



Crown Castle
3530 Torington Way, Suite 300
Charlotte, NC 28277

July 2, 2014

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

RE: Sprint PCS-Exempt Modification - Crown Site BU: 876335
Sprint PCS Site ID: CT03XC100
Located at: 3 A Birdseye Road, Farmington, CT 06030

Dear Ms. Bachman:

This letter and exhibits are submitted on behalf of Sprint PCS (Sprint). Sprint is making modifications to certain existing sites in its Connecticut system in order to implement their 2.5GHz LTE technology. Please accept this letter and exhibits as notification, pursuant to § 16-50j-73 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mrs. Kathleen A. Eagen, Manager for Town of Farmington.

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at **3 A Birdseye Road, Farmington, CT 06030**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to Sprint’s operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) § 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in the R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Sprint’s additional antennas will be located at the same elevation on the existing tower.
2. There will be no proposed modifications to the ground and no extension of boundaries.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

Melanie A. Bachman

July 2, 2014

Page 2

4. A Structural Modification Report confirming that the tower and foundation can support Sprint's proposed modifications is included as Exhibit-2.
5. The operation of the additional antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table report for Sprint's modified facility is included as Exhibit-3.

For the foregoing reasons, Sprint respectfully submits 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: Donna Neal.

Sincerely,



Jeff Barbadora
Real Estate Specialist

Enclosures

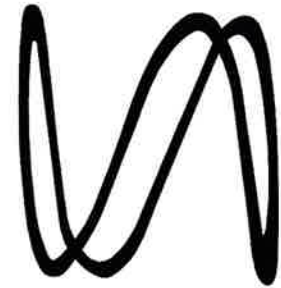
Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

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

cc: Mrs. Kathleen A. Eagen, Manager
Town of Farmington
1 Monteith Drive
Farmington, CT 06032

Sprint



CROWN CASTLE

PROJECT: 2.5 EQUIPMENT DEPLOYMENT
 SITE NAME: EAST FARMINGTON
 SITE CASCADE: CT03XC100
 SITE NUMBER: 876335
 SITE ADDRESS: 3 A BIRDSEYE RD
 FARMINGTON, CT 06030
 SITE TYPE: MONOPOLE TOWER
 MARKET: NORTHERN CONNECTICUT

PLANS PREPARED FOR:

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

Design. Build. Deliver.
 1033 Watervliet Shaker Rd
 Albany, NY 12205
 Office # (518) 690-0790
 Fax # (518) 690-0793
 JOB NUMBER 353-000

MLA PARTNER:

ENGINEERING LICENSE:

DRAWING NOTICE:
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:
EAST FARMINGTON

SITE CASCADE:
CT03XC100

SITE ADDRESS:
3 A BIRDSEYE RD
FARMINGTON, CT 06030

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

SITE INFORMATION

TOWER OWNER:
CROWN ATLANTIC COMPANY LLC
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
(704) 405-6555

LATITUDE (NAD83):
41° 42' 56.94" N
41.71665°

LONGITUDE (NAD83):
72° 48' 37.42" W
-72.810394°

COUNTY:
HARTFORD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL
FARMINGTON

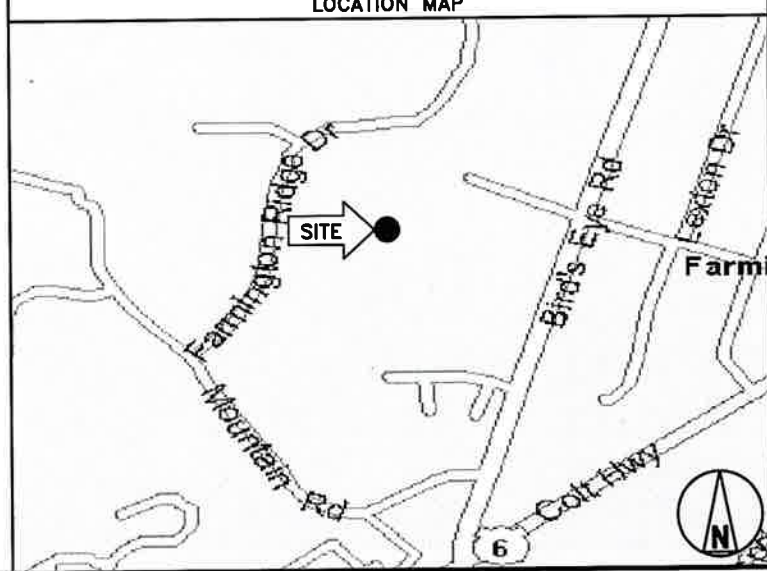
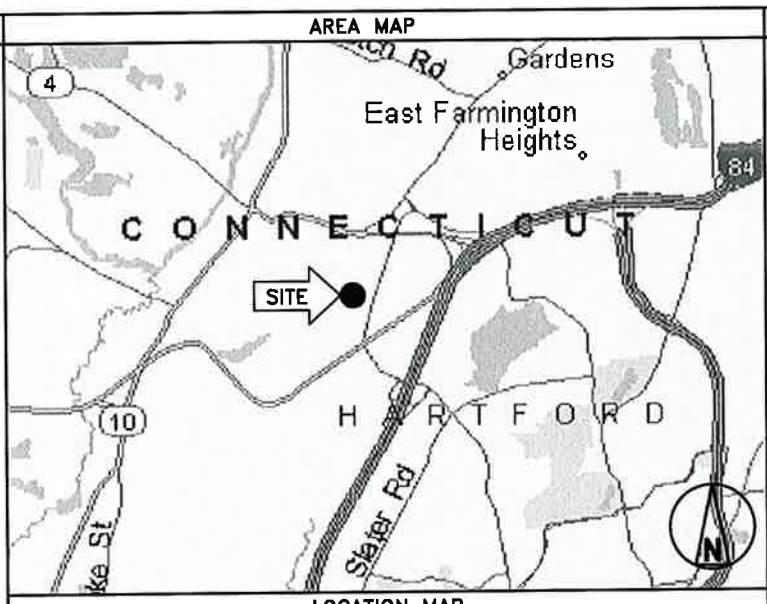
ZONING DISTRICT:
TBD

POWER COMPANY:
CONNECTICUT LIGHT & POWER
(860) 947-2000

SPRINT PM:
PETER GIARD
(508) 801-0074
peter.giard@sprint.com

SPRINT CM:
PETER CULBERT
(603) 203-8446
(603) 969-0686
peter.culbert@sprint.com

CROWN CASTLE CM:
JASON D'AMICO
(860) 209-0104
JASON.D'AMICO@CROWNCastle.COM



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL 2.5 EQUIPMENT IN EXISTING N.V. MMBS CABINET
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (27) JUMPER CABLES
- INSTALL (1) FIBER CABLE
- INSTALL (4) BATTERIES IN EXISTING BBU CABINET

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

- INTERNATIONAL BUILDING CODE (2012 IBC)
- TIA-EIA-222-G OR LATEST EDITION
- NFPA 780 - LIGHTNING PROTECTION CODE
- 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
- ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
- CT BUILDING CODE
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET & PROJECT DATA	0
SP-1	SPRINT SPECIFICATIONS	0
SP-2	SPRINT SPECIFICATIONS	0
SP-3	SPRINT SPECIFICATIONS	0
A-1	SITE PLAN	0
A-2	TOWER ELEVATION & CABLE PLAN	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	COLOR CODING & NOTES	0
A-5	EQUIPMENT & MOUNTING DETAILS	0
A-6	CIVIL DETAILS	0
A-7	PLUMBING DIAGRAM	0
E-1	ELECTRICAL & GROUNDING PLAN	0
E-2	ELECTRICAL & GROUNDING DETAILS	0



THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
 - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.
- 1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:
 - A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
 - 1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
 - 5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - 3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY -GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
 - 4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE - "NEC") AND NFPA 101 (LIFE SAFETY CODE).
 - 5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
 - 6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
 - 7. AMERICAN CONCRETE INSTITUTE (ACI)
 - 8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
 - 9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
 - 10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
 - 11. PORTLAND CEMENT ASSOCIATION (PCA)
 - 12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
 - 13. BRICK INDUSTRY ASSOCIATION (BIA)
 - 14. AMERICAN WELDING SOCIETY (AWS)
 - 15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
 - 16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
 - 17. DOOR AND HARDWARE INSTITUTE (DHI)
 - 18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
 - 19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

- A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
- B. COMPANY: SPRINT CORPORATION
- C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
- D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
- E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
- G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

- 1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.
- 1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.
- 1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
 - A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
 - B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
 - C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.
- 1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED.
- 1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.
- 1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193
- 1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.
- 3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
 - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT:
 - A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.
 - B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
 - 1. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - 2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - 3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - 4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - 5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - 6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.
- 3.2 DELIVERABLES:
 - A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
 - B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.
 - C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
 - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 NOTICE TO PROCEED

- A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.
- B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

TOWER OWNER NOTIFICATION
 ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 FUNCTIONAL REQUIREMENTS:
 - A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.
 - B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.
 - C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES
 - D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:

EAST FARMINGTON

SITE CASCADE:

CT03XC100

SITE ADDRESS:

**3 A BIRDSEYE RD
FARMINGTON, CT 06030**

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
 2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
 3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
 4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
 5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
 6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
 7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
 8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
 9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
 10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
 11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
 12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
 13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
 14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER.
 15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
 16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
 17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
 18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
 19. PERFORM ANTENNA AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
 20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."
- 3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:**
- A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
 - B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
 - C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
 1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
 - D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION
 - E. CONDUCT TESTING AS REQUIRED HEREIN.
- 3.3 DELIVERABLES:**
- A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER
 - B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
 1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
 2. PROJECT PROGRESS REPORTS.
 3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).

5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
 - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.
- 1.3 SUBMITTALS:
 - A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
 - B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.
 1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
 2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
 3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
 4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
 5. CHEMICAL GROUNDING DESIGN
 - D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
 2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
 1. AZIMUTH, DOWNTILT, AGL - UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
 2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
 3. ALL AVAILABLE JURISDICTIONAL INFORMATION
 4. PDF SCAN OF REDLINES PRODUCED IN FIELD

5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASHTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASHTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH, DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS - ANTENNA ALIGNMENT TOOL (AAT)

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:

EAST FARMINGTON

SITE CASCADE:

CT03XC100

SITE ADDRESS:

**3 A BIRDSEYE RD
FARMINGTON, CT 06030**

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

- 7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
- 8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
- 9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL
- 10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
- 11. ALL AVAILABLE JURISDICTIONAL INFORMATION
- 12. PDF SCAN OF REDLINES PRODUCED IN FIELD
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.
- 3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.
 - A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.
 - 1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
 - 2. STRUCTURAL BACKFILL COMPACTION REPORTS.
 - 3. SITE RESISTANCE TO EARTH TEST.
 - 4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
 - 5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
 - 6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".
 - B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;
 - 1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
 - 2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
 - 3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS - PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
 - 4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING - TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
 - 5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
 - 6. SITE LAYOUT - PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
 - 7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
 - 8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
 - 9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WEEKLY REPORTS:

- A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.
- B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

- A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

- A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

- A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

- A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

- 1. SHELTER AND TOWER OVERVIEW.
- 2. TOWER FOUNDATION(S) - FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
- 3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
- 4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
- 5. PHOTOS OF TOWER SECTION STACKING.
- 6. CONCRETE TESTING / SAMPLES.
- 7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
- 8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
- 9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.
- 10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
- 11. COAX CABLE ENTRY INTO SHELTER.
- 12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
- 13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
- 14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
- 15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
- 16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
- 17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
- 18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
- 19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
- 20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
- 21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
- 22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
- 23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

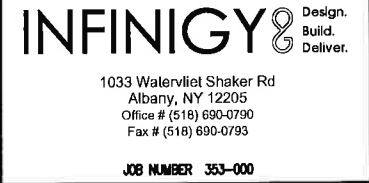
- 24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
- 25. ALL BTS GROUND CONNECTIONS.
- 26. ALL GROUND TEST WELLS.
- 27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
- 28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
- 29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
- 30. GPS ANTENNAS.
- 31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
- 32. DOGHOUSE/CABLE EXIT FROM ROOF.
- 33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
- 34. MASTER BUS BAR.
- 35. TELCO BOARD AND NIU.
- 36. ELECTRICAL DISTRIBUTION WALL.
- 37. CABLE ENTRY WITH SURGE SUPPRESSION.
- 38. ENTRANCE TO EQUIPMENT ROOM.
- 39. COAX WEATHERPROOFING--TOP AND BOTTOM OF TOWER.
- 40. COAX GROUNDING --TOP AND BOTTOM OF TOWER.
- 41. ANTENNA AND MAST GROUNDING.
- 42. LANDSCAPING - WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:

EAST FARMINGTON

SITE CASCADE:

CT03XC100

SITE ADDRESS:

**3 A BIRDSEYE RD
FARMINGTON, CT 06030**

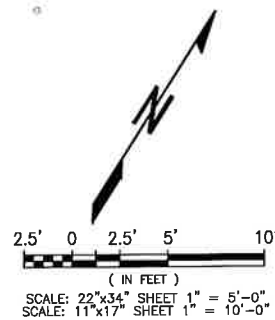
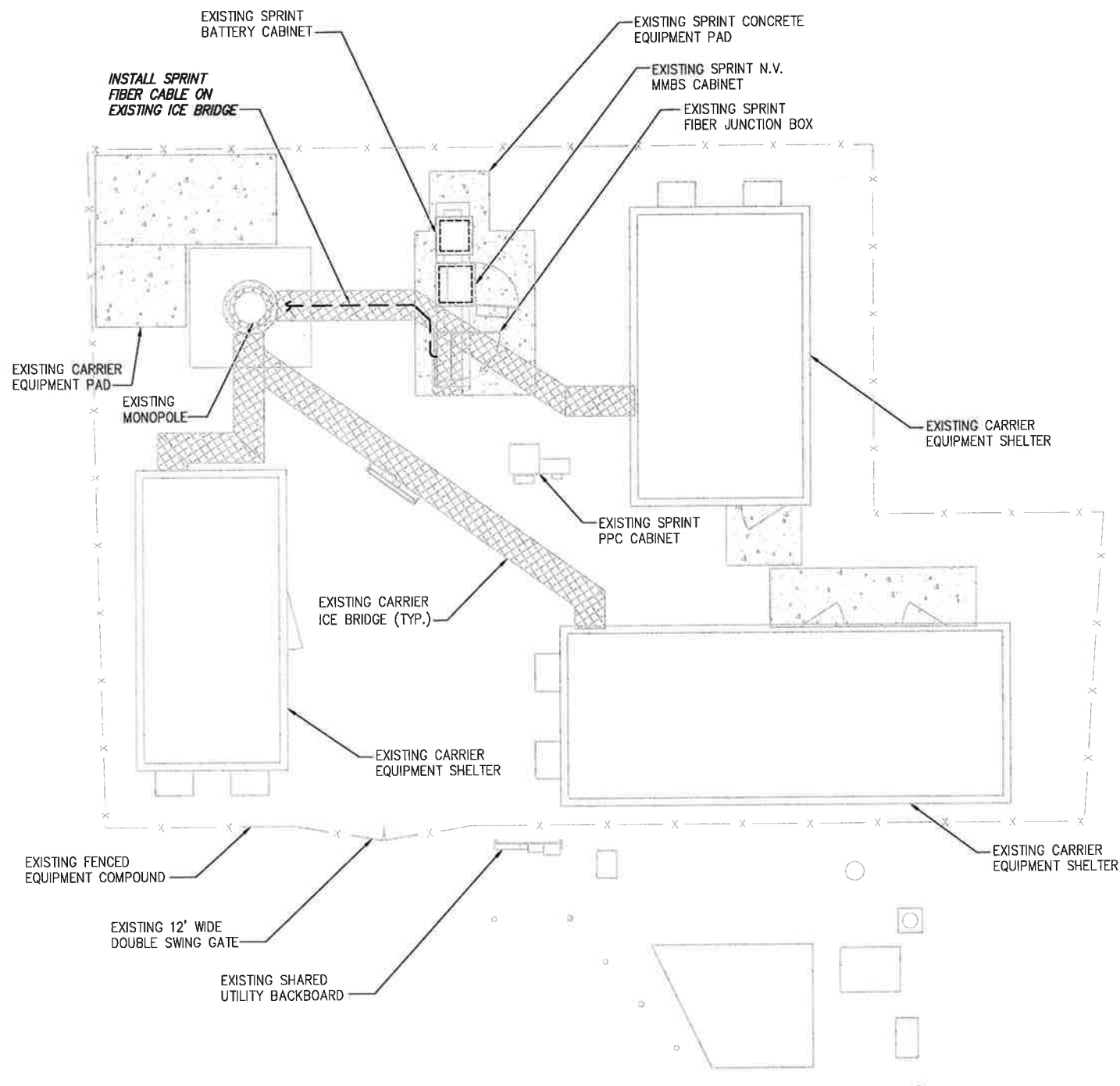
SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3

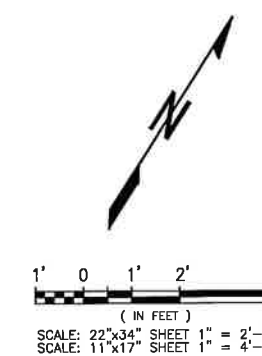
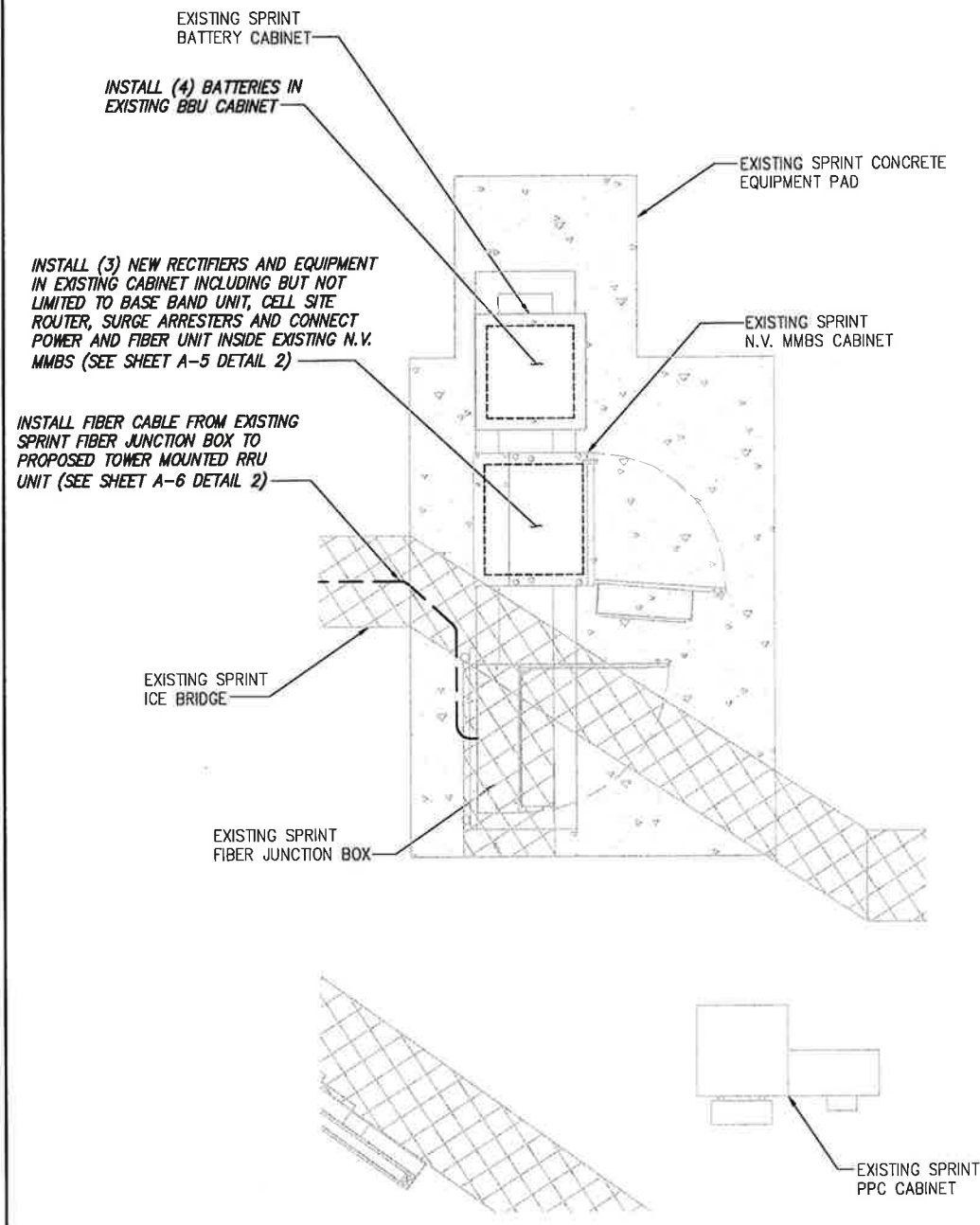
INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.



OVERALL SITE PLAN

SCALE: AS NOTED

1



SPRINT EQUIPMENT PLAN

SCALE: AS NOTED

2

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JJV	0

SITE NAME:

EAST FARMINGTON

SITE CASCADE:

CT03XC100

SITE ADDRESS:

3 A BIRDSEYE RD
FARMINGTON, CT 06030

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

A-1

NOTE:
 INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER OR MOUNT FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

NOTE:
 SPRINT TOWER TOP WORK CONTINGENT ON FOLLOWING: COMPLETION OF STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE, COMPLETION OF ANTENNA/RRH MOUNTING ASSESSMENT (PROVIDED BY AE)

NOTE:
 SEE DETAIL 2 ON A-3 FOR ANTENNA LAYOUT

TOP OF EXISTING TOWER
 ELEV. = ±140'-0" A.G.L.

INSTALL (1) SPRINT 2.5 ANTENNA EACH SECTOR (SEE SHEET A-5 DETAIL 3)

Ø OF EXISTING/TO BE INSTALLED SPRINT ANTENNAS ELEV. = 139'-0" A.G.L.

INSTALL (1) RRU-2.5 EACH SECTOR (SEE SHEET A-5 DETAILS 1)

EXISTING CARRIER PANEL ANTENNAS

EXISTING SPRINT PANEL ANTENNAS

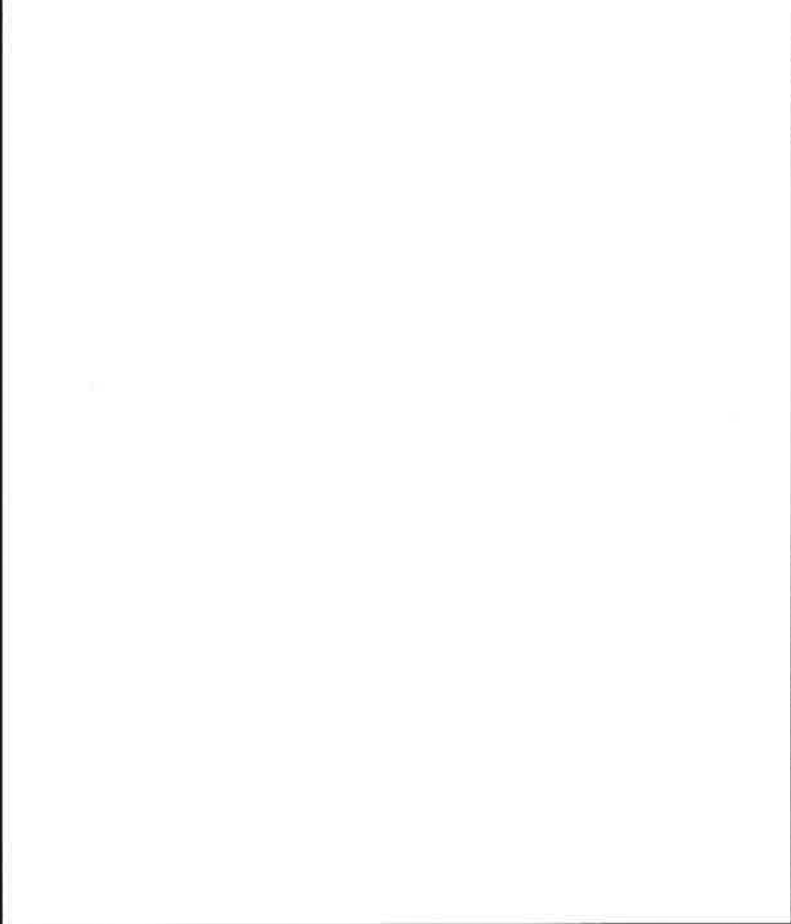
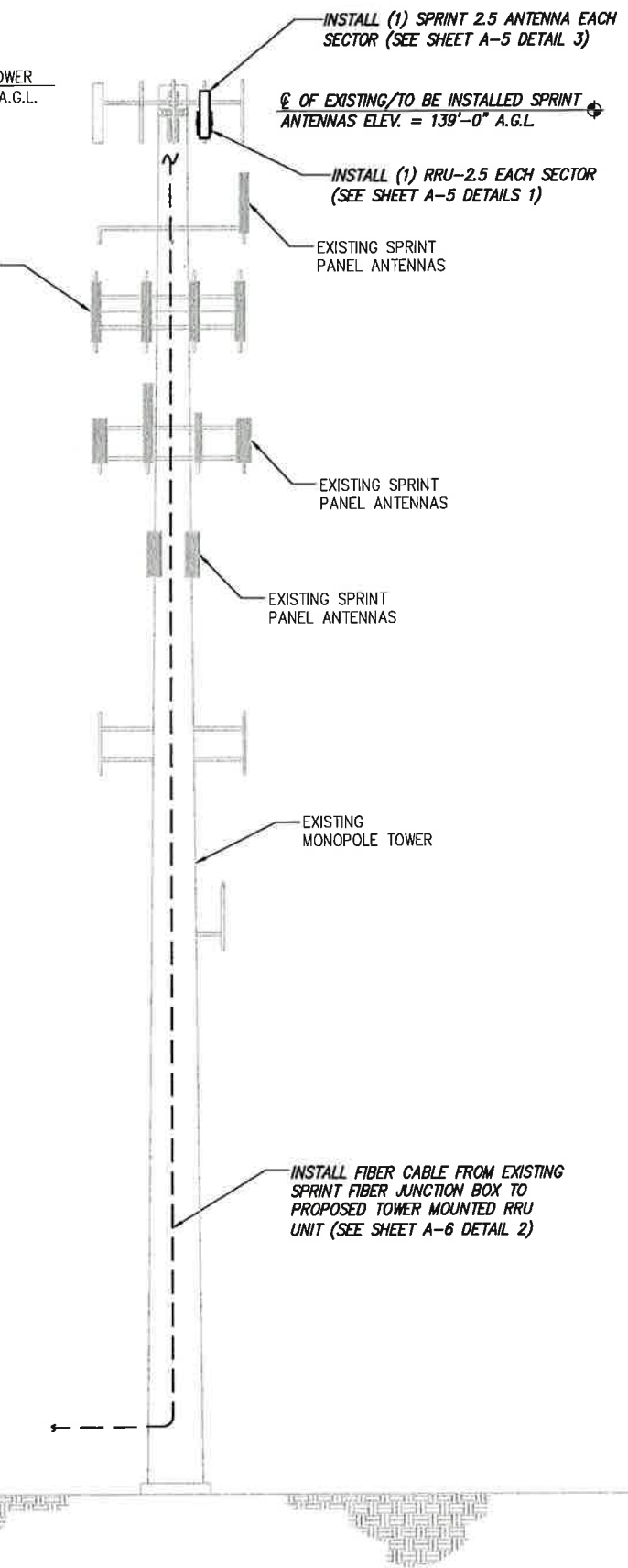
EXISTING SPRINT PANEL ANTENNAS

