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

July 25, 2014

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

RE: **Sprint PCS-Exempt Modification - Crown Site BU: 842872**
Sprint PCS Site ID: CT43XC847
Located at: 52 New Britain Ave, Rocky Hill, CT 06067

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 Henry Vasel, Mayor for the Town of Rocky Hill.

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at **52 New Britain Ave, Rocky Hill, CT 06067**. 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 Henry Vasel, Mayor
Town of Rocky Hill
761 Old Main St
Rocky Hill, CT 06067

Sprint

CROWN CASTLE

PROJECT:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	ROCKY HILL FD
SITE CASCADE:	CT43XC847
SITE NUMBER:	842872
SITE ADDRESS:	52 NEW BRITAIN AVE ROCKY HILL, CT 06067
SITE TYPE:	MONOPOLE TOWER
MARKET:	NORTHERN CONNECTICUT

SITE INFORMATION

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

LATITUDE (NAD83):
41° 39' 36.9" N
41.66025°

LONGITUDE (NAD83):
72° 40' 50.42" W
-72.680672°

COUNTY:
HARTFORD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

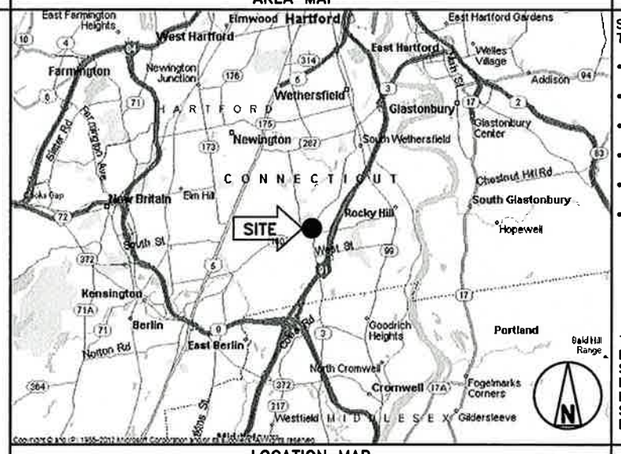
ZONING DISTRICT:
TBD

POWER COMPANY:
CL&P
(800) 286-4000

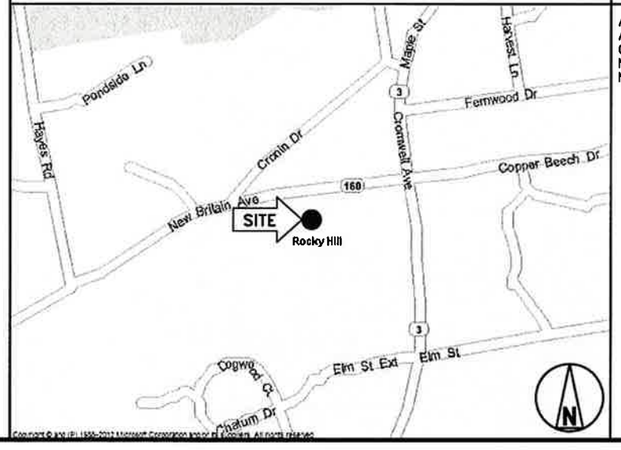
SPRINT CM:
PETER CULBERT
(603) 203-6446
(603) 969-0686
peter.culbert@sprint.com

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

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

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

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

APPLICABLE CODES

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

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

811 Know what's **below.** **Call** before you dig. www.call811.com

DRAWING INDEX

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

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-XXX

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:
ROCKY HILL FD

SITE CASCADE:
CT43XC847

SITE ADDRESS:
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

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

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT CORPORATION

C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.

D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.

E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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

JOB NUMBER 353-XXX

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:

ROCKY HILL FD

SITE CASCADE:

CT43XC847

SITE ADDRESS:

52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM 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.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

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

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

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

PLANS PREPARED FOR:

Sprint

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PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.

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JOB NUMBER 353-XXX

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
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SITE NAME:

ROCKY HILL FD

SITE CASCADE:

CT43XC847

SITE ADDRESS:

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ROCKY HILL, CT 06067

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

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

3.3 PROJECT TRACKING IN SMS:

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

3.4 ADDITIONAL REPORTING:

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

3.5 PROJECT PHOTOGRAPHS:

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

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

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

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.

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

JOB NUMBER 353-XXX

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:

ROCKY HILL FD

SITE CASCADE:

CT43XC847

SITE ADDRESS:

52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

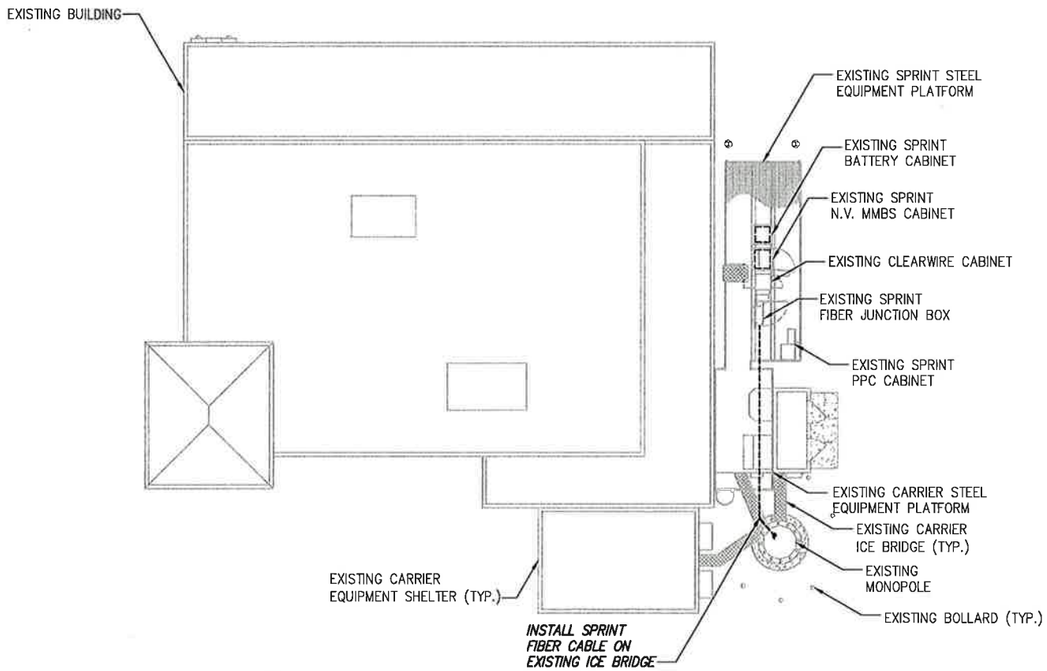
SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

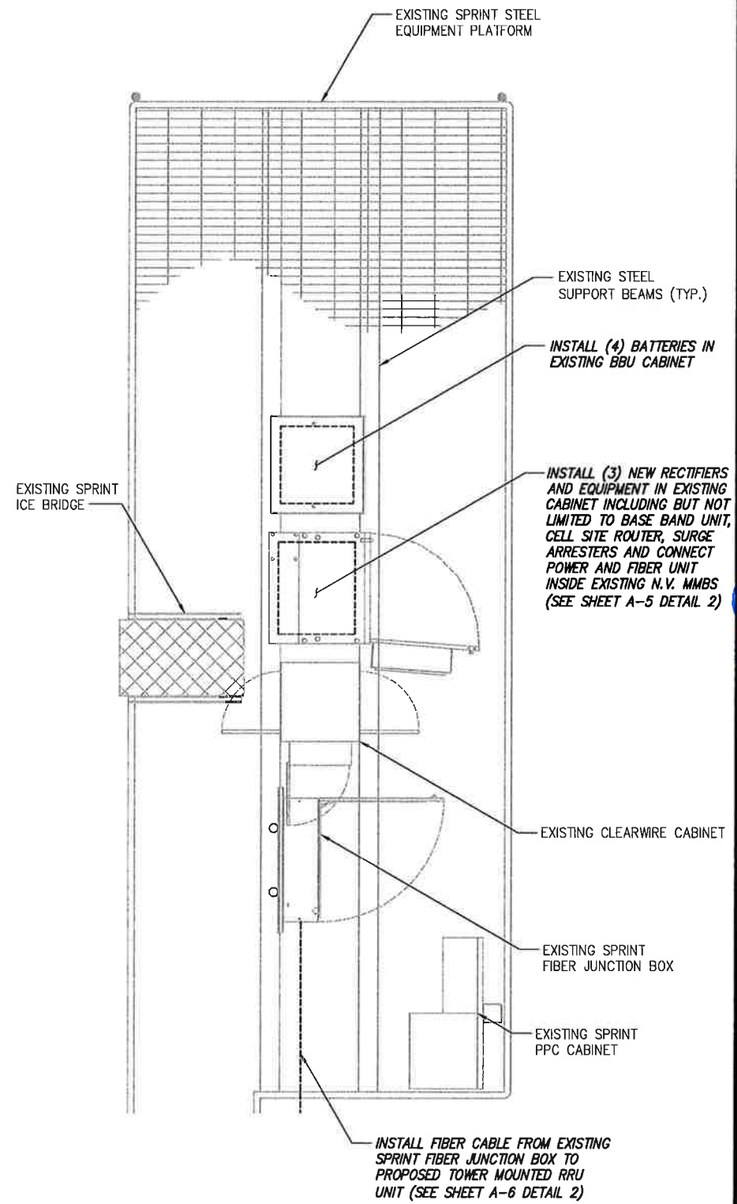
SP-3

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



5' 0 5' 10' 20'
(IN FEET)
SCALE: 22"x34" SHEET 1" = 10'-0"
SCALE: 11"x17" SHEET 1" = 20'-0"

OVERALL SITE PLAN | SCALE: AS NOTED | 1



1' 0 1' 2' 4'
(IN FEET)
SCALE: 22"x34" SHEET 1" = 2'-0"
SCALE: 11"x17" SHEET 1" = 4'-0"

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

PLANS PREPARED FOR:

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SITE CASCADE:

CT43XC847

SITE ADDRESS:

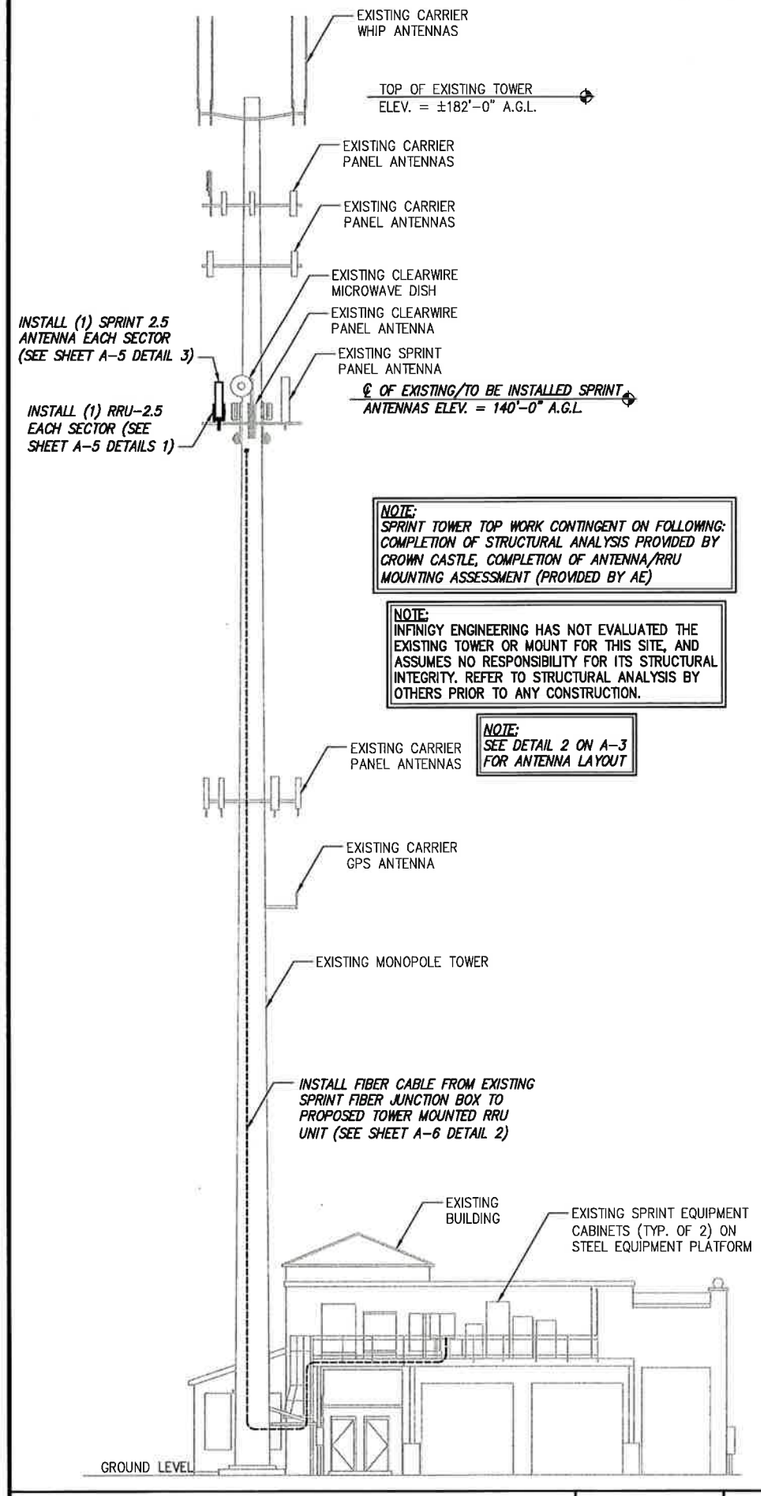
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

A-1



TOWER ELEVATION | NO SCALE | 1

DETAIL NOT USED | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

DETAIL NOT USED | NO SCALE | 2

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CT43XC847

SITE ADDRESS:

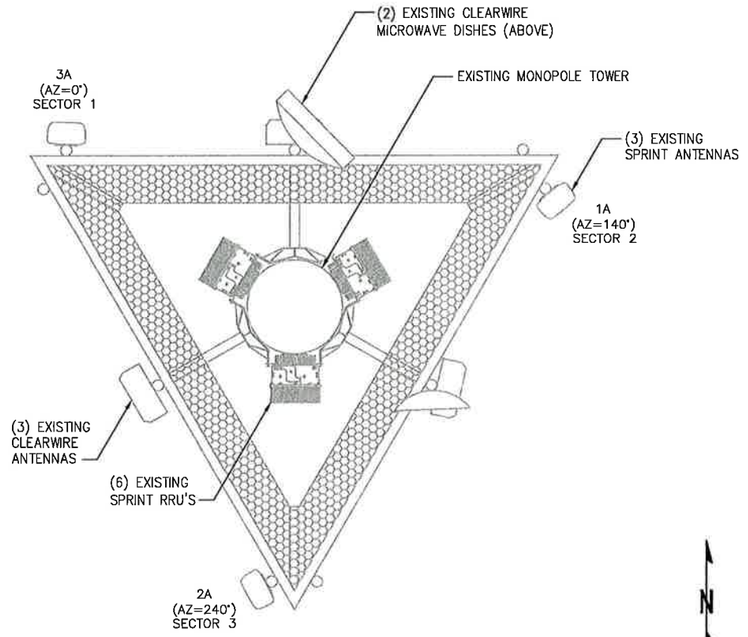
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:

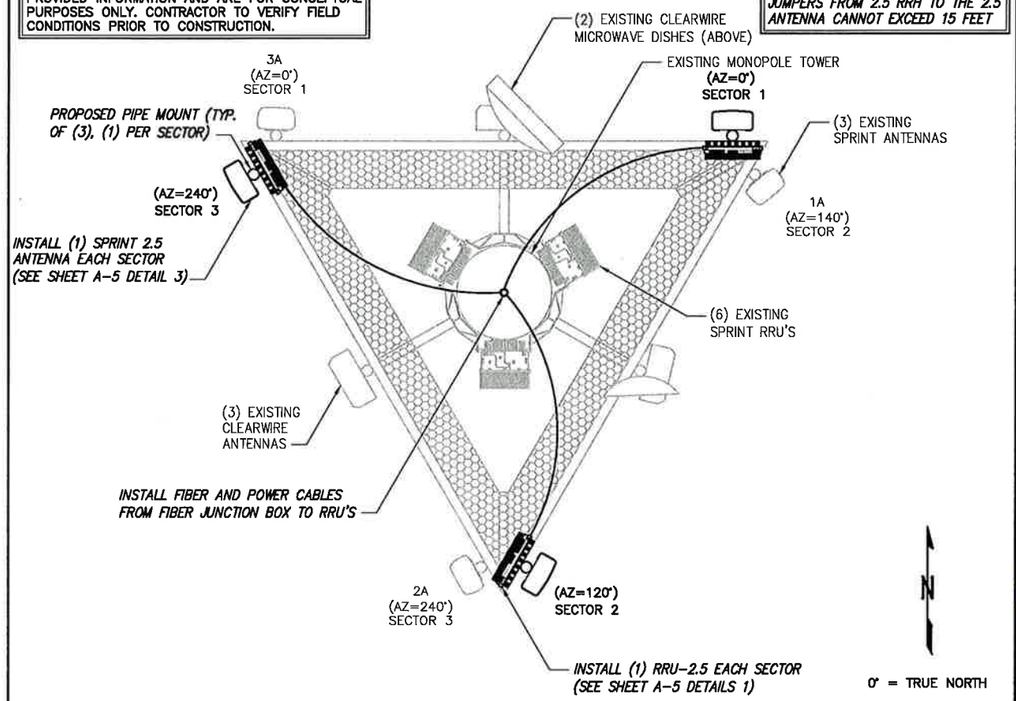
A-2



EXISTING ANTENNA & RRU LAYOUT | NO SCALE | 1

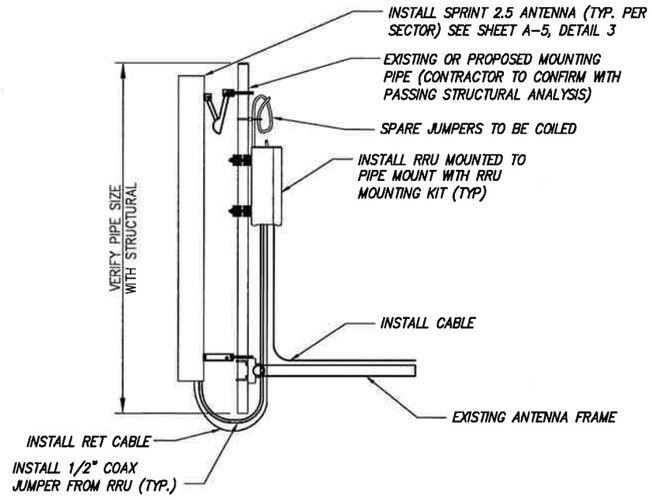
THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

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



FINAL ANTENNA LAYOUT | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3



NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRU.
3. DO NO EXCEED BEND RADIUS.

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

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

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

TYPICAL ANTENNA & RRU MOUNTING DETAILS | NO SCALE | 4

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-XXX

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:
ROCKY HILL FD

SITE CASCADE:
CT43XC847

SITE ADDRESS:
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

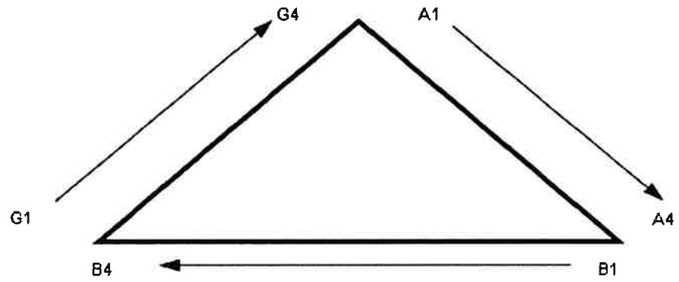
SHEET NUMBER:
A-3

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

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

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

Figure 1: Antenna Orientation



NOTES:

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.

2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.

3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.

4. THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.

5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.

6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.

7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.

8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
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

NV FREQUENCY	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

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

Example – Sector 2, Cable 2, 800mhz Radio #1

Example – Sector 3, Cable 1, 1900mhz Radio #1

Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

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SITE CASCADE:

CT43XC847

SITE ADDRESS:

52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

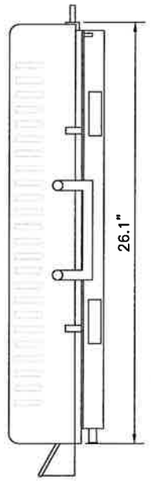
SHEET DESCRIPTION:

COLOR CODING AND NOTES

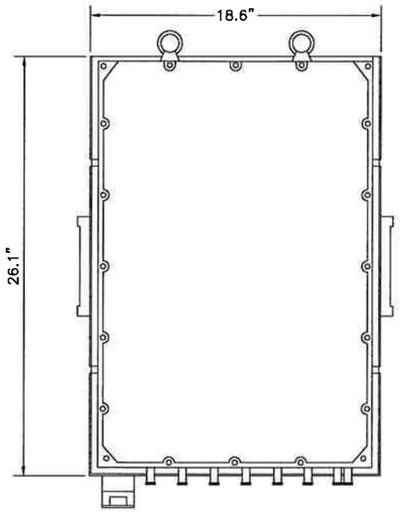
SHEET NUMBER:

A-4

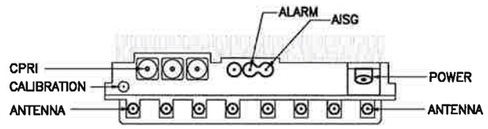
RRU: ALCATEL LUCENT TD-RRH8X20
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW

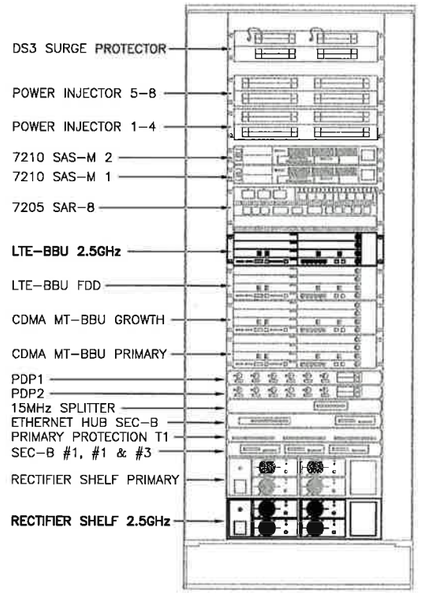


PLAN VIEW

NOTES

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

2.5 RRU	NO SCALE	1

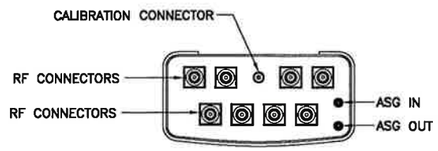


FRONT VIEW

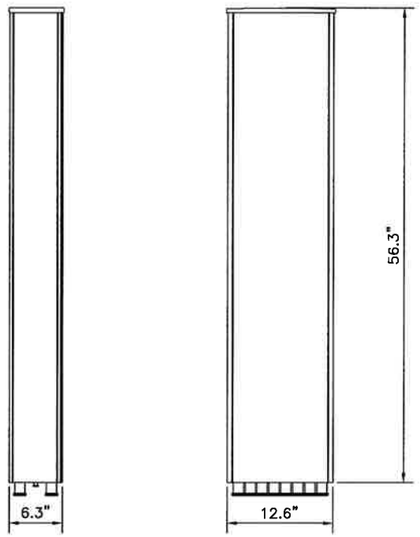
NEW EQUIPMENT IN EXISTING CABINET	NO SCALE	2

ANTENNA: RFS APXVTM14-C-I20

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



PLAN VIEW



2.5 ANTENNA	NO SCALE	3

DETAIL NOT USED	NO SCALE	4

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
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Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-XXX

