0.758	0.000	0.000	0.000	0.702	0.06
		B		0.000	0.000	0.000	0.702	0.07
		C		0.000	0.000	0.000	3.312	0.11
L29	35.1250-34.8750	A	0.755	0.000	0.000	0.000	0.094	0.00
		B		0.000	0.000	0.000	0.094	0.00
		C		0.000	0.000	0.000	0.405	0.01
L30	34.8750-28.7500	A	0.750	0.000	0.000	0.000	2.297	0.21
		B		0.000	0.000	0.000	2.297	0.22
		C		0.000	0.000	0.000	9.865	0.34
L31	28.7500-27.7500	A	0.750	0.000	0.000	0.000	0.375	0.04
		B		0.000	0.000	0.000	0.375	0.04
		C		0.000	0.000	0.000	2.173	0.10
L32	27.7500-25.8750	A	0.750	0.000	0.000	0.000	0.703	0.07
		B		0.000	0.000	0.000	0.703	0.07
		C		0.000	0.000	0.000	4.426	0.21
L33	25.8750-25.7500	A	0.750	0.000	0.000	0.000	0.047	0.00
		B		0.000	0.000	0.000	0.047	0.00
		C		0.000	0.000	0.000	0.295	0.01
L34	25.7500-25.6250	A	0.750	0.000	0.000	0.000	0.047	0.00
		B		0.000	0.000	0.000	0.047	0.00
		C		0.000	0.000	0.000	0.295	0.00
L35	25.6250-25.5000	A	0.750	0.000	0.000	0.000	0.047	0.00
		B		0.000	0.000	0.000	0.047	0.00
		C		0.000	0.000	0.000	0.295	0.00
L36	25.5000-20.5000	A	0.750	0.000	0.000	0.000	1.875	0.04
		B		0.000	0.000	0.000	1.875	0.05
		C		0.000	0.000	0.000	10.818	0.14
L37	20.5000-15.5000	A	0.750	0.000	0.000	0.000	1.875	0.04
		B		0.000	0.000	0.000	1.875	0.05
		C		0.000	0.000	0.000	9.928	0.14
L38	15.5000-10.5000	A	0.750	0.000	0.000	0.000	1.875	0.04
		B		0.000	0.000	0.000	1.875	0.05
		C		0.000	0.000	0.000	9.928	0.14
L39	10.5000-5.5000	A	0.750	0.000	0.000	0.000	1.875	0.02
		B		0.000	0.000	0.000	1.875	0.03
		C		0.000	0.000	0.000	6.464	0.07
L40	5.5000-0.5000	A	0.750	0.000	0.000	0.000	1.875	0.00
		B		0.000	0.000	0.000	1.875	0.00
		C		0.000	0.000	0.000	3.750	0.00
L41	0.5000-0.0000	A	0.750	0.000	0.000	0.000	0.188	0.00
		B		0.000	0.000	0.000	0.188	0.00

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 15 of 48
	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Tower Section	Tower Elevation ft	Face or Leg C	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
		C		0.000	0.000	0.000	0.375	0.00

### Feed Line Center of Pressure

Section	Elevation ft	$CP_X$ in	$CP_Z$ in	$CP_X$ Ice in	$CP_Z$ Ice in
L1	148.0000-143.0000	-0.0478	0.0276	-0.2356	0.1360
L2	143.0000-138.0000	-0.0478	0.0276	-0.2366	0.1366
L3	138.0000-133.0000	-0.0478	0.0276	-0.2374	0.1371
L4	133.0000-128.0000	-0.0479	0.0276	-0.2381	0.1374
L5	128.0000-123.0000	-0.0479	0.0277	-0.2386	0.1378
L6	123.0000-118.0000	-0.1922	0.1110	-0.6566	0.3791
L7	118.0000-113.0000	-0.3821	0.2206	-1.0939	0.6315
L8	113.0000-108.0000	-0.3837	0.2215	-1.1060	0.6386
L9	108.0000-100.5000	-0.3856	0.2226	-1.1199	0.6466
L10	100.5000-99.5000	-0.3861	0.2229	-1.1248	0.6494
L11	99.5000-94.5000	-0.3870	0.2234	-1.1281	0.6513
L12	94.5000-89.5000	-0.3883	0.2242	-1.1374	0.6567
L13	89.5000-84.5000	-0.3896	0.2249	-1.1458	0.6615
L14	84.5000-79.5000	-0.3908	0.2256	-1.1534	0.6659
L15	79.5000-74.5000	-0.3919	0.2263	-1.1602	0.6698
L16	74.5000-70.4100	-0.3696	0.2134	-1.0601	0.6121
L17	70.4100-70.1600	-0.3435	0.1983	-0.9499	0.5484
L18	70.1600-65.1600	-0.3445	0.1989	-0.9540	0.5508
L19	65.1600-63.9100	-0.3457	0.1996	-0.9585	0.5534
L20	63.9100-63.6600	-0.3460	0.1998	-0.9596	0.5540
L21	63.6600-58.2500	-0.3807	0.2198	-1.1084	0.6400
L22	58.2500-57.2500	-0.3952	0.2281	-1.1751	0.6784
L23	57.2500-52.4700	-0.3666	0.2117	-1.0417	0.6014
L24	52.4700-52.2200	-0.3488	0.2014	-0.9656	0.5575
L25	52.2200-47.2200	-0.3497	0.2019	-0.9682	0.5590
L26	47.2200-42.2200	-0.3514	0.2029	-0.9723	0.5614
L27	42.2200-37.2200	-0.3530	0.2038	-0.9753	0.5631
L28	37.2200-35.1250	-0.3542	0.2045	-0.9767	0.5639
L29	35.1250-34.8750	-0.3449	0.1991	-0.9571	0.5526
L30	34.8750-28.7500	-0.3459	0.1997	-0.9595	0.5540
L31	28.7500-27.7500	-0.6257	0.3613	-1.2781	0.7379
L32	27.7500-25.8750	-0.7124	0.4113	-1.3771	0.7951
L33	25.8750-25.7500	-0.7133	0.4118	-1.3800	0.7968
L34	25.7500-25.6250	-0.7134	0.4119	-1.3804	0.7970
L35	25.6250-25.5000	-0.7135	0.4120	-1.3808	0.7972
L36	25.5000-20.5000	-0.6244	0.3605	-1.2859	0.7424
L37	20.5000-15.5000	-0.5421	0.3130	-1.2011	0.6934
L38	15.5000-10.5000	-0.5449	0.3146	-1.2121	0.6998
L39	10.5000-5.5000	-0.3759	0.2170	-0.7724	0.4459
L40	5.5000-0.5000	-0.2250	0.1299	-0.3491	0.2015
L41	0.5000-0.0000	-0.2254	0.1302	-0.3502	0.2022

### Discrete Tower Loads

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	16 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

<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<sub>A</sub>A<sub>1</sub> Front</i>	<i>C<sub>A</sub>A<sub>1</sub> Side</i>	<i>Weight</i>
			<i>ft</i> <i>ft</i> <i>ft</i>	<i>°</i>	<i>ft</i>	<i>ft<sup>2</sup></i>	<i>ft<sup>2</sup></i>	<i>K</i>
***								
Lightning Rod	C	From Leg	1.0000 0.00 2.00	0.0000	148.0000	No Ice 0.2500 1/2" Ice 0.6635 1" Ice 0.9732 2" Ice 1.4936 4" Ice 2.6833	0.2500 0.6635 0.9732 1.4936 2.6833	0.03 0.03 0.04 0.06 0.14
***								
***								
***								
DB420	A	From Leg	4.0000 0.00 12.00	0.0000	148.0000	No Ice 3.3300 1/2" Ice 5.9940 1" Ice 8.6580 2" Ice 13.9860 4" Ice 24.6420	3.3300 5.9940 8.6580 13.9860 24.6420	0.03 0.04 0.05 0.07 0.12
LLPX310R w/ Mount Pipe	A	From Leg	4.0000 0.00 3.00	0.0000	148.0000	No Ice 5.0651 1/2" Ice 5.4799 1" Ice 5.9053 2" Ice 6.7882 4" Ice 8.7047	5.0651 5.4799 5.9053 6.7882 8.7047	0.05 0.08 0.13 0.23 0.54
LLPX310R w/ Mount Pipe	B	From Leg	4.0000 0.00 3.00	0.0000	148.0000	No Ice 5.0651 1/2" Ice 5.4799 1" Ice 5.9053 2" Ice 6.7882 4" Ice 8.7047	5.0651 5.4799 5.9053 6.7882 8.7047	0.05 0.08 0.13 0.23 0.54
LLPX310R w/ Mount Pipe	C	From Leg	4.0000 0.00 3.00	0.0000	148.0000	No Ice 5.0651 1/2" Ice 5.4799 1" Ice 5.9053 2" Ice 6.7882 4" Ice 8.7047	5.0651 5.4799 5.9053 6.7882 8.7047	0.05 0.08 0.13 0.23 0.54
(2) APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 8.4975 1/2" Ice 9.1490 1" Ice 9.7672 2" Ice 11.0311 4" Ice 13.6786	8.4975 9.1490 9.7672 11.0311 13.6786	0.08 0.15 0.23 0.41 0.91
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 8.4975 1/2" Ice 9.1490 1" Ice 9.7672 2" Ice 11.0311 4" Ice 13.6786	8.4975 9.1490 9.7672 11.0311 13.6786	0.08 0.15 0.23 0.41 0.91
(6) ACU-A20-N	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 0.0778 1/2" Ice 0.1210 1" Ice 0.1728 2" Ice 0.3025 4" Ice 0.6654	0.0778 0.1210 0.1728 0.3025 0.6654	0.00 0.00 0.00 0.01 0.04
(3) ACU-A20-N	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 0.0778 1/2" Ice 0.1210 1" Ice 0.1728 2" Ice 0.3025 4" Ice 0.6654	0.0778 0.1210 0.1728 0.3025 0.6654	0.00 0.00 0.00 0.01 0.04
(6) PCS 1900MHz 4x45W-65MHz	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 2.7087 1/2" Ice 2.9477 1" Ice 3.1953 2" Ice 3.7164 4" Ice 4.8623	2.7087 2.9477 3.1953 3.7164 4.8623	0.06 0.08 0.11 0.17 0.35
(3) PCS 1900MHz 4x45W-65MHz	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	No Ice 2.7087 1/2" Ice 2.9477 1" Ice 3.1953	2.7087 2.9477 3.1953	0.06 0.08 0.11

<b><i>tnxTower</i></b>  <b><i>Velocitel, Inc., d.b.a. FDH</i></b> <b><i>Velocitel</i></b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	17 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C<sub>A</sub>A<sub>1</sub> Front</i> <i>ft<sup>2</sup></i>	<i>C<sub>A</sub>A<sub>2</sub> Side</i> <i>ft<sup>2</sup></i>	<i>Weight</i> <i>K</i>	
(2) 800MHZ RRH	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	3.7164	3.6084	0.17
						4" Ice	4.8623	4.7439	0.35
						No Ice	2.4899	2.0685	0.05
						1/2" Ice	2.7061	2.2705	0.07
						1" Ice	2.9310	2.4812	0.10
800MHZ RRH	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	3.4068	2.9284	0.16
						4" Ice	4.4620	3.9265	0.32
						No Ice	2.4899	2.0685	0.05
						1/2" Ice	2.7061	2.2705	0.07
						1" Ice	2.9310	2.4812	0.10
(2) 800 EXTERNAL NOTCH FILTER	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	3.4068	2.9284	0.16
						4" Ice	4.4620	3.9265	0.32
						No Ice	0.7701	0.3747	0.01
						1/2" Ice	0.8898	0.4647	0.02
						1" Ice	1.0181	0.5634	0.02
800 EXTERNAL NOTCH FILTER	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	1.3007	0.7868	0.04
						4" Ice	1.9696	1.3372	0.11
						No Ice	0.7701	0.3747	0.01
						1/2" Ice	0.8898	0.4647	0.02
						1" Ice	1.0181	0.5634	0.02
FDD_R6_RRH	A	From Leg	4.0000 0.00 3.00	0.0000	148.0000	2" Ice	1.3007	0.7868	0.04
						4" Ice	1.9696	1.3372	0.11
						No Ice	1.7889	0.7778	0.03
						1/2" Ice	1.9715	0.9182	0.04
						1" Ice	2.1627	1.0673	0.06
FDD_R6_RRH	B	From Leg	4.0000 0.00 3.00	0.0000	148.0000	2" Ice	2.5710	1.3914	0.09
						4" Ice	3.4914	2.1432	0.20
						No Ice	1.7889	0.7778	0.03
						1/2" Ice	1.9715	0.9182	0.04
						1" Ice	2.1627	1.0673	0.06
FDD_R6_RRH	C	From Leg	4.0000 0.00 3.00	0.0000	148.0000	2" Ice	2.5710	1.3914	0.09
						4" Ice	3.4914	2.1432	0.20
						No Ice	1.7889	0.7778	0.03
						1/2" Ice	1.9715	0.9182	0.04
						1" Ice	2.1627	1.0673	0.06
6' x 2" Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	2.5710	1.3914	0.09
						4" Ice	3.4914	2.1432	0.20
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.4963	1.4963	0.03
						1" Ice	1.5675	1.5675	0.04
6' x 2" Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	1.7100	1.7100	0.05
						4" Ice	1.9950	1.9950	0.07
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.4963	1.4963	0.03
						1" Ice	1.5675	1.5675	0.04
6' x 2" Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	148.0000	2" Ice	1.7100	1.7100	0.05
						4" Ice	1.9950	1.9950	0.07
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.4963	1.4963	0.03
						1" Ice	1.5675	1.5675	0.04
Platform Mount [LP 1201-1]	C	None		0.0000	148.0000	4" Ice	1.9950	1.9950	0.07
						No Ice	23.1000	23.1000	2.10
						1/2" Ice	26.8000	26.8000	2.50
						1" Ice	30.5000	30.5000	2.90
						2" Ice	37.9000	37.9000	3.70
						4" Ice	52.7000	52.7000	5.30

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	18 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C<sub>A</sub>A<sub>1</sub> Front</i> <i>ft<sup>2</sup></i>	<i>C<sub>A</sub>A<sub>1</sub> Side</i> <i>ft<sup>2</sup></i>	<i>Weight</i> <i>K</i>
***								
***								
***								
Pipe Mount [PM 602-1]	A	From Leg	0.5000 0.00 0.00	0.0000	144.0000	No Ice 5.2500 1/2" Ice 6.5000 1" Ice 7.7500 2" Ice 10.2500 4" Ice 15.2500	1.5800 1.9500 2.3200 3.0600 4.5400	0.09 0.12 0.14 0.19 0.29
***								
***								
***								
QS66512-3 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 8.6375 1/2" Ice 9.2903 1" Ice 9.9098 2" Ice 11.1763 4" Ice 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.13 0.21 0.29 0.49 1.02
QS66512-3 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 8.6375 1/2" Ice 9.2903 1" Ice 9.9098 2" Ice 11.1763 4" Ice 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.13 0.21 0.29 0.49 1.02
QS66512-3 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 8.6375 1/2" Ice 9.2903 1" Ice 9.9098 2" Ice 11.1763 4" Ice 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.13 0.21 0.29 0.49 1.02
(2) 7020.00	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 0.1191 1/2" Ice 0.1714 1" Ice 0.2323 2" Ice 0.3801 4" Ice 0.7793	0.2042 0.2791 0.3627 0.5559 1.0459	0.00 0.01 0.01 0.02 0.07
(2) 7020.00	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 0.1191 1/2" Ice 0.1714 1" Ice 0.2323 2" Ice 0.3801 4" Ice 0.7793	0.2042 0.2791 0.3627 0.5559 1.0459	0.00 0.01 0.01 0.02 0.07
(2) 7020.00	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 0.1191 1/2" Ice 0.1714 1" Ice 0.2323 2" Ice 0.3801 4" Ice 0.7793	0.2042 0.2791 0.3627 0.5559 1.0459	0.00 0.01 0.01 0.02 0.07
RRUS 32	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 3.3332 1/2" Ice 3.5968 1" Ice 3.8690 2" Ice 4.4394 4" Ice 5.6838	1.9828 2.2137 2.4533 2.9583 4.0721	0.06 0.08 0.10 0.16 0.34
RRUS 32	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 3.3332 1/2" Ice 3.5968 1" Ice 3.8690 2" Ice 4.4394 4" Ice 5.6838	1.9828 2.2137 2.4533 2.9583 4.0721	0.06 0.08 0.10 0.16 0.34
RRUS 32	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice 3.3332 1/2" Ice 3.5968 1" Ice 3.8690 2" Ice 4.4394 4" Ice 5.6838	1.9828 2.2137 2.4533 2.9583 4.0721	0.06 0.08 0.10 0.16 0.34
RRUS 11	A	From Leg	4.0000	0.0000	120.0000	No Ice 3.2560	1.3790	0.05

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	19 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>1</sub> Side	Weight	
			Horz	Vert						ft
				0.00			1/2" Ice	3.4982	1.5577	0.07
				0.00			1" Ice	3.7490	1.7450	0.09
							2" Ice	4.2766	2.1455	0.15
							4" Ice	5.4355	3.0504	0.31
RRUS 11	B	From Leg	4.0000	0.0000	120.0000	No Ice	3.2560	1.3790	0.05	
			0.00			1/2" Ice	3.4982	1.5577	0.07	
			0.00			1" Ice	3.7490	1.7450	0.09	
						2" Ice	4.2766	2.1455	0.15	
						4" Ice	5.4355	3.0504	0.31	
RRUS 11	C	From Leg	4.0000	0.0000	120.0000	No Ice	3.2560	1.3790	0.05	
			0.00			1/2" Ice	3.4982	1.5577	0.07	
			0.00			1" Ice	3.7490	1.7450	0.09	
						2" Ice	4.2766	2.1455	0.15	
						4" Ice	5.4355	3.0504	0.31	
DC6-48-60-18-8F	B	From Leg	4.0000	0.0000	120.0000	No Ice	2.5667	4.3167	0.02	
			0.00			1/2" Ice	2.7978	4.5965	0.05	
			0.00			1" Ice	3.0377	4.8849	0.09	
						2" Ice	3.5432	5.4877	0.17	
						4" Ice	4.6580	6.7969	0.38	
***										
7770.00 w/ Mount Pipe	A	From Leg	4.0000	0.0000	120.0000	No Ice	6.1194	4.2543	0.06	
			0.00			1/2" Ice	6.6258	5.0137	0.10	
			0.00			1" Ice	7.1283	5.7109	0.16	
						2" Ice	8.1643	7.1553	0.29	
						4" Ice	10.3599	10.4117	0.66	
7770.00 w/ Mount Pipe	B	From Leg	4.0000	0.0000	120.0000	No Ice	6.1194	4.2543	0.06	
			0.00			1/2" Ice	6.6258	5.0137	0.10	
			0.00			1" Ice	7.1283	5.7109	0.16	
						2" Ice	8.1643	7.1553	0.29	
						4" Ice	10.3599	10.4117	0.66	
7770.00 w/ Mount Pipe	C	From Leg	4.0000	0.0000	120.0000	No Ice	6.1194	4.2543	0.06	
			0.00			1/2" Ice	6.6258	5.0137	0.10	
			0.00			1" Ice	7.1283	5.7109	0.16	
						2" Ice	8.1643	7.1553	0.29	
						4" Ice	10.3599	10.4117	0.66	
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	4.0000	0.0000	120.0000	No Ice	8.6375	6.3625	0.08	
			0.00			1/2" Ice	9.2903	7.5378	0.14	
			0.00			1" Ice	9.9098	8.4270	0.22	
						2" Ice	11.1763	10.2390	0.39	
						4" Ice	13.8289	14.0988	0.89	
P65-16-XLH-RR w/ Mount Pipe	B	From Leg	4.0000	0.0000	120.0000	No Ice	8.6375	6.3625	0.08	
			0.00			1/2" Ice	9.2903	7.5378	0.14	
			0.00			1" Ice	9.9098	8.4270	0.22	
						2" Ice	11.1763	10.2390	0.39	
						4" Ice	13.8289	14.0988	0.89	
P65-16-XLH-RR w/ Mount Pipe	C	From Leg	4.0000	0.0000	120.0000	No Ice	8.6375	6.3625	0.08	
			0.00			1/2" Ice	9.2903	7.5378	0.14	
			0.00			1" Ice	9.9098	8.4270	0.22	
						2" Ice	11.1763	10.2390	0.39	
						4" Ice	13.8289	14.0988	0.89	
(2) LGP2140X	A	From Leg	4.0000	0.0000	120.0000	No Ice	1.2600	0.3780	0.01	
			0.00			1/2" Ice	1.4160	0.4932	0.02	
			0.00			1" Ice	1.5806	0.6170	0.03	
						2" Ice	1.9358	0.8905	0.05	
						4" Ice	2.7499	1.5412	0.13	
(2) LGP2140X	B	From Leg	4.0000	0.0000	120.0000	No Ice	1.2600	0.3780	0.01	
			0.00			1/2" Ice	1.4160	0.4932	0.02	