EXISTING SPRINT PANEL ANTENNAS

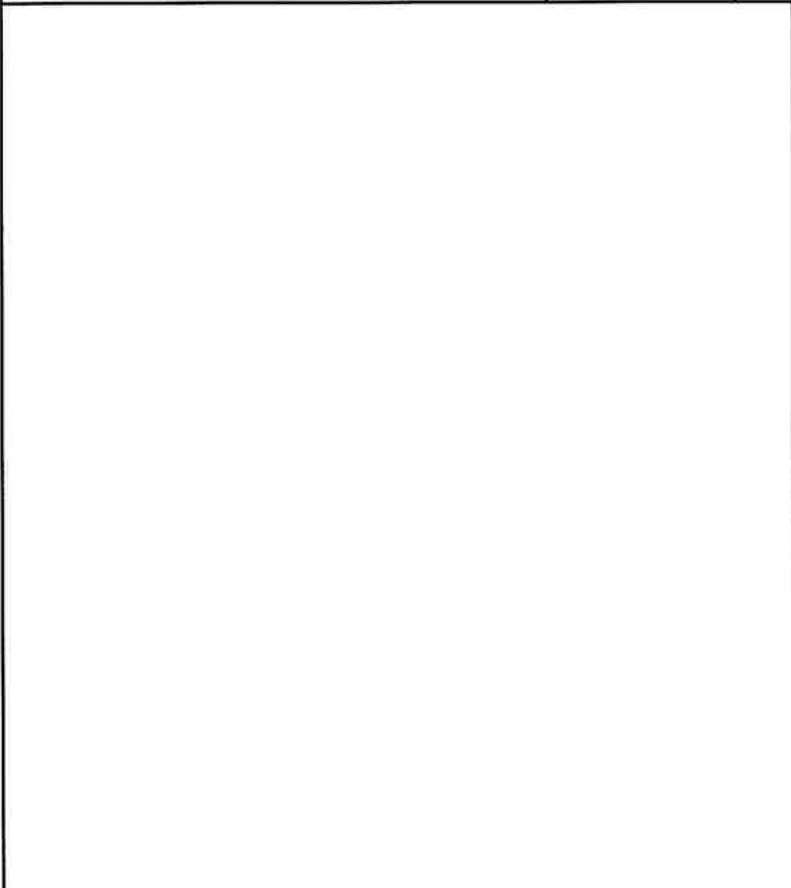
EXISTING MONOPOLE TOWER

INSTALL FIBER CABLE FROM EXISTING SPRINT FIBER JUNCTION BOX TO PROPOSED TOWER MOUNTED RRU UNIT (SEE SHEET A-6 DETAIL 2)

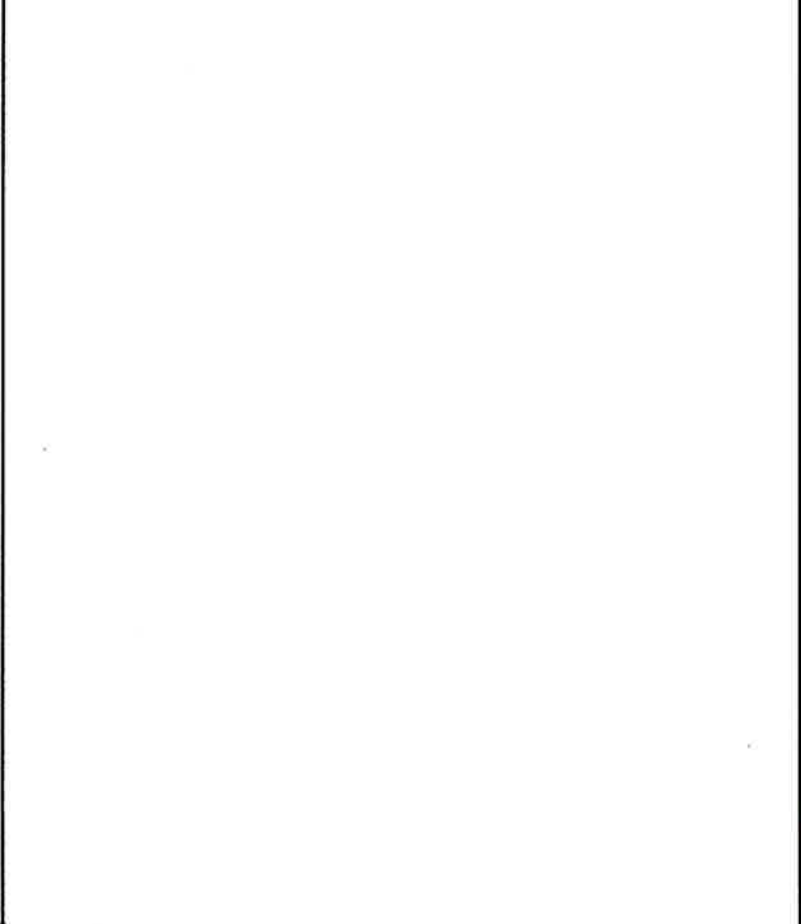
GROUND LEVEL



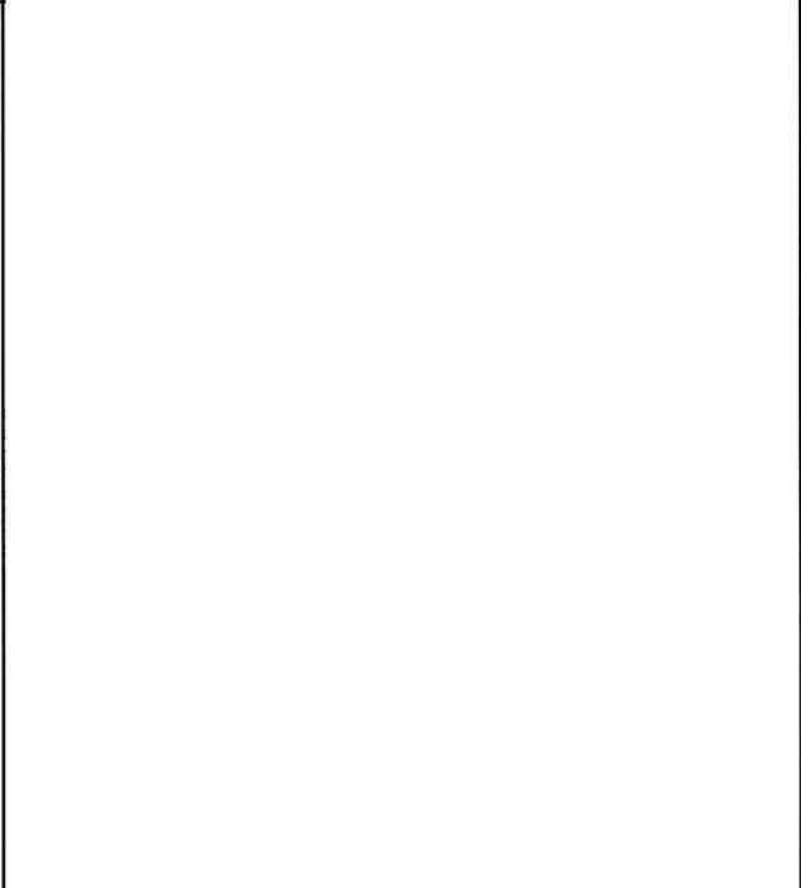
DETAIL NOT USED	NO SCALE	2
-----------------	----------	---



DETAIL NOT USED	NO SCALE	3
-----------------	----------	---



DETAIL NOT USED	NO SCALE	4
-----------------	----------	---



DETAIL NOT USED	NO SCALE	4
-----------------	----------	---

TOWER ELEVATION

NO SCALE

1

DETAIL NOT USED

NO SCALE

3

DETAIL NOT USED

NO SCALE

4

PLANS PREPARED FOR:




6580 Sprint Parkway
 Overland Park, Kansas 66251

PLANS PREPARED BY:



Design. Build. Deliver.
 1033 Watervliet Shaker Rd
 Albany, NY 12205
 Office # (518) 690-0790
 Fax # (518) 690-0793
 JOB NUMBER 353-000

MLA PARTNER:



ENGINEERING LICENSE



DRAWING NOTICE:
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:
 EAST FARMINGTON

SITE CASCADE:
 CT03XC100

SITE ADDRESS:
 3 A BIRDSEYE RD
 FARMINGTON, CT 06030

SHEET DESCRIPTION:
 TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:
 A-2

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JJV	0

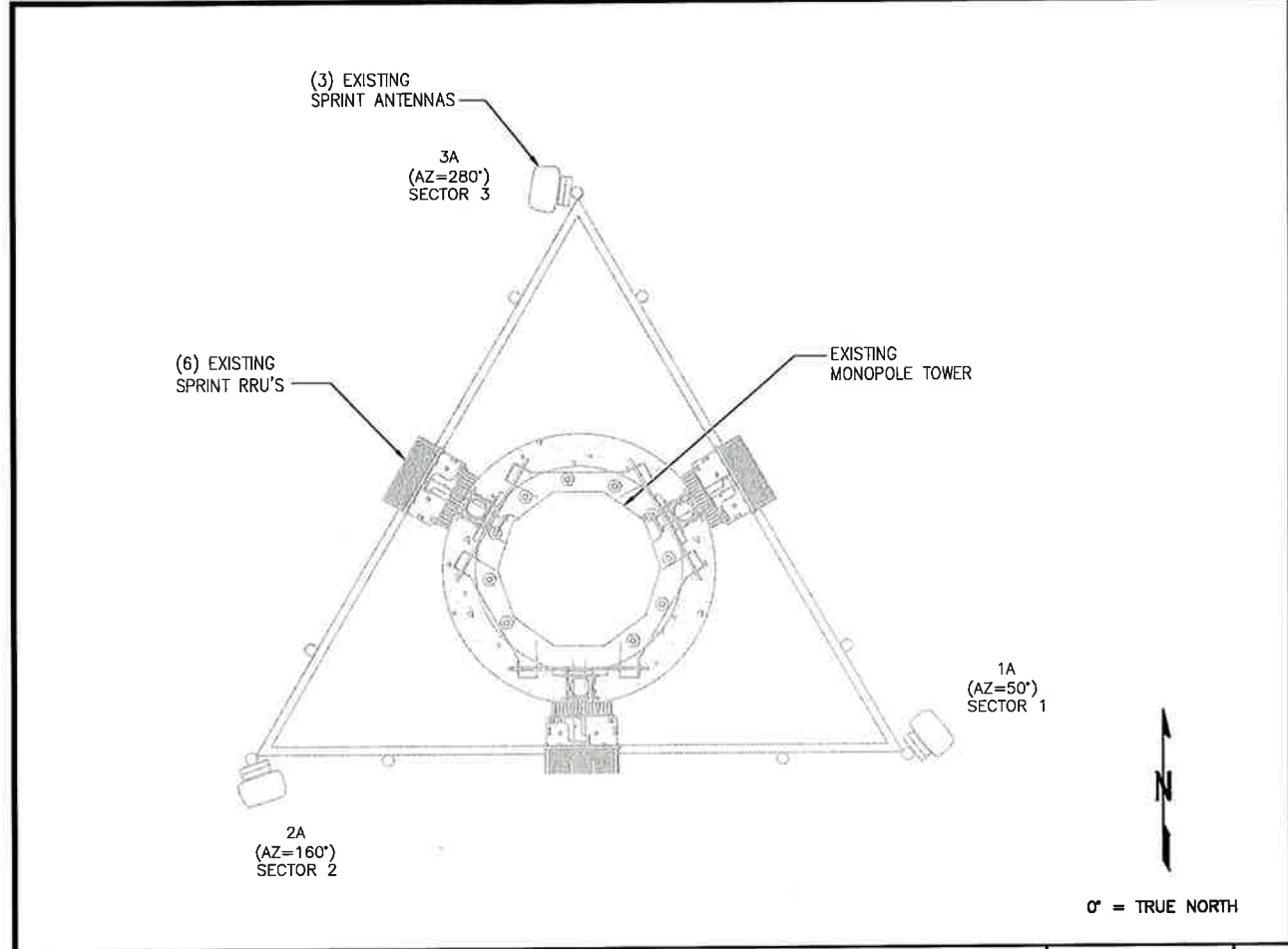
SITE NAME: EAST FARMINGTON

SITE CASCADE: CT03XC100

SITE ADDRESS: 3 A BIRDSEYE RD, FARMINGTON, CT 06030

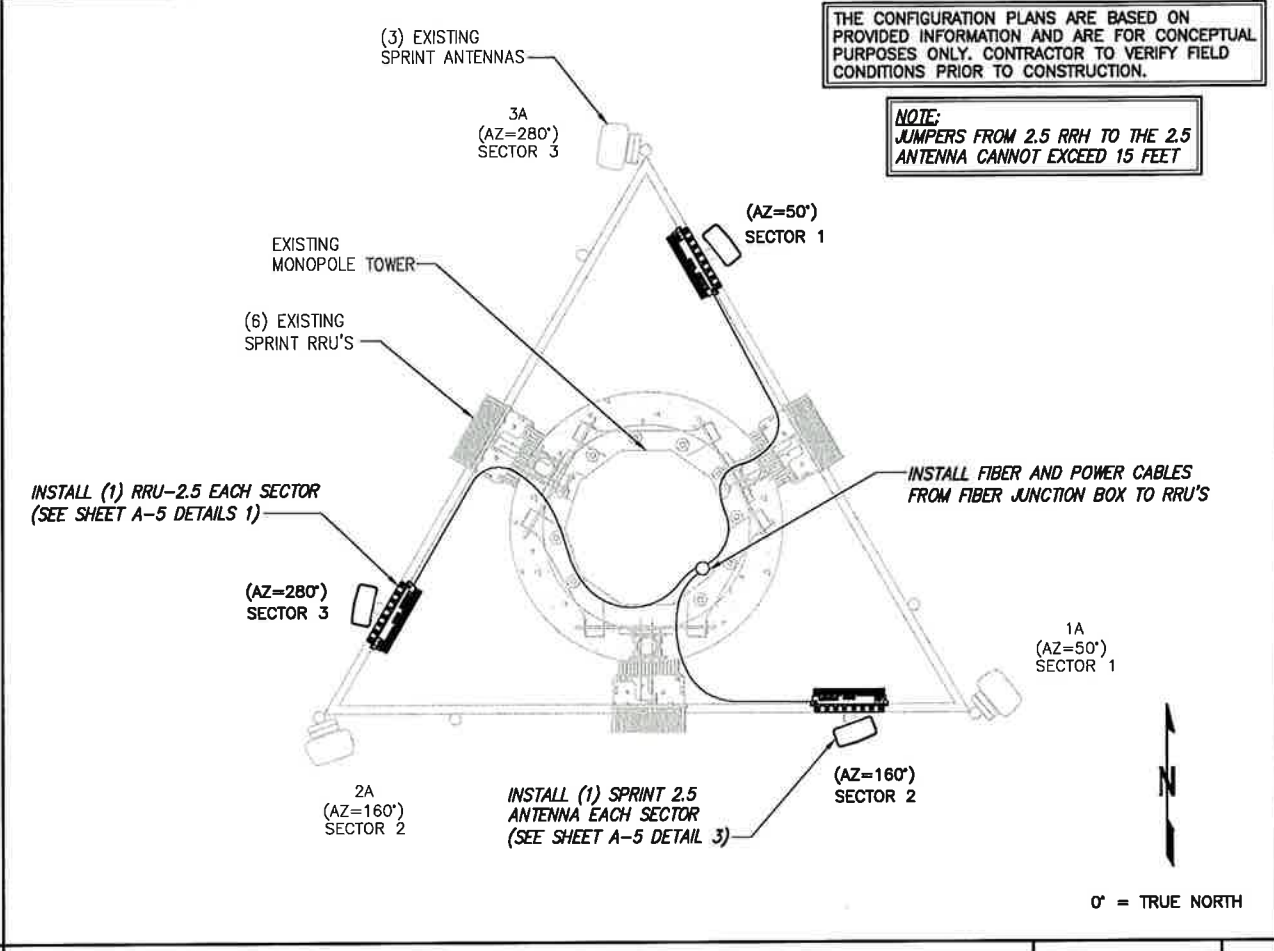
SHEET DESCRIPTION: ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER: A-3



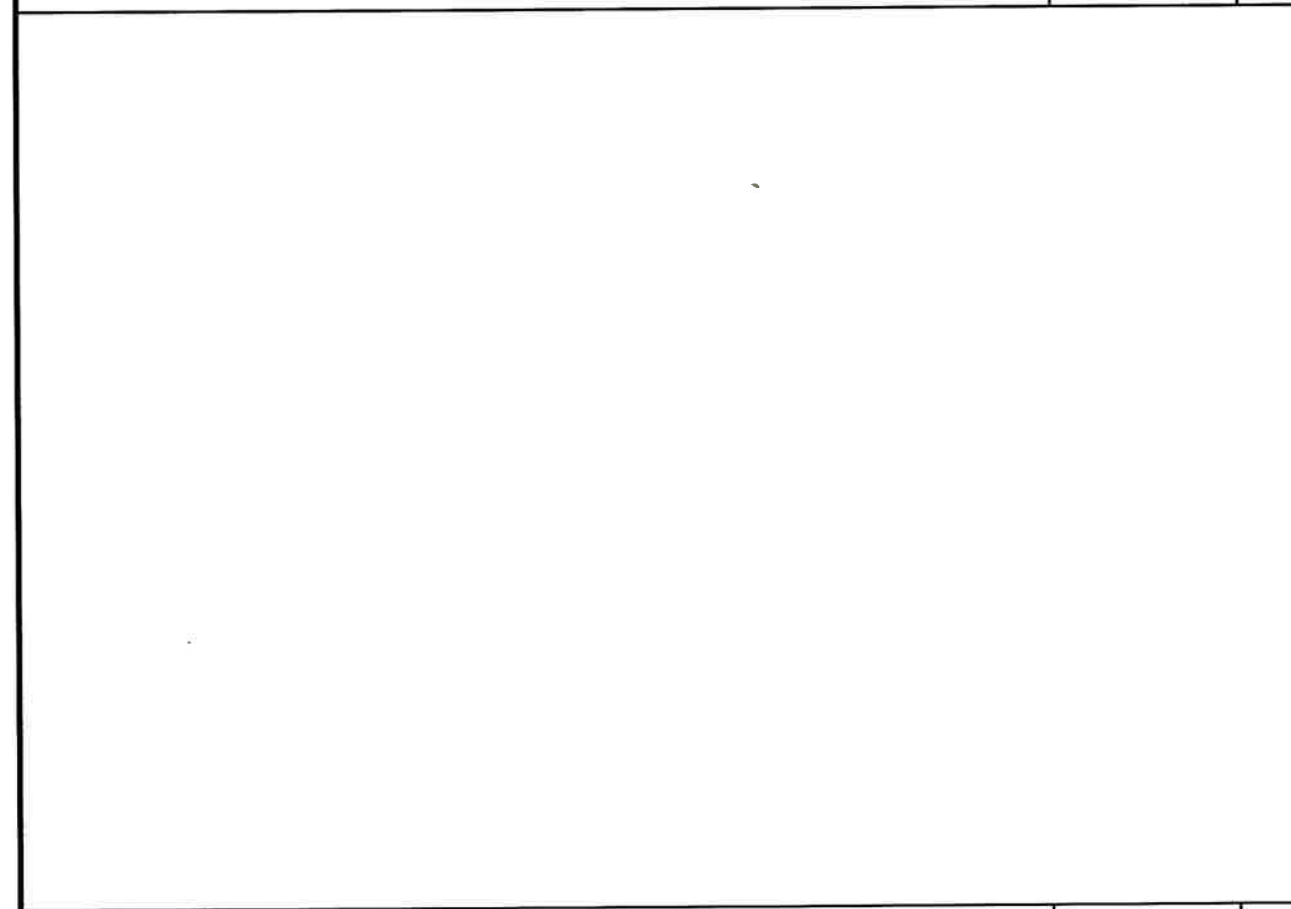
EXISTING ANTENNA & RRU LAYOUT

NO SCALE 1



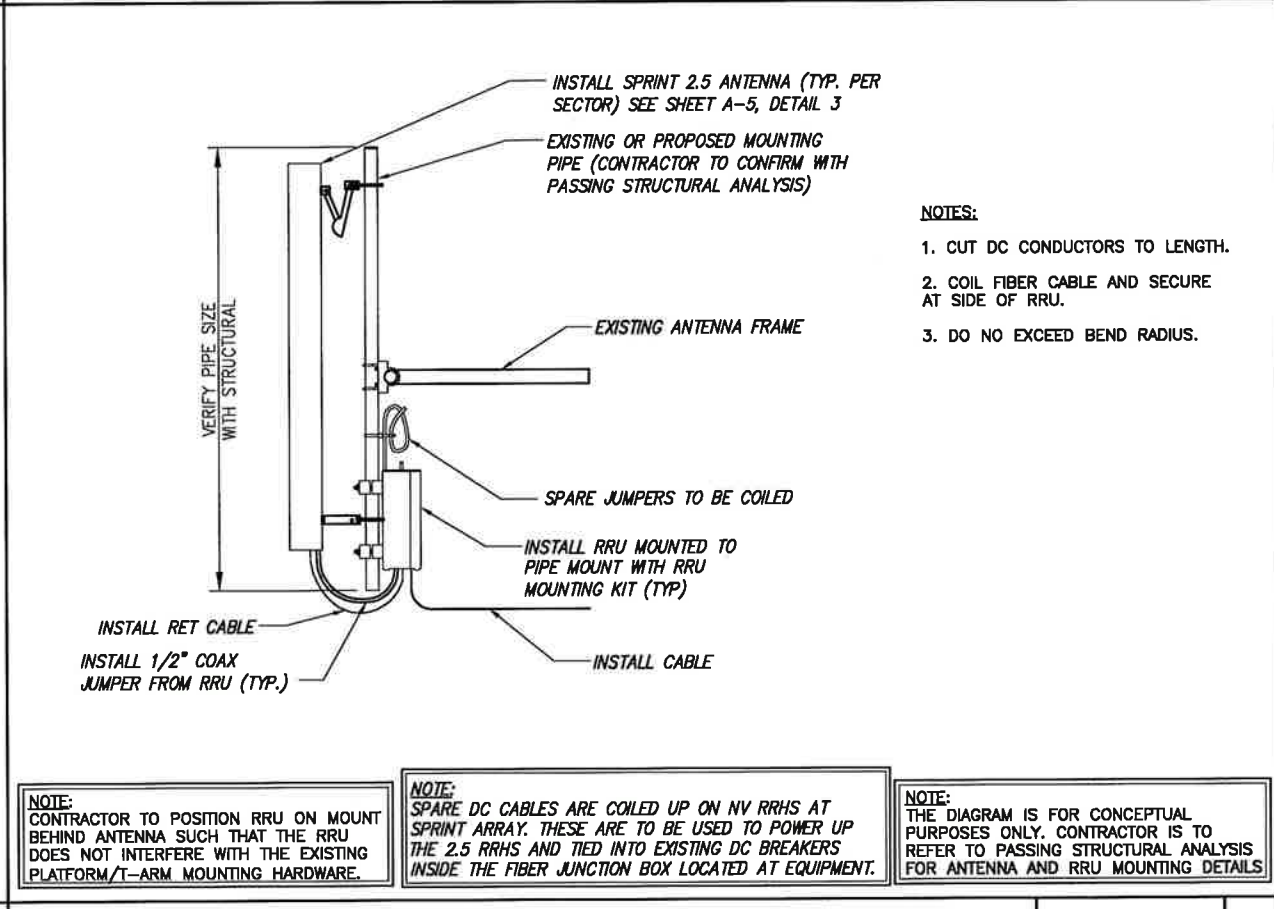
FINAL ANTENNA LAYOUT

NO SCALE 2



DETAIL NOT USED

NO SCALE 3



TYPICAL ANTENNA & RRU MOUNTING DETAILS

NO SCALE 4

NOTE: CONTRACTOR TO POSITION RRU ON MOUNT BEHIND ANTENNA SUCH THAT THE RRU DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE: SPARE DC CABLES ARE COILED UP ON NV RRHS AT SPRINT ARRAY. THESE ARE TO BE USED TO POWER UP THE 2.5 RRHS AND TIED INTO EXISTING DC BREAKERS INSIDE THE FIBER JUNCTION BOX LOCATED AT EQUIPMENT.