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:
ROCKY HILL FD

SITE CASCADE:
CT43XC847

SITE ADDRESS:
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-5

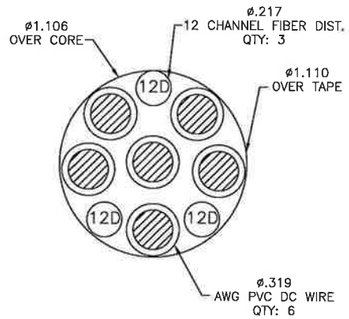
RFS HYBRIFLEX RISER CABLE SCHEDULE

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

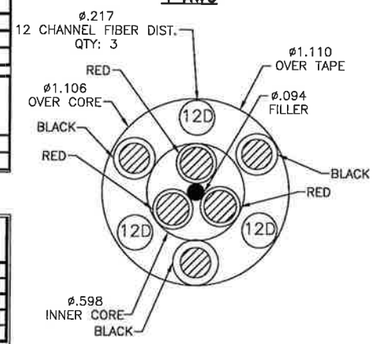
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

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

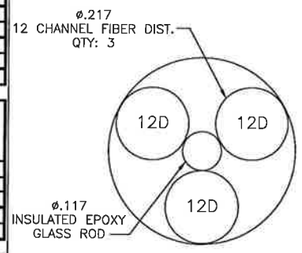
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG

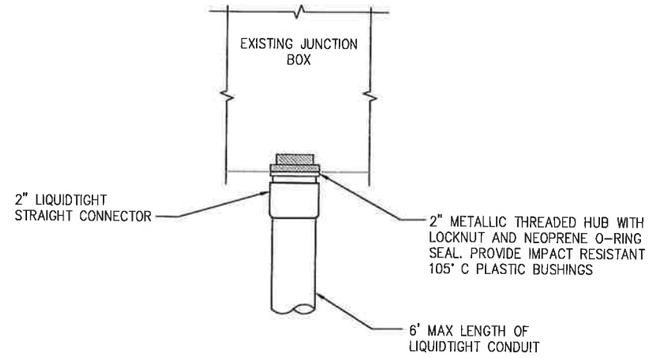


8 & 6 AWG



FIBER ONLY

2.5 CABLE CROSS SECTION DATA | NO SCALE | 1



FIBER JUNCTION BOX PENETRATION | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
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Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-XXX

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
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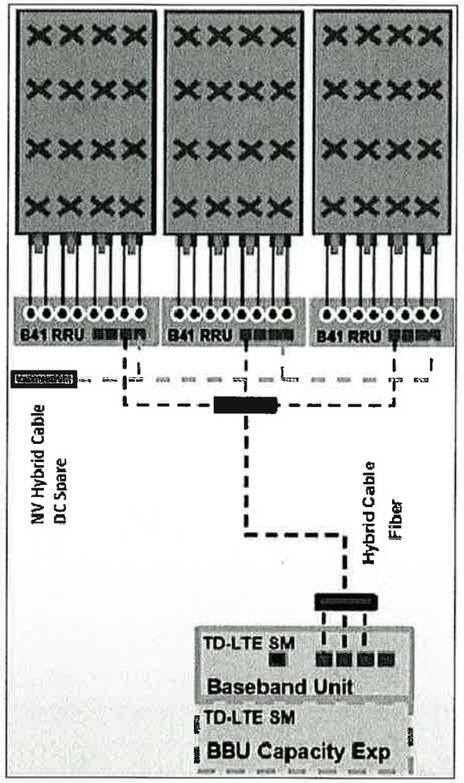
ROCKY HILL FD

SITE CASCADE:
CT43XC847

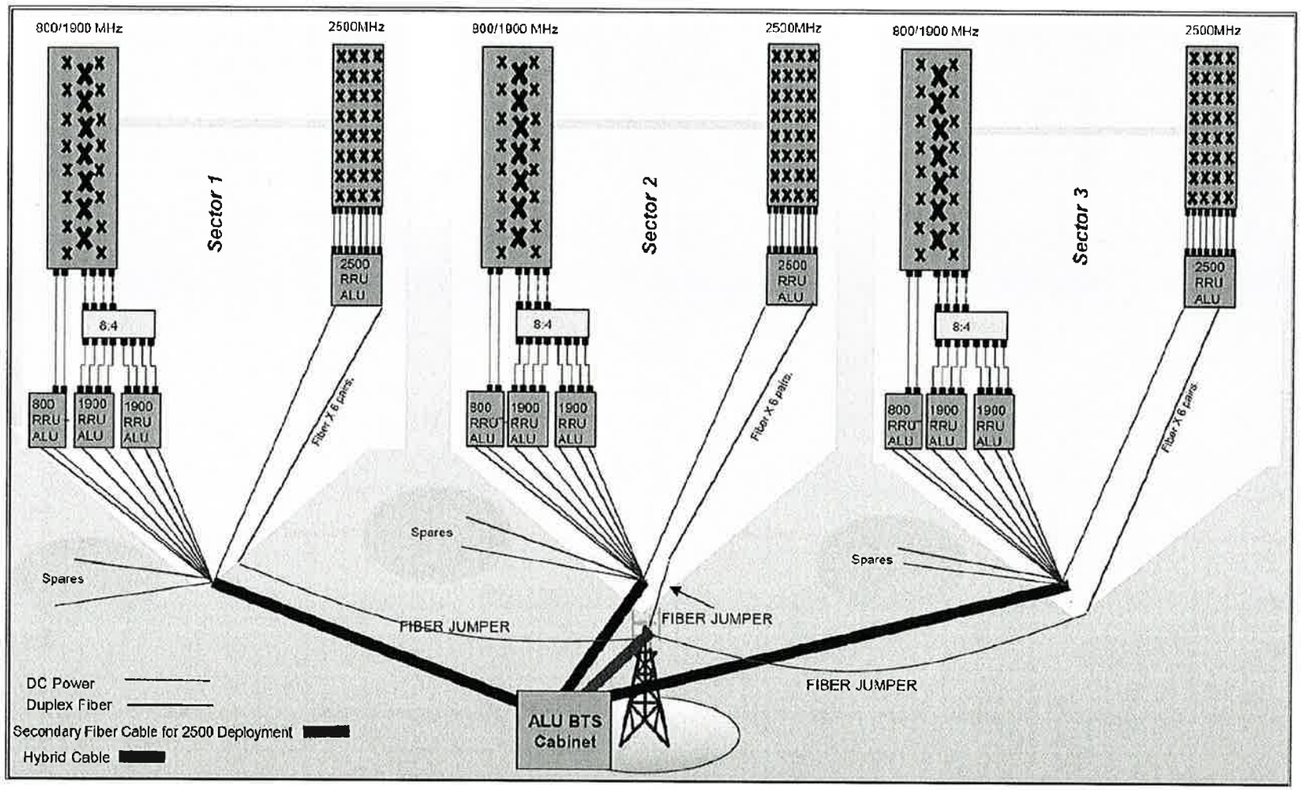
SITE ADDRESS:
52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
CIVIL DETAILS

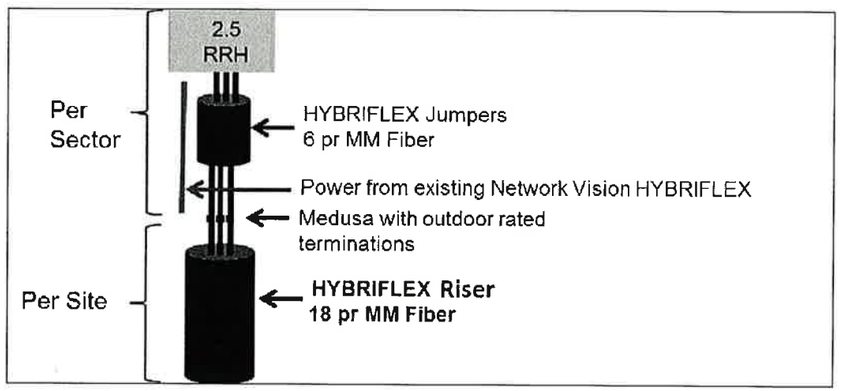
SHEET NUMBER:
A-6



ALU 2.5 ALU SCENARIO 1



RAN WIRING DIAGRAM



RF 2.5 ALU SCENARIO 1

PLUMBING DIAGRAM

NO SCALE

1

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Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

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SITE CASCADE:

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SHEET DESCRIPTION:

PLUMBING DIAGRAM

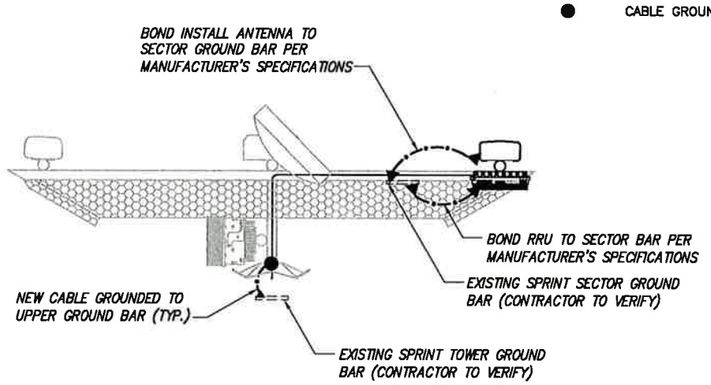
SHEET NUMBER:

A-7

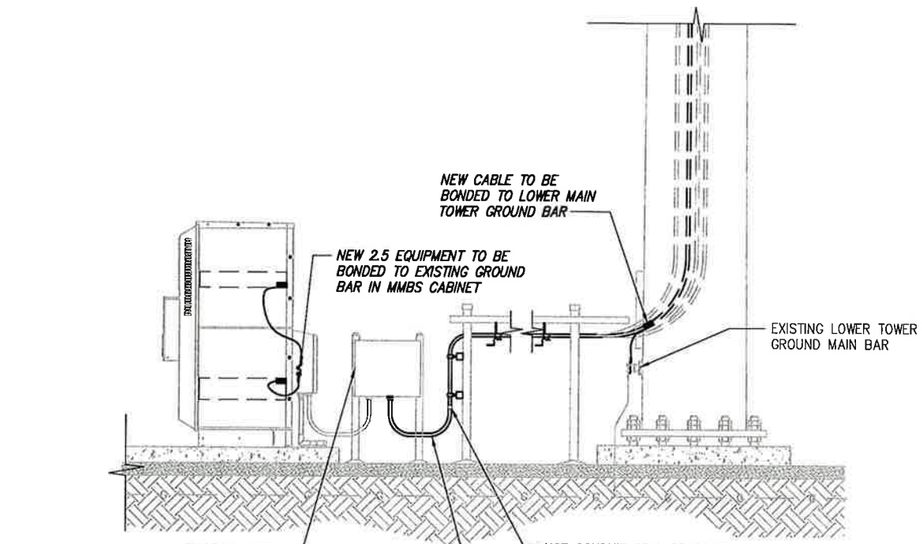
PLAN NOT USED | NO SCALE | 1

LEGEND:

—— G ——	EXISTING GROUND RING
■	CADWELD CONNECTION (EXOTHERMIC WELD)
▲	MECHANICAL CONNECTION
⊗	GROUND ROD
●	CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



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

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION) | NO SCALE | 3

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

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52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

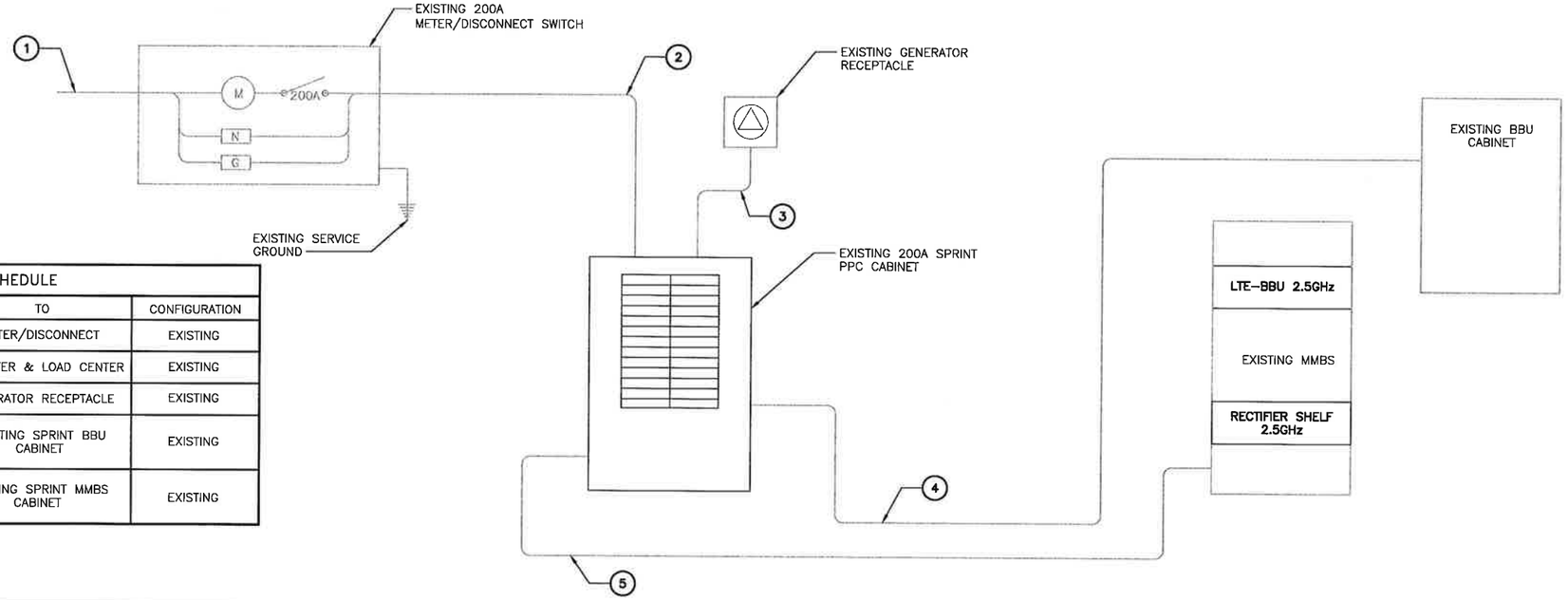
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

NOTES

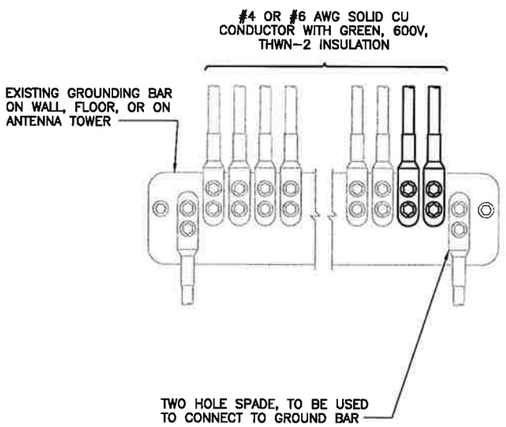
CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



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

ELECTRICAL ONE–LINE DIAGRAM

NO SCALE | 1

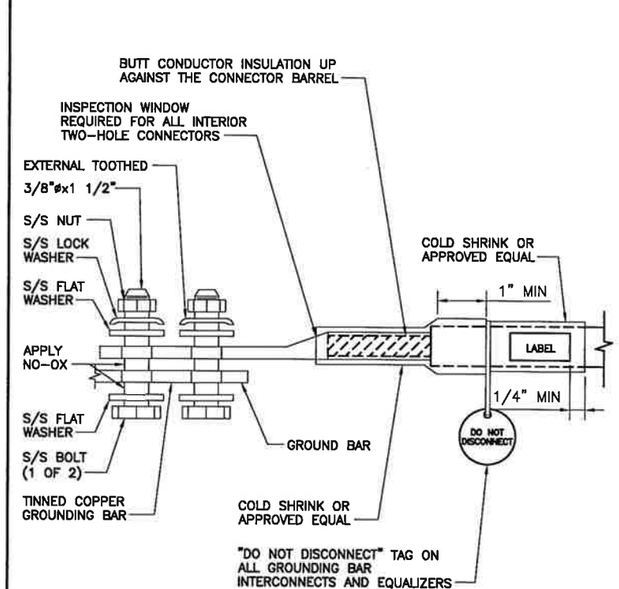


NOTES

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

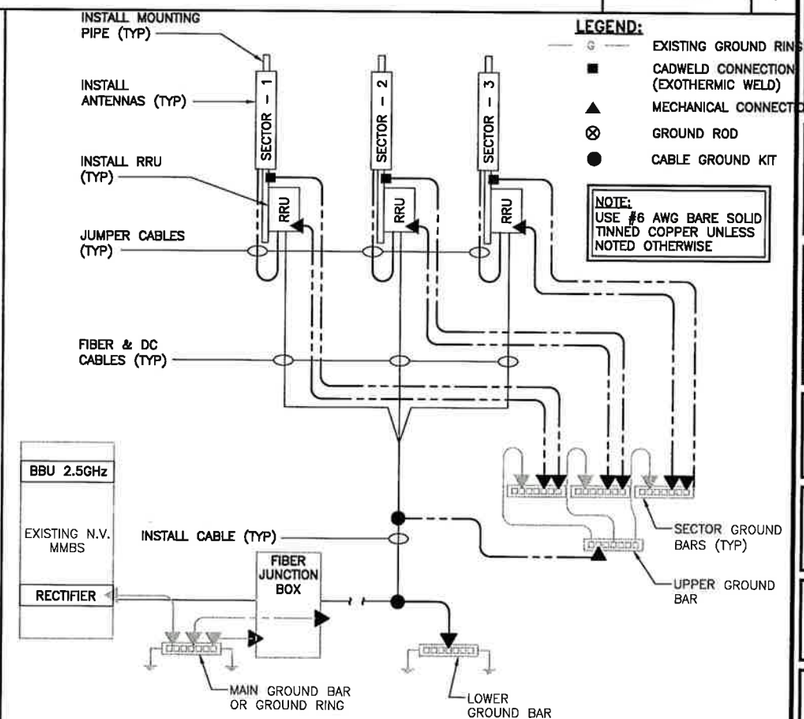
INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

NO SCALE | 2



TWO HOLE LUG

NO SCALE | 3



LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT

NOTE:
USE #6 AWG BARE SOLID TINNED COPPER UNLESS NOTED OTHERWISE

GROUNDING RISER DIAGRAM

NO SCALE | 4

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.

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

JOB NUMBER 353-XXX

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR PERMIT	7/8/14	MPS	0

SITE NAME:

ROCKY HILL FD

SITE CASCADE:

CT43XC847

SITE ADDRESS:

52 NEW BRITAIN AVE
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2

Date: **June 26, 2014**

Darcy Tarr
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation:	***Sprint PCS* Co-Locate**	**Scenario 2.5B**
	Carrier Site Number:	CT43XC847
Crown Castle Designation:	**Crown Castle BU Number:**	842872
	Crown Castle Site Name:	ROCKY HILL
	Crown Castle JDE Job Number:	292592
	Crown Castle Work Order Number:	780286
	Crown Castle Application Number:	248936 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	780286
Site Data:	**52 NEW BRITAIN AVENUE, ROCKY HILL, Hartford County, CT**	
	Latitude *41° 39' 36.89"*, Longitude *-72° 40' 50.58"*	
	182 Foot - Monopole Tower	

Dear Darcy Tarr,

Crown Castle 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 780286, in accordance with application 248936, revision 1.

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

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

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

All modifications and 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 *Crown Castle* 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.

Structural analysis prepared by: Bryan M. Clinton, E.I.T. / CMS

Respectfully submitted by:

Aaron C. Poot, P.E.
Manager Engineering

STATE OF CONNECTICUT
AARON C. POOT
No. 25050
LICENSED
PROFESSIONAL ENGINEER

tnxTower Report - version 6.1.4.1

6/26/14

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 182 ft Monopole tower designed by Engineered Endeavors, Inc. in September of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

The tower was reinforced by B&T in February of 2014. Reinforcement consists of base plate stiffeners, flat plate shaft reinforcement from 47 ft to 87 ft, and additional steel rebar in the foundation.

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
140.0	140.0	3	alcatel lucent	TD-RRH8x20-25	1	1-1/4	-
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			

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
180.0	186.0	1	austin antenna company	APC-1362	7	7/8	1
		1	austin antenna company	APC-2163			
		1	austin antenna company	APC-301			
		1	austin antenna company	APC-4065			
		2	rfs celwave	PD458-3			
	180.0	1	tower mounts	Side Arm Mount [SO 702-3]			
	175.0	1	telewave	ANT450D6-9			
170.0	170.0	1	tower mounts	Platform Mount [LP 601-1]	12	1-5/8	1
	168.0	6	ericsson	RRUS-11			
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		1	raycap	DC6-48-60-18-8F			
160.0	160.0	3	ems wireless	RR90-17-02DP w/ Mount Pipe	1 12	1-1/4 1-5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		6	ericsson	AIR 21 w/ Mount Pipe			
		3	rfs celwave	ATMAA1412D-1A20			
		1	tower mounts	Platform Mount [LP 305-1]			
140.0	144.0	2	andrew	VHLP2.5-10W	4 3	1/2 1-1/4	1
		2	dragonwave	Horizon Compact			
	140.0	3	alcatel lucent	1900MHz RRH (65MHz)			
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ RRH			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		3	kathrein	840 10054 w/ Mount Pipe			
		3	samsung telecommunications	URAS-FLEXIBLE			
		1	tower mounts	Platform Mount [LP 714-1]			
88.0	90.0	3	alcatel lucent	RRH2x40-AWS	1	1-5/8	2
		3	andrew	HBX-6517DS-VTM w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		1	andrew	LNX-6514DS-T6M w/ Mount Pipe	12	1-5/8	1
		2	antel	BXA-70063-6CF-EDIN-4 w/ Mount Pipe			
		6	decibel	DB844H80-XY w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
		3	rymsa wireless	MG D3-800Tx w/ Mount Pipe			
	88.0	1	tower mounts	Platform Mount [LP 714-1]			
75.0	75.0	1	gps	GPS_A	1	1/2	1
		1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180	180	6	CELLWAVE	OMNI ANT.	-	-
170	170	12	ALLGON	7184.15	-	-
160	160	12	ALLGON	7184.15	-	-
150	150	12	ALLGON	7184.15	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	TEP	4713251	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	TEP (Mapping)	4713252	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI	4843720	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B&T GRP	4740398	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B&T GRP	4904956	CCISITES
4-POST-MODIFICATION INSPECTION	B&T GRP	4904967	CCISITES

3.1) Analysis Method

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

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are included in Appendix C.