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	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Horz Lateral ft	Vert ft					
				0.00					
						1" Ice	1.5806	0.6170	0.03
						2" Ice	1.9358	0.8905	0.05
						4" Ice	2.7499	1.5412	0.13
(2) LGP2140X	C	From Leg	4.0000	0.0000	120.0000	No Ice	1.2600	0.3780	0.01
			0.00			1/2" Ice	1.4160	0.4932	0.02
			0.00			1" Ice	1.5806	0.6170	0.03
						2" Ice	1.9358	0.8905	0.05
						4" Ice	2.7499	1.5412	0.13
RRUS-11	A	From Leg	4.0000	0.0000	120.0000	No Ice	3.2560	1.3790	0.05
			0.00			1/2" Ice	3.4982	1.5577	0.07
			0.00			1" Ice	3.7490	1.7450	0.09
						2" Ice	4.2766	2.1455	0.15
						4" Ice	5.4355	3.0504	0.31
RRUS-11	B	From Leg	4.0000	0.0000	120.0000	No Ice	3.2560	1.3790	0.05
			0.00			1/2" Ice	3.4982	1.5577	0.07
			0.00			1" Ice	3.7490	1.7450	0.09
						2" Ice	4.2766	2.1455	0.15
						4" Ice	5.4355	3.0504	0.31
RRUS-11	C	From Leg	4.0000	0.0000	120.0000	No Ice	3.2560	1.3790	0.05
			0.00			1/2" Ice	3.4982	1.5577	0.07
			0.00			1" Ice	3.7490	1.7450	0.09
						2" Ice	4.2766	2.1455	0.15
						4" Ice	5.4355	3.0504	0.31
DC6-48-60-18-8F	B	From Leg	4.0000	0.0000	120.0000	No Ice	2.5667	4.3167	0.02
			0.00			1/2" Ice	2.7978	4.5965	0.05
			0.00			1" Ice	3.0377	4.8849	0.09
						2" Ice	3.5432	5.4877	0.17
						4" Ice	4.6580	6.7969	0.38
6' x 2" Horizontal Mount Pipe	A	From Leg	4.0000	0.0000	120.0000	No Ice	0.8000	0.8000	0.03
			0.00			1/2" Ice	1.2167	1.2167	0.17
			3.00			1" Ice	1.6444	1.6444	0.32
						2" Ice	2.5333	2.5333	0.65
						4" Ice	4.4444	4.4444	1.39
6' x 2" Horizontal Mount Pipe	B	From Leg	4.0000	0.0000	120.0000	No Ice	0.8000	0.8000	0.03
			0.00			1/2" Ice	1.2167	1.2167	0.17
			3.00			1" Ice	1.6444	1.6444	0.32
						2" Ice	2.5333	2.5333	0.65
						4" Ice	4.4444	4.4444	1.39
6' x 2" Horizontal Mount Pipe	C	From Leg	4.0000	0.0000	120.0000	No Ice	0.8000	0.8000	0.03
			0.00			1/2" Ice	1.2167	1.2167	0.17
			3.00			1" Ice	1.6444	1.6444	0.32
						2" Ice	2.5333	2.5333	0.65
						4" Ice	4.4444	4.4444	1.39
Pipe Mount	A	From Leg	4.0000	0.0000	120.0000	No Ice	1.2000	1.2000	0.02
			0.00			1/2" Ice	1.5024	1.5024	0.03
			0.00			1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08
						4" Ice	3.9289	3.9289	0.20
Pipe Mount	B	From Leg	4.0000	0.0000	120.0000	No Ice	1.2000	1.2000	0.02
			0.00			1/2" Ice	1.5024	1.5024	0.03
			0.00			1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08
						4" Ice	3.9289	3.9289	0.20
Pipe Mount	C	From Leg	4.0000	0.0000	120.0000	No Ice	1.2000	1.2000	0.02
			0.00			1/2" Ice	1.5024	1.5024	0.03
			0.00			1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	21 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight	
			Horz Lateral	Vert						°
Platform Mount [LP 1201-1]	C	None			0.0000	120.0000	4" Ice	3.9289	3.9289	0.20
							No Ice	23.1000	23.1000	2.10
							1/2" Ice	26.8000	26.8000	2.50
							1" Ice	30.5000	30.5000	2.90
							2" Ice	37.9000	37.9000	3.70
							4" Ice	52.7000	52.7000	5.30
***										
***										
***										
PD220	A	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	3.0800	3.0800	0.02
			0.00				1/2" Ice	5.3000	5.3000	0.05
			14.00				1" Ice	7.5367	7.5367	0.09
							2" Ice	12.0600	12.0600	0.21
							4" Ice	21.3067	21.3067	0.62
DB205-A	C	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	1.2000	1.2000	0.04
			0.00				1/2" Ice	2.1600	2.1600	0.05
			12.00				1" Ice	3.1200	3.1200	0.06
							2" Ice	5.0400	5.0400	0.08
							4" Ice	8.8800	8.8800	0.13
DB420-B	B	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	3.3300	3.3300	0.03
			0.00				1/2" Ice	5.9940	5.9940	0.04
			11.00				1" Ice	8.6580	8.6580	0.05
							2" Ice	13.9860	13.9860	0.07
							4" Ice	24.6420	24.6420	0.12
DB224	C	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	3.1500	3.1500	0.03
			0.00				1/2" Ice	5.6700	5.6700	0.04
			11.00				1" Ice	8.1900	8.1900	0.05
							2" Ice	13.2300	13.2300	0.07
							4" Ice	23.3100	23.3100	0.11
(2) PD1110	B	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	2.5023	2.5023	0.02
			0.00				1/2" Ice	3.8435	3.8435	0.04
			9.00				1" Ice	5.2013	5.2013	0.07
							2" Ice	7.9670	7.9670	0.15
							4" Ice	11.6110	11.6110	0.42
PD201-1	B	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	0.6279	0.6279	0.00
			0.00				1/2" Ice	1.5391	1.5391	0.01
			9.00				1" Ice	2.4669	2.4669	0.02
							2" Ice	4.2716	4.2716	0.07
							4" Ice	6.5661	6.5661	0.23
PD201-1	C	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	0.6279	0.6279	0.00
			0.00				1/2" Ice	1.5391	1.5391	0.01
			9.00				1" Ice	2.4669	2.4669	0.02
							2" Ice	4.2716	4.2716	0.07
							4" Ice	6.5661	6.5661	0.23
DB806E-XT	A	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	2.0000	2.0000	0.02
			0.00				1/2" Ice	2.8292	2.8292	0.03
			9.00				1" Ice	3.4557	3.4557	0.05
							2" Ice	4.4522	4.4522	0.11
							4" Ice	6.5562	6.5562	0.29
(2) PD83-1	B	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	3.7000	3.7000	0.02
			0.00				1/2" Ice	5.5750	5.5750	0.05
			-6.00				1" Ice	7.4667	7.4667	0.09
							2" Ice	11.3000	11.3000	0.20
							4" Ice	18.4568	18.4568	0.58
PD83-1	C	From Leg	4.0000	0.0000	0.0000	96.0000	No Ice	3.7000	3.7000	0.02
			0.00				1/2" Ice	5.5750	5.5750	0.05
			-6.00				1" Ice	7.4667	7.4667	0.09

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 22 of 48
	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>1</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>1</sub> Side ft <sup>2</sup>	Weight K
			Horz Lateral ft	Vert ft					
						2" Ice	11.3000	11.3000	0.20
						4" Ice	18.4568	18.4568	0.58
(3) 6' x 2" Mount Pipe	A	From Leg	4.0000	0.0000	96.0000	No Ice	1.4250	1.4250	0.02
			0.00			1/2" Ice	1.4963	1.4963	0.03
			0.00			1" Ice	1.5675	1.5675	0.04
						2" Ice	1.7100	1.7100	0.05
						4" Ice	1.9950	1.9950	0.07
(4) 6' x 2" Mount Pipe	B	From Leg	4.0000	0.0000	96.0000	No Ice	1.4250	1.4250	0.02
			0.00			1/2" Ice	1.4963	1.4963	0.03
			0.00			1" Ice	1.5675	1.5675	0.04
						2" Ice	1.7100	1.7100	0.05
						4" Ice	1.9950	1.9950	0.07
(2) 6' x 2" Mount Pipe	C	From Leg	4.0000	0.0000	96.0000	No Ice	1.4250	1.4250	0.02
			0.00			1/2" Ice	1.4963	1.4963	0.03
			0.00			1" Ice	1.5675	1.5675	0.04
						2" Ice	1.7100	1.7100	0.05
						4" Ice	1.9950	1.9950	0.07
Platform Mount [LP 1201-1]	C	None		0.0000	96.0000	No Ice	23.1000	23.1000	2.10
						1/2" Ice	26.8000	26.8000	2.50
						1" Ice	30.5000	30.5000	2.90
						2" Ice	37.9000	37.9000	3.70
						4" Ice	52.7000	52.7000	5.30
***									
***									
***									
APXV18-206516S-C-A20 w/ Mount Pipe	A	From Leg	4.0000	0.0000	82.0000	No Ice	3.8586	3.2963	0.04
			0.00			1/2" Ice	4.2736	4.0044	0.07
			0.00			1" Ice	4.7274	4.6717	0.11
						2" Ice	5.6860	6.0562	0.21
						4" Ice	7.7274	9.0382	0.53
APXV18-206516S-C-A20 w/ Mount Pipe	B	From Leg	4.0000	0.0000	82.0000	No Ice	3.8586	3.2963	0.04
			0.00			1/2" Ice	4.2736	4.0044	0.07
			0.00			1" Ice	4.7274	4.6717	0.11
						2" Ice	5.6860	6.0562	0.21
						4" Ice	7.7274	9.0382	0.53
APXV18-206516S-C-A20 w/ Mount Pipe	C	From Leg	4.0000	0.0000	82.0000	No Ice	3.8586	3.2963	0.04
			0.00			1/2" Ice	4.2736	4.0044	0.07
			0.00			1" Ice	4.7274	4.6717	0.11
						2" Ice	5.6860	6.0562	0.21
						4" Ice	7.7274	9.0382	0.53
LNx-6515DS-VTM w/ Mount Pipe	A	From Leg	4.0000	0.0000	82.0000	No Ice	11.6264	9.7931	0.07
			0.00			1/2" Ice	12.3456	11.3114	0.16
			0.00			1" Ice	13.0742	12.8538	0.26
						2" Ice	14.5433	15.1920	0.49
						4" Ice	17.8072	20.0471	1.14
LNx-6515DS-VTM w/ Mount Pipe	B	From Leg	4.0000	0.0000	82.0000	No Ice	11.6264	9.7931	0.07
			0.00			1/2" Ice	12.3456	11.3114	0.16
			0.00			1" Ice	13.0742	12.8538	0.26
						2" Ice	14.5433	15.1920	0.49
						4" Ice	17.8072	20.0471	1.14
LNx-6515DS-VTM w/ Mount Pipe	C	From Leg	4.0000	0.0000	82.0000	No Ice	11.6264	9.7931	0.07
			0.00			1/2" Ice	12.3456	11.3114	0.16
			0.00			1" Ice	13.0742	12.8538	0.26
						2" Ice	14.5433	15.1920	0.49
						4" Ice	17.8072	20.0471	1.14
ATSBT-BOTTOM-FM-4G	A	From Leg	4.0000	0.0000	82.0000	No Ice	0.2025	0.1095	0.00
			0.00			1/2" Ice	0.2673	0.1632	0.00

<b><i>tnxTower</i></b>  <b><i>Velocitel, Inc., d.b.a. FDH Velocitel</i></b> <i>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</i>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	23 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

<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<sub>A</sub>A<sub>1</sub> Front ft<sup>2</sup></i>	<i>C<sub>A</sub>A<sub>1</sub> Side ft<sup>2</sup></i>	<i>Weight K</i>
			0.00			1" Ice 0.3408	0.2257	0.01
						2" Ice 0.5135	0.3764	0.01
						4" Ice 0.9628	0.7816	0.05
ATSBT-BOTTOM-FM-4G	B	From Leg	4.0000	0.0000	82.0000	No Ice 0.2025	0.1095	0.00
			0.00			1/2" Ice 0.2673	0.1632	0.00
			0.00			1" Ice 0.3408	0.2257	0.01
						2" Ice 0.5135	0.3764	0.01
						4" Ice 0.9628	0.7816	0.05
ATSBT-BOTTOM-FM-4G	C	From Leg	4.0000	0.0000	82.0000	No Ice 0.2025	0.1095	0.00
			0.00			1/2" Ice 0.2673	0.1632	0.00
			0.00			1" Ice 0.3408	0.2257	0.01
						2" Ice 0.5135	0.3764	0.01
						4" Ice 0.9628	0.7816	0.05
APXV18-206516S-C-A20 w/ Mount Pipe	A	From Leg	4.0000	0.0000	82.0000	No Ice 3.8586	3.2963	0.04
			0.00			1/2" Ice 4.2736	4.0044	0.07
			0.00			1" Ice 4.7274	4.6717	0.11
						2" Ice 5.6860	6.0562	0.21
						4" Ice 7.7274	9.0382	0.53
APXV18-206516S-C-A20 w/ Mount Pipe	B	From Leg	4.0000	0.0000	82.0000	No Ice 3.8586	3.2963	0.04
			0.00			1/2" Ice 4.2736	4.0044	0.07
			0.00			1" Ice 4.7274	4.6717	0.11
						2" Ice 5.6860	6.0562	0.21
						4" Ice 7.7274	9.0382	0.53
APXV18-206516S-C-A20 w/ Mount Pipe	C	From Leg	4.0000	0.0000	82.0000	No Ice 3.8586	3.2963	0.04
			0.00			1/2" Ice 4.2736	4.0044	0.07
			0.00			1" Ice 4.7274	4.6717	0.11
						2" Ice 5.6860	6.0562	0.21
						4" Ice 7.7274	9.0382	0.53
ETW190VS12UB	A	From Leg	4.0000	0.0000	82.0000	No Ice 0.6644	0.3669	0.01
			0.00			1/2" Ice 0.7783	0.4613	0.02
			0.00			1" Ice 0.9008	0.5644	0.03
						2" Ice 1.1717	0.7964	0.04
						4" Ice 1.8173	1.3642	0.11
ETW190VS12UB	B	From Leg	4.0000	0.0000	82.0000	No Ice 0.6644	0.3669	0.01
			0.00			1/2" Ice 0.7783	0.4613	0.02
			0.00			1" Ice 0.9008	0.5644	0.03
						2" Ice 1.1717	0.7964	0.04
						4" Ice 1.8173	1.3642	0.11
ETW190VS12UB	C	From Leg	4.0000	0.0000	82.0000	No Ice 0.6644	0.3669	0.01
			0.00			1/2" Ice 0.7783	0.4613	0.02
			0.00			1" Ice 0.9008	0.5644	0.03
						2" Ice 1.1717	0.7964	0.04
						4" Ice 1.8173	1.3642	0.11
ATMAA1412D-1A20	A	From Leg	4.0000	0.0000	82.0000	No Ice 1.1667	0.4667	0.01
			0.00			1/2" Ice 1.3136	0.5747	0.02
			0.00			1" Ice 1.4691	0.6914	0.03
						2" Ice 1.8062	0.9506	0.06
						4" Ice 2.5840	1.5728	0.14
ATMAA1412D-1A20	B	From Leg	4.0000	0.0000	82.0000	No Ice 1.1667	0.4667	0.01
			0.00			1/2" Ice 1.3136	0.5747	0.02
			0.00			1" Ice 1.4691	0.6914	0.03
						2" Ice 1.8062	0.9506	0.06
						4" Ice 2.5840	1.5728	0.14
ATMAA1412D-1A20	C	From Leg	4.0000	0.0000	82.0000	No Ice 1.1667	0.4667	0.01
			0.00			1/2" Ice 1.3136	0.5747	0.02
			0.00			1" Ice 1.4691	0.6914	0.03
						2" Ice 1.8062	0.9506	0.06

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	24 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>1</sub> Side	Weight
			Horz	Vert					
Pipe Mount	A	From Leg	4.0000	0.0000	82.0000	4" Ice	2.5840	1.5728	0.14
						No Ice	1.2000	1.2000	0.02
						1/2" Ice	1.5024	1.5024	0.03
						1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08
Pipe Mount	B	From Leg	4.0000	0.0000	82.0000	4" Ice	3.9289	3.9289	0.20
						No Ice	1.2000	1.2000	0.02
						1/2" Ice	1.5024	1.5024	0.03
						1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08
Pipe Mount	C	From Leg	4.0000	0.0000	82.0000	4" Ice	3.9289	3.9289	0.20
						No Ice	1.2000	1.2000	0.02
						1/2" Ice	1.5024	1.5024	0.03
						1" Ice	1.8141	1.8141	0.04
						2" Ice	2.4652	2.4652	0.08
Platform Mount [LP 1201-1]	C	None	0.0000	82.0000	4" Ice	3.9289	3.9289	0.20	
					No Ice	23.1000	23.1000	2.10	
					1/2" Ice	26.8000	26.8000	2.50	
					1" Ice	30.5000	30.5000	2.90	
					2" Ice	37.9000	37.9000	3.70	
***									
***									
***									
800 10504 w/ Mount Pipe	A	From Leg	2.0000	0.0000	72.0000	No Ice	3.4817	3.1885	0.05
						1/2" Ice	3.8572	3.8202	0.08
						1" Ice	4.2411	4.4686	0.12
						2" Ice	5.0941	5.8154	0.22
						4" Ice	7.0104	8.7942	0.52
800 10504 w/ Mount Pipe	B	From Leg	2.0000	0.0000	72.0000	No Ice	3.4817	3.1885	0.05
						1/2" Ice	3.8572	3.8202	0.08
						1" Ice	4.2411	4.4686	0.12
						2" Ice	5.0941	5.8154	0.22
						4" Ice	7.0104	8.7942	0.52
800 10504 w/ Mount Pipe	C	From Leg	2.0000	0.0000	72.0000	No Ice	3.4817	3.1885	0.05
						1/2" Ice	3.8572	3.8202	0.08
						1" Ice	4.2411	4.4686	0.12
						2" Ice	5.0941	5.8154	0.22
						4" Ice	7.0104	8.7942	0.52
Side Arm Mount [SO 102-3]	C	None	0.0000	72.0000	No Ice	3.0000	3.0000	0.08	
					1/2" Ice	3.4800	3.4800	0.11	
					1" Ice	3.9600	3.9600	0.14	
					2" Ice	4.9200	4.9200	0.20	
					4" Ice	6.8400	6.8400	0.32	
***									
***									
***									
BSA150B	A	From Leg	3.0000	0.0000	53.0000	No Ice	11.7778	11.7778	0.00
						1/2" Ice	12.3000	12.3000	0.15
						1" Ice	12.8333	12.8333	0.31
						2" Ice	13.9333	13.9333	0.65
						4" Ice	16.2667	16.2667	1.42
BSA150B	A	From Leg	3.0000	0.0000	53.0000	No Ice	11.7778	11.7778	0.00
						1/2" Ice	12.3000	12.3000	0.15
						1" Ice	12.8333	12.8333	0.31
						2" Ice	13.9333	13.9333	0.65
						4" Ice	16.2667	16.2667	1.42

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	25 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight K
8' x 2" Pipe Mount	A	From Leg	0.0000 0.00 0.00	0.0000	53.0000	No Ice 1.6000 1/2" Ice 2.4250 1" Ice 3.2364 2" Ice 4.2284 4" Ice 6.3235	1.6000 2.4250 3.2364 4.2284 6.3235	0.03 0.04 0.06 0.11 0.28
Side Arm Mount [SO 702-1]	A	From Leg	0.0000 0.00 0.00	0.0000	53.0000	No Ice 1.0000 1/2" Ice 1.2500 1" Ice 1.5000 2" Ice 2.0000 4" Ice 3.0000	1.4300 2.0500 2.6700 3.9100 6.3900	0.03 0.04 0.05 0.07 0.12
*** *** ***								
BULLET III	C	From Leg	1.0000 0.00 0.00	0.0000	50.0000	No Ice 0.0774 1/2" Ice 0.1184 1" Ice 0.1680 2" Ice 0.2933 4" Ice 0.6474	0.0774 0.1184 0.1680 0.2933 0.6474	0.00 0.00 0.00 0.01 0.04

**Dishes**

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft <sup>2</sup>	Weight K
VHLP800-11	B	Paraboloid w/o Radome	From Leg	4.0000 0.00 4.00	90.0000		148.0000	2.9167	No Ice 6.6800 1/2" Ice 7.0700 1" Ice 7.4600 2" Ice 8.2300 4" Ice 9.7800	0.02 0.06 0.09 0.17 0.31
VHLP800-11	C	Paraboloid w/o Radome	From Leg	4.0000 0.00 4.00	90.0000		148.0000	2.9167	No Ice 6.6800 1/2" Ice 7.0700 1" Ice 7.4600 2" Ice 8.2300 4" Ice 9.7800	0.02 0.06 0.09 0.17 0.31
*** ***										
VHLP2.5-10W	A	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.00 0.00	0.0000		144.0000	2.9167	No Ice 6.6800 1/2" Ice 7.0700 1" Ice 7.4600 2" Ice 8.2300 4" Ice 9.7800	0.05 0.08 0.12 0.19 0.34
***										