NOTE: THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRU MOUNTING DETAILS

THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

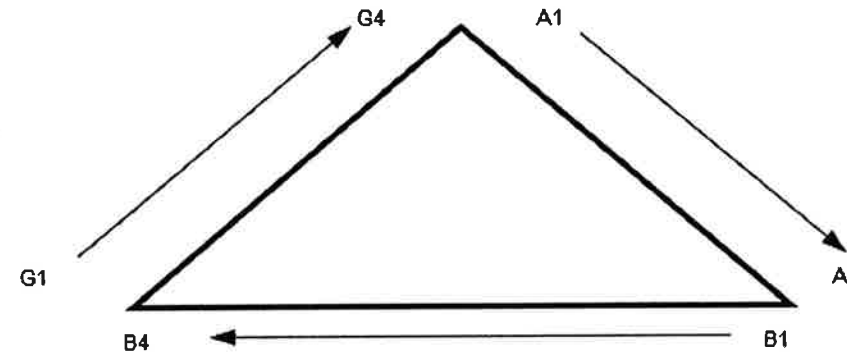
NOTE: JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET

NV CABLES			
BAND	INDICATOR	PORT	COLOR
800-1	YEL GRN	NV-1	GRN
1900-1	YEL RED	NV-2	BLU
1900-2	YEL BRN	NV-3	BRN
1900-3	YEL BLU	NV-4	WHT
1900-4	YEL SLT	NV-5	RED
800-2	YEL ORG	NV-6	SLT
SPARE	YEL WHT	NV-7	PPL
2500	YEL PPL	NV-8	ORG

HYBRID	
HYBRID	COLOR
1	GRN
2	BLU
3	BRN
4	WHT
5	RED
6	SLT
7	PPL
8	ORG

2.5 Band		
2500 Radio 1	COLOR	
YEL	WHT	GRN
YEL	WHT	BLU
YEL	WHT	BRN
YEL	WHT	WHT
YEL	WHT	RED
YEL	WHT	SLT
YEL	WHT	PPL
YEL	WHT	ORG

Figure 1: Antenna Orientation



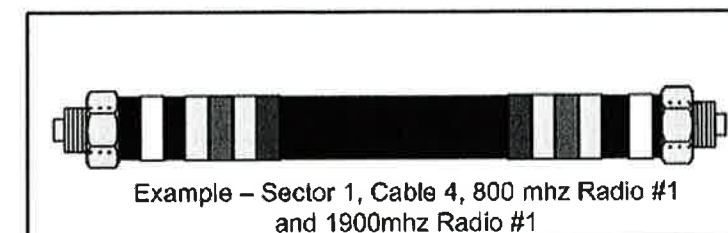
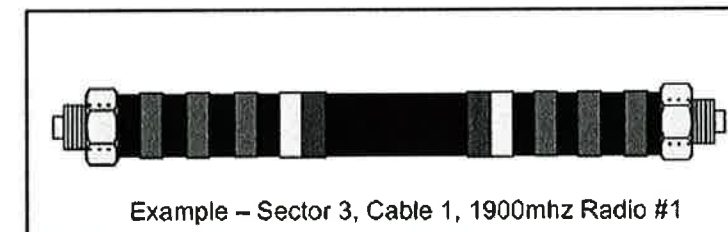
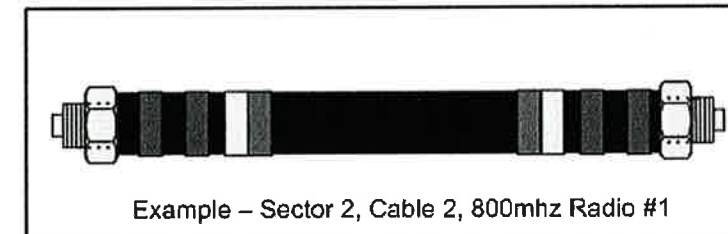
NOTES:

- ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.
- THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.
- A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
- THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
- SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.
- HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.
- HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.
- INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
	2	No Tape	No Tape	No Tape
	3	Brown	No Tape	No Tape
	4	White	No Tape	No Tape
	5	Red	No Tape	No Tape
	6	Grey	No Tape	No Tape
	7	Purple	No Tape	No Tape
	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
	2	No Tape	No Tape	No Tape
	3	Brown	Brown	No Tape
	4	White	White	No Tape
	5	Red	Red	No Tape
	6	Grey	Grey	No Tape
	7	Purple	Purple	No Tape
	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
	2	No Tape	No Tape	No Tape
	3	Brown	Brown	Brown
	4	White	White	White
	5	Red	Red	Red
	6	Grey	Grey	Grey
	7	Purple	Purple	Purple
	8	Orange	Orange	Orange

NV FREQUENCY	INDICATOR	ID
800-1	YEL GRN	GRN
1900-1	YEL RED	RED
1900-2	YEL BRN	BRN
1900-3	YEL BLU	BLU
1900-4	YEL SLT	SLT
800-1	YEL ORG	ORG
RESERVED	YEL WHT	WHT
RESERVED	YEL PPL	PPL

2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	PPL



PLANS PREPARED FOR:

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-000

MLA PARTNER:

ENGINEERING LICENSE:

DRAWING NOTICE:
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		5/22/14	JJV	0

SITE NAME:
EAST FARMINGTON

SITE CASCADE:
CT03XC100

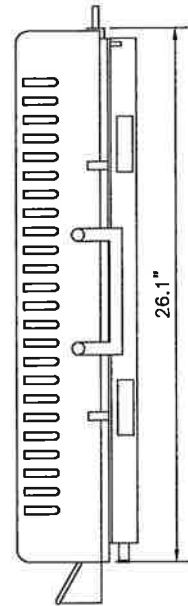
SITE ADDRESS:
3 A BIRDSEYE RD
FARMINGTON, CT 06030

SHEET DESCRIPTION:
COLOR CODING AND NOTES

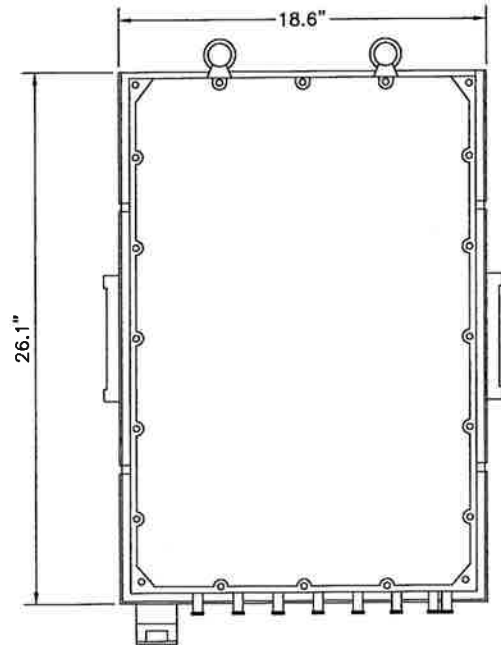
SHEET NUMBER:
A-4

RRU: ALCATEL LUCENT TD-RRH8X20

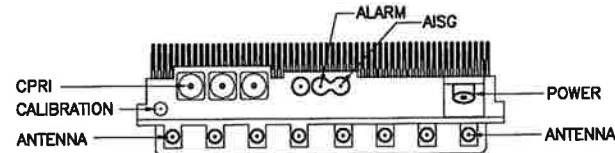
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



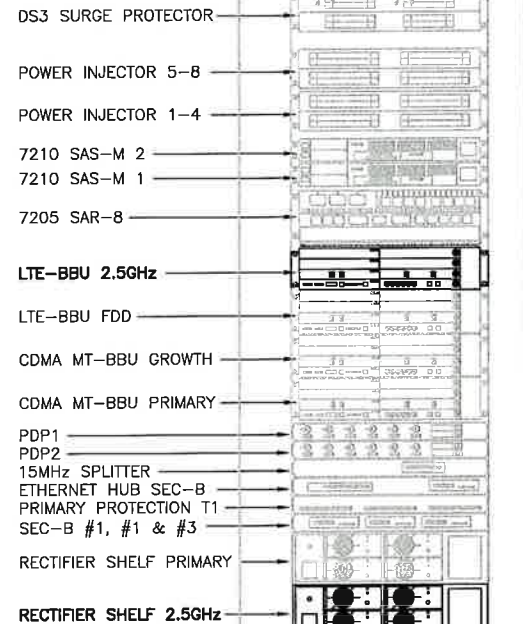
FRONT VIEW



PLAN VIEW

NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN



FRONT VIEW

- DS3 SURGE PROTECTOR
- POWER INJECTOR 5-8
- POWER INJECTOR 1-4
- 7210 SAS-M 2
- 7210 SAS-M 1
- 7205 SAR-8
- LTE-BBU 2.5GHz
- LTE-BBU FDD
- CDMA MT-BBU GROWTH
- CDMA MT-BBU PRIMARY
- PDP1
- PDP2
- 15MHz SPLITTER
- ETHERNET HUB SEC-B
- PRIMARY PROTECTION T1
- SEC-B #1, #1 & #3
- RECTIFIER SHELF PRIMARY
- RECTIFIER SHELF 2.5GHz

PLANS PREPARED FOR:

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-000

MLA PARTNER:

ENGINEERING LICENSE:

DRAWING NOTICE:
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		5/22/14	JJV	0

SITE NAME:
EAST FARMINGTON

SITE CASCADE:
CT03XC100

SITE ADDRESS:
**3 A BIRDSEYE RD
FARMINGTON, CT 06030**

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-5

2.5 RRU

NO SCALE

1

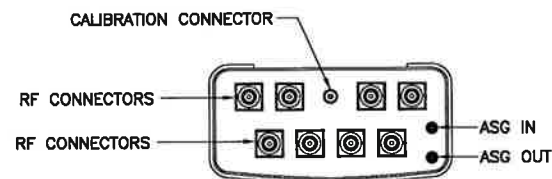
NEW EQUIPMENT IN EXISTING CABINET

NO SCALE

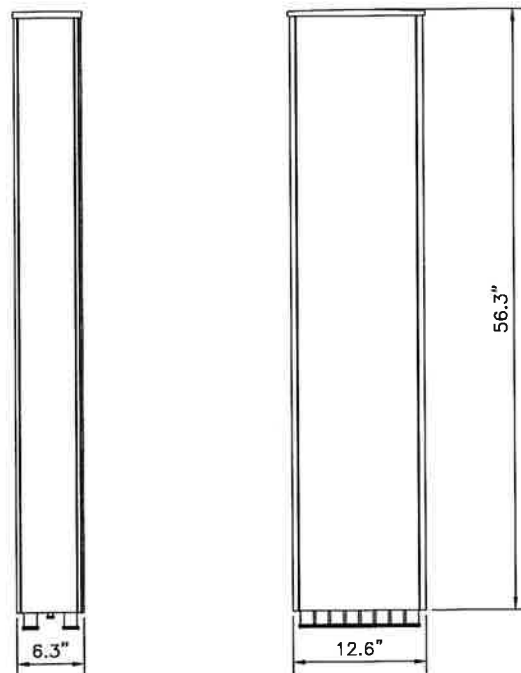
2

ANTENNA: RFS APXVTM14-C-I20

- RADOME MATERIAL: ASA
- RADOME COLOR: LIGHT GRAY
- DIMENSIONS, HxWxD.in.(mm): 56.3"x12.6"x6.3" (1430x320x160mm)
- WEIGHT: 52.9 lbs
- CONNECTORS: (8) 4.1/9.5 DIN FEMALE
(1) NF - CALIBRATION CONNECTOR



PLAN VIEW



2.5 ANTENNA

NO SCALE

3

DETAIL NOT USED

NO SCALE

4

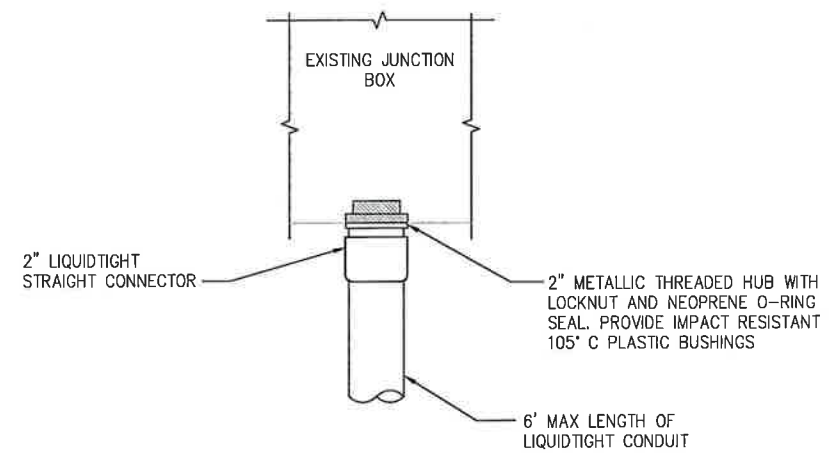
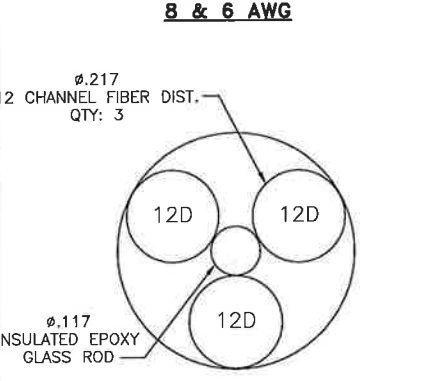
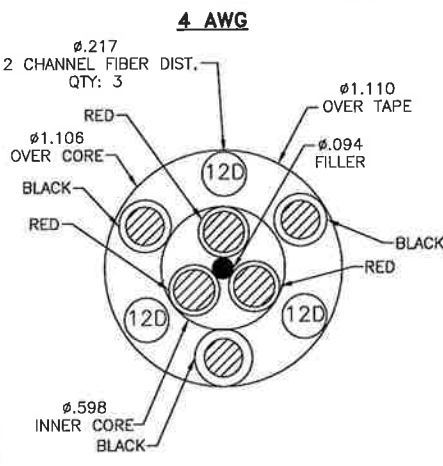
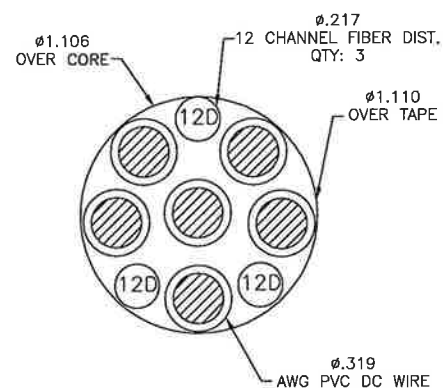
RFS HYBRIFLEX RISER CABLE SCHEDULE

Fiber Only (Existing DC Power)	Hybrid cable MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	Hybrid cable MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	Hybrid cable MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	Hybrid cable MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

Fiber Only	Hybrid Jumper cable MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	Hybrid Jumper cable MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	Hybrid Jumper cable MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	Hybrid Jumper cable MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE
AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF
HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



FIBER JUNCTION BOX PENETRATION

NO SCALE 2

2.5 CABLE CROSS SECTION DATA

NO SCALE 1

DETAIL NOT USED

NO SCALE 3

PLANS PREPARED FOR:

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-000

MLA PARTNER:

ENGINEERING LICENSE:

DRAWING NOTICE:
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:
EAST FARMINGTON

SITE CASCADE:
CT03XC100

SITE ADDRESS:
3 A BIRDSEYE RD
FARMINGTON, CT 06030

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-6



DRAWING NOTICE:
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		5/22/14	JDV	0

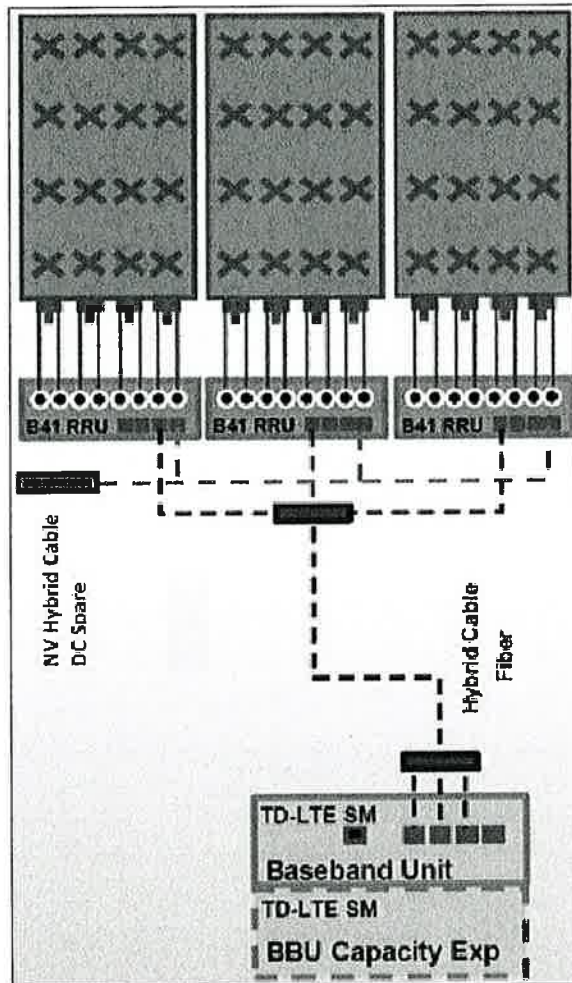
SITE NAME:
EAST FARMINGTON

SITE CASCADE:
CT03XC100

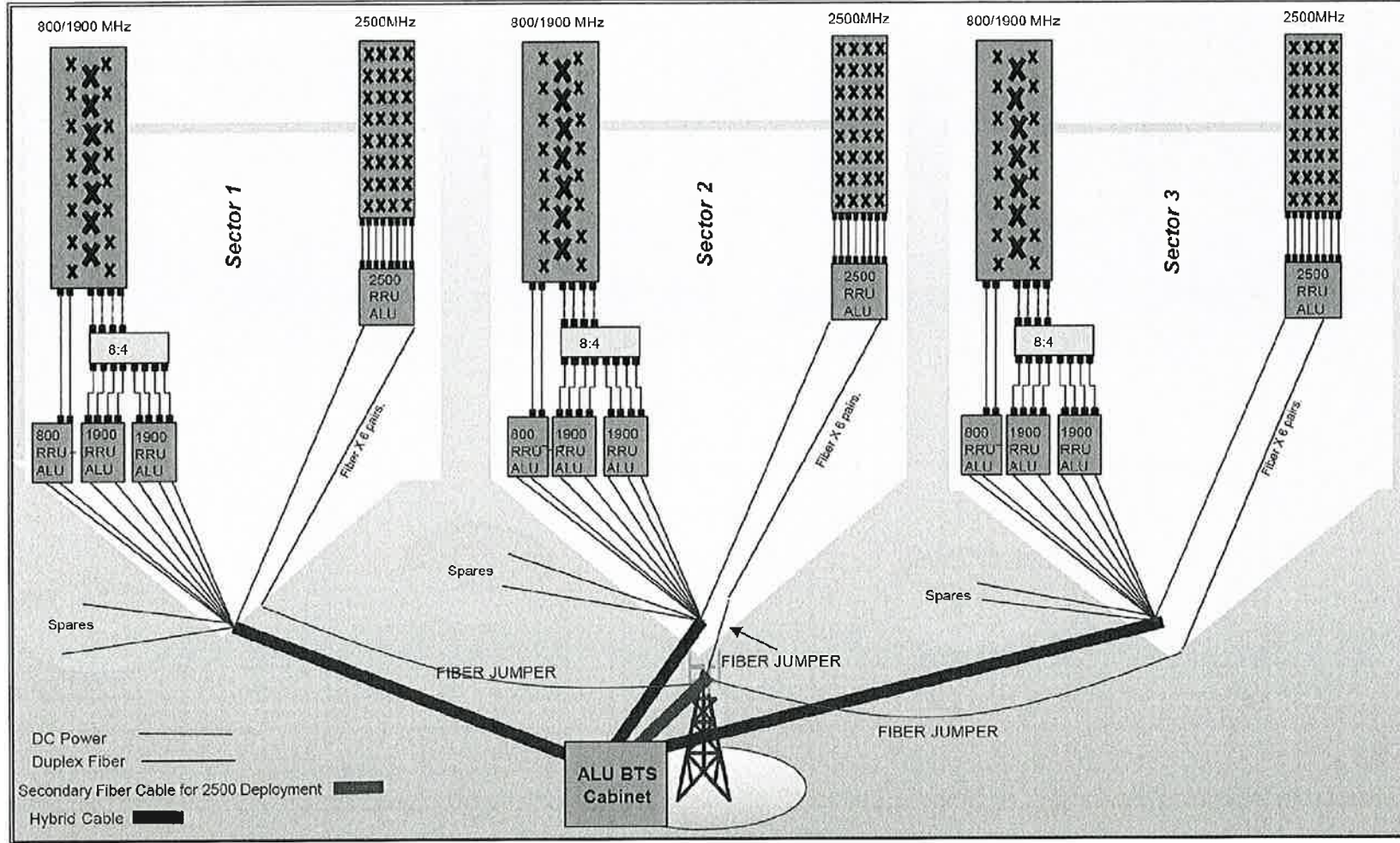
SITE ADDRESS:
 3 A BIRDSEYE RD
 FARMINGTON, CT 06030

SHEET DESCRIPTION:
CIVIL DETAILS

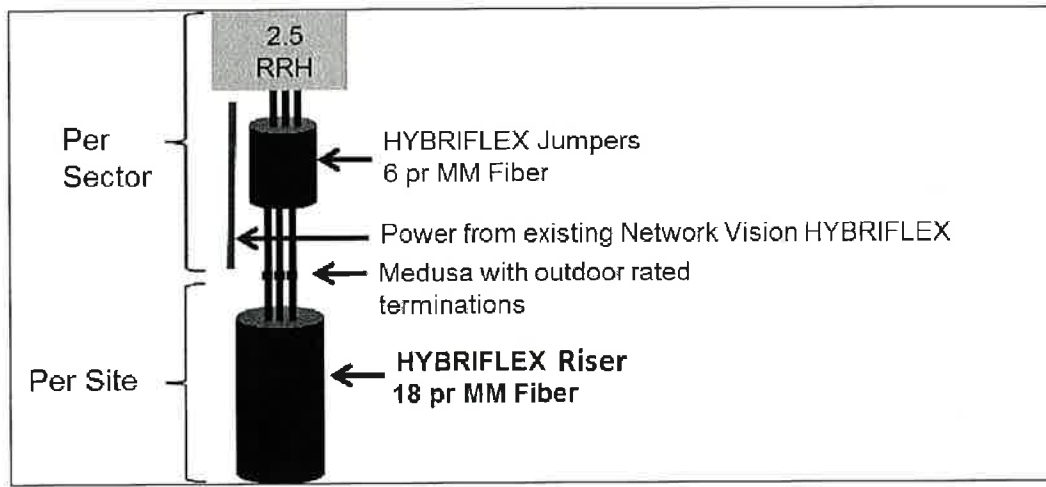
SHEET NUMBER:
A-7



ALU 2.5 ALU SCENARIO 1



RAN WIRING DIAGRAM



RF 2.5 ALU SCENARIO 1

PLUMBING DIAGRAM

NO SCALE

1

PLAN NOT USED

NO SCALE

1

DRAWING NOTICE:
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:
EAST FARMINGTON

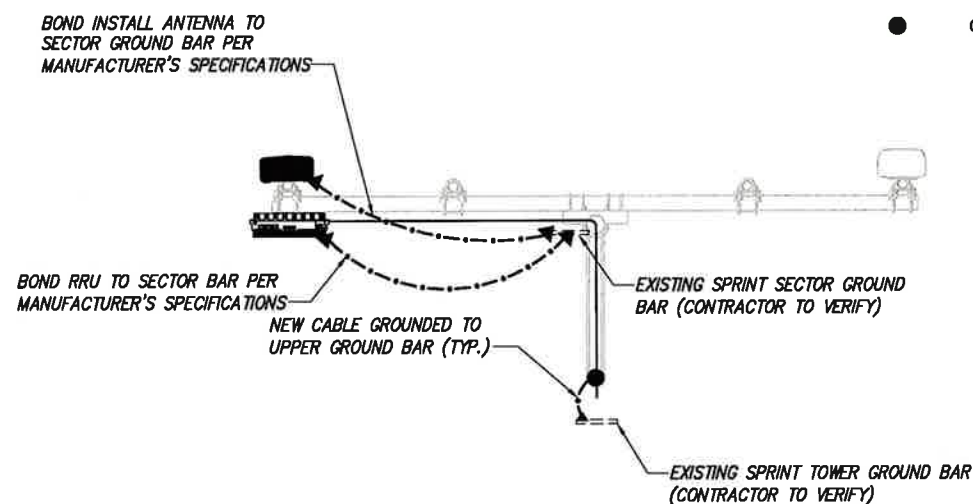
SITE CASCADE:
CT03XC100

SITE ADDRESS:
 3 A BIRDSEYE RD
 FARMINGTON, CT 06030

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1

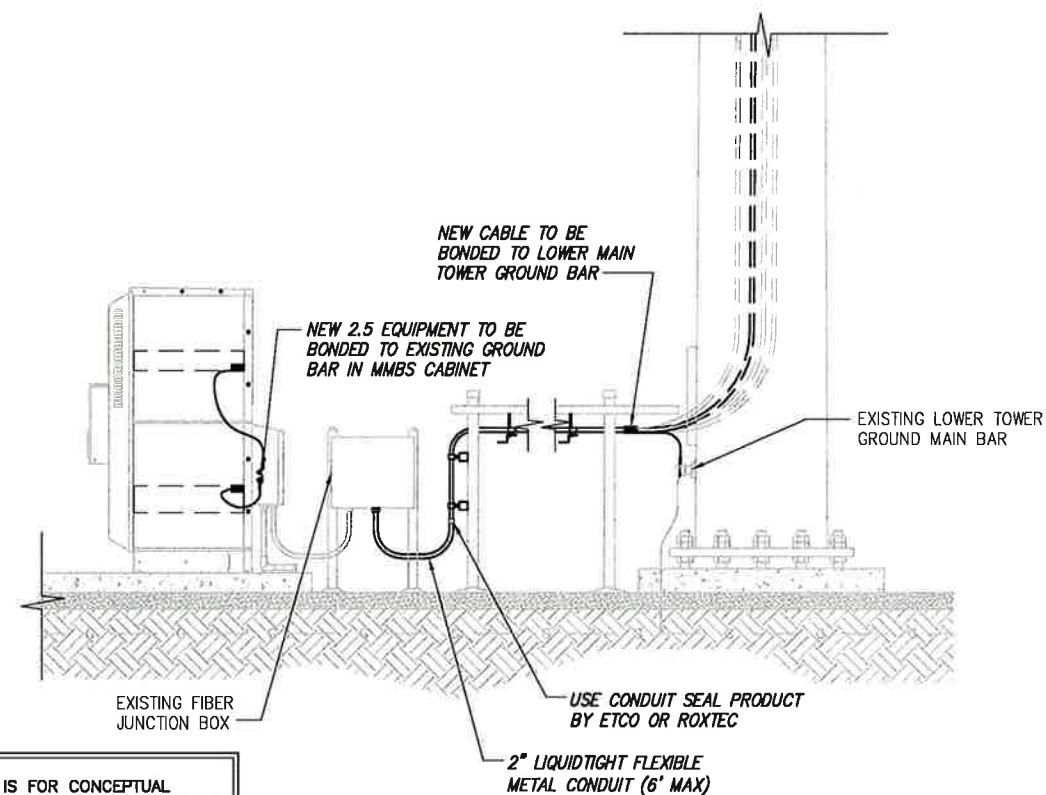
- LEGEND:**
- EXISTING GROUND RING
 - CADWELD CONNECTION (EXOTHERMIC WELD)
 - ▲ MECHANICAL CONNECTION
 - ⊗ GROUND ROD
 - CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2