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.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
182 - 177	Pole	TP15.678x14.5x0.25	Pole	5.5%	Pass
177 - 172	Pole	TP16.856x15.678x0.25	Pole	8.9%	Pass
172 - 167	Pole	TP18.033x16.856x0.25	Pole	14.7%	Pass
167 - 162	Pole	TP19.211x18.033x0.25	Pole	23.7%	Pass
162 - 157	Pole	TP20.389x19.211x0.25	Pole	34.0%	Pass
157 - 152	Pole	TP21.567x20.389x0.25	Pole	43.8%	Pass
152 - 147	Pole	TP22.745x21.567x0.25	Pole	51.8%	Pass
147 - 142	Pole	TP23.922x22.745x0.25	Pole	58.5%	Pass
142 - 137	Pole	TP25.1x23.922x0.25	Pole	67.8%	Pass
137 - 136.83	Pole	TP26.023x25.1x0.25	Pole	68.1%	Pass
136.83 - 131.83	Pole	TP25.806x24.639x0.375	Pole	54.6%	Pass
131.83 - 126.83	Pole	TP26.972x25.806x0.375	Pole	60.0%	Pass
126.83 - 121.83	Pole	TP28.139x26.972x0.375	Pole	64.6%	Pass
121.83 - 116.83	Pole	TP29.305x28.139x0.375	Pole	68.5%	Pass
116.83 - 111.83	Pole	TP30.472x29.305x0.375	Pole	71.8%	Pass
111.83 - 106.83	Pole	TP31.638x30.472x0.375	Pole	74.6%	Pass
106.83 - 101.83	Pole	TP32.805x31.638x0.375	Pole	76.9%	Pass
101.83 - 96.83	Pole	TP33.971x32.805x0.375	Pole	79.0%	Pass
96.83 - 92.47	Pole	TP36.161x33.971x0.375	Pole	80.5%	Pass
92.47 - 86.45	Pole	TP35.643x34.239x0.375	Pole	86.8%	Pass
86.45 - 85	Pole	TP35.98x35.643x0.375	Pole	87.6%	Pass
85 - 80	Pole + Reinf.	TP37.145x35.98x0.54	Reinf. 2 Tension Rupture	79.6%	Pass
80 - 75	Pole + Reinf.	TP38.311x37.145x0.53	Reinf. 2 Tension Rupture	82.2%	Pass
75 - 74	Pole + Reinf.	TP38.544x38.311x0.53	Reinf. 2 Tension Rupture	82.7%	Pass
74 - 69	Pole + Reinf.	TP39.709x38.544x0.525	Reinf. 1 Tension Rupture	85.1%	Pass
69 - 64	Pole + Reinf.	TP40.874x39.709x0.52	Reinf. 1 Tension Rupture	87.2%	Pass
64 - 59	Pole + Reinf.	TP42.04x40.874x0.515	Reinf. 1 Tension Rupture	89.1%	Pass
59 - 54	Pole + Reinf.	TP43.205x42.04x0.51	Reinf. 1 Tension Rupture	90.9%	Pass
54 - 49.07	Pole + Reinf.	TP45.805x43.205x0.51	Reinf. 1 Tension Rupture	92.4%	Pass
49.07 - 41.85	Pole	TP45.282x43.603x0.4375	Pole	89.7%	Pass
41.85 - 36.85	Pole	TP46.443x45.282x0.4375	Pole	90.2%	Pass
36.85 - 31.85	Pole	TP47.604x46.443x0.4375	Pole	90.7%	Pass
31.85 - 26.85	Pole	TP48.765x47.604x0.4375	Pole	91.0%	Pass
26.85 - 21.85	Pole	TP49.926x48.765x0.4375	Pole	91.3%	Pass
21.85 - 16.85	Pole	TP51.088x49.926x0.4375	Pole	91.5%	Pass
16.85 - 11.85	Pole	TP52.249x51.088x0.4375	Pole	91.6%	Pass
11.85 - 6.85	Pole	TP53.41x52.249x0.4375	Pole	91.6%	Pass
6.85 - 1.85	Pole	TP54.571x53.41x0.4375	Pole	91.6%	Pass
1.85 - 0	Pole	TP55x54.571x0.4375	Pole	91.6%	Pass
				Summary	
			Pole	91.6%	Pass
			Reinforcement	92.4%	Pass
			Overall	92.4%	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	94.7	Pass
1	Base Plate	0	79.1	Pass
1	Base Foundation	0	94.1	Pass

Structure Rating (max from all components) =	94.7%

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

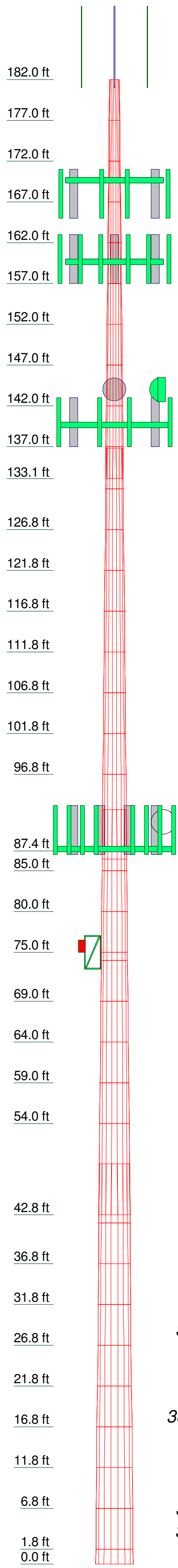
4.1) Recommendations

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	5'	18	0.250		14.500	15.678		0.2
2	5'	18	0.250		15.678	16.856		0.2
3	5'	18	0.250		16.856	18.033		0.2
4	5'	18	0.250		18.033	19.211		0.2
5	5'	18	0.250		19.211	20.389		0.3
6	5'	18	0.250		20.389	21.567		0.3
7	5'	18	0.250		21.567	22.745		0.3
8	5'	18	0.250		22.745	23.922		0.3
9	5'	18	0.250		23.922	25.100		0.3
10	5'1-1/32"	18	0.250	3'9-1/32"	25.100	[illegible]		0.3
11	3'1"	18	0.375		[illegible]	[illegible]		0.5
12	5'	18	0.375		25.806	26.972		0.5
13	5'	18	0.375		26.972	28.139		0.6
14	5'	18	0.375		28.139	29.305		0.6
15	5'	18	0.375		29.305	30.472		0.6
16	5'	18	0.375		30.472	31.638		0.6
17	5'	18	0.375		31.638	32.805		0.6
18	5'	18	0.375		32.805	33.971		0.7
19	[illegible]	18	0.375	5'1/4"	33.971	36.161	A572-65	1.3
20	[illegible]	18	[illegible]		[illegible]	[illegible]		0.8
21	5'5-3/8"	18	[illegible]		[illegible]	[illegible]		0.2
22	5'1"	18	0.540		35.986	37.145		1.0
23	5'	18	0.530		37.145	38.311		1.0
24	1'	18	0.530		[illegible]	[illegible]		0.2
25	5'	18	[illegible]		[illegible]	39.709		1.1
26	5'	18	0.520		39.709	40.874		1.1
27	5'	18	0.515		40.874	42.040		1.1
28	5'	18	0.510		42.040	43.205		1.1
29	[illegible]	18	0.510	6'2-23/32"	43.205	45.805		2.7
30	7'2-23/32"	18	0.438		[illegible]	[illegible]		1.5
31	5'	18	0.438		[illegible]	46.443		1.1
32	5'	18	0.438		46.443	47.604		1.1
33	5'	18	0.438		47.604	48.765		1.1
34	5'	18	0.438		48.765	49.926		1.2
35	5'	18	0.438		49.926	51.088		1.2
36	5'	18	0.438		51.088	52.249		1.2
37	5'	18	0.438		52.249	53.410		1.2
38	5'	18	0.438		53.410	54.571		1.3
39	1'10-5/32"	18	0.438		54.571	55.050		0.5
								30.4



DESIGNED APPURTENANCE LOADING

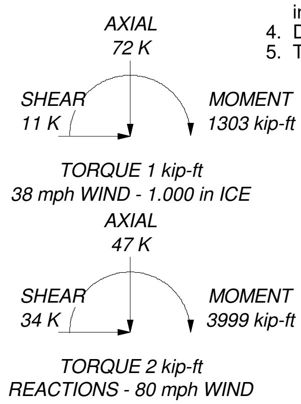
TYPE	ELEVATION	TYPE	ELEVATION
PD458-3	180	1900MHz RRH (65MHz)	140
PD458-3	180	800 EXTERNAL NOTCH FILTER	140
APC-2163	180	800 EXTERNAL NOTCH FILTER	140
APC-1362	180	800 EXTERNAL NOTCH FILTER	140
APC-301	180	800MHZ RRH	140
ANT450D6-9	180	800MHZ RRH	140
APC-4065	180	800MHZ RRH	140
(2) 6' x 2" Mount Pipe	180	Horizon Compact	140
(2) 6' x 2" Mount Pipe	180	Horizon Compact	140
(2) 6' x 2" Mount Pipe	180	URAS-FLEXIBLE	140
Side Arm Mount [SO 702-3]	180	URAS-FLEXIBLE	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	170	URAS-FLEXIBLE	140
		APXVTM14-C-120 w/ Mount Pipe	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	170	APXVTM14-C-120 w/ Mount Pipe	140
		APXVTM14-C-120 w/ Mount Pipe	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	170	TD-RRH8x20-25	140
		TD-RRH8x20-25	140
7770.00 w/ Mount Pipe	170	TD-RRH8x20-25	140
7770.00 w/ Mount Pipe	170	Platform Mount [LP 714-1]	140
7770.00 w/ Mount Pipe	170	VHLP2.5-10W	140
(2) RRUS-11	170	VHLP2.5-10W	140
(2) RRUS-11	170	BXA-70063-6CF-EDIN-4 w/ Mount Pipe	88
(2) RRUS-11	170		
(2) LGP21401	170	(2) DB844H80-XY w/ Mount Pipe	88
(2) LGP21401	170	(2) DB844H80-XY w/ Mount Pipe	88
(2) LGP21401	170	(2) DB844H80-XY w/ Mount Pipe	88
DC6-48-60-18-8F	170	MG D3-800Tx w/ Mount Pipe	88
Platform Mount [LP 601-1]	170	MG D3-800Tx w/ Mount Pipe	88
RR90-17-02DP w/ Mount Pipe	160	MG D3-800Tx w/ Mount Pipe	88
RR90-17-02DP w/ Mount Pipe	160	(2) FD9R6004/2C-3L	88
RR90-17-02DP w/ Mount Pipe	160	(2) FD9R6004/2C-3L	88
(2) AIR 21 w/ Mount Pipe	160	(2) FD9R6004/2C-3L	88
(2) AIR 21 w/ Mount Pipe	160	HBX-6517DS-VTM w/ Mount Pipe	88
(2) AIR 21 w/ Mount Pipe	160	HBX-6517DS-VTM w/ Mount Pipe	88
ATMAA1412D-1A20	160	HBX-6517DS-VTM w/ Mount Pipe	88
ATMAA1412D-1A20	160	RRH2x40-AWS	88
ATMAA1412D-1A20	160	RRH2x40-AWS	88
Platform Mount [LP 305-1]	160	RRH2x40-AWS	88
APXVSPP18-C-A20 w/ Mount Pipe	140	DB-T1-6Z-8AB-0Z	88
APXVSPP18-C-A20 w/ Mount Pipe	140	Platform Mount [LP 714-1]	88
APXVSPP18-C-A20 w/ Mount Pipe	140	BXA-70063-6CF-EDIN-4 w/ Mount Pipe	88
840 10054 w/ Mount Pipe	140		
840 10054 w/ Mount Pipe	140	LNX-6514DS-T6M w/ Mount Pipe	88
840 10054 w/ Mount Pipe	140	GPS_A	75
1900MHz RRH (65MHz)	140	Side Arm Mount [SO 701-1]	75
1900MHz RRH (65MHz)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	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: 92.4%



CROWN CASTLE
The Foundation for a Wireless World
Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX:

Job: **BU#: 842872**			
Project:			
Client: Crown Castle	Drawn by: cschanck	App'd:	
Code: TIA/EIA-222-F	Date: 06/26/14	Scale: NTS	
Path: X:\ENG Work Area\BClinton\842872\temp\842872-Mod.eri		Dwg No. E-1	

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 80 mph.
3) Nominal ice thickness of 1.000 in.
4) Ice thickness is considered to increase with height.
5) Ice density of 56.000 pcf.
6) A wind speed of 38 mph is used in combination with ice.
7) Temperature drop of 50.000 °F.
8) Deflections calculated using a wind speed of 50 mph.
9) TOWER RATING: 92.4%.
10) A non-linear (P-delta) analysis was used.
11) Pressures are calculated at each section.
12) Stress ratio used in pole design is 1.333.
13) 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	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	182'-177'	5'	0'	18	14.500	15.678	0.250	1.000	A572-65 (65 ksi)
L2	177'-172'	5'	0'	18	15.678	16.856	0.250	1.000	A572-65 (65 ksi)
L3	172'-167'	5'	0'	18	16.856	18.033	0.250	1.000	A572-65 (65 ksi)
L4	167'-162'	5'	0'	18	18.033	19.211	0.250	1.000	A572-65 (65 ksi)
L5	162'-157'	5'	0'	18	19.211	20.389	0.250	1.000	A572-65 (65 ksi)
L6	157'-152'	5'	0'	18	20.389	21.567	0.250	1.000	A572-65 (65 ksi)
L7	152'-147'	5'	0'	18	21.567	22.745	0.250	1.000	A572-65 (65 ksi)
L8	147'-142'	5'	0'	18	22.745	23.922	0.250	1.000	A572-65 (65 ksi)

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
L9	142'-137'	5'	0'	18	23.922	25.100	0.250	1.000	A572-65 (65 ksi)
L10	137'-133'31/32"	3'11-1/32"	3'9-1/32"	18	25.100	26.023	0.250	1.000	A572-65 (65 ksi)
L11	133'31/32"-131'10"	5'	0'	18	24.639	25.806	0.375	1.500	A572-65 (65 ksi)
L12	131'10"-126'10"	5'	0'	18	25.806	26.972	0.375	1.500	A572-65 (65 ksi)
L13	126'10"-121'10"	5'	0'	18	26.972	28.139	0.375	1.500	A572-65 (65 ksi)
L14	121'10"-116'10"	5'	0'	18	28.139	29.305	0.375	1.500	A572-65 (65 ksi)
L15	116'10"-111'10"	5'	0'	18	29.305	30.472	0.375	1.500	A572-65 (65 ksi)
L16	111'10"-106'10"	5'	0'	18	30.472	31.638	0.375	1.500	A572-65 (65 ksi)
L17	106'10"-101'10"	5'	0'	18	31.638	32.805	0.375	1.500	A572-65 (65 ksi)
L18	101'10"-96'10"	5'	0'	18	32.805	33.971	0.375	1.500	A572-65 (65 ksi)
L19	96'10"-87'5-3/8"	9'4-5/8"	5'1/4"	18	33.971	36.161	0.375	1.500	A572-65 (65 ksi)
L20	87'5-3/8"-86'5-3/8"	6'1/4"	0'	18	34.239	35.643	0.375	1.500	A572-65 (65 ksi)
L21	86'5-3/8"-85'	1'5-3/8"	0'	18	35.643	35.980	0.375	1.500	A572-65 (65 ksi)
L22	85'-80'	5'	0'	18	35.980	37.145	0.540	2.160	A572-65 (65 ksi)
L23	80'-75'	5'	0'	18	37.145	38.311	0.530	2.120	A572-65 (65 ksi)
L24	75'-74'	1'	0'	18	38.311	38.544	0.530	2.120	A572-65 (65 ksi)
L25	74'-69'	5'	0'	18	38.544	39.709	0.525	2.100	A572-65 (65 ksi)
L26	69'-64'	5'	0'	18	39.709	40.874	0.520	2.080	A572-65 (65 ksi)
L27	64'-59'	5'	0'	18	40.874	42.040	0.515	2.060	A572-65 (65 ksi)
L28	59'-54'	5'	0'	18	42.040	43.205	0.510	2.040	A572-65 (65 ksi)
L29	54'-42'10-5/32"	11'1-27/32"	6'2-23/32"	18	43.205	45.805	0.510	2.040	A572-65 (65 ksi)
L30	42'10-5/32"-41'10-5/32"	7'2-23/32"	0'	18	43.603	45.282	0.438	1.750	A572-65 (65 ksi)
L31	41'10-5/32"-36'10-5/32"	5'	0'	18	45.282	46.443	0.438	1.750	A572-65 (65 ksi)
L32	36'10-5/32"-31'10-5/32"	5'	0'	18	46.443	47.604	0.438	1.750	A572-65 (65 ksi)
L33	31'10-5/32"-26'10-5/32"	5'	0'	18	47.604	48.765	0.438	1.750	A572-65 (65 ksi)
L34	26'10-5/32"-21'10-5/32"	5'	0'	18	48.765	49.926	0.438	1.750	A572-65 (65 ksi)
L35	21'10-5/32"-16'10-5/32"	5'	0'	18	49.926	51.088	0.438	1.750	A572-65 (65 ksi)
L36	16'10-5/32"-11'10-5/32"	5'	0'	18	51.088	52.249	0.438	1.750	A572-65 (65 ksi)
L37	11'10-5/32"-6'10-5/32"	5'	0'	18	52.249	53.410	0.438	1.750	A572-65 (65 ksi)
L38	6'10-5/32"-1'10-5/32"	5'	0'	18	53.410	54.571	0.438	1.750	A572-65 (65 ksi)
L39	1'10-5/32"-0'	1'10-5/32"		18	54.571	55.000	0.438	1.750	A572-65 (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	14.724	11.307	290.087	5.059	7.366	39.382	580.557	5.655	2.112	8.448
	15.920	12.242	368.125	5.477	7.964	46.222	736.734	6.122	2.319	9.277
L2	15.920	12.242	368.125	5.477	7.964	46.222	736.734	6.122	2.319	9.277
	17.116	13.177	459.035	5.895	8.563	53.609	918.675	6.590	2.527	10.106
L3	17.116	13.177	459.035	5.895	8.563	53.609	918.675	6.590	2.527	10.106
	18.312	14.111	563.801	6.313	9.161	61.544	1128.344	7.057	2.734	10.935
L4	18.312	14.111	563.801	6.313	9.161	61.544	1128.344	7.057	2.734	10.935
	19.508	15.046	683.405	6.731	9.759	70.026	1367.710	7.524	2.941	11.765
L5	19.508	15.046	683.405	6.731	9.759	70.026	1367.710	7.524	2.941	11.765
	20.703	15.980	818.831	7.149	10.358	79.056	1638.738	7.992	3.148	12.594
L6	20.703	15.980	818.831	7.149	10.358	79.056	1638.738	7.992	3.148	12.594
	21.899	16.915	971.059	7.567	10.956	88.633	1943.396	8.459	3.356	13.423
L7	21.899	16.915	971.059	7.567	10.956	88.633	1943.396	8.459	3.356	13.423
	23.095	17.849	1141.075	7.986	11.554	98.758	2283.651	8.926	3.563	14.252
L8	23.095	17.849	1141.075	7.986	11.554	98.758	2283.651	8.926	3.563	14.252
	24.291	18.784	1329.859	8.404	12.153	109.431	2661.468	9.394	3.770	15.081
L9	24.291	18.784	1329.859	8.404	12.153	109.431	2661.468	9.394	3.770	15.081
	25.487	19.719	1538.396	8.822	12.751	120.651	3078.816	9.861	3.978	15.91
L10	25.487	19.719	1538.396	8.822	12.751	120.651	3078.816	9.861	3.978	15.91
	26.425	20.451	1716.305	9.150	13.220	129.828	3434.868	10.227	4.140	16.56
L11	25.908	28.881	2148.233	8.614	12.517	171.628	4299.293	14.443	3.677	9.804
	26.204	30.269	2473.183	9.028	13.109	188.658	4949.619	15.137	3.882	10.352
L12	26.204	30.269	2473.183	9.028	13.109	188.658	4949.619	15.137	3.882	10.352
	27.388	31.657	2829.352	9.442	13.702	206.493	5662.426	15.832	4.087	10.899
L13	27.388	31.657	2829.352	9.442	13.702	206.493	5662.426	15.832	4.087	10.899
	28.573	33.046	3218.173	9.856	14.294	225.134	6440.580	16.526	4.292	11.446
L14	28.573	33.046	3218.173	9.856	14.294	225.134	6440.580	16.526	4.292	11.446
	29.757	34.434	3641.077	10.270	14.887	244.580	7286.946	17.220	4.498	11.994
L15	29.757	34.434	3641.077	10.270	14.887	244.580	7286.946	17.220	4.498	11.994
	30.942	35.823	4099.498	10.684	15.480	264.832	8204.389	17.915	4.703	12.541
L16	30.942	35.823	4099.498	10.684	15.480	264.832	8204.389	17.915	4.703	12.541
	32.126	37.211	4594.865	11.098	16.072	285.890	9195.777	18.609	4.908	13.089
L17	32.126	37.211	4594.865	11.098	16.072	285.890	9195.777	18.609	4.908	13.089
	33.311	38.599	5128.613	11.513	16.665	307.753	10263.974	19.303	5.114	13.636
L18	33.311	38.599	5128.613	11.513	16.665	307.753	10263.974	19.303	5.114	13.636
	34.495	39.988	5702.172	11.927	17.257	330.421	11411.848	19.998	5.319	14.184
L19	34.495	39.988	5702.172	11.927	17.257	330.421	11411.848	19.998	5.319	14.184
	36.718	42.594	6891.290	12.704	18.370	375.147	13791.648	21.301	5.704	15.211
L20	35.956	40.307	5839.842	12.022	17.394	335.747	11687.367	20.157	5.366	14.31
	36.192	41.977	6596.314	12.520	18.106	364.308	13201.307	20.993	5.613	14.968
L21	36.192	41.977	6596.314	12.520	18.106	364.308	13201.307	20.993	5.613	14.968
	36.535	42.379	6787.485	12.640	18.278	371.350	13583.902	21.193	5.672	15.127
L22	36.535	60.743	9638.724	12.581	18.278	527.345	19290.132	30.377	5.382	9.967
	37.718	62.740	10621.158	12.995	18.870	562.864	21256.291	31.376	5.587	10.347
L23	37.718	61.595	10433.015	12.998	18.870	552.894	20879.759	30.803	5.605	10.575
	38.902	63.555	11461.199	13.412	19.462	588.906	22937.478	31.784	5.810	10.962
L24	38.902	63.555	11461.199	13.412	19.462	588.906	22937.478	31.784	5.810	10.962
	39.138	63.948	11674.622	13.495	19.580	596.245	23364.606	31.980	5.851	11.039
L25	39.138	63.353	11569.048	13.497	19.580	590.853	23153.319	31.682	5.860	11.161
	40.322	65.294	12665.826	13.910	20.172	627.884	25348.317	32.653	6.065	11.552
L26	40.322	64.681	12550.002	13.912	20.172	622.143	25116.517	32.347	6.074	11.68
	41.505	66.604	13703.200	14.326	20.764	659.943	27424.430	33.308	6.279	12.074
L27	41.505	65.972	13576.483	14.328	20.764	653.840	27170.831	32.992	6.288	12.209
	42.688	67.877	14786.793	14.741	21.356	692.388	29593.043	33.945	6.493	12.607
L28	42.688	67.226	14648.522	14.743	21.356	685.914	29316.320	33.619	6.501	12.748
	43.872	69.112	15916.579	15.157	21.948	725.188	31854.101	34.563	6.707	13.15
L29	43.872	69.112	15916.579	15.157	21.948	725.188	31854.101	34.563	6.707	13.15
	46.511	73.320	19004.512	16.080	23.269	816.738	38034.030	36.667	7.164	14.047
L30	45.744	59.941	14110.661	15.324	22.151	637.034	28239.890	29.976	6.904	15.781
	45.980	62.272	15821.325	15.920	23.003	687.790	31663.467	31.142	7.200	16.456
L31	45.980	62.272	15821.325	15.920	23.003	687.790	31663.467	31.142	7.200	16.456
	47.159	63.884	17082.439	16.332	23.593	724.047	34187.356	31.948	7.404	16.923
L32	47.159	63.884	17082.439	16.332	23.593	724.047	34187.356	31.948	7.404	16.923
	48.338	65.497	18408.849	16.744	24.183	761.234	36841.921	32.755	7.608	17.39
L33	48.338	65.497	18408.849	16.744	24.183	761.234	36841.921	32.755	7.608	17.39
	49.518	67.109	19802.203	17.156	24.773	799.354	39630.462	33.561	7.813	17.858
L34	49.518	67.109	19802.203	17.156	24.773	799.354	39630.462	33.561	7.813	17.858
	50.697	68.722	21264.148	17.569	25.363	838.404	42556.276	34.367	8.017	18.325
L35	50.697	68.722	21264.148	17.569	25.363	838.404	42556.276	34.367	8.017	18.325
	51.876	70.334	22796.333	17.981	25.953	878.386	45622.663	35.174	8.221	18.792

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
L36	51.876	70.334	22796.333	17.981	25.953	878.386	45622.663	35.174	8.221	18.792
	53.055	71.947	24400.406	18.393	26.542	919.299	48832.919	35.980	8.426	19.259
L37	53.055	71.947	24400.406	18.393	26.542	919.299	48832.919	35.980	8.426	19.259
	54.234	73.559	26078.015	18.805	27.132	961.143	52190.344	36.786	8.630	19.726
L38	54.234	73.559	26078.015	18.805	27.132	961.143	52190.344	36.786	8.630	19.726
	55.413	75.171	27830.806	19.217	27.722	1003.919	55698.232	37.593	8.835	20.193
L39	55.413	75.171	27830.806	19.217	27.722	1003.919	55698.232	37.593	8.835	20.193
	55.848	75.767	28497.398	19.370	27.940	1019.950	57032.294	37.891	8.910	20.366

