Crown Castle
3530 Toringdon Way
Suite 300
Charlotte, NC 28277

Tel: 704-405-6600

www.crowncastle.com

June 16, 2014

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

RE: **Sprint PCS-Exempt Modification - Crown Site BU: 855662**
Sprint PCS Site ID: CT43XC826
Located at: 340 Bloomfield Avenue, Windsor, CT 06095

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 The Honorable Donald S. Trinks, Mayor for the Town of Windsor.

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at **340 Bloomfield Avenue, Windsor, CT 06095**. 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.

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: The Honorable Donald S. Trinks, Mayor
Town of Windsor
275 Broad Street
Windsor, CT 06095

Sprint

PROJECT:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	WINDSOR / PUBLIC SAFETY
SITE CASCADE:	CT43XC826
SITE ADDRESS:	340 BLOOMFIELD AVENUE WINDSOR, CT 06095
SITE TYPE:	MONOPOLE
MARKET:	NORTHERN CONNECTICUT

APPROVED
By Jason D'Amico at 1:34 am, Jun 03, 2014

SITE INFORMATION

PROPERTY OWNER:
TOWN OF WINDSOR
275 BROAD STREET
WINDSOR, CT 06095

LATITUDE:
41.85277°

LONGITUDE:
-72.66084°

COUNTY:
HARTFORD

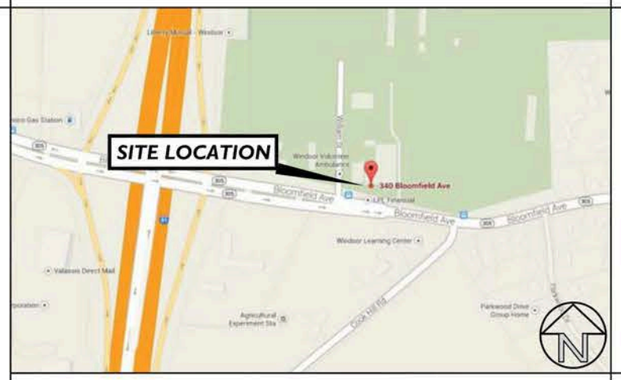
JURISDICTION:
TOWN OF WINDSOR
ZONE: MUNICIPAL MDL-94

AAV PROVIDER:
AT&T

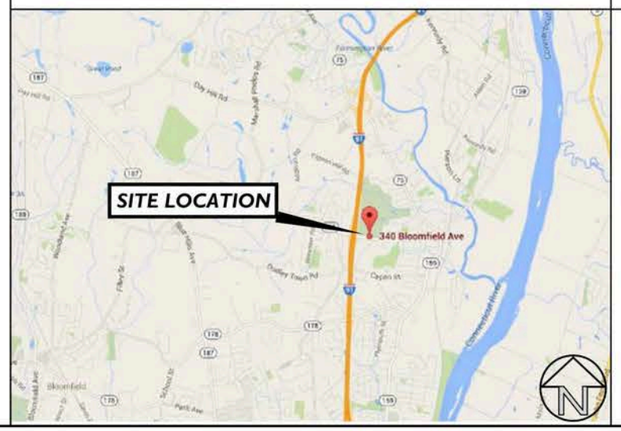
POWER COMPANY:
CONNECTICUT LIGHT AND POWER
PHONE# 800-922-4455

SPRINT CONSTRUCTION MANAGER:
MICHAEL DELIA
781-316-6348
MICHAEL.DELIA@SPRINT.COM

AREA MAP



LOCATION MAP



PROJECT DISCRIPTION

SPRINT PROPOSED TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (3) NEW RECTIFIERS IN EXISTING MMBTS CABINET
- INSTALL (4) NEW BATTERIES IN EXISTING BBU CABINET
- INSTALL (3) NEW PANEL ANTENNAS
- INSTALL (3) NEW RRH'S NEAR ANTENNA
- INSTALL (27) NEW JUMPER CABLES
- INSTALL (1) NEW FIBER CABLE

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED 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.

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 - LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES MOST RECENT EDITIONS.
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

SHEET INDEX

APPROVED
By Jeff Barbadora at 9:43 am, Jun 16, 2014

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
01	3-12-14	REVISED PER SPRINT COMMENTS	CM	KLR
00	3-3-14	INITIAL SUBMISSION	CM	KLR

Sprint
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251
(517) 436-7466

A SAXON DESIGN GROUP LLC
A SAXON DESIGN GROUP
244 RIVERS EDGE LANE
TOMS RIVER, NJ 08755
(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
COVER SHEET

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	T-1

24"x36" SHEETS - SIGN & SEAL AREA

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-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
2. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
3. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
4. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
5. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
6. AMERICAN CONCRETE INSTITUTE (ACI)
7. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
8. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
9. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
10. PORTLAND CEMENT ASSOCIATION (PCA)
11. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
12. BRICK INDUSTRY ASSOCIATION (BIA)
13. AMERICAN WELDING SOCIETY (AWS)
14. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
15. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
16. DOOR AND HARDWARE INSTITUTE (DHI)
17. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
18. 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.

A. TOP HAT
B. HOW TO INSTALL A NEW CABINET
C. BASE BAND UNIT IN EXISTING UNIT
D. INSTALLATION OF BATTERIES
E. INSTALLATION OF HYBRID CABLE
F. INSTALLATION OF RRH'S
G. CABLING
H. TS-0200 REV 4 – ANTENNA LINE ACCEPTANCE STANDARDS
I. SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.
J. COMMISSIONING MOPS
K. SPRINT CELL SITE ENGINEERING NOTICE – EN-2013-002
L. SPRINT ENGINEERING LETTER – EL-0504
M. SPRINT ENGINEERING LETTER – EL-0568
N. SPRINT TECHNICAL SPECIFICATION – TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

A. CONTRACTOR WILL UTILIZE ITS BEST EFFORTS TO WORK WITH SPRINT ELECTRONIC PROJECT MANAGEMENT SYSTEMS. CONTRACTOR UNDERSTANDS THAT SUFFICIENT INTERNET ACCESS, EQUIVALENT TO "BROADBAND" OR BETTER, IS REQUIRED TO TIMELY AND EFFECTIVELY UTILIZE SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS AND AGREES TO MAINTAIN APPROPRIATE CONNECTIONS FOR CONTRACTOR'S STAFF AND OFFICES THAT ARE COMPATIBLE WITH SPRINT DATA AND DOCUMENT 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. 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

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.

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:
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 ANTENNAL 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.

CONTINUE SHEET SP-2

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
01	3-12-14	REVISED PER SPRINT COMMENTS	CM	KLR
00	3-3-14	INITIAL SUBMISSION	CM	KLR

Sprint

6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251
(517) 436-7466

A SAXON DESIGN GROUP LLC

A SAXON DESIGN GROUP
244 RIVERS EDGE LANE
TOMS RIVER, NJ 08755
(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
SPRINT SPECIFICATIONS
(SHEET 1 OF 3)

MICHAEL L BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	SP-1

24"x36" SHEETS - SIGN & SEAL AREA

CONTINUED FROM SP-1:

SECTION 01 400 – SUBMITTALS, TESTS, AND INSPECTIONS

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.

C. 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: 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.
1. 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.
2. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, 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 – ANTENNALIGN ALIGNMENT TOOL (AAT)
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

E. 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.

F. 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 01 500 – PROJECT REPORTING

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.

SECTION 07 500 – ROOF CUTTING, PATCHING AND REPAIR

SUMMARY:
THIS SECTION SPECIFIES CUTTING AND PATCHING EXISTING ROOFING SYSTEMS WHERE CONDUIT OR CABLES EXIT THE BUILDING ONTO THE ROOF OR BUILDING-MOUNTED ANTENNAS, AND AS REQUIRED FOR WATERTIGHT PERFORMANCE. ROOFTOP ENTRY OPENINGS IN MEMBRANE ROOFTOPS SHALL BE CONSTRUCTED TO COMPLY WITH LANDLORD, ANY EXISTING WARRANTY, AND LOCAL JURISDICTIONAL STANDARDS.

1.4 SUBMITTALS:

A. PRE-CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH (MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.

B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)

C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 – PAINTING

QUALITY ASSURANCE:

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

CONTINUE SHEET SP-3

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
01	3-12-14	REVISED PER SPRINT COMMENTS	CM	KLR
00	3-3-14	INITIAL SUBMISSION	CM	KLR

Sprint

6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251
(517) 436-7466

A SAXON DESIGN GROUP LLC

A SAXON DESIGN GROUP
244 RIVERS EDGE LANE
TOMS RIVER, NJ 08755
(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

STATE OF CONNECTICUT – MICHAEL L. BOHLINGER – 20405 – 3/17/14 – LICENSED PROFESSIONAL ENGINEER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
SPRINT SPECIFICATIONS
(SHEET 2 OF 3)

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	SP-2

24"x36" SHEETS - SIGN & SEAL AREA

CONTINUED FROM SP-2:

MATERIALS:

A. MANUFACTURERS: BENJAMIN MOORE, ICI DEVOE COATINGS, PPG, SHERWIN WILLIAMS OR APPROVED EQUAL. PROVIDE PREMIUM GRADE, PROFESSIONAL-QUALITY PRODUCTS FOR COATING SYSTEMS.

PAINT SCHEDULE:

A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.

B. ROOF TOP CONSTRUCTION: TOUCH UP – PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

1. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
3. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION.
4. CLEAN UP, TOUCH UP AND PROTECT WORK.

TOUCHUP PAINTING:

1. GALVANIZING DAMAGE AND ALL BOLTS AND NUTS SHALL BE TOUCHED UP AFTER TOWER ERECTION WITH "GALVANOX," "DRY GALV," OR "ZINC-IT."
2. FIELD TOUCHUP PAINT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ALL METAL COMPONENTS SHALL BE HANDLED WITH CARE TO PREVENT DAMAGE TO THE COMPONENTS, THEIR PRESERVATIVE TREATMENT, OR THEIR PROTECTIVE COATINGS.

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO HEADS AND CABLE INSTALLATION

SUMMARY:
THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRH'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRH'S:
THE NUMBER AND TYPE OF ANTENNAS AND RRH'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:
HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:
FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRH'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12-50, CR 540, OR FXL 540. SUPER-FLEX CABLES ARE NOT ACCEPTABLE. JUMPERS BETWEEN THE RRH'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. DO NOT USE SUPERFLEX OUTDOORS. JUMPERS SHALL BE FACTORY FABRICATED IN APPROPRIATE LENGTHS WITH A MAXIMUM OF 4 FEET EXCESS PER JUMPER AND HAVE CONNECTORS AT EACH END, MANUFACTURED BY SUPPLIER. IF JUMPERS ARE FIELD FABRICATED, FOLLOW MANUFACTURER'S REQUIREMENTS FOR INSTALLATION OF CONNECTORS

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:
INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:
THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.

B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADII.

C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.

1. FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
   a. FIBER: SUPPORT FIBER BUNDLES USING ½" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
   b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
4. CABLE INSTALLATION:
   a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
   b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
   c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.
5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED IN TS 0200 REV 4.
7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.

B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

1. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.
2. SELF-AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.
3. 3M SLIM LOCK CLOSURE 716: SUBSTITUTIONS WILL NOT BE ALLOWED.
4. OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE STATIONS (MMBS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE TRANSCIEVER STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

SUPPORTING DEVICES:

A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
1. ALLIED TUBE AND CONDUIT
2. B-LINE SYSTEM
3. UNISTRUT DIVERSIFIED PRODUCTS
4. THOMAS & BETTS

B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.

B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.

C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:

D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.

E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.

B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 – ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.

B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.

C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.

D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.

E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6-FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.

F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.

B. CABLE TERMINATION FITTINGS FOR CONDUIT
1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO – CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.

D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.

E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.

B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.

C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

CONDUIT AND CONDUCTOR INSTALLATION:

A. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.

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00	3-3-14	INITIAL SUBMISSION	CM	KLR

Sprint

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(517) 436-7466

A SAXON DESIGN GROUP LLC

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244 RIVERS EDGE LANE
TOMS RIVER, NJ 08755
(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
SPRINT SPECIFICATIONS
(SHEET 3 OF 3)

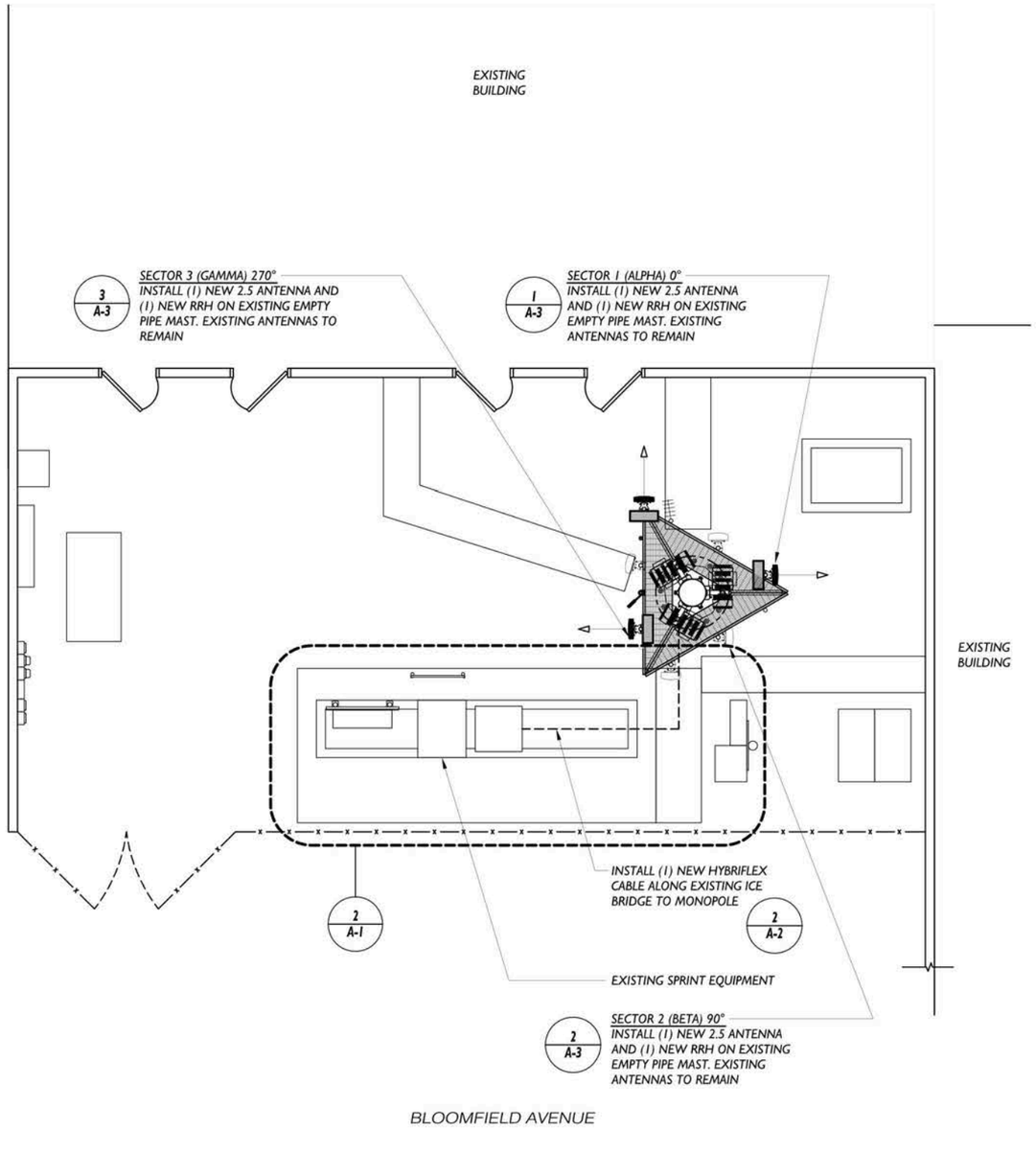
MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	SP-3