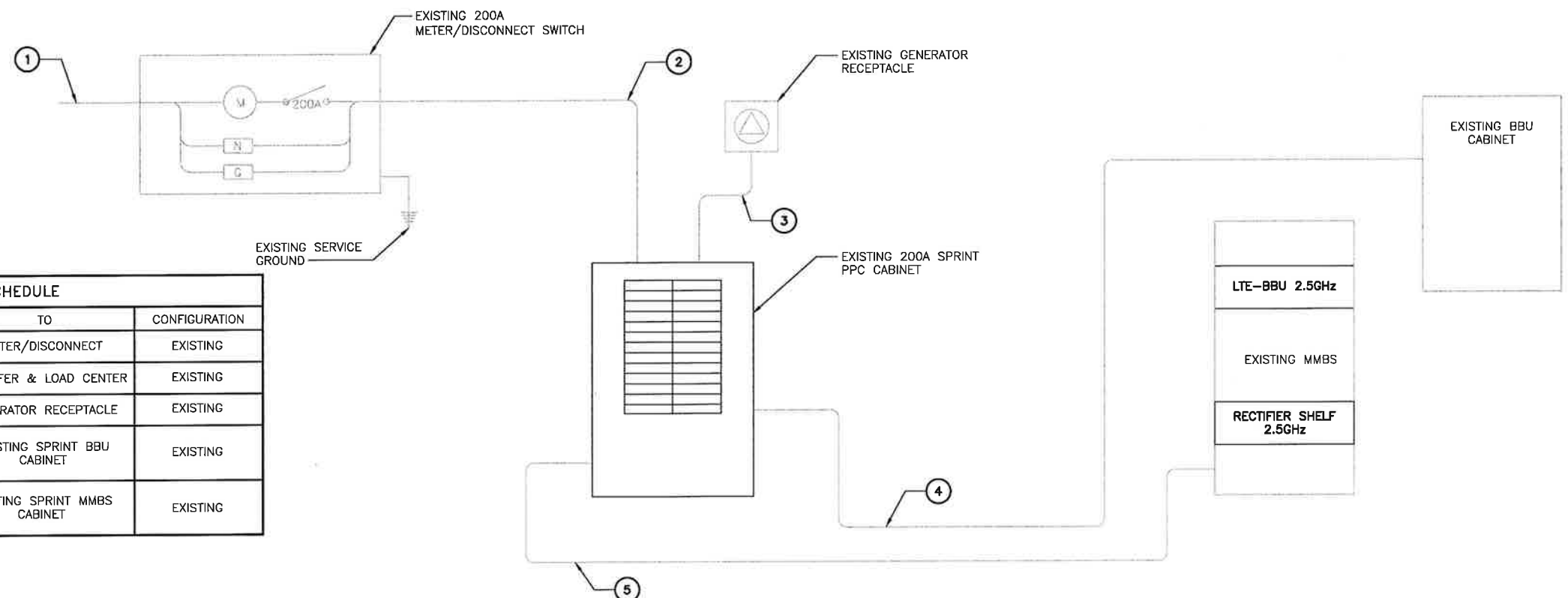
NOTE:
 DEPICTION IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO FIELD VERIFY PRIOR TO CONSTRUCTION

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION)

NO SCALE

3

NOTES
 CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
①	UTILITY SOURCE	METER/DISCONNECT	EXISTING
②	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
③	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
④	TRANSFER & LOAD CENTER	EXISTING SPRINT BBU CABINET	EXISTING
⑤	TRANSFER & LOAD CENTER	EXISTING SPRINT MMBS CABINET	EXISTING

PLANS PREPARED FOR:

6580 Sprint Parkway
 Overland Park, Kansas 66251

PLANS PREPARED BY:

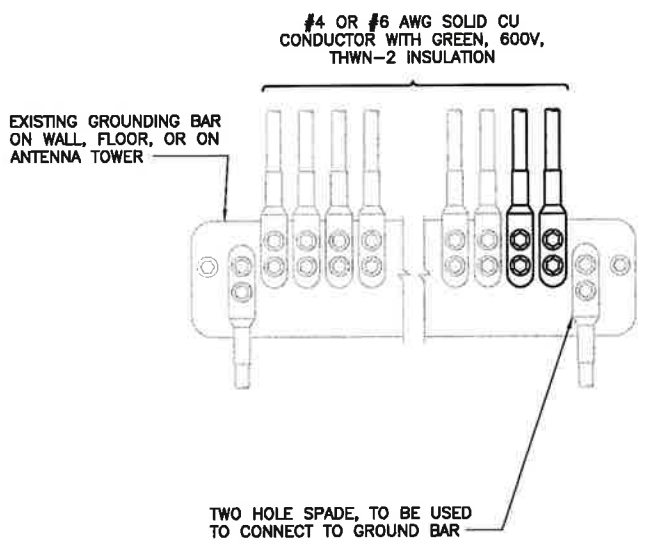
Design. Build. Deliver.
 1033 Watervliet Shaker Rd
 Albany, NY 12205
 Office # (518) 690-0790
 Fax # (518) 690-0793
 JOB NUMBER 353-000

MLA PARTNER:

ENGINEERING LICENSE:

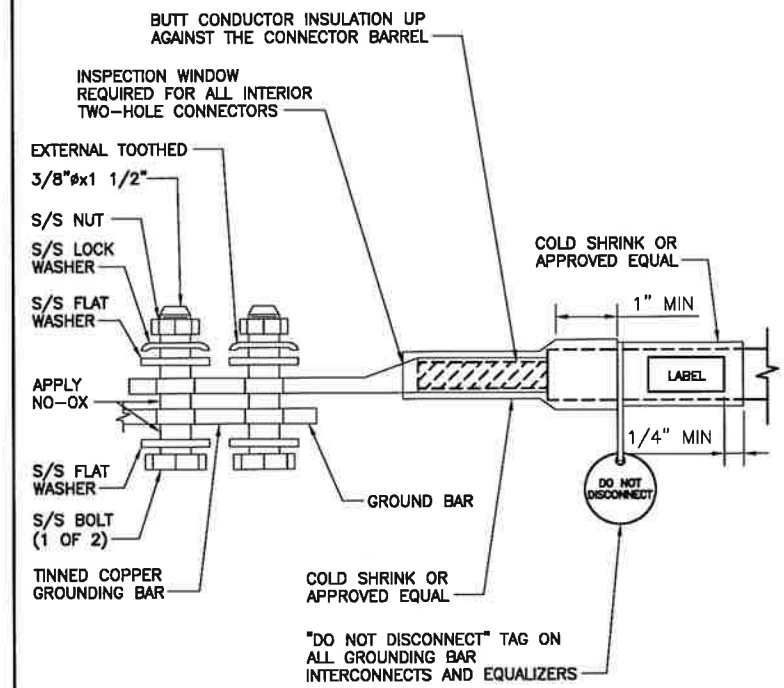
ELECTRICAL ONE-LINE DIAGRAM

NO SCALE 1



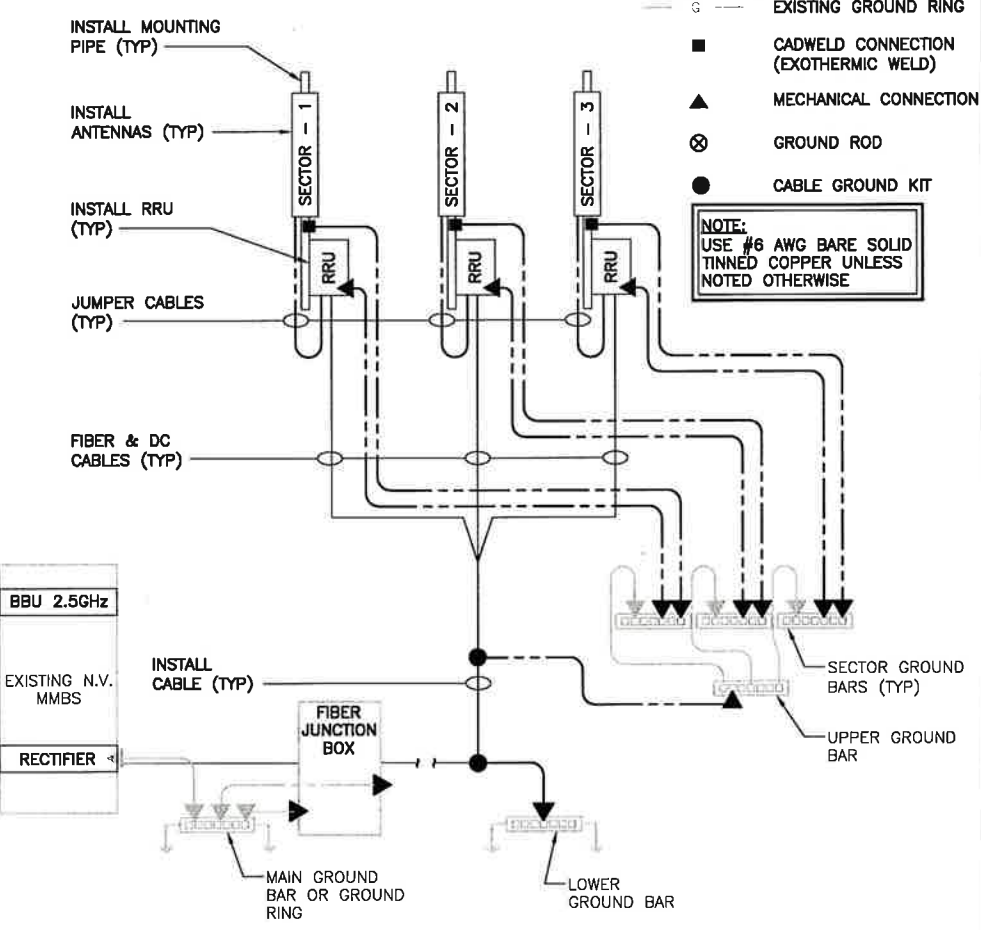
NOTES

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.



TWO HOLE LUG

NO SCALE 3



GROUNDING RISER DIAGRAM

NO SCALE 4

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	5/22/14	JDV	0

SITE NAME:

EAST FARMINGTON

SITE CASCADE:

CT03XC100

SITE ADDRESS:

3 A BIRDSEYE RD
 FARMINGTON, CT 06030

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

NO SCALE 2

June 06, 2014

Patrick Byrum
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6532



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

Subject: Structural Analysis Report

Carrier Designation: *Sprint PCS Co-Locate* Scenario 2.5A
Carrier Site Number: CT03XC100
Carrier Site Name: N/A

Crown Castle Designation: Crown Castle BU Number: 876335
Crown Castle Site Name: EAST FARMINGTON
Crown Castle JDE Job Number: 286431
Crown Castle Work Order Number: 757960
Crown Castle Application Number: 245397 Rev. 1

Engineering Firm Designation: B+T Group Project Number: 77969.013.01

Site Data: 3 A Birdseye Road, Farmington, Hartford County, CT
Latitude 41° 42' 56.94", Longitude -72° 48' 37.42"
140 Foot - Monopole Tower

Dear Patrick Byrum,

B+T Group is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 653908, in accordance with application 245397, revision 1.

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:

LC4.7: Existing + Reserved + Proposed Equipment

Sufficient Capacity

Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2003 IBC; 2003 IRC (State Building Code, 2005 CT supplement) based upon a wind speed of 80 mph fastest mile.

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

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

Respectfully submitted by:
B+T Engineering, Inc.

Jyoti Ojha
Project Engineer

Chad E. Tuttle, P.E.
President



TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Antenna and Cable Information

Table 2 - Existing and Reserved Antenna and Cable Information

Table 3 - Design Antenna and Cable Information

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Table 6 – Tower Components vs. Capacity

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 140 ft. monopole designed by Summit in November of 1997. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F. The tower has been modified multiple times and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
139.0	139.0	3	Alcatel Lucent	TD-RRH8x20-25	1	1 1/4	--
		3	Rfs Celwave	APXVTM14-C-120			

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
139.0	139.0	3	Rfs Celwave	APXV9ERR18-C-A20	3	1 1/4	1
		1	--	Platform Mount [LP 1201-1]			
137.0	140.0	3	Alcatel Lucent	800MHz 2X50W RRH W/FILTER	--	--	1
	137.0	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz			
		1	--	Side Arm Mount [SO 102-3]			
129.0	130.0	3	Ericsson	RRUS-11	--	--	1
	129.0	1	--	Side Arm Mount [SO 102-3]			
128.0	130.0	3	Ericsson	RRUS-11	9 2 1	7/8 3/4 3/8	1
		2	Kmw Com	AM-X-CD-16-65-00T-RET			
		1	Andrew	SBNH-1D6565C			
		3	Powerwave Tech	7770.00			
		1	Raycap	DC6-48-60-18-8F			
	128.0	6	Powerwave Tech	LGP21401			
		1	--	T-Arm Mount [TA 602-3]			
120.0	120.0	12	Swedcom	ALP 9212-N	12	7/8	1
		1	--	Platform Mount [LP 1201-1]			
110.0	110.0	1	Raycap	TME-DB-T16Z-8AB-0Z	--	--	2
		1	--	Side Arm Mount [SO 102-1]			
108.0	109.0	3	Antel	BXA-171063-12CF-EDIN-2	1	1 5/8	2
		3	Antel	BXA-70063-4CF-EDIN-X			
		1	Kathrein	800 10735V01			
		3	Antel	BXA-185060/8CFx2	12	1 5/8	1
		2	Antel	BXA-70063-6CF-EDIN-4			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
	108.0	6	Rfs Celwave	FD9R6004/2C-3L	--	--	2
		1	--	Platform Mount [LP 303-1]			
		3	Alcatel Lucent	RRH2x40-AWS			
100.0	100.0	3	Ericsson	ERICSSON AIR 21 B2A B4P	1	1 5/8	2
		3	Ericsson	ERICSSON AIR 21 B4A B2P			
		1	--	T-Arm Mount [TA 702-3]			
		3	Ericsson	KRY 112 144/1			
90.0	90.0	3	Kathrein	742 213	6	7/8	1
		1	--	Pipe Mount [PM 601-3]			
70.0	72.0	2	Lucent	KS24019-L112A	2	5/16	1
	70.0	2	--	Side Arm Mount [SO 701-1]			
49.0	51.0	1	Lucent	KS24019-L112A	1	1/2	1
	49.0	1	--	Side Arm Mount [SO 701-1]			

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
<i>Information Not Available</i>						

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Sprint Co-Locate Revision #1	245397	CCI Sites
Tower Manufacturing Drawing	Summit, Dtd 11/03/1997	1615361	CCI Sites
Tower Modification Drawing	B+T Group, Project No.79807	Date:12/09/2008	CCI Sites
Tower Modification Drawing	B+T Group, Project No.77969.005	Date:07/10/2012	CCI Sites
Post Modification Inspection	TEP, Project No.127152	3413367	CCI Sites
Tower Modification Drawing	B+T Group, Project No.77969.007.01	Date:03/04/2013	CCI Sites
Tower Modification Drawing	B+T Group, Project No.77969.011.01	Date:02/10/2014	CCI Sites
Foundation Drawing	Summit, Job No.2933	1440555	CCI Sites
Geotech Report	FDH, Project No. 1310091600	1531892	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 05/05/2014	CCI Sites

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 wind loads as allowed by TIA/EIA-222-F.
- 5) Mount areas and weights are assumed based on photographs provided.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	140 - 102.333	Pole	TP23.721x16x0.25	1	-10.333	906.684	98.4	Pass
L2	102.333 - 91.75	Pole	TP25.89x23.721x0.376	2	-12.223	1266.550	87.1	Pass
L3	91.75 - 85.333	Pole	TP26.706x24.724x0.422	3	-14.443	1716.051	92.9	Pass
L4	85.333 - 82.5	Pole	TP27.287x26.706x0.601	4	-15.015	2344.747	74.9	Pass
L5	82.5 - 77.1667	Pole	TP28.38x27.287x0.527	5	-16.126	2207.568	92.1	Pass
L6	77.1667 - 66.667	Pole	TP30.534x28.38x0.512	6	-18.626	2323.192	90.5	Pass
L7	66.667 - 60	Pole	TP31.901x30.534x0.508	7	-20.050	2243.412	96.4	Pass
L8	60 - 46.5	Pole	TP34.67x31.901x0.505	8	-22.216	2334.509	94.6	Pass
L9	46.5 - 44.25	Pole	TP34.506x33.122x0.554	9	-24.765	2658.668	97.8	Pass
L10	44.25 - 27.75	Pole	TP37.89x34.506x0.652	10	-29.589	3481.183	90.3	Pass
L11	27.75 - 24.083	Pole	TP38.642x37.89x0.645	11	-30.706	3516.534	91.6	Pass
L12	24.083 - 18.083	Pole	TP39.872x38.642x0.551	12	-32.622	2998.290	99.2	Pass
L13	18.083 - 0	Pole	TP43.58x39.872x0.626	13	-38.355	4100.215	98.6	Pass
							Summary	
						Pole (L12)	99.2	Pass
						RATING =	99.2	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC4.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	93.9	Pass
1	Base Plate	Base	91.3	Pass
1	Base Foundation	Base	69.6	Pass
Structure Rating (max from all components) =				99.2%

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F

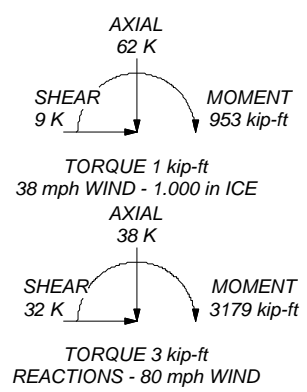
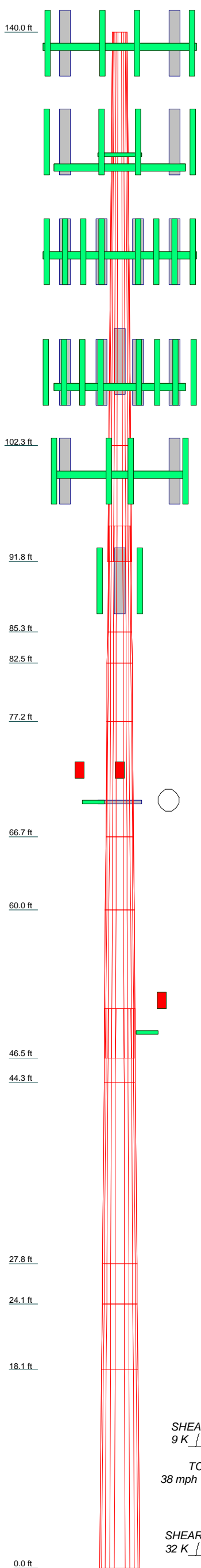
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	37.667	12	0.250	16.000	23.721	23.721	A607-60	2.0
2	10.563	12	0.376	3.250	23.721	25.890	52.584702ksi	1.0
3	9.667	12	0.422	24.724	26.706	26.706	52.584702ksi	1.2
4	2.833	12	0.601	26.706	27.287	27.287	52.584702ksi	0.5
5	5.333	12	0.527	27.287	28.380	28.380	52.584702ksi	0.9
6	10.500	12	0.512	28.380	30.534	30.534	58.450152ksi	1.9
7	6.667	12	0.508	30.534	31.901	31.901	56.742734ksi	1.1
8	13.500	12	0.505	31.901	34.670	34.670	54.670493ksi	2.6
9	6.750	12	0.554	33.122	34.506	34.506	53.993176ksi	1.3
10	16.500	12	0.652	34.506	37.890	37.890	54.865969ksi	4.0
11	3.667	12	0.645	37.890	38.642	38.642	55.708333ksi	0.9
12	6.000	12	0.551	38.642	39.872	39.872	55.701995ksi	1.6
13	18.083	12	0.626	39.872	43.580	43.580	53.739219ksi	4.9
								23.7



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXV9ERR18-C-A20 w/ Mount Pipe (E)	139	(4) ALP 9212-N w/ Mount Pipe (E)	120
APXV9ERR18-C-A20 w/ Mount Pipe (E)	139	(4) ALP 9212-N w/ Mount Pipe (E)	120
APXV9ERR18-C-A20 w/ Mount Pipe (E)	139	Platform Mount [LP 1201-1] (E)	120
APXVTM14-C-120 w/ Mount Pipe (P)	139	TME-DB-T16Z-8AB-0Z w/mount pipe (R)	110
APXVTM14-C-120 w/ Mount Pipe (P)	139	Side Arm Mount [SO 102-1] (R)	110
APXVTM14-C-120 w/ Mount Pipe (P)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
TD-RRH8x20-25 (P)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
TD-RRH8x20-25 (P)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
TD-RRH8x20-25 (P)	139	BXA-70063-6CF-EDIN-4 w/Mount Pipe (E)	108
(2) 5' x 2' Pipe Mount (E)	139	BXA-70063-6CF-EDIN-4 w/Mount Pipe (E)	108
(2) 5' x 2' Pipe Mount (E)	139	BXA-70063-4CF-EDIN-X w/ Mount Pipe (R)	108
(2) 5' x 2' Pipe Mount (E)	139	BXA-70063-4CF-EDIN-X w/ Mount Pipe (R)	108
Platform Mount [LP 1201-1] (E)	139	BXA-70063-4CF-EDIN-X w/ Mount Pipe (R)	108
PCS 1900MHz 4x45W-65MHz (E)	137	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	108
PCS 1900MHz 4x45W-65MHz (E)	137	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	108
PCS 1900MHz 4x45W-65MHz (E)	137	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	108
800MHz 2X50W RRH W/FILTER (E)	137	800 10735V01 w/ Mount Pipe (R)	108
800MHz 2X50W RRH W/FILTER (E)	137	RRH2x40-AWS (R)	108
800MHz 2X50W RRH W/FILTER (E)	137	RRH2x40-AWS (R)	108
Side Arm Mount [SO 102-3] (E)	137	RRH2x40-AWS (R)	108
(2) RRUS-11 (E)	129	(2) FD9R6004/2C-3L (E)	108
(2) RRUS-11 (E)	129	(2) FD9R6004/2C-3L (E)	108
(2) RRUS-11 (E)	129	(2) FD9R6004/2C-3L (E)	108
5' x 2' Pipe Mount (E)	129	Platform Mount [LP 303-1] (E)	108
5' x 2' Pipe Mount (E)	129	KRY 112 144/1 (E)	100
5' x 2' Pipe Mount (E)	129	KRY 112 144/1 (E)	100
Side Arm Mount [SO 102-3] (E)	129	KRY 112 144/1 (E)	100
7770.00 w/ Mount Pipe (E)	128	ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	100
7770.00 w/ Mount Pipe (E)	128	ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	100
7770.00 w/ Mount Pipe (E)	128	ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	100
(2) LGP21401 (E)	128	ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	100
(2) LGP21401 (E)	128	ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	100
(2) LGP21401 (E)	128	ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	100
SBNH-1D6565C w/ Mount Pipe (E)	128	T-Arm Mount [TA 702-3] (R)	100
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	128	742 213 w/ Mount Pipe (E)	90
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	128	742 213 w/ Mount Pipe (E)	90
DC6-48-60-18-8F (E)	128	742 213 w/ Mount Pipe (E)	90
RRUS-11 (R)	128	Pipe Mount [PM 601-3] (E)	90
RRUS-11 (R)	128	KS24019-L112A (E)	70
RRUS-11 (R)	128	KS24019-L112A (E)	70
6' x 2' Mount Pipe (E)	128	Side Arm Mount [SO 701-1] (E)	70
6' x 2' Mount Pipe (E)	128	Side Arm Mount [SO 701-1] (E)	70
6' x 2' Mount Pipe (E)	128	KS24019-L112A (E)	49
T-Arm Mount [TA 602-3] (E)	128	Side Arm Mount [SO 701-1] (E)	49
(4) ALP 9212-N w/ Mount Pipe (E)	120		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	53.993176ksi	54 ksi	69 ksi
52.584702ksi	53 ksi	68 ksi	54.865969ksi	55 ksi	70 ksi
60.01407ksi	60 ksi	75 ksi	55.708333ksi	56 ksi	71 ksi
56.810582ksi	57 ksi	72 ksi	55.701895ksi	56 ksi	71 ksi
58.450152ksi	58 ksi	73 ksi	53.739219ksi	54 ksi	69 ksi
58.742734ksi	59 ksi	74 ksi	59.216199ksi	59 ksi	74 ksi
54.670493ksi	55 ksi	70 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RAITING:99.2%