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 182'-177'				1	1	1		
L2 177'-172'				1	1	1		
L3 172'-167'				1	1	1		
L4 167'-162'				1	1	1		
L5 162'-157'				1	1	1		
L6 157'-152'				1	1	1		
L7 152'-147'				1	1	1		
L8 147'-142'				1	1	1		
L9 142'-137'				1	1	1		
L10 137'-133'31/32"				1	1	1		
L11 133'31/32"-131'10"				1	1	1		
L12 131'10"-126'10"				1	1	1		
L13 126'10"-121'10"				1	1	1		
L14 121'10"-116'10"				1	1	1		
L15 116'10"-111'10"				1	1	1		
L16 111'10"-106'10"				1	1	1		
L17 106'10"-101'10"				1	1	1		
L18 101'10"-96'10"				1	1	1		
L19 96'10"-87'5-3/8"				1	1	1		
L20 87'5-3/8"-86'5-3/8"				1	1	1		
L21 86'5-3/8"-85'				1	1	1		
L22 85'-80'				1	1	0.972528		
L23 80'-75'				1	1	0.981876		
L24 75'-74'				1	1	0.980194		
L25 74'-69'				1	1	0.981217		
L26 69'-64'				1	1	0.982747		
L27 64'-59'				1	1	0.984756		
L28 59'-54'				1	1	0.987222		
L29 54'-42'10-5/32"				1	1	0.980623		
L30 42'10-5/32"-41'10-5/32"				1	1	1		
L31 41'10-5/32"-36'10-5/32"				1	1	1		
L32 36'10-5/32"-31'10-5/32"				1	1	1		
L33 31'10-5/32"-26'10-5/32"				1	1	1		

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
L34 26'10-5/32"-21'10-5/32"				1	1	1		
L35 21'10-5/32"-16'10-5/32"				1	1	1		
L36 16'10-5/32"-11'10-5/32"				1	1	1		
L37 11'10-5/32"-6'10-5/32"				1	1	1		
L38 6'10-5/32"-1'10-5/32"				1	1	1		
L39 1'10-5/32"-0'				1	1	1		

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
LDF5-50A(7/8")	C	No	Inside Pole	180' - 0'	0.000	0	7	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
170'										
LDF7-50A(1-5/8")	B	No	Inside Pole	170' - 0'	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
160'										
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	B	No	Inside Pole	160' - 0'	0.000	0	1	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
LDF7-50A(1-5/8")	B	No	Inside Pole	160' - 0'	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
140'										
LDF4-50A(1/2")	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	3	No Ice	0.063	0.000
								1/2" Ice	0.163	0.001
								1" Ice	0.263	0.002
								2" Ice	0.463	0.007
								4" Ice	0.863	0.023
LDF4-50A(1/2")	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.007
								4" Ice	0.000	0.023
HB114-1-0813U4-M5F(1 1/4")	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	1	No Ice	0.154	0.001
								1/2" Ice	0.254	0.002
								1" Ice	0.354	0.004
								2" Ice	0.554	0.010
								4" Ice	0.954	0.028
HB114-1-0813U4-	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	2	No Ice	0.000	0.001
								1/2" Ice	0.000	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
M5F(1 1/4")								1" Ice	0.000	0.004
								2" Ice	0.000	0.010
								4" Ice	0.000	0.028
HB114-21U3M12-XXXF(1-1/4")	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.002
								1" Ice	0.000	0.004
								2" Ice	0.000	0.010
								4" Ice	0.000	0.028
2" Rigid Conduit	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	1	No Ice	0.000	0.003
								1/2" Ice	0.000	0.004
								1" Ice	0.000	0.006
								2" Ice	0.000	0.013
								4" Ice	0.000	0.032
2" Rigid Conduit	B	No	CaAa (Out Of Face)	140' - 0'	0.000	0	1	No Ice	0.200	0.003
								1/2" Ice	0.300	0.004
								1" Ice	0.400	0.006
								2" Ice	0.600	0.013
								4" Ice	1.000	0.032
88'										
HJ7-50A(1-5/8")	A	No	Inside Pole	88' - 0'	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
HB158-1-08U8-S8J18(1-5/8)	A	No	Inside Pole	88' - 0'	0.000	0	1	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
75'										
LDF4-50A(1/2")	B	No	CaAa (Out Of Face)	75' - 0'	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.007
								4" Ice	0.000	0.023
*										
Thin Flat Bar Climbing Ladder	A	No	CaAa (Out Of Face)	172' - 164'	24.000	0	1	No Ice	0.333	0.004
								1/2" Ice	0.444	0.005
								1" Ice	0.556	0.007
								2" Ice	0.778	0.011
								4" Ice	1.222	0.023
*										
CCI-65FP-060100	A	No	CaAa (Out Of Face)	72' - 47'	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	B	No	CaAa (Out Of Face)	72' - 47'	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	C	No	CaAa (Out Of Face)	72' - 47'	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
CCI-65FP-060100	A	No	CaAa (Out Of Face)	77' - 72'	0.000	0	2	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	B	No	CaAa (Out Of Face)	77' - 72'	0.000	0	2	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	C	No	CaAa (Out Of Face)	77' - 72'	0.000	0	2	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000

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
								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
CCI-65FP-060100	A	No	CaAa (Out Of Face)	87' - 77'	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	B	No	CaAa (Out Of Face)	87' - 77'	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
CCI-65FP-060100	C	No	CaAa (Out Of Face)	87' - 77'	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

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	182'-177'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L2	177'-172'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L3	172'-167'	A	0.000	0.000	0.000	1.667	0.02
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.01
L4	167'-162'	A	0.000	0.000	0.000	1.000	0.01
		B	0.000	0.000	0.000	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.01
L5	162'-157'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.01
L6	157'-152'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.01
L7	152'-147'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.01
L8	147'-142'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.01
L9	142'-137'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.629	0.13
		C	0.000	0.000	0.000	0.000	0.01
L10	137'-133'31/32"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.128	0.12
		C	0.000	0.000	0.000	0.000	0.01
L11	133'31/32"-131'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.677	0.04
		C	0.000	0.000	0.000	0.000	0.00
L12	131'10"-126'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L13	126'10"-121'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L14	121'10"-116'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01

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
L15	116'10"-111'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L16	111'10"-106'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L17	106'10"-101'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L18	101'10"-96'10"	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L19	96'10"-87'5-3/8"	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.000	5.096	0.29
		C	0.000	0.000	0.000	0.000	0.02
L20	87'5-3/8"-86'5-3/8"	A	0.000	0.000	0.000	0.092	0.01
		B	0.000	0.000	0.000	0.635	0.03
		C	0.000	0.000	0.000	0.000	0.00
L21	86'5-3/8"-85'	A	0.000	0.000	0.000	0.241	0.02
		B	0.000	0.000	0.000	1.028	0.05
		C	0.000	0.000	0.000	0.000	0.00
L22	85'-80'	A	0.000	0.000	0.000	0.833	0.07
		B	0.000	0.000	0.000	3.548	0.16
		C	0.000	0.000	0.000	0.000	0.01
L23	80'-75'	A	0.000	0.000	0.000	1.167	0.07
		B	0.000	0.000	0.000	3.882	0.16
		C	0.000	0.000	0.000	0.000	0.01
L24	75'-74'	A	0.000	0.000	0.000	0.333	0.01
		B	0.000	0.000	0.000	0.876	0.03
		C	0.000	0.000	0.000	0.000	0.00
L25	74'-69'	A	0.000	0.000	0.000	1.167	0.07
		B	0.000	0.000	0.000	3.882	0.16
		C	0.000	0.000	0.000	0.000	0.01
L26	69'-64'	A	0.000	0.000	0.000	0.833	0.07
		B	0.000	0.000	0.000	3.548	0.16
		C	0.000	0.000	0.000	0.000	0.01
L27	64'-59'	A	0.000	0.000	0.000	0.833	0.07
		B	0.000	0.000	0.000	3.548	0.16
		C	0.000	0.000	0.000	0.000	0.01
L28	59'-54'	A	0.000	0.000	0.000	0.833	0.07
		B	0.000	0.000	0.000	3.548	0.16
		C	0.000	0.000	0.000	0.000	0.01
L29	54'-42'10-5/32"	A	0.000	0.000	0.000	1.167	0.15
		B	0.000	0.000	0.000	7.223	0.35
		C	0.000	0.000	0.000	0.000	0.03
L30	42'10-5/32"-41'10-5/32"	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.000	0.543	0.03
		C	0.000	0.000	0.000	0.000	0.00
L31	41'10-5/32"-36'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L32	36'10-5/32"-31'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L33	31'10-5/32"-26'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L34	26'10-5/32"-21'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L35	21'10-5/32"-16'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L36	16'10-5/32"-11'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L37	11'10-5/32"-6'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01

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
L38	6'10-5/32"-1'10-5/32"	A	0.000	0.000	0.000	0.000	0.07
		B	0.000	0.000	0.000	2.715	0.16
		C	0.000	0.000	0.000	0.000	0.01
L39	1'10-5/32"-0'	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.000	1.003	0.06
		C	0.000	0.000	0.000	0.000	0.00

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	182'-177'	A	1.225	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L2	177'-172'	A	1.221	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L3	172'-167'	A	1.217	0.000	0.000	0.000	3.019	0.04
		B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.01
L4	167'-162'	A	1.213	0.000	0.000	0.000	1.808	0.02
		B		0.000	0.000	0.000	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.01
L5	162'-157'	A	1.208	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.01
L6	157'-152'	A	1.203	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.01
L7	152'-147'	A	1.199	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.01
L8	147'-142'	A	1.194	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.01
L9	142'-137'	A	1.189	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.196	0.25
		C		0.000	0.000	0.000	0.000	0.01
L10	137'-133'31/32"	A	1.184	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	6.769	0.27
		C		0.000	0.000	0.000	0.000	0.01
L11	133'31/32"-131'10"	A	1.181	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.155	0.09
		C		0.000	0.000	0.000	0.000	0.00
L12	131'10"-126'10"	A	1.178	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.605	0.34
		C		0.000	0.000	0.000	0.000	0.01
L13	126'10"-121'10"	A	1.173	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.578	0.34
		C		0.000	0.000	0.000	0.000	0.01
L14	121'10"-116'10"	A	1.167	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.549	0.34
		C		0.000	0.000	0.000	0.000	0.01
L15	116'10"-111'10"	A	1.161	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.519	0.34
		C		0.000	0.000	0.000	0.000	0.01
L16	111'10"-106'10"	A	1.155	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.488	0.34
		C		0.000	0.000	0.000	0.000	0.01
L17	106'10"-101'10"	A	1.148	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.456	0.33
		C		0.000	0.000	0.000	0.000	0.01
L18	101'10"-96'10"	A	1.141	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	8.422	0.33
		C		0.000	0.000	0.000	0.000	0.01

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
L19	96'10"-87'5-3/8"	A	1.131	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.000	15.712	0.62
		C		0.000	0.000	0.000	0.000	0.02
L20	87'5-3/8"-86'5-3/8"	A	1.123	0.000	0.000	0.000	0.196	0.01
		B		0.000	0.000	0.000	1.870	0.07
		C		0.000	0.000	0.000	0.000	0.00
L21	86'5-3/8"-85'	A	1.121	0.000	0.000	0.000	0.512	0.02
		B		0.000	0.000	0.000	2.922	0.09
		C		0.000	0.000	0.000	0.000	0.00
L22	85'-80'	A	1.116	0.000	0.000	0.000	1.764	0.07
		B		0.000	0.000	0.000	10.060	0.33
		C		0.000	0.000	0.000	0.000	0.01
L23	80'-75'	A	1.108	0.000	0.000	0.000	2.459	0.07
		B		0.000	0.000	0.000	10.714	0.32
		C		0.000	0.000	0.000	0.000	0.01
L24	75'-74'	A	1.103	0.000	0.000	0.000	0.701	0.01
		B		0.000	0.000	0.000	2.347	0.07
		C		0.000	0.000	0.000	0.000	0.00
L25	74'-69'	A	1.097	0.000	0.000	0.000	2.447	0.07
		B		0.000	0.000	0.000	10.648	0.33
		C		0.000	0.000	0.000	0.000	0.01
L26	69'-64'	A	1.088	0.000	0.000	0.000	1.740	0.07
		B		0.000	0.000	0.000	9.893	0.33
		C		0.000	0.000	0.000	0.000	0.01
L27	64'-59'	A	1.078	0.000	0.000	0.000	1.731	0.07
		B		0.000	0.000	0.000	9.834	0.33
		C		0.000	0.000	0.000	0.000	0.01
L28	59'-54'	A	1.067	0.000	0.000	0.000	1.722	0.07
		B		0.000	0.000	0.000	9.770	0.32
		C		0.000	0.000	0.000	0.000	0.01
L29	54'-42'10-5/32"	A	1.047	0.000	0.000	0.000	2.388	0.15
		B		0.000	0.000	0.000	20.122	0.71
		C		0.000	0.000	0.000	0.000	0.03
L30	42'10-5/32"-41'10-5/32"	A	1.030	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.000	1.590	0.06
		C		0.000	0.000	0.000	0.000	0.00
L31	41'10-5/32"-36'10-5/32"	A	1.021	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.822	0.31
		C		0.000	0.000	0.000	0.000	0.01
L32	36'10-5/32"-31'10-5/32"	A	1.005	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.739	0.31
		C		0.000	0.000	0.000	0.000	0.01
L33	31'10-5/32"-26'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L34	26'10-5/32"-21'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L35	21'10-5/32"-16'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L36	16'10-5/32"-11'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L37	11'10-5/32"-6'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L38	6'10-5/32"-1'10-5/32"	A	1.000	0.000	0.000	0.000	0.000	0.07
		B		0.000	0.000	0.000	7.715	0.31
		C		0.000	0.000	0.000	0.000	0.01
L39	1'10-5/32"-0'	A	1.000	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	0.000	2.849	0.11
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	182'-177'	0.000	0.000	0.000	0.000
L2	177'-172'	0.000	0.000	0.000	0.000
L3	172'-167'	0.000	-0.407	0.000	-0.582
L4	167'-162'	0.000	-0.262	0.000	-0.393
L5	162'-157'	0.000	0.000	0.000	0.000
L6	157'-152'	0.000	0.000	0.000	0.000
L7	152'-147'	0.000	0.000	0.000	0.000
L8	147'-142'	0.000	0.000	0.000	0.000
L9	142'-137'	0.369	0.213	0.849	0.490
L10	137'-133'31/32"	0.562	0.325	1.179	0.681
L11	133'31/32"-131'10"	0.563	0.325	1.181	0.682
L12	131'10"-126'10"	0.566	0.327	1.194	0.690
L13	126'10"-121'10"	0.570	0.329	1.216	0.702
L14	121'10"-116'10"	0.575	0.332	1.237	0.714
L15	116'10"-111'10"	0.579	0.334	1.256	0.725
L16	111'10"-106'10"	0.583	0.337	1.274	0.736
L17	106'10"-101'10"	0.587	0.339	1.291	0.746
L18	101'10"-96'10"	0.590	0.341	1.307	0.755
L19	96'10"-87'5-3/8"	0.595	0.343	1.328	0.767
L20	87'5-3/8"-86'5-3/8"	0.662	0.271	1.379	0.629
L21	86'5-3/8"-85'	0.713	0.218	1.411	0.529
L22	85'-80'	0.716	0.219	1.423	0.533
L23	80'-75'	0.764	0.175	1.468	0.458
L24	75'-74'	0.826	0.114	1.517	0.353
L25	74'-69'	0.769	0.178	1.487	0.465
L26	69'-64'	0.731	0.224	1.471	0.551
L27	64'-59'	0.735	0.225	1.484	0.555
L28	59'-54'	0.739	0.226	1.496	0.559
L29	54'-42'10-5/32"	0.698	0.274	1.471	0.650
L30	42'10-5/32"-41'10-5/32"	0.616	0.356	1.406	0.812
L31	41'10-5/32"-36'10-5/32"	0.618	0.357	1.398	0.807
L32	36'10-5/32"-31'10-5/32"	0.620	0.358	1.398	0.807
L33	31'10-5/32"-26'10-5/32"	0.621	0.359	1.406	0.812
L34	26'10-5/32"-21'10-5/32"	0.623	0.360	1.416	0.817
L35	21'10-5/32"-16'10-5/32"	0.625	0.361	1.425	0.823
L36	16'10-5/32"-11'10-5/32"	0.626	0.362	1.435	0.828
L37	11'10-5/32"-6'10-5/32"	0.628	0.363	1.444	0.834
L38	6'10-5/32"-1'10-5/32"	0.629	0.363	1.452	0.839
L39	1'10-5/32"-0'	0.630	0.364	1.458	0.842

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft ft ft	°	ft		ft^2	ft^2	K
180'									
PD458-3	A	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice	3.492 4.794 6.112 8.499 11.687	3.492 4.794 6.112 8.499 11.687	0.02 0.05 0.08 0.17 0.46

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			
PD458-3	B	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.492 4.794 6.112 8.499 11.687	3.492 4.794 6.112 8.499 11.687	0.02 0.05 0.08 0.17 0.46
APC-2163	A	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.375 4.754 6.150 8.992 12.448	3.375 4.754 6.150 8.992 12.448	0.01 0.04 0.07 0.17 0.47
APC-1362	B	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.500 4.929 6.375 9.317 13.051	3.500 4.929 6.375 9.317 13.051	0.02 0.04 0.08 0.17 0.48
APC-301	C	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.000 4.229 5.475 7.685 10.708	3.000 4.229 5.475 7.685 10.708	0.01 0.04 0.07 0.15 0.42
ANT450D6-9	C	From Leg	4.000 0' -5'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.862 4.370 5.878 8.893 14.923	2.862 4.370 5.878 8.893 14.923	0.18 0.20 0.22 0.27 0.37
APC-4065	C	From Leg	4.000 0' 6'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.125 4.404 5.700 8.140 11.277	3.125 4.404 5.700 8.140 11.277	0.01 0.04 0.07 0.15 0.43
(2) 6' x 2" Mount Pipe	A	From Leg	4.000 0' 0'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.02 0.03 0.05 0.09 0.23
(2) 6' x 2" Mount Pipe	B	From Leg	4.000 0' 0'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.02 0.03 0.05 0.09 0.23
(2) 6' x 2" Mount Pipe	C	From Leg	4.000 0' 0'	0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.02 0.03 0.05 0.09 0.23
Side Arm Mount [SO 702-3]	C	None		0.000	180'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.220 4.150 5.080 6.940 10.660	3.220 4.150 5.080 6.940 10.660	0.08 0.11 0.15 0.21 0.34
170'									
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000 0' -2'	0.000	170'	No Ice 1/2" Ice	8.498 9.149 9.767	6.304 7.479 8.368	0.07 0.14 0.21

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
						1" Ice	11.031	10.179	0.38
						2" Ice	13.679	14.024	0.87
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.000 0' -2'	0.000	170'	No Ice	8.498	6.304	0.07
						1/2" Ice	9.149	7.479	0.14
						1" Ice	9.767	8.368	0.21
						2" Ice	11.031	10.179	0.38
						4" Ice	13.679	14.024	0.87
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0' -2'	0.000	170'	No Ice	8.498	6.304	0.07
						1/2" Ice	9.149	7.479	0.14
						1" Ice	9.767	8.368	0.21
						2" Ice	11.031	10.179	0.38
						4" Ice	13.679	14.024	0.87
7770.00 w/ Mount Pipe	A	From Leg	4.000 0' -2'	0.000	170'	No Ice	6.119	4.254	0.06
						1/2" Ice	6.626	5.014	0.10
						1" Ice	7.128	5.711	0.16
						2" Ice	8.164	7.155	0.29
						4" Ice	10.360	10.412	0.66
7770.00 w/ Mount Pipe	B	From Leg	4.000 0' -2'	0.000	170'	No Ice	6.119	4.254	0.06
						1/2" Ice	6.626	5.014	0.10
						1" Ice	7.128	5.711	0.16
						2" Ice	8.164	7.155	0.29
						4" Ice	10.360	10.412	0.66
7770.00 w/ Mount Pipe	C	From Leg	4.000 0' -2'	0.000	170'	No Ice	6.119	4.254	0.06
						1/2" Ice	6.626	5.014	0.10
						1" Ice	7.128	5.711	0.16
						2" Ice	8.164	7.155	0.29
						4" Ice	10.360	10.412	0.66
(2) RRUS-11	A	From Leg	4.000 0' -2'	0.000	170'	No Ice	3.249	1.373	0.05
						1/2" Ice	3.491	1.551	0.07
						1" Ice	3.741	1.738	0.09
						2" Ice	4.268	2.138	0.15
						4" Ice	5.426	3.042	0.31
(2) RRUS-11	B	From Leg	4.000 0' -2'	0.000	170'	No Ice	3.249	1.373	0.05
						1/2" Ice	3.491	1.551	0.07
						1" Ice	3.741	1.738	0.09
						2" Ice	4.268	2.138	0.15
						4" Ice	5.426	3.042	0.31
(2) RRUS-11	C	From Leg	4.000 0' -2'	0.000	170'	No Ice	3.249	1.373	0.05
						1/2" Ice	3.491	1.551	0.07
						1" Ice	3.741	1.738	0.09
						2" Ice	4.268	2.138	0.15
						4" Ice	5.426	3.042	0.31
(2) LGP21401	A	From Leg	4.000 0' -2'	0.000	170'	No Ice	1.288	0.233	0.01
						1/2" Ice	1.445	0.313	0.02
						1" Ice	1.611	0.403	0.03
						2" Ice	1.969	0.608	0.05
						4" Ice	2.788	1.121	0.14
(2) LGP21401	B	From Leg	4.000 0' -2'	0.000	170'	No Ice	1.288	0.233	0.01
						1/2" Ice	1.445	0.313	0.02
						1" Ice	1.611	0.403	0.03
						2" Ice	1.969	0.608	0.05
						4" Ice	2.788	1.121	0.14
(2) LGP21401	C	From Leg	4.000 0'	0.000	170'	No Ice	1.288	0.233	0.01
						1/2" Ice	1.445	0.313	0.02

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
			-2'			Ice	1.611	0.403	0.03
						1" Ice	1.969	0.608	0.05
						2" Ice	2.788	1.121	0.14
						4" Ice			
DC6-48-60-18-8F	A	From Leg	4.000 0' -2'	0.000	170'	No Ice	1.266	1.266	0.02
						1/2" Ice	1.456	1.456	0.04
						1" Ice	1.658	1.658	0.05
						2" Ice	2.093	2.093	0.10
						4" Ice	3.098	3.098	0.21
Platform Mount [LP 601-1]	C	None		0.000	170'	No Ice	28.470	28.470	1.12
						1/2" Ice	33.590	33.590	1.51
						1" Ice	38.710	38.710	1.91
						2" Ice	48.950	48.950	2.69
						4" Ice	69.430	69.430	4.26
160'									
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.000 0' 0'	0.000	160'	No Ice	4.593	3.319	0.03
						1/2" Ice	5.088	4.089	0.07
						1" Ice	5.578	4.784	0.12
						2" Ice	6.588	6.225	0.22
						4" Ice	8.731	9.308	0.56
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.000 0' 0'	0.000	160'	No Ice	4.593	3.319	0.03
						1/2" Ice	5.088	4.089	0.07
						1" Ice	5.578	4.784	0.12
						2" Ice	6.588	6.225	0.22
						4" Ice	8.731	9.308	0.56
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.000 0' 0'	0.000	160'	No Ice	4.593	3.319	0.03
						1/2" Ice	5.088	4.089	0.07
						1" Ice	5.578	4.784	0.12
						2" Ice	6.588	6.225	0.22
						4" Ice	8.731	9.308	0.56
(2) AIR 21 w/ Mount Pipe	A	From Leg	4.000 0' 0'	0.000	160'	No Ice	6.771	5.701	0.11
						1/2" Ice	7.292	6.552	0.17
						1" Ice	7.807	7.329	0.23
						2" Ice	8.869	8.938	0.38
						4" Ice	11.116	12.371	0.81
(2) AIR 21 w/ Mount Pipe	B	From Leg	4.000 0' 0'	0.000	160'	No Ice	6.771	5.701	0.11
						1/2" Ice	7.292	6.552	0.17
						1" Ice	7.807	7.329	0.23
						2" Ice	8.869	8.938	0.38
						4" Ice	11.116	12.371	0.81
(2) AIR 21 w/ Mount Pipe	C	From Leg	4.000 0' 0'	0.000	160'	No Ice	6.771	5.701	0.11
						1/2" Ice	7.292	6.552	0.17
						1" Ice	7.807	7.329	0.23
						2" Ice	8.869	8.938	0.38
						4" Ice	11.116	12.371	0.81
ATMAA1412D-1A20	A	From Leg	4.000 0' 0'	0.000	160'	No Ice	0.467	1.167	0.01
						1/2" Ice	0.575	1.314	0.02
						1" Ice	0.691	1.469	0.03
						2" Ice	0.951	1.806	0.06
						4" Ice	1.573	2.584	0.14
ATMAA1412D-1A20	B	From Leg	4.000 0' 0'	0.000	160'	No Ice	0.467	1.167	0.01
						1/2" Ice	0.575	1.314	0.02
						1" Ice	0.691	1.469	0.03
						2" Ice	0.951	1.806	0.06
						4" Ice	1.573	2.584	0.14