**Tower Pressures - No Ice**

$G_H = 1.690$

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 26 of 48
	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
L1	145.4812	1.528	32.53	9.378	A	0.000	9.378	9.378	100.00	0.000	0.000
148.0000-143.0000					B	0.000	9.378		100.00	0.000	0.000
					C	0.000	9.378		100.00	0.000	0.188
L2	140.4820	1.513	32.21	9.801	A	0.000	9.801	9.801	100.00	0.000	0.000
143.0000-138.0000					B	0.000	9.801		100.00	0.000	0.000
					C	0.000	9.801		100.00	0.000	0.188
L3	135.4828	1.497	31.88	10.224	A	0.000	10.224	10.224	100.00	0.000	0.000
138.0000-133.0000					B	0.000	10.224		100.00	0.000	0.000
					C	0.000	10.224		100.00	0.000	0.188
L4	130.4834	1.481	31.54	10.647	A	0.000	10.647	10.647	100.00	0.000	0.000
133.0000-128.0000					B	0.000	10.647		100.00	0.000	0.000
					C	0.000	10.647		100.00	0.000	0.188
L5	125.4841	1.465	31.19	11.070	A	0.000	11.070	11.070	100.00	0.000	0.000
128.0000-123.0000					B	0.000	11.070		100.00	0.000	0.000
					C	0.000	11.070		100.00	0.000	0.188
L6	120.4847	1.448	30.83	11.493	A	0.000	11.493	11.493	100.00	0.000	0.000
123.0000-118.0000					B	0.000	11.493		100.00	0.000	0.000
					C	0.000	11.493		100.00	0.000	0.784
L7	115.4852	1.43	30.46	11.916	A	0.000	11.916	11.916	100.00	0.000	0.000
118.0000-113.0000					B	0.000	11.916		100.00	0.000	0.000
					C	0.000	11.916		100.00	0.000	1.678
L8	110.4857	1.412	30.07	12.339	A	0.000	12.339	12.339	100.00	0.000	0.000
113.0000-108.0000					B	0.000	12.339		100.00	0.000	0.000
					C	0.000	12.339		100.00	0.000	1.678
L9	104.2192	1.389	29.58	19.301	A	0.000	19.301	19.301	100.00	0.000	0.000
108.0000-100.5000					B	0.000	19.301		100.00	0.000	0.000
					C	0.000	19.301		100.00	0.000	2.517
L10	99.9995	1.373	29.23	2.604	A	0.000	2.604	2.604	100.00	0.000	0.000
100.5000-99.5000					B	0.000	2.604		100.00	0.000	0.000
					C	0.000	2.604		100.00	0.000	0.336
L11	96.9867	1.361	28.97	13.272	A	0.000	13.272	13.272	100.00	0.000	0.000
99.5000-94.5000					B	0.000	13.272		100.00	0.000	0.000
					C	0.000	13.272		100.00	0.000	1.678
L12	91.9871	1.34	28.54	13.695	A	0.000	13.695	13.695	100.00	0.000	0.000
94.5000-89.5000					B	0.000	13.695		100.00	0.000	0.000
					C	0.000	13.695		100.00	0.000	1.678
L13	86.9875	1.319	28.09	14.118	A	0.000	14.118	14.118	100.00	0.000	0.000
89.5000-84.5000					B	0.000	14.118		100.00	0.000	0.000
					C	0.000	14.118		100.00	0.000	1.678
L14	81.9879	1.297	27.62	14.541	A	0.000	14.541	14.541	100.00	0.000	0.000
84.5000-79.5000					B	0.000	14.541		100.00	0.000	0.000
					C	0.000	14.541		100.00	0.000	1.678
L15	76.9882	1.274	27.12	14.964	A	0.000	14.964	14.964	100.00	0.000	0.000
79.5000-74.5000					B	0.000	14.964		100.00	0.000	0.000
					C	0.000	14.964		100.00	0.000	1.678
L16	72.4473	1.252	26.66	12.555	A	0.000	12.555	12.555	100.00	0.000	0.293
74.5000-70.4100					B	0.000	12.555		100.00	0.000	0.293
					C	0.000	12.555		100.00	0.000	1.665
L17	70.2850	1.241	26.43	0.777	A	0.000	0.777	0.777	100.00	0.000	0.042
70.4100-70.1600					B	0.000	0.777		100.00	0.000	0.042
					C	0.000	0.777		100.00	0.000	0.126
L18	67.6488	1.228	26.14	15.754	A	0.000	15.754	15.754	100.00	0.000	0.833
70.1600-65.1600					B	0.000	15.754		100.00	0.000	0.833
					C	0.000	15.754		100.00	0.000	2.511
L19	64.5343	1.211	25.79	4.005	A	0.000	4.005	4.005	100.00	0.000	0.208
65.1600-63.9100					B	0.000	4.005		100.00	0.000	0.208
					C	0.000	4.005		100.00	0.000	0.628
L20	63.7850	1.207	25.70	0.804	A	0.000	0.804	0.804	100.00	0.000	0.042

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p>876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p>27 of 48</p>
	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Section Elevation <i>ft</i>	<i>z</i> <i>ft</i>	$K_z$	$q_z$ <i>psf</i>	$A_G$ <i>ft<sup>2</sup></i>	$F_{ac}$ <i>e</i>	$A_F$ <i>ft<sup>2</sup></i>	$A_R$ <i>ft<sup>2</sup></i>	$A_{leg}$ <i>ft<sup>2</sup></i>	Leg %	$C_{AA}$ In Face <i>ft<sup>2</sup></i>	$C_{AA}$ Out Face <i>ft<sup>2</sup></i>
63.9100-63.6600					B	0.000	0.804		100.00	0.000	0.042
00					C	0.000	0.804		100.00	0.000	0.126
L21	60.9424	1.192	25.37	17.660	A	0.000	17.660	17.660	100.00	0.000	0.249
63.6600-58.2500					B	0.000	17.660		100.00	0.000	0.249
00					C	0.000	17.660		100.00	0.000	2.064
L22	57.7496	1.173	24.98	3.256	A	0.000	3.256	3.256	100.00	0.000	0.000
58.2500-57.2500					B	0.000	3.256		100.00	0.000	0.000
00					C	0.000	3.256		100.00	0.000	0.336
L23	54.8503	1.156	24.62	15.797	A	0.000	15.797	15.797	100.00	0.000	0.460
57.2500-52.4700					B	0.000	15.797		100.00	0.000	0.460
00					C	0.000	15.797		100.00	0.000	2.064
L24	52.3450	1.141	24.29	0.837	A	0.000	0.837	0.837	100.00	0.000	0.042
52.4700-52.2200					B	0.000	0.837		100.00	0.000	0.042
00					C	0.000	0.837		100.00	0.000	0.126
L25	49.7096	1.124	23.94	16.959	A	0.000	16.959	16.959	100.00	0.000	0.833
52.2200-47.2200					B	0.000	16.959		100.00	0.000	0.833
00					C	0.000	16.959		100.00	0.000	2.511
L26	44.7099	1.091	23.22	17.382	A	0.000	17.382	17.382	100.00	0.000	0.833
47.2200-42.2200					B	0.000	17.382		100.00	0.000	0.833
00					C	0.000	17.382		100.00	0.000	2.511
L27	39.7101	1.054	22.45	17.805	A	0.000	17.805	17.805	100.00	0.000	0.833
42.2200-37.2200					B	0.000	17.805		100.00	0.000	0.833
00					C	0.000	17.805		100.00	0.000	2.511
L28	36.1708	1.027	21.86	7.586	A	0.000	7.586	7.586	100.00	0.000	0.349
37.2200-35.1250					B	0.000	7.586		100.00	0.000	0.349
50					C	0.000	7.586		100.00	0.000	1.052
L29	35.0000	1.017	21.65	0.910	A	0.000	0.910	0.910	100.00	0.000	0.052
35.1250-34.8750					B	0.000	0.910		100.00	0.000	0.052
50					C	0.000	0.910		100.00	0.000	0.136
L30	31.7982	1	21.29	22.630	A	0.000	22.630	22.630	100.00	0.000	1.276
34.8750-28.7500					B	0.000	22.630		100.00	0.000	1.276
00					C	0.000	22.630		100.00	0.000	3.331
L31	28.2496	1	21.29	3.682	A	0.000	3.682	3.682	100.00	0.000	0.208
28.7500-27.7500					B	0.000	3.682		100.00	0.000	0.208
00					C	0.000	3.682		100.00	0.000	0.856
L32	26.8112	1	21.29	6.950	A	0.000	6.950	6.950	100.00	0.000	0.391
27.7500-25.8750					B	0.000	6.950		100.00	0.000	0.391
50					C	0.000	6.950		100.00	0.000	1.801
L33	25.8125	1	21.29	0.465	A	0.000	0.465	0.465	100.00	0.000	0.026
25.8750-25.7500					B	0.000	0.465		100.00	0.000	0.026
00					C	0.000	0.465		100.00	0.000	0.120
L34	25.6875	1	21.29	0.466	A	0.000	0.466	0.466	100.00	0.000	0.026
25.7500-25.6250					B	0.000	0.466		100.00	0.000	0.026
50					C	0.000	0.466		100.00	0.000	0.120
L35	25.5625	1	21.29	0.466	A	0.000	0.466	0.466	100.00	0.000	0.026
25.6250-25.5000					B	0.000	0.466		100.00	0.000	0.026
00					C	0.000	0.466		100.00	0.000	0.120
L36	22.9907	1	21.29	18.855	A	0.000	18.855	18.855	100.00	0.000	1.042
25.5000-20.5000					B	0.000	18.855		100.00	0.000	1.042
00					C	0.000	18.855		100.00	0.000	4.256
L37	17.9909	1	21.29	19.278	A	0.000	19.278	19.278	100.00	0.000	1.042
20.5000-15.5000					B	0.000	19.278		100.00	0.000	1.042
00					C	0.000	19.278		100.00	0.000	3.761
L38	12.9911	1	21.29	19.700	A	0.000	19.700	19.700	100.00	0.000	1.042
15.5000-10.5000					B	0.000	19.700		100.00	0.000	1.042
00					C	0.000	19.700		100.00	0.000	3.761
L39	7.9912	1	21.29	20.123	A	0.000	20.123	20.123	100.00	0.000	1.042
10.5000-5.5000					B	0.000	20.123		100.00	0.000	1.042
0					C	0.000	20.123		100.00	0.000	2.847
L40	2.9914	1	21.29	20.546	A	0.000	20.546	20.546	100.00	0.000	1.042



<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 28 of 48
	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
5.5000-0.5000					B	0.000	20.546		100.00	0.000	1.042
					C	0.000	20.546		100.00	0.000	2.083
L41 0.5000-0.0000	0.2499	1	21.29	2.078	A	0.000	2.078	2.078	100.00	0.000	0.104
					B	0.000	2.078		100.00	0.000	0.104
					C	0.000	2.078		100.00	0.000	0.208

### Tower Pressure - With Ice

$G_H = 1.690$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L1 148.0000-143.0000	145.4812	1.528	5.53	0.8961	10.125	A	0.000	10.125	10.125	100.00	0.000	0.000
						B	0.000	10.125		100.00	0.000	0.000
						C	0.000	10.125		100.00	0.000	1.084
L2 143.0000-138.0000	140.4820	1.513	5.47	0.8924	10.545	A	0.000	10.545	10.545	100.00	0.000	0.000
						B	0.000	10.545		100.00	0.000	0.000
						C	0.000	10.545		100.00	0.000	1.080
L3 138.0000-133.0000	135.4828	1.497	5.42	0.8885	10.964	A	0.000	10.964	10.964	100.00	0.000	0.000
						B	0.000	10.964		100.00	0.000	0.000
						C	0.000	10.964		100.00	0.000	1.076
L4 133.0000-128.0000	130.4834	1.481	5.36	0.8845	11.384	A	0.000	11.384	11.384	100.00	0.000	0.000
						B	0.000	11.384		100.00	0.000	0.000
						C	0.000	11.384		100.00	0.000	1.072
L5 128.0000-123.0000	125.4841	1.465	5.30	0.8804	11.804	A	0.000	11.804	11.804	100.00	0.000	0.000
						B	0.000	11.804		100.00	0.000	0.000
						C	0.000	11.804		100.00	0.000	1.068
L6 123.0000-118.0000	120.4847	1.448	5.24	0.8761	12.223	A	0.000	12.223	12.223	100.00	0.000	0.000
						B	0.000	12.223		100.00	0.000	0.000
						C	0.000	12.223		100.00	0.000	3.412
L7 118.0000-113.0000	115.4852	1.43	5.18	0.8717	12.642	A	0.000	12.642	12.642	100.00	0.000	0.000
						B	0.000	12.642		100.00	0.000	0.000
						C	0.000	12.642		100.00	0.000	6.908
L8 113.0000-108.0000	110.4857	1.412	5.11	0.8670	13.061	A	0.000	13.061	13.061	100.00	0.000	0.000
						B	0.000	13.061		100.00	0.000	0.000
						C	0.000	13.061		100.00	0.000	6.880
L9 108.0000-100.5000	104.2192	1.389	5.03	0.8610	20.377	A	0.000	20.377	20.377	100.00	0.000	0.000
						B	0.000	20.377		100.00	0.000	0.000
						C	0.000	20.377		100.00	0.000	10.265
L10 100.5000-99.5000	99.9995	1.373	4.97	0.8567	2.747	A	0.000	2.747	2.747	100.00	0.000	0.000
						B	0.000	2.747		100.00	0.000	0.000
						C	0.000	2.747		100.00	0.000	1.369
L11 99.5000-94.5000	96.9867	1.361	4.92	0.8536	13.984	A	0.000	13.984	13.984	100.00	0.000	0.000
						B	0.000	13.984		100.00	0.000	0.000
						C	0.000	13.984		100.00	0.000	6.799
L12 94.5000-89.5000	91.9871	1.34	4.85	0.8482	14.402	A	0.000	14.402	14.402	100.00	0.000	0.000
						B	0.000	14.402		100.00	0.000	0.000
						C	0.000	14.402		100.00	0.000	6.767
L13 89.5000-84.5000	86.9875	1.319	4.77	0.8425	14.820	A	0.000	14.820	14.820	100.00	0.000	0.000
						B	0.000	14.820		100.00	0.000	0.000
						C	0.000	14.820		100.00	0.000	6.733
L14 84.5000-79.5000	81.9879	1.297	4.69	0.8365	15.238	A	0.000	15.238	15.238	100.00	0.000	0.000
						B	0.000	15.238		100.00	0.000	0.000
						C	0.000	15.238		100.00	0.000	6.697

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	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L15 79.5000-74.5000	76.9882	1.274	4.61	0.8303	15.656	A	0.000	15.656	15.656	100.00	0.000	0.000
						B	0.000	15.656		100.00	0.000	0.000
						C	0.000	15.656		100.00	0.000	6.659
L16 74.5000-70.4100	72.4473	1.252	4.53	0.8242	13.117	A	0.000	13.117	13.117	100.00	0.000	0.615
						B	0.000	13.117		100.00	0.000	0.615
						C	0.000	13.117		100.00	0.000	6.032
L17 70.4100-70.1600	70.2850	1.241	4.49	0.8212	0.811	A	0.000	0.811	0.811	100.00	0.000	0.087
						B	0.000	0.811		100.00	0.000	0.087
						C	0.000	0.811		100.00	0.000	0.418
L18 70.1600-65.1600	67.6488	1.228	4.44	0.8175	16.435	A	0.000	16.435	16.435	100.00	0.000	1.742
						B	0.000	16.435		100.00	0.000	1.742
						C	0.000	16.435		100.00	0.000	8.324
L19 65.1600-63.9100	64.5343	1.211	4.38	0.8129	4.174	A	0.000	4.174	4.174	100.00	0.000	0.434
						B	0.000	4.174		100.00	0.000	0.434
						C	0.000	4.174		100.00	0.000	2.073
L20 63.9100-63.6600	63.7850	1.207	4.37	0.8117	0.838	A	0.000	0.838	0.838	100.00	0.000	0.087
						B	0.000	0.838		100.00	0.000	0.087
						C	0.000	0.838		100.00	0.000	0.414
L21 63.6600-58.2500	60.9424	1.192	4.31	0.8073	18.387	A	0.000	18.387	18.387	100.00	0.000	0.517
						B	0.000	18.387		100.00	0.000	0.517
						C	0.000	18.387		100.00	0.000	7.573
L22 58.2500-57.2500	57.7496	1.173	4.25	0.8021	3.391	A	0.000	3.391	3.391	100.00	0.000	0.000
						B	0.000	3.391		100.00	0.000	0.000
						C	0.000	3.391		100.00	0.000	1.304
L23 57.2500-52.4700	54.8503	1.156	4.18	0.7972	16.432	A	0.000	16.432	16.432	100.00	0.000	0.949
						B	0.000	16.432		100.00	0.000	0.949
						C	0.000	16.432		100.00	0.000	7.125
L24 52.4700-52.2200	52.3450	1.141	4.13	0.7927	0.870	A	0.000	0.870	0.870	100.00	0.000	0.086
						B	0.000	0.870		100.00	0.000	0.086
						C	0.000	0.870		100.00	0.000	0.407
L25 52.2200-47.2200	49.7096	1.124	4.07	0.7878	17.616	A	0.000	17.616	17.616	100.00	0.000	1.709
						B	0.000	17.616		100.00	0.000	1.709
						C	0.000	17.616		100.00	0.000	8.113
L26 47.2200-42.2200	44.7099	1.091	3.95	0.7778	18.030	A	0.000	18.030	18.030	100.00	0.000	1.698
						B	0.000	18.030		100.00	0.000	1.698
						C	0.000	18.030		100.00	0.000	8.042
L27 42.2200-37.2200	39.7101	1.054	3.82	0.7668	18.444	A	0.000	18.444	18.444	100.00	0.000	1.685
						B	0.000	18.444		100.00	0.000	1.685
						C	0.000	18.444		100.00	0.000	7.964
L28 37.2200-35.1250	36.1708	1.027	3.72	0.7583	7.851	A	0.000	7.851	7.851	100.00	0.000	0.702
						B	0.000	7.851		100.00	0.000	0.702
						C	0.000	7.851		100.00	0.000	3.312
L29 35.1250-34.8750	35.0000	1.017	3.68	0.7553	0.942	A	0.000	0.942	0.942	100.00	0.000	0.094
						B	0.000	0.942		100.00	0.000	0.094
						C	0.000	0.942		100.00	0.000	0.405
L30 34.8750-28.7500	31.7982	1	3.62	0.7500	23.396	A	0.000	23.396	23.396	100.00	0.000	2.297
						B	0.000	23.396		100.00	0.000	2.297
						C	0.000	23.396		100.00	0.000	9.865
L31 28.7500-27.7500	28.2496	1	3.62	0.7500	3.807	A	0.000	3.807	3.807	100.00	0.000	0.375
						B	0.000	3.807		100.00	0.000	0.375
						C	0.000	3.807		100.00	0.000	2.173
L32 27.7500-25.8750	26.8112	1	3.62	0.7500	7.184	A	0.000	7.184	7.184	100.00	0.000	0.703
						B	0.000	7.184		100.00	0.000	0.703
						C	0.000	7.184		100.00	0.000	4.426
L33 25.8750-25.7500	25.8125	1	3.62	0.7500	0.481	A	0.000	0.481	0.481	100.00	0.000	0.047
						B	0.000	0.481		100.00	0.000	0.047
						C	0.000	0.481		100.00	0.000	0.295
L34 25.7500-25.6250	25.6875	1	3.62	0.7500	0.481	A	0.000	0.481	0.481	100.00	0.000	0.047
						B	0.000	0.481		100.00	0.000	0.047
						C	0.000	0.481		100.00	0.000	0.295

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 30 of 48
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Section Elevation <i>ft</i>	<i>z</i> <i>ft</i>	<i>K<sub>Z</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>t<sub>z</sub></i> <i>in</i>	<i>A<sub>G</sub></i> <i>ft<sup>2</sup></i>	<i>F a c e</i> <i>ft<sup>2</sup></i>	<i>A<sub>F</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>R</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>leg</sub></i> <i>ft<sup>2</sup></i>	<i>Leg %</i>	<i>C<sub>A</sub>A<sub>1</sub></i> <i>In Face ft<sup>2</sup></i>	<i>C<sub>A</sub>A<sub>1</sub></i> <i>Out Face ft<sup>2</sup></i>
L35 25.6250-25.5000	25.5625	1	3.62	0.7500	0.482	A 0.000 0.000	0.000 0.482 0.482	0.482	0.482	100.00 100.00 100.00	0.000 0.000 0.000	0.047 0.047 0.295
L36 25.5000-20.5000	22.9907	1	3.62	0.7500	19.480	A 0.000 0.000	0.000 19.480 19.480	19.480	19.480	100.00 100.00 100.00	0.000 0.000 0.000	1.875 1.875 10.818
L37 20.5000-15.5000	17.9909	1	3.62	0.7500	19.903	A 0.000 0.000	0.000 19.903 19.903	19.903	19.903	100.00 100.00 100.00	0.000 0.000 0.000	1.875 1.875 9.928
L38 15.5000-10.5000	12.9911	1	3.62	0.7500	20.325	A 0.000 0.000	0.000 20.325 20.325	20.325	20.325	100.00 100.00 100.00	0.000 0.000 0.000	1.875 1.875 9.928
L39 10.5000-5.5000	7.9912	1	3.62	0.7500	20.748	A 0.000 0.000	0.000 20.748 20.748	20.748	20.748	100.00 100.00 100.00	0.000 0.000 0.000	1.875 1.875 6.464
L40 5.5000-0.5000	2.9914	1	3.62	0.7500	21.171	A 0.000 0.000	0.000 21.171 21.171	21.171	21.171	100.00 100.00 100.00	0.000 0.000 0.000	1.875 1.875 3.750
L41 0.5000-0.0000	0.2499	1	3.62	0.7500	2.140	A 0.000 0.000	0.000 2.140 2.140	2.140	2.140	100.00 100.00 100.00	0.000 0.000 0.000	0.188 0.188 0.375