B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job: 77969.013.001 - East Farmington, CT (BU# 87633)
	Project: Client: Crown Castle Drawn by: jojha App'd: Code: TIA/EIA-222-F Date: 06/06/14 Scale: NTS Path: C:\Users\jojha\Desktop\77969.013\Txi\77969.013_01_East Farmington, CT_AS.dwg Dwg No. E-1

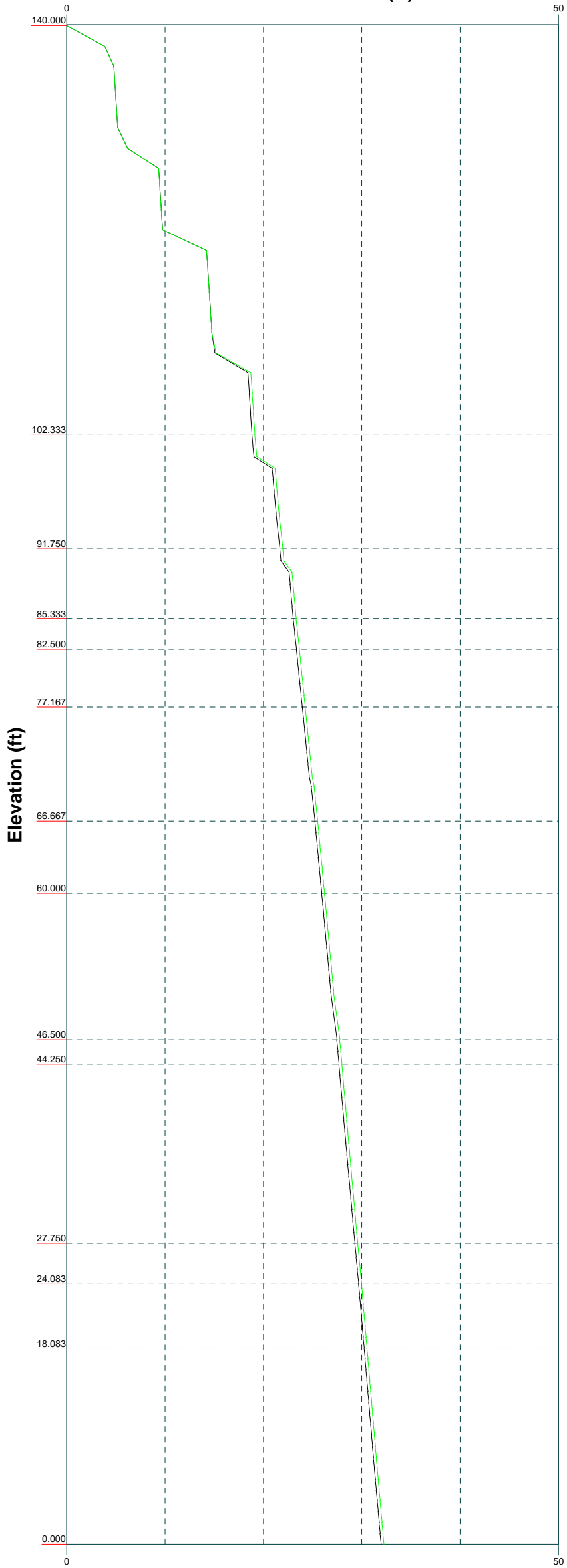
Vx

Vz

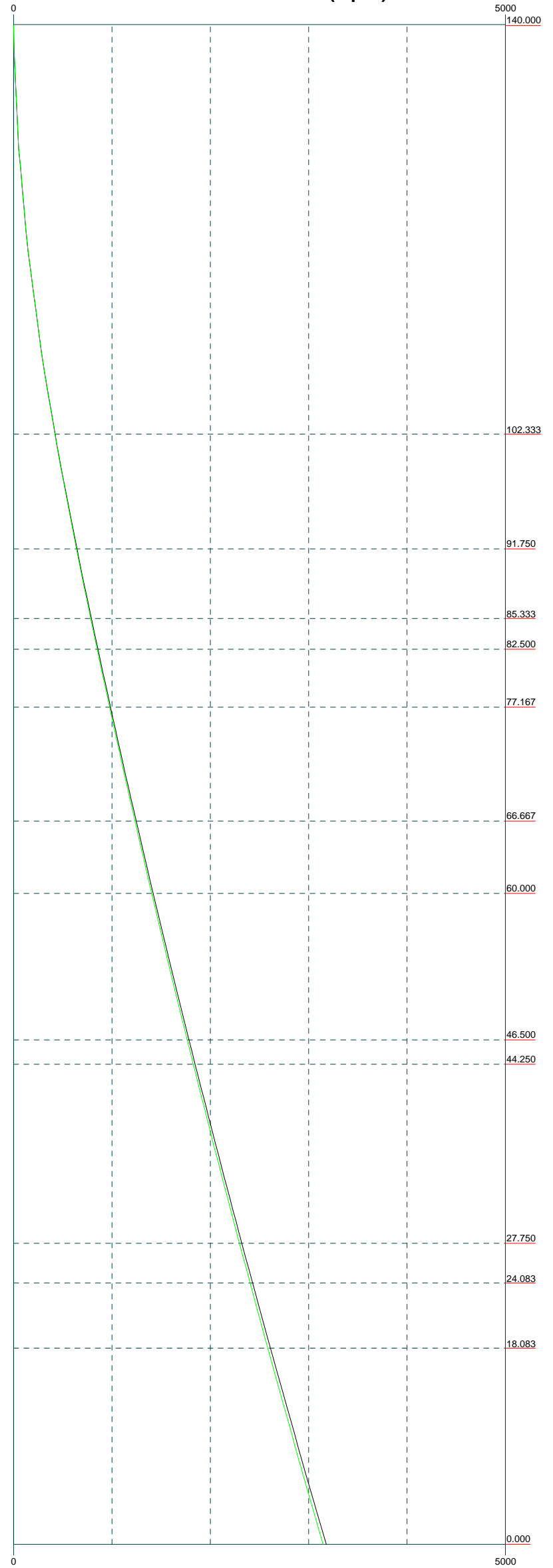
Mx

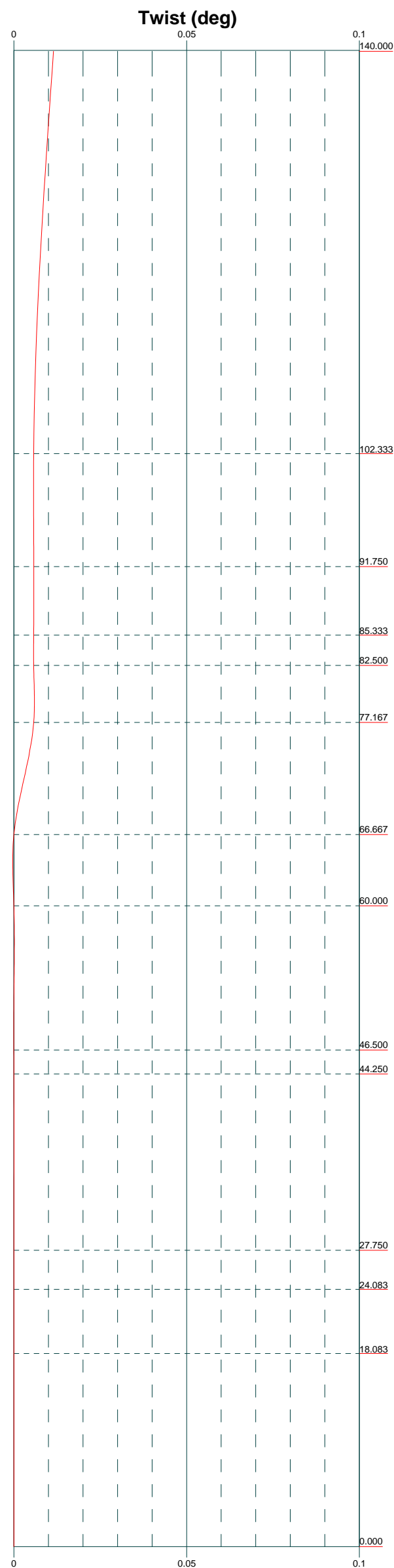
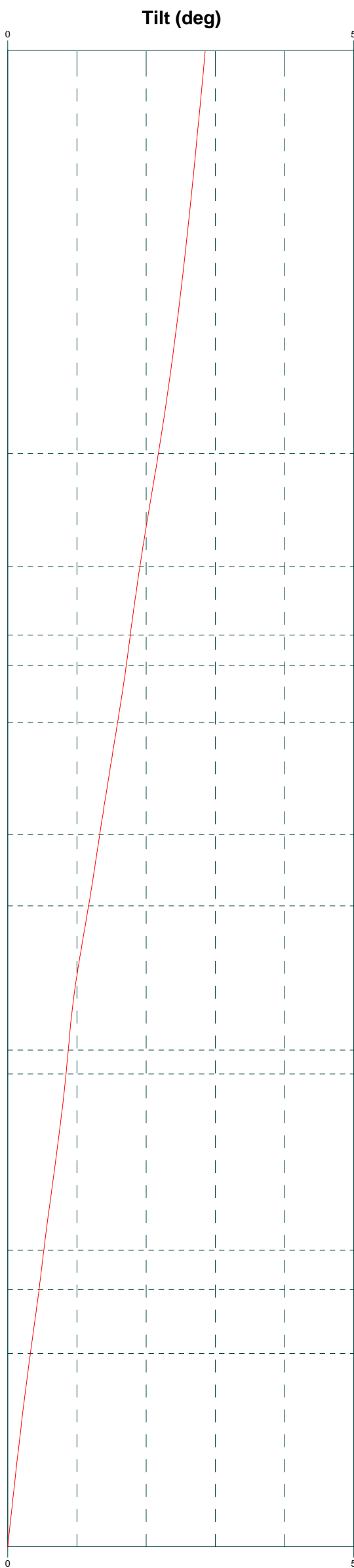
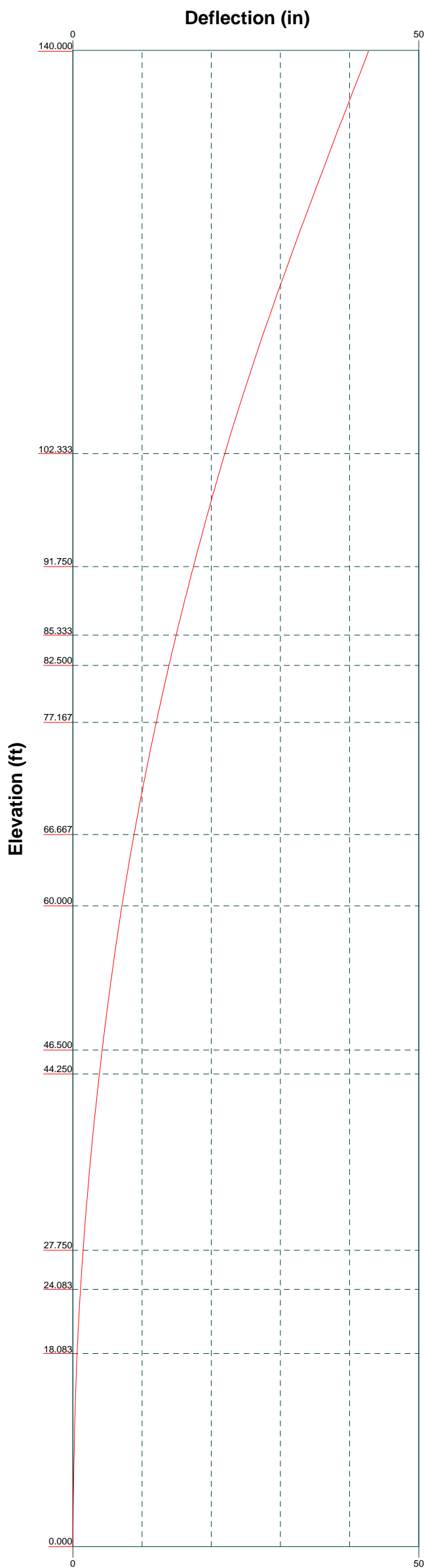
Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)

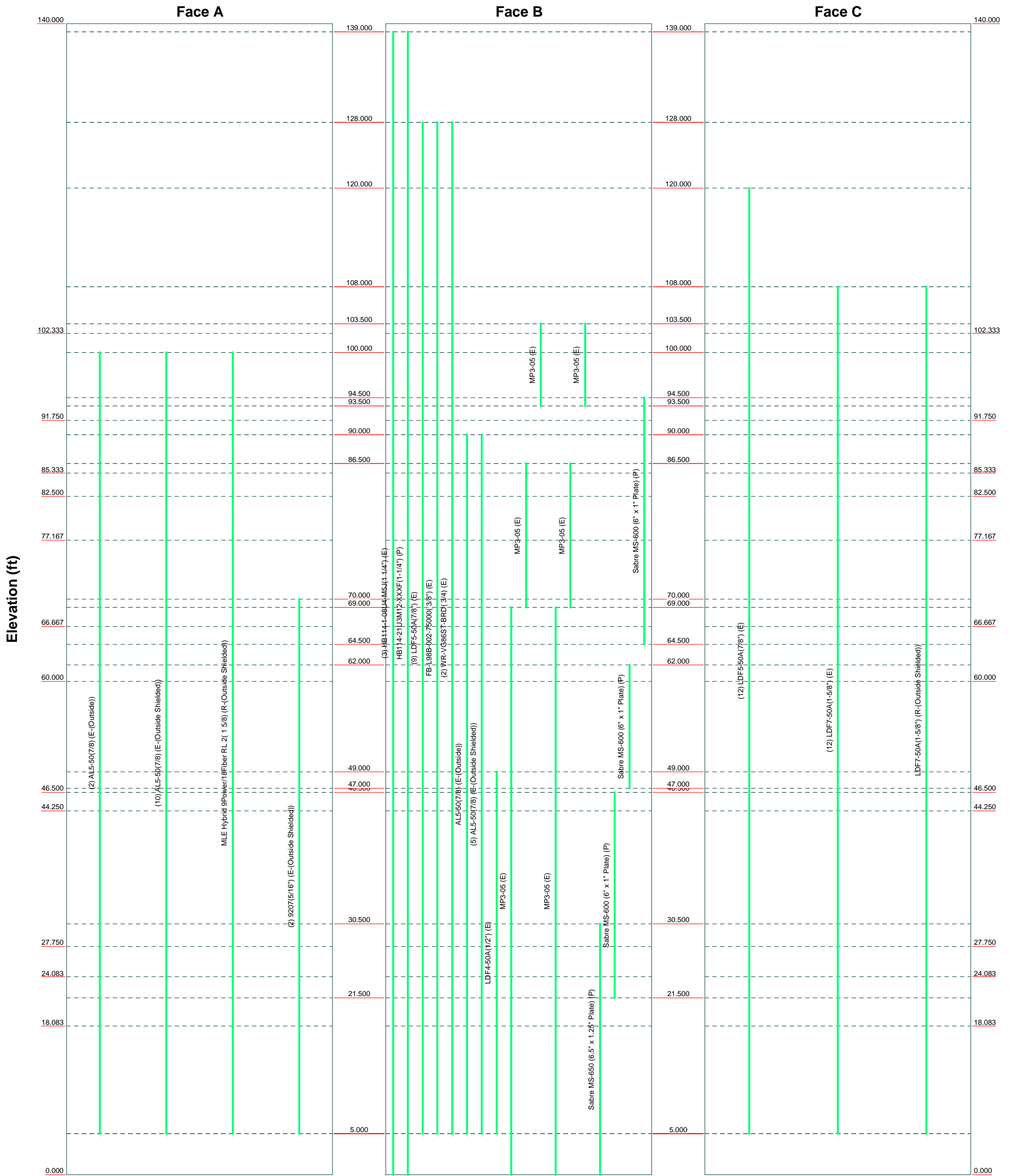




Feed Line Distribution Chart

0' - 140'

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



tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 1 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Tower Input Data

There is a pole section.

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

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Basic wind speed of 80 mph.

Nominal ice thickness of 1.000 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

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

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 50 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

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

Options

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	140.000-102.333	37.667	0.000	12	16.000	23.721	0.250	1.000	A607-60 (60 ksi)
L2	102.333-91.750	10.583	3.250	12	23.721	25.890	0.376	1.506	52.584702ksi (53 ksi)
L3	91.750-85.333	9.667	0.000	12	24.724	26.706	0.422	1.690	60.01407ksi (60 ksi)
L4	85.333-82.500	2.833	0.000	12	26.706	27.287	0.601	2.402	56.810582ksi (57 ksi)
L5	82.500-77.167	5.333	0.000	12	27.287	28.380	0.527	2.106	58.450152ksi

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	77969.013.001 - East Farmington, CT (BU# 876335)	Page	2 of 25
	Project		Date	10:45:04 06/06/14
	Client	Crown Castle		Designed by

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	77.167-66.667	10.500	0.000	12	28.380	30.534	0.512	2.046	(58 ksi) 58.742734ksi
L7	66.667-60.000	6.667	0.000	12	30.534	31.901	0.508	2.030	(59 ksi) 54.670493ksi
L8	60.000-46.500	13.500	4.500	12	31.901	34.670	0.505	2.020	(55 ksi) 53.993176ksi
L9	46.500-44.250	6.750	0.000	12	33.122	34.506	0.554	2.217	(54 ksi) 54.865969ksi
L10	44.250-27.750	16.500	0.000	12	34.506	37.890	0.652	2.606	(55 ksi) 55.708333ksi
L11	27.750-24.083	3.667	0.000	12	37.890	38.642	0.645	2.581	(56 ksi) 55.701895ksi
L12	24.083-18.083	6.000	0.000	12	38.642	39.872	0.551	2.204	(56 ksi) 53.739219ksi
L13	18.083-0.000	18.083		12	39.872	43.580	0.626	2.504	(54 ksi) 59.216199ksi (59 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	16.564	12.679	401.443	5.638	8.288	48.437	813.432	6.240	3.618	14.472
L2	24.558	18.894	1328.505	8.403	12.287	108.120	2691.912	9.299	5.687	22.749
	24.558	28.293	1968.030	8.357	12.287	160.167	3987.763	13.925	5.348	14.21
L3	26.803	30.922	2569.219	9.134	13.411	191.575	5205.935	15.219	5.930	15.754
	26.286	33.056	2491.704	8.700	12.807	194.559	5048.869	16.269	5.494	13.005
L4	27.648	35.752	3152.414	9.409	13.834	227.881	6387.646	17.596	6.025	14.263
	27.648	50.481	4391.062	9.346	13.834	317.420	8897.481	24.845	5.548	9.238
L5	28.249	51.604	4690.723	9.554	14.134	331.865	9504.677	25.398	5.703	9.497
	28.249	45.369	4146.813	9.580	14.134	293.384	8402.567	22.329	5.902	11.209
L6	29.381	47.222	4676.188	9.972	14.701	318.090	9475.225	23.241	6.195	11.766
	29.381	45.901	4550.244	9.977	14.701	309.523	9220.027	22.591	6.235	12.189
L7	31.611	49.448	5688.740	10.748	15.816	359.674	11526.930	24.337	6.812	13.318
	31.611	49.072	5646.975	10.749	15.816	357.033	11442.303	24.152	6.823	13.442
L8	33.026	51.307	6454.178	11.239	16.525	390.577	13077.914	25.252	7.189	14.165
	33.026	51.058	6423.885	11.240	16.525	388.744	13016.533	25.129	7.196	14.248
L9	35.893	55.561	8277.854	12.231	17.959	460.929	16773.176	27.345	7.938	15.717
	35.246	58.117	7868.028	11.659	17.157	458.585	15942.758	28.603	7.391	13.337
L10	35.723	60.587	8914.451	12.155	17.874	498.733	18063.094	29.819	7.762	14.007
	35.723	71.032	10391.436	12.120	17.874	581.365	21055.866	34.960	7.501	11.512
L11	39.226	78.131	13828.786	13.331	19.627	704.586	28020.869	38.454	8.408	12.904
	39.226	77.372	13699.075	13.334	19.627	697.977	27758.040	38.080	8.425	13.06
L12	40.005	78.934	14545.675	13.603	20.016	726.690	29473.482	38.849	8.627	13.372
	40.005	67.576	12514.610	13.636	20.016	625.220	25357.993	33.259	8.879	16.116
L13	41.278	69.759	13766.893	14.077	20.654	666.560	27895.458	34.333	9.209	16.715
	41.278	79.100	15550.809	14.050	20.654	752.932	31510.156	38.931	9.008	14.392
	45.117	86.574	20388.247	15.378	22.574	903.156	41312.116	42.609	10.002	15.979

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontal
ft	ft ²	in					in	in
L1				1	1	1		

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 3 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
ft	ft ²	in						
140.000-102.333								
L2				1	1	0.956127		
102.333-91.750								
L3				1	1	1.07562		
91.750-85.333								
L4				1	1	0.926259		
85.333-82.500								
L5				1	1	1.03548		
82.500-77.167								
L6				1	1	1.09168		
77.167-66.667								
L7				1	1	0.947739		
66.667-60.000								
L8				1	1	1.04477		
60.000-46.500								
L9				1	1	0.957484		
46.500-44.250								
L10				1	1	0.948284		
44.250-27.750								
L11				1	1	0.950131		
27.750-24.083								
L12				1	1	1.1218		
24.083-18.083								
L13				1	1	0.955568		
18.083-0.000								

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	$C_A A_A$ ft ² /ft	Weight klf
HB114-1-08U4-M5J(1 1/4") (E)	B	No	Inside Pole	139.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000
HB114-21U3M12-XXX F(1-1/4") (P)	B	No	Inside Pole	139.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000
///							
LDF5-50A(7/8")	B	No	Inside Pole	128.000 - 5.000	9	No Ice	0.000

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		4 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _{AA}	Weight
							ft ² /ft	klf
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
FB-L98B-002-75000(3/8")	B	No	Inside Pole	128.000 - 5.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	B	No	Inside Pole	128.000 - 5.000	2	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
*/**//								
LDF5-50A(7/8")	C	No	Inside Pole	120.000 - 5.000	12	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
*/**//								
LDF7-50A(1-5/8")	C	No	Inside Pole	108.000 - 5.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	108.000 - 5.000	1	No Ice	0.000	0.001
(R-(Outside Shielded))						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
*/**//								
AL5-50(7/8)	A	No	CaAa (Out Of Face)	100.000 - 5.000	2	No Ice	0.110	0.000
(E-(Outside))						1/2" Ice	0.210	0.001
						1" Ice	0.310	0.003
						2" Ice	0.510	0.008
						4" Ice	0.910	0.025
AL5-50(7/8)	A	No	CaAa (Out Of Face)	100.000 - 5.000	10	No Ice	0.000	0.000
(E-(Outside Shielded))						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.003
						2" Ice	0.000	0.008
						4" Ice	0.000	0.025
MLE Hybrid	A	No	CaAa (Out Of Face)	100.000 - 5.000	1	No Ice	0.000	0.001
9Power/18Fiber RL 2(15/8)						1/2" Ice	0.000	0.002
(R-(Outside Shielded))						1" Ice	0.000	0.004
						2" Ice	0.000	0.010
						4" Ice	0.000	0.029
*/**//								
AL5-50(7/8)	B	No	CaAa (Out Of Face)	90.000 - 5.000	1	No Ice	0.110	0.000
(E-(Outside))						1/2" Ice	0.210	0.001
						1" Ice	0.310	0.003
						2" Ice	0.510	0.008
						4" Ice	0.910	0.025
AL5-50(7/8)	B	No	CaAa (Out Of Face)	90.000 - 5.000	5	No Ice	0.000	0.000
(E-(Outside Shielded))						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.003
						2" Ice	0.000	0.008
						4" Ice	0.000	0.025
*/**//								
9207(5/16")	A	No	CaAa (Out Of Face)	70.000 - 5.000	2	No Ice	0.000	0.001
(E-(Outside Shielded))						1/2" Ice	0.000	0.001

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		5 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA}		Weight klf
							ft ² /ft	
						1" Ice	0.000	0.002
						2" Ice	0.000	0.006
						4" Ice	0.000	0.022
//*/ LDF4-50A(1/2") (E)	B	No	Inside Pole	49.000 - 5.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
//*/ MP3-05 (E)	B	No	CaAa (Out Of Face)	69.000 - 0.000	1	No Ice	0.348	0.000
						1/2" Ice	0.432	0.000
						1" Ice	0.515	0.000
						2" Ice	0.682	0.000
						4" Ice	1.015	0.000
MP3-05 (E)	B	No	CaAa (Out Of Face)	86.500 - 69.000	1	No Ice	0.348	0.000
						1/2" Ice	0.432	0.000
						1" Ice	0.515	0.000
						2" Ice	0.682	0.000
						4" Ice	1.015	0.000
MP3-05 (E)	B	No	CaAa (Out Of Face)	103.500 - 93.500	1	No Ice	0.348	0.000
						1/2" Ice	0.432	0.000
						1" Ice	0.515	0.000
						2" Ice	0.682	0.000
						4" Ice	1.015	0.000
//*/ MP3-05 (E)	B	No	CaAa (Out Of Face)	69.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
MP3-05 (E)	B	No	CaAa (Out Of Face)	86.500 - 69.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
MP3-05 (E)	B	No	CaAa (Out Of Face)	103.500 - 93.500	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
//*/ Sabre MS-650 (6.5" x 1.25" Plate) (P)	B	No	CaAa (Out Of Face)	30.500 - 0.000	1	No Ice	0.208	0.000
						1/2" Ice	0.292	0.000
						1" Ice	0.375	0.000
						2" Ice	0.542	0.000
						4" Ice	0.875	0.000
Sabre MS-600 (6" x 1" Plate) (P)	B	No	CaAa (Out Of Face)	46.500 - 21.500	1	No Ice	0.167	0.000
						1/2" Ice	0.250	0.000
						1" Ice	0.333	0.000
						2" Ice	0.500	0.000
						4" Ice	0.833	0.000
Sabre MS-600 (6" x 1" Plate) (P)	B	No	CaAa (Out Of Face)	62.000 - 47.000	1	No Ice	0.167	0.000
						1/2" Ice	0.250	0.000
						1" Ice	0.333	0.000
						2" Ice	0.500	0.000
						4" Ice	0.833	0.000
Sabre MS-600 (6" x 1" Plate) (P)	B	No	CaAa (Out Of Face)	94.500 - 64.500	1	No Ice	0.167	0.000
						1/2" Ice	0.250	0.000
						1" Ice	0.333	0.000
						2" Ice	0.500	0.000