24"x36" SHEETS - SIGN & SEAL AREA

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

NOTE:
TOTAL PROPOSED INSTALLATION CONSISTS OF (3) 2.5 ANTENNAS AND (3) RRH - (1) OF EACH PER SECTOR

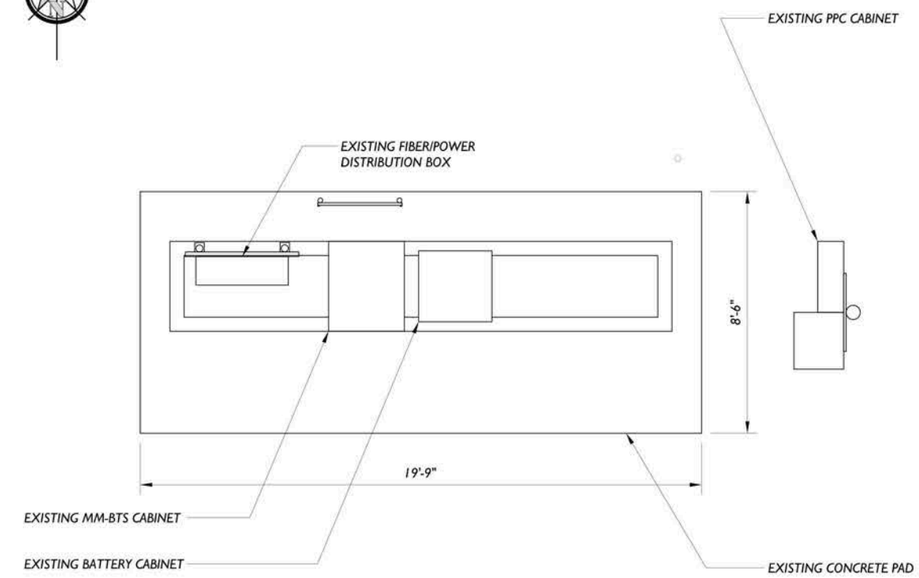


OVERALL SITE PLAN

SCALE	11"x17" : 1/8"= 1'-0"
	24"x36" : 1/4"= 1'-0"

1

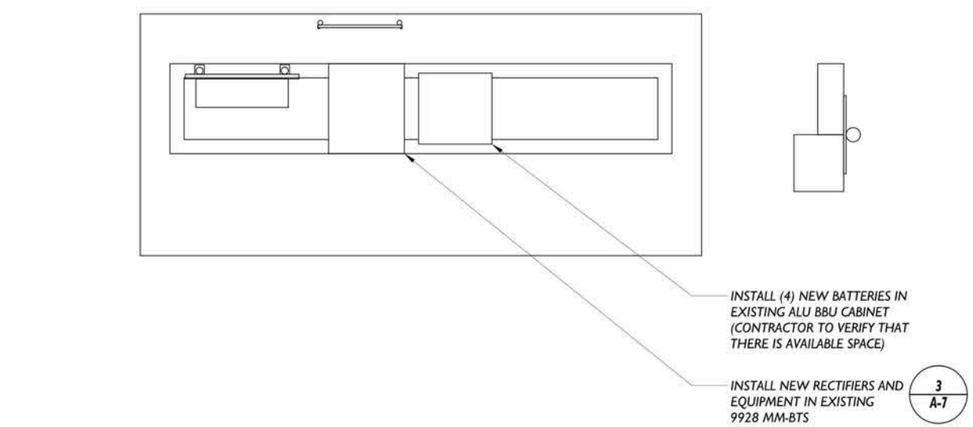
NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.



EXISTING SPRINT EQUIPMENT PLAN

SCALE	11"x17" : 3/16" = 1'-0"
	24"x36" : 3/8" = 1'-0"

2



PROPOSED SPRINT EQUIPMENT PLAN

SCALE	11"x17" : 3/16" = 1'-0"
	24"x36" : 3/8" = 1'-0"

3

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
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(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE: 3/7/14

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

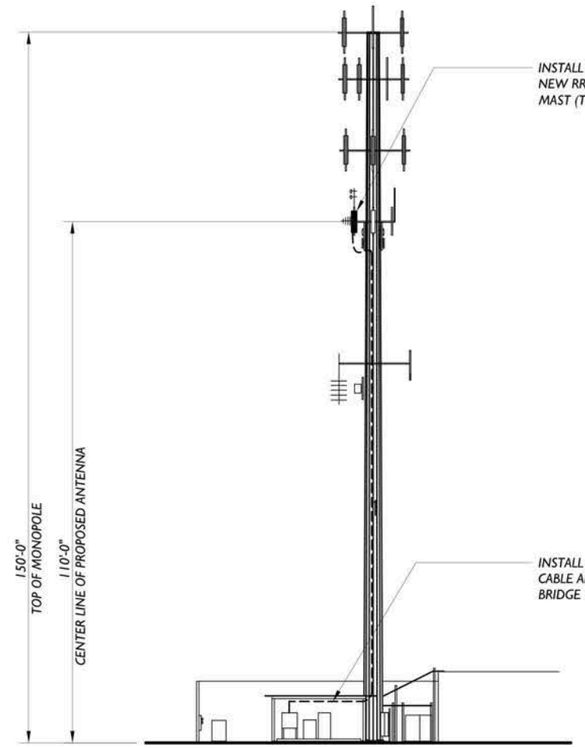
DRAWING TITLE
SITE PLAN

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	A-1

24"x36" SHEETS - SIGN & SEAL AREA

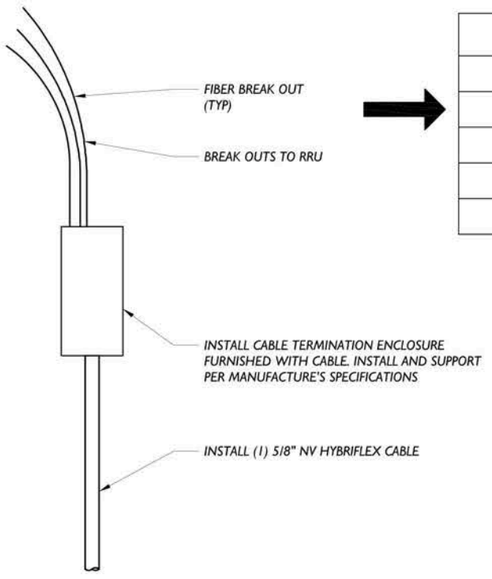
NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.



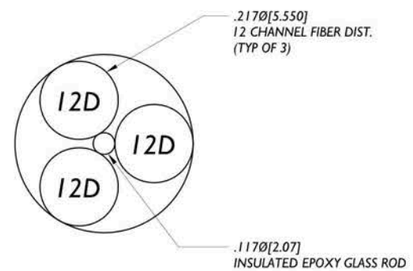
ELEVATION

SCALE: 11"x17" : 1/32" = 1'-0" | 24"x36" : 1/16" = 1'-0"

1



HYBRID CABLE DC CONDUCTOR SIZE GUIDELINE			
CABLE	LENGTH	DC CONDUCTOR	CABLE DIAMETER
FIBER ONLY	VARIES	USE NV HYBRIFLEX	5/8"
HYBRIFLEX	OVER 200'	8 AWG	1 1/4"
HYBRIFLEX	225'-300'	6 AWG	1 1/4"
HYBRIFLEX	325'-375'	4 AWG	1 1/4"



HYBRID BREAK OUT DETAIL

SCALE: 11"x17" : NTS | 24"x36" : NTS

2

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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

STATE OF CONNECTICUT · MICHAEL L. BOHLINGER · 20405 · PROFESSIONAL ENGINEER

SIGNATURE: 3/7/14

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

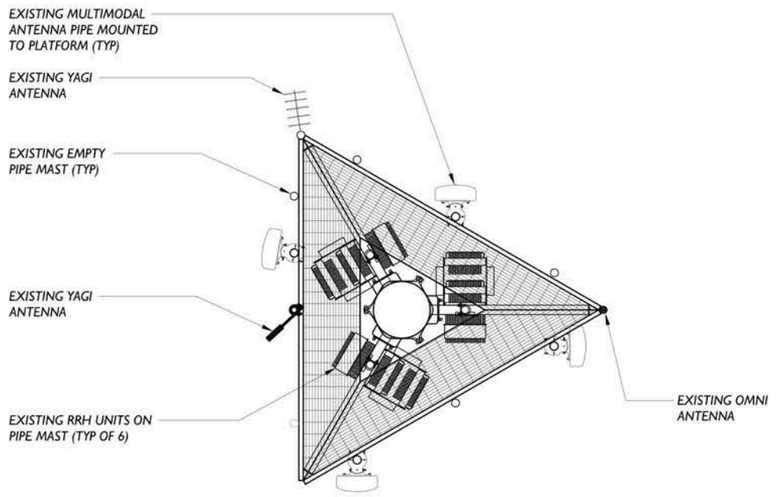
SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
BUILDING ELEVATION
AND CABLE PLAN

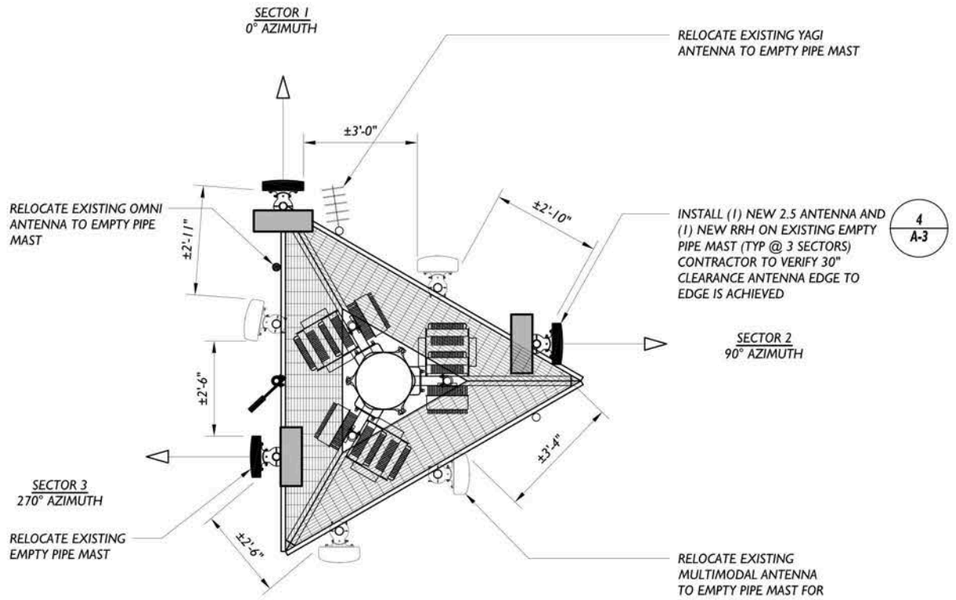
MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 3-3-14
PROJECT No: ASDGSP24
DRAWING BY: CD
CHK BY:
DWG No.: A-2

24"x36" SHEETS - SIGN & SEAL AREA



EXISTING LAYOUT



PROPOSED LAYOUT

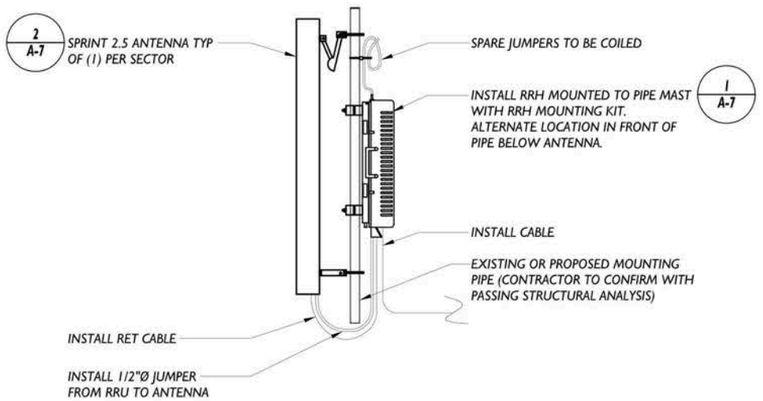
EXISTING AND PROPOSED LAYOUTS

SCALE	11"x17" : 1/4" = 1'-0"
	24"x36" : 1/2" = 1'-0"

1

NOTE:
1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE TO SIDE OF RRU.
3. DO NOT EXCEED BEND RADIUS.
4. JUMPERS FROM 2.5 RRH TO 2.5 ANTENNA CAN NOT EXCEED 15'. NOTIFY SPRINT CM OF ANY DISCREPANCY.