**Tower Pressure - Service**

$G_H = 1.690$

Section Elevation <i>ft</i>	<i>z</i> <i>ft</i>	<i>K<sub>Z</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>A<sub>G</sub></i> <i>ft<sup>2</sup></i>	<i>F a c e</i> <i>ft<sup>2</sup></i>	<i>A<sub>F</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>R</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>leg</sub></i> <i>ft<sup>2</sup></i>	<i>Leg %</i>	<i>C<sub>A</sub>A<sub>1</sub></i> <i>In Face ft<sup>2</sup></i>	<i>C<sub>A</sub>A<sub>1</sub></i> <i>Out Face ft<sup>2</sup></i>
L1 148.0000-143.0000	145.4812	1.528	9.78	9.378	A 0.000 0.000	0.000 9.378 9.378	9.378	9.378	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.188
L2 143.0000-138.0000	140.4820	1.513	9.68	9.801	A 0.000 0.000	0.000 9.801 9.801	9.801	9.801	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.188
L3 138.0000-133.0000	135.4828	1.497	9.58	10.224	A 0.000 0.000	0.000 10.224 10.224	10.224	10.224	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.188
L4 133.0000-128.0000	130.4834	1.481	9.48	10.647	A 0.000 0.000	0.000 10.647 10.647	10.647	10.647	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.188
L5 128.0000-123.0000	125.4841	1.465	9.37	11.070	A 0.000 0.000	0.000 11.070 11.070	11.070	11.070	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.188
L6 123.0000-118.0000	120.4847	1.448	9.27	11.493	A 0.000 0.000	0.000 11.493 11.493	11.493	11.493	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.784
L7 118.0000-113.0000	115.4852	1.43	9.15	11.916	A 0.000 0.000	0.000 11.916 11.916	11.916	11.916	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 1.678
L8 113.0000-108.0000	110.4857	1.412	9.04	12.339	A 0.000 0.000	0.000 12.339 12.339	12.339	12.339	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 1.678
L9	104.2192	1.389	8.89	19.301	A	0.000	19.301	19.301	100.00	0.000	0.000

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	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
108.0000-100.5000					B	0.000	19.301		100.00	0.000	0.000
L10					C	0.000	19.301		100.00	0.000	2.517
100.5000-99.5000	99.9995	1.373	8.79	2.604	A	0.000	2.604	2.604	100.00	0.000	0.000
L11					B	0.000	2.604		100.00	0.000	0.000
99.5000-94.5000	96.9867	1.361	8.71	13.272	C	0.000	2.604		100.00	0.000	0.336
L12					A	0.000	13.272	13.272	100.00	0.000	0.000
94.5000-89.5000	91.9871	1.34	8.58	13.695	B	0.000	13.272		100.00	0.000	1.678
L13					C	0.000	13.272		100.00	0.000	0.000
89.5000-84.5000	86.9875	1.319	8.44	14.118	A	0.000	13.695	13.695	100.00	0.000	0.000
L14					B	0.000	13.695		100.00	0.000	0.000
84.5000-79.5000	81.9879	1.297	8.30	14.541	C	0.000	13.695		100.00	0.000	1.678
L15					A	0.000	14.118	14.118	100.00	0.000	0.000
79.5000-74.5000	76.9882	1.274	8.15	14.964	B	0.000	14.118		100.00	0.000	1.678
L16					C	0.000	14.118		100.00	0.000	0.000
74.5000-70.4100	72.4473	1.252	8.01	12.555	A	0.000	14.541	14.541	100.00	0.000	0.000
L17					B	0.000	14.541		100.00	0.000	1.678
70.4100-70.1600	70.2850	1.241	7.94	0.777	C	0.000	14.541		100.00	0.000	1.678
L18					A	0.000	14.964	14.964	100.00	0.000	0.000
70.1600-65.1600	67.6488	1.228	7.86	15.754	B	0.000	14.964		100.00	0.000	0.000
L19					C	0.000	14.964		100.00	0.000	1.678
65.1600-63.9100	64.5343	1.211	7.75	4.005	A	0.000	12.555	12.555	100.00	0.000	0.293
L20					B	0.000	12.555		100.00	0.000	0.293
63.9100-63.6600	63.7850	1.207	7.73	0.804	C	0.000	12.555		100.00	0.000	1.665
L21					A	0.000	0.777	0.777	100.00	0.000	0.042
63.6600-58.2500	60.9424	1.192	7.63	17.660	B	0.000	0.777		100.00	0.000	0.042
L22					C	0.000	0.777		100.00	0.000	0.126
58.2500-57.2500	57.7496	1.173	7.51	3.256	A	0.000	15.754	15.754	100.00	0.000	0.833
L23					B	0.000	15.754		100.00	0.000	0.833
57.2500-52.4700	54.8503	1.156	7.40	15.797	C	0.000	15.754		100.00	0.000	2.511
L24					A	0.000	4.005	4.005	100.00	0.000	0.208
52.4700-52.2200	52.3450	1.141	7.30	0.837	B	0.000	4.005		100.00	0.000	0.208
L25					C	0.000	4.005		100.00	0.000	0.628
52.2200-47.2200	49.7096	1.124	7.19	16.959	A	0.000	0.804	0.804	100.00	0.000	0.042
L26					B	0.000	0.804		100.00	0.000	0.042
47.2200-42.2200	44.7099	1.091	6.98	17.382	C	0.000	0.804		100.00	0.000	0.126
L27					A	0.000	17.660	17.660	100.00	0.000	0.249
42.2200-37.2200	39.7101	1.054	6.75	17.805	B	0.000	17.660		100.00	0.000	0.249
L28					C	0.000	17.660		100.00	0.000	2.064
37.2200-35.1250	36.1708	1.027	6.57	7.586	A	0.000	3.256	3.256	100.00	0.000	0.000
L29					B	0.000	3.256		100.00	0.000	0.000
					C	0.000	3.256		100.00	0.000	0.336
					A	0.000	15.797	15.797	100.00	0.000	0.460
					B	0.000	15.797		100.00	0.000	0.460
					C	0.000	15.797		100.00	0.000	2.064
					A	0.000	0.837	0.837	100.00	0.000	0.042
					B	0.000	0.837		100.00	0.000	0.042
					C	0.000	0.837		100.00	0.000	0.126
					A	0.000	16.959	16.959	100.00	0.000	0.833
					B	0.000	16.959		100.00	0.000	0.833
					C	0.000	16.959		100.00	0.000	2.511
					A	0.000	17.382	17.382	100.00	0.000	0.833
					B	0.000	17.382		100.00	0.000	0.833
					C	0.000	17.382		100.00	0.000	2.511
					A	0.000	17.805	17.805	100.00	0.000	0.833
					B	0.000	17.805		100.00	0.000	0.833
					C	0.000	17.805		100.00	0.000	2.511
					A	0.000	7.586	7.586	100.00	0.000	0.349
					B	0.000	7.586		100.00	0.000	0.349
					C	0.000	7.586		100.00	0.000	1.052
					A	0.000	0.910	0.910	100.00	0.000	0.052

<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p style="text-align: center;">6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 32 of 48
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Section Elevation <i>ft</i>	<i>z</i> <i>ft</i>	$K_z$	$q_z$ <i>psf</i>	$A_G$ <i>ft<sup>2</sup></i>	$F_{ac}$ <i>ft<sup>2</sup></i>	$A_F$ <i>ft<sup>2</sup></i>	$A_R$ <i>ft<sup>2</sup></i>	$A_{leg}$ <i>ft<sup>2</sup></i>	Leg %	$C_{AA}$ In Face <i>ft<sup>2</sup></i>	$C_{AA}$ Out Face <i>ft<sup>2</sup></i>
35.1250-34.87					B	0.000	0.910		100.00	0.000	0.052
50					C	0.000	0.910		100.00	0.000	0.136
L30	31.7982	1	6.40	22.630	A	0.000	22.630	22.630	100.00	0.000	1.276
34.8750-28.75					B	0.000	22.630		100.00	0.000	1.276
00					C	0.000	22.630		100.00	0.000	3.331
L31	28.2496	1	6.40	3.682	A	0.000	3.682	3.682	100.00	0.000	0.208
28.7500-27.75					B	0.000	3.682		100.00	0.000	0.208
00					C	0.000	3.682		100.00	0.000	0.856
L32	26.8112	1	6.40	6.950	A	0.000	6.950	6.950	100.00	0.000	0.391
27.7500-25.87					B	0.000	6.950		100.00	0.000	0.391
50					C	0.000	6.950		100.00	0.000	1.801
L33	25.8125	1	6.40	0.465	A	0.000	0.465	0.465	100.00	0.000	0.026
25.8750-25.75					B	0.000	0.465		100.00	0.000	0.026
00					C	0.000	0.465		100.00	0.000	0.120
L34	25.6875	1	6.40	0.466	A	0.000	0.466	0.466	100.00	0.000	0.026
25.7500-25.62					B	0.000	0.466		100.00	0.000	0.026
50					C	0.000	0.466		100.00	0.000	0.120
L35	25.5625	1	6.40	0.466	A	0.000	0.466	0.466	100.00	0.000	0.026
25.6250-25.50					B	0.000	0.466		100.00	0.000	0.026
00					C	0.000	0.466		100.00	0.000	0.120
L36	22.9907	1	6.40	18.855	A	0.000	18.855	18.855	100.00	0.000	1.042
25.5000-20.50					B	0.000	18.855		100.00	0.000	1.042
00					C	0.000	18.855		100.00	0.000	4.256
L37	17.9909	1	6.40	19.278	A	0.000	19.278	19.278	100.00	0.000	1.042
20.5000-15.50					B	0.000	19.278		100.00	0.000	1.042
00					C	0.000	19.278		100.00	0.000	3.761
L38	12.9911	1	6.40	19.700	A	0.000	19.700	19.700	100.00	0.000	1.042
15.5000-10.50					B	0.000	19.700		100.00	0.000	1.042
00					C	0.000	19.700		100.00	0.000	3.761
L39	7.9912	1	6.40	20.123	A	0.000	20.123	20.123	100.00	0.000	1.042
10.5000-5.500					B	0.000	20.123		100.00	0.000	1.042
0					C	0.000	20.123		100.00	0.000	2.847
L40	2.9914	1	6.40	20.546	A	0.000	20.546	20.546	100.00	0.000	1.042
5.5000-0.5000					B	0.000	20.546		100.00	0.000	1.042
					C	0.000	20.546		100.00	0.000	2.083
L41	0.2499	1	6.40	2.078	A	0.000	2.078	2.078	100.00	0.000	0.104
0.5000-0.0000					B	0.000	2.078		100.00	0.000	0.104
					C	0.000	2.078		100.00	0.000	0.208

## Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp

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

## Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	148 - 143	Pole	Max Tension	14	0.00	-0.00	-0.00
			Max. Compression	14	-6.37	2.85	5.05
			Max. Mx	11	-3.27	41.94	1.76
			Max. My	2	-3.14	-1.72	47.79
			Max. Vy	5	7.60	-41.85	2.75
			Max. Vx	8	8.30	-1.37	-42.56
			Max. Torque	9			-8.88
L2	143 - 138	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-6.86	2.87	5.07
			Max. Mx	5	-3.53	-81.32	3.28
			Max. My	2	-3.44	-3.45	90.30
			Max. Vy	5	8.19	-81.32	3.28
			Max. Vx	8	8.89	-2.47	-85.52
			Max. Torque	9			-8.88
L3	138 - 133	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-7.37	2.89	5.09
			Max. Mx	5	-3.86	-123.76	3.81
			Max. My	2	-3.76	-5.20	135.79
			Max. Vy	5	8.79	-123.76	3.81
			Max. Vx	8	9.49	-3.58	-131.46
			Max. Torque	9			-8.88
L4	133 - 128	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-7.90	2.90	5.10
			Max. Mx	5	-4.20	-169.26	4.34
			Max. My	2	-4.10	-6.94	184.34
			Max. Vy	5	9.41	-169.26	4.34
			Max. Vx	8	10.11	-4.69	-180.46
			Max. Torque	9			-8.88
L5	128 - 123	Pole	Max Tension	1	0.00	0.00	0.00

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	34 of 48
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	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L6	123 - 118	Pole	Max. Compression	14	-8.45	2.92	5.12
			Max. Mx	5	-4.56	-217.88	4.87
			Max. My	2	-4.46	-8.69	236.03
			Max. Vy	5	10.04	-217.88	4.87
			Max. Vx	8	10.75	-5.80	-232.59
			Max. Torque	9			-8.88
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-15.86	2.27	4.73
			Max. Mx	5	-8.02	-284.10	5.56
			Max. My	2	-7.90	-10.61	305.23
			Max. Vy	5	17.61	-284.10	5.56
			Max. Vx	8	18.41	-6.76	-302.46
			Max. Torque	9			-8.88
			Max Tension	1	0.00	0.00	0.00
L7	118 - 113	Pole	Max. Compression	14	-16.54	2.34	4.72
			Max. Mx	5	-8.49	-373.92	6.49
			Max. My	2	-8.38	-12.79	398.62
			Max. Vy	5	18.33	-373.92	6.49
			Max. Vx	8	19.14	-7.49	-396.31
			Max. Torque	9			-6.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-17.24	2.41	4.71
			Max. Mx	5	-9.00	-467.38	7.42
			Max. My	2	-8.88	-14.96	495.65
			Max. Vy	5	19.07	-467.38	7.42
			Max. Vx	8	19.87	-8.22	-493.81
			Max. Torque	9			-6.58
			Max Tension	1	0.00	0.00	0.00
L9	108 - 100.5	Pole	Max. Compression	14	-17.74	2.46	4.70
			Max. Mx	5	-9.37	-535.00	8.07
			Max. My	2	-9.26	-16.48	565.76
			Max. Vy	5	19.58	-535.00	8.07
			Max. Vx	8	20.39	-8.73	-564.25
			Max. Torque	9			-6.58
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-19.15	2.53	4.69
			Max. Mx	5	-10.41	-634.91	9.00
			Max. My	2	-10.30	-18.66	669.25
			Max. Vy	5	20.39	-634.91	9.00
			Max. Vx	8	21.19	-9.46	-668.20
			Max. Torque	9			-6.60
			Max Tension	1	0.00	0.00	0.00
L11	99.5 - 94.5	Pole	Max. Compression	14	-23.85	1.65	3.90
			Max. Mx	5	-13.48	-751.18	9.72
			Max. My	8	-13.36	-10.34	-788.55
			Max. Vy	5	24.57	-751.18	9.72
			Max. Vx	8	25.38	-10.34	-788.55
			Max. Torque	9			-6.60
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-24.85	1.73	3.88
			Max. Mx	5	-14.29	-875.88	10.66
			Max. My	8	-14.18	-11.08	-917.33
			Max. Vy	5	25.33	-875.88	10.66
			Max. Vx	8	26.14	-11.08	-917.33
			Max. Torque	11			-4.17
			Max Tension	1	0.00	0.00	0.00
L13	89.5 - 84.5	Pole	Max. Compression	14	-25.87	1.80	3.86
			Max. Mx	5	-15.14	-1004.39	11.60
			Max. My	8	-15.03	-11.81	-1049.91
			Max. Vy	5	26.09	-1004.39	11.60
			Max. Vx	8	26.90	-11.81	-1049.91

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	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	84.5 - 79.5	Pole	Max. Torque	11			-4.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.28	1.87	3.84
			Max. Mx	5	-18.48	-1146.98	12.54
			Max. My	8	-18.37	-12.55	-1196.57
			Max. Vy	5	30.96	-1146.98	12.54
			Max. Vx	8	31.78	-12.55	-1196.57
L15	79.5 - 74.5	Pole	Max. Torque	11			-4.13
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-32.40	1.95	3.83
			Max. Mx	5	-19.46	-1303.60	13.48
			Max. My	8	-19.35	-13.29	-1357.28
			Max. Vy	5	31.71	-1303.60	13.48
			Max. Vx	8	32.52	-13.29	-1357.28
L16	74.5 - 70.41	Pole	Max. Torque	11			-4.12
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33.89	2.01	3.81
			Max. Mx	5	-20.57	-1435.52	14.25
			Max. My	8	-20.47	-13.90	-1492.55
			Max. Vy	5	32.96	-1435.52	14.25
			Max. Vx	8	33.77	-13.90	-1492.55
L17	70.41 - 70.16	Pole	Max. Torque	11			-4.10
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33.96	2.02	3.81
			Max. Mx	5	-20.64	-1443.77	14.30
			Max. My	8	-20.55	-13.94	-1500.99
			Max. Vy	5	33.00	-1443.77	14.30
			Max. Vx	8	33.81	-13.94	-1500.99
L18	70.16 - 65.16	Pole	Max. Torque	11			-4.09
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.42	2.09	3.79
			Max. Mx	5	-21.93	-1610.86	15.24
			Max. My	8	-21.84	-14.67	-1672.16
			Max. Vy	5	33.86	-1610.86	15.24
			Max. Vx	8	34.67	-14.67	-1672.16
L19	65.16 - 63.91	Pole	Max. Torque	11			-4.09
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.79	2.11	3.78
			Max. Mx	5	-22.26	-1653.30	15.47
			Max. My	8	-22.17	-14.86	-1715.62
			Max. Vy	5	34.08	-1653.30	15.47
			Max. Vx	8	34.89	-14.86	-1715.62
L20	63.91 - 63.66	Pole	Max. Torque	11			-4.07
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.86	2.12	3.78
			Max. Mx	5	-22.34	-1661.82	15.52
			Max. My	8	-22.25	-14.89	-1724.34
			Max. Vy	5	34.11	-1661.82	15.52
			Max. Vx	8	34.92	-14.89	-1724.34
L21	63.66 - 58.25	Pole	Max. Torque	11			-4.06
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.97	2.12	3.78
			Max. Mx	5	-22.43	-1675.82	15.59
			Max. My	8	-22.35	-14.95	-1738.67
			Max. Vy	5	34.17	-1675.82	15.59
			Max. Vx	8	34.98	-14.95	-1738.67
L22	58.25 - 57.25	Pole	Max. Torque	11			-4.06
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-38.65	2.21	3.73
			Max. Mx	5	-24.67	-1883.85	16.72
			Max. My	8	-24.60	-15.83	-1951.59



<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p style="text-align: center;">6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p style="text-align: center;">876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p style="text-align: center;">36 of 48</p>
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	<p><b>Client</b></p> <p style="text-align: center;">Crown Castle</p>	<p><b>Designed by</b></p> <p style="text-align: center;">BApple</p>