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
ATMAA1412D-1A20	C	From Leg	4.000 0' 0'	0.000	160'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.467 0.575 0.691 0.951 1.573	1.167 1.314 1.469 1.806 2.584	0.01 0.02 0.03 0.06 0.14
Platform Mount [LP 305-1]	C	None		0.000	160'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	18.010 23.330 28.650 39.290 60.570	18.010 23.330 28.650 39.290 60.570	1.12 1.35 1.58 2.05 2.97
140'									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.08 0.15 0.23 0.41 0.91
840 10054 w/ Mount Pipe	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.413 5.833 6.263 7.156 9.093	2.385 2.917 3.466 4.614 7.316	0.05 0.09 0.13 0.23 0.53
840 10054 w/ Mount Pipe	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.413 5.833 6.263 7.156 9.093	2.385 2.917 3.466 4.614 7.316	0.05 0.09 0.13 0.23 0.53
840 10054 w/ Mount Pipe	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.413 5.833 6.263 7.156 9.093	2.385 2.917 3.466 4.614 7.316	0.05 0.09 0.13 0.23 0.53
1900MHz RRH (65MHz)	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.698 2.936 3.183 3.703 4.846	2.771 3.011 3.260 3.784 4.935	0.06 0.08 0.11 0.18 0.35
1900MHz RRH (65MHz)	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.698 2.936 3.183 3.703 4.846	2.771 3.011 3.260 3.784 4.935	0.06 0.08 0.11 0.18 0.35
1900MHz RRH (65MHz)	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice	2.698 2.936 3.183 3.703	2.771 3.011 3.260 3.784	0.06 0.08 0.11 0.18

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
						2" Ice 4" Ice	4.846	4.935	0.35
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.01 0.02 0.02 0.04 0.11
800 EXTERNAL NOTCH FILTER	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.01 0.02 0.02 0.04 0.11
800 EXTERNAL NOTCH FILTER	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.01 0.02 0.02 0.04 0.11
800MHZ RRH	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.05 0.07 0.10 0.16 0.32
800MHZ RRH	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.05 0.07 0.10 0.16 0.32
800MHZ RRH	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.05 0.07 0.10 0.16 0.32
Horizon Compact	A	From Leg	4.000 0' 4'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.841 0.966 1.099 1.392 2.082	0.429 0.525 0.629 0.863 1.435	0.01 0.02 0.03 0.05 0.12
Horizon Compact	B	From Leg	4.000 0' 4'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.841 0.966 1.099 1.392 2.082	0.429 0.525 0.629 0.863 1.435	0.01 0.02 0.03 0.05 0.12
URAS-FLEXIBLE	A	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.804 1.988 2.180 2.589 3.512	0.778 0.918 1.067 1.391 2.143	0.03 0.04 0.06 0.09 0.20
URAS-FLEXIBLE	B	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.804 1.988 2.180 2.589 3.512	0.778 0.918 1.067 1.391 2.143	0.03 0.04 0.06 0.09 0.20
URAS-FLEXIBLE	C	From Leg	4.000 0' 0'	0.000	140'	No Ice 1/2" Ice	1.804 1.988 2.180	0.778 0.918 1.067	0.03 0.04 0.06

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
						1" Ice	2.589	1.391	0.09
						2" Ice	3.512	2.143	0.20
						4" Ice			
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000 0' 0'	0.000	140'	No Ice	7.134	4.959	0.07
						1/2" Ice	7.662	5.754	0.13
						1" Ice	8.183	6.472	0.19
						2" Ice	9.256	8.010	0.34
						4" Ice	11.526	11.412	0.75
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000 0' 0'	0.000	140'	No Ice	7.134	4.959	0.07
						1/2" Ice	7.662	5.754	0.13
						1" Ice	8.183	6.472	0.19
						2" Ice	9.256	8.010	0.34
						4" Ice	11.526	11.412	0.75
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000 0' 0'	0.000	140'	No Ice	7.134	4.959	0.07
						1/2" Ice	7.662	5.754	0.13
						1" Ice	8.183	6.472	0.19
						2" Ice	9.256	8.010	0.34
						4" Ice	11.526	11.412	0.75
TD-RRH8x20-25	A	From Leg	4.000 0' 0'	0.000	140'	No Ice	4.720	1.703	0.07
						1/2" Ice	5.014	1.920	0.10
						1" Ice	5.316	2.145	0.13
						2" Ice	5.948	2.622	0.20
						4" Ice	7.314	3.680	0.40
TD-RRH8x20-25	B	From Leg	4.000 0' 0'	0.000	140'	No Ice	4.720	1.703	0.07
						1/2" Ice	5.014	1.920	0.10
						1" Ice	5.316	2.145	0.13
						2" Ice	5.948	2.622	0.20
						4" Ice	7.314	3.680	0.40
TD-RRH8x20-25	C	From Leg	4.000 0' 0'	0.000	140'	No Ice	4.720	1.703	0.07
						1/2" Ice	5.014	1.920	0.10
						1" Ice	5.316	2.145	0.13
						2" Ice	5.948	2.622	0.20
						4" Ice	7.314	3.680	0.40
Platform Mount [LP 714-1]	C	None		0.000	140'	No Ice	37.470	37.470	1.60
						1/2" Ice	44.230	44.230	2.04
						1" Ice	50.990	50.990	2.48
						2" Ice	64.510	64.510	3.36
						4" Ice	91.550	91.550	5.12
88'									
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	No Ice	7.969	5.398	0.04
						1/2" Ice	8.609	6.546	0.10
						1" Ice	9.216	7.409	0.17
						2" Ice	10.459	9.184	0.33
						4" Ice	13.066	12.933	0.79
LNX-6514DS-T6M w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	No Ice	8.568	7.004	0.06
						1/2" Ice	9.220	8.185	0.13
						1" Ice	9.838	9.081	0.20
						2" Ice	11.104	10.904	0.38
						4" Ice	13.754	14.926	0.89
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice	7.969	5.398	0.04
						1/2" Ice	8.609	6.546	0.10
						1" Ice	9.216	7.409	0.17
						2" Ice	10.459	9.184	0.33
						4" Ice	13.066	12.933	0.79
(2) DB844H80-XY w/	A	From Leg	4.000	0.000	88'	No Ice	3.104	5.154	0.03

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
Mount Pipe			0' 2'			1/2" Ice 1" Ice 2" Ice 4" Ice	3.476 3.879 4.761 6.660	5.833 6.523 7.959 11.092	0.07 0.11 0.22 0.55
(2) DB844H80-XY w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.104 3.476 3.879 4.761 6.660	5.154 5.833 6.523 7.959 11.092	0.03 0.07 0.11 0.22 0.55
(2) DB844H80-XY w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.104 3.476 3.879 4.761 6.660	5.154 5.833 6.523 7.959 11.092	0.03 0.07 0.11 0.22 0.55
MG D3-800Tx w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.570 3.979 4.387 5.325 7.341	3.418 4.119 4.784 6.164 9.175	0.03 0.07 0.11 0.21 0.52
MG D3-800Tx w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.570 3.979 4.387 5.325 7.341	3.418 4.119 4.784 6.164 9.175	0.03 0.07 0.11 0.21 0.52
MG D3-800Tx w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.570 3.979 4.387 5.325 7.341	3.418 4.119 4.784 6.164 9.175	0.03 0.07 0.11 0.21 0.52
(2) FD9R6004/2C-3L	A	From Leg	4.000 0' 2'	0.000	88'	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	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	B	From Leg	4.000 0' 2'	0.000	88'	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	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	C	From Leg	4.000 0' 2'	0.000	88'	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	0.00 0.01 0.01 0.02 0.06
HBX-6517DS-VTM w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	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	0.05 0.09 0.15 0.28 0.69
HBX-6517DS-VTM w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	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	0.05 0.09 0.15 0.28 0.69

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
HBX-6517DS-VTM w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	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	0.05 0.09 0.15 0.28 0.69
RRH2x40-AWS	A	From Leg	4.000 0' 2'	0.000	88'	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	0.04 0.06 0.08 0.13 0.28
RRH2x40-AWS	B	From Leg	4.000 0' 2'	0.000	88'	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	0.04 0.06 0.08 0.13 0.28
RRH2x40-AWS	C	From Leg	4.000 0' 2'	0.000	88'	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	0.04 0.06 0.08 0.13 0.28
DB-T1-6Z-8AB-0Z	A	From Leg	4.000 0' 2'	0.000	88'	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	0.04 0.08 0.12 0.21 0.45
Platform Mount [LP 714-1]	C	None		0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	37.470 44.230 50.990 64.510 91.550	37.470 44.230 50.990 64.510 91.550	1.60 2.04 2.48 3.36 5.12
*									
GPS_A	C	From Leg	3.000 0' 0'	0.000	75'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.297 0.374 0.459 0.655 1.151	0.297 0.374 0.459 0.655 1.151	0.00 0.00 0.01 0.02 0.08
Side Arm Mount [SO 701-1]	C	From Leg	1.500 0' 0'	0.000	75'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.850 1.140 1.430 2.010 3.170	1.670 2.340 3.010 4.350 7.030	0.07 0.08 0.09 0.12 0.18
*									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2.5-10W	A	Paraboloid	From	4.000	0.000		140'	2.917	No Ice	6.680	0.05

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
		w/Shroud (HP)	Leg	0'					1/2" Ice	7.070	0.09
				4'					1" Ice	7.460	0.12
									2" Ice	8.230	0.20
									4" Ice	9.780	0.34
VHLP2.5-10W	B	Paraboloid	From	4.000	75.000		140'	2.917	No Ice	6.680	0.05
		w/Shroud (HP)	Leg	0'					1/2" Ice	7.070	0.09
				4'					1" Ice	7.460	0.12
									2" Ice	8.230	0.20
									4" Ice	9.780	0.34
*											

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	182 - 177	Pole	Max Tension	36	0.00	-0.00	0.00
			Max. Compression	14	-1.64	0.83	-0.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	11	-0.44	10.78	-0.37
			Max. My	8	-0.44	0.57	-10.56
			Max. Vy	11	-1.82	10.78	-0.37
			Max. Vx	8	1.82	0.57	-10.56
			Max. Torque	13			0.52
L2	177 - 172	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-2.00	0.83	-0.50
			Max. Mx	11	-0.64	20.44	-0.37
			Max. My	8	-0.64	0.57	-20.22
			Max. Vy	11	-2.04	20.44	-0.37
			Max. Vx	8	2.05	0.57	-20.22
			Max. Torque	13			0.52
L3	172 - 167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-6.73	0.83	-0.18
			Max. Mx	11	-2.28	38.39	-0.30
			Max. My	8	-2.27	0.57	-38.08
			Max. Vy	11	-6.37	38.39	-0.30
			Max. Vx	8	6.37	0.57	-38.08
			Max. Torque	13			0.52
L4	167 - 162	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-7.21	0.82	-0.17
			Max. Mx	11	-2.58	70.97	-0.30
			Max. My	8	-2.57	0.57	-70.66
			Max. Vy	11	-6.67	70.97	-0.30
			Max. Vx	8	6.67	0.57	-70.66
			Max. Torque	8			-0.43
L5	162 - 157	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-11.51	0.82	-0.17
			Max. Mx	11	-4.43	114.69	-0.30
			Max. My	8	-4.42	0.57	-114.42
			Max. Vy	11	-10.18	114.69	-0.30
			Max. Vx	8	10.18	0.57	-114.42
			Max. Torque	8			-0.43
L6	157 - 152	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-12.06	0.81	-0.18
			Max. Mx	11	-4.83	166.25	-0.31
			Max. My	8	-4.82	0.57	-166.01
			Max. Vy	11	-10.45	166.25	-0.31
			Max. Vx	8	10.46	0.57	-166.01
			Max. Torque	8			-0.43
L7	152 - 147	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-12.65	0.79	-0.18
			Max. Mx	11	-5.26	219.19	-0.32
			Max. My	8	-5.24	0.57	-218.99
			Max. Vy	11	-10.73	219.19	-0.32
			Max. Vx	8	10.74	0.57	-218.99
			Max. Torque	2			0.43
L8	147 - 142	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-13.52	0.20	0.15
			Max. Mx	11	-5.76	274.08	-0.30
			Max. My	8	-5.71	0.57	-274.54
			Max. Vy	11	-11.39	274.08	-0.30
			Max. Vx	2	-11.67	0.37	274.21
			Max. Torque	13			-1.39
L9	142 - 137	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-20.29	-0.08	0.14
			Max. Mx	11	-8.58	348.17	-0.49
			Max. My	8	-8.52	0.64	-350.15
			Max. Vy	11	-17.13	348.17	-0.49
			Max. Vx	2	-17.42	0.06	349.87
			Max. Torque	13			-1.49
L10	137 - 133.081	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-20.32	-0.09	0.14
			Max. Mx	11	-8.60	351.03	-0.50
			Max. My	8	-8.55	0.65	-353.06
			Max. Vy	11	-17.14	351.03	-0.50
			Max. Vx	2	-17.44	0.05	352.77
			Max. Torque	13			-1.49

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L11	133.081 - 131.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-21.77	-0.34	-0.00
			Max. Mx	11	-9.53	437.86	-0.74
			Max. My	8	-9.48	0.75	-441.42
			Max. Vy	11	-17.61	437.86	-0.74
			Max. Vx	2	-17.91	-0.25	441.10
			Max. Torque	13			-1.50
L12	131.833 - 126.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-22.85	-0.59	-0.15
			Max. Mx	11	-10.26	526.90	-0.99
			Max. My	8	-10.21	0.85	-531.99
			Max. Vy	11	-18.04	526.90	-0.99
			Max. Vx	2	-18.33	-0.56	531.64
			Max. Torque	13			-1.51
L13	126.833 - 121.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-23.96	-0.85	-0.29
			Max. Mx	11	-11.02	618.07	-1.23
			Max. My	8	-10.97	0.95	-624.71
			Max. Vy	11	-18.47	618.07	-1.23
			Max. Vx	2	-18.76	-0.87	624.31
			Max. Torque	13			-1.52
L14	121.833 - 116.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-25.10	-1.12	-0.45
			Max. Mx	11	-11.81	711.39	-1.48
			Max. My	8	-11.77	1.05	-719.57
			Max. Vy	11	-18.90	711.39	-1.48
			Max. Vx	2	-19.19	-1.18	719.14
			Max. Torque	13			-1.53
L15	116.833 - 111.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-26.27	-1.40	-0.60
			Max. Mx	11	-12.63	806.85	-1.72
			Max. My	8	-12.59	1.14	-816.60
			Max. Vy	11	-19.33	806.85	-1.72
			Max. Vx	2	-19.63	-1.49	816.12
			Max. Torque	13			-1.54
L16	111.833 - 106.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-27.47	-1.68	-0.76
			Max. Mx	11	-13.48	904.48	-1.97
			Max. My	8	-13.44	1.24	-915.78
			Max. Vy	11	-19.76	904.48	-1.97
			Max. Vx	2	-20.06	-1.81	915.26
			Max. Torque	13			-1.55
L17	106.833 - 101.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.70	-1.98	-0.93
			Max. Mx	11	-14.36	1004.27	-2.22
			Max. My	8	-14.31	1.33	-1017.14
			Max. Vy	11	-20.19	1004.27	-2.22
			Max. Vx	2	-20.49	-2.13	1016.56
			Max. Torque	13			-1.56
L18	101.833 - 96.8333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-29.95	-2.28	-1.10
			Max. Mx	11	-15.26	1106.21	-2.47
			Max. My	8	-15.22	1.42	-1120.66
			Max. Vy	11	-20.63	1106.21	-2.47
			Max. Vx	2	-20.93	-2.44	1120.03
			Max. Torque	13			-1.57
L19	96.8333 - 87.4479	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.08	-2.55	-1.26
			Max. Mx	11	-16.07	1196.97	-2.70
			Max. My	8	-16.03	1.50	-1212.78

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	11	-21.00	1196.97	-2.70
			Max. Vx	2	-21.30	-2.72	1212.11
			Max. Torque	13			-1.58
L20	87.4479 - 86.4479	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-38.88	-3.11	-0.85
			Max. Mx	5	-19.95	-1338.41	6.55
			Max. My	8	-19.90	1.58	-1356.27
			Max. Vy	11	-26.14	1338.12	-2.91
			Max. Vx	2	-26.58	-3.25	1355.86
			Max. Torque	13			-2.00
L21	86.4479 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-39.28	-3.20	-0.90
			Max. Mx	5	-20.24	-1376.36	6.74
			Max. My	8	-20.20	1.63	-1394.85
			Max. Vy	11	-26.28	1376.04	-3.01
			Max. Vx	2	-26.72	-3.36	1394.42
			Max. Torque	13			-2.01
L22	85 - 80	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-40.97	-3.52	-1.09
			Max. Mx	5	-21.57	-1509.01	7.37
			Max. My	8	-21.53	1.80	-1529.68
			Max. Vy	11	-26.79	1508.58	-3.35
			Max. Vx	2	-27.23	-3.77	1529.19
			Max. Torque	13			-2.03
L23	80 - 75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-42.69	-3.85	-1.27
			Max. Mx	5	-22.92	-1644.27	8.00
			Max. My	8	-22.88	1.96	-1667.12
			Max. Vy	11	-27.32	1643.72	-3.69
			Max. Vx	2	-27.76	-4.18	1666.57
			Max. Torque	13			-2.06
L24	75 - 74	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-43.14	-3.62	-1.49
			Max. Mx	5	-23.26	-1671.52	8.02
			Max. My	8	-23.21	2.15	-1695.09
			Max. Vy	11	-27.48	1671.30	-3.84
			Max. Vx	2	-27.94	-4.08	1694.33
			Max. Torque	13			-1.83
L25	74 - 69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-44.90	-3.97	-1.69
			Max. Mx	5	-24.64	-1810.22	8.59
			Max. My	8	-24.60	2.25	-1836.04
			Max. Vy	11	-28.00	1809.88	-4.12
			Max. Vx	2	-28.46	-4.43	1835.21
			Max. Torque	13			-1.85
L26	69 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.69	-4.33	-1.89
			Max. Mx	5	-26.05	-1951.44	9.15
			Max. My	8	-26.01	2.34	-1979.52
			Max. Vy	11	-28.49	1950.98	-4.40
			Max. Vx	2	-28.94	-4.78	1978.62
			Max. Torque	13			-1.87
L27	64 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-48.50	-4.69	-2.10
			Max. Mx	5	-27.49	-2095.09	9.72
			Max. My	8	-27.45	2.44	-2125.41
			Max. Vy	11	-28.97	2094.50	-4.68
			Max. Vx	2	-29.42	-5.13	2124.44
			Max. Torque	13			-1.89
L28	59 - 54	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-50.34	-5.05	-2.30
			Max. Mx	5	-28.95	-2241.12	10.28
			Max. My	8	-28.92	2.53	-2273.68
			Max. Vy	11	-29.44	2240.39	-4.96
			Max. Vx	2	-29.89	-5.49	2272.64
			Max. Torque	13			-1.91
L29	54 - 42.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-52.18	-5.39	-2.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	5	-30.42	-2387.21	10.83
			Max. My	8	-30.39	2.61	-2421.98
			Max. Vy	11	-29.87	2386.35	-5.24
			Max. Vx	2	-30.32	-5.84	2420.86
			Max. Torque	13			-1.93
L30	42.8464 - 41.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-56.55	-5.90	-2.79
			Max. Mx	5	-33.84	-2605.71	11.63
			Max. My	8	-33.81	2.74	-2643.71
			Max. Vy	11	-30.58	2604.64	-5.65
			Max. Vx	2	-31.03	-6.35	2642.48
			Max. Torque	13			-1.96
L31	41.8464 - 36.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-58.31	-6.24	-2.99
			Max. Mx	5	-35.26	-2759.45	12.18
			Max. My	8	-35.23	2.82	-2799.68
			Max. Vy	11	-30.92	2758.22	-5.94
			Max. Vx	2	-31.37	-6.71	2798.36
			Max. Torque	13			-1.97
L32	36.8464 - 31.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-60.10	-6.59	-3.20
			Max. Mx	5	-36.71	-2914.84	12.73
			Max. My	8	-36.69	2.90	-2957.30
			Max. Vy	11	-31.24	2913.46	-6.22
			Max. Vx	2	-31.69	-7.07	2955.90
			Max. Torque	13			-1.98
L33	31.8464 - 26.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-61.91	-6.95	-3.40
			Max. Mx	5	-38.19	-3071.84	13.28
			Max. My	8	-38.17	2.98	-3116.52
			Max. Vy	11	-31.56	3070.31	-6.51
			Max. Vx	2	-32.01	-7.43	3115.03
			Max. Torque	13			-2.00
L34	26.8464 - 21.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-63.77	-7.31	-3.61
			Max. Mx	5	-39.69	-3230.45	13.82
			Max. My	8	-39.68	3.06	-3277.34
			Max. Vy	11	-31.89	3228.76	-6.79
			Max. Vx	2	-32.33	-7.79	3275.76
			Max. Torque	13			-2.01
L35	21.8464 - 16.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-65.65	-7.68	-3.83
			Max. Mx	5	-41.23	-3390.68	14.36
			Max. My	8	-41.22	3.13	-3439.76
			Max. Vy	11	-32.21	3388.82	-7.08
			Max. Vx	2	-32.65	-8.15	3438.09
			Max. Torque	13			-2.02
L36	16.8464 - 11.8464	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-67.58	-8.07	-4.05
			Max. Mx	5	-42.79	-3552.52	14.89
			Max. My	8	-42.78	3.20	-3603.78
			Max. Vy	11	-32.53	3550.49	-7.36
			Max. Vx	2	-32.98	-8.51	3602.02
			Max. Torque	2			-2.04
L37	11.8464 - 6.84635	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-69.53	-8.46	-4.27
			Max. Mx	5	-44.38	-3715.98	15.42
			Max. My	8	-44.38	3.27	-3769.42
			Max. Vy	11	-32.86	3713.78	-7.65
			Max. Vx	2	-33.30	-8.87	3767.56
			Max. Torque	2			-2.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L38	6.84635 - 1.84635	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-71.52	-8.85	-4.50
			Max. Mx	5	-46.00	-3881.08	15.95
			Max. My	8	-46.00	3.34	-3936.68
			Max. Vy	11	-33.18	3878.69	-7.93
			Max. Vx	2	-33.62	-9.23	3934.73
			Max. Torque	2			-2.09
L39	1.84635 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-72.27	-9.00	-4.59
			Max. Mx	5	-46.59	-3942.46	16.14
			Max. My	8	-46.59	3.36	-3998.86
			Max. Vy	11	-33.32	3940.01	-8.04
			Max. Vx	2	-33.76	-9.37	3996.86
			Max. Torque	2			-2.10

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	21	72.27	0.01	-10.51
	Max. H_x	11	46.61	33.29	-0.04
	Max. H_z	2	46.61	-0.05	33.73
	Max. M_x	2	3996.86	-0.05	33.73
	Max. M_z	5	3942.46	-33.28	0.12
	Max. Torsion	8	1.69	0.03	-33.72
	Min. Vert	1	46.61	0.00	0.00
	Min. H_x	5	46.61	-33.28	0.12
	Min. H_z	8	46.61	0.03	-33.72
	Min. M_x	8	-3998.86	0.03	-33.72
	Min. M_z	11	-3940.01	33.29	-0.04
	Min. Torsion	2	-2.10	-0.05	33.73