NOTE:
STRUCTURAL ANALYSIS TO BE PERFORMED BY OTHERS FOR NEW 2.5 INSTALLATION



NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

ANTENNA AND RRU MOUNTING DETAIL

SCALE	11"x17" : NTS
	24"x36" : NTS

4

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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
ANTENNA PLAN
AND MOUNTING DETAILS

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	A-3

24"x36" SHEETS - SIGN & SEAL AREA

NOTE:
GENERAL CONTRACTOR TO VERIFY RFDS IS CURRENT PRIOR TO CONSTRUCTION START

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

Sprint

RFDS Sheet

General Site Information

Site ID	CT43XC826	Equipment Vendor	ALU
Market	Northern Connecticut	Lattitude	41.85277
Region	EAST	Longitude	-72.66084
MLA	N/A	LL SITE ID	N/A
Structure Type	MONOPOLE		
BTS Type	N/A		
Solution ID		Siterra SR Equipment type	N/A
		Equipment Vendor	ALU

Incremental Power Draw needed by added Equipment: 0

Base Equipment

BBU Kit	ALU BBU KIT	Top Hat	NONE
BBU Kit Qty	1	Top Hat Qty	N/A
		Top Hat Dimensions	N/A
Growth Cabinet	NONE	Top Hat Weight (lbs)	N/A
Growth Cabinet Qty	N/A		
Growth Cabinet Dimensions	N/A		
Growth Cabinet Weight	N/A		

RF Path Information

RRH	TD-RRH8x20-25	
RRH Qty	3	
RRH Dimensions	26.1in x 18.6 x 6.7 in	
RRH Weight. lbs.	70	
RRH Mount Weight. Lbs.	TBD	
Power and Fiber Cable	ALU Fiber only	
Cable Qty	1	
Weight per foot. Lbs.	0.12	
Diameter. Inches.	0.7	
Length Ft.	124.8	(calculated as antenna height plus 20%)
Coax Jumper	Coax Jumper. Mfg TBD.	
Coax Jumper Qty	27	
Coax Jumper Length. Feet.	8	
Coax Jumper Weight	TBD	
Coax Jumper Diameter. Inches	0.5	
AISG Cable	Commscope ATCB-B01-006	
AISG Cable Qty	3	
AISG Diameter. Inches.	0.315	
AISG Cable length.	8	
Weight of entire AISG cable. Lbs.	1.3	

Antenna Sector Information

	Sector 1	Sector 2	Sector 3
Antenna make/model	RFS APXVTM14-C-I20	RFS APXVTM14-C-I20	RFS APXVTM14-C-I20
Antenna qty	1	1	1
Antenna Dimensions. Inches	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3
Antenna Weight. Lbs	56	56	56
Antenna Mounting Kit Weight. Lbs.	11 (estimate)	11 (estimate)	11 (estimate)
CL Height	110	110	110
Antenna Azimuth	0	90	270
Antenna Mechanical Downtilt	0	0	0
Antenna etilt	-2	-2	-2

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(732) 678-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No: ASDGSP24

CLIENT ID No: CT43XC826

DESIGN TYPE: 2.5 GHz

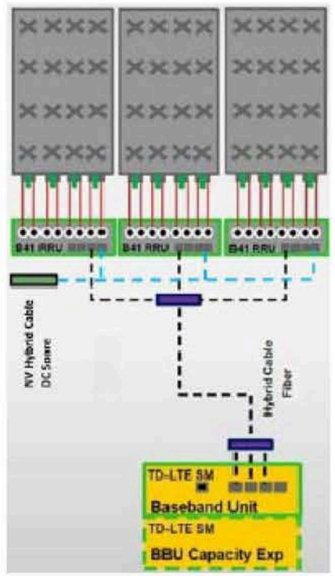
SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
RF DATA SHEET AND EQUIPMENT INFORMATION

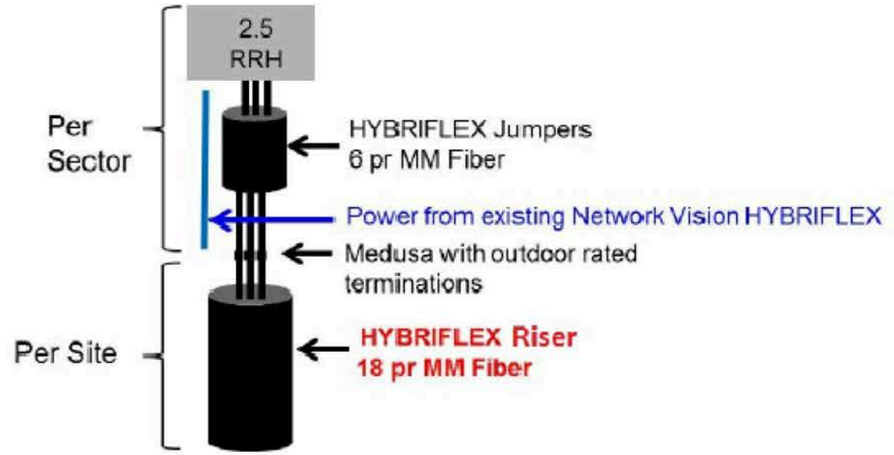
MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 3-3-14
PROJECT No: ASDGSP24
DRAWING BY: CD
CHK BY:
DWG No.: A-4

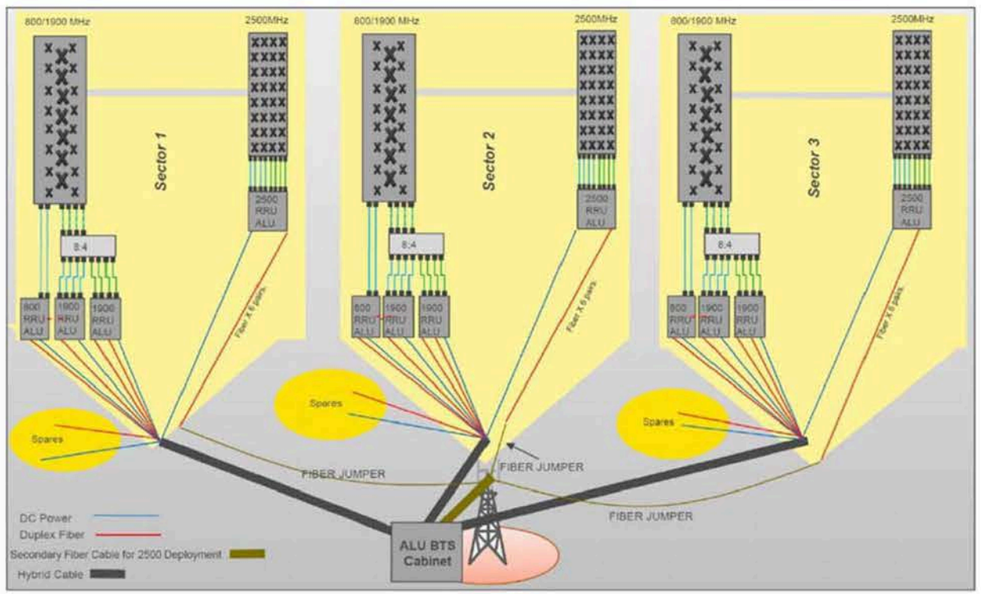
24"x36" SHEETS - SIGN & SEAL AREA



ALU 2500MHz ALU SCENARIO 1 | SCALE 11"x17" : NTS, 24"x36" : NTS | 1



RFS 2500MHz ALU SCENARIO 1 | SCALE 11"x17" : NTS, 24"x36" : NTS | 2



RAN WIRING DIAGRAM: ALU EQUIPMENT | SCALE 11"x17" : NTS, 24"x36" : NTS | 3

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No: ASDGSP24

CLIENT ID No: CT43XC826

DESIGN TYPE: 2.5 GHz

SITE INFORMATION:

WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE

WIRING DIAGRAMS

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 3-3-14
PROJECT No: ASDGSP24
DRAWING BY: CD
CHK BY:
DWG No.: A-5

24"x36" SHEETS - SIGN & SEAL AREA

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

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 19.1 CABLE COLOR CODE

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

NOTES

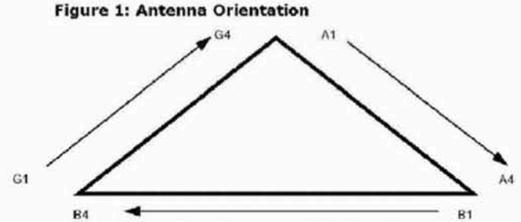
1. All cables shall be marked at the top and bottom with 2" colored tape, stencil tag colored tape, or colored heat shrink tubing
2. Colored tape may be obtained from Graybar Electronic. UV stabilized tape or heat shrink are preferred.
3. The first ring shall be closest to the end of the cable, and there shall be a 1" space between each ring.
4. The cable color code shall be applied in accordance to Table 19-1.
   A. Table 19-1 only shows 3 sectors, but additional sectors are easily supported by adding the appropriate number of colored rings to the cable color code.
5. After the cable color code is applied, the frequency color code, Table 19-2, must be applied for the specific frequency band in use on a given line.
   A. 2" gap shall separate the cable color code from the frequency color code.
   B. The 2" color rings for the frequency code shall be placed next to each other with no spaces.
6. Wrap 2" colored tape a minimum of 3 times around the coax, and keep the tape in the same area as much as possible. This will allow removal of tape that fades or discolors due to weather.
7. Examples of the cable and frequency color codes are shown in Figure 19-1 and Figure 19-2.

FIGURE 19.2 COLOR CODE

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

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

Figure 1: Antenna Orientation



CABLE MARKING DIAGRAM

SCALE	11"x17" : NTS
	24"x36" : NTS

1

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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

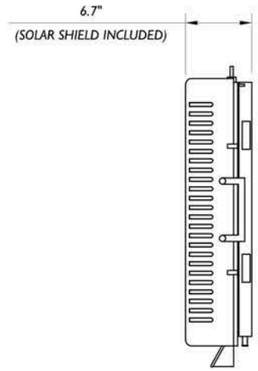
SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
RF DATA SHEET

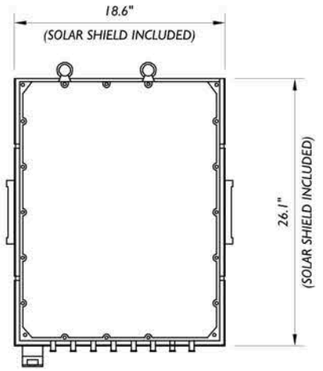
MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 3-3-14
PROJECT No: ASDGSP24
DRAWING BY: CD
CHK BY:
DWG No.: A-6

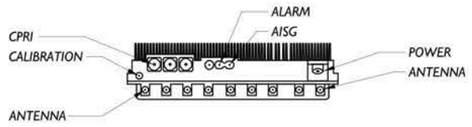
24"x36" SHEETS - SIGN & SEAL AREA



SIDE VIEW



FRONT VIEW



PLAN VIEW

TD-RRH8x20-25 REMOTE RADIO HEAD

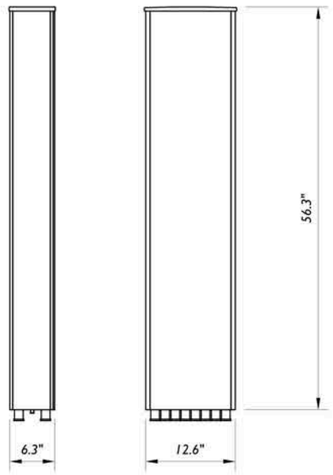
DIMENSIONS:	26.1"x18.6"x6.7"
WEIGHT:	60 LBS (WITH HARDWARE)

2.5 RRH DETAIL

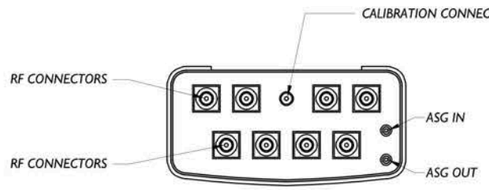
SCALE: 11"x17" : NTS; 24"x36" : NTS

1

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.



SIDE VIEW FRONT VIEW



PLAN VIEW

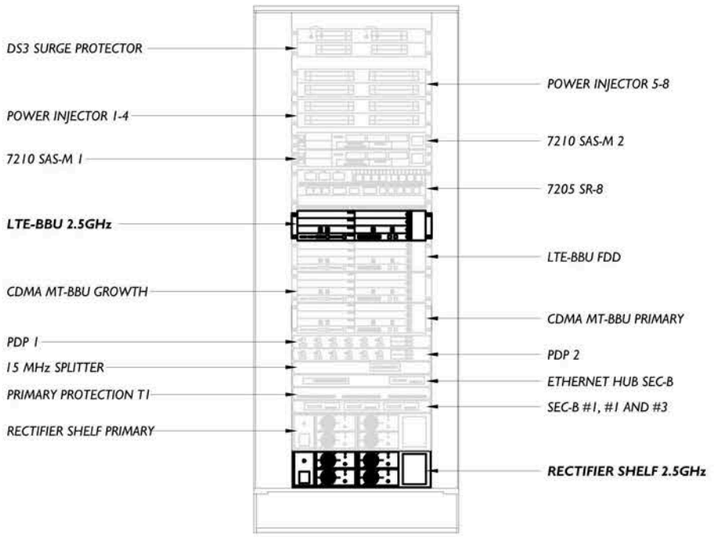
RFS APXVTM14-C-120 PANEL ANTENNA

DIMENSIONS:	53.3"x12.6"x6.3"
WEIGHT:	56 LBS (WITH HARDWARE)
FREQUENCY RANGE:	806-869 MHz 1850-1995 MHz

2.5 ANTENNA DETAIL

SCALE: 11"x17" : NTS; 24"x36" : NTS

2



FRONT VIEW

2.5 EQUIP. IN EXISTING CABINET

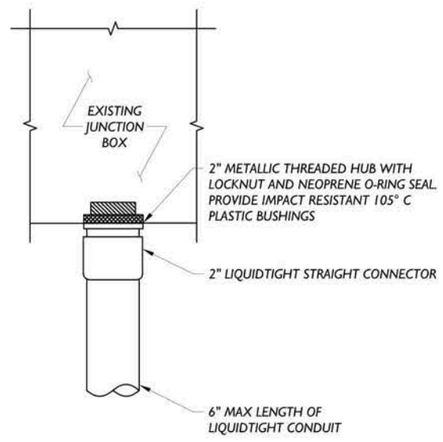
SCALE: 11"x17" : NTS; 24"x36" : NTS

3

EXISTING BBU CABINET

SCALE: 11"x17" : NTS; 24"x36" : NTS

4



JUNCTION BOX PENETRATION

SCALE: 11"x17" : NTS; 24"x36" : NTS

5

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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE: 3/7/14

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No: ASDGSP24

CLIENT ID No: CT43XC826

DESIGN TYPE: 2.5 GHz

SITE INFORMATION:

WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE

EQUIPMENT SPECIFICATIONS

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	A-7

24"x36" SHEETS - SIGN & SEAL AREA

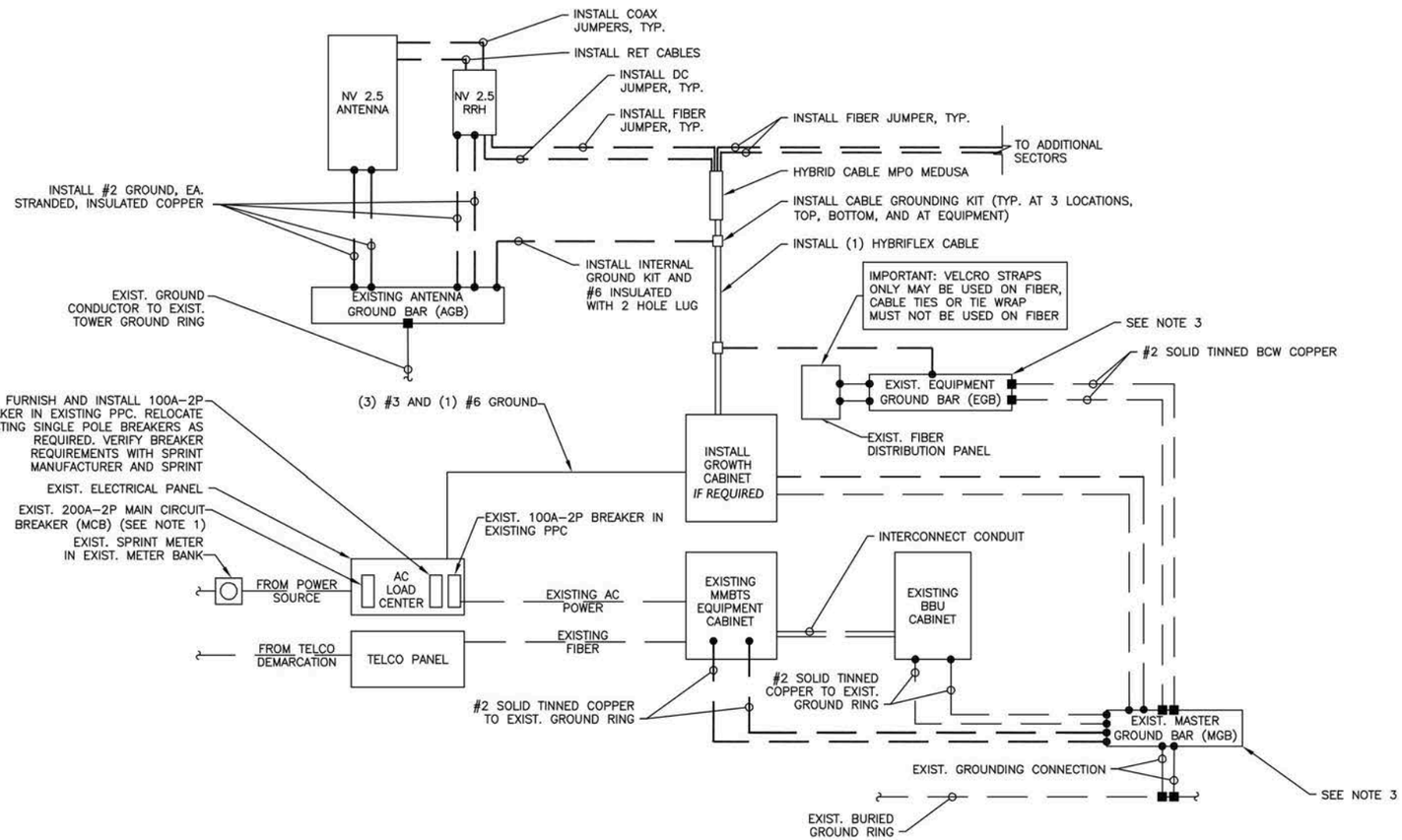
SPECIAL WORK NOTE:

1. G.C. TO FURNISH AND INSTALL ALL COMPONENTS TO UPGRADE EXISTING ELECTRICAL SERVICE, CONDUIT, CONDUCTOR, PPC AND MCB IN ACCORDANCE WITH SPRINT CONSTRUCTION STANDARDS NV 2.5 ADDENDUM "ENGINEERING NOTICE 2013-002 (POWER UPGRADES) REV.0"
2. G.C. TO FURNISH AND INSTALL UPGRADE THE EXISTING MMBTS BREAKER, CONDUCTOR, AND CONDUIT TO A MINIMUM NEC RATING FOR A 100-AMP, 240V CIRCUIT.
3. FOR NEW OR REPAIRED GROUNDING EQUIPMENT, REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
   -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12
   -SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12

NOTE:
MAXIMUM LENGTH OF LIQUID TIGHT CONDUIT IS TO BE 6 FEET

SYMBOL LEGEND

- (X) SPECIAL WORK NOTE
- ■ EXOTHERMIC CONNECTION
- ● MECHANICAL CONNECTION
- □ CABLE GROUNDING KIT



ELECTRICAL ONE-LINE DIAGRAM

SCALE	11"x17" : NTS
	24"x36" : NTS

1

ELECTRICAL NOTES

1) ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

2) THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND SPRINT CONSTRUCTION MANAGER.

3) ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.

4) ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.

5) GENERAL CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.

6) ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.

7) THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIALS DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

8) GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

9) ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

10) BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

11) ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.

12) RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.

13) RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.

14) FIBER OPTIC CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 770-OPTICAL FIBER CABLES AND RACEWAYS.

15) COMMUNICATIONS CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 800-COMMUNICATIONS SYSTEMS.

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.

ELECTRICAL NOTES

SCALE	11"x17" : NTS
	24"x36" : NTS

2

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ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE: 3/7/14

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No:
ASDGSP24

CLIENT ID No:
CT43XC826

DESIGN TYPE:
2.5 GHz

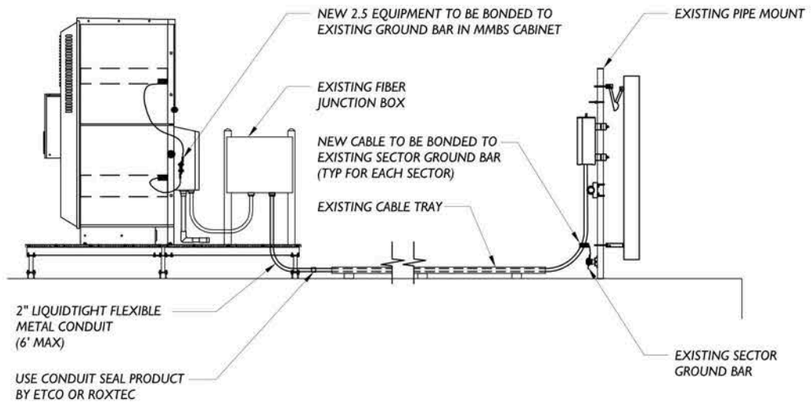
SITE INFORMATION:
WINDSOR / PUBLIC SAFETY
340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
ONE-LINE DIAGRAM

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	E-1

24"x36" SHEETS - SIGN & SEAL AREA



TYPICAL EQUIPMENT GROUNDING SCHEMATIC

SCALE: 11"x17" : NTS; 24"x36" : NTS

1

NOTE:
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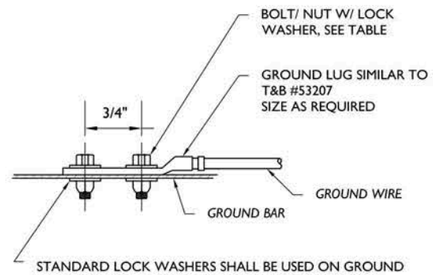


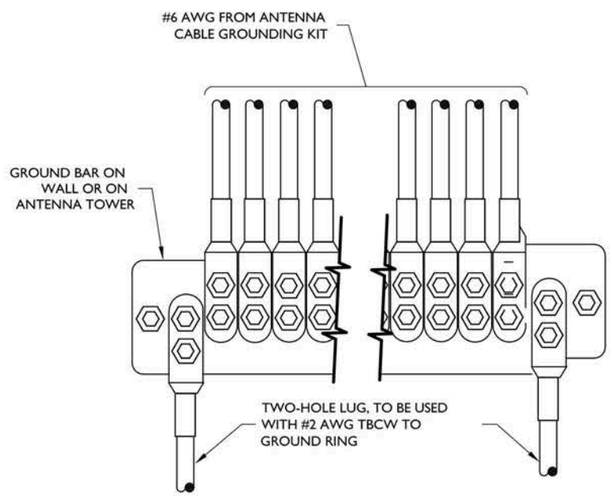
STANDARD LOCK WASHERS SHALL BE USED ON GROUND BARS, SSERRATED "DRAGON TOOTH" LOCK WASHERS SHALL BE USED ON CONNECTIONS TO BUILDING STEEL AND MISCELLANEOUS METALS.

TABLE		
WIRE SIZE	LUG #	BOLT SIZE
#4/0	53212	1/2" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#2	53207	1/4" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#6	53205	

GROUND LUG CONNECTION

SCALE: 11"x17" : NTS; 24"x36" : NTS

2



NOTE CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS

GROUND LUG CONNECTION TO GROUND BAR

SCALE: 11"x17" : NTS; 24"x36" : NTS

3

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DESIGN TYPE:
2.5 GHz

SITE INFORMATION:
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340 BLOOMFIELD AVENUE
WINDSOR, CT 06095

DRAWING TITLE
GROUNDING DETAILS

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE:	3-3-14
PROJECT No:	ASDGSP24
DRAWING BY:	CD
CHK BY:	
DWG No.:	G-1

24"x36" SHEETS - SIGN & SEAL AREA

May 28, 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 2.5B**
	Carrier Site Number:	CT43XC826
	Carrier Site Name:	Windsor Public Safety
Crown Castle Designation:	**Crown Castle BU Number:**	855662
	Crown Castle Site Name:	WINDSORCENTRAL
	Crown Castle JDE Job Number:	281126
	Crown Castle Work Order Number:	757879
	Crown Castle Application Number:	218557 Rev. 7
Engineering Firm Designation:	**B+T Group Project Number:**	91728.003.01
Site Data:	**340 Bloomfield Avenue, Windsor, Hartford County, CT** **Latitude *41° 51' 9.3"*, Longitude *-72° 39' 37.8"*** **150 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 650663, in accordance with application 218557, revision 7.

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

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

The analysis has been performed in accordance with the TIA/EIA-222-F standard and IBC 2003 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.

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/28/14

John Landon
Project Engineer

Chad E. Tuttle, P.E.
President

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Monopole. Tower manufacturer, basic wind speed, and standard code are unknown.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 38 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
109.0	110.0	3	Alcatel Lucent	TD-RRH8x20-25	3 1	5/16 5/8	-
		3	Rfs Celwave	APXVTM14-C-120			
	109.0	1	--	Platform Support (L3x3x1/4)			

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
150.0	155.0	1	Rfs Celwave	PD320-2	12 3 1	1-5/8 1-1/4 7/8	1
	150.0	1	--	Platform Mount [LP 1201-1]			
	148.0	3	Ericsson	RRUS-11			
		6	Kathrein	800 10121			
		12	Kathrein	860 10025			
		2	Kmw Com	AM-X-CD-16-65-00T-RET			
		12	Powerwave	LGP 13519			
		1	Powerwave Tech	P65-15-XLH-RR			
		1	Raycap	DC6-48-60-18-8F			
142.0	143.0	3	Ericsson	ERICSSON AIR 21 B2A B4P	1	1 5/8	2
		3	Ericsson	ERICSSON AIR 21 B4A B2P			
		3	Ericsson	KRY 112 144/1			
	142.0	1	--	Platform Mount [LP 1201-1]	12	1-5/8	1
126.0	126.0	3	Alcatel Lucent	RRH2x40-AWS	1	1 5/8	2
		3	Andrew	HBX-6516DS-VTM			
		3	Andrew	HBX-6517DS-VTM			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			
		1	Antel	BXA-70080-6CF-4	12	1-5/8	1
		6	Decibel	DB844G65ZAXY			
		2	Powerwave Tech	P65-16-XL-R			
		6	Rfs Celwave	FD9R6004/2C-3L			
		1	--	Platform Mount [LP 1201-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
111.0	111.0	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz	--	--	1
		3	Alcatel Lucent	TME-800MHz 2X50W RRH W/FILTER			
		1	--	Pipe Mount [PM 601-3]			
109.0	118.0	1	Decibel	DB205-L	3 3	7/8 1-1/4	1
	113.0	1		SD212-SF3P2SNM			
	110.0	4	Rfs Celwave	APXVSPP18-C-A20			
	109.0	1	--	Platform Mount [LP 1201-1]			
81.0	83.0	1	Sinclair	SRL-227	2	7/8	1
	81.0	1	--	Side Arm Mount [SO 701-3]			
	76.0	1	Sinclair	SD212			
74.0	75.0	1	Radiowaves	HP2-23	1	1/4	1
	74.0	1	--	Pipe Mount [PM 601-1]			
50.0	51.0	1	Pctel	GPS-TMG-HR-26N	1	1/2	1
	50.0	1	--	Side Arm Mount [SO 702-1]			

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)
Information Unknown						

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Sprint Co-locate, Revision# 7	218557	CCI Sites
Tower Manufacturer Drawings	Summit Manufacturing, LLC	4864315	CCI Sites
Tower Mapping	BTE Management Group, Job No. 15085	Date: 07/12/2012	On File
Foundation Drawing	PJF Structural Analysis Project No. A00007-T144	Date: 07/26/2007	On File
Geotech Report			
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	150 - 117	Pole	TP30.37x24.19x0.219	1	-10.086	1057.261	41.5	Pass
L2	117 - 76	Pole	TP38.04x29.221x0.25	2	-19.479	1512.728	93.7	Pass
L3	76 - 41	Pole	TP44.58x36.605x0.344	3	-26.767	2208.861	98.7	Pass
L4	41 - 0	Pole	TP52.25x42.775x0.375	4	-38.860	3151.119	95.8	Pass
							Summary	
						Pole (L3)	98.7	Pass
						RATING =	98.7	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	81.6	Pass
1	Base Plate	Base	81.4	Pass
1	Base Foundation	Base	90.4	Pass