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	57.25 - 52.47	Pole	Max. Vy	5	35.17	-1883.85	16.72
			Max. Vx	8	35.98	-15.83	-1951.59
			Max. Torque	11			-4.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-40.74	2.28	6.16
			Max. Mx	5	-26.06	-2054.31	17.55
			Max. My	8	-25.99	-16.53	-2125.80
			Max. Vy	5	37.01	-2054.31	17.55
L24	52.47 - 52.22	Pole	Max. Vx	8	37.80	-16.53	-2125.80
			Max. Torque	11			-8.76
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-40.83	2.28	6.16
			Max. Mx	5	-26.15	-2063.56	17.60
			Max. My	8	-26.08	-16.57	-2135.26
			Max. Vy	5	37.04	-2063.56	17.60
			Max. Vx	8	37.83	-16.57	-2135.26
L25	52.22 - 47.22	Pole	Max. Torque	11			-8.76
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-42.57	2.36	6.12
			Max. Mx	5	-27.74	-2250.75	18.52
			Max. My	8	-27.68	-17.30	-2326.41
			Max. Vy	5	37.86	-2250.75	18.52
			Max. Vx	8	38.64	-17.30	-2326.41
			Max. Torque	11			-8.76
L26	47.22 - 42.22	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-44.33	2.43	6.07
			Max. Mx	5	-29.38	-2441.89	19.44
			Max. My	8	-29.32	-18.03	-2521.50
			Max. Vy	5	38.63	-2441.89	19.44
			Max. Vx	8	39.42	-18.03	-2521.50
			Max. Torque	11			-8.74
			Max Tension	1	0.00	0.00	0.00
L27	42.22 - 37.22	Pole	Max. Compression	14	-46.12	2.50	6.03
			Max. Mx	5	-31.05	-2636.86	20.35
			Max. My	8	-31.00	-18.75	-2720.40
			Max. Vy	5	39.39	-2636.86	20.35
			Max. Vx	8	40.17	-18.75	-2720.40
			Max. Torque	11			-8.72
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.88	2.53	6.01
L28	37.22 - 35.125	Pole	Max. Mx	5	-31.75	-2719.66	20.74
			Max. My	8	-31.71	-19.05	-2804.85
			Max. Vy	5	39.69	-2719.66	20.74
			Max. Vx	8	40.47	-19.05	-2804.85
			Max. Torque	11			-8.70
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.98	2.55	6.01
			Max. Mx	5	-31.86	-2729.57	20.77
L29	35.125 - 34.875	Pole	Max. My	8	-31.83	-19.08	-2814.97
			Max. Vy	5	39.72	-2729.57	20.77
			Max. Vx	8	40.50	-19.08	-2814.97
			Max. Torque	11			-8.70
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-47.16	2.55	6.00
			Max. Mx	5	-32.02	-2744.47	20.84
			Max. My	8	-31.98	-19.13	-2830.17
L30	34.875 - 28.75	Pole	Max. Vy	5	39.78	-2744.47	20.84
			Max. Vx	8	40.56	-19.13	-2830.17
			Max. Torque	11			-8.69
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-47.16	2.55	6.00
			Max. Mx	5	-32.02	-2744.47	20.84
			Max. My	8	-31.98	-19.13	-2830.17
			Max. Vy	5	39.78	-2744.47	20.84
L31	28.75 - 27.75	Pole	Max. Vx	8	40.56	-19.13	-2830.17
			Max. Torque	11			-8.69
			Max Tension	1	0.00	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L32	27.75 - 25.875	Pole	Max. Compression	14	-51.87	2.73	5.90
			Max. Mx	5	-36.19	-3016.76	22.03
			Max. My	8	-36.16	-20.03	-3107.87
			Max. Vy	5	40.93	-3016.76	22.03
			Max. Vx	8	41.71	-20.03	-3107.87
			Max. Torque	11			-8.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-52.74	2.93	5.79
			Max. Mx	5	-37.00	-3093.61	22.28
			Max. My	8	-36.97	-20.14	-3186.43
			Max. Vy	5	41.25	-3093.61	22.28
L33	25.875 - 25.75	Pole	Max. Vx	8	42.03	-20.14	-3186.43
			Max. Torque	11			-8.67
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-52.80	2.94	5.78
			Max. Mx	5	-37.08	-3098.75	22.29
			Max. My	8	-37.05	-20.15	-3191.69
			Max. Vy	5	41.25	-3098.75	22.29
			Max. Vx	8	42.02	-20.15	-3191.69
			Max. Torque	11			-8.66
			Max Tension	1	0.00	0.00	0.00
			L34	25.75 - 25.625	Pole	Max. Compression	14
Max. Mx	5	-37.14				-3103.91	22.32
Max. My	8	-37.11				-20.17	-3196.94
Max. Vy	5	41.27				-3103.91	22.32
Max. Vx	8	42.04				-20.17	-3196.94
Max. Torque	11						-8.66
Max Tension	1	0.00				0.00	0.00
Max. Compression	14	-52.91				2.95	5.78
Max. Mx	5	-37.19				-3109.07	22.34
Max. My	8	-37.16				-20.19	-3202.20
Max. Vy	5	41.29				-3109.07	22.34
L35	25.625 - 25.5	Pole	Max. Vx	8	42.06	-20.19	-3202.20
			Max. Torque	11			-8.66
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-55.13	3.02	5.73
			Max. Mx	5	-39.25	-3317.58	23.24
			Max. My	8	-39.23	-20.90	-3414.61
			Max. Vy	5	42.14	-3317.58	23.24
			Max. Vx	8	42.91	-20.90	-3414.61
			Max. Torque	11			-8.66
			Max Tension	1	0.00	0.00	0.00
			L36	25.5 - 20.5	Pole	Max. Compression	14
Max. Mx	5	-41.36				-3530.26	24.14
Max. My	8	-41.34				-21.61	-3631.19
Max. Vy	5	42.97				-3530.26	24.14
Max. Vx	8	43.74				-21.61	-3631.19
Max. Torque	11						-8.63
Max Tension	1	0.00				0.00	0.00
Max. Compression	14	-59.66				3.18	5.64
Max. Mx	5	-43.50				-3747.08	25.03
Max. My	8	-43.48				-22.32	-3851.88
Max. Vy	5	43.80				-3747.08	25.03
L37	20.5 - 15.5	Pole	Max. Vx	8	44.57	-22.32	-3851.88
			Max. Torque	11			-8.60
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-61.86	3.21	5.62
			Max. Mx	5	-45.58	-3967.99	25.92
			Max. My	8	-45.57	-23.04	-4076.64
			Max. Vy	5	44.60	-3967.99	25.92
			Max. Vx	8	45.36	-23.04	-4076.64
			Max. Torque	11			-8.60
			Max Tension	1	0.00	0.00	0.00
			L38	15.5 - 10.5	Pole	Max. Compression	14
Max. Mx	5	-43.50				-3747.08	25.03
Max. My	8	-43.48				-22.32	-3851.88
Max. Vy	5	43.80				-3747.08	25.03
Max. Vx	8	44.57				-22.32	-3851.88
Max. Torque	11						-8.60
Max Tension	1	0.00				0.00	0.00
Max. Compression	14	-61.86				3.21	5.62
Max. Mx	5	-45.58				-3967.99	25.92
Max. My	8	-45.57				-23.04	-4076.64
Max. Vy	5	44.60				-3967.99	25.92
L39	10.5 - 5.5	Pole	Max. Vx	8	45.36	-23.04	-4076.64
			Max. Torque	11			-8.60
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-61.86	3.21	5.62
			Max. Mx	5	-45.58	-3967.99	25.92
			Max. My	8	-45.57	-23.04	-4076.64
			Max. Vy	5	44.60	-3967.99	25.92
			Max. Vx	8	45.36	-23.04	-4076.64
			Max. Torque	11			-8.60
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-61.86	3.21	5.62

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	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L40	5.5 - 0.5	Pole	Max. Torque	11			-8.58
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-63.98	3.21	5.62
			Max. Mx	5	-47.59	-4192.85	26.82
			Max. My	8	-47.59	-23.75	-4305.31
			Max. Vy	5	45.37	-4192.85	26.82
			Max. Vx	8	46.14	-23.75	-4305.31
L41	0.5 - 0	Pole	Max. Torque	11			-8.56
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-64.19	3.21	5.62
			Max. Mx	5	-47.80	-4215.55	26.90
			Max. My	8	-47.80	-23.82	-4328.39
			Max. Vy	5	45.45	-4215.55	26.90
			Max. Vx	8	46.21	-23.82	-4328.39
		Max. Torque	11			-8.55	

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	64.19	0.00	0.00
	Max. H <sub>x</sub>	11	47.81	45.13	-0.10
	Max. H <sub>z</sub>	2	47.81	-0.42	46.11
	Max. M <sub>x</sub>	2	4319.29	-0.42	46.11
	Max. M <sub>z</sub>	5	4215.55	-45.44	0.18
	Max. Torsion	4	6.57	-39.10	23.41
	Min. Vert	27	47.81	-0.13	13.86
	Min. H <sub>x</sub>	5	47.81	-45.44	0.18
	Min. H <sub>z</sub>	8	47.81	-0.14	-46.20
	Min. M <sub>x</sub>	8	-4328.39	-0.14	-46.20
	Min. M <sub>z</sub>	11	-4170.91	45.13	-0.10
	Min. Torsion	11	-8.55	45.13	-0.10

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	47.81	0.00	-0.00	-2.08	1.51	-0.00
Dead+Wind 0 deg - No Ice	47.81	0.42	-46.11	-4319.29	-61.44	0.84
Dead+Wind 30 deg - No Ice	47.81	22.75	-40.05	-3758.39	-2110.38	-3.72
Dead+Wind 60 deg - No Ice	47.81	39.10	-23.41	-2214.27	-3610.54	-6.57
Dead+Wind 90 deg - No Ice	47.81	45.44	-0.18	-26.90	-4215.55	-4.24
Dead+Wind 120 deg - No Ice	47.81	38.94	23.26	2190.25	-3587.95	-5.23
Dead+Wind 150 deg - No Ice	47.81	22.54	40.01	3749.19	-2080.99	-2.28
Dead+Wind 180 deg - No Ice	47.81	0.14	46.20	4328.39	-23.82	1.97
Dead+Wind 210 deg - No Ice	47.81	-22.39	40.33	3796.85	2056.43	6.26
Dead+Wind 240 deg - No Ice	47.81	-39.07	23.16	2169.80	3609.04	7.52
Dead+Wind 270 deg - No Ice	47.81	-45.13	0.10	10.77	4170.91	8.55
Dead+Wind 300 deg - No Ice	47.81	-38.96	-22.84	-2128.71	3594.17	7.03
Dead+Wind 330 deg - No Ice	47.81	-22.13	-40.10	-3768.57	2020.76	5.82
Dead+Ice+Temp	64.19	-0.00	-0.00	-5.62	3.21	0.00

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b> 876354, WESTPORT FIRE DEPARTMENT	<b>Page</b> 39 of 48
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Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead+Wind 0 deg+Ice+Temp	64.19	0.07	-10.20	-968.69	-8.10	-0.06
Dead+Wind 30 deg+Ice+Temp	64.19	5.04	-8.85	-842.67	-469.03	-0.82
Dead+Wind 60 deg+Ice+Temp	64.19	8.68	-5.16	-496.84	-806.65	-1.23
Dead+Wind 90 deg+Ice+Temp	64.19	10.08	-0.03	-9.76	-941.22	-0.68
Dead+Wind 120 deg+Ice+Temp	64.19	8.65	5.14	482.82	-803.02	-0.80
Dead+Wind 150 deg+Ice+Temp	64.19	5.01	8.85	830.97	-464.63	-0.20
Dead+Wind 180 deg+Ice+Temp	64.19	0.03	10.21	959.80	-2.32	0.59
Dead+Wind 210 deg+Ice+Temp	64.19	-4.97	8.90	839.41	464.62	1.33
Dead+Wind 240 deg+Ice+Temp	64.19	-8.67	5.11	477.65	812.29	1.42
Dead+Wind 270 deg+Ice+Temp	64.19	-10.02	0.01	-3.98	938.56	1.50
Dead+Wind 300 deg+Ice+Temp	64.19	-8.66	-5.06	-481.65	810.13	1.13
Dead+Wind 330 deg+Ice+Temp	64.19	-4.93	-8.86	-845.33	459.00	0.85
Dead+Wind 0 deg - Service	47.81	0.13	-13.86	-1301.27	-17.42	0.23
Dead+Wind 30 deg - Service	47.81	6.84	-12.04	-1132.48	-633.96	-1.13
Dead+Wind 60 deg - Service	47.81	11.75	-7.04	-667.79	-1085.31	-1.97
Dead+Wind 90 deg - Service	47.81	13.66	-0.05	-9.60	-1267.36	-1.28
Dead+Wind 120 deg - Service	47.81	11.70	6.99	657.54	-1078.50	-1.60
Dead+Wind 150 deg - Service	47.81	6.77	12.03	1126.69	-625.11	-0.69
Dead+Wind 180 deg - Service	47.81	0.04	13.89	1301.02	-6.09	0.62
Dead+Wind 210 deg - Service	47.81	-6.73	12.12	1141.06	619.89	1.94
Dead+Wind 240 deg - Service	47.81	-11.74	6.96	651.38	1087.01	2.28
Dead+Wind 270 deg - Service	47.81	-13.57	0.03	1.73	1256.04	2.59
Dead+Wind 300 deg - Service	47.81	-11.71	-6.86	-642.01	1082.51	2.13
Dead+Wind 330 deg - Service	47.81	-6.65	-12.05	-1135.52	609.12	1.73

## 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	-47.81	0.00	0.00	47.81	0.00	0.000%
2	0.42	-47.81	-46.11	-0.42	47.81	46.11	0.000%
3	22.75	-47.81	-40.05	-22.75	47.81	40.05	0.000%
4	39.10	-47.81	-23.41	-39.10	47.81	23.41	0.000%
5	45.44	-47.81	-0.18	-45.44	47.81	0.18	0.000%
6	38.94	-47.81	23.26	-38.94	47.81	-23.26	0.000%
7	22.54	-47.81	40.01	-22.54	47.81	-40.01	0.000%
8	0.14	-47.81	46.20	-0.14	47.81	-46.20	0.000%
9	-22.39	-47.81	40.33	22.39	47.81	-40.33	0.000%
10	-39.07	-47.81	23.16	39.07	47.81	-23.16	0.000%
11	-45.13	-47.81	0.10	45.13	47.81	-0.10	0.000%
12	-38.96	-47.81	-22.84	38.96	47.81	22.84	0.000%
13	-22.13	-47.81	-40.10	22.13	47.81	40.10	0.000%
14	0.00	-64.19	0.00	0.00	64.19	0.00	0.000%
15	0.07	-64.19	-10.20	-0.07	64.19	10.20	0.000%
16	5.04	-64.19	-8.85	-5.04	64.19	8.85	0.000%
17	8.68	-64.19	-5.16	-8.68	64.19	5.16	0.000%
18	10.08	-64.19	-0.03	-10.08	64.19	0.03	0.000%
19	8.65	-64.19	5.14	-8.65	64.19	-5.14	0.000%
20	5.01	-64.19	8.85	-5.01	64.19	-8.85	0.000%
21	0.03	-64.19	10.21	-0.03	64.19	-10.21	0.000%
22	-4.97	-64.19	8.90	4.97	64.19	-8.90	0.000%
23	-8.67	-64.19	5.11	8.67	64.19	-5.11	0.000%
24	-10.02	-64.19	0.01	10.02	64.19	-0.01	0.000%
25	-8.66	-64.19	-5.06	8.66	64.19	5.06	0.000%
26	-4.93	-64.19	-8.86	4.93	64.19	8.86	0.000%
27	0.13	-47.81	-13.86	-0.13	47.81	13.86	0.000%
28	6.84	-47.81	-12.04	-6.84	47.81	12.04	0.000%

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	40 of 48
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	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
29	11.75	-47.81	-7.04	-11.75	47.81	7.04	0.000%
30	13.66	-47.81	-0.05	-13.66	47.81	0.05	0.000%
31	11.70	-47.81	6.99	-11.70	47.81	-6.99	0.000%
32	6.77	-47.81	12.03	-6.77	47.81	-12.03	0.000%
33	0.04	-47.81	13.89	-0.04	47.81	-13.89	0.000%
34	-6.73	-47.81	12.12	6.73	47.81	-12.12	0.000%
35	-11.74	-47.81	6.96	11.74	47.81	-6.96	0.000%
36	-13.57	-47.81	0.03	13.57	47.81	-0.03	0.000%
37	-11.71	-47.81	-6.86	11.71	47.81	6.86	0.000%
38	-6.65	-47.81	-12.05	6.65	47.81	12.05	0.000%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000459
2	Yes	5	0.00000001	0.00016199
3	Yes	6	0.00000001	0.00005841
4	Yes	6	0.00000001	0.00006797
5	Yes	5	0.00000001	0.00024769
6	Yes	6	0.00000001	0.00005738
7	Yes	6	0.00000001	0.00006284
8	Yes	5	0.00000001	0.00013525
9	Yes	6	0.00000001	0.00006900
10	Yes	6	0.00000001	0.00005579
11	Yes	5	0.00000001	0.00046019
12	Yes	6	0.00000001	0.00006712
13	Yes	6	0.00000001	0.00005427
14	Yes	4	0.00000001	0.00066759
15	Yes	6	0.00000001	0.00013713
16	Yes	6	0.00000001	0.00013893
17	Yes	6	0.00000001	0.00013568
18	Yes	6	0.00000001	0.00013080
19	Yes	6	0.00000001	0.00013245
20	Yes	6	0.00000001	0.00013509
21	Yes	6	0.00000001	0.00013370
22	Yes	6	0.00000001	0.00013693
23	Yes	6	0.00000001	0.00013392
24	Yes	6	0.00000001	0.00013102
25	Yes	6	0.00000001	0.00013523
26	Yes	6	0.00000001	0.00013883
27	Yes	5	0.00000001	0.00005033
28	Yes	5	0.00000001	0.00013073
29	Yes	5	0.00000001	0.00016575
30	Yes	5	0.00000001	0.00005844
31	Yes	5	0.00000001	0.00012720
32	Yes	5	0.00000001	0.00014325
33	Yes	5	0.00000001	0.00005325
34	Yes	5	0.00000001	0.00017266
35	Yes	5	0.00000001	0.00012862
36	Yes	5	0.00000001	0.00008877
37	Yes	5	0.00000001	0.00016341
38	Yes	5	0.00000001	0.00012162

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	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 143	29.255	27	1.7896	0.0285
L2	143 - 138	27.387	27	1.7768	0.0243
L3	138 - 133	25.539	27	1.7521	0.0205
L4	133 - 128	23.722	27	1.7175	0.0172
L5	128 - 123	21.945	27	1.6747	0.0142
L6	123 - 118	20.217	27	1.6252	0.0116
L7	118 - 113	18.544	27	1.5696	0.0096
L8	113 - 108	16.933	27	1.5041	0.0082
L9	108 - 100.5	15.397	27	1.4294	0.0069
L10	104.5 - 99.5	14.370	27	1.3726	0.0061
L11	99.5 - 94.5	12.952	27	1.3315	0.0056
L12	94.5 - 89.5	11.591	27	1.2663	0.0050
L13	89.5 - 84.5	10.301	27	1.1967	0.0045
L14	84.5 - 79.5	9.086	27	1.1237	0.0041
L15	79.5 - 74.5	7.949	27	1.0477	0.0038
L16	74.5 - 70.41	6.893	27	0.9684	0.0035
L17	70.41 - 70.16	6.092	27	0.9014	0.0032
L18	70.16 - 65.16	6.045	27	0.8972	0.0032
L19	65.16 - 63.91	5.149	27	0.8130	0.0029
L20	63.91 - 63.66	4.939	27	0.7918	0.0029
L21	63.66 - 58.25	4.898	27	0.7876	0.0028
L22	63.25 - 57.25	4.831	27	0.7805	0.0028
L23	57.25 - 52.47	3.882	27	0.7231	0.0027
L24	52.47 - 52.22	3.196	27	0.6461	0.0024
L25	52.22 - 47.22	3.162	27	0.6420	0.0024
L26	47.22 - 42.22	2.533	27	0.5606	0.0020
L27	42.22 - 37.22	1.988	27	0.4785	0.0016
L28	37.22 - 35.125	1.531	27	0.3959	0.0013
L29	35.125 - 34.875	1.364	27	0.3613	0.0011
L30	34.875 - 28.75	1.346	27	0.3584	0.0011
L31	34.5 - 27.75	1.318	27	0.3541	0.0011
L32	27.75 - 25.875	0.849	27	0.3008	0.0009
L33	25.875 - 25.75	0.737	27	0.2722	0.0008
L34	25.75 - 25.625	0.730	27	0.2703	0.0008
L35	25.625 - 25.5	0.722	27	0.2690	0.0008
L36	25.5 - 20.5	0.715	27	0.2677	0.0008
L37	20.5 - 15.5	0.462	27	0.2156	0.0006
L38	15.5 - 10.5	0.264	27	0.1629	0.0005
L39	10.5 - 5.5	0.121	27	0.1105	0.0003
L40	5.5 - 0.5	0.033	27	0.0576	0.0002
L41	0.5 - 0	0.000	27	0.0000	0.0000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.0000	VHLP800-11	27	29.255	1.7896	0.0285	15048
148.0000	Lightning Rod	27	29.255	1.7896	0.0285	15048
144.0000	VHLP2.5-10W	27	27.760	1.7801	0.0251	15048
120.0000	QS66512-3 w/ Mount Pipe	27	19.206	1.5929	0.0102	5030
96.0000	PD220	27	11.992	1.2880	0.0051	4471
82.0000	APXV18-206516S-C-A20 w/ Mount	27	8.507	1.0860	0.0040	3766

<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p style="text-align: center;">6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p style="text-align: center;">876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p style="text-align: center;">42 of 48</p>
	<p><b>Project</b></p> <p style="text-align: center;">15TGPG1400</p>	<p><b>Date</b></p> <p style="text-align: center;">15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p style="text-align: center;">Crown Castle</p>	<p><b>Designed by</b></p> <p style="text-align: center;">BApple</p>

<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>	Pipe					
72.0000	800 10504 w/ Mount Pipe	27	6.397	0.9276	0.0033	3489
53.0000	BSA150B	27	3.268	0.6549	0.0025	3565
50.0000	BULLET III	27	2.872	0.6061	0.0022	3508

### Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation ft</i>	<i>Horz. Deflection in</i>	<i>Gov. Load Comb.</i>	<i>Tilt °</i>	<i>Twist °</i>
L1	148 - 143	96.664	8	5.8802	0.0976
L2	143 - 138	90.552	8	5.8447	0.0836
L3	138 - 133	84.492	8	5.7696	0.0709
L4	133 - 128	78.523	8	5.6608	0.0596
L5	128 - 123	72.678	8	5.5245	0.0495
L6	123 - 118	66.984	8	5.3655	0.0403
L7	118 - 113	61.464	8	5.1874	0.0328
L8	113 - 108	56.147	8	4.9756	0.0272
L9	108 - 100.5	51.067	8	4.7327	0.0228
L10	104.5 - 99.5	47.669	8	4.5471	0.0201
L11	99.5 - 94.5	42.974	8	4.4124	0.0184
L12	94.5 - 89.5	38.469	8	4.1981	0.0164
L13	89.5 - 84.5	34.195	8	3.9689	0.0150
L14	84.5 - 79.5	30.167	8	3.7278	0.0137
L15	79.5 - 74.5	26.396	8	3.4766	0.0125
L16	74.5 - 70.41	22.894	8	3.2142	0.0114
L17	70.41 - 70.16	20.236	8	2.9924	0.0106
L18	70.16 - 65.16	20.080	8	2.9787	0.0106
L19	65.16 - 63.91	17.107	8	2.6997	0.0096
L20	63.91 - 63.66	16.410	8	2.6296	0.0094
L21	63.66 - 58.25	16.273	8	2.6154	0.0094
L22	63.25 - 57.25	16.049	8	2.5921	0.0093
L23	57.25 - 52.47	12.898	8	2.4017	0.0088
L24	52.47 - 52.22	10.622	8	2.1462	0.0081
L25	52.22 - 47.22	10.510	8	2.1328	0.0080
L26	47.22 - 42.22	8.418	8	1.8626	0.0066
L27	42.22 - 37.22	6.610	8	1.5900	0.0054
L28	37.22 - 35.125	5.089	8	1.3160	0.0042
L29	35.125 - 34.875	4.537	8	1.2010	0.0038
L30	34.875 - 28.75	4.474	8	1.1914	0.0037
L31	34.5 - 27.75	4.381	8	1.1771	0.0037
L32	27.75 - 25.875	2.824	8	0.9999	0.0030
L33	25.875 - 25.75	2.449	8	0.9051	0.0027
L34	25.75 - 25.625	2.426	8	0.8987	0.0027
L35	25.625 - 25.5	2.402	8	0.8943	0.0026
L36	25.5 - 20.5	2.379	8	0.8900	0.0026
L37	20.5 - 15.5	1.538	8	0.7168	0.0020
L38	15.5 - 10.5	0.879	8	0.5416	0.0015
L39	10.5 - 5.5	0.403	8	0.3675	0.0010
L40	5.5 - 0.5	0.110	8	0.1917	0.0005
L41	0.5 - 0	0.001	8	0.0173	0.0000

### Critical Deflections and Radius of Curvature - Design Wind

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p>876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p>43 of 48</p>
	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
152.0000	VHLP800-11	8	96.664	5.8802	0.0976	5250
148.0000	Lightning Rod	8	96.664	5.8802	0.0976	5250
144.0000	VHLP2.5-10W	8	91.772	5.8543	0.0863	5250
120.0000	QS66512-3 w/ Mount Pipe	8	63.650	5.2623	0.0356	1576
96.0000	PD220	8	39.798	4.2697	0.0170	1372
82.0000	APXV18-206516S-C-A20 w/ Mount Pipe	8	28.249	3.6034	0.0131	1148
72.0000	800 10504 w/ Mount Pipe	8	21.247	3.0793	0.0109	1060
53.0000	BSA150B	8	10.862	2.1756	0.0082	1078
50.0000	BULLET III	8	9.546	2.0137	0.0074	1060

**Compression Checks**

**Pole Design Data**

Section No.	Elevation	Size	L	L <sub>n</sub>	Kl/r	F <sub>a</sub>	A	Actual P	Allow. P <sub>a</sub>	Ratio P/P <sub>a</sub>
	ft		ft	ft		ksi	in <sup>2</sup>	K	K	
L1	148 - 143 (1)	TP23.0151x22x0.25	5.0000	0.0000	0.0	36.000	18.3259	-3.14	659.73	0.005
L2	143 - 138 (2)	TP24.0301x23.0151x0.25	5.0000	0.0000	0.0	36.000	19.1430	-3.44	689.15	0.005
L3	138 - 133 (3)	TP25.0452x24.0301x0.25	5.0000	0.0000	0.0	36.000	19.9601	-3.76	718.56	0.005
L4	133 - 128 (4)	TP26.0602x25.0452x0.25	5.0000	0.0000	0.0	36.000	20.7772	-4.10	747.98	0.005
L5	128 - 123 (5)	TP27.0753x26.0602x0.25	5.0000	0.0000	0.0	36.000	21.5943	-4.46	777.40	0.006
L6	123 - 118 (6)	TP28.0903x27.0753x0.25	5.0000	0.0000	0.0	36.000	22.4115	-7.90	806.81	0.010
L7	118 - 113 (7)	TP29.1054x28.0903x0.25	5.0000	0.0000	0.0	36.000	23.2286	-8.38	836.23	0.010
L8	113 - 108 (8)	TP30.1204x29.1054x0.25	5.0000	0.0000	0.0	36.000	24.0457	-8.88	865.64	0.010
L9	108 - 100.5 (9)	TP31.643x30.1204x0.25	7.5000	0.0000	0.0	36.000	24.6177	-9.26	886.24	0.010
L10	100.5 - 99.5 (10)	TP31.346x30.331x0.375	5.0000	0.0000	0.0	36.000	37.3975	-10.30	1346.31	0.008
L11	99.5 - 94.5 (11)	TP32.361x31.346x0.375	5.0000	0.0000	0.0	36.000	38.6231	-13.37	1390.43	0.010
L12	94.5 - 89.5 (12)	TP33.3761x32.361x0.375	5.0000	0.0000	0.0	36.000	39.8488	-14.18	1434.56	0.010
L13	89.5 - 84.5 (13)	TP34.3911x33.3761x0.375	5.0000	0.0000	0.0	36.000	41.0744	-15.03	1478.68	0.010
L14	84.5 - 79.5 (14)	TP35.4061x34.3911x0.375	5.0000	0.0000	0.0	36.000	42.3001	-18.37	1522.80	0.012
L15	79.5 - 74.5 (15)	TP36.4211x35.4061x0.375	5.0000	0.0000	0.0	36.000	43.5257	-19.35	1566.93	0.012
L16	74.5 - 70.41 (16)	TP37.2514x36.4211x0.375	4.0900	0.0000	0.0	36.000	44.5283	-20.47	1603.02	0.013
L17	70.41 - 70.16 (17)	TP37.3022x37.2514x0.375	0.2500	0.0000	0.0	36.000	44.5896	-20.55	1605.23	0.013
L18	70.16 - 65.16 (18)	TP38.3172x37.3022x0.375	5.0000	0.0000	0.0	36.000	45.8152	-21.84	1649.35	0.013
L19	65.16 - 63.91 (19)	TP38.571x38.3172x0.375	1.2500	0.0000	0.0	36.000	46.1217	-22.17	1660.38	0.013
L20	63.91 - 63.66 (20)	H1-3+VT (1.34 CR) - 19 TP38.6217x38.571x0.375	0.2500	0.0000	0.0	36.000	46.1829	-22.25	1662.59	0.013
L21	63.66 - 58.25 (21)	H1-3+VT (1.35 CR) - 20 TP39.72x38.6217x0.375	5.4100	0.0000	0.0	36.000	46.2834	-22.35	1666.20	0.013
L22	58.25 - 57.25 (22)	H1-3+VT (1.35 CR) - 21 TP39.1731x37.955x0.4375	6.0000	0.0000	0.0	36.000	54.5687	-24.60	1964.47	0.013
L23	57.25 - 52.47 (23)	TP40.1435x39.1731x0.4375	4.7800	0.0000	0.0	36.000	55.9358	-25.99	2013.69	0.013
L24	52.47 - 52.22 (24)	TP40.1942x40.1435x0.4375	0.2500	0.0000	0.0	36.000	56.0073	-26.08	2016.26	0.013



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	<b>Project</b> 15TGPG1400	<b>Date</b> 15:00:36 12/04/15
	<b>Client</b> Crown Castle	<b>Designed by</b> BApple

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
L25	52.22 - 47.22 (25)	TP41.2093x40.1942x0.4375	5.0000	0.0000	0.0	36.000	57.4373	-27.68	2067.74	0.013
L26	47.22 - 42.22 (26)	H1-3+VT (1.37 CR) - 25 TP42.2244x41.2093x0.4375	5.0000	0.0000	0.0	36.000	58.8673	-29.32	2119.22	0.014
L27	42.22 - 37.22 (27)	H1-3+VT (1.42 CR) - 26 TP43.2395x42.2244x0.4375	5.0000	0.0000	0.0	36.000	60.2973	-31.00	2170.70	0.014
L28	37.22 - 35.125 (28)	H1-3+VT (1.46 CR) - 27 TP43.6648x43.2395x0.4375	2.0950	0.0000	0.0	36.000	60.8964	-31.71	2192.27	0.014
L29	35.125 - 34.875 (29)	H1-3+VT (1.47 CR) - 28 TP43.7155x43.6648x0.6375	0.2500	0.0000	0.0	36.000	88.4284	-31.83	3183.42	0.010
L30	34.875 - 28.75 (30)	TP44.959x43.7155x0.6375	6.1250	0.0000	0.0	36.000	88.5847	-31.98	3189.05	0.010
L31	28.75 - 27.75 (31)	TP44.2869x42.9167x0.5	6.7500	0.0000	0.0	36.000	70.4969	-36.16	2537.89	0.014
L32	27.75 - 25.875 (32)	H1-3+VT (1.39 CR) - 31 TP44.6675x44.2869x0.5	1.8750	0.0000	0.0	36.000	71.1097	-36.97	2559.95	0.014
L33	25.875 - 25.75 (33)	H1-3+VT (1.40 CR) - 32 TP44.6929x44.6675x0.5	0.1250	0.0000	0.0	36.000	71.1505	-37.05	2561.42	0.014
L34	25.75 - 25.625 (34)	H1-3+VT (1.40 CR) - 33 TP44.7182x44.6929x0.75	0.1250	0.0000	0.0	36.000	106.1830	-37.11	3822.60	0.010
L35	25.625 - 25.5 (35)	TP44.7436x44.7182x0.75	0.1250	0.0000	0.0	36.000	106.2450	-37.16	3824.81	0.010
L36	25.5 - 20.5 (36)	TP45.7586x44.7436x0.75	5.0000	0.0000	0.0	36.000	108.6960	-39.23	3913.05	0.010
L37	20.5 - 15.5 (37)	TP46.7736x45.7586x0.7375	5.0000	0.0000	0.0	36.000	109.3240	-41.34	3935.67	0.011
L38	15.5 - 10.5 (38)	TP47.7885x46.7736x0.7375	5.0000	0.0000	0.0	36.000	111.7340	-43.48	4022.44	0.011
L39	10.5 - 5.5 (39)	TP48.8035x47.7885x0.725	5.0000	0.0000	0.0	36.000	112.2390	-45.57	4040.62	0.011
L40	5.5 - 0.5 (40)	TP49.8185x48.8035x0.725	5.0000	0.0000	0.0	36.000	114.6090	-47.59	4125.92	0.012
L41	0.5 - 0 (41)	TP49.92x49.8185x0.725	0.5000	0.0000	0.0	36.000	114.8460	-47.80	4134.45	0.012

### Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M <sub>x</sub> kip-ft	Actual f <sub>bx</sub> ksi	Allow. F <sub>bx</sub> ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M <sub>y</sub> kip-ft	Actual f <sub>by</sub> ksi	Allow. F <sub>by</sub> ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	148 - 143 (1)	TP23.0151x22x0.25	47.82	5.643	36.000	0.157	0.00	0.000	36.000	0.000
L2	143 - 138 (2)	TP24.0301x23.0151x0.25	90.37	9.769	36.000	0.271	0.00	0.000	36.000	0.000
L3	138 - 133 (3)	TP25.0452x24.0301x0.25	135.89	13.507	36.000	0.375	0.00	0.000	36.000	0.000
L4	133 - 128 (4)	TP26.0602x25.0452x0.25	184.47	16.915	36.000	0.470	0.00	0.000	36.000	0.000
L5	128 - 123 (5)	TP27.0753x26.0602x0.25	236.19	20.041	36.000	0.557	0.00	0.000	36.000	0.000
L6	123 - 118 (6)	TP28.0903x27.0753x0.25	305.42	24.052	36.000	0.668	0.00	0.000	36.000	0.000
L7	118 - 113 (7)	TP29.1054x28.0903x0.25	398.82	29.228	36.000	0.812	0.00	0.000	36.000	0.000
L8	113 - 108 (8)	TP30.1204x29.1054x0.25	495.88	33.903	36.000	0.942	0.00	0.000	36.000	0.000
L9	108 - 100.5 (9)	TP31.643x30.1204x0.25	566.00	36.913	36.000	1.025	0.00	0.000	36.000	0.000
L10	100.5 - 99.5 (10)	TP31.346x30.331x0.375	669.51	28.491	36.000	0.791	0.00	0.000	36.000	0.000
L11	99.5 - 94.5 (11)	TP32.361x31.346x0.375	788.72	31.456	36.000	0.874	0.00	0.000	36.000	0.000
L12	94.5 - 89.5 (12)	TP33.3761x32.361x0.375	917.40	34.360	36.000	0.954	0.00	0.000	36.000	0.000
L13	89.5 - 84.5 (13)	TP34.3911x33.3761x0.375	1049.97	37.001	36.000	1.028	0.00	0.000	36.000	0.000
L14	84.5 - 79.5 (14)	TP35.4061x34.3911x0.375	1196.64	39.748	36.000	1.104	0.00	0.000	36.000	0.000

<b>tnxTower</b>  <b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b> 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	<b>Job</b>	876354, WESTPORT FIRE DEPARTMENT	<b>Page</b>	45 of 48
	<b>Project</b>	15TGPG1400	<b>Date</b>	15:00:36 12/04/15
	<b>Client</b>	Crown Castle	<b>Designed by</b>	BApple

Section No.	Elevation ft	Size	Actual $M_x$ kip-ft	Actual $f_{bx}$ ksi	Allow. $F_{bx}$ ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual $M_y$ kip-ft	Actual $f_{by}$ ksi	Allow. $F_{by}$ ksi	Ratio $\frac{f_{by}}{F_{by}}$
L15	79.5 - 74.5 (15)	TP36.4211x35.4061x0.375	1357.34	42.570	36.000	1.183	0.00	0.000	36.000	0.000
L16	74.5 - 70.41 (16)	TP37.2514x36.4211x0.375	1492.61	44.718	36.000	1.242	0.00	0.000	36.000	0.000
L17	70.41 - 70.16 (17)	TP37.3022x37.2514x0.375	1501.06	44.847	36.000	1.246	0.00	0.000	36.000	0.000
L18	70.16 - 65.16 (18)	TP38.3172x37.3022x0.375	1672.22	47.310	36.000	1.314	0.00	0.000	36.000	0.000
L19	65.16 - 63.91 (19)	TP38.571x38.3172x0.375	1715.68	47.894	36.000	1.330	0.00	0.000	36.000	0.000
L20	63.91 - 63.66 (20)	TP38.6217x38.571x0.375	1724.41	48.009	36.000	1.334	0.00	0.000	36.000	0.000
L21	63.66 - 58.25 (21)	TP39.72x38.6217x0.375	1738.73	48.197	36.000	1.339	0.00	0.000	36.000	0.000
L22	58.25 - 57.25 (22)	TP39.1731x37.955x0.4375	1951.65	45.473	36.000	1.263	0.00	0.000	36.000	0.000
L23	57.25 - 52.47 (23)	TP40.1435x39.1731x0.4375	2125.87	47.127	36.000	1.309	0.00	0.000	36.000	0.000
L24	52.47 - 52.22 (24)	TP40.1942x40.1435x0.4375	2135.32	47.216	36.000	1.312	0.00	0.000	36.000	0.000
L25	52.22 - 47.22 (25)	TP41.2093x40.1942x0.4375	2326.47	48.900	36.000	1.358	0.00	0.000	36.000	0.000
L26	47.22 - 42.22 (26)	TP42.2244x41.2093x0.4375	2521.57	50.444	36.000	1.401	0.00	0.000	36.000	0.000
L27	42.22 - 37.22 (27)	TP43.2395x42.2244x0.4375	2720.47	51.859	36.000	1.441	0.00	0.000	36.000	0.000
L28	37.22 - 35.125 (28)	TP43.6648x43.2395x0.4375	2804.92	52.416	36.000	1.456	0.00	0.000	36.000	0.000
L29	35.125 - 34.875 (29)	TP43.7155x43.6648x0.6375	2815.04	36.521	36.000	1.014	0.00	0.000	36.000	0.000
L30	34.875 - 28.75 (30)	TP44.959x43.7155x0.6375	2830.23	36.588	36.000	1.016	0.00	0.000	36.000	0.000
L31	28.75 - 27.75 (31)	TP44.2869x42.9167x0.5	3107.93	49.592	36.000	1.378	0.00	0.000	36.000	0.000
L32	27.75 - 25.875 (32)	TP44.6675x44.2869x0.5	3186.49	49.968	36.000	1.388	0.00	0.000	36.000	0.000
L33	25.875 - 25.75 (33)	TP44.6929x44.6675x0.5	3191.75	49.993	36.000	1.389	0.00	0.000	36.000	0.000
L34	25.75 - 25.625 (34)	TP44.7182x44.6929x0.75	3197.01	33.917	36.000	0.942	0.00	0.000	36.000	0.000
L35	25.625 - 25.5 (35)	TP44.7436x44.7182x0.75	3202.27	33.933	36.000	0.943	0.00	0.000	36.000	0.000
L36	25.5 - 20.5 (36)	TP45.7586x44.7436x0.75	3414.68	34.558	36.000	0.960	0.00	0.000	36.000	0.000
L37	20.5 - 15.5 (37)	TP46.7736x45.7586x0.7375	3631.25	35.700	36.000	0.992	0.00	0.000	36.000	0.000
L38	15.5 - 10.5 (38)	TP47.7885x46.7736x0.7375	3851.95	36.241	36.000	1.007	0.00	0.000	36.000	0.000
L39	10.5 - 5.5 (39)	TP48.8035x47.7885x0.725	4076.70	37.346	36.000	1.037	0.00	0.000	36.000	0.000
L40	5.5 - 0.5 (40)	TP49.8185x48.8035x0.725	4305.38	37.815	36.000	1.050	0.00	0.000	36.000	0.000
L41	0.5 - 0 (41)	TP49.92x49.8185x0.725	4328.46	37.860	36.000	1.052	0.00	0.000	36.000	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V$ K	Actual $f_v$ ksi	Allow. $F_v$ ksi	Ratio $\frac{f_v}{F_v}$	Actual $T$ kip-ft	Actual $f_{vt}$ ksi	Allow. $F_{vt}$ ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	148 - 143 (1)	TP23.0151x22x0.25	8.22	0.448	24.000	0.038	2.86	0.159	24.000	0.007
L2	143 - 138 (2)	TP24.0301x23.0151x0.25	8.81	0.460	24.000	0.039	2.86	0.146	24.000	0.006
L3	138 - 133 (3)	TP25.0452x24.0301x0.25	9.41	0.471	24.000	0.040	2.86	0.134	24.000	0.006

<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p style="text-align: center;">6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p style="text-align: center;"><b>Job</b></p> <p style="text-align: center;">876354, WESTPORT FIRE DEPARTMENT</p>	<p style="text-align: center;"><b>Page</b></p> <p style="text-align: center;">46 of 48</p>
	<p style="text-align: center;"><b>Project</b></p> <p style="text-align: center;">15TGPG1400</p>	<p style="text-align: center;"><b>Date</b></p> <p style="text-align: center;">15:00:36 12/04/15</p>
	<p style="text-align: center;"><b>Client</b></p> <p style="text-align: center;">Crown Castle</p>	<p style="text-align: center;"><b>Designed by</b></p> <p style="text-align: center;">BApple</p>