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	46.61	0.00	0.00	1.36	-1.77	-0.00
Dead+Wind 0 deg - No Ice	46.61	0.05	-33.73	-3996.86	-9.37	2.10
Dead+Wind 30 deg - No Ice	46.61	16.64	-29.26	-3468.29	-1971.67	1.81
Dead+Wind 60 deg - No Ice	46.61	28.80	-17.03	-2022.08	-3410.78	1.15
Dead+Wind 90 deg - No Ice	46.61	33.28	-0.12	-16.14	-3942.46	-0.02
Dead+Wind 120 deg - No Ice	46.61	28.74	16.98	2017.51	-3402.49	-0.96
Dead+Wind 150 deg - No Ice	46.61	16.54	29.26	3472.26	-1957.12	-1.66
Dead+Wind 180 deg - No Ice	46.61	-0.03	33.72	3998.86	3.36	-1.69
Dead+Wind 210 deg - No Ice	46.61	-16.63	29.25	3470.91	1967.02	-1.52
Dead+Wind 240 deg - No Ice	46.61	-28.76	17.03	2025.88	3400.86	-1.14
Dead+Wind 270 deg - No Ice	46.61	-33.29	0.04	8.04	3940.01	-0.00
Dead+Wind 300 deg - No Ice	46.61	-28.75	-16.92	-2005.62	3400.02	1.26
Dead+Wind 330 deg - No Ice	46.61	-16.51	-29.25	-3468.10	1949.48	2.07
Dead+Ice+Temp	72.27	0.00	0.00	4.59	-9.00	-0.00
Dead+Wind 0 deg+Ice+Temp	72.27	0.01	-10.51	-1293.62	-10.90	0.71
Dead+Wind 30 deg+Ice+Temp	72.27	5.20	-9.11	-1121.42	-650.46	0.71
Dead+Wind 60 deg+Ice+Temp	72.27	9.00	-5.29	-650.64	-1119.37	0.55
Dead+Wind 90 deg+Ice+Temp	72.27	10.40	-0.03	0.30	-1292.36	0.19

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 120 deg+Ice+Temp	72.27	8.99	5.29	658.42	-1117.42	-0.16
Dead+Wind 150 deg+Ice+Temp	72.27	5.18	9.12	1131.26	-647.05	-0.48
Dead+Wind 180 deg+Ice+Temp	72.27	-0.01	10.51	1302.72	-8.04	-0.60
Dead+Wind 210 deg+Ice+Temp	72.27	-5.20	9.11	1130.69	631.88	-0.64
Dead+Wind 240 deg+Ice+Temp	72.27	-8.99	5.30	660.21	1099.41	-0.55
Dead+Wind 270 deg+Ice+Temp	72.27	-10.40	0.01	6.16	1274.36	-0.20
Dead+Wind 300 deg+Ice+Temp	72.27	-8.99	-5.27	-646.73	1099.41	0.24
Dead+Wind 330 deg+Ice+Temp	72.27	-5.17	-9.12	-1121.59	627.68	0.58
Dead+Wind 0 deg - Service	46.61	0.02	-13.17	-1563.06	-4.78	0.83
Dead+Wind 30 deg - Service	46.61	6.50	-11.43	-1356.23	-772.60	0.72
Dead+Wind 60 deg - Service	46.61	11.25	-6.65	-790.33	-1335.68	0.46
Dead+Wind 90 deg - Service	46.61	13.00	-0.05	-5.45	-1543.68	-0.01
Dead+Wind 120 deg - Service	46.61	11.23	6.63	790.26	-1332.42	-0.38
Dead+Wind 150 deg - Service	46.61	6.46	11.43	1359.50	-766.90	-0.66
Dead+Wind 180 deg - Service	46.61	-0.01	13.17	1565.57	0.20	-0.67
Dead+Wind 210 deg - Service	46.61	-6.50	11.43	1358.98	768.56	-0.60
Dead+Wind 240 deg - Service	46.61	-11.23	6.65	793.55	1329.57	-0.45
Dead+Wind 270 deg - Service	46.61	-13.00	0.02	4.01	1540.50	-0.00
Dead+Wind 300 deg - Service	46.61	-11.23	-6.61	-783.88	1329.23	0.50
Dead+Wind 330 deg - Service	46.61	-6.45	-11.43	-1356.15	761.69	0.82

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-46.61	0.00	0.00	46.61	0.00	0.000%
2	0.05	-46.61	-33.73	-0.05	46.61	33.73	0.000%
3	16.64	-46.61	-29.26	-16.64	46.61	29.26	0.000%
4	28.80	-46.61	-17.03	-28.80	46.61	17.03	0.000%
5	33.28	-46.61	-0.12	-33.28	46.61	0.12	0.000%
6	28.74	-46.61	16.98	-28.74	46.61	-16.98	0.000%
7	16.54	-46.61	29.26	-16.54	46.61	-29.26	0.000%
8	-0.03	-46.61	33.72	0.03	46.61	-33.72	0.000%
9	-16.63	-46.61	29.25	16.63	46.61	-29.25	0.000%
10	-28.76	-46.61	17.03	28.76	46.61	-17.03	0.000%
11	-33.29	-46.61	0.04	33.29	46.61	-0.04	0.000%
12	-28.75	-46.61	-16.92	28.75	46.61	16.92	0.000%
13	-16.51	-46.61	-29.25	16.51	46.61	29.25	0.000%
14	0.00	-72.27	0.00	-0.00	72.27	-0.00	0.000%
15	0.01	-72.27	-10.51	-0.01	72.27	10.51	0.000%
16	5.20	-72.27	-9.11	-5.20	72.27	9.11	0.000%
17	9.00	-72.27	-5.29	-9.00	72.27	5.29	0.000%
18	10.40	-72.27	-0.03	-10.40	72.27	0.03	0.000%
19	8.99	-72.27	5.29	-8.99	72.27	-5.29	0.000%
20	5.18	-72.27	9.12	-5.18	72.27	-9.12	0.000%
21	-0.01	-72.27	10.51	0.01	72.27	-10.51	0.000%
22	-5.20	-72.27	9.11	5.20	72.27	-9.11	0.000%
23	-8.99	-72.27	5.30	8.99	72.27	-5.30	0.000%
24	-10.40	-72.27	0.01	10.40	72.27	-0.01	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
25	-8.99	-72.27	-5.27	8.99	72.27	5.27	0.000%
26	-5.17	-72.27	-9.12	5.17	72.27	9.12	0.000%
27	0.02	-46.61	-13.17	-0.02	46.61	13.17	0.000%
28	6.50	-46.61	-11.43	-6.50	46.61	11.43	0.000%
29	11.25	-46.61	-6.65	-11.25	46.61	6.65	0.000%
30	13.00	-46.61	-0.05	-13.00	46.61	0.05	0.000%
31	11.23	-46.61	6.63	-11.23	46.61	-6.63	0.000%
32	6.46	-46.61	11.43	-6.46	46.61	-11.43	0.000%
33	-0.01	-46.61	13.17	0.01	46.61	-13.17	0.000%
34	-6.50	-46.61	11.43	6.50	46.61	-11.43	0.000%
35	-11.23	-46.61	6.65	11.23	46.61	-6.65	0.000%
36	-13.00	-46.61	0.02	13.00	46.61	-0.02	0.000%
37	-11.23	-46.61	-6.61	11.23	46.61	6.61	0.000%
38	-6.45	-46.61	-11.43	6.45	46.61	11.43	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00079756
3	Yes	6	0.00000001	0.00076877
4	Yes	6	0.00000001	0.00074337
5	Yes	5	0.00000001	0.00025925
6	Yes	6	0.00000001	0.00074133
7	Yes	6	0.00000001	0.00076596
8	Yes	5	0.00000001	0.00046769
9	Yes	6	0.00000001	0.00073685
10	Yes	6	0.00000001	0.00076368
11	Yes	5	0.00000001	0.00008290
12	Yes	6	0.00000001	0.00076330
13	Yes	6	0.00000001	0.00072338
14	Yes	4	0.00000001	0.00021816
15	Yes	6	0.00000001	0.00036014
16	Yes	6	0.00000001	0.00079918
17	Yes	6	0.00000001	0.00077999
18	Yes	6	0.00000001	0.00035641
19	Yes	6	0.00000001	0.00078833
20	Yes	6	0.00000001	0.00079797
21	Yes	6	0.00000001	0.00036052
22	Yes	6	0.00000001	0.00076745
23	Yes	6	0.00000001	0.00078946
24	Yes	6	0.00000001	0.00035268
25	Yes	6	0.00000001	0.00077450
26	Yes	6	0.00000001	0.00075498
27	Yes	5	0.00000001	0.00019644
28	Yes	6	0.00000001	0.00010687
29	Yes	6	0.00000001	0.00010074
30	Yes	5	0.00000001	0.00005766
31	Yes	6	0.00000001	0.00010039
32	Yes	6	0.00000001	0.00010631
33	Yes	5	0.00000001	0.00013764
34	Yes	6	0.00000001	0.00009956
35	Yes	6	0.00000001	0.00010546
36	Yes	4	0.00000001	0.00090885
37	Yes	6	0.00000001	0.00010493
38	Yes	6	0.00000001	0.00009627

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	182 - 177	59.306	33	3.005	0.003
L2	177 - 172	56.163	33	2.996	0.003
L3	172 - 167	53.037	33	2.975	0.004
L4	167 - 162	49.938	33	2.946	0.004
L5	162 - 157	46.878	33	2.897	0.005
L6	157 - 152	43.879	33	2.829	0.005
L7	152 - 147	40.961	33	2.742	0.005
L8	147 - 142	38.144	33	2.640	0.005
L9	142 - 137	35.438	33	2.528	0.005
L10	137 - 133.081	32.854	33	2.407	0.004
L11	136.833 - 131.833	32.770	33	2.403	0.004
L12	131.833 - 126.833	30.285	33	2.337	0.004
L13	126.833 - 121.833	27.891	33	2.234	0.004
L14	121.833 - 116.833	25.608	33	2.127	0.003
L15	116.833 - 111.833	23.438	33	2.017	0.003
L16	111.833 - 106.833	21.384	33	1.907	0.003
L17	106.833 - 101.833	19.446	33	1.795	0.002
L18	101.833 - 96.8333	17.625	33	1.684	0.002
L19	96.8333 - 87.4479	15.919	33	1.574	0.002
L20	92.4688 - 86.4479	14.525	33	1.478	0.002
L21	86.4479 - 85	12.704	33	1.400	0.001
L22	85 - 80	12.284	33	1.367	0.001
L23	80 - 75	10.895	33	1.286	0.001
L24	75 - 74	9.591	33	1.205	0.001
L25	74 - 69	9.340	33	1.189	0.001
L26	69 - 64	8.138	33	1.107	0.001
L27	64 - 59	7.021	33	1.026	0.001
L28	59 - 54	5.989	33	0.946	0.001
L29	54 - 42.8464	5.041	33	0.865	0.001
L30	49.0729 - 41.8464	4.188	33	0.787	0.001
L31	41.8464 - 36.8464	3.043	33	0.716	0.001
L32	36.8464 - 31.8464	2.342	33	0.624	0.000
L33	31.8464 - 26.8464	1.737	33	0.533	0.000
L34	26.8464 - 21.8464	1.225	33	0.445	0.000
L35	21.8464 - 16.8464	0.805	33	0.358	0.000
L36	16.8464 - 11.8464	0.475	33	0.273	0.000
L37	11.8464 - 6.84635	0.233	33	0.190	0.000
L38	6.84635 - 1.84635	0.077	33	0.108	0.000
L39	1.84635 - 0	0.006	33	0.029	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180'	PD458-3	33	58.048	3.002	0.003	16788

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170'	AM-X-CD-16-65-00T-RET w/ Mount Pipe	33	51.794	2.965	0.004	9506
160'	RR90-17-02DP w/ Mount Pipe	33	45.670	2.872	0.005	4301
144'	VHLP2.5-10W	33	36.507	2.573	0.005	2560
140'	APXVSPP18-C-A20 w/ Mount Pipe	33	34.390	2.481	0.005	2518
88'	BXA-70063-6CF-EDIN-4 w/ Mount Pipe	33	13.162	1.426	0.002	3523
75'	GPS_A	33	9.591	1.205	0.001	3529

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	182 - 177	150.991	8	7.647	0.007
L2	177 - 172	143.013	8	7.627	0.009
L3	172 - 167	135.074	8	7.575	0.011
L4	167 - 162	127.200	8	7.503	0.012
L5	162 - 157	119.425	8	7.379	0.013
L6	157 - 152	111.803	8	7.208	0.013
L7	152 - 147	104.386	8	6.986	0.014
L8	147 - 142	97.220	8	6.727	0.014
L9	142 - 137	90.338	8	6.443	0.013
L10	137 - 133.081	83.761	8	6.137	0.011
L11	136.833 - 131.833	83.547	8	6.126	0.011
L12	131.833 - 126.833	77.220	8	5.958	0.010
L13	126.833 - 121.833	71.128	8	5.696	0.009
L14	121.833 - 116.833	65.313	8	5.424	0.008
L15	116.833 - 111.833	59.786	8	5.145	0.007
L16	111.833 - 106.833	54.552	8	4.863	0.006
L17	106.833 - 101.833	49.614	8	4.579	0.006
L18	101.833 - 96.8333	44.971	8	4.296	0.005
L19	96.8333 - 87.4479	40.623	8	4.015	0.005
L20	92.4688 - 86.4479	37.067	8	3.773	0.004
L21	86.4479 - 85	32.422	8	3.572	0.004
L22	85 - 80	31.352	8	3.488	0.004
L23	80 - 75	27.809	8	3.283	0.003
L24	75 - 74	24.482	8	3.075	0.003
L25	74 - 69	23.842	8	3.034	0.003
L26	69 - 64	20.775	8	2.827	0.003
L27	64 - 59	17.924	8	2.620	0.002
L28	59 - 54	15.290	8	2.414	0.002
L29	54 - 42.8464	12.870	8	2.209	0.002
L30	49.0729 - 41.8464	10.693	8	2.011	0.002
L31	41.8464 - 36.8464	7.771	8	1.828	0.001
L32	36.8464 - 31.8464	5.981	8	1.592	0.001
L33	31.8464 - 26.8464	4.435	8	1.361	0.001
L34	26.8464 - 21.8464	3.128	8	1.135	0.001
L35	21.8464 -	2.056	8	0.914	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
	16.8464				
L36	16.8464 - 11.8464	1.213	8	0.697	0.000
L37	11.8464 - 6.84635	0.595	8	0.484	0.000
L38	6.84635 - 1.84635	0.197	8	0.277	0.000
L39	1.84635 - 0	0.014	8	0.073	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180'	PD458-3	8	147.797	7.642	0.008	7514
170'	AM-X-CD-16-65-00T-RET w/ Mount Pipe	8	131.915	7.550	0.011	4019
160'	RR90-17-02DP w/ Mount Pipe	8	116.355	7.317	0.013	1759
144'	VHLP2.5-10W	8	93.055	6.559	0.014	1032
140'	APXVSPP18-C-A20 w/ Mount Pipe	8	87.669	6.325	0.012	1012
88'	BXA-70063-6CF-EDIN-4 w/ Mount Pipe	8	33.590	3.638	0.004	1392
75'	GPS_A	8	24.482	3.075	0.003	1391

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	182 - 177 (1)	TP15.678x14.5x0.25	5'	0'	0.0	39.000	12.242	-0.44	477.44	0.001
L2	177 - 172 (2)	TP16.856x15.678x0.25	5'	0'	0.0	39.000	13.177	-0.64	513.88	0.001
L3	172 - 167 (3)	TP18.033x16.856x0.25	5'	0'	0.0	39.000	14.111	-2.28	550.33	0.004
L4	167 - 162 (4)	TP19.211x18.033x0.25	5'	0'	0.0	39.000	15.046	-2.58	586.78	0.004
L5	162 - 157 (5)	TP20.389x19.211x0.25	5'	0'	0.0	39.000	15.980	-4.43	623.23	0.007
L6	157 - 152 (6)	TP21.567x20.389x0.25	5'	0'	0.0	39.000	16.915	-4.83	659.68	0.007
L7	152 - 147 (7)	TP22.745x21.567x0.25	5'	0'	0.0	39.000	17.849	-5.25	696.13	0.008
L8	147 - 142 (8)	TP23.922x22.745x0.25	5'	0'	0.0	39.000	18.784	-5.72	732.58	0.008
L9	142 - 137 (9)	TP25.1x23.922x0.25	5'	0'	0.0	39.000	19.719	-8.52	769.02	0.011
L10	137 - 133.081 (10)	TP26.023x25.1x0.25	3'11-1/32"	0'	0.0	39.000	19.750	-8.55	770.24	0.011
L11	133.081 - 131.833 (11)	TP25.806x24.639x0.375	5'	0'	0.0	39.000	30.269	-9.48	1180.49	0.008
L12	131.833 - 126.833 (12)	TP26.972x25.806x0.375	5'	0'	0.0	39.000	31.657	-10.21	1234.64	0.008
L13	126.833 - 121.833 (13)	TP28.139x26.972x0.375	5'	0'	0.0	39.000	33.046	-10.97	1288.79	0.009
L14	121.833 - 116.833 (14)	TP29.305x28.139x0.375	5'	0'	0.0	39.000	34.434	-11.77	1342.93	0.009
L15	116.833 - 111.833 (15)	TP30.472x29.305x0.375	5'	0'	0.0	39.000	35.823	-12.59	1397.08	0.009
L16	111.833 - 106.833 (16)	TP31.638x30.472x0.375	5'	0'	0.0	39.000	37.211	-13.44	1451.23	0.009
L17	106.833 - 101.833 (17)	TP32.805x31.638x0.375	5'	0'	0.0	39.000	38.599	-14.31	1505.37	0.010
L18	101.833 -	TP33.971x32.805x0.375	5'	0'	0.0	39.000	39.988	-15.22	1559.52	0.010

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 $\frac{P}{P_a}$
	96.8333 (18)									
L19	96.8333 - 87.4479 (19)	TP36.161x33.971x0.375	9'4-5/8"	0'	0.0	39.000	41.200	-16.03	1606.79	0.010
L20	87.4479 - 86.4479 (20)	TP35.643x34.239x0.375	6'1/4"	0'	0.0	39.000	41.977	-19.90	1637.11	0.012
L21	86.4479 - 85 (21)	TP35.98x35.643x0.375	1'5-3/8"	0'	0.0	39.000	42.379	-20.20	1652.78	0.012
L22	85 - 80 (22)	TP37.145x35.98x0.54	5'	0'	0.0	39.000	62.740	-21.53	2446.86	0.009
L23	80 - 75 (23)	TP38.311x37.145x0.53	5'	0'	0.0	39.000	63.555	-22.88	2478.66	0.009
L24	75 - 74 (24)	TP38.544x38.311x0.53	1'	0'	0.0	39.000	63.947	-23.21	2493.95	0.009
L25	74 - 69 (25)	TP39.709x38.544x0.525	5'	0'	0.0	39.000	65.294	-24.60	2546.48	0.010
L26	69 - 64 (26)	TP40.874x39.709x0.52	5'	0'	0.0	39.000	66.604	-26.01	2597.56	0.010
L27	64 - 59 (27)	TP42.04x40.874x0.515	5'	0'	0.0	39.000	67.877	-27.45	2647.20	0.010
L28	59 - 54 (28)	TP43.205x42.04x0.51	5'	0'	0.0	39.000	69.112	-28.92	2695.38	0.011
L29	54 - 42.8464 (29)	TP45.805x43.205x0.51	11'1-27/32"	0'	0.0	39.000	70.971	-30.39	2767.88	0.011
L30	42.8464 - 41.8464 (30)	TP45.282x43.603x0.438	7'2-23/32"	0'	0.0	39.000	62.272	-33.81	2428.60	0.014
L31	41.8464 - 36.8464 (31)	TP46.443x45.282x0.438	5'	0'	0.0	39.000	63.884	-35.23	2491.49	0.014
L32	36.8464 - 31.8464 (32)	TP47.604x46.443x0.438	5'	0'	0.0	39.000	65.497	-36.69	2554.37	0.014
L33	31.8464 - 26.8464 (33)	TP48.765x47.604x0.438	5'	0'	0.0	39.000	67.109	-38.17	2617.26	0.015
L34	26.8464 - 21.8464 (34)	TP49.926x48.765x0.438	5'	0'	0.0	39.000	68.722	-39.68	2680.14	0.015
L35	21.8464 - 16.8464 (35)	TP51.088x49.926x0.438	5'	0'	0.0	39.000	70.334	-41.22	2743.03	0.015
L36	16.8464 - 11.8464 (36)	TP52.249x51.088x0.438	5'	0'	0.0	39.000	71.947	-42.78	2805.91	0.015
L37	11.8464 - 6.84635 (37)	TP53.41x52.249x0.438	5'	0'	0.0	39.000	73.559	-44.38	2868.80	0.015
L38	6.84635 - 1.84635 (38)	TP54.571x53.41x0.438	5'	0'	0.0	39.000	74.526	-45.37	2906.53	0.016
L39	1.84635 - 0 (39)	TP55x54.571x0.438	1'10-5/32"	0'	0.0	39.000	75.171	-46.03	2931.69	0.016

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	182 - 177 (1)	TP15.678x14.5x0.25	10.90	2.830	39.000	0.073	0.00	0.000	39.000	0.000
L2	177 - 172 (2)	TP16.856x15.678x0.25	20.56	4.602	39.000	0.118	0.00	0.000	39.000	0.000
L3	172 - 167 (3)	TP18.033x16.856x0.25	38.47	7.500	39.000	0.192	0.00	0.000	39.000	0.000
L4	167 - 162 (4)	TP19.211x18.033x0.25	71.04	12.173	39.000	0.312	0.00	0.000	39.000	0.000
L5	162 - 157 (5)	TP20.389x19.211x0.25	114.77	17.421	39.000	0.447	0.00	0.000	39.000	0.000
L6	157 - 152 (6)	TP21.567x20.389x0.25	166.34	22.521	39.000	0.577	0.00	0.000	39.000	0.000
L7	152 - 147 (7)	TP22.745x21.567x0.25	219.30	26.647	39.000	0.683	0.00	0.000	39.000	0.000
L8	147 - 142 (8)	TP23.922x22.745x0.25	274.64	30.117	39.000	0.772	0.00	0.000	39.000	0.000
L9	142 - 137 (9)	TP25.1x23.922x0.25	350.15	34.827	39.000	0.893	0.00	0.000	39.000	0.000
L10	137 - 133.081 (10)	TP26.023x25.1x0.25	353.06	35.004	39.000	0.898	0.00	0.000	39.000	0.000
L11	133.081 - 131.833 (11)	TP25.806x24.639x0.375	441.42	28.078	39.000	0.720	0.00	0.000	39.000	0.000
L12	131.833 - 126.833 (12)	TP26.972x25.806x0.375	532.00	30.916	39.000	0.793	0.00	0.000	39.000	0.000
L13	126.833 - 121.833 (13)	TP28.139x26.972x0.375	624.71	33.298	39.000	0.854	0.00	0.000	39.000	0.000
L14	121.833 - 116.833 (14)	TP29.305x28.139x0.375	719.57	35.305	39.000	0.905	0.00	0.000	39.000	0.000
L15	116.833 - 111.833 (15)	TP30.472x29.305x0.375	816.60	37.001	39.000	0.949	0.00	0.000	39.000	0.000
L16	111.833 - 106.833 (16)	TP31.638x30.472x0.375	915.78	38.439	39.000	0.986	0.00	0.000	39.000	0.000