Structure Rating (max from all components) =	98.7%

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

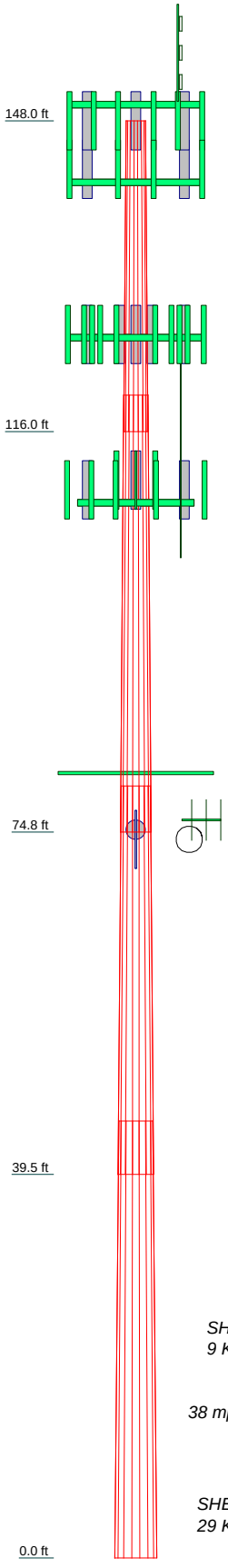
4.1) Recommendations

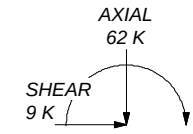
The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

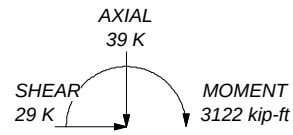
APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	32.000	18	0.219	3.750	24.000	30.241		2.0
2	45.000	18	0.250	4.750	29.072	37.847		4.0
3	40.000	18	0.313	5.500	36.421	44.222	A607-65	5.4
4	45.000	18	0.375		42.524	51.300		8.5
								20.0







DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) 800 10121 w/ Mount Pipe (E)	150	HBX-6516DS-VTM w/ Mount Pipe (R)	126
(2) 800 10121 w/ Mount Pipe (E)	150	HBX-6517DS-VTM w/ Mount Pipe (R)	126
(2) 800 10121 w/ Mount Pipe (E)	150	HBX-6517DS-VTM w/ Mount Pipe (R)	126
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	150	HBX-6517DS-VTM w/ Mount Pipe (R)	126
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	150	DB-T1-6Z-8AB-0Z (R)	126
P65-15-XLH-RR w/ Mount Pipe (E)	150	RRH2x40-AWS (R)	126
(4) LGP 13519 (E)	150	RRH2x40-AWS (R)	126
(4) LGP 13519 (E)	150	RRH2x40-AWS (R)	126
(4) LGP 13519 (E)	150	Platform Mount [LP 1201-1] (E)	126
RRUS-11 (E)	150	(2) DB844G65ZAXY w/Mount Pipe (E)	126
RRUS-11 (E)	150	TME-800MHz 2X50W RRH W/FILTER (E)	111
RRUS-11 (E)	150	TME-800MHz 2X50W RRH W/FILTER (E)	111
(4) 860 10025 (E)	150	PCS 1900MHz 4x45W-65MHz (E)	111
(4) 860 10025 (E)	150	PCS 1900MHz 4x45W-65MHz (E)	111
(4) 860 10025 (E)	150	PCS 1900MHz 4x45W-65MHz (E)	111
DC6-48-60-18-8F (E)	150	Pipe Mount [PM 601-3] (E)	111
PD320-2 (E)	150	TME-800MHz 2X50W RRH W/FILTER (E)	111
Platform Mount [LP 1201-1] (E)	150	SD212-SF3P2SNM (E)	109
Detuner Mount (E)	147	APXVSPP18-C-A20 w/ Mount Pipe (E)	109
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	142	APXVSPP18-C-A20 w/ Mount Pipe (E)	109
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	142	(2) APXVSPP18-C-A20 w/ Mount Pipe (E)	109
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	142	APXVTM14-C-120 w/ Mount Pipe (P)	109
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	142	APXVTM14-C-120 w/ Mount Pipe (P)	109
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	142	APXVTM14-C-120 w/ Mount Pipe (P)	109
KRY 112 144/1 (R)	142	TD-RRH8x20-25 (P)	109
KRY 112 144/1 (R)	142	TD-RRH8x20-25 (P)	109
KRY 112 144/1 (R)	142	TD-RRH8x20-25 (P)	109
(2) 6' x 2" Mount Pipe (E)	142	6' x 2" Mount Pipe (E)	109
(2) 6' x 2" Mount Pipe (E)	142	6' x 2" Mount Pipe (E)	109
(2) 6' x 2" Mount Pipe (E)	142	6' x 2" Mount Pipe (E)	109
Platform Mount [LP 1201-1] (E)	142	Platform Mount [LP 1201-1] (Modfied Support)	109
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	142	DB205-L (E)	109
(2) DB844G65ZAXY w/Mount Pipe (E)	126	Detuner Mount (E)	95
(2) DB844G65ZAXY w/Mount Pipe (E)	126	4' x 2" Pipe Mount (E)	81
P65-16-XL-R w/ Mount Pipe (E)	126	4' x 2" Pipe Mount (E)	81
P65-16-XL-R w/ Mount Pipe (E)	126	4' x 2" Pipe Mount (E)	81
BXA-70080-6CF-4 w/ Mount Pipe (E)	126	Side Arm Mount [SO 701-3] (E)	81
(2) FD9R6004/2C-3L (E)	126	SRL-227 (E)	81
(2) FD9R6004/2C-3L (E)	126	SD212 (E)	81
(2) FD9R6004/2C-3L (E)	126	Pipe Mount [PM 601-1] (E)	74
HBX-6516DS-VTM w/ Mount Pipe (R)	126	HP2-23 (E)	74
HBX-6516DS-VTM w/ Mount Pipe (R)	126	GPS-TMG-HR-26N (E)	50
		Detuner Mount (E)	50
		Side Arm Mount [SO 702-1] (E)	50
		Detuner Mount (E)	15

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 98.7%

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1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 91728.003.01 - Windsor Central, CT (BU#855662			
Project:			
Client: Crown Castle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 05/28/14	Scale: NTS	
Path: S:\Projects\Crown Castle\91728_855662_WindsorCentral\Engineering\tnxTower\91728_003_01_WINDSORCENTRAL_CT_JLan		Dwg No. E-1	

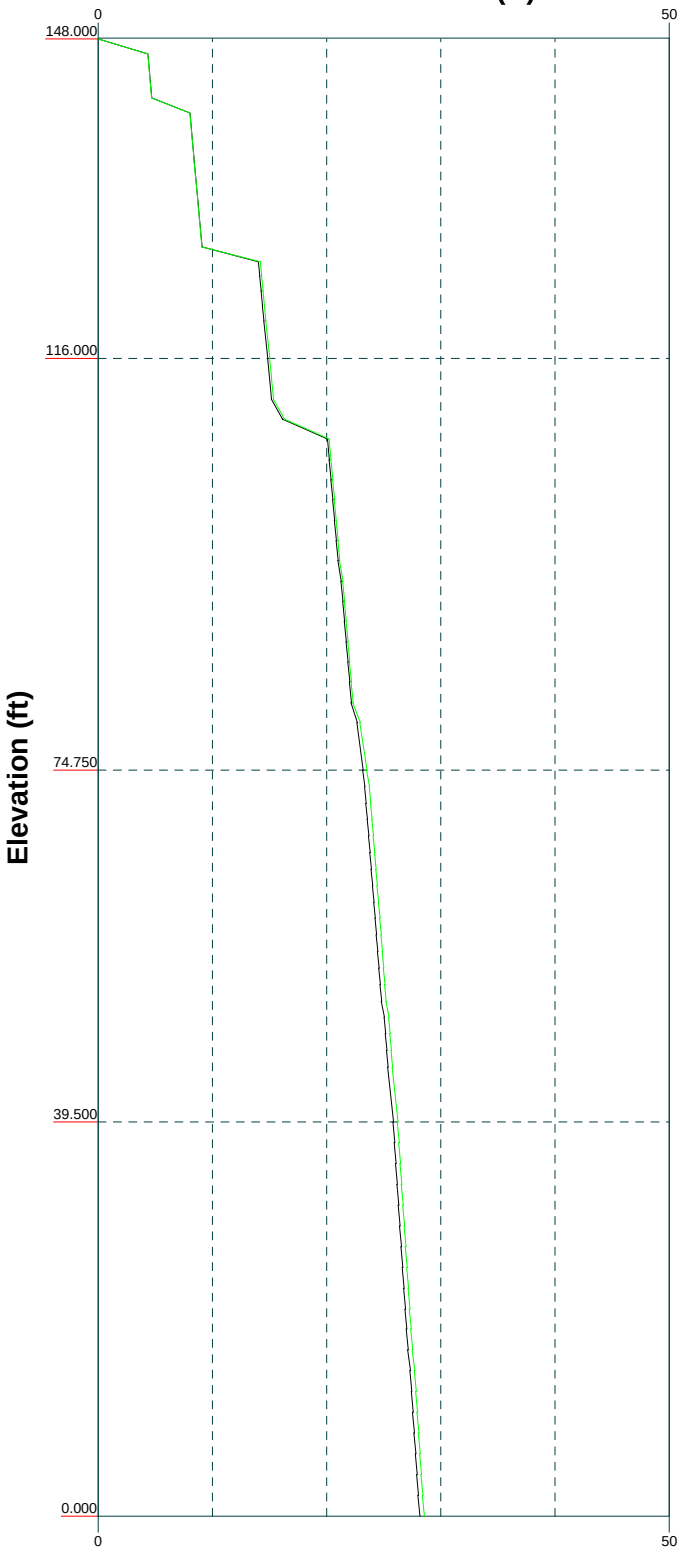
TIA/EIA-222-F - 80 mph/38 mph 1.000 in Ice