Section No.	Elevation ft	Size	Actual V K	Actual f <sub>v</sub> ksi	Allow. F <sub>v</sub> ksi	Ratio f <sub>v</sub> F <sub>v</sub>	Actual T kip-ft	Actual f <sub>vt</sub> ksi	Allow. F <sub>vt</sub> ksi	Ratio f <sub>vt</sub> F <sub>vt</sub>
L4	133 - 128 (4)	TP26.0602x25.0452x0.25	10.03	0.483	24.000	0.041	2.86	0.124	24.000	0.005
L5	128 - 123 (5)	TP27.0753x26.0602x0.25	10.66	0.494	24.000	0.042	2.87	0.115	24.000	0.005
L6	123 - 118 (6)	TP28.0903x27.0753x0.25	18.32	0.818	24.000	0.069	0.86	0.032	24.000	0.001
L7	118 - 113 (7)	TP29.1054x28.0903x0.25	19.05	0.820	24.000	0.069	0.89	0.031	24.000	0.001
L8	113 - 108 (8)	TP30.1204x29.1054x0.25	19.79	0.823	24.000	0.070	0.91	0.029	24.000	0.001
L9	108 - 100.5 (9)	TP31.643x30.1204x0.25	20.30	0.825	24.000	0.070	0.93	0.029	24.000	0.001
L10	100.5 - 99.5 (10)	TP31.346x30.331x0.375	21.11	0.564	24.000	0.048	0.95	0.019	24.000	0.001
L11	99.5 - 94.5 (11)	TP32.361x31.346x0.375	25.29	0.655	24.000	0.055	1.40	0.026	24.000	0.001
L12	94.5 - 89.5 (12)	TP33.3761x32.361x0.375	26.14	0.656	24.000	0.056	1.45	0.026	24.000	0.001
L13	89.5 - 84.5 (13)	TP34.3911x33.3761x0.375	26.90	0.655	24.000	0.055	1.47	0.024	24.000	0.001
L14	84.5 - 79.5 (14)	TP35.4061x34.3911x0.375	31.78	0.751	24.000	0.064	1.49	0.023	24.000	0.001
L15	79.5 - 74.5 (15)	TP36.4211x35.4061x0.375	32.52	0.747	24.000	0.063	1.52	0.022	24.000	0.001
L16	74.5 - 70.41 (16)	TP37.2514x36.4211x0.375	33.77	0.758	24.000	0.064	1.54	0.022	24.000	0.001
L17	70.41 - 70.16 (17)	TP37.3022x37.2514x0.375	33.81	0.758	24.000	0.064	1.54	0.022	24.000	0.001
L18	70.16 - 65.16 (18)	TP38.3172x37.3022x0.375	34.67	0.757	24.000	0.064	1.57	0.021	24.000	0.001
L19	65.16 - 63.91 (19)	TP38.571x38.3172x0.375	34.89	0.756	24.000	0.064	1.57	0.021	24.000	0.001
L20	63.91 - 63.66 (20)	TP38.6217x38.571x0.375	34.92	0.756	24.000	0.064	1.57	0.021	24.000	0.001
L21	63.66 - 58.25 (21)	TP39.72x38.6217x0.375	34.98	0.756	24.000	0.064	1.58	0.021	24.000	0.001
L22	58.25 - 57.25 (22)	TP39.1731x37.955x0.4375	35.98	0.659	24.000	0.056	1.61	0.018	24.000	0.001
L23	57.25 - 52.47 (23)	TP40.1435x39.1731x0.4375	37.80	0.676	24.000	0.057	1.63	0.017	24.000	0.001
L24	52.47 - 52.22 (24)	TP40.1942x40.1435x0.4375	37.83	0.675	24.000	0.057	1.63	0.017	24.000	0.001
L25	52.22 - 47.22 (25)	TP41.2093x40.1942x0.4375	38.64	0.673	24.000	0.057	1.66	0.016	24.000	0.001
L26	47.22 - 42.22 (26)	TP42.2244x41.2093x0.4375	39.42	0.670	24.000	0.057	1.69	0.016	24.000	0.001
L27	42.22 - 37.22 (27)	TP43.2395x42.2244x0.4375	40.17	0.666	24.000	0.056	1.71	0.015	24.000	0.001
L28	37.22 - 35.125 (28)	TP43.6648x43.2395x0.4375	40.47	0.665	24.000	0.056	1.72	0.015	24.000	0.001
L29	35.125 - 34.875 (29)	TP43.7155x43.6648x0.6375	40.50	0.458	24.000	0.039	1.72	0.011	24.000	0.000
L30	34.875 - 28.75 (30)	TP44.959x43.7155x0.6375	40.56	0.458	24.000	0.039	1.73	0.010	24.000	0.000
L31	28.75 - 27.75 (31)	TP44.2869x42.9167x0.5	41.71	0.592	24.000	0.050	1.76	0.013	24.000	0.001
L32	27.75 - 25.875 (32)	TP44.6675x44.2869x0.5	42.03	0.591	24.000	0.050	1.78	0.013	24.000	0.001
L33	25.875 - 25.75 (33)	TP44.6929x44.6675x0.5	42.02	0.591	24.000	0.050	1.79	0.013	24.000	0.001
L34	25.75 - 25.625 (34)	TP44.7182x44.6929x0.75	42.04	0.396	24.000	0.034	1.79	0.009	24.000	0.000
L35	25.625 - 25.5 (35)	TP44.7436x44.7182x0.75	42.06	0.396	24.000	0.034	1.79	0.009	24.000	0.000
L36	25.5 - 20.5 (36)	TP45.7586x44.7436x0.75	42.91	0.395	24.000	0.033	1.84	0.009	24.000	0.000
L37	20.5 - 15.5 (37)	TP46.7736x45.7586x0.7375	43.74	0.400	24.000	0.034	1.88	0.009	24.000	0.000
L38	15.5 - 10.5 (38)	TP47.7885x46.7736x0.7375	44.57	0.399	24.000	0.034	1.92	0.008	24.000	0.000
L39	10.5 - 5.5 (39)	TP48.8035x47.7885x0.725	45.36	0.404	24.000	0.034	1.95	0.008	24.000	0.000
L40	5.5 - 0.5 (40)	TP49.8185x48.8035x0.725	46.14	0.403	24.000	0.034	1.97	0.008	24.000	0.000
L41	0.5 - 0 (41)	TP49.92x49.8185x0.725	46.21	0.402	24.000	0.034	1.97	0.008	24.000	0.000

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p>876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p>47 of 48</p>
	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

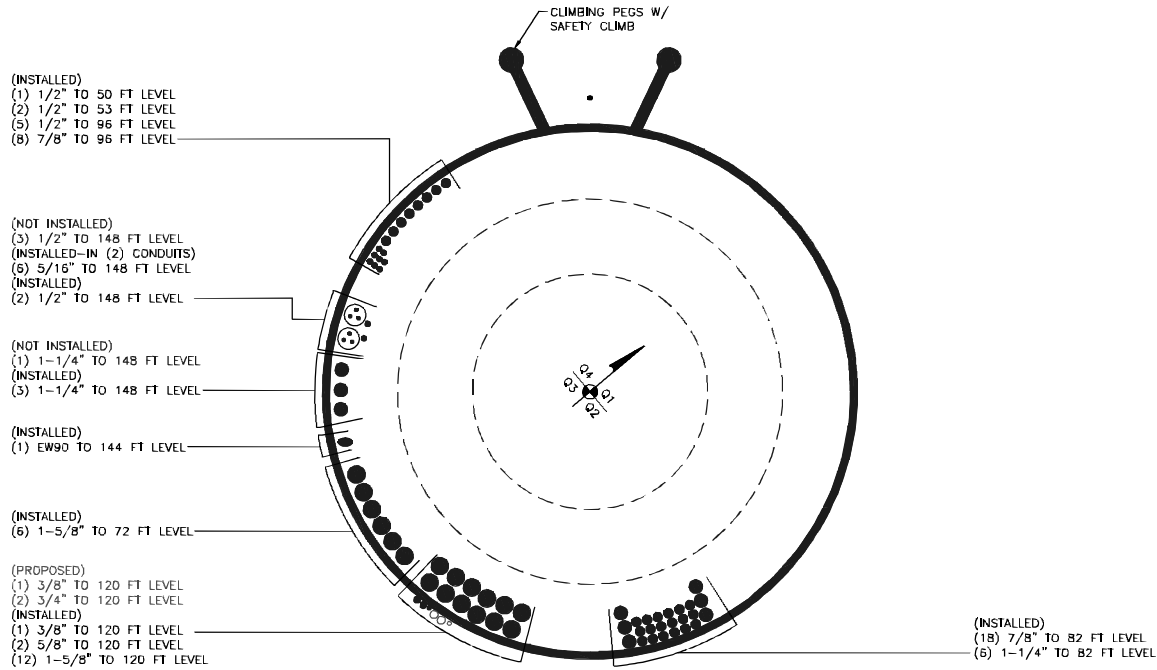
**Pole Interaction Design Data**

Section No.	Elevation <i>ft</i>	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$P$	$f_{bx}$	$f_{by}$	$f_v$	$f_{vt}$			
		$P_a$	$F_{bx}$	$F_{by}$	$F_v$	$F_{vt}$			
L1	148 - 143 (1)	0.005	0.157	0.000	0.038	0.007	0.162	1.333	H1-3+VT ✓
L2	143 - 138 (2)	0.005	0.271	0.000	0.039	0.006	0.277	1.333	H1-3+VT ✓
L3	138 - 133 (3)	0.005	0.375	0.000	0.040	0.006	0.381	1.333	H1-3+VT ✓
L4	133 - 128 (4)	0.005	0.470	0.000	0.041	0.005	0.476	1.333	H1-3+VT ✓
L5	128 - 123 (5)	0.006	0.557	0.000	0.042	0.005	0.563	1.333	H1-3+VT ✓
L6	123 - 118 (6)	0.010	0.668	0.000	0.069	0.001	0.679	1.333	H1-3+VT ✓
L7	118 - 113 (7)	0.010	0.812	0.000	0.069	0.001	0.823	1.333	H1-3+VT ✓
L8	113 - 108 (8)	0.010	0.942	0.000	0.070	0.001	0.953	1.333	H1-3+VT ✓
L9	108 - 100.5 (9)	0.010	1.025	0.000	0.070	0.001	1.037	1.333	H1-3+VT ✓
L10	100.5 - 99.5 (10)	0.008	0.791	0.000	0.048	0.001	0.800	1.333	H1-3+VT ✓
L11	99.5 - 94.5 (11)	0.010	0.874	0.000	0.055	0.001	0.884	1.333	H1-3+VT ✓
L12	94.5 - 89.5 (12)	0.010	0.954	0.000	0.056	0.001	0.965	1.333	H1-3+VT ✓
L13	89.5 - 84.5 (13)	0.010	1.028	0.000	0.055	0.001	1.039	1.333	H1-3+VT ✓
L14	84.5 - 79.5 (14)	0.012	1.104	0.000	0.064	0.001	1.117	1.333	H1-3+VT ✓
L15	79.5 - 74.5 (15)	0.012	1.183	0.000	0.063	0.001	1.196	1.333	H1-3+VT ✓
L16	74.5 - 70.41 (16)	0.013	1.242	0.000	0.064	0.001	1.256	1.333	H1-3+VT ✓
L17	70.41 - 70.16 (17)	0.013	1.246	0.000	0.064	0.001	1.260	1.333	H1-3+VT ✓
L18	70.16 - 65.16 (18)	0.013	1.314	0.000	0.064	0.001	1.328	1.333	H1-3+VT ✓
L19	65.16 - 63.91 (19)	0.013	1.330	0.000	0.064	0.001	1.345	1.333	H1-3+VT ✗
L20	63.91 - 63.66 (20)	0.013	1.334	0.000	0.064	0.001	1.348	1.333	H1-3+VT ✗
L21	63.66 - 58.25 (21)	0.013	1.339	0.000	0.064	0.001	1.353	1.333	H1-3+VT ✗
L22	58.25 - 57.25 (22)	0.013	1.263	0.000	0.056	0.001	1.276	1.333	H1-3+VT ✓
L23	57.25 - 52.47 (23)	0.013	1.309	0.000	0.057	0.001	1.323	1.333	H1-3+VT ✓
L24	52.47 - 52.22	0.013	1.312	0.000	0.057	0.001	1.325	1.333	H1-3+VT ✓

<p><b>tnxTower</b></p> <p><b>Velocitel, Inc., d.b.a. FDH</b> <b>Velocitel</b></p> <p>6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031</p>	<p><b>Job</b></p> <p>876354, WESTPORT FIRE DEPARTMENT</p>	<p><b>Page</b></p> <p>48 of 48</p>
	<p><b>Project</b></p> <p>15TGPG1400</p>	<p><b>Date</b></p> <p>15:00:36 12/04/15</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>BApple</p>

Section No.	Elevation ft	Ratio P P <sub>a</sub>	Ratio f <sub>bx</sub> F <sub>bx</sub>	Ratio f <sub>by</sub> F <sub>by</sub>	Ratio f <sub>v</sub> F <sub>v</sub>	Ratio f <sub>vt</sub> F <sub>vt</sub>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(24)						✓		
L25	52.22 - 47.22	0.013	1.358	0.000	0.057	0.001	1.373 ✗	1.333	H1-3+VT ✗
	(25)								
L26	47.22 - 42.22	0.014	1.401	0.000	0.057	0.001	1.416 ✗	1.333	H1-3+VT ✗
	(26)								
L27	42.22 - 37.22	0.014	1.441	0.000	0.056	0.001	1.456 ✗	1.333	H1-3+VT ✗
	(27)								
L28	37.22 - 35.125	0.014	1.456	0.000	0.056	0.001	1.471 ✗	1.333	H1-3+VT ✗
	(28)								
L29	35.125 - 34.875 (29)	0.010	1.014	0.000	0.039	0.000	1.025 ✓	1.333	H1-3+VT ✓
	(30)								
L30	34.875 - 28.75	0.010	1.016	0.000	0.039	0.000	1.027 ✓	1.333	H1-3+VT ✓
	(31)								
L31	28.75 - 27.75	0.014	1.378	0.000	0.050	0.001	1.392 ✗	1.333	H1-3+VT ✗
	(32)								
L32	27.75 - 25.875	0.014	1.388	0.000	0.050	0.001	1.403 ✗	1.333	H1-3+VT ✗
	(33)								
L33	25.875 - 25.75	0.014	1.389	0.000	0.050	0.001	1.404 ✗	1.333	H1-3+VT ✗
	(34)								
L34	25.75 - 25.625	0.010	0.942	0.000	0.034	0.000	0.952 ✓	1.333	H1-3+VT ✓
	(35)								
L35	25.625 - 25.5	0.010	0.943	0.000	0.034	0.000	0.953 ✓	1.333	H1-3+VT ✓
	(36)								
L36	25.5 - 20.5 (36)	0.010	0.960	0.000	0.033	0.000	0.970 ✓	1.333	H1-3+VT ✓
	(37)								
L37	20.5 - 15.5 (37)	0.011	0.992	0.000	0.034	0.000	1.002 ✓	1.333	H1-3+VT ✓
	(38)								
L38	15.5 - 10.5 (38)	0.011	1.007	0.000	0.034	0.000	1.018 ✓	1.333	H1-3+VT ✓
	(39)								
L39	10.5 - 5.5 (39)	0.011	1.037	0.000	0.034	0.000	1.049 ✓	1.333	H1-3+VT ✓
	(40)								
L40	5.5 - 0.5 (40)	0.012	1.050	0.000	0.034	0.000	1.062 ✓	1.333	H1-3+VT ✓
	(41)								
L41	0.5 - 0 (41)	0.012	1.052	0.000	0.034	0.000	1.064 ✓	1.333	H1-3+VT ✓

**APPENDIX B**  
**BASE LEVEL DRAWING**



REV	DATE	DESCRIPTION
1	20/05/14	UPDATED PER WORK ORDER # 773050
2	21/1/2014	UPDATED PER WORK ORDER 762446
3	10/10/2014	UPDATED PER WORK ORDER 835446, 788208
4	8/4/2015	UPDATED PER WORK ORDER 1046807
5	20/4/2015	UPDATED PER WORK ORDER 1041310 1042907
6	14/7/2015	UPDATED PER WORK ORDER 1032988
7	8/8/2015	UPDATED PER WORK ORDER 1100206
8	17/8/2015	UPDATED PER WORK ORDER 1122200
9	1/12/2015	UPDATED PER WORK ORDER 1160778

DRAWN BY: **KAN**  
 CHECKED BY: **CM**  
 DRAWING DATE: **07/12/07**

**SITE NUMBER:** \_\_\_\_\_  
**SITE NAME:** \_\_\_\_\_  
**SITE ADDRESS:** \_\_\_\_\_  
**WESTPORT FIRE DEPARTMENT**  
**BUSINESS UNIT NUMBER:** \_\_\_\_\_  
**876304**  
**SITE ADDRESS:** \_\_\_\_\_  
**516 POST ROAD EAST**  
**WESTPORT, CT 06880**  
**FAIRFIELD COUNTY**  
**USA**  
**SHEET TITLE:** \_\_\_\_\_  
**BASE LEVEL**  
**SHEET NUMBER:** \_\_\_\_\_

BUSINESS UNIT: 876354 TOWER ID: C\_BASELEVEL

**BASE LEVEL DRAWING**

SCALE: 1" = 1'-0"

**1**

**A1-0**

**APPENDIX C**  
**ADDITIONAL CALCULATIONS**



# Additional Calculations



Site BU: 856867  
Work Order: 1160781



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## Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	148	47.5	4	12	22	31.643	0.25	1	A607-60
2	104.5	46.25	5	12	30.33	39.72	0.375	1.5	A607-60
3	63.25	34.5	5.75	12	37.95	44.959	0.4375	1.75	A607-60
4	34.5	34.5	0	12	42.92	49.92	0.5	2	A607-60

## Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number												
						1	2	3	4	5	6	7	8	9	10	11	12
1	0	35.125	plate	CCI-WSFP-065125	2		E				E						
2	0	25.75	plate	CCI-WSFP-065125	2								E			E	
3	25.875	35.125	plate	CCI-SFP-065125	1										E		
4	35.125	52.47	plate	CCI-SFP-060100	3		E			E					E		
5	63.91	70.41	plate	CCI-SFP-045100	3				E			E					E
6																	
7																	
8																	
9																	
10																	

## Reinforcement Details

	B (in)	H (in)	Gross Area (in <sup>2</sup> )	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L <sub>v</sub> (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
2	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
3	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
4	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
5	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65

# TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	148 - 143	5		12	22.000	23.015	0.25	A607-60	1.000
2	143 - 138	5		12	23.015	24.030	0.25	A607-60	1.000
3	138 - 133	5		12	24.030	25.045	0.25	A607-60	1.000
4	133 - 128	5		12	25.045	26.060	0.25	A607-60	1.000
5	128 - 123	5		12	26.060	27.075	0.25	A607-60	1.000
6	123 - 118	5		12	27.075	28.090	0.25	A607-60	1.000
7	118 - 113	5		12	28.090	29.105	0.25	A607-60	1.000
8	113 - 108	5		12	29.105	30.120	0.25	A607-60	1.000
9	108 - 104.5	7.5	4	12	30.120	31.643	0.25	A607-60	1.000
10	104.5 - 99.5	5		12	30.331	31.346	0.375	A607-60	1.000
11	99.5 - 94.5	5		12	31.346	32.361	0.375	A607-60	1.000
12	94.5 - 89.5	5		12	32.361	33.376	0.375	A607-60	1.000
13	89.5 - 84.5	5		12	33.376	34.391	0.375	A607-60	1.000
14	84.5 - 79.5	5		12	34.391	35.406	0.375	A607-60	1.000
15	79.5 - 74.5	5		12	35.406	36.421	0.375	A607-60	1.000
16	74.5 - 70.41	4.09		12	36.421	37.251	0.375	A607-60	1.000
17	70.41 - 70.16	0.25		12	37.251	37.302	0.375	A607-60	1.000
18	70.16 - 65.16	5		12	37.302	38.317	0.375	A607-60	1.000
19	65.16 - 63.91	1.25		12	38.317	38.571	0.375	A607-60	1.000
20	63.91 - 63.66	0.25		12	38.571	38.622	0.375	A607-60	1.000
21	63.66 - 63.25	5.41	5	12	38.622	39.720	0.375	A607-60	1.000
22	63.25 - 57.25	6		12	37.955	39.173	0.4375	A607-60	1.000
23	57.25 - 52.47	4.78		12	39.173	40.143	0.4375	A607-60	1.000
24	52.47 - 52.22	0.25		12	40.143	40.194	0.4375	A607-60	1.000
25	52.22 - 47.22	5		12	40.194	41.209	0.4375	A607-60	1.000
26	47.22 - 42.22	5		12	41.209	42.224	0.4375	A607-60	1.000
27	42.22 - 37.22	5		12	42.224	43.239	0.4375	A607-60	1.000
28	37.22 - 35.125	2.095		12	43.239	43.665	0.4375	A607-60	1.000
29	35.125 - 34.875	0.25		12	43.665	43.716	0.6375	A607-60	0.966
30	34.875 - 34.5	6.125	5.75	12	43.716	44.959	0.6375	A607-60	0.965
31	34.5 - 27.75	6.75		12	42.917	44.287	0.5	A607-60	1.000
32	27.75 - 25.875	1.875		12	44.287	44.667	0.5	A607-60	1.000
33	25.875 - 25.75	0.125		12	44.667	44.693	0.5	A607-60	1.000
34	25.75 - 25.625	0.125		12	44.693	44.718	0.75	A607-60	0.977
35	25.625 - 25.5	0.125		12	44.718	44.744	0.75	A607-60	0.977
36	25.5 - 20.5	5		12	44.744	45.759	0.75	A607-60	0.970
37	20.5 - 15.5	5		12	45.759	46.774	0.7375	A607-60	0.979
38	15.5 - 10.5	5		12	46.774	47.789	0.7375	A607-60	0.973
39	10.5 - 5.5	5		12	47.789	48.804	0.725	A607-60	0.983
40	5.5 - 0.5	5		12	48.804	49.819	0.725	A607-60	0.977
41	0.5 - 0	0.5		12	49.819	49.920	0.725	A607-60	0.976