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 $\frac{f_{by}}{F_{by}}$
L17	106.833 - 101.833 (17)	TP32.805x31.638x0.375	1017.14	39.661	39.000	1.017	0.00	0.000	39.000	0.000
L18	101.833 - 96.8333 (18)	TP33.971x32.805x0.375	1120.66	40.699	39.000	1.044	0.00	0.000	39.000	0.000
L19	96.8333 - 87.4479 (19)	TP36.161x33.971x0.375	1212.78	41.478	39.000	1.064	0.00	0.000	39.000	0.000
L20	87.4479 - 86.4479 (20)	TP35.643x34.239x0.375	1356.27	44.674	39.000	1.145	0.00	0.000	39.000	0.000
L21	86.4479 - 85 (21)	TP35.98x35.643x0.375	1394.85	45.074	39.000	1.156	0.00	0.000	39.000	0.000
L22	85 - 80 (22)	TP37.145x35.98x0.54	1529.68	32.612	39.000	0.836	0.00	0.000	39.000	0.000
L23	80 - 75 (23)	TP38.311x37.145x0.53	1667.12	33.970	39.000	0.871	0.00	0.000	39.000	0.000
L24	75 - 74 (24)	TP38.544x38.311x0.53	1695.09	34.115	39.000	0.875	0.00	0.000	39.000	0.000
L25	74 - 69 (25)	TP39.709x38.544x0.525	1836.04	35.090	39.000	0.900	0.00	0.000	39.000	0.000
L26	69 - 64 (26)	TP40.874x39.709x0.52	1979.52	35.994	39.000	0.923	0.00	0.000	39.000	0.000
L27	64 - 59 (27)	TP42.04x40.874x0.515	2125.42	36.836	39.000	0.945	0.00	0.000	39.000	0.000
L28	59 - 54 (28)	TP43.205x42.04x0.51	2273.68	37.624	39.000	0.965	0.00	0.000	39.000	0.000
L29	54 - 42.8464 (29)	TP45.805x43.205x0.51	2421.98	37.994	39.000	0.974	0.00	0.000	39.000	0.000
L30	42.8464 - 41.8464 (30)	TP45.282x43.603x0.438	2643.72	46.125	39.000	1.183	0.00	0.000	39.000	0.000
L31	41.8464 - 36.8464 (31)	TP46.443x45.282x0.438	2799.68	46.401	39.000	1.190	0.00	0.000	39.000	0.000
L32	36.8464 - 31.8464 (32)	TP47.604x46.443x0.438	2957.30	46.618	39.000	1.195	0.00	0.000	39.000	0.000
L33	31.8464 - 26.8464 (33)	TP48.765x47.604x0.438	3116.53	46.786	39.000	1.200	0.00	0.000	39.000	0.000
L34	26.8464 - 21.8464 (34)	TP49.926x48.765x0.438	3277.34	46.908	39.000	1.203	0.00	0.000	39.000	0.000
L35	21.8464 - 16.8464 (35)	TP51.088x49.926x0.438	3439.76	46.992	39.000	1.205	0.00	0.000	39.000	0.000
L36	16.8464 - 11.8464 (36)	TP52.249x51.088x0.438	3603.78	47.042	39.000	1.206	0.00	0.000	39.000	0.000
L37	11.8464 - 6.84635 (37)	TP53.41x52.249x0.438	3769.43	47.062	39.000	1.207	0.00	0.000	39.000	0.000
L38	6.84635 - 1.84635 (38)	TP54.571x53.41x0.438	3869.58	47.061	39.000	1.207	0.00	0.000	39.000	0.000
L39	1.84635 - 0 (39)	TP55x54.571x0.438	3936.68	47.056	39.000	1.207	0.00	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	182 - 177 (1)	TP15.678x14.5x0.25	1.82	0.149	26.000	0.011	0.02	0.002	26.000	0.000
L2	177 - 172 (2)	TP16.856x15.678x0.25	2.05	0.155	26.000	0.012	0.02	0.002	26.000	0.000
L3	172 - 167 (3)	TP18.033x16.856x0.25	6.37	0.451	26.000	0.035	0.22	0.021	26.000	0.001
L4	167 - 162 (4)	TP19.211x18.033x0.25	6.67	0.443	26.000	0.034	0.22	0.019	26.000	0.001
L5	162 - 157 (5)	TP20.389x19.211x0.25	10.18	0.637	26.000	0.049	0.22	0.016	26.000	0.001
L6	157 - 152 (6)	TP21.567x20.389x0.25	10.45	0.618	26.000	0.048	0.22	0.015	26.000	0.001
L7	152 - 147 (7)	TP22.745x21.567x0.25	10.73	0.601	26.000	0.046	0.22	0.013	26.000	0.001
L8	147 - 142 (8)	TP23.922x22.745x0.25	11.64	0.620	26.000	0.048	0.75	0.040	26.000	0.002
L9	142 - 137 (9)	TP25.1x23.922x0.25	17.42	0.883	26.000	0.068	0.94	0.046	26.000	0.002
L10	137 - 133.081 (10)	TP26.023x25.1x0.25	17.43	0.883	26.000	0.068	0.94	0.045	26.000	0.002
L11	133.081 - 131.833 (11)	TP25.806x24.639x0.375	17.90	0.591	26.000	0.045	0.96	0.030	26.000	0.001

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 $\frac{f_{vt}}{F_{vt}}$
L12	131.833 - 126.833 (12)	TP26.972x25.806x0.375	18.33	0.579	26.000	0.045	0.98	0.028	26.000	0.001
L13	126.833 - 121.833 (13)	TP28.139x26.972x0.375	18.76	0.568	26.000	0.044	1.00	0.026	26.000	0.001
L14	121.833 - 116.833 (14)	TP29.305x28.139x0.375	19.19	0.557	26.000	0.043	1.02	0.024	26.000	0.001
L15	116.833 - 111.833 (15)	TP30.472x29.305x0.375	19.62	0.548	26.000	0.042	1.04	0.023	26.000	0.001
L16	111.833 - 106.833 (16)	TP31.638x30.472x0.375	20.05	0.539	26.000	0.041	1.06	0.022	26.000	0.001
L17	106.833 - 101.833 (17)	TP32.805x31.638x0.375	20.49	0.531	26.000	0.041	1.08	0.020	26.000	0.001
L18	101.833 - 96.8333 (18)	TP33.971x32.805x0.375	20.92	0.523	26.000	0.040	1.10	0.019	26.000	0.001
L19	96.8333 - 87.4479 (19)	TP36.161x33.971x0.375	21.30	0.517	26.000	0.040	1.12	0.019	26.000	0.001
L20	87.4479 - 86.4479 (20)	TP35.643x34.239x0.375	26.58	0.633	26.000	0.049	1.43	0.023	26.000	0.001
L21	86.4479 - 85 (21)	TP35.98x35.643x0.375	26.72	0.630	26.000	0.048	1.44	0.023	26.000	0.001
L22	85 - 80 (22)	TP37.145x35.98x0.54	27.22	0.434	26.000	0.033	1.47	0.015	26.000	0.001
L23	80 - 75 (23)	TP38.311x37.145x0.53	27.75	0.437	26.000	0.034	1.50	0.015	26.000	0.001
L24	75 - 74 (24)	TP38.544x38.311x0.53	27.93	0.437	26.000	0.034	1.30	0.013	26.000	0.000
L25	74 - 69 (25)	TP39.709x38.544x0.525	28.45	0.436	26.000	0.034	1.33	0.012	26.000	0.000
L26	69 - 64 (26)	TP40.874x39.709x0.52	28.94	0.435	26.000	0.033	1.36	0.012	26.000	0.000
L27	64 - 59 (27)	TP42.04x40.874x0.515	29.42	0.433	26.000	0.033	1.40	0.012	26.000	0.000
L28	59 - 54 (28)	TP43.205x42.04x0.51	29.89	0.432	26.000	0.033	1.43	0.011	26.000	0.000
L29	54 - 42.8464 (29)	TP45.805x43.205x0.51	30.31	0.427	26.000	0.033	1.45	0.011	26.000	0.000
L30	42.8464 - 41.8464 (30)	TP45.282x43.603x0.438	31.03	0.498	26.000	0.038	1.49	0.013	26.000	0.000
L31	41.8464 - 36.8464 (31)	TP46.443x45.282x0.438	31.37	0.491	26.000	0.038	1.52	0.012	26.000	0.000
L32	36.8464 - 31.8464 (32)	TP47.604x46.443x0.438	31.69	0.484	26.000	0.037	1.54	0.012	26.000	0.000
L33	31.8464 - 26.8464 (33)	TP48.765x47.604x0.438	32.01	0.477	26.000	0.037	1.56	0.011	26.000	0.000
L34	26.8464 - 21.8464 (34)	TP49.926x48.765x0.438	32.33	0.470	26.000	0.036	1.58	0.011	26.000	0.000
L35	21.8464 - 16.8464 (35)	TP51.088x49.926x0.438	32.65	0.464	26.000	0.036	1.61	0.011	26.000	0.000
L36	16.8464 - 11.8464 (36)	TP52.249x51.088x0.438	32.97	0.458	26.000	0.035	1.63	0.010	26.000	0.000
L37	11.8464 - 6.84635 (37)	TP53.41x52.249x0.438	33.29	0.453	26.000	0.035	1.66	0.010	26.000	0.000
L38	6.84635 - 1.84635 (38)	TP54.571x53.41x0.438	33.55	0.450	26.000	0.034	1.68	0.010	26.000	0.000
L39	1.84635 - 0 (39)	TP55x54.571x0.438	33.75	0.449	26.000	0.034	1.69	0.010	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	182 - 177 (1)	0.001	0.073	0.000	0.011	0.000	0.074 ✔	1.333	H1-3+VT ✔
L2	177 - 172 (2)	0.001	0.118	0.000	0.012	0.000	0.119 ✔	1.333	H1-3+VT ✔
L3	172 - 167 (3)	0.004	0.192	0.000	0.035	0.001	0.197 ✔	1.333	H1-3+VT ✔
L4	167 - 162 (4)	0.004	0.312	0.000	0.034	0.001	0.317	1.333	H1-3+VT ✔

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
L5	162 - 157 (5)	0.007	0.447	0.000	0.049	0.001	0.454	1.333	H1-3+VT
L6	157 - 152 (6)	0.007	0.577	0.000	0.048	0.001	0.585	1.333	H1-3+VT
L7	152 - 147 (7)	0.008	0.683	0.000	0.046	0.001	0.691	1.333	H1-3+VT
L8	147 - 142 (8)	0.008	0.772	0.000	0.048	0.002	0.781	1.333	H1-3+VT
L9	142 - 137 (9)	0.011	0.893	0.000	0.068	0.002	0.905	1.333	H1-3+VT
L10	137 - 133.081 (10)	0.011	0.898	0.000	0.068	0.002	0.910	1.333	H1-3+VT
L11	133.081 - 131.833 (11)	0.008	0.720	0.000	0.045	0.001	0.729	1.333	H1-3+VT
L12	131.833 - 126.833 (12)	0.008	0.793	0.000	0.045	0.001	0.802	1.333	H1-3+VT
L13	126.833 - 121.833 (13)	0.009	0.854	0.000	0.044	0.001	0.863	1.333	H1-3+VT
L14	121.833 - 116.833 (14)	0.009	0.905	0.000	0.043	0.001	0.915	1.333	H1-3+VT
L15	116.833 - 111.833 (15)	0.009	0.949	0.000	0.042	0.001	0.958	1.333	H1-3+VT
L16	111.833 - 106.833 (16)	0.009	0.986	0.000	0.041	0.001	0.995	1.333	H1-3+VT
L17	106.833 - 101.833 (17)	0.010	1.017	0.000	0.041	0.001	1.027	1.333	H1-3+VT
L18	101.833 - 96.8333 (18)	0.010	1.044	0.000	0.040	0.001	1.054	1.333	H1-3+VT
L19	96.8333 - 87.4479 (19)	0.010	1.064	0.000	0.040	0.001	1.074	1.333	H1-3+VT
L20	87.4479 - 86.4479 (20)	0.012	1.145	0.000	0.049	0.001	1.158	1.333	H1-3+VT
L21	86.4479 - 85 (21)	0.012	1.156	0.000	0.048	0.001	1.169	1.333	H1-3+VT
L22	85 - 80 (22)	0.009	0.836	0.000	0.033	0.001	0.845	1.333	H1-3+VT
L23	80 - 75 (23)	0.009	0.871	0.000	0.034	0.001	0.881	1.333	H1-3+VT
L24	75 - 74 (24)	0.009	0.875	0.000	0.034	0.000	0.884	1.333	H1-3+VT
L25	74 - 69 (25)	0.010	0.900	0.000	0.034	0.000	0.910	1.333	H1-3+VT
L26	69 - 64 (26)	0.010	0.923	0.000	0.033	0.000	0.933	1.333	H1-3+VT
L27	64 - 59 (27)	0.010	0.945	0.000	0.033	0.000	0.955	1.333	H1-3+VT
L28	59 - 54 (28)	0.011	0.965	0.000	0.033	0.000	0.976	1.333	H1-3+VT
L29	54 - 42.8464 (29)	0.011	0.974	0.000	0.033	0.000	0.985	1.333	H1-3+VT
L30	42.8464 - 41.8464 (30)	0.014	1.183	0.000	0.038	0.000	1.197	1.333	H1-3+VT
L31	41.8464 - 36.8464 (31)	0.014	1.190	0.000	0.038	0.000	1.204	1.333	H1-3+VT
L32	36.8464 - 31.8464 (32)	0.014	1.195	0.000	0.037	0.000	1.210	1.333	H1-3+VT
L33	31.8464 - 26.8464 (33)	0.015	1.200	0.000	0.037	0.000	1.215	1.333	H1-3+VT

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
L34	26.8464 - 21.8464 (34)	0.015	1.203	0.000	0.036	0.000	1.218 ✔	1.333	H1-3+VT ✔
L35	21.8464 - 16.8464 (35)	0.015	1.205	0.000	0.036	0.000	1.220 ✔	1.333	H1-3+VT ✔
L36	16.8464 - 11.8464 (36)	0.015	1.206	0.000	0.035	0.000	1.222 ✔	1.333	H1-3+VT ✔
L37	11.8464 - 6.84635 (37)	0.015	1.207	0.000	0.035	0.000	1.222 ✔	1.333	H1-3+VT ✔
L38	6.84635 - 1.84635 (38)	0.016	1.207	0.000	0.034	0.000	1.223 ✔	1.333	H1-3+VT ✔
L39	1.84635 - 0 (39)	0.016	1.207	0.000	0.034	0.000	1.223 ✔	1.333	H1-3+VT ✔

Section Capacity Table

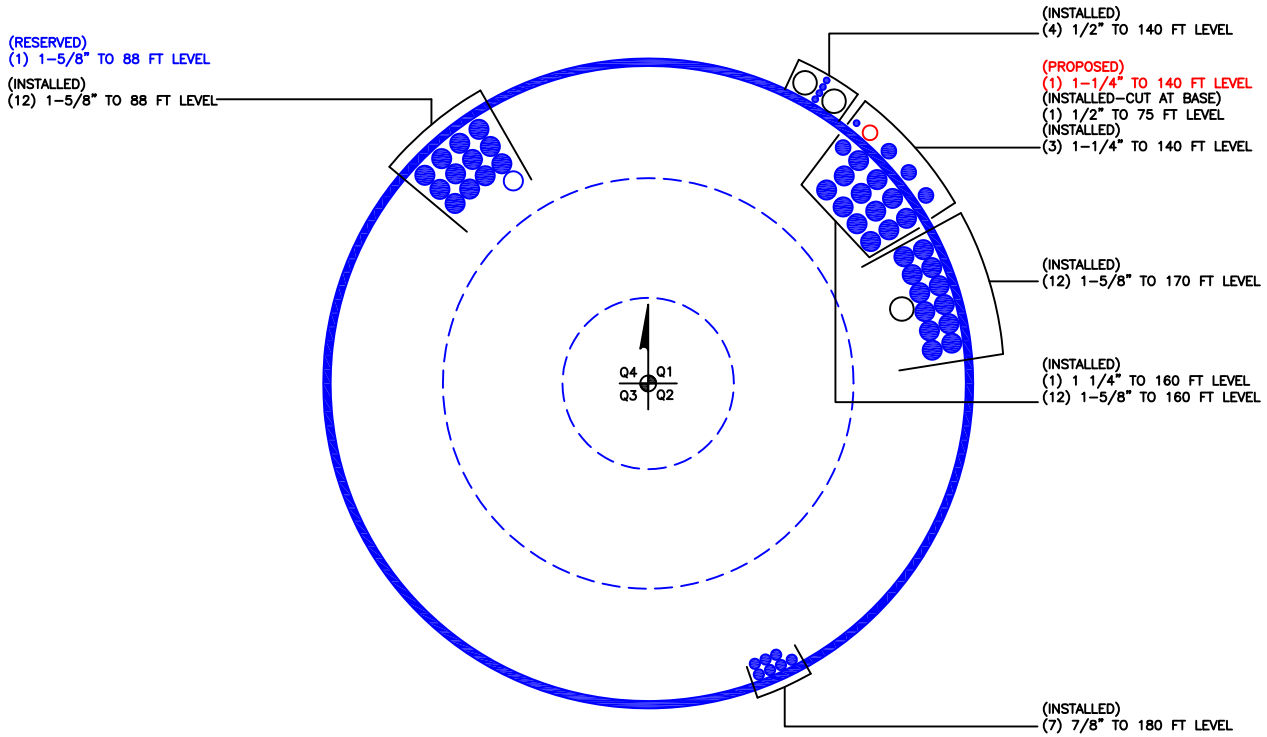
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
L1	182 - 177	Pole	TP15.678x14.5x0.25	1	-0.44	636.42	5.5	Pass
L2	177 - 172	Pole	TP16.856x15.678x0.25	2	-0.64	685.01	8.9	Pass
L3	172 - 167	Pole	TP18.033x16.856x0.25	3	-2.28	733.59	14.8	Pass
L4	167 - 162	Pole	TP19.211x18.033x0.25	4	-2.58	782.18	23.8	Pass
L5	162 - 157	Pole	TP20.389x19.211x0.25	5	-4.43	830.77	34.1	Pass
L6	157 - 152	Pole	TP21.567x20.389x0.25	6	-4.83	879.35	43.9	Pass
L7	152 - 147	Pole	TP22.745x21.567x0.25	7	-5.25	927.94	51.9	Pass
L8	147 - 142	Pole	TP23.922x22.745x0.25	8	-5.72	976.52	58.6	Pass
L9	142 - 137	Pole	TP25.1x23.922x0.25	9	-8.52	1025.11	67.9	Pass
L10	137 - 133.081	Pole	TP26.023x25.1x0.25	10	-8.55	1026.73	68.3	Pass
L11	133.081 - 131.833	Pole	TP25.806x24.639x0.375	11	-9.48	1573.59	54.7	Pass
L12	131.833 - 126.833	Pole	TP26.972x25.806x0.375	12	-10.21	1645.78	60.1	Pass
L13	126.833 - 121.833	Pole	TP28.139x26.972x0.375	13	-10.97	1717.96	64.7	Pass
L14	121.833 - 116.833	Pole	TP29.305x28.139x0.375	14	-11.77	1790.13	68.6	Pass
L15	116.833 - 111.833	Pole	TP30.472x29.305x0.375	15	-12.59	1862.31	71.9	Pass
L16	111.833 - 106.833	Pole	TP31.638x30.472x0.375	16	-13.44	1934.49	74.7	Pass
L17	106.833 - 101.833	Pole	TP32.805x31.638x0.375	17	-14.31	2006.66	77.0	Pass
L18	101.833 - 96.8333	Pole	TP33.971x32.805x0.375	18	-15.22	2078.84	79.1	Pass
L19	96.8333 - 87.4479	Pole	TP36.161x33.971x0.375	19	-16.03	2141.85	80.6	Pass
L20	87.4479 - 86.4479	Pole	TP35.643x34.239x0.375	20	-19.90	2182.27	86.9	Pass
L21	86.4479 - 85	Pole	TP35.98x35.643x0.375	21	-20.20	2203.16	87.7	Pass
L22	85 - 80	Pole	TP37.145x35.98x0.54	22	-21.53	3261.66	63.4	Pass
L23	80 - 75	Pole	TP38.311x37.145x0.53	23	-22.88	3304.05	66.1	Pass
L24	75 - 74	Pole	TP38.544x38.311x0.53	24	-23.21	3324.44	66.3	Pass
L25	74 - 69	Pole	TP39.709x38.544x0.525	25	-24.60	3394.46	68.2	Pass
L26	69 - 64	Pole	TP40.874x39.709x0.52	26	-26.01	3462.55	70.0	Pass
L27	64 - 59	Pole	TP42.04x40.874x0.515	27	-27.45	3528.72	71.7	Pass
L28	59 - 54	Pole	TP43.205x42.04x0.51	28	-28.92	3592.94	73.2	Pass
L29	54 - 42.8464	Pole	TP45.805x43.205x0.51	29	-30.39	3689.58	73.9	Pass
L30	42.8464 - 41.8464	Pole	TP45.282x43.603x0.438	30	-33.81	3237.32	89.8	Pass
L31	41.8464 - 36.8464	Pole	TP46.443x45.282x0.438	31	-35.23	3321.16	90.3	Pass
L32	36.8464 -	Pole	TP47.604x46.443x0.438	32	-36.69	3404.98	90.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
	31.8464							
L33	31.8464 - 26.8464	Pole	TP48.765x47.604x0.438	33	-38.17	3488.81	91.1	Pass
L34	26.8464 - 21.8464	Pole	TP49.926x48.765x0.438	34	-39.68	3572.63	91.4	Pass
L35	21.8464 - 16.8464	Pole	TP51.088x49.926x0.438	35	-41.22	3656.46	91.5	Pass
L36	16.8464 - 11.8464	Pole	TP52.249x51.088x0.438	36	-42.78	3740.28	91.7	Pass
L37	11.8464 - 6.84635	Pole	TP53.41x52.249x0.438	37	-44.38	3824.11	91.7	Pass
L38	6.84635 - 1.84635	Pole	TP54.571x53.41x0.438	38	-45.37	3874.40	91.7	Pass
L39	1.84635 - 0	Pole	TP55x54.571x0.438	39	-46.03	3907.94	91.7	Pass
							Summary	
						Pole (L38)	91.7	Pass
						RATING =	**91.7**	**Pass**

NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842872 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- F

Site BU: 842872

Work Order: 780286

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	182.000001	48.919271	3.752604	18	14.5	26.0233	0.25	1	A572-65
2	136.833334	49.385417	5.020833	18	24.64	36.1606	0.375	1.5	A572-65
3	92.46875	49.622396	6.226563	18	34.24	45.8047	0.375	1.5	A572-65
4	49.072917	49.072917	0	18	43.60	55	0.4375	1.75	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	49	74	plate	5-3/4" x 1" plate	3																		
2	74	85	plate	5-3/4" x 1" plate	3																		
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	I_x (in^4)	I_y (in^4)	L_u (in)	Connection Length (in)	Bolt Hole Size (in)	Reinforcement Material
1	5.75	1	5.75	0.5	0.479	15.842	14.000	n/a	1.1875	A572-65
2	5.75	1	5.75	0.5	0.479	15.842	14.000	n/a	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	182 - 177	5		18	14.500	15.678	0.25	A572-65	1.000
2	177 - 172	5		18	15.678	16.856	0.25	A572-65	1.000
3	172 - 167	5		18	16.856	18.033	0.25	A572-65	1.000
4	167 - 162	5		18	18.033	19.211	0.25	A572-65	1.000
5	162 - 157	5		18	19.211	20.389	0.25	A572-65	1.000
6	157 - 152	5		18	20.389	21.567	0.25	A572-65	1.000
7	152 - 147	5		18	21.567	22.745	0.25	A572-65	1.000
8	147 - 142	5		18	22.745	23.922	0.25	A572-65	1.000
9	142 - 137	5		18	23.922	25.100	0.25	A572-65	1.000
10	137 - 136.8333	3.919271	3.752604	18	25.100	26.023	0.25	A572-65	1.000
11	136.8333 - 131.8333	5		18	24.639	25.806	0.375	A572-65	1.000
12	131.8333 - 126.8333	5		18	25.806	26.972	0.375	A572-65	1.000
13	126.8333 - 121.8333	5		18	26.972	28.139	0.375	A572-65	1.000
14	121.8333 - 116.8333	5		18	28.139	29.305	0.375	A572-65	1.000
15	116.8333 - 111.8333	5		18	29.305	30.472	0.375	A572-65	1.000
16	111.8333 - 106.8333	5		18	30.472	31.638	0.375	A572-65	1.000
17	106.8333 - 101.8333	5		18	31.638	32.805	0.375	A572-65	1.000
18	101.8333 - 96.83333	5		18	32.805	33.971	0.375	A572-65	1.000
19	96.83333 - 92.46875	9.385417	5.020833	18	33.971	36.161	0.375	A572-65	1.000
20	92.46875 - 86.44792	6.020833		18	34.239	35.643	0.375	A572-65	1.000
21	86.44792 - 85	1.447917		18	35.643	35.980	0.375	A572-65	1.000
22	85 - 80	5		18	35.980	37.145	0.54	A572-65	0.973
23	80 - 75	5		18	37.145	38.311	0.53	A572-65	0.982
24	75 - 74	1		18	38.311	38.544	0.53	A572-65	0.980
25	74 - 69	5		18	38.544	39.709	0.525	A572-65	0.981
26	69 - 64	5		18	39.709	40.874	0.52	A572-65	0.983
27	64 - 59	5		18	40.874	42.040	0.515	A572-65	0.985
28	59 - 54	5		18	42.040	43.205	0.51	A572-65	0.987
29	54 - 49.07292	11.153646	6.226563	18	43.205	45.805	0.51	A572-65	0.981
30	49.07292 - 41.84635	7.226563		18	43.603	45.282	0.4375	A572-65	1.000
31	41.84635 - 36.84635	5		18	45.282	46.443	0.4375	A572-65	1.000
32	36.84635 - 31.84635	5		18	46.443	47.604	0.4375	A572-65	1.000
33	31.84635 - 26.84635	5		18	47.604	48.765	0.4375	A572-65	1.000
34	26.84635 - 21.84635	5		18	48.765	49.926	0.4375	A572-65	1.000
35	21.84635 - 16.84635	5		18	49.926	51.088	0.4375	A572-65	1.000
36	16.84635 - 11.84635	5		18	51.088	52.249	0.4375	A572-65	1.000
37	11.84635 - 6.846354	5		18	52.249	53.410	0.4375	A572-65	1.000
38	6.846354 - 1.846354	5		18	53.410	54.571	0.4375	A572-65	1.000
39	1.846354 - 0	1.846354		18	54.571	55.000	0.4375	A572-65	1.000