Vx Vz

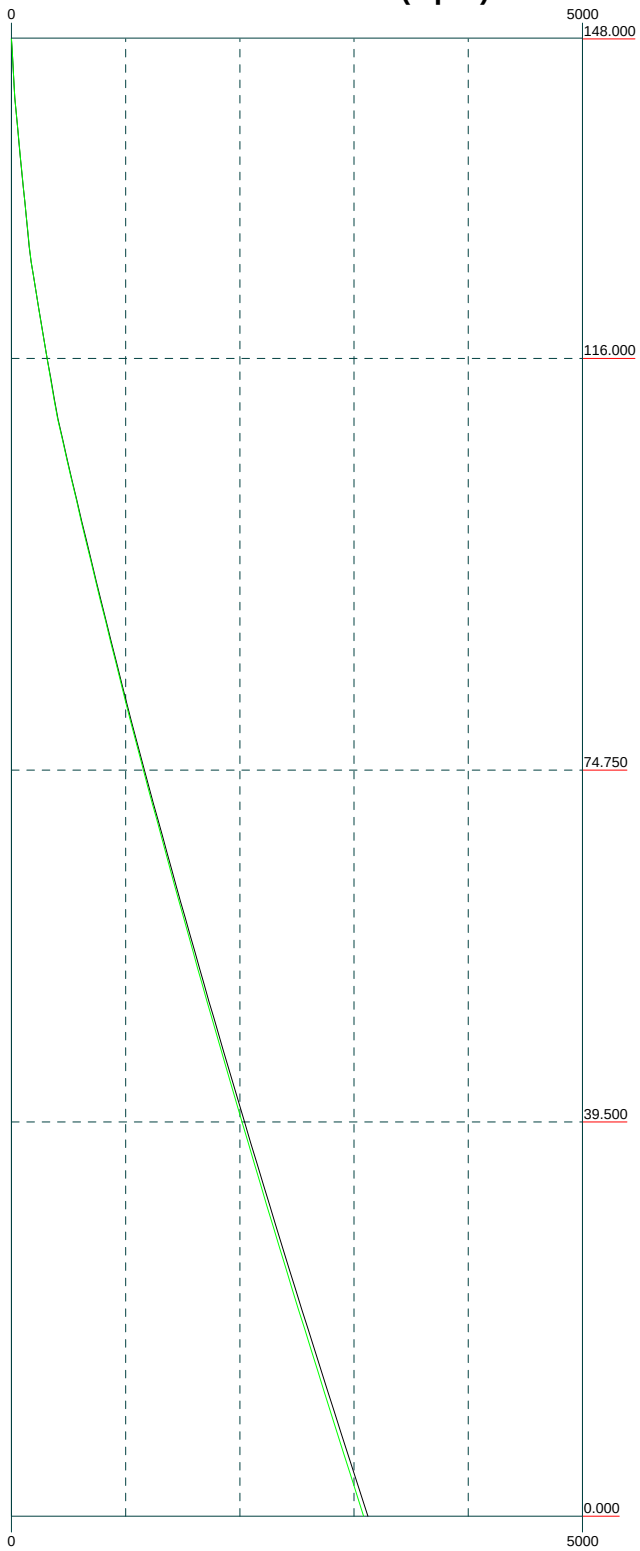
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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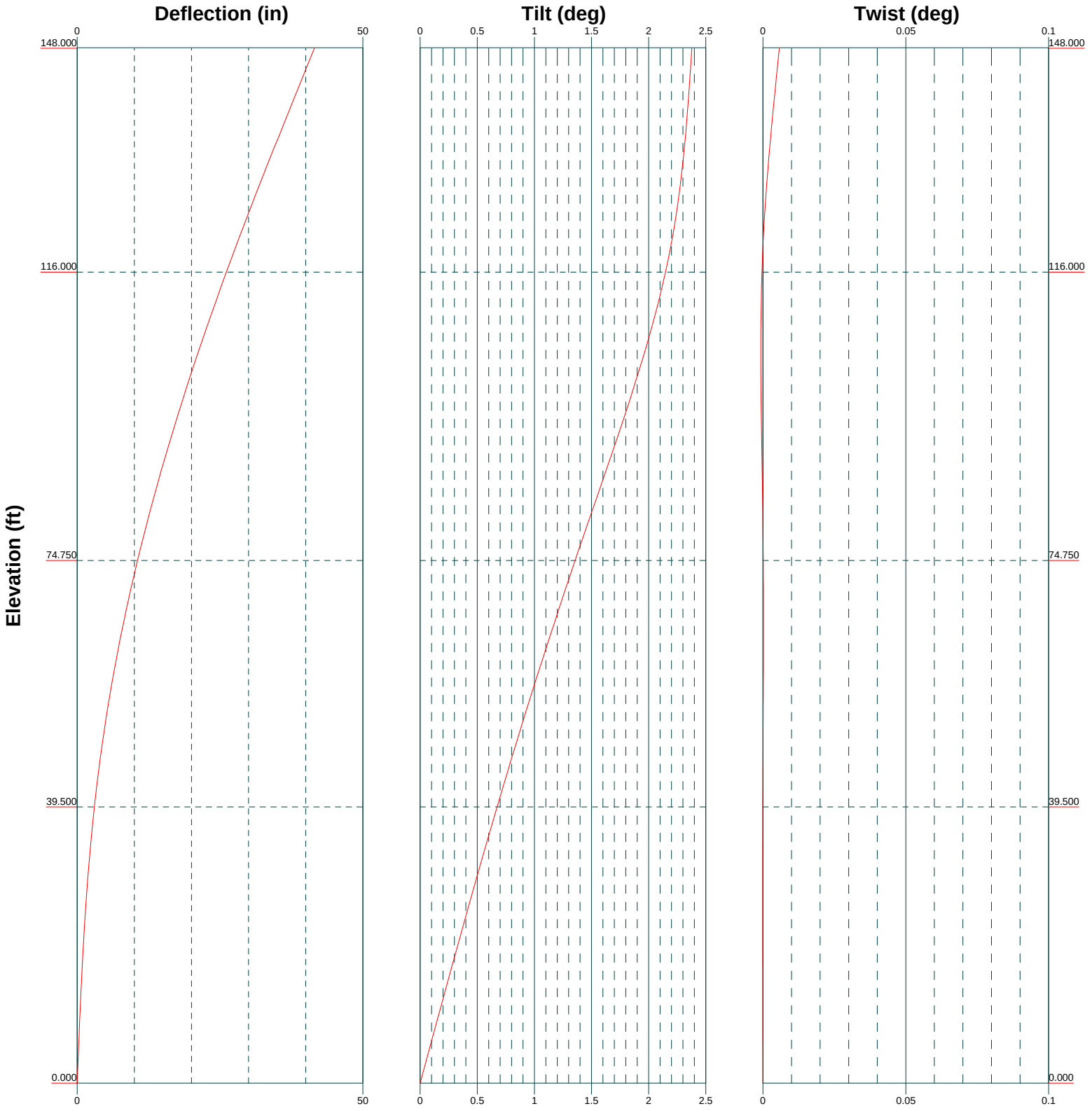
Job: 91728.003.01 - Windsor Central, CT (BU#855662			
Project:			
Client: Crown Castle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 05/28/14	Scale: NTS	
Path: S:\Projects\Crown Castle\91728_855662_WindsorCentral\Engineering\tnxTower\91728_003_01_WINDSORCENTRAL_CT_JL.eri		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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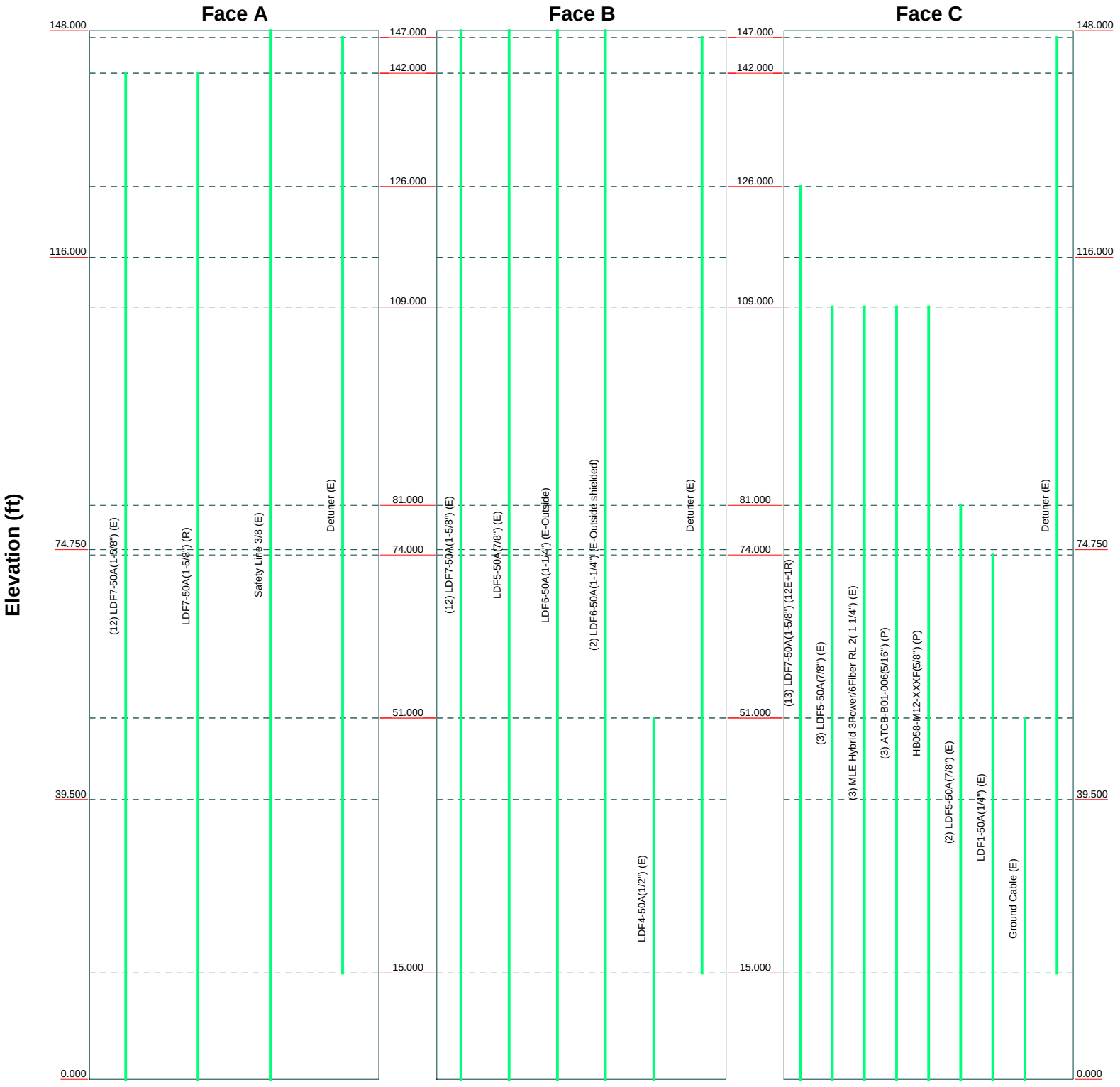
Job: 91728.003.01 - Windsor Central, CT (BU#855662			
Project:			
Client: Crown Castle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 05/28/14	Scale: NTS	
Path: S:\Projects\Crown Castle\91728_855662_WindsorCentral\Engineering\tnxTower\91728_003_01_WINDSORCENTRAL_CT_JL.eri		Dwg No. E-5	

Feed Line Distribution Chart
0' - 148'

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



B+T GRP

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

Job: ***91728.003.01 - Windsor Central, CT (BU#855662***		
Project:		
Client: Crown Castle	Drawn by: J. Landon	App'd:
Code: TIA/EIA-222-F	Date: 05/28/14	Scale: NTS
Path: S:\Projects\Crown Castle\91728_855662_WindsorCentral\Engineering\tnxTower\91728_003_01_WINDSORCENTRAL_CT_JLan		Dwg No. E-7

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

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	148.000-116.000	32.000	3.750	18	24.000	30.241	0.219	0.875	A607-65 (65 ksi)
L2	116.000-74.750	45.000	4.750	18	29.072	37.847	0.250	1.000	A607-65 (65 ksi)
L3	74.750-39.500	40.000	5.500	18	36.421	44.222	0.313	1.250	A607-65 (65 ksi)
L4	39.500-0.000	45.000		18	42.524	51.300	0.375	1.500	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.370	16.512	1179.768	8.442	12.192	96.766	2361.088	8.257	3.839	17.55
	30.708	20.845	2373.680	10.658	15.362	154.512	4750.483	10.424	4.937	22.571
L2	30.263	22.870	2400.285	10.232	14.769	162.526	4803.727	11.437	4.677	18.707
	38.431	29.833	5327.751	13.347	19.226	277.108	10662.513	14.919	6.221	24.884
L3	37.923	35.815	5899.487	12.818	18.502	318.861	11806.736	17.911	5.860	18.752
	44.904	43.553	10608.888	15.588	22.465	472.245	21231.736	21.781	7.233	23.146
L4	44.269	50.168	11260.241	14.963	21.602	521.250	22535.298	25.089	6.824	18.198
	52.091	60.613	19859.520	18.078	26.060	762.057	39745.172	30.313	8.369	22.317

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 148.000-116.000				1	1	1		
L2 116.000-74.750				1	1	1		
L3 74.750-39.500				1	1	1		
L4 39.500-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8") (E)	B	No	Inside Pole	150.000 - 0.000	0.000	0	12	No Ice	0.000	0.001
								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") (E)	B	No	Inside Pole	150.000 - 0.000	0.000	0	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
LDF6-50A(1-1/4")	B	No	CaAa (Out Of Face)	150.000 - 0.000	0.000	0	1	No Ice	0.155	0.001
								1/2" Ice	0.255	0.002

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
(E-Outside)								1" Ice	0.355	0.004
								2" Ice	0.555	0.009
								4" Ice	0.955	0.028
LDF6-50A(1-1/4")	B	No	CaAa (Out Of Face)	150.000 - 0.000	0.000	0	2	No Ice	0.000	0.001
								1/2" Ice	0.000	0.002
(E-Outside shielded)								1" Ice	0.000	0.004
								2" Ice	0.000	0.009
								4" Ice	0.000	0.028
////										
LDF7-50A(1-5/8")	A	No	Inside Pole	142.000 - 0.000	0.000	0	12	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
(E)								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
LDF7-50A(1-5/8")	A	No	Inside Pole	142.000 - 0.000	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
(R)								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	Inside Pole	126.000 - 0.000	0.000	0	13	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
(12E+1R)								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	109.000 - 0.000	0.000	0	3	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
(E)								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	C	No	Inside Pole	109.000 - 0.000	0.000	0	3	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
(E)								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
ATCB-B01-006(5/16")	C	No	Inside Pole	109.000 - 0.000	0.000	0	3	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
(P)								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
HB058-M12-XXXF(5/8")	C	No	Inside Pole	109.000 - 0.000	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
(P)								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
////										
LDF5-50A(7/8")	C	No	Inside Pole	81.000 - 0.000	0.000	0	2	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
(E)								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
////										
LDF1-50A(1/4")	C	No	Inside Pole	74.000 - 0.000	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
(E)								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
////										
LDF4-50A(1/2")	B	No	CaAa (Out Of Face)	51.000 - 0.000	0.000	0	1	No Ice	0.063	0.000
								1/2" Ice	0.163	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
(E)								1" Ice	0.263	0.002
								2" Ice	0.463	0.007
								4" Ice	0.863	0.023
////										
Ground Cable	C	No	Inside Pole	51.000 - 0.000	0.000	0	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
////										
Safety Line	A	No	CaAa (Out Of Face)	150.000 - 0.000	0.000	0	1	No Ice	0.037	0.000
3/8								1/2" Ice	0.137	0.001
(E)								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
////										
Detuner	C	No	CaAa (Out Of Face)	147.000 - 15.000	24.000	0	1	No Ice	0.037	0.000
(E)								1/2" Ice	0.137	0.001
								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
Detuner	B	No	CaAa (Out Of Face)	147.000 - 15.000	24.000	0	1	No Ice	0.037	0.000
(E)								1/2" Ice	0.137	0.001
								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
Detuner	A	No	CaAa (Out Of Face)	147.000 - 15.000	24.000	0	1	No Ice	0.037	0.000
(E)								1/2" Ice	0.137	0.001
								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
////										

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	148.000-116.000	A	0.000	0.000	0.000	2.362	0.291
		B	0.000	0.000	0.000	6.123	0.396
		C	0.000	0.000	0.000	1.163	0.113
L2	116.000-74.750	A	0.000	0.000	0.000	3.094	0.458
		B	0.000	0.000	0.000	7.941	0.510
		C	0.000	0.000	0.000	1.547	0.572
L3	74.750-39.500	A	0.000	0.000	0.000	2.644	0.391
		B	0.000	0.000	0.000	7.510	0.438
		C	0.000	0.000	0.000	1.322	0.534
L4	39.500-0.000	A	0.000	0.000	0.000	2.400	0.435
		B	0.000	0.000	0.000	9.530	0.491
		C	0.000	0.000	0.000	0.919	0.602

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	148.000-116.000	A	1.180	0.000	0.000	0.000	17.237	0.370
		B		0.000	0.000	0.000	20.997	0.830
		C		0.000	0.000	0.000	8.481	0.152
L2	116.000-74.750	A	1.135	0.000	0.000	0.000	22.572	0.561
		B		0.000	0.000	0.000	27.419	1.072
		C		0.000	0.000	0.000	11.286	0.624
L3	74.750-39.500	A	1.068	0.000	0.000	0.000	18.649	0.476
		B		0.000	0.000	0.000	26.126	0.919
		C		0.000	0.000	0.000	9.324	0.577
L4	39.500-0.000	A	1.000	0.000	0.000	0.000	16.068	0.508
		B		0.000	0.000	0.000	31.634	1.023
		C		0.000	0.000	0.000	6.151	0.630

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	148.000-116.000	0.178	0.053	0.293	-0.068
L2	116.000-74.750	0.182	0.054	0.318	-0.073
L3	74.750-39.500	0.209	0.070	0.415	-0.023
L4	39.500-0.000	0.262	0.099	0.603	0.077

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 800 10121 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
(2) 800 10121 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
(2) 800 10121 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.139 0.212 0.385 0.874

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.139 0.212 0.385 0.874
P65-15-XLH-RR w/ Mount Pipe (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.838 6.292 6.756 7.716 9.772	3.665 4.278 4.902 6.235 9.277	0.048 0.092 0.142 0.262 0.611
(4) LGP 13519 (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
(4) LGP 13519 (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
(4) LGP 13519 (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
RRUS-11 (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310
RRUS-11 (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310
RRUS-11 (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310
(4) 860 10025 (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
(4) 860 10025 (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
(4) 860 10025 (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
DC6-48-60-18-8F (E)	B	From Leg	4.000 0.000	0.000	150.000	No Ice 1/2" Ice	2.567 2.798	2.567 2.798	0.019 0.041

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			-2.000			1" Ice	3.038	3.038	0.067
						2" Ice	3.543	3.543	0.129
						4" Ice	4.658	4.658	0.299
PD320-2	B	From Leg	4.000	0.000	150.000	No Ice	1.800	1.000	0.015
(E)			0.000			1/2" Ice	3.408	2.017	0.022
			5.000			1" Ice	5.016	3.034	0.029
						2" Ice	8.232	5.068	0.043
						4" Ice	14.664	9.136	0.071
Platform Mount [LP 1201-1]	C	None		0.000	150.000	No Ice	23.100	23.100	2.100
(E)						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
////									
ERICSSON AIR 21 B2A	A	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B2A	B	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B2A	C	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B4P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B4A	B	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B4A	A	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B4A	C	From Leg	4.000	0.000	142.000	No Ice	6.825	5.642	0.112
B2P w/ Mount Pipe			0.000			1/2" Ice	7.347	6.480	0.169
(R)			1.000			1" Ice	7.863	7.257	0.233
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
KRY 112 144/1	A	From Leg	4.000	0.000	142.000	No Ice	0.408	0.204	0.011
(R)			0.000			1/2" Ice	0.497	0.273	0.014
			1.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	B	From Leg	4.000	0.000	142.000	No Ice	0.408	0.204	0.011
(R)			0.000			1/2" Ice	0.497	0.273	0.014
			1.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	C	From Leg	4.000	0.000	142.000	No Ice	0.408	0.204	0.011
(R)			0.000			1/2" Ice	0.497	0.273	0.014
			1.000			1" Ice	0.594	0.351	0.019