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 6 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Description	Face or Leg	Allow or Shield	Component Type	Placement ft	Total Number	C _{AA} ft ² /ft	Weight klf
*					4" Ice	0.833	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.000-102.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.407	0.272
		C	0.000	0.000	0.000	0.000	0.130
L2	102.333-91.750	A	0.000	0.000	0.000	1.815	0.035
		B	0.000	0.000	0.000	3.535	0.092
		C	0.000	0.000	0.000	0.000	0.155
L3	91.750-85.333	A	0.000	0.000	0.000	1.412	0.027
		B	0.000	0.000	0.000	1.989	0.063
		C	0.000	0.000	0.000	0.000	0.094
L4	85.333-82.500	A	0.000	0.000	0.000	0.623	0.012
		B	0.000	0.000	0.000	1.771	0.029
		C	0.000	0.000	0.000	0.000	0.041
L5	82.500-77.167	A	0.000	0.000	0.000	1.173	0.022
		B	0.000	0.000	0.000	3.333	0.055
		C	0.000	0.000	0.000	0.000	0.078
L6	77.167-66.667	A	0.000	0.000	0.000	2.310	0.048
		B	0.000	0.000	0.000	6.562	0.107
		C	0.000	0.000	0.000	0.000	0.154
L7	66.667-60.000	A	0.000	0.000	0.000	1.467	0.036
		B	0.000	0.000	0.000	3.750	0.068
		C	0.000	0.000	0.000	0.000	0.097
L8	60.000-46.500	A	0.000	0.000	0.000	2.970	0.073
		B	0.000	0.000	0.000	8.354	0.138
		C	0.000	0.000	0.000	0.000	0.197
L9	46.500-44.250	A	0.000	0.000	0.000	0.495	0.012
		B	0.000	0.000	0.000	1.406	0.023
		C	0.000	0.000	0.000	0.000	0.033
L10	44.250-27.750	A	0.000	0.000	0.000	3.630	0.089
		B	0.000	0.000	0.000	10.885	0.171
		C	0.000	0.000	0.000	0.000	0.241
L11	27.750-24.083	A	0.000	0.000	0.000	0.807	0.020
		B	0.000	0.000	0.000	3.056	0.038
		C	0.000	0.000	0.000	0.000	0.054
L12	24.083-18.083	A	0.000	0.000	0.000	1.320	0.032
		B	0.000	0.000	0.000	4.431	0.062
		C	0.000	0.000	0.000	0.000	0.088
L13	18.083-0.000	A	0.000	0.000	0.000	2.878	0.071
		B	0.000	0.000	0.000	11.505	0.158
		C	0.000	0.000	0.000	0.000	0.191

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.000-102.333	A	1.168	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.634	0.272

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 7 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L2	102.333-91.750	C		0.000	0.000	0.000	0.000	0.157
		A	1.138	0.000	0.000	0.000	5.571	0.390
		B		0.000	0.000	0.000	5.732	0.092
		C		0.000	0.000	0.000	0.000	0.202
L3	91.750-85.333	A	1.126	0.000	0.000	0.000	4.333	0.303
		B		0.000	0.000	0.000	4.490	0.154
		C		0.000	0.000	0.000	0.000	0.123
L4	85.333-82.500	A	1.119	0.000	0.000	0.000	1.891	0.130
		B		0.000	0.000	0.000	3.461	0.083
		C		0.000	0.000	0.000	0.000	0.054
L5	82.500-77.167	A	1.112	0.000	0.000	0.000	3.545	0.243
		B		0.000	0.000	0.000	6.496	0.155
		C		0.000	0.000	0.000	0.000	0.101
L6	77.167-66.667	A	1.098	0.000	0.000	0.000	6.921	0.486
		B		0.000	0.000	0.000	12.710	0.300
		C		0.000	0.000	0.000	0.000	0.198
L7	66.667-60.000	A	1.081	0.000	0.000	0.000	4.350	0.324
		B		0.000	0.000	0.000	7.145	0.187
		C		0.000	0.000	0.000	0.000	0.125
L8	60.000-46.500	A	1.059	0.000	0.000	0.000	8.688	0.634
		B		0.000	0.000	0.000	15.890	0.370
		C		0.000	0.000	0.000	0.000	0.251
L9	46.500-44.250	A	1.039	0.000	0.000	0.000	1.448	0.106
		B		0.000	0.000	0.000	2.677	0.062
		C		0.000	0.000	0.000	0.000	0.042
L10	44.250-27.750	A	1.010	0.000	0.000	0.000	10.296	0.716
		B		0.000	0.000	0.000	20.237	0.430
		C		0.000	0.000	0.000	0.000	0.302
L11	27.750-24.083	A	1.000	0.000	0.000	0.000	2.274	0.156
		B		0.000	0.000	0.000	5.623	0.095
		C		0.000	0.000	0.000	0.000	0.067
L12	24.083-18.083	A	1.000	0.000	0.000	0.000	3.720	0.256
		B		0.000	0.000	0.000	8.061	0.155
		C		0.000	0.000	0.000	0.000	0.110
L13	18.083-0.000	A	1.000	0.000	0.000	0.000	8.111	0.558
		B		0.000	0.000	0.000	20.150	0.360
		C		0.000	0.000	0.000	0.000	0.239

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	140.000-102.333	0.017	0.010	0.023	0.013
L2	102.333-91.750	0.348	-0.008	0.437	-0.243
L3	91.750-85.333	0.326	-0.077	0.531	-0.282
L4	85.333-82.500	0.590	0.101	0.825	-0.044
L5	82.500-77.167	0.595	0.102	0.836	-0.044
L6	77.167-66.667	0.604	0.103	0.856	-0.044
L7	66.667-60.000	0.562	0.071	0.804	-0.101
L8	60.000-46.500	0.617	0.103	0.889	-0.048
L9	46.500-44.250	0.627	0.107	0.907	-0.043
L10	44.250-27.750	0.665	0.128	0.956	-0.009
L11	27.750-24.083	0.814	0.222	1.153	0.127
L12	24.083-18.083	0.741	0.173	1.056	0.046
L13	18.083-0.000	0.672	0.196	0.964	0.113

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 8 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			Lateral		°	ft	ft ²	ft ²	K	
			ft	ft						
APXV9ERR18-C-A20 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	139.000	No Ice	8.498	7.471	0.088
			0.000				1/2" Ice	9.149	8.656	0.158
			0.000				1" Ice	9.767	9.556	0.237
							2" Ice	11.031	11.388	0.421
							4" Ice	13.679	15.527	0.935
APXV9ERR18-C-A20 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	139.000	No Ice	8.498	7.471	0.088
			0.000				1/2" Ice	9.149	8.656	0.158
			0.000				1" Ice	9.767	9.556	0.237
							2" Ice	11.031	11.388	0.421
							4" Ice	13.679	15.527	0.935
APXV9ERR18-C-A20 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	139.000	No Ice	8.498	7.471	0.088
			0.000				1/2" Ice	9.149	8.656	0.158
			0.000				1" Ice	9.767	9.556	0.237
							2" Ice	11.031	11.388	0.421
							4" Ice	13.679	15.527	0.935
APXVTM14-C-120 w/ Mount Pipe (P)	A	From Leg	4.000	0.000	0.000	139.000	No Ice	7.134	4.959	0.077
			0.000				1/2" Ice	7.662	5.754	0.132
			0.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.339
							4" Ice	11.526	11.412	0.753
APXVTM14-C-120 w/ Mount Pipe (P)	B	From Leg	4.000	0.000	0.000	139.000	No Ice	7.134	4.959	0.077
			0.000				1/2" Ice	7.662	5.754	0.132
			0.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.339
							4" Ice	11.526	11.412	0.753
APXVTM14-C-120 w/ Mount Pipe (P)	C	From Leg	4.000	0.000	0.000	139.000	No Ice	7.134	4.959	0.077
			0.000				1/2" Ice	7.662	5.754	0.132
			0.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.339
							4" Ice	11.526	11.412	0.753
TD-RRH8x20-25 (P)	A	From Leg	4.000	0.000	0.000	139.000	No Ice	4.720	1.703	0.070
			0.000				1/2" Ice	5.014	1.920	0.097
			0.000				1" Ice	5.316	2.145	0.128
							2" Ice	5.948	2.622	0.201
							4" Ice	7.314	3.680	0.397
TD-RRH8x20-25 (P)	B	From Leg	4.000	0.000	0.000	139.000	No Ice	4.720	1.703	0.070
			0.000				1/2" Ice	5.014	1.920	0.097
			0.000				1" Ice	5.316	2.145	0.128
							2" Ice	5.948	2.622	0.201
							4" Ice	7.314	3.680	0.397
TD-RRH8x20-25 (P)	C	From Leg	4.000	0.000	0.000	139.000	No Ice	4.720	1.703	0.070
			0.000				1/2" Ice	5.014	1.920	0.097
			0.000				1" Ice	5.316	2.145	0.128
							2" Ice	5.948	2.622	0.201
							4" Ice	7.314	3.680	0.397
(2) 5' x 2' Pipe Mount (E)	A	From Leg	4.000	0.000	0.000	139.000	No Ice	1.188	1.188	0.018
			0.000				1/2" Ice	1.496	1.496	0.027
			0.000				1" Ice	1.807	1.807	0.040
							2" Ice	2.458	2.458	0.076
							4" Ice	3.919	3.919	0.196

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		9 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
(2) 5' x 2' Pipe Mount (E)	B	From Leg	4.000	0.000	0.000	139.000	No Ice	1.188	1.188	0.018
			0.000	0.000			1/2" Ice	1.496	1.496	0.027
			0.000	0.000			1" Ice	1.807	1.807	0.040
							2" Ice	2.458	2.458	0.076
							4" Ice	3.919	3.919	0.196
(2) 5' x 2' Pipe Mount (E)	C	From Leg	4.000	0.000	0.000	139.000	No Ice	1.188	1.188	0.018
			0.000	0.000			1/2" Ice	1.496	1.496	0.027
			0.000	0.000			1" Ice	1.807	1.807	0.040
							2" Ice	2.458	2.458	0.076
							4" Ice	3.919	3.919	0.196
Platform Mount [LP 1201-1] (E)	C	None			0.000	139.000	No Ice	23.100	23.100	2.100
							1/2" Ice	26.800	26.800	2.500
							1" Ice	30.500	30.500	2.900
							2" Ice	37.900	37.900	3.700
							4" Ice	52.700	52.700	5.300
//// PCS 1900MHz 4x45W-65MHz (E)	A	From Leg	2.000	0.000	0.000	137.000	No Ice	2.709	2.611	0.060
			0.000	0.000			1/2" Ice	2.948	2.847	0.083
			0.000	0.000			1" Ice	3.195	3.092	0.110
							2" Ice	3.716	3.608	0.173
							4" Ice	4.862	4.744	0.347
PCS 1900MHz 4x45W-65MHz (E)	B	From Leg	2.000	0.000	0.000	137.000	No Ice	2.709	2.611	0.060
			0.000	0.000			1/2" Ice	2.948	2.847	0.083
			0.000	0.000			1" Ice	3.195	3.092	0.110
							2" Ice	3.716	3.608	0.173
							4" Ice	4.862	4.744	0.347
PCS 1900MHz 4x45W-65MHz (E)	C	From Leg	2.000	0.000	0.000	137.000	No Ice	2.709	2.611	0.060
			0.000	0.000			1/2" Ice	2.948	2.847	0.083
			0.000	0.000			1" Ice	3.195	3.092	0.110
							2" Ice	3.716	3.608	0.173
							4" Ice	4.862	4.744	0.347
800MHz 2X50W RRH W/FILTER (E)	A	From Leg	2.000	0.000	0.000	137.000	No Ice	2.401	2.254	0.064
			0.000	0.000			1/2" Ice	2.613	2.460	0.086
			3.000	0.000			1" Ice	2.833	2.675	0.111
							2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
800MHz 2X50W RRH W/FILTER (E)	B	From Leg	2.000	0.000	0.000	137.000	No Ice	2.401	2.254	0.064
			0.000	0.000			1/2" Ice	2.613	2.460	0.086
			3.000	0.000			1" Ice	2.833	2.675	0.111
							2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
800MHz 2X50W RRH W/FILTER (E)	C	From Leg	2.000	0.000	0.000	137.000	No Ice	2.401	2.254	0.064
			0.000	0.000			1/2" Ice	2.613	2.460	0.086
			3.000	0.000			1" Ice	2.833	2.675	0.111
							2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
Side Arm Mount [SO 102-3] (E)	C	None			0.000	137.000	No Ice	3.000	3.000	0.081
							1/2" Ice	3.480	3.480	0.111
							1" Ice	3.960	3.960	0.141
							2" Ice	4.920	4.920	0.201
							4" Ice	6.840	6.840	0.321
//// (2) RRUS-11 (E)	A	From Leg	2.000	0.000	0.000	129.000	No Ice	3.249	1.373	0.048
			0.000	0.000			1/2" Ice	3.491	1.551	0.068
			1.000	0.000			1" Ice	3.741	1.738	0.092
							2" Ice	4.268	2.138	0.150
							4" Ice	5.426	3.042	0.310

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		11 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
(E)			0.000			1/2" Ice	1.445	0.313	0.021
			0.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
SBNH-1D6565C w/ Mount Pipe (E)	A	From Leg	4.000	0.000	128.000	No Ice	11.683	9.842	0.094
			0.000			1/2" Ice	12.404	11.366	0.183
			2.000			1" Ice	13.135	12.914	0.283
						2" Ice	14.601	15.267	0.517
						4" Ice	17.875	20.139	1.162
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	B	From Leg	4.000	0.000	128.000	No Ice	8.498	6.304	0.074
			0.000			1/2" Ice	9.149	7.479	0.139
			2.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	C	From Leg	4.000	0.000	128.000	No Ice	8.498	6.304	0.074
			0.000			1/2" Ice	9.149	7.479	0.139
			2.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
DC6-48-60-18-8F (E)	A	From Leg	4.000	0.000	128.000	No Ice	1.266	1.266	0.020
			0.000			1/2" Ice	1.456	1.456	0.035
			2.000			1" Ice	1.658	1.658	0.053
						2" Ice	2.093	2.093	0.095
						4" Ice	3.098	3.098	0.215
RRUS-11 (R)	A	From Leg	4.000	0.000	128.000	No Ice	3.249	1.373	0.048
			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11 (R)	B	From Leg	4.000	0.000	128.000	No Ice	3.249	1.373	0.048
			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11 (R)	C	From Leg	4.000	0.000	128.000	No Ice	3.249	1.373	0.048
			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
6' x 2" Mount Pipe (E)	A	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe (E)	B	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe (E)	C	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
T-Arm Mount [TA 602-3] (E)	C	None		0.000	128.000	No Ice	11.590	11.590	0.774
						1/2" Ice	15.440	15.440	0.990
						1" Ice	19.290	19.290	1.206

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		12 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
						2" Ice	26.990	26.990	1.639	
						4" Ice	42.390	42.390	2.503	
***//										
(4) ALP 9212-N w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	120.000	No Ice	6.021	7.050	0.037
			0.000				1/2" Ice	6.505	7.833	0.096
			0.000				1" Ice	6.992	8.588	0.162
							2" Ice	7.995	10.151	0.317
							4" Ice	10.128	13.500	0.746
(4) ALP 9212-N w/ Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	120.000	No Ice	6.021	7.050	0.037
			0.000				1/2" Ice	6.505	7.833	0.096
			0.000				1" Ice	6.992	8.588	0.162
							2" Ice	7.995	10.151	0.317
							4" Ice	10.128	13.500	0.746
(4) ALP 9212-N w/ Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	120.000	No Ice	6.021	7.050	0.037
			0.000				1/2" Ice	6.505	7.833	0.096
			0.000				1" Ice	6.992	8.588	0.162
							2" Ice	7.995	10.151	0.317
							4" Ice	10.128	13.500	0.746
Platform Mount [LP 1201-1] (E)	C	None		0.000		120.000	No Ice	23.100	23.100	2.100
							1/2" Ice	26.800	26.800	2.500
							1" Ice	30.500	30.500	2.900
							2" Ice	37.900	37.900	3.700
							4" Ice	52.700	52.700	5.300
***//										
TME-DB-T16Z-8AB-0Z w/mount pipe (R)	A	From Leg	2.000	0.000	0.000	110.000	No Ice	5.660	2.752	0.053
			0.000				1/2" Ice	5.997	3.126	0.095
			0.000				1" Ice	6.344	3.521	0.142
							2" Ice	7.075	4.417	0.254
							4" Ice	8.662	6.448	0.561
Side Arm Mount [SO 102-1] (R)	A	From Leg	1.000	0.000	0.000	110.000	No Ice	1.500	1.500	0.025
			0.000				1/2" Ice	1.740	1.750	0.035
			0.000				1" Ice	1.980	2.000	0.045
							2" Ice	2.460	2.500	0.065
							4" Ice	3.420	3.500	0.105
***//										
BXA-185060/8CFx2 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	108.000	No Ice	3.294	3.104	0.029
			0.000				1/2" Ice	3.684	3.754	0.060
			1.000				1" Ice	4.078	4.392	0.097
							2" Ice	4.991	5.718	0.191
							4" Ice	6.945	8.643	0.485
BXA-185060/8CFx2 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	108.000	No Ice	3.294	3.104	0.029
			0.000				1/2" Ice	3.684	3.754	0.060
			1.000				1" Ice	4.078	4.392	0.097
							2" Ice	4.991	5.718	0.191
							4" Ice	6.945	8.643	0.485
BXA-185060/8CFx2 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	108.000	No Ice	3.294	3.104	0.029
			0.000				1/2" Ice	3.684	3.754	0.060
			1.000				1" Ice	4.078	4.392	0.097
							2" Ice	4.991	5.718	0.191
							4" Ice	6.945	8.643	0.485
BXA-70063-6CF-EDIN-4 w/Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	108.000	No Ice	7.751	5.180	0.039
			0.000				1/2" Ice	8.295	6.114	0.095
			1.000				1" Ice	8.846	6.924	0.159
							2" Ice	9.974	8.593	0.313
							4" Ice	12.335	12.132	0.754
BXA-70063-6CF-EDIN-4 w/Mount Pipe	B	From Leg	4.000	0.000	0.000	108.000	No Ice	7.751	5.180	0.039
			0.000				1/2" Ice	8.295	6.114	0.095

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		13 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
(E)			1.000						
						1" Ice	8.846	6.924	0.159
						2" Ice	9.974	8.593	0.313
						4" Ice	12.335	12.132	0.754
BXA-70063-4CF-EDIN-X w/ Mount Pipe	A	From Leg	4.000	0.000	108.000	No Ice	5.399	3.693	0.028
(R)			0.000			1/2" Ice	5.844	4.295	0.070
			1.000			1" Ice	6.299	4.913	0.118
						2" Ice	7.240	6.258	0.235
						4" Ice	9.261	9.285	0.576
BXA-70063-4CF-EDIN-X w/ Mount Pipe	B	From Leg	4.000	0.000	108.000	No Ice	5.399	3.693	0.028
(R)			0.000			1/2" Ice	5.844	4.295	0.070
			1.000			1" Ice	6.299	4.913	0.118
						2" Ice	7.240	6.258	0.235
						4" Ice	9.261	9.285	0.576
BXA-70063-4CF-EDIN-X w/ Mount Pipe	C	From Leg	4.000	0.000	108.000	No Ice	5.399	3.693	0.028
(R)			0.000			1/2" Ice	5.844	4.295	0.070
			1.000			1" Ice	6.299	4.913	0.118
						2" Ice	7.240	6.258	0.235
						4" Ice	9.261	9.285	0.576
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.000	0.000	108.000	No Ice	5.029	5.289	0.041
(R)			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.000	0.000	108.000	No Ice	5.029	5.289	0.041
(R)			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.000	0.000	108.000	No Ice	5.029	5.289	0.041
(R)			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
800 10735V01 w/ Mount Pipe	A	From Leg	4.000	0.000	108.000	No Ice	9.042	5.489	0.058
(R)			0.000			1/2" Ice	9.720	6.710	0.121
			1.000			1" Ice	10.373	7.688	0.192
						2" Ice	11.691	9.563	0.362
						4" Ice	14.446	13.514	0.849
RRH2x40-AWS	A	From Leg	4.000	0.000	108.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			0.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	B	From Leg	4.000	0.000	108.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			0.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	C	From Leg	4.000	0.000	108.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			0.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
(2) FD9R6004/2C-3L	A	From Leg	4.000	0.000	108.000	No Ice	0.367	0.085	0.003
(E)			0.000			1/2" Ice	0.451	0.136	0.005
			1.000			1" Ice	0.543	0.196	0.009
						2" Ice	0.755	0.343	0.020

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		14 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
(2) FD9R6004/2C-3L (E)	B	From Leg	4.000	0.000	0.000	108.000	4" Ice	1.281	0.740	0.063
							No Ice	0.367	0.085	0.003
							1/2" Ice	0.451	0.136	0.005
							1" Ice	0.543	0.196	0.009
							2" Ice	0.755	0.343	0.020
(2) FD9R6004/2C-3L (E)	C	From Leg	4.000	0.000	0.000	108.000	4" Ice	1.281	0.740	0.063
							No Ice	0.367	0.085	0.003
							1/2" Ice	0.451	0.136	0.005
							1" Ice	0.543	0.196	0.009
							2" Ice	0.755	0.343	0.020
Platform Mount [LP 303-1] (E)	C	None			0.000	108.000	4" Ice	1.281	0.740	0.063
							No Ice	14.660	14.660	1.250
							1/2" Ice	18.870	18.870	1.481
							1" Ice	23.080	23.080	1.713
							2" Ice	31.500	31.500	2.175
/// KRY 112 144/1 (E)	A	From Leg	3.000	0.000	0.000	100.000	4" Ice	48.340	48.340	3.101
							No Ice	0.408	0.204	0.011
							1/2" Ice	0.497	0.273	0.014
							1" Ice	0.594	0.351	0.019
							2" Ice	0.815	0.533	0.032
KRY 112 144/1 (E)	B	From Leg	3.000	0.000	0.000	100.000	4" Ice	1.359	0.999	0.082
							No Ice	0.408	0.204	0.011
							1/2" Ice	0.497	0.273	0.014
							1" Ice	0.594	0.351	0.019
							2" Ice	0.815	0.533	0.032
KRY 112 144/1 (E)	C	From Leg	3.000	0.000	0.000	100.000	4" Ice	1.359	0.999	0.082
							No Ice	0.408	0.204	0.011
							1/2" Ice	0.497	0.273	0.014
							1" Ice	0.594	0.351	0.019
							2" Ice	0.815	0.533	0.032
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	A	From Leg	3.000	0.000	0.000	100.000	4" Ice	1.359	0.999	0.082
							No Ice	6.825	5.642	0.112
							1/2" Ice	7.347	6.480	0.169
							1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	B	From Leg	3.000	0.000	0.000	100.000	4" Ice	11.175	12.293	0.807
							No Ice	6.825	5.642	0.112
							1/2" Ice	7.347	6.480	0.169
							1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	C	From Leg	3.000	0.000	0.000	100.000	4" Ice	11.175	12.293	0.807
							No Ice	6.825	5.642	0.112
							1/2" Ice	7.347	6.480	0.169
							1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	A	From Leg	3.000	0.000	0.000	100.000	4" Ice	11.175	12.293	0.807
							No Ice	6.825	5.642	0.112
							1/2" Ice	7.347	6.480	0.169
							1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	B	From Leg	3.000	0.000	0.000	100.000	4" Ice	11.175	12.293	0.807
							No Ice	6.825	5.642	0.112
							1/2" Ice	7.347	6.480	0.169
							1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job		77969.013.001 - East Farmington, CT (BU# 876335)		Page		15 of 25	
	Project				Date		10:45:04 06/06/14	
	Client		Crown Castle		Designed by		jojha	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	C	From Leg	3.000	0.000	0.000	100.000	No Ice	6.825	5.642	0.112
			0.000	0.000			1/2" Ice	7.347	6.480	0.169
			0.000	0.000			1" Ice	7.863	7.257	0.233
							2" Ice	8.926	8.864	0.383
							4" Ice	11.175	12.293	0.807
T-Arm Mount [TA 702-3] (R)	C	None			0.000	100.000	No Ice	5.640	5.640	0.339
							1/2" Ice	6.550	6.550	0.429
							1" Ice	7.460	7.460	0.519
							2" Ice	9.280	9.280	0.699
							4" Ice	12.920	12.920	1.059
//// 742 213 w/ Mount Pipe (E)	A	From Leg	1.000	0.000	0.000	90.000	No Ice	5.373	4.620	0.049
			0.000	0.000			1/2" Ice	5.950	6.000	0.094
			0.000	0.000			1" Ice	6.501	6.982	0.146
							2" Ice	7.611	8.852	0.277
							4" Ice	9.933	12.794	0.683
742 213 w/ Mount Pipe (E)	B	From Leg	1.000	0.000	0.000	90.000	No Ice	5.373	4.620	0.049
			0.000	0.000			1/2" Ice	5.950	6.000	0.094
			0.000	0.000			1" Ice	6.501	6.982	0.146
							2" Ice	7.611	8.852	0.277
							4" Ice	9.933	12.794	0.683
742 213 w/ Mount Pipe (E)	C	From Leg	1.000	0.000	0.000	90.000	No Ice	5.373	4.620	0.049
			0.000	0.000			1/2" Ice	5.950	6.000	0.094
			0.000	0.000			1" Ice	6.501	6.982	0.146
							2" Ice	7.611	8.852	0.277
							4" Ice	9.933	12.794	0.683
Pipe Mount [PM 601-3] (E)	C	None			0.000	90.000	No Ice	4.390	4.390	0.195
							1/2" Ice	5.480	5.480	0.237
							1" Ice	6.570	6.570	0.280
							2" Ice	8.750	8.750	0.365
							4" Ice	13.110	13.110	0.534
//// KS24019-L112A (E)	C	From Leg	3.000	0.000	0.000	70.000	No Ice	0.100	0.100	0.005
			0.000	0.000			1/2" Ice	0.180	0.180	0.006
			2.000	0.000			1" Ice	0.260	0.260	0.008
							2" Ice	0.420	0.420	0.011
							4" Ice	0.740	0.740	0.017
KS24019-L112A (E)	A	From Leg	3.000	0.000	0.000	70.000	No Ice	0.100	0.100	0.005
			0.000	0.000			1/2" Ice	0.180	0.180	0.006
			2.000	0.000			1" Ice	0.260	0.260	0.008
							2" Ice	0.420	0.420	0.011
							4" Ice	0.740	0.740	0.017
Side Arm Mount [SO 701-1] (E)	C	From Leg	1.500	0.000	0.000	70.000	No Ice	0.850	1.670	0.065
			0.000	0.000			1/2" Ice	1.140	2.340	0.079
			0.000	0.000			1" Ice	1.430	3.010	0.093
							2" Ice	2.010	4.350	0.121
							4" Ice	3.170	7.030	0.177
Side Arm Mount [SO 701-1] (E)	A	From Leg	1.500	0.000	0.000	70.000	No Ice	0.850	1.670	0.065
			0.000	0.000			1/2" Ice	1.140	2.340	0.079
			0.000	0.000			1" Ice	1.430	3.010	0.093
							2" Ice	2.010	4.350	0.121
							4" Ice	3.170	7.030	0.177
//// KS24019-L112A (E)	B	From Leg	3.000	0.000	0.000	49.000	No Ice	0.100	0.100	0.005
			0.000	0.000			1/2" Ice	0.180	0.180	0.006
			2.000	0.000			1" Ice	0.260	0.260	0.008
							2" Ice	0.420	0.420	0.011
							4" Ice	0.740	0.740	0.017