## TNX Section Forces

Increment (ft):		5	TNX Output		
	Section Height (ft)	P <sub>u</sub> (K)	M <sub>ux</sub> (kip-ft)	V <sub>u</sub> (K)	
1	148 - 143	3.1365	47.818	8.2182	
2	143 - 138	3.4391	90.366	8.806	
3	138 - 133	3.7609	135.89	9.4098	
4	133 - 128	4.102	184.47	10.029	
5	128 - 123	4.4627	236.19	10.662	
6	123 - 118	7.8956	305.42	18.324	
7	118 - 113	8.3757	398.82	19.052	
8	113 - 108	8.8847	495.88	19.785	
9	108 - 104.5	9.2567	566	20.299	
10	104.5 - 99.5	10.302	669.51	21.107	
11	99.5 - 94.5	13.368	788.71	25.294	
12	94.5 - 89.5	14.179	917.4	26.142	
13	89.5 - 84.5	15.03	1050	26.902	
14	84.5 - 79.5	18.368	1196.6	31.776	
15	79.5 - 74.5	19.354	1357.3	32.524	
16	74.5 - 70.41	20.473	1492.6	33.772	
17	70.41 - 70.16	20.55	1501.1	33.808	
18	70.16 - 65.16	21.844	1672.2	34.672	
19	65.16 - 63.91	22.171	1715.7	34.887	
20	63.91 - 63.66	22.255	1724.4	34.918	
21	63.66 - 63.25	22.348	1738.7	34.981	
22	63.25 - 57.25	24.595	1951.7	35.983	
23	57.25 - 52.47	25.988	2125.9	37.802	
24	52.47 - 52.22	26.084	2135.3	37.831	
25	52.22 - 47.22	27.681	2326.5	38.644	
26	47.22 - 42.22	29.325	2521.6	39.42	
27	42.22 - 37.22	31.002	2720.5	40.169	
28	37.22 - 35.125	31.714	2804.9	40.474	
29	35.125 - 34.875	31.826	2815	40.5	
30	34.875 - 34.5	31.983	2830.2	40.56	
31	34.5 - 27.75	36.157	3107.9	41.714	
32	27.75 - 25.875	36.966	3186.5	42.031	
33	25.875 - 25.75	37.054	3191.8	42.023	
34	25.75 - 25.625	37.107	3197	42.044	
35	25.625 - 25.5	37.158	3202.3	42.065	
36	25.5 - 20.5	39.225	3414.7	42.914	
37	20.5 - 15.5	41.339	3631.2	43.738	
38	15.5 - 10.5	43.484	3851.9	44.566	
39	10.5 - 5.5	45.6	4076.7	45.4	
40	5.5 - 0.5	47.6	4305.4	46.1	
41	0.5 - 0	47.8	4328.5	46.2	

# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
148 - 143	Pole	TP23.015x22x0.25	Pole	8.6%	Pass
143 - 138	Pole	TP24.03x23.015x0.25	Pole	14.8%	Pass
138 - 133	Pole	TP25.045x24.03x0.25	Pole	20.7%	Pass
133 - 128	Pole	TP26.06x25.045x0.25	Pole	26.3%	Pass
128 - 123	Pole	TP27.075x26.06x0.25	Pole	31.5%	Pass
123 - 118	Pole	TP28.09x27.075x0.25	Pole	38.6%	Pass
118 - 113	Pole	TP29.105x28.09x0.25	Pole	47.5%	Pass
113 - 108	Pole	TP30.12x29.105x0.25	Pole	55.9%	Pass
108 - 104.5	Pole	TP31.643x30.12x0.25	Pole	61.5%	Pass
104.5 - 99.5	Pole	TP31.346x30.331x0.375	Pole	42.2%	Pass
99.5 - 94.5	Pole	TP32.361x31.346x0.375	Pole	46.6%	Pass
94.5 - 89.5	Pole	TP33.376x32.361x0.375	Pole	50.9%	Pass
89.5 - 84.5	Pole	TP34.391x33.376x0.375	Pole	54.9%	Pass
84.5 - 79.5	Pole	TP35.406x34.391x0.375	Pole	59.6%	Pass
79.5 - 74.5	Pole	TP36.421x35.406x0.375	Pole	64.4%	Pass
74.5 - 70.41	Pole	TP37.251x36.421x0.375	Pole	68.2%	Pass
70.41 - 70.16	Pole	TP37.302x37.251x0.375	Pole	68.4%	Pass
70.16 - 65.16	Pole	TP38.317x37.302x0.375	Pole	72.8%	Pass
65.16 - 63.91	Pole	TP38.571x38.317x0.375	Pole	73.9%	Pass
63.91 - 63.66	Pole	TP38.622x38.571x0.375	Pole	74.1%	Pass
63.66 - 63.25	Pole	TP39.72x38.622x0.375	Pole	74.5%	Pass
63.25 - 57.25	Pole	TP39.173x37.955x0.4375	Pole	67.3%	Pass
57.25 - 52.47	Pole	TP40.143x39.173x0.4375	Pole	69.9%	Pass
52.47 - 52.22	Pole	TP40.194x40.143x0.4375	Pole	70.1%	Pass
52.22 - 47.22	Pole	TP41.209x40.194x0.4375	Pole	73.2%	Pass
47.22 - 42.22	Pole	TP42.224x41.209x0.4375	Pole	76.1%	Pass
42.22 - 37.22	Pole	TP43.239x42.224x0.4375	Pole	78.9%	Pass
37.22 - 35.13	Pole	TP43.665x43.239x0.4375	Pole	80.0%	Pass
35.13 - 34.88	Pole + Reinf.	TP43.716x43.665x0.6375	Reinf. 3 Tension Rupture	76.1%	Pass
34.88 - 34.5	Pole + Reinf.	TP44.959x43.716x0.6375	Reinf. 3 Tension Rupture	76.3%	Pass
34.5 - 27.75	Pole	TP44.287x42.917x0.5	Pole	73.5%	Pass
27.75 - 25.88	Pole	TP44.667x44.287x0.5	Pole	74.0%	Pass
25.88 - 25.75	Pole	TP44.693x44.667x0.5	Pole	79.3%	Pass
25.75 - 25.63	Pole + Reinf.	TP44.718x44.693x0.75	Reinf. 1 Tension Rupture	71.7%	Pass
25.63 - 25.5	Pole + Reinf.	TP44.744x44.718x0.75	Reinf. 1 Tension Rupture	71.7%	Pass
25.5 - 20.5	Pole + Reinf.	TP45.759x44.744x0.75	Reinf. 1 Tension Rupture	73.6%	Pass
20.5 - 15.5	Pole + Reinf.	TP46.774x45.759x0.7375	Reinf. 1 Tension Rupture	75.4%	Pass
15.5 - 10.5	Pole + Reinf.	TP47.789x46.774x0.7375	Reinf. 1 Tension Rupture	77.0%	Pass
10.5 - 5.5	Pole + Reinf.	TP48.804x47.789x0.725	Reinf. 1 Tension Rupture	78.6%	Pass
5.5 - 0.5	Pole + Reinf.	TP49.819x48.804x0.725	Reinf. 1 Tension Rupture	80.1%	Pass
0.5 - 0	Pole + Reinf.	TP49.92x49.819x0.725	Reinf. 1 Tension Rupture	80.2%	Pass
				Summary	
			Pole	80.0%	Pass
			Reinforcement	80.2%	Pass
			Overall	80.2%	Pass

# Additional Calculations

Section Elevation (ft)	Moment of Inertia (in <sup>4</sup> )			Area (in <sup>2</sup> )			% Capacity					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
148 - 143	1214	n/a	1214	18.30	n/a	18.30	8.6%					
143 - 138	1384	n/a	1384	19.12	n/a	19.12	14.8%					
138 - 133	1568	n/a	1568	19.93	n/a	19.93	20.7%					
133 - 128	1769	n/a	1769	20.75	n/a	20.75	26.3%					
128 - 123	1986	n/a	1986	21.56	n/a	21.56	31.5%					
123 - 118	2220	n/a	2220	22.38	n/a	22.38	38.6%					
118 - 113	2472	n/a	2472	23.20	n/a	23.20	47.5%					
113 - 108	2742	n/a	2742	24.01	n/a	24.01	55.9%					
108 - 104.5	2943	n/a	2943	24.58	n/a	24.58	61.5%					
104.5 - 99.5	4585	n/a	4585	37.34	n/a	37.34	42.2%					
99.5 - 94.5	5051	n/a	5051	38.57	n/a	38.57	46.6%					
94.5 - 89.5	5547	n/a	5547	39.79	n/a	39.79	50.9%					
89.5 - 84.5	6075	n/a	6075	41.02	n/a	41.02	54.9%					
84.5 - 79.5	6635	n/a	6635	42.24	n/a	42.24	59.6%					
79.5 - 74.5	7228	n/a	7228	43.46	n/a	43.46	64.4%					
74.5 - 70.41	7739	n/a	7739	44.46	n/a	44.46	68.2%					
70.41 - 70.16	7771	n/a	7771	44.53	n/a	44.53	68.4%					
70.16 - 65.16	8430	n/a	8430	45.75	n/a	45.75	72.8%					
65.16 - 63.91	8600	n/a	8600	46.06	n/a	46.06	73.9%					
63.91 - 63.66	8635	n/a	8635	46.12	n/a	46.12	74.1%					
63.66 - 63.25	8691	n/a	8691	46.22	n/a	46.22	74.5%					
63.25 - 57.25	10465	n/a	10465	54.49	n/a	54.49	67.3%					
57.25 - 52.47	11271	n/a	11271	55.86	n/a	55.86	69.9%					
52.47 - 52.22	11315	n/a	11315	55.93	n/a	55.93	70.1%					
52.22 - 47.22	12204	n/a	12204	57.36	n/a	57.36	73.2%					
47.22 - 42.22	13138	n/a	13138	58.78	n/a	58.78	76.1%					
42.22 - 37.22	14119	n/a	14119	60.21	n/a	60.21	78.9%					
37.22 - 35.13	14544	n/a	14544	60.81	n/a	60.81	80.0%					
35.13 - 34.88	14595	6205	20800	60.88	24.38	85.26	66.5%	76.1%		76.1%		
34.88 - 34.5	14672	6226	20898	60.99	24.38	85.36	66.6%	76.3%		76.3%		
34.5 - 27.75	17276	n/a	17276	70.40	n/a	70.40	73.5%					
27.75 - 25.88	17730	n/a	17730	71.01	n/a	71.01	74.0%					
25.88 - 25.75	18064	n/a	18064	71.05	n/a	71.05	79.3%					
25.75 - 25.63	17832	8544	26376	71.09	32.50	103.59	64.1%	71.7%	66.4%			
25.63 - 25.5	17863	8553	26416	71.13	32.50	103.63	64.2%	71.7%	66.5%			
25.5 - 20.5	19119	8933	28052	72.76	32.50	105.26	65.9%	73.6%	68.3%			
20.5 - 15.5	20433	9322	29755	74.39	32.50	106.89	67.5%	75.4%	70.0%			
15.5 - 10.5	21806	9719	31525	76.03	32.50	108.53	69.0%	77.0%	71.6%			
10.5 - 5.5	23239	10125	33363	77.66	32.50	110.16	70.5%	78.6%	73.2%			
5.5 - 0.5	24733	10538	35271	79.29	32.50	111.79	71.8%	80.1%	74.6%			
0.5 - 0	24886	10580	35466	79.45	32.50	111.95	71.9%	80.2%	74.8%			

Note: Section capacity checked in 5 degree increments.

## Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

- Assumptions:**
- 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
  - 2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
  - 3) Clear space between bottom of leveling nut and top of concrete **not** exceeding  $(1) \times (\text{Rod Diameter})$

### Site Data

Site BU No: 876354  
 Site Name: WESTPORT FIRE DEPT.  
 Job No. 15TGPG1400

### Anchor Rod Data

Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	58	in
Anchor Spacing:	6	in

### Plate Data

W=Side:	60	in
Thick:	2.75	in
Grade:	50	ksi
Clip Distance:	8	in

### Stiffener Data (Welding at both sides)

Configuration:	Stiffened	
Weld Type:	Both	**
Groove Depth:	0.5	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.5	in
Fillet V. Weld:	0.375	in
Width:	6	in
Height:	18	in
Thick:	1	in
Notch:	0.75	in
Grade:	50	ksi
Weld str.:	70	ksi

### Pole Data

Diam:	49.92	in
Thick:	0.5	in
Grade:	60	ksi
# of Sides:	12	"0" IF Round

### Stress Increase Factor

ASD ASIF:	1.333	
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\*\* Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

### Base Reactions

TIA Revision:	F	
Unfactored Moment, M:	4328	ft-kips
Unfactored Axial, P:	48	kips
Unfactored Shear, V:	46	kips

### Anchor Rod Results

TIA F --> Maximum Rod Tension: 176.7 Kips  
 Allowable Tension: 195.0 Kips  
 Anchor Rod Stress Ratio: 90.6% **Pass**

### Base Plate Results

Base Plate Stress: 5.5 ksi  
 Allowable PL Bending Stress: 26.7 ksi  
 Base Plate Stress Ratio: 20.6% **Pass**

### Shear Check Only

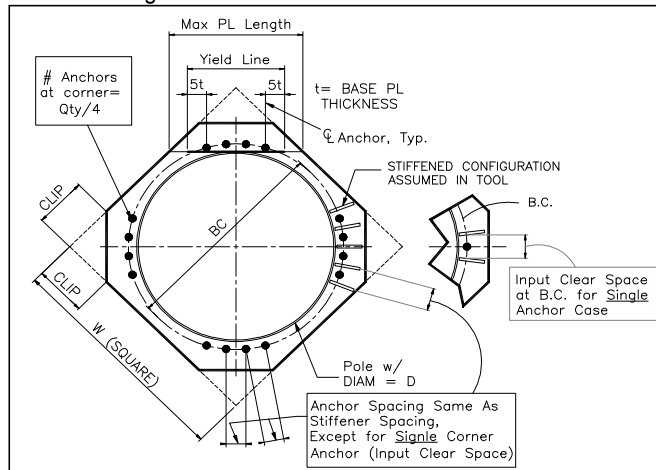
PL Ref. Data
Yield Line (in): N/A, Roark
Max PL Length: 34.93

### Stiffener Results

Horizontal Weld : 53.2% **Pass**  
 Vertical Weld: 45.9% **Pass**  
 Plate Flex+Shear,  $f_b/F_b + (f_v/F_v)^2$ : 13.1% **Pass**  
 Plate Tension+Shear,  $f_t/F_t + (f_v/F_v)^2$ : 53.6% **Pass**  
 Plate Comp. (AISC Bracket): 54.7% **Pass**

### Pole Results

Pole Punching Shear Check: 10.1% **Pass**



BU:	876354
Site Name:	WESTPORT FIRE DEPARTMENT
App Number:	322279
Work Order:	1160781

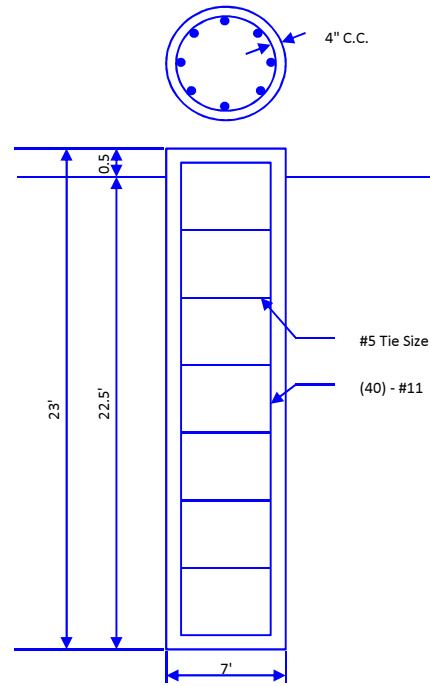


Monopole Drilled Pier

Input

<b>Criteria</b>	
TIA Revision:	F
ACI 318 Revision:	2005
Seismic Category:	B
<b>Forces</b>	
Compression	48 kips
Shear	46 kips
Moment	4328 k-ft
Swelling Force	0 kips
<b>Foundation Dimensions</b>	
Pier Diameter:	7 ft
Ext. above grade:	0.5 ft
Depth below grade:	22.5 ft
<b>Material Properties</b>	
Number of Rebar:	40
Rebar Size:	11
Tie Size	5
Rebar tensile strength:	60 ksi
Concrete Strength:	3000 psi
Ultimate Concrete Strain	0.003 in/in
Clear Cover to Ties:	4 in

Soil Profile: Soil 1



Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Friction (ksf)	Ultimate Comp. Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	3.33	0	3.33	100		0				
2	4.67	3.33	8	100		0				
3	5	8	13	135		45	1.0133	1.0133		
4	5	13	18	135		45	1.6133	1.6133		
5	4.5	18	22.5	135		45	2.2133	2.2133	99	

Analysis Results

<b>Soil Lateral Capacity</b>	
Depth to Zero Shear:	8.90 ft
Max Moment, Mu:	4771.04 k-ft
Soil Safety Factor:	2.05
Safety Factor Req'd:	2
<b>RATING:</b>	<b>97.5%</b>

<b>Soil Axial Capacity</b>	
Skin Friction (k):	253.92 kips
End Bearing (k):	1904.98 kips
Comp. Capacity (k), φCn:	2158.90 kips
Comp. (k), Cu:	62.40 kips
<b>RATING:</b>	<b>2.9%</b>

<b>Concrete/Steel Check</b>	
Mu (from soil analysis)	6202.35 k-ft
φMn	9107.82 k-ft
<b>RATING:</b>	<b>68.1%</b>

rho provided	1.13
rho required	0.33 OK

Rebar Spacing	4.35
Spacing required	22.56 OK

Dev. Length required	13.27
Dev. Length provided	61.78 OK

**Overall Foundation Rating: 97.5%**

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

AT&T Existing Facility

Site ID: CT2153

Westport FD  
515 Boston Post Road  
Westport, CT 06880

**January 5, 2016**

**EBI Project Number: 6616000020**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general public allowable limit:	<b>10.89 %</b>



January 5, 2016

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

Emissions Analysis for Site: **CT2153 – Westport FD**

EBI Consulting was directed to analyze the proposed AT&T facility located at **515 Boston Post Road, Westport, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed AT&T Wireless antenna facility located at **515 Boston Post Road, Westport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 LTE channels (WCS Band - 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Powerwave 7770.00, Quintel QS66512-3 and the Powerwave P65-16-XLH-RR** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerline of the proposed antennas is **120 feet** above ground level (AGL).
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

### AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	<b>0.77</b>	Antenna B1 MPE%	<b>0.77</b>	Antenna C1 MPE%	<b>0.77</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Quintel QS66512-3	Make / Model:	Quintel QS66512-3	Make / Model:	Quintel QS66512-3
Gain:	11.35 / 14.75 dBd	Gain:	11.35 / 14.75 dBd	Gain:	11.35 / 14.75 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	4,401.21	ERP (W):	4,401.21	ERP (W):	4,401.21
Antenna A2 MPE%	<b>1.39</b>	Antenna B2 MPE%	<b>1.39</b>	Antenna C2 MPE%	<b>1.39</b>
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Powerwave P65-16-XLH-RR	Make / Model:	Powerwave P65-16-XLH-RR	Make / Model:	Powerwave P65-16-XLH-RR
Gain:	12.65 / 15.05 dBd	Gain:	12.65 / 15.05 dBd	Gain:	12.65 / 15.05 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	3,023.80	ERP (W):	3,023.80	ERP (W):	3,023.80
Antenna A3 MPE%	<b>1.19</b>	Antenna B3 MPE%	<b>1.19</b>	Antenna C3 MPE%	<b>1.19</b>

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	<b>3.34 %</b>
Nextel	0.31 %
Westport	1.09 %
Sprint	0.68 %
Westport FD	0.01 %
Clearwire	0.07 %
MetroPCS	4.29 %
T-Mobile	1.10 %
<b>Site Total MPE %:</b>	<b>10.89 %</b>

AT&T Sector 1 Total:	3.34 %
AT&T Sector 2 Total:	3.34 %
AT&T Sector 3 Total:	3.34 %
<b>Site Total:</b>	<b>10.89 %</b>

AT&T _ Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	120	2.29	850	567	0.40 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	120	3.63	1900	1000	0.36 %
AT&T 850 MHz GSM	2	409.37	120	2.26	850	567	0.40 %
AT&T 2300 MHz (WCS) LTE	2	1791.23	120	9.91	2300	1000	0.99 %
AT&T 700 MHz LTE	2	552.23	120	3.06	700	467	0.65 %
AT&T 1900 MHz (PCS) LTE	2	959.67	120	5.31	1900	1000	0.53 %
						<b>Total:</b>	<b>3.34 %</b>

## Summary

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

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

AT&T Sector	Power Density Value (%)
Sector 1:	3.34%
Sector 2:	3.34%
Sector 3 :	3.34%
AT&T Maximum Total (per sector):	3.34%
Site Total:	10.89 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **10.89%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



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