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
(2) 6' x 2" Mount Pipe	A	From Leg	4.000	0.000	142.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(2) 6' x 2" Mount Pipe	B	From Leg	4.000	0.000	142.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(2) 6' x 2" Mount Pipe	C	From Leg	4.000	0.000	142.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 1201-1]	C	None		0.000	142.000	No Ice	23.100	23.100	2.100
(E)						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
////									
(2) DB844G65ZAXY	A	From Leg	4.000	0.000	126.000	No Ice	5.379	5.396	0.042
w/Mount Pipe			0.000			1/2" Ice	6.071	6.491	0.093
(E)			0.000			1" Ice	6.647	7.302	0.150
						2" Ice	7.828	8.960	0.288
						4" Ice	10.341	12.491	0.689
(2) DB844G65ZAXY	B	From Leg	4.000	0.000	126.000	No Ice	5.379	5.396	0.042
w/Mount Pipe			0.000			1/2" Ice	6.071	6.491	0.093
(E)			0.000			1" Ice	6.647	7.302	0.150
						2" Ice	7.828	8.960	0.288
						4" Ice	10.341	12.491	0.689
(2) DB844G65ZAXY	C	From Leg	4.000	0.000	126.000	No Ice	5.379	5.396	0.042
w/Mount Pipe			0.000			1/2" Ice	6.071	6.491	0.093
(E)			0.000			1" Ice	6.647	7.302	0.150
						2" Ice	7.828	8.960	0.288
						4" Ice	10.341	12.491	0.689
P65-16-XL-R w/ Mount Pipe	A	From Leg	4.000	0.000	126.000	No Ice	8.637	6.362	0.057
(E)			0.000			1/2" Ice	9.290	7.538	0.122
			0.000			1" Ice	9.910	8.427	0.196
						2" Ice	11.176	10.239	0.371
						4" Ice	13.829	14.099	0.864
P65-16-XL-R w/ Mount Pipe	B	From Leg	4.000	0.000	126.000	No Ice	8.637	6.362	0.057
(E)			0.000			1/2" Ice	9.290	7.538	0.122
			0.000			1" Ice	9.910	8.427	0.196
						2" Ice	11.176	10.239	0.371
						4" Ice	13.829	14.099	0.864
BXA-70080-6CF-4 w/ Mount	C	From Leg	4.000	0.000	126.000	No Ice	6.006	6.203	0.043
Pipe			0.000			1/2" Ice	6.562	7.359	0.098
(E)			0.000			1" Ice	7.083	8.229	0.160
						2" Ice	8.167	10.019	0.310
						4" Ice	10.691	13.840	0.750
(2) FD9R6004/2C-3L	A	From Leg	4.000	0.000	126.000	No Ice	0.367	0.085	0.003
(E)			0.000			1/2" Ice	0.451	0.136	0.005
			0.000			1" Ice	0.543	0.196	0.009
						2" Ice	0.755	0.343	0.020

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	1.281	0.740	0.063
(2) FD9R6004/2C-3L (E)	B	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (E)	C	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
HBX-6516DS-VTM w/ Mount Pipe (R)	A	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.598 3.998 4.435 5.368 7.361	3.241 3.914 4.564 5.914 8.877	0.029 0.062 0.101 0.199 0.504
HBX-6516DS-VTM w/ Mount Pipe (R)	B	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.598 3.998 4.435 5.368 7.361	3.241 3.914 4.564 5.914 8.877	0.029 0.062 0.101 0.199 0.504
HBX-6516DS-VTM w/ Mount Pipe (R)	C	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.598 3.998 4.435 5.368 7.361	3.241 3.914 4.564 5.914 8.877	0.029 0.062 0.101 0.199 0.504
HBX-6517DS-VTM w/ Mount Pipe (R)	A	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.541 6.112 6.654 7.750 10.109	5.021 6.223 7.167 9.011 12.898	0.045 0.092 0.146 0.281 0.692
HBX-6517DS-VTM w/ Mount Pipe (R)	B	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.541 6.112 6.654 7.750 10.109	5.021 6.223 7.167 9.011 12.898	0.045 0.092 0.146 0.281 0.692
HBX-6517DS-VTM w/ Mount Pipe (R)	C	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.541 6.112 6.654 7.750 10.109	5.021 6.223 7.167 9.011 12.898	0.045 0.092 0.146 0.281 0.692
DB-T1-6Z-8AB-0Z (R)	A	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.600 5.915 6.240 6.914 8.365	2.333 2.558 2.791 3.284 4.373	0.044 0.080 0.120 0.213 0.455
RRH2x40-AWS (R)	A	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.522 2.753 2.993 3.499 4.615	1.589 1.795 2.010 2.465 3.479	0.044 0.061 0.082 0.132 0.275
RRH2x40-AWS (R)	B	From Leg	4.000 0.000 0.000	0.000	126.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.522 2.753 2.993 3.499 4.615	1.589 1.795 2.010 2.465 3.479	0.044 0.061 0.082 0.132 0.275
RRH2x40-AWS	C	From Leg	4.000	0.000	126.000	No Ice	2.522	1.589	0.044

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(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
Platform Mount [LP 1201-1]	C	None		0.000	126.000	No Ice	23.100	23.100	2.100
(E)						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-800MHz 2X50W RRH W/FILTER	A	From Leg	1.000	0.000	111.000	No Ice	2.401	2.254	0.064
			0.000			1/2" Ice	2.613	2.460	0.086
(E)			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
TME-800MHz 2X50W RRH W/FILTER	B	From Leg	1.000	0.000	111.000	No Ice	2.401	2.254	0.064
			0.000			1/2" Ice	2.613	2.460	0.086
(E)			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
TME-800MHz 2X50W RRH W/FILTER	C	From Leg	1.000	0.000	111.000	No Ice	2.401	2.254	0.064
			0.000			1/2" Ice	2.613	2.460	0.086
(E)			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
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.000	0.000	111.000	No Ice	2.709	2.611	0.060
			0.000			1/2" Ice	2.948	2.847	0.083
(E)			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	B	From Leg	1.000	0.000	111.000	No Ice	2.709	2.611	0.060
			0.000			1/2" Ice	2.948	2.847	0.083
(E)			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	C	From Leg	1.000	0.000	111.000	No Ice	2.709	2.611	0.060
			0.000			1/2" Ice	2.948	2.847	0.083
(E)			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
Pipe Mount [PM 601-3]	C	None		0.000	111.000	No Ice	4.390	4.390	0.195
(E)						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
DB205-L	B	From Leg	4.000	0.000	109.000	No Ice	1.717	1.717	0.036
(E)			0.000			1/2" Ice	3.450	3.450	0.052
			9.000			1" Ice	5.200	5.200	0.078
						2" Ice	8.750	8.750	0.164
						4" Ice	15.687	15.687	0.472
SD212-SF3P2SNM	B	From Leg	4.000	0.000	109.000	No Ice	2.160	2.160	0.021
(E)			0.000			1/2" Ice	3.960	3.960	0.050
			4.000			1" Ice	5.760	5.760	0.079
						2" Ice	9.360	9.360	0.137
						4" Ice	16.560	16.560	0.253
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	109.000	No Ice	8.498	6.946	0.083
			0.000			1/2" Ice	9.149	8.127	0.151

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			1.000				1" Ice	9.767	9.021	0.227
							2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	109.000	No Ice	8.498	6.946	0.083
(E)			0.000				1/2" Ice	9.149	8.127	0.151
			1.000				1" Ice	9.767	9.021	0.227
							2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
(2) APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	109.000	No Ice	8.498	6.946	0.083
(E)			0.000				1/2" Ice	9.149	8.127	0.151
			1.000				1" Ice	9.767	9.021	0.227
							2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	109.000	No Ice	7.134	4.959	0.077
(P)			0.000				1/2" Ice	7.662	5.754	0.131
			1.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.338
							4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	109.000	No Ice	7.134	4.959	0.077
(P)			0.000				1/2" Ice	7.662	5.754	0.131
			1.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.338
							4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	109.000	No Ice	7.134	4.959	0.077
(P)			0.000				1/2" Ice	7.662	5.754	0.131
			1.000				1" Ice	8.183	6.472	0.193
							2" Ice	9.256	8.010	0.338
							4" Ice	11.526	11.412	0.752
TD-RRH8x20-25	B	From Leg	4.000	0.000	0.000	109.000	No Ice	4.720	1.703	0.070
(P)			0.000				1/2" Ice	5.014	1.920	0.097
			1.000				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	C	From Leg	4.000	0.000	0.000	109.000	No Ice	4.720	1.703	0.070
(P)			0.000				1/2" Ice	5.014	1.920	0.097
			1.000				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	A	From Leg	4.000	0.000	0.000	109.000	No Ice	4.720	1.703	0.070
(P)			0.000				1/2" Ice	5.014	1.920	0.097
			1.000				1" Ice	5.316	2.145	0.128
							2" Ice	5.948	2.622	0.201
							4" Ice	7.314	3.680	0.397
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	109.000	No Ice	1.425	1.425	0.022
(E)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
							4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	109.000	No Ice	1.425	1.425	0.022
(E)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
							4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	109.000	No Ice	1.425	1.425	0.022
(E)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 1201-1]	C	None		0.000	109.000	No Ice	23.100	23.100	2.200
(Modfied Support)						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
////									
SRL-227	A	From Leg	4.000	0.000	81.000	No Ice	4.625	1.448	0.035
(E)			0.000			1/2" Ice	9.386	3.733	0.071
			2.000			1" Ice	14.147	6.018	0.106
						2" Ice	23.669	10.588	0.178
						4" Ice	42.713	19.728	0.320
SD212	B	From Leg	4.000	0.000	81.000	No Ice	3.000	3.000	0.016
(E)			0.000			1/2" Ice	4.032	4.032	0.174
			-5.000			1" Ice	5.064	5.064	0.341
						2" Ice	7.128	7.128	0.701
						4" Ice	11.256	11.256	1.531
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	81.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	81.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	81.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
Side Arm Mount [SO 701-3]	A	None		0.000	81.000	No Ice	2.830	2.830	0.195
(E)						1/2" Ice	3.920	3.920	0.237
						1" Ice	5.010	5.010	0.279
						2" Ice	7.190	7.190	0.363
						4" Ice	11.550	11.550	0.531
////									
Pipe Mount [PM 601-1]	A	From Leg	0.500	0.000	74.000	No Ice	3.000	0.900	0.065
(E)			0.000			1/2" Ice	3.740	1.120	0.079
			0.000			1" Ice	4.480	1.340	0.093
						2" Ice	5.960	1.780	0.122
						4" Ice	8.920	2.660	0.178
////									
GPS-TMG-HR-26N	A	From Leg	4.000	0.000	50.000	No Ice	0.160	0.160	0.001
(E)			0.000			1/2" Ice	0.219	0.219	0.002
			1.000			1" Ice	0.285	0.285	0.005
						2" Ice	0.445	0.445	0.014
						4" Ice	0.867	0.867	0.053
Side Arm Mount [SO 702-1]	A	From Leg	1.500	0.000	50.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.000	2.050	0.038
			0.000			1" Ice	1.000	2.670	0.049
						2" Ice	1.000	3.910	0.071
						4" Ice	1.000	6.390	0.115
////									
Detuner Mount	C	None		0.000	147.000	No Ice	2.830	2.830	0.195
(E)						1/2" Ice	3.920	3.920	0.237

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	5.010	5.010	0.279
						2" Ice	7.190	7.190	0.363
						4" Ice	11.550	11.550	0.531
Detuner Mount (E)	C	None		0.000	95.000	No Ice	2.830	2.830	0.195
						1/2" Ice	3.920	3.920	0.237
						1" Ice	5.010	5.010	0.279
						2" Ice	7.190	7.190	0.363
						4" Ice	11.550	11.550	0.531
Detuner Mount (E)	C	None		0.000	50.000	No Ice	2.830	2.830	0.195
						1/2" Ice	3.920	3.920	0.237
						1" Ice	5.010	5.010	0.279
						2" Ice	7.190	7.190	0.363
						4" Ice	11.550	11.550	0.531
Detuner Mount (E)	C	None		0.000	15.000	No Ice	2.830	2.830	0.195
						1/2" Ice	3.920	3.920	0.237
						1" Ice	5.010	5.010	0.279
						2" Ice	7.190	7.190	0.363
						4" Ice	11.550	11.550	0.531
////									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HP2-23 (E)	A	Paraboloid w/Shroud (HP)	From Leg	1.000 0.000 1.000	0.000		74.000	2.042	No Ice	3.274	0.027
									1/2" Ice	3.547	0.045
									1" Ice	3.819	0.063
									2" Ice	4.365	0.100
									4" Ice	5.456	0.173
////											

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

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

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 116	41.509	33	2.377	0.006
L2	119.75 - 74.75	27.823	33	2.194	0.003
L3	79.5 - 39.5	12.017	33	1.455	0.001
L4	45 - 0	3.799	33	0.774	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.000	(2) 800 10121 w/ Mount Pipe	33	41.509	2.377	0.006	24646
147.000	Detuner Mount	33	41.012	2.373	0.006	24646
142.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	33	38.528	2.352	0.005	20538
126.000	(2) DB844G65ZAXY w/Mount Pipe	33	30.739	2.256	0.003	5600
111.000	TME-800MHz 2X50W RRH W/FILTER	33	23.919	2.073	0.002	3877
109.000	DB205-L	33	23.059	2.041	0.002	3781
95.000	Detuner Mount	33	17.412	1.780	0.002	3222
81.000	SRL-227	33	12.496	1.487	0.001	2811
75.000	HP2-23	33	10.639	1.361	0.001	2725

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
74.000	Pipe Mount [PM 601-1]	33	10.345	1.340	0.001	2716
50.000	GPS-TMG-HR-26N	33	4.646	0.867	0.001	2508
15.000	Detuner Mount	33	0.780	0.250	0.000	7404