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 16 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
Side Arm Mount [SO 701-1] (E)	B	From Leg	1.500	0.000	0.000	49.000	4" Ice 0.740 No Ice 0.850	0.740 1.670	0.017 0.065
			0.000				1/2" Ice 1.140 1" Ice 1.430	2.340 3.010	0.079 0.093
			0.000				2" Ice 2.010 4" Ice 3.170	4.350 7.030	0.121 0.177
///									

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
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

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 17 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

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	140 - 102.333	Pole	Max Tension	27	0.000	0.000	-0.000
			Max. Compression	14	-23.421	-0.811	2.987
			Max. Mx	5	-10.380	-419.522	0.300
			Max. My	2	-10.333	0.208	422.084
			Max. Vy	5	18.845	-419.522	0.300
			Max. Vx	2	-19.141	0.208	422.084
			Max. Torque	12			-2.995
L2	102.333 - 91.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-26.992	-0.792	3.313
			Max. Mx	5	-12.269	-568.960	0.027
			Max. My	2	-12.223	0.535	573.730
			Max. Vy	5	21.299	-568.960	0.027
			Max. Vx	2	-21.597	0.535	573.730
			Max. Torque	12			-2.999
L3	91.75 - 85.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-30.591	-0.858	3.767
			Max. Mx	5	-14.485	-783.268	-0.337
			Max. My	2	-14.443	0.962	790.955
			Max. Vy	5	23.043	-783.268	-0.337
			Max. Vx	2	-23.342	0.962	790.955
			Max. Torque	12			-3.012
L4	85.333 - 82.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-31.426	-0.906	3.895
			Max. Mx	5	-15.056	-848.984	-0.445
			Max. My	2	-15.014	1.086	857.526
			Max. Vy	5	23.369	-848.984	-0.445
			Max. Vx	2	-23.668	1.086	857.526
			Max. Torque	12			-3.017
L5	82.5 - 77.1667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-33.009	-0.997	4.139
			Max. Mx	5	-16.164	-975.172	-0.649
			Max. My	2	-16.126	1.320	985.323
			Max. Vy	5	23.971	-975.172	-0.649
			Max. Vx	2	-24.270	1.320	985.323
			Max. Torque	12			-3.025
L6	77.1667 - 66.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-36.501	-0.924	4.799
			Max. Mx	5	-18.659	-1233.056	-0.998
			Max. My	2	-18.626	1.986	1246.608
			Max. Vy	5	25.247	-1233.056	-0.998
			Max. Vx	2	-25.532	1.986	1246.608
			Max. Torque	12			-3.043
L7	66.667 - 60	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-38.508	-1.043	5.157
			Max. Mx	5	-20.079	-1403.633	-1.330
			Max. My	2	-20.050	2.361	1419.114
			Max. Vy	5	25.948	-1403.633	-1.330
			Max. Vx	2	-26.232	2.361	1419.114
			Max. Torque	12			-3.055
L8	60 - 46.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-41.437	-1.207	5.646
			Max. Mx	5	-22.240	-1641.205	-1.778
			Max. My	2	-22.216	2.865	1659.284

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 18 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
L9	46.5 - 44.25	Pole	Max. Vy	5	26.873	-1641.205	-1.778	
			Max. Vx	2	-27.156	2.865	1659.284	
			Max. Torque	12				-3.071
			Max Tension	1	0.000	0.000	0.000	
			Max. Compression	14	-44.865	-1.600	5.857	
			Max. Mx	5	-24.787	-1825.678	-2.164	
			Max. My	2	-24.765	3.013	1845.475	
			Max. Vy	5	27.698	-1825.678	-2.164	
L10	44.25 - 27.75	Pole	Max. Vx	2	-27.994	3.013	1845.475	
			Max. Torque	12				-3.085
			Max Tension	1	0.000	0.000	0.000	
			Max. Compression	14	-51.061	-1.879	6.679	
			Max. Mx	5	-29.604	-2295.723	-2.803	
			Max. My	2	-29.589	3.753	2320.472	
			Max. Vy	5	29.315	-2295.723	-2.803	
			Max. Vx	2	-29.608	3.753	2320.472	
L11	27.75 - 24.083	Pole	Max. Torque	12				-3.116
			Max Tension	1	0.000	0.000	0.000	
			Max. Compression	14	-52.486	-1.942	6.866	
			Max. Mx	5	-30.719	-2403.856	-2.944	
			Max. My	2	-30.706	3.916	2429.701	
			Max. Vy	5	29.689	-2403.856	-2.944	
			Max. Vx	2	-29.982	3.916	2429.701	
			Max. Torque	12				-3.123
L12	24.083 - 18.083	Pole	Max Tension	1	0.000	0.000	0.000	
			Max. Compression	14	-54.881	-2.048	7.179	
			Max. Mx	5	-32.631	-2583.609	-3.174	
			Max. My	2	-32.622	4.183	2611.240	
			Max. Vy	5	30.258	-2583.609	-3.174	
			Max. Vx	2	-30.550	4.183	2611.240	
			Max. Torque	12				-3.136
			Max Tension	1	0.000	0.000	0.000	
L13	18.083 - 0	Pole	Max. Compression	14	-61.875	-2.291	7.896	
			Max. Mx	5	-38.355	-3145.934	-3.897	
			Max. My	2	-38.355	4.986	3178.868	
			Max. Vy	5	31.977	-3145.934	-3.897	
			Max. Vx	2	-32.263	4.986	3178.868	
			Max. Torque	12				-3.165

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	15	61.875	0.007	9.230
	Max. H _x	11	38.368	31.962	0.045
	Max. H _z	2	38.368	0.045	32.248
	Max. M _x	2	3178.868	0.045	32.248
	Max. M _z	5	3145.934	-31.962	-0.045
	Max. Torsion	6	3.144	-27.702	-16.163
	Min. Vert	1	38.368	0.000	0.000
	Min. H _x	5	38.368	-31.962	-0.045
	Min. H _z	8	38.368	-0.045	-32.248
	Min. M _x	8	-3176.154	-0.045	-32.248
	Min. M _z	11	-3145.427	31.962	0.045
	Min. Torsion	12	-3.165	27.702	16.163

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 19 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
----------	-----------	-----------------	------------	-----------------	-----------------

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	38.368	0.000	0.000	-1.306	-0.245	0.000
Dead+Wind 0 deg - No Ice	38.368	-0.045	-32.248	-3178.868	4.986	1.440
Dead+Wind 30 deg - No Ice	38.368	15.942	-27.905	-2750.586	-1568.534	-0.164
Dead+Wind 60 deg - No Ice	38.368	27.658	-16.086	-1585.622	-2721.876	-1.717
Dead+Wind 90 deg - No Ice	38.368	31.962	0.045	3.897	-3145.934	-2.805
Dead+Wind 120 deg - No Ice	38.368	27.702	16.163	1591.986	-2727.054	-3.144
Dead+Wind 150 deg - No Ice	38.368	16.020	27.950	2753.085	-1577.552	-2.648
Dead+Wind 180 deg - No Ice	38.368	0.045	32.248	3176.154	-5.472	-1.448
Dead+Wind 210 deg - No Ice	38.368	-15.942	27.905	2747.875	1568.020	0.143
Dead+Wind 240 deg - No Ice	38.368	-27.658	16.086	1582.937	2721.352	1.704
Dead+Wind 270 deg - No Ice	38.368	-31.962	-0.045	-6.561	3145.427	2.813
Dead+Wind 300 deg - No Ice	38.368	-27.702	-16.163	-1594.653	2726.576	3.165
Dead+Wind 330 deg - No Ice	38.368	-16.020	-27.950	-2755.777	1577.083	2.661
Dead+Ice+Temp	61.875	0.000	-0.000	-7.896	-2.291	0.000
Dead+Wind 0 deg+Ice+Temp	61.875	-0.007	-9.230	-952.613	-1.359	0.522
Dead+Wind 30 deg+Ice+Temp	61.875	4.587	-7.989	-825.579	-471.494	-0.024
Dead+Wind 60 deg+Ice+Temp	61.875	7.953	-4.608	-479.472	-815.913	-0.563
Dead+Wind 90 deg+Ice+Temp	61.875	9.187	0.007	-7.030	-942.328	-0.951
Dead+Wind 120 deg+Ice+Temp	61.875	7.960	4.621	465.153	-816.868	-1.084
Dead+Wind 150 deg+Ice+Temp	61.875	4.600	7.997	810.556	-473.150	-0.928
Dead+Wind 180 deg+Ice+Temp	61.875	0.007	9.230	936.631	-3.275	-0.523
Dead+Wind 210 deg+Ice+Temp	61.875	-4.587	7.989	809.597	466.856	0.023
Dead+Wind 240 deg+Ice+Temp	61.875	-7.953	4.608	463.492	811.274	0.562
Dead+Wind 270 deg+Ice+Temp	61.875	-9.187	-0.007	-8.946	937.691	0.952
Dead+Wind 300 deg+Ice+Temp	61.875	-7.960	-4.621	-481.129	812.234	1.086
Dead+Wind 330 deg+Ice+Temp	61.875	-4.600	-7.997	-826.535	468.517	0.929
Dead+Wind 0 deg - Service	38.368	-0.017	-12.597	-1244.686	1.793	0.569
Dead+Wind 30 deg - Service	38.368	6.227	-10.901	-1077.099	-613.899	-0.065
Dead+Wind 60 deg - Service	38.368	10.804	-6.283	-621.260	-1065.167	-0.681
Dead+Wind 90 deg - Service	38.368	12.485	0.017	0.681	-1231.082	-1.113
Dead+Wind 120 deg - Service	38.368	10.821	6.314	622.071	-1067.207	-1.247
Dead+Wind 150 deg - Service	38.368	6.258	10.918	1076.407	-617.437	-1.049
Dead+Wind 180 deg - Service	38.368	0.017	12.597	1241.949	-2.298	-0.570
Dead+Wind 210 deg - Service	38.368	-6.227	10.901	1074.362	613.389	0.062
Dead+Wind 240 deg - Service	38.368	-10.804	6.283	618.528	1064.655	0.678
Dead+Wind 270 deg - Service	38.368	-12.485	-0.017	-3.410	1230.580	1.114
Dead+Wind 300 deg - Service	38.368	-10.821	-6.314	-624.801	1066.702	1.251
Dead+Wind 330 deg - Service	38.368	-6.258	-10.918	-1079.141	616.934	1.051

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-38.368	0.000	0.000	38.368	0.000	0.000%
2	-0.045	-38.368	-32.248	0.045	38.368	32.248	0.000%
3	15.942	-38.368	-27.905	-15.942	38.368	27.905	0.000%
4	27.658	-38.368	-16.086	-27.658	38.368	16.086	0.000%

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p>77969.013.001 - East Farmington, CT (BU# 876335)</p>	<p>Page</p> <p>20 of 25</p>
	<p>Project</p>	<p>Date</p> <p>10:45:04 06/06/14</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>jojha</p>

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
5	31.962	-38.368	0.045	-31.962	38.368	-0.045	0.000%
6	27.702	-38.368	16.163	-27.702	38.368	-16.163	0.000%
7	16.020	-38.368	27.950	-16.020	38.368	-27.950	0.000%
8	0.045	-38.368	32.248	-0.045	38.368	-32.248	0.000%
9	-15.942	-38.368	27.905	15.942	38.368	-27.905	0.000%
10	-27.658	-38.368	16.086	27.658	38.368	-16.086	0.000%
11	-31.962	-38.368	-0.045	31.962	38.368	0.045	0.000%
12	-27.702	-38.368	-16.163	27.702	38.368	16.163	0.000%
13	-16.020	-38.368	-27.950	16.020	38.368	27.950	0.000%
14	0.000	-61.875	0.000	-0.000	61.875	0.000	0.000%
15	-0.007	-61.875	-9.230	0.007	61.875	9.230	0.000%
16	4.587	-61.875	-7.989	-4.587	61.875	7.989	0.000%
17	7.953	-61.875	-4.608	-7.953	61.875	4.608	0.000%
18	9.187	-61.875	0.007	-9.187	61.875	-0.007	0.000%
19	7.960	-61.875	4.621	-7.960	61.875	-4.621	0.000%
20	4.600	-61.875	7.997	-4.600	61.875	-7.997	0.000%
21	0.007	-61.875	9.230	-0.007	61.875	-9.230	0.000%
22	-4.587	-61.875	7.989	4.587	61.875	-7.989	0.000%
23	-7.953	-61.875	4.608	7.953	61.875	-4.608	0.000%
24	-9.187	-61.875	-0.007	9.187	61.875	0.007	0.000%
25	-7.960	-61.875	-4.621	7.960	61.875	4.621	0.000%
26	-4.600	-61.875	-7.997	4.600	61.875	7.997	0.000%
27	-0.017	-38.368	-12.597	0.017	38.368	12.597	0.000%
28	6.227	-38.368	-10.901	-6.227	38.368	10.901	0.000%
29	10.804	-38.368	-6.283	-10.804	38.368	6.283	0.000%
30	12.485	-38.368	0.017	-12.485	38.368	-0.017	0.000%
31	10.821	-38.368	6.314	-10.821	38.368	-6.314	0.000%
32	6.258	-38.368	10.918	-6.258	38.368	-10.918	0.000%
33	0.017	-38.368	12.597	-0.017	38.368	-12.597	0.000%
34	-6.227	-38.368	10.901	6.227	38.368	-10.901	0.000%
35	-10.804	-38.368	6.283	10.804	38.368	-6.283	0.000%
36	-12.485	-38.368	-0.017	12.485	38.368	0.017	0.000%
37	-10.821	-38.368	-6.314	10.821	38.368	6.314	0.000%
38	-6.258	-38.368	-10.918	6.258	38.368	10.918	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00006512
3	Yes	6	0.00000001	0.00010965
4	Yes	6	0.00000001	0.00011489
5	Yes	5	0.00000001	0.00019155
6	Yes	6	0.00000001	0.00010563
7	Yes	6	0.00000001	0.00011615
8	Yes	5	0.00000001	0.00008585
9	Yes	6	0.00000001	0.00011163
10	Yes	6	0.00000001	0.00010679
11	Yes	5	0.00000001	0.00021290
12	Yes	6	0.00000001	0.00011773
13	Yes	6	0.00000001	0.00010680
14	Yes	4	0.00000001	0.00013513
15	Yes	6	0.00000001	0.00010933
16	Yes	6	0.00000001	0.00014582
17	Yes	6	0.00000001	0.00014774

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 21 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

18	Yes	6	0.00000001	0.00010872
19	Yes	6	0.00000001	0.00014101
20	Yes	6	0.00000001	0.00014499
21	Yes	6	0.00000001	0.00010681
22	Yes	6	0.00000001	0.00014194
23	Yes	6	0.00000001	0.00014017
24	Yes	6	0.00000001	0.00010814
25	Yes	6	0.00000001	0.00014836
26	Yes	6	0.00000001	0.00014421
27	Yes	4	0.00000001	0.00042215
28	Yes	5	0.00000001	0.00027353
29	Yes	5	0.00000001	0.00029615
30	Yes	4	0.00000001	0.00097803
31	Yes	5	0.00000001	0.00025634
32	Yes	5	0.00000001	0.00030190
33	Yes	4	0.00000001	0.00045259
34	Yes	5	0.00000001	0.00028077
35	Yes	5	0.00000001	0.00025976
36	Yes	5	0.00000001	0.00005489
37	Yes	5	0.00000001	0.00030953
38	Yes	5	0.00000001	0.00026229

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 102.333	42.731	27	2.854	0.012
L2	102.333 - 91.75	21.963	27	2.177	0.007
L3	95 - 85.333	18.762	27	1.989	0.006
L4	85.333 - 82.5	14.926	27	1.769	0.004
L5	82.5 - 77.1667	13.893	27	1.712	0.004
L6	77.1667 - 66.667	12.050	27	1.587	0.004
L7	66.667 - 60	8.841	27	1.331	0.003
L8	60 - 46.5	7.096	27	1.167	0.002
L9	51 - 44.25	5.104	27	0.947	0.002
L10	44.25 - 27.75	3.828	27	0.841	0.001
L11	27.75 - 24.083	1.476	27	0.523	0.001
L12	24.083 - 18.083	1.100	27	0.455	0.001
L13	18.083 - 0	0.610	27	0.326	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.000	APXV9ERR18-C-A20 w/ Mount Pipe	27	42.133	2.839	0.012	12352
137.000	PCS 1900MHz 4x45W-65MHz	27	40.939	2.810	0.012	12352
129.000	(2) RRUS-11	27	36.202	2.691	0.011	5614
128.000	7770.00 w/ Mount Pipe	27	35.617	2.675	0.011	5146
120.000	(4) ALP 9212-N w/ Mount Pipe	27	31.041	2.544	0.010	3087
110.000	TME-DB-T16Z-8AB-0Z w/mount pipe	27	25.684	2.352	0.008	2057
108.000	BXA-185060/8CFx2 w/ Mount Pipe	27	24.677	2.309	0.008	1928
100.000	KRY 112 144/1	27	20.911	2.118	0.007	1963

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 22 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
90.000	742 213 w/ Mount Pipe	27	16.721	1.870	0.005	2493
70.000	KS24019-L112A	27	9.799	1.412	0.003	2366
49.000	KS24019-L112A	27	4.708	0.912	0.002	3127

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 102.333	108.772	2	7.266	0.031
L2	102.333 - 91.75	55.986	2	5.547	0.018
L3	95 - 85.333	47.837	2	5.070	0.014
L4	85.333 - 82.5	38.067	2	4.512	0.011
L5	82.5 - 77.1667	35.436	2	4.366	0.010
L6	77.1667 - 66.667	30.740	2	4.049	0.009
L7	66.667 - 60	22.558	2	3.396	0.007
L8	60 - 46.5	18.110	2	2.978	0.006
L9	51 - 44.25	13.029	2	2.416	0.004
L10	44.25 - 27.75	9.772	2	2.147	0.004
L11	27.75 - 24.083	3.768	2	1.336	0.002
L12	24.083 - 18.083	2.809	2	1.160	0.002
L13	18.083 - 0	1.558	2	0.833	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.000	APXV9ERR18-C-A20 w/ Mount Pipe	2	107.254	7.229	0.030	4988
137.000	PCS 1900MHz 4x45W-65MHz	2	104.220	7.155	0.030	4988
129.000	(2) RRUS-11	2	92.184	6.852	0.028	2266
128.000	7770.00 w/ Mount Pipe	2	90.699	6.813	0.028	2076
120.000	(4) ALP 9212-N w/ Mount Pipe	2	79.071	6.479	0.025	1244
110.000	TME-DB-T16Z-8AB-0Z w/mount pipe	2	65.453	5.993	0.021	826
108.000	BXA-185060/8CFx2 w/ Mount Pipe	2	62.890	5.884	0.021	774
100.000	KRY 112 144/1	2	53.308	5.397	0.017	785
90.000	742 213 w/ Mount Pipe	2	42.642	4.767	0.012	992
70.000	KS24019-L112A	2	25.001	3.602	0.007	935
49.000	KS24019-L112A	2	12.017	2.328	0.004	1230

Compression Checks

Pole Design Data

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p>77969.013.001 - East Farmington, CT (BU# 876335)</p>	<p>Page</p> <p>23 of 25</p>
	<p>Project</p>	<p>Date</p> <p>10:45:04 06/06/14</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>jojha</p>

Section No.	Elevation ft	Size	L ft	L _a ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
L1	140 - 102.333 (1)	TP23.721x16x0.25	37.667	0.000	0.0	36.000	18.894	-10.333	680.183	0.015
L2	102.333 - 91.75 (2)	TP25.89x23.721x0.376	10.583	0.000	0.0	31.551	30.115	-12.223	950.150	0.013
L3	91.75 - 85.333 (3)	TP26.706x24.724x0.422	9.667	0.000	0.0	36.008	35.752	-14.443	1287.360	0.011
L4	85.333 - 82.5 (4)	TP27.287x26.706x0.601	2.833	0.000	0.0	34.086	51.604	-15.015	1759.000	0.009
L5	82.5 - 77.1667 (5)	TP28.38x27.287x0.527	5.333	0.000	0.0	35.070	47.222	-16.126	1656.090	0.010
L6	77.1667 - 66.667 (6)	TP30.534x28.38x0.512	10.500	0.000	0.0	35.246	49.448	-18.626	1742.830	0.011
L7	66.667 - 60 (7)	TP31.901x30.534x0.508	6.667	0.000	0.0	32.802	51.307	-20.050	1682.980	0.012
L8	60 - 46.5 (8)	H1-3+VT (1.34 CR) - 7 TP34.67x31.901x0.505	13.500	0.000	0.0	32.396	54.060	-22.216	1751.320	0.013
L9	46.5 - 44.25 (9)	H1-3+VT (1.42 CR) - 8 TP34.506x33.122x0.554	6.750	0.000	0.0	32.920	60.587	-24.765	1994.500	0.012
L10	44.25 - 27.75 (10)	H1-3+VT (1.36 CR) - 9 TP37.89x34.506x0.652	16.500	0.000	0.0	33.425	78.131	-29.589	2611.540	0.011
L11	27.75 - 24.083 (11)	TP38.642x37.89x0.645	3.667	0.000	0.0	33.421	78.934	-30.706	2638.060	0.012
L12	24.083 - 18.083 (12)	TP39.872x38.642x0.551	6.000	0.000	0.0	32.243	69.759	-32.622	2249.280	0.015
L13	18.083 - 0 (13)	H1-3+VT (1.47 CR) - 12 TP43.58x39.872x0.626	18.083	0.000	0.0	35.530	86.574	-38.355	3075.930	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} F _{bx}	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} F _{by}
L1	140 - 102.333 (1)	TP23.721x16x0.25	422.083	46.846	36.000	1.301	0.000	0.000	36.000	0.000
L2	102.333 - 91.75 (2)	TP25.89x23.721x0.376	573.730	37.905	31.551	1.201	0.000	0.000	31.551	0.000
L3	91.75 - 85.333 (3)	TP26.706x24.724x0.422	790.956	41.651	36.008	1.157	0.000	0.000	36.008	0.000
L4	85.333 - 82.5 (4)	TP27.287x26.706x0.601	857.525	31.008	34.086	0.910	0.000	0.000	34.086	0.000
L5	82.5 - 77.1667 (5)	TP28.38x27.287x0.527	985.325	37.172	35.070	1.060	0.000	0.000	35.070	0.000
L6	77.1667 - 66.667 (6)	TP30.534x28.38x0.512	1246.60 8	41.591	35.246	1.180	0.000	0.000	35.246	0.000
L7	66.667 - 60 (7)	TP31.901x30.534x0.508	1419.11 7	43.601	32.802	1.329	0.000	0.000	32.802	0.000
L8	60 - 46.5 (8)	TP34.67x31.901x0.505	1659.28 3	45.649	32.396	1.409	0.000	0.000	32.396	0.000
L9	46.5 - 44.25 (9)	TP34.506x33.122x0.554	1845.47 5	44.404	32.920	1.349	0.000	0.000	32.920	0.000
L10	44.25 - 27.75 (10)	TP37.89x34.506x0.652	2320.47 5	39.521	33.425	1.182	0.000	0.000	33.425	0.000
L11	27.75 - 24.083 (11)	TP38.642x37.89x0.645	2429.70 8	40.122	33.421	1.201	0.000	0.000	33.421	0.000
L12	24.083 - 18.083 (12)	TP39.872x38.642x0.551	2611.24 2	47.010	32.243	1.458	0.000	0.000	32.243	0.000
L13	18.083 - 0 (13)	TP43.58x39.872x0.626	3178.87	42.237	35.530	1.189	0.000	0.000	35.530	0.000

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 24 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