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 116	105.899	8	6.064	0.014
L2	119.75 - 74.75	71.012	8	5.599	0.007
L3	79.5 - 39.5	30.696	8	3.717	0.003
L4	45 - 0	9.708	8	1.977	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.000	(2) 800 10121 w/ Mount Pipe	8	105.899	6.064	0.014	9882
147.000	Detuner Mount	8	104.631	6.054	0.014	9882
142.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	8	98.301	6.002	0.013	8235
126.000	(2) DB844G65ZAXY w/Mount Pipe	8	78.446	5.758	0.009	2243
111.000	TME-800MHz 2X50W RRH W/FILTER	8	61.059	5.293	0.006	1546
109.000	DB205-L	8	58.866	5.211	0.006	1507
95.000	Detuner Mount	8	44.464	4.545	0.005	1279
81.000	SRL-227	8	31.918	3.797	0.004	1111
75.000	HP2-23	8	27.178	3.477	0.003	1076
74.000	Pipe Mount [PM 601-1]	8	26.427	3.424	0.003	1072
50.000	GPS-TMG-HR-26N	8	11.873	2.215	0.002	984
15.000	Detuner Mount	8	1.994	0.638	0.000	2899

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	148 - 116 (1)	TP30.241x24x0.219	32.000	0.000	0.0	39.000	20.337	-10.086	793.144	0.013
L2	116 - 74.75 (2)	TP37.847x29.072x0.25	45.000	0.000	0.0	39.000	29.098	-19.479	1134.830	0.017
L3	74.75 - 39.5 (3)	TP44.222x36.421x0.313	40.000	0.000	0.0	39.000	42.489	-26.767	1657.060	0.016
L4	39.5 - 0 (4)	TP51.3x42.524x0.375	45.000	0.000	0.0	39.000	60.613	-38.860	2363.930	0.016

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	148 - 116 (1)	TP30.241x24x0.219	257.936	21.049	39.000	0.540	0.000	0.000	39.000	0.000
L2	116 - 74.75 (2)	TP37.847x29.072x0.25	1054.775	48.021	39.000	1.231	0.000	0.000	39.000	0.000
L3	74.75 - 39.5 (3)	TP44.222x36.421x0.313	1897.800	50.678	39.000	1.299	0.000	0.000	39.000	0.000
L4	39.5 - 0 (4)	TP51.3x42.524x0.375	3121.583	49.155	39.000	1.260	0.000	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	148 - 116 (1)	TP30.241x24x0.219	14.690	0.722	26.000	0.056	1.269	0.051	26.000	0.002
L2	116 - 74.75 (2)	TP37.847x29.072x0.25	22.921	0.788	26.000	0.061	0.722	0.016	26.000	0.001
L3	74.75 - 39.5 (3)	TP44.222x36.421x0.313	25.784	0.607	26.000	0.047	1.294	0.017	26.000	0.001
L4	39.5 - 0 (4)	TP51.3x42.524x0.375	28.556	0.471	26.000	0.036	1.369	0.011	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	148 - 116 (1)	0.013	0.540	0.000	0.056	0.002	0.553 ✔	1.333	H1-3+VT ✔
L2	116 - 74.75 (2)	0.017	1.231	0.000	0.061	0.001	1.249 ✔	1.333	H1-3+VT ✔
L3	74.75 - 39.5 (3)	0.016	1.299	0.000	0.047	0.001	1.316 ✔	1.333	H1-3+VT ✔
L4	39.5 - 0 (4)	0.016	1.260	0.000	0.036	0.000	1.277 ✔	1.333	H1-3+VT ✔

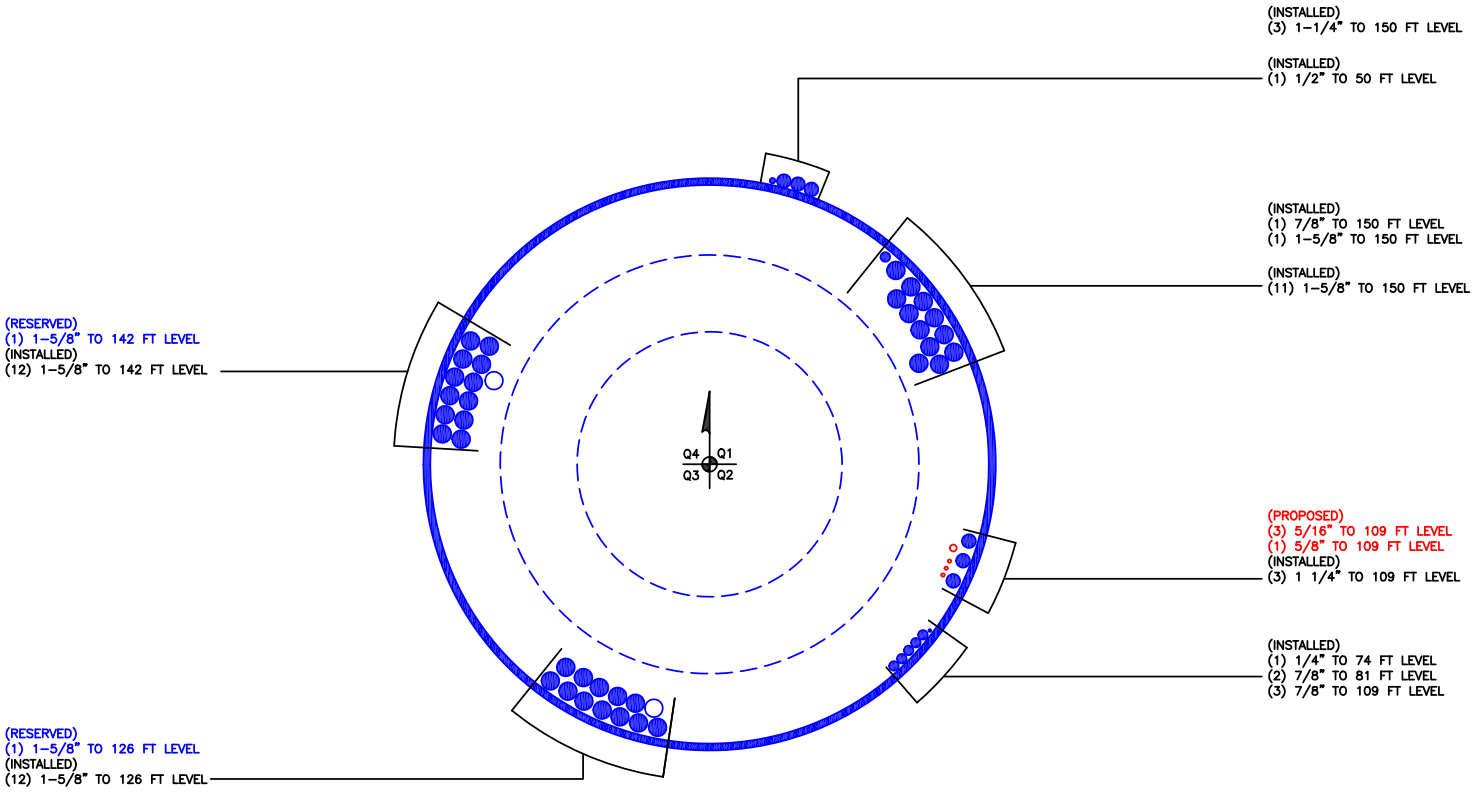
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	148 - 116	Pole	TP30.241x24x0.219	1	-10.086	1057.261	41.5	Pass
L2	116 - 74.75	Pole	TP37.847x29.072x0.25	2	-19.479	1512.728	93.7	Pass
L3	74.75 - 39.5	Pole	TP44.222x36.421x0.313	3	-26.767	2208.861	98.7	Pass
L4	39.5 - 0	Pole	TP51.3x42.524x0.375	4	-38.860	3151.119	95.8	Pass
							Summary	
						Pole (L3)	98.7	Pass
						RATING =	**98.7**	**Pass**

Program Version 6.1.4.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 855662

APPENDIX C

ADDITIONAL CALCULATIONS

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

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

Site Data

BU#: *855662*
Site Name: *WINDSORCENTRAL, CT*
App #: *216463 Rev 2*

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	58	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	57	in
Thick:	2.75	in
Grade:	55	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:	51.3	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"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:	3122	ft-kips
Unfactored Axial, P:	39	kips
Unfactored Shear, V:	29	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	159.0 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	81.6% **Pass**

Base Plate Results — Flexural Check

Base Plate Stress:	44.8 ksi
Allowable PL Bending Stress:	55.0 ksi
Base Plate Stress Ratio:	81.4% **Pass**

PL Ref. Data	
Yield Line (in):	29.31
Max PL Length:	29.31

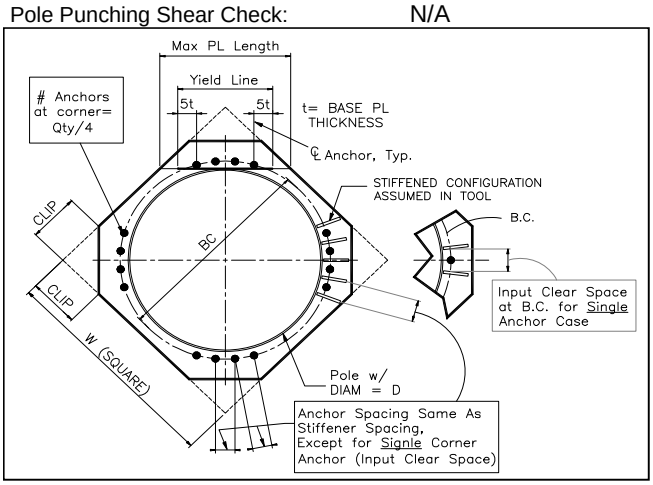
N/A - Unstiffened

Stiffener Results

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

Pole Results

Pole Punching Shear Check: N/A



CCI Foundation Tool Suite - Monopole Pier - Beta Release

CCI Foundation Tool Suite - v1.0 Date: 5/28/2014

BU:	855662
Site Name:	WINDSORCENTRAL, CT
App Number:	216051 Rev. 1
Work Order:	738802

Monopole Drilled Pier

Input

Criteria

TIA Revision:	F
ACI 318 Revision:	2002
Seismic Category:	B

Forces

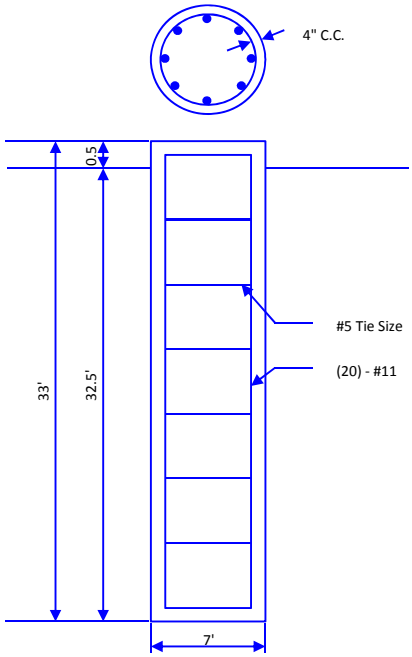
Compression	50.7	kips
Shear	37.7	kips
Moment	4058.6	k-ft
Swelling Force	0	kips

Foundation Dimensions

Pier Diameter:	7	ft
Ext. above grade:	0.5	ft
Depth below grade:	32.5	ft

Material Properties

Number of Rebar:	20	
Rebar Size:	11	
Tie Size	5	
Rebar tensile strength:	60	ksi
Concrete Strength:	3000	psi
Ultimate Concrete Strain	0.003	in/in
Clear Cover to Ties:	4	in



Soil Profile: Soil

Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Skin Friction (ksf)	Ultimate Comp. Skin Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	2	0	2	100	0	0	0	0	0	
2	3	2	5	37.6	0	0	0	0	0	
3	7	5	12	55		35			0	
4	4	12	16	50		31			0	
5	16.5	16	32.5	50	800				0	

Analysis Results

Soil Lateral Capacity

Depth to Zero Shear:	7.04	ft
Max Moment, Mu:	3338.60	k-ft
Soil Safety Factor:	2.21	
Safety Factor Req'd:	2	
RATING:	90.4%	

Soil Axial Capacity

Skin Friction (k):	135.67	kips
End Bearing (k):	0.00	kips
Comp. Capacity (k), ϕCn:	135.67	kips
Comp. (k), Cu:	50.70	kips
RATING:	37.4%	

Concrete/Steel Check

Mu (from soil analysis)	4340.19	k-ft
ϕMn	4949.82	k-ft
RATING:	87.7%	

rho provided	0.56	
rho required	0.33	OK

Rebar Spacing	10.11	
Spacing required	22.56	OK

Dev. Length required	25.13	
Dev. Length provided	61.78	OK

Overall Foundation Rating: 90.4%

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT43XC826

Windsor / Public Safety

340 Bloomfield Avenue
Windsor, CT 06095

June 10, 2014

EBI Project Number: 62143278

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

June 10, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT43XC826 - Windsor / Public Safety

Site Total: 51.87% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 340 Bloomfield Avenue, Windsor, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2). The number of µW/cm2 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 ($\mu W/cm^2$). The general population exposure limit for the cellular band (850 MHz Band) is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 340 Bloomfield Avenue, Windsor, 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 APXVSPP18-C-A20 and the RFS APXVTM14-C-I20. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 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 **110 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	CT43XC826 - Windsor / Public Safety
Site Addresss	340 Bloomfield Avenue, Windsor, CT, 06095
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	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	110	104	1/2 "	0.5	3	104.27	0.35%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	110	104	1/2 "	0.5	3	19.54	0.11%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	110	104	1/2 "	0.5	3	69.51	0.41%
														Sector total Power Density Value:		0.87%

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	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	110	104	1/2 "	0.5	3	104.27	0.35%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	110	104	1/2 "	0.5	3	19.54	0.11%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	110	104	1/2 "	0.5	3	69.51	0.41%
														Sector total Power Density Value:		0.87%

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	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	110	104	1/2 "	0.5	3	104.27	0.35%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	110	104	1/2 "	0.5	3	19.54	0.11%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	110	104	1/2 "	0.5	3	69.51	0.41%
														Sector total Power Density Value:		0.87%

Site Composite MPE %	
Carrier	MPE %
Sprint	2.61%
Verizon Wireless	17.88%
AT&T	16.99%
T-Mobile	4.46%
Clearwire	1.10%
Town	8.83%
Total Site MPE %	**51.87%**

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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 **2.61% (0.87% from sector 1, 0.87% from sector 2 and 0.87% 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 **51.87%** 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

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