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 $\frac{f_{by}}{F_{by}}$
5										

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	140 - 102.333 (1)	TP23.721x16x0.25	19.141	1.013	24.000	0.086	0.873	0.046	24.000	0.002
L2	102.333 - 91.75 (2)	TP25.89x23.721x0.376	21.597	0.717	21.034	0.069	0.893	0.028	21.034	0.001
L3	91.75 - 85.333 (3)	TP26.706x24.724x0.422	23.342	0.653	24.006	0.055	0.919	0.023	24.006	0.001
L4	85.333 - 82.5 (4)	TP27.287x26.706x0.601	23.669	0.459	22.724	0.041	0.934	0.016	22.724	0.001
L5	82.5 - 77.1667 (5)	TP28.38x27.287x0.527	24.270	0.514	23.380	0.045	0.964	0.017	23.380	0.001
L6	77.1667 - 66.667 (6)	TP30.534x28.38x0.512	25.532	0.516	23.497	0.045	0.874	0.014	23.497	0.001
L7	66.667 - 60 (7)	TP31.901x30.534x0.508	26.232	0.511	21.868	0.048	0.909	0.013	21.868	0.001
L8	60 - 46.5 (8)	TP34.67x31.901x0.505	27.156	0.502	21.597	0.047	0.962	0.012	21.597	0.001
L9	46.5 - 44.25 (9)	TP34.506x33.122x0.554	27.994	0.462	21.946	0.043	1.142	0.013	21.946	0.001
L10	44.25 - 27.75 (10)	TP37.89x34.506x0.652	29.608	0.379	22.283	0.035	1.244	0.010	22.283	0.000
L11	27.75 - 24.083 (11)	TP38.642x37.89x0.645	29.982	0.380	22.281	0.035	1.274	0.010	22.281	0.000
L12	24.083 - 18.083 (12)	TP39.872x38.642x0.551	30.550	0.438	21.496	0.041	1.318	0.011	21.496	0.001
L13	18.083 - 0 (13)	TP43.58x39.872x0.626	32.263	0.373	23.686	0.032	1.440	0.009	23.686	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P P_a	Ratio f_{bx} F_{bx}	Ratio f_{by} F_{by}	Ratio f_v F_v	Ratio f_{vt} F_{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 102.333 (1)	0.015	1.301	0.000	0.086	0.002	1.318	1.333	H1-3+VT ✓
L2	102.333 - 91.75 (2)	0.013	1.201	0.000	0.069	0.001	1.216	1.333	H1-3+VT ✓
L3	91.75 - 85.333 (3)	0.011	1.157	0.000	0.055	0.001	1.169	1.333	H1-3+VT ✓
L4	85.333 - 82.5 (4)	0.009	0.910	0.000	0.041	0.001	0.919	1.333	H1-3+VT ✓
L5	82.5 - 77.1667 (5)	0.010	1.060	0.000	0.045	0.001	1.070	1.333	H1-3+VT ✓
L6	77.1667 - 66.667 (6)	0.011	1.180	0.000	0.045	0.001	1.191	1.333	H1-3+VT ✓
L7	66.667 - 60 (7)	0.012	1.329	0.000	0.048	0.001	1.342	1.333	H1-3+VT ✗
L8	60 - 46.5 (8)	0.013	1.409	0.000	0.047	0.001	1.422	1.333	H1-3+VT ✗

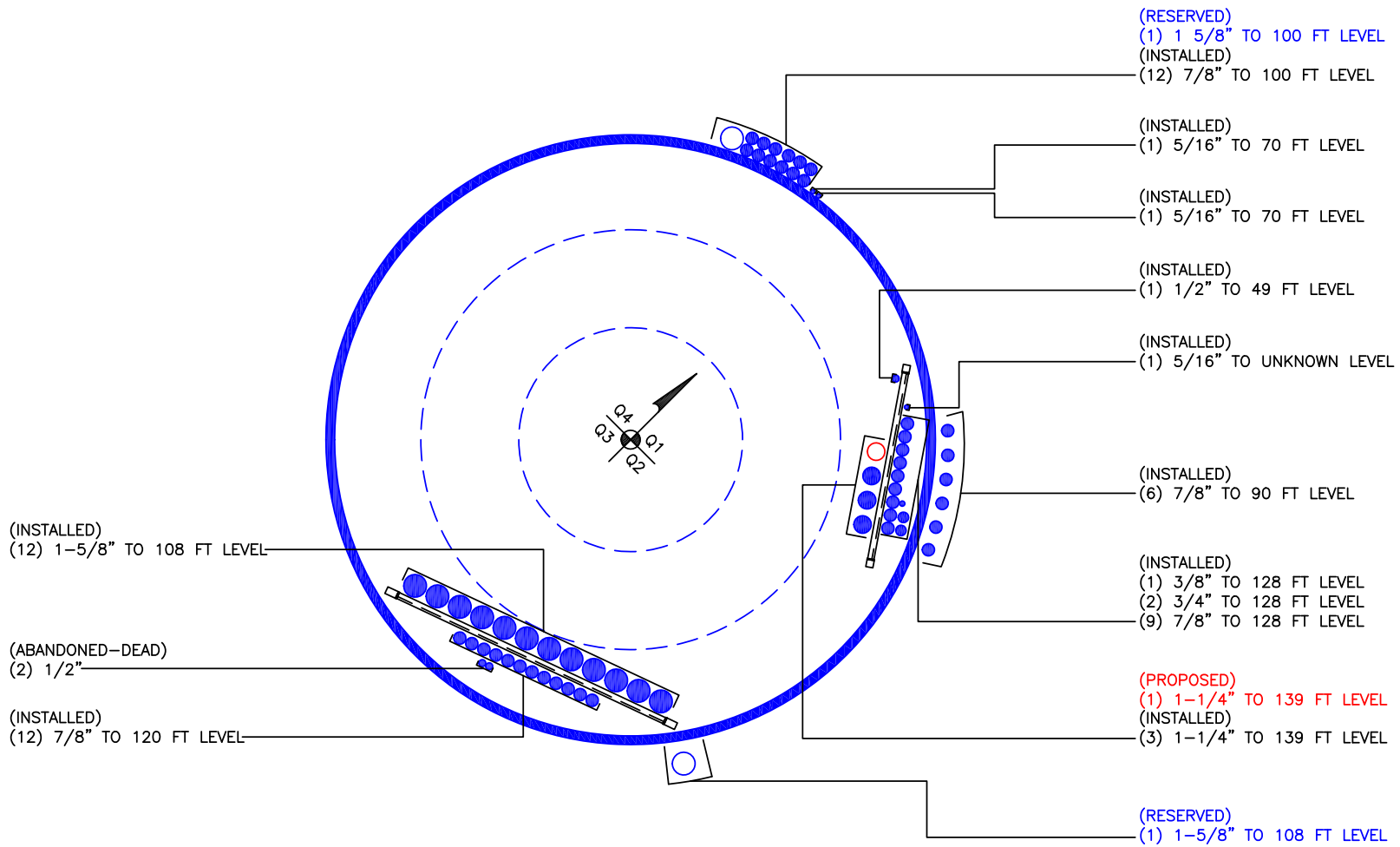
tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.013.001 - East Farmington, CT (BU# 876335)	Page 25 of 25
	Project	Date 10:45:04 06/06/14
	Client Crown Castle	Designed by jojha

Section No.	Elevation ft	Ratio P	Ratio f_{bx}	Ratio f_{by}	Ratio f_v	Ratio f_{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L9	46.5 - 44.25 (9)	0.012	1.349	0.000	0.043	0.001	1.362 X	1.333	H1-3+VT X
L10	44.25 - 27.75 (10)	0.011	1.182	0.000	0.035	0.000	1.194 ✓	1.333	H1-3+VT ✓
L11	27.75 - 24.083 (11)	0.012	1.201	0.000	0.035	0.000	1.212 ✓	1.333	H1-3+VT ✓
L12	24.083 - 18.083 (12)	0.015	1.458	0.000	0.041	0.001	1.473 X	1.333	H1-3+VT X
L13	18.083 - 0 (13)	0.012	1.189	0.000	0.032	0.000	1.202 ✓	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail	
L1	140 - 102.333	Pole	TP23.721x16x0.25	1	-10.333	906.684	98.4	Pass	
L2	102.333 - 91.75	Pole	TP25.89x23.721x0.376	2	-12.223	1266.550	87.1	Pass	
L3	91.75 - 85.333	Pole	TP26.706x24.724x0.422	3	-14.443	1716.051	92.9	Pass	
L4	85.333 - 82.5	Pole	TP27.287x26.706x0.601	4	-15.015	2344.747	74.9	Pass	
L5	82.5 - 77.1667	Pole	TP28.38x27.287x0.527	5	-16.126	2207.568	92.1	Pass	
L6	77.1667 - 66.667	Pole	TP30.534x28.38x0.512	6	-18.626	2323.192	90.5	Pass	
L7	66.667 - 60	Pole	TP31.901x30.534x0.508	7	-20.050	2243.412	96.4	Pass	
L8	60 - 46.5	Pole	TP34.67x31.901x0.505	8	-22.216	2334.509	94.6	Pass	
L9	46.5 - 44.25	Pole	TP34.506x33.122x0.554	9	-24.765	2658.668	97.8	Pass	
L10	44.25 - 27.75	Pole	TP37.89x34.506x0.652	10	-29.589	3481.183	90.3	Pass	
L11	27.75 - 24.083	Pole	TP38.642x37.89x0.645	11	-30.706	3516.534	91.6	Pass	
L12	24.083 - 18.083	Pole	TP39.872x38.642x0.551	12	-32.622	2998.290	99.2	Pass	
L13	18.083 - 0	Pole	TP43.58x39.872x0.626	13	-38.355	4100.215	98.6	Pass	
							Summary		
							Pole (L12)	99.2	Pass
							RATING =	99.2	Pass

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Reinforcement 1						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	18.083	4	MP305	F	0	T&C
18.083	24.083	4	MP305	F	0	T&C
24.083	44.25	3	MP305	F	0	T&C
44.25	66.667	3	MP305	F	0	T&C
66.667	77.1667	4	MP303	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
77.1667	85.333	3	MP303	F	0	T&C
94.667	102.333	3	MP303	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 3						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	27.75	1	CCI 1.25x6.5	F	0	T&C
24.083	44.25	2	CCI 1x6	F	0	T&C
49	60	1	CCI 1x6	F	0	T&C
66.667	82.5	2	CCI 1x6	F	0	T&C
82.5	93	2	CCI 1x6	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

1
1
1
1
1

Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Section				Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.
																Top Height	Length	Lap Splice	# of Sides					
102.3330	140.0000	0.2500	60	75	98.4%										98.4%	140.0000	37.6670	0.0000	12	16.0000	23.7208	0.2500	60.0	1.00
91.7500	102.3330	0.2500	60	75	77.5%				3	MP303	87.1%				87.1%	102.3330	10.5830	3.2500	12	23.7208	25.8900	0.3764	52.6	0.96
85.3330	95.0000	0.3125	65	80	92.9%							2	CCI 1x6	71.5%	92.9%	95.0000	9.6670	0.0000	12	24.7238	26.7058	0.4224	60.0	1.08
82.5000	85.3330	0.3125	65	80	65.7%				3	MP303	74.9%				74.9%	85.3330	2.8330	0.0000	12	26.7058	27.2866	0.6005	56.8	0.93
77.1667	82.5000	0.3125	65	80	80.8%				3	MP303	92.1%				92.1%	82.5000	5.3333	0.0000	12	27.2866	28.3800	0.5265	58.5	1.04
66.6670	77.1667	0.3125	65	80	90.5%	4	MP303	80.2%							90.5%	77.1667	10.4997	0.0000	12	28.3800	30.5336	0.5115	58.7	1.09
60.0000	66.6670	0.3125	65	80	82.2%	3	MP305	96.4%							96.4%	66.6670	6.6670	0.0000	12	30.5336	31.9010	0.5076	54.7	0.95
46.5000	60.0000	0.3125	65	80	91.1%	3	MP305	94.6%							94.6%	60.0000	13.5000	4.5000	12	31.9010	34.6700	0.5050	54.0	1.04
44.2500	51.0000	0.3750	65	80	83.6%	3	MP305	97.8%							97.8%	51.0000	6.7500	0.0000	12	33.1220	34.5062	0.5542	54.9	0.96
27.7500	44.2500	0.3750	65	80	81.3%	3	MP305	88.7%							81.3%	44.2500	16.5000	0.0000	12	34.5062	37.8896	0.6516	55.7	0.95
24.0830	27.7500	0.3750	65	80	82.5%	3	MP305	89.9%							82.5%	27.7500	3.6670	0.0000	12	37.8896	38.6416	0.6452	55.7	0.95
18.0830	24.0830	0.3750	65	80	91.9%	4	MP305	99.2%							91.9%	24.0830	6.0000	0.0000	12	38.6416	39.8719	0.5510	53.7	1.12
0.0000	18.0830	0.3750	65	80	90.8%	4	MP305	98.6%							90.8%	18.0830	18.0830	0.0000	12	39.8719	43.5800	0.6259	59.2	0.96

Reinforcement Capacity

Dimensions and Properties														Compression				Axial				
Model	Weight (lb/ft)	Area (in ²)	Moment of Inertia (in ⁴)	Centroid from Mating Edge (in)	Centroid from Bolt Hole Center (in)	Web Thickness (in)	Width (in)	Flange Width (in)	Flange Thickness (in)	Hole Diameter (in)	Yield Stress (ksi)	Ultimate Stress (ksi)	Slender. Ratio Coefficient	Unbraced Length (in)	Slender. Ratio Coefficient	Unbraced Length (in)	ASD-9			LRFD		
																	Allowable Axial (kip)	Allowable Axial w/ increase (kip)	Governing Axial	Design Axial Strength (kip)	Governing Axial	
MP303	9.9	2.92	0.66	6.57	0.59	0	4.06	1.57	0.64	1.21875	65	80	0.80	18	1.00	18	96.4	128.6	Rupture	144.7	Rupture	
MP304	14.1	4.13	0.91	11.86	0.61	0	4.78	1.61	0.84	1.21875	65	80	0.80	18	1.00	18	137.3	183.1	Rupture	206.0	Rupture	
MP305	19.2	5.65	2.15	20.79	0.79	0	5.33	2.09	0.91	1.21875	65	80	0.80	18	1.00	18	194.5	259.3	Rupture	291.8	Rupture	
MP306	28.8	8.47	4.95	52.50	0.93	0	6.89	2.61	1.01	1.21875	65	80	0.80	24	1.00	24	298.7	398.3	Rupture	448.1	Rupture	
CCI 1x4.5	15.3	4.50	0.38	7.59	0.5	0	4.5	0	0	1.21875	65	80	0.80	20	1.00	20	128.8	171.7	Rupture	193.1	Rupture	
CCI 1x6	20.4	6.00	0.50	18.00	0.5	0	6	0	0	1.21875	65	80	0.80	16	1.00	16	188.8	251.7	Rupture	283.1	Rupture	
CCI 1.25x6.5	27.6	8.13	1.06	28.61	0.625	0	6.5	0	0	1.21875	65	80	0.80	19	1.00	19	260.4	347.2	Compress.	391.4	Rupture	
CCI 1.25x8.5	36.2	10.63	1.38	63.97	0.625	0	8.5	0	0	1.21875	65	80	0.80	17	1.00	17	350.9	467.9	Compress.	541.4	Rupture	

Anchor Rod Information for TIA/EIA-222-F and TIA-222-G-2

Site Information	
ID:	876335
Name:	EAST FARMINGTON
App. #:	245397 Revision # 1



Base Reactions	
Moment:	3179 ft-kip
Axial:	38 kip
Shear:	32 kip
Base Plate Type:	Square

Design Information	
TIA Code:	F
ASIF:	1.333
Failure:	100%
eta Factor:	0.50

Original Anchor Rod Data	
Quantity:	12
Diameter:	2.25 in
Material:	#18J
Bolt Circle:	51.0 in
Bolt Spacing:	6 in
Bolt Group Area:	47.71 in ²
Bolt Group MOIx:	15513 in ⁴
<u>Reactions Seen by Original AR Group</u>	
Moment:	2372.1 kip-ft
Axial:	38.4 kip
Shear:	32.3 kip
<u>Original AR Capacity Check</u>	
Tension Load:	182.9 kip
Allowable load:	194.8 kip
AR Capacity:	93.9% Pass

First Added Anchor Rod Data	
Quantity:	6
Diameter:	1.75 in
Material:	A193 B7
Bolt Circle:	54.1 in
Bolt Group Area:	14.43 in ²
Bolt Group MOIx:	5276 in ⁴
<u>Reactions Seen by First Added AR Group</u>	
Moment:	806.8 kip-ft
Axial:	0.0 kip
Shear:	0.0 kip
<u>First Added AR Capacity Check</u>	
Tension Load:	119.3 kip
Allowable load:	132.3 kip
AR Capacity:	90.2% Pass

Second Added Anchor Rod Data	
Quantity:	
Diameter:	
Material:	
Bolt Circle:	
Bolt Group Area:	0.00 in ²
Bolt Group MOIx:	0 in ⁴
<u>Reactions Seen by Second Added AR Group</u>	
Moment:	0.0 kip-ft
Axial:	0.0 kip
Shear:	0.0 kip
<u>Second Added AR Capacity Check</u>	
Tension Load:	0.0 kip
Allowable load:	0.0 kip
AR Capacity:	0.0%

Third Added Anchor Rod Data	
Quantity:	
Diameter:	
Material:	
Bolt Circle:	
Bolt Group Area:	0.00 in ²
Bolt Group MOIx:	0 in ⁴
<u>Reactions Seen by Second Added AR Group</u>	
Moment:	0.0 kip-ft
Axial:	0.0 kip
Shear:	0.0 kip
<u>Second Added AR Capacity Check</u>	
Tension Load:	0.0 kip
Allowable load:	0.0 kip
AR Capacity:	0.0%

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

- 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)*(Rod Diameter)

Site Data

BU#:	876335	
Site Name:	EAST FARMINGTON	
App #:	245397 Revision # 1	
Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	51	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	49.5	in
Thick:	3	in
Grade:	50	ksi
Clip Distance:	6	in

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

Pole Data		
Diam:	43.58	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

** 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:	2372.10527	ft-kips
Unfactored Axial, P:	38.3552	kips
Unfactored Shear, V:	32.263131	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	182.9 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	93.8% Pass

Base Plate Results

Base Plate Stress:	45.6 ksi
Allowable PL Bending Stress:	50.0 ksi
Base Plate Stress Ratio:	91.3% Pass

Flexural Check

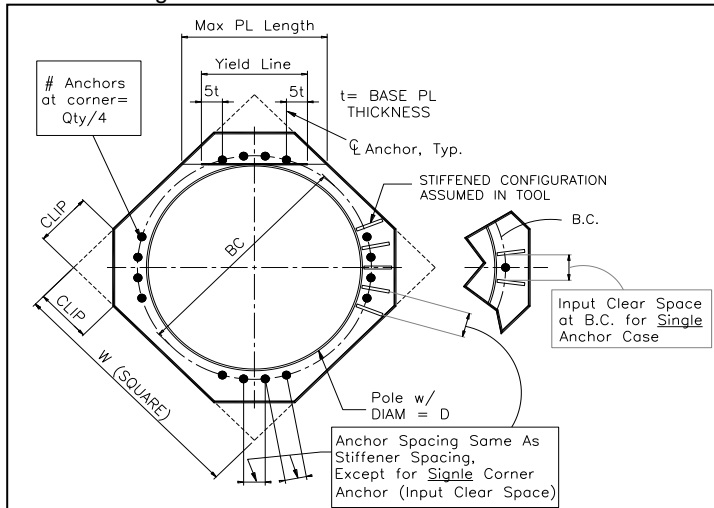
N/A - Unstiffened

Stiffener Results

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$:	N/A
Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check:	N/A
----------------------------	-----



PROJECT	876335 - EAST FARMINGTON,CT		
SUBJECT	Foundation Analysis		
DATE	06/06/14	PAGE	1 OF 1

Monopole Pad & Pier Foundation Analysis

Rev. Type: **F**

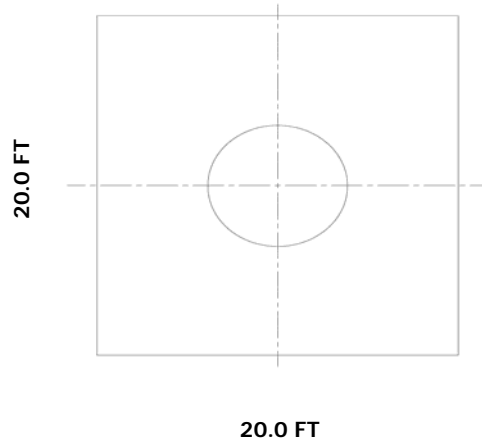
Design Loads:

Input unfactored loads

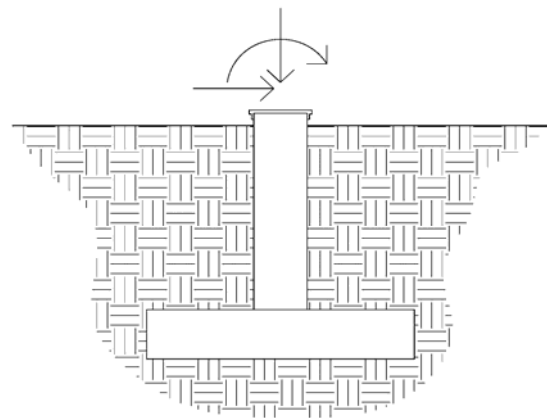
Shear:	<u>32.0</u>	kips
Moment:	<u>3,179.0</u>	ft-kips
Tower Height:	<u>140.0</u>	ft
Tower Weight:	<u>458.0</u>	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	<u>43.58</u>	in
Bearing Depth:	<u>9.0</u>	ft
Pad Width:	<u>20.0</u>	ft
Neglected Depth:	<u>4.2</u>	ft
Thickness:	<u>4.0</u>	ft
Pier Diameter:	<u>8.0</u>	ft
Pier Height Above Grade:	<u>0.5</u>	ft
BP Dist. Above Pier:	<u>3.0</u>	in
Clear Cover:	<u>3.0</u>	in
Pier Rebar Size:	<u>11</u>	
Pier Rebar Quantity:	<u>24</u>	
Pad Rebar Size:	<u>9</u>	
Pad Rebar Quantity:	<u>27</u>	
Pier Tie Size:	<u>5</u>	
Tie Quantity:	<u>12</u>	
Rebar Yield Strength:	<u>60000</u>	psi
Concrete Strength:	<u>3000</u>	psi
Concrete Unit Weight:	<u>0.0875</u>	kcf



Elevation Overview



Soil Data:

Allowable Values

Soil Unit Weight:	<u>0.067</u>	kcf
Ult. Bearing Capacity:	<u>30.000</u>	ksf
Angle of Friction:	<u>30.000</u>	deg
Cohesion:	<u>0.000</u>	ksf
Passive Pressure:	<u>0.000</u>	ksf
Base Friction:	<u>0.300</u>	

** Notes:

Summary of Results

Req'd Pier Diam.	OK
Overturning	69.6%
Shear Capacity	27.3%
Bearing	24.8%
Pad Shear - 1-way	29.8%
Pad Shear - 2-way	20.2%
Pad Moment Capacity	29.7%
Pier Moment Capacity	51.2%

RADIO FREQUENCY FCC REGULATORY COMPLIANCE
MAXIMUM PERMISSIBLE EXPOSURE (MPE) ASSESSMENT

Sprint Existing Facility

Site ID: CT03XC100

East Farmington

3a Birdseye Road
Farmington, CT 06030

July 1, 2014

EBI Project Number: 62143714

July 1, 2014

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT03XC100 - East Farmington

Site Total: 49.88% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 3a Birdseye Road, Farmington, CT, for the purpose of determining whether the radio frequency (RF) exposure levels from the proposed Sprint equipment upgrades 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 limit for the cellular band (850 MHz Band) is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz 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 upgrades to the existing Sprint Wireless antenna facility located at 3a Birdseye Road, Farmington, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. 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 emissions were calculated using the following assumptions:

- 1) 3 channels in the 1900 MHz Band were considered for each sector of the proposed installation.
- 2) 1 channel in the 800 MHz Band was considered for each sector of the proposed installation
- 3) 2 channels in the 2500 MHz Band were considered for each sector of the proposed installation.
- 4) 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.
- 5) 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.

- 6) The antennas used in this modeling are the RFS APXV9ERR18-C-A20 and the RFS APXVTM14-C-I20. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXV9ERR18-C-A20 has a 14.9 dBd gain value at its main lobe at 1900 MHz and 11.9 dBd at its main lobe for 850 MHz. The RFS APXVTM14-C-I20 has a 15.9 dBd gain value at its main lobe at 2500 MHz. 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.
- 7) The antenna mounting height centerline for the proposed antennas is **139 feet** above ground level (AGL).
- 8) 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 calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT03XC100 - East Farmington
Site Address	3a Birdseye Road, Farmington, CT, 06030
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	4.9	139	133	1/2 "	0.5	0	165.25	0.34%
1a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.9	139	133	1/2 "	0.5	0	27.61	0.10%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	139	133	1/2 "	0.5	0	138.69	0.50%
Sector total Power Density Value:															0.93%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	4.9	139	133	1/2 "	0.5	0	165.25	0.34%
2a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.9	139	133	1/2 "	0.5	0	27.61	0.10%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	139	133	1/2 "	0.5	0	138.69	0.50%
Sector total Power Density Value:															0.93%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	4.9	139	133	1/2 "	0.5	0	165.25	0.34%
3a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.9	139	133	1/2 "	0.5	0	27.61	0.10%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	139	133	1/2 "	0.5	0	138.69	0.50%
Sector total Power Density Value:															0.93%	

Site Composite MPE %	
Carrier	MPE %
Sprint	2.80%
Nextel	3.96%
MetroPCS	15.01%
Verizon Wireless	8.47%
T-Mobile	0.35%
AT&T	19.29%
Total Site MPE %	49.88%

Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public Maximum Permissible Exposure (MPE) to radio frequency energy.

The anticipated Maximum Composite contributions from the Sprint facility are **2.80% (0.93% from sector 1, 0.93% from sector 2 and 0.93% from sector 3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **49.88%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE 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.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803