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	182 - 177	0.4379	10.9	1.8211
2	177 - 172	0.6396	20.558	2.0452
3	172 - 167	2.2799	38.465	6.368
4	167 - 162	2.5775	71.038	6.6669
5	162 - 157	4.4287	114.77	10.18
6	157 - 152	4.8282	166.34	10.454
7	152 - 147	5.2514	219.3	10.734
8	147 - 142	5.7192	274.64	11.639
9	142 - 137	8.5239	350.15	17.42
10	137 - 136.8333	8.5507	353.06	17.43
11	136.8333 - 131.8333	9.4755	441.42	17.901
12	131.8333 - 126.8333	10.21	531.99	18.328
13	126.8333 - 121.8333	10.973	624.71	18.757
14	121.8333 - 116.8333	11.766	719.57	19.189
15	116.8333 - 111.8333	12.587	816.6	19.621
16	111.8333 - 106.8333	13.437	915.78	20.054
17	106.8333 - 101.8333	14.313	1017.1	20.488
18	101.8333 - 96.83333	15.217	1120.7	20.921
19	96.83333 - 92.46875	16.031	1212.8	21.295
20	92.46875 - 86.44792	19.896	1356.3	26.577
21	86.44792 - 85	20.196	1394.8	26.718
22	85 - 80	21.529	1529.7	27.223
23	80 - 75	22.965	1667.2	27.798
24	75 - 74	23.215	1695.1	27.93
25	74 - 69	24.599	1836	28.451
26	69 - 64	26.012	1979.5	28.94
27	64 - 59	27.452	2125.4	29.42
28	59 - 54	28.919	2273.7	29.889
29	54 - 49.07292	30.389	2422	30.313
30	49.07292 - 41.84635	33.807	2643.7	31.028
31	41.84635 - 36.84635	35.233	2799.7	31.366
32	36.84635 - 31.84635	36.687	2957.3	31.689
33	31.84635 - 26.84635	38.17	3116.5	32.007
34	26.84635 - 21.84635	39.68	3277.3	32.327
35	21.84635 - 16.84635	41.217	3439.8	32.648
36	16.84635 - 11.84635	42.782	3603.8	32.97
37	11.84635 - 6.846354	44.375	3769.4	33.293
38	6.846354 - 1.846354	45.996	3936.7	33.618
39	1.846354 - 0	46.6	3998.9	33.8

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
182 - 177	Pole	TP15.678x14.5x0.25	Pole	5.5%	Pass
177 - 172	Pole	TP16.856x15.678x0.25	Pole	8.9%	Pass
172 - 167	Pole	TP18.033x16.856x0.25	Pole	14.7%	Pass
167 - 162	Pole	TP19.211x18.033x0.25	Pole	23.7%	Pass
162 - 157	Pole	TP20.389x19.211x0.25	Pole	34.0%	Pass
157 - 152	Pole	TP21.567x20.389x0.25	Pole	43.8%	Pass
152 - 147	Pole	TP22.745x21.567x0.25	Pole	51.8%	Pass
147 - 142	Pole	TP23.922x22.745x0.25	Pole	58.5%	Pass
142 - 137	Pole	TP25.1x23.922x0.25	Pole	67.8%	Pass
137 - 136.83	Pole	TP26.023x25.1x0.25	Pole	68.1%	Pass
136.83 - 131.83	Pole	TP25.806x24.639x0.375	Pole	54.6%	Pass
131.83 - 126.83	Pole	TP26.972x25.806x0.375	Pole	60.0%	Pass
126.83 - 121.83	Pole	TP28.139x26.972x0.375	Pole	64.6%	Pass
121.83 - 116.83	Pole	TP29.305x28.139x0.375	Pole	68.5%	Pass
116.83 - 111.83	Pole	TP30.472x29.305x0.375	Pole	71.8%	Pass
111.83 - 106.83	Pole	TP31.638x30.472x0.375	Pole	74.6%	Pass
106.83 - 101.83	Pole	TP32.805x31.638x0.375	Pole	76.9%	Pass
101.83 - 96.83	Pole	TP33.971x32.805x0.375	Pole	79.0%	Pass
96.83 - 92.47	Pole	TP36.161x33.971x0.375	Pole	80.5%	Pass
92.47 - 86.45	Pole	TP35.643x34.239x0.375	Pole	86.8%	Pass
86.45 - 85	Pole	TP35.98x35.643x0.375	Pole	87.6%	Pass
85 - 80	Pole + Reinf.	TP37.145x35.98x0.54	Reinf. 2 Tension Rupture	79.6%	Pass
80 - 75	Pole + Reinf.	TP38.311x37.145x0.53	Reinf. 2 Tension Rupture	82.2%	Pass
75 - 74	Pole + Reinf.	TP38.544x38.311x0.53	Reinf. 2 Tension Rupture	82.7%	Pass
74 - 69	Pole + Reinf.	TP39.709x38.544x0.525	Reinf. 1 Tension Rupture	85.1%	Pass
69 - 64	Pole + Reinf.	TP40.874x39.709x0.52	Reinf. 1 Tension Rupture	87.2%	Pass
64 - 59	Pole + Reinf.	TP42.04x40.874x0.515	Reinf. 1 Tension Rupture	89.1%	Pass
59 - 54	Pole + Reinf.	TP43.205x42.04x0.51	Reinf. 1 Tension Rupture	90.9%	Pass
54 - 49.07	Pole + Reinf.	TP45.805x43.205x0.51	Reinf. 1 Tension Rupture	92.4%	Pass
49.07 - 41.85	Pole	TP45.282x43.603x0.4375	Pole	89.7%	Pass
41.85 - 36.85	Pole	TP46.443x45.282x0.4375	Pole	90.2%	Pass
36.85 - 31.85	Pole	TP47.604x46.443x0.4375	Pole	90.7%	Pass
31.85 - 26.85	Pole	TP48.765x47.604x0.4375	Pole	91.0%	Pass
26.85 - 21.85	Pole	TP49.926x48.765x0.4375	Pole	91.3%	Pass
21.85 - 16.85	Pole	TP51.088x49.926x0.4375	Pole	91.5%	Pass
16.85 - 11.85	Pole	TP52.249x51.088x0.4375	Pole	91.6%	Pass
11.85 - 6.85	Pole	TP53.41x52.249x0.4375	Pole	91.6%	Pass
6.85 - 1.85	Pole	TP54.571x53.41x0.4375	Pole	91.6%	Pass
1.85 - 0	Pole	TP55x54.571x0.4375	Pole	91.6%	Pass
				Summary	
			Pole	91.6%	Pass
			Reinforcement	92.4%	Pass
			Overall	92.4%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity		
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2
182 - 177	368	n/a	368	12.24	n/a	12.24	5.5%		
177 - 172	459	n/a	459	13.18	n/a	13.18	8.9%		
172 - 167	564	n/a	564	14.11	n/a	14.11	14.7%		
167 - 162	683	n/a	683	15.05	n/a	15.05	23.7%		
162 - 157	819	n/a	819	15.98	n/a	15.98	34.0%		
157 - 152	971	n/a	971	16.91	n/a	16.91	43.8%		
152 - 147	1141	n/a	1141	17.85	n/a	17.85	51.8%		
147 - 142	1329	n/a	1329	18.78	n/a	18.78	58.5%		
142 - 137	1538	n/a	1538	19.72	n/a	19.72	67.8%		
137 - 136.83	1545	n/a	1545	19.75	n/a	19.75	68.1%		
136.83 - 131.83	2472	n/a	2472	30.27	n/a	30.27	54.6%		
131.83 - 126.83	2828	n/a	2828	31.66	n/a	31.66	60.0%		
126.83 - 121.83	3217	n/a	3217	33.04	n/a	33.04	64.6%		
121.83 - 116.83	3640	n/a	3640	34.43	n/a	34.43	68.5%		
116.83 - 111.83	4098	n/a	4098	35.82	n/a	35.82	71.8%		
111.83 - 106.83	4593	n/a	4593	37.21	n/a	37.21	74.6%		
106.83 - 101.83	5127	n/a	5127	38.60	n/a	38.60	76.9%		
101.83 - 96.83	5700	n/a	5700	39.99	n/a	39.99	79.0%		
96.83 - 92.47	6234	n/a	6234	41.20	n/a	41.20	80.5%		
92.47 - 86.45	6594	n/a	6594	41.98	n/a	41.98	86.8%		
86.45 - 85	6785	n/a	6785	42.38	n/a	42.38	87.6%		
85 - 80	7473	3162	10635	43.76	17.25	61.01	62.4%		79.6%
80 - 75	8207	3357	11563	45.15	17.25	62.40	64.5%		82.2%
75 - 74	8359	3396	11755	45.43	17.25	62.68	64.9%		82.7%
74 - 69	9148	3598	12746	46.82	17.25	64.07	66.8%	85.1%	
69 - 64	9986	3805	13791	48.20	17.25	65.45	68.5%	87.2%	
64 - 59	10873	4019	14891	49.59	17.25	66.84	70.1%	89.1%	
59 - 54	11811	4238	16049	50.98	17.25	68.23	71.5%	90.9%	
54 - 49.07	12786	4460	17246	52.34	17.25	69.59	72.7%	92.4%	
49.07 - 41.85	15816	n/a	15816	62.27	n/a	62.27	89.7%		
41.85 - 36.85	17076	n/a	17076	63.88	n/a	63.88	90.2%		
36.85 - 31.85	18402	n/a	18402	65.49	n/a	65.49	90.7%		
31.85 - 26.85	19795	n/a	19795	67.11	n/a	67.11	91.0%		
26.85 - 21.85	21257	n/a	21257	68.72	n/a	68.72	91.3%		
21.85 - 16.85	22788	n/a	22788	70.33	n/a	70.33	91.5%		
16.85 - 11.85	24392	n/a	24392	71.94	n/a	71.94	91.6%		
11.85 - 6.85	26069	n/a	26069	73.56	n/a	73.56	91.6%		
6.85 - 1.85	27821	n/a	27821	75.17	n/a	75.17	91.6%		
1.85 - 0	28487	n/a	28487	75.76	n/a	75.76	91.6%		

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

TIA Rev F

Site Data

BU#:	*842872*
Site Name:	*Rocky Hill*
App #:	*248936, Rev. 1*
Pole Manufacturer:	*Other*

Reactions		
Moment:	3999	ft-kips
Axial:	47	kips
Shear:	34	kips

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	64	in

Plate Data		
Diam:	70	in
Thick:	2	in
Grade:	60	ksi
Single-Rod B-eff:	10.91	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Both	
Groove Depth:	0.5	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.5	in
Fillet V. Weld:	0.375	in
Width:	6.5	in
Height:	36	in
Thick:	1.25	in
Notch:	0.75	in
Grade:	65	ksi
Weld str.:	80	ksi

Pole Data		
Diam:	55	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

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

Anchor Rod Results

		Stiffened
Maximum Rod Tension:	184.5 Kips	Service, ASD
Allowable Tension:	195.0 Kips	Fty*ASIF
Anchor Rod Stress Ratio:	94.7% **Pass**	

Base Plate Results

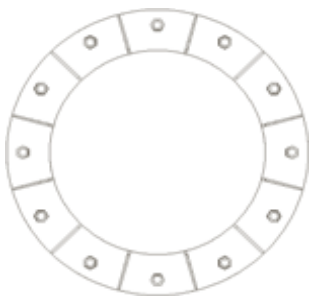
	Flexural Check	Stiffened
Base Plate Stress:	47.4 ksi	Service, ASD
Allowable Plate Stress:	60.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	79.1% **Pass**	Y.L. Length: N/A, Roark

Stiffener Results

Horizontal Weld :	66.9% **Pass**
Vertical Weld:	22.5% **Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	2.4% **Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	35.1% **Pass**
Plate Comp. (AISC Bracket):	29.6% **Pass**

Pole Results

Pole Punching Shear Check:	3.6% **Pass**



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

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

Monopole Drilled Pier

Checks capacity of a single drilled shaft foundation for a monopole

BU#: 842872
Site Name: *ROCKY HILL*
App Number: *248936 Rev. 1*

ACI 318 Version:	2002

Design Reactions		
Shear, **S**:	34.00	kips
Moment, **Mt**:	3999.00	ft-kips
Tower Weight, **Wt**:	47.00	kips
Tower Height, **H**:	182	ft
Base Diameter, **BD**:	55.0	in

Foundation Dimensions		
Caisson Diameter, **CD**:	7.0	ft
Ext. Above Grade, **E**:	1.0	ft
Depth Below Grade, **L**:	17.5	ft
Neglected Depth, **N**:	3.5	ft
Rebar Size, **Sp**:	11	
Rebar Quantity, **mp**:	24	
Tie Size, **tp**:	4	

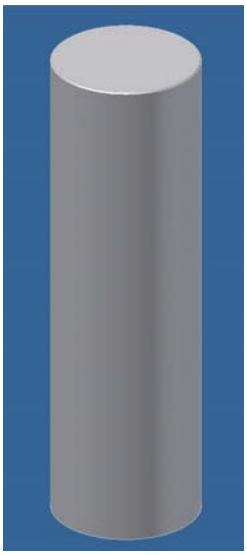
Material Properties		
Rebar Tensile, **Fy**:	60	ksi
Concrete Strength, **F'c**:	3000	psi
Concrete Density, δ**x**:	120	pcf
Clear Cover, **cc**:	5	in

Soil Properties		
Soil Unit Weight, γ:	84	pcf
Allowable Bearing, **Bc**:	16.97	ksf
Seismic Design Cat, **z**:	B	

L-Pile Analysis		
Depth to Point of Zero Shear, **f**:	6.29	ft
Maximum Moment, **Mmax**:	4166.29	ft-kips
Factored Moment, **Mn**:	5416.18	ft-kips

Design Checks	*Capacity/ Availability*	*Demand/ Limits*	*Check*
Minimum Req'd Dia. 1 (ft):	7.00	1.88	**OK**
Minimum Req'd Dia. 2 (ft):	7.00	6.08	**Acceptable**
Bearing (ksf):	16.97	1.22	**OK**
Rebar Area (in^2):	37.44	18.47	**OK**
Pier moment capacity (k-ft):	5755.37	5416.18	**OK**
Rebar spacing (in):	8.21	2 < Bs <18	**OK**
Development Length (in):	129.27	12.00	**OK**

☐ **Assume 0.33% Minimum Steel?**



Bearing: 7.2%

Steel: 94.1%

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

BU#: *842872*
Site Name: *ROCKY HILL*
App #: *248936 Rev. 1*

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Pier Properties

Concrete:

Pier Diameter =	7.0	ft
Concrete Area =	5541.8	in^2

Reinforcement:

Clear Cover to **Tie**=	5.25	in
Horiz. **Tie** Bar Size=	4	
Vert. Cage Diameter =	5.92	ft
Vert. Cage Diameter =	71.09	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	24	
As Total=	37.44	in^2
A s/ Aconc, Rho:	0.0068	0.68%

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:
(3)*(Sqrt(f'c)/Fy: 0.0027
200 / Fy: 0.0033

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.68%	**OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	8466.87	kips
at Mu=(ϕ=0.65)Mn=	5076.28	ft-kips
Max Tu, (φ=0.9) Tn =	2021.76	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Maximum Shaft Superimposed Forces

TIA Revision:	F	
Max. Service Shaft M:	4166.292	ft-kips **(* Note)**
Max. Service Shaft P:	47	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Load Factor	**Shaft Factored Loads**		
1.30	Mu:	5416.179	ft-kips
1.30	Pu:	61.1	kips

Material Properties

Concrete Comp. strength, f'c =	3000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	

ACI 318 Code

Select Analysis ACI Code=	2002

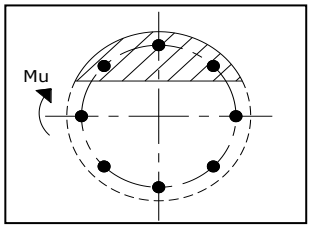
Seismic Properties

Seismic Design Category =	B
Seismic Risk =	**Low**

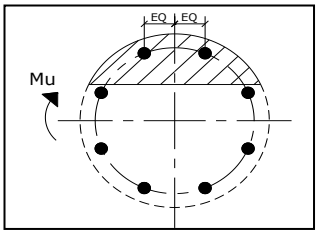
Solve (Run) <-- Press Upon Completing All Input

Results:

Governing Orientation Case: **2**



Case 1



Case 2

Dist. From Edge to Neutral Axis:	**15.26**	in
Extreme Steel Strain, ϵt:	**0.0122**	
ϵt > 0.0050, Tension Controlled		
Reduction Factor,φ:	**0.900**	

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	61.10	kips
Drilled Shaft Moment Capacity, φMn:	**5755.37**	ft-kips
Drilled Shaft Superimposed Mu:	**5416.18**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**94.1%**

LPile Plus for Windows, Version 6 (6.0.28)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

This copy of LPile is licensed to:

Crown Castle USA
Crown Castle USA

Serial Number of Security Device: 295890788
Company Name Stored in Security Device: Crown Castle

Files Used for Analysis

Path to file locations: X:\ENG Work Area\BClinton\842872\
Name of input data file: 842872 New LPile (USCS units).lp6d
Name of output report file: 842872 New LPile (USCS units).lp6o
Name of plot output file: 842872 New LPile (USCS units).lp6p
Name of runtime messeage file: 842872 New LPile (USCS units).lp6r

Date and Time of Analysis

Date: June 26, 2014 Time: 9:51:06

Problem Title

Project Name: 842872

Job Number: 780286

Client:

Engineer:

Description:

Program Options

Engineering units are US Customary Units: pounds, inches, feet

Basic Program Options:

This analysis computes pile response to lateral loading and will compute nonlinear moment-curvature and nominal moment capacity for selected section types.

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No p-y curves to be computed and output for user-specified depths

Solution Control Parameters:
- Number of pile increments = 100
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in

Pile Response Output Options:
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1

Pile Structural Properties and Geometry

Total Number of Sections = 1

Total Pile Length = 18.50 ft

Depth of ground surface below top of pile = 1.00 ft

Pile dimensions used for p-y curve computations defined using 2 points.
p-y curves are computed using values of pile diameter interpolated over the length of the pile.

Point	Depth X ft	Pile Diameter in
1	0.00000	84.0000000
2	18.500000	84.0000000

Input Structural Properties:

Pile Section No. 1:

Section Type	= Drilled Shaft (Bored Pile)
Section Length	= 18.500 ft
Section Diameter	= 84.000 in

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 5 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 1.000 ft
Distance from top of pile to bottom of layer = 4.000 ft
NOTE: Internal default values for p-y subgrade modulus will be computed for the above soil layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 4.000 ft
Distance from top of pile to bottom of layer = 6.000 ft
NOTE: Internal default values for p-y subgrade modulus will be computed for the above soil layer.

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 6.000 ft
Distance from top of pile to bottom of layer = 8.000 ft
NOTE: Internal default values for p-y subgrade modulus will be computed for the above soil layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 8.000 ft
Distance from top of pile to bottom of layer = 9.500 ft
NOTE: Internal default values for p-y subgrade modulus will be computed for the above soil layer.

Layer 5 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 9.500 ft
Distance from top of pile to bottom of layer = 18.500 ft
NOTE: Internal default values for p-y subgrade modulus will be computed for the above soil layer.

(Depth of lowest layer extends 0.00 ft below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 10 points

Point No.	Depth X ft	Eff. Unit Weight pcf
1	1.00	109.00000
2	4.00	109.00000
3	4.00	112.00000
4	6.00	112.00000
5	6.00	109.00000
6	8.00	109.00000
7	8.00	122.00000
8	9.50	122.00000
9	9.50	60.00000
10	18.50	60.00000

Summary of Soil Properties

Layer Num.	Soil Type (p-y Curve Criteria)	Depth ft	Eff. Unit Wt., pcf	Cohesion psf	Friction Ang., deg.	qu psi	RQD percent	Epsilon 50	J	kpy pci	Rock Emass psi	krm	Test Type	Test Prop.	Elas. Subgr. pci
1	Sand (Reese, et al.)	1.000	109.000	--	33.000	--	--	--	--	default	--	--	--	--	--
		4.000	109.000	--	33.000	--	--	--	--	default	--	--	--	--	--
2	Sand (Reese, et al.)	4.000	112.000	--	34.000	--	--	--	--	default	--	--	--	--	--
		6.000	112.000	--	34.000	--	--	--	--	default	--	--	--	--	--
3	Sand (Reese, et al.)	6.000	109.000	--	33.000	--	--	--	--	default	--	--	--	--	--
		8.000	109.000	--	33.000	--	--	--	--	default	--	--	--	--	--
4	Sand (Reese, et al.)	8.000	122.000	--	35.000	--	--	--	--	default	--	--	--	--	--
		9.500	122.000	--	35.000	--	--	--	--	default	--	--	--	--	--
5	Sand (Reese, et al.)	9.500	60.000	--	35.000	--	--	--	--	default	--	--	--	--	--
		18.500	60.000	--	35.000	--	--	--	--	default	--	--	--	--	--

Loading Type

Cyclic loading criteria were used for computation of p-y curves for all analyses.

Number of cycles of loading = 100

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 34000. lbs	M = 47988000. in-lbs	47000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applie to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft:

Length of Section	=	18.50000000 ft
Shaft Diameter	=	84.00000000 in
Concrete Cover Thickness	=	5.00000000 in
Number of Reinforcing Bars	=	24 bars
Yield Stress of Reinforcing Bars	=	60.00000000 ksi
Modulus of Elasticity of Reinforcing Bars	=	29000. ksi
Gross Area of Shaft	=	5541.76944093 sq. in.
Total Area of Reinforcing Steel	=	37.44000000 sq. in.
Area Ratio of Steel Reinforcement	=	0.68 percent
Edge-to-Edge Bar Spacing	=	8.06489629 in
Rebar Offset	=	0.0000000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	16282.440 kips
Tensile Load for Cracking of Concrete	=	-2118.591 kips

Nominal Axial Tensile Capacity = -2246.400 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.41000	1.56000	36.29500	0.00000
2	1.41000	1.56000	35.05828	9.39384
3	1.41000	1.56000	31.43239	18.14750
4	1.41000	1.56000	25.66444	25.66444
5	1.41000	1.56000	18.14750	31.43239
6	1.41000	1.56000	9.39384	35.05828
7	1.41000	1.56000	0.00000	36.29500
8	1.41000	1.56000	-9.39384	35.05828
9	1.41000	1.56000	-18.14750	31.43239
10	1.41000	1.56000	-25.66444	25.66444
11	1.41000	1.56000	-31.43239	18.14750
12	1.41000	1.56000	-35.05828	9.39384
13	1.41000	1.56000	-36.29500	0.00000
14	1.41000	1.56000	-35.05828	-9.39384
15	1.41000	1.56000	-31.43239	-18.14750
16	1.41000	1.56000	-25.66444	-25.66444
17	1.41000	1.56000	-18.14750	-31.43239
18	1.41000	1.56000	-9.39384	-35.05828
19	1.41000	1.56000	0.00000	-36.29500
20	1.41000	1.56000	9.39384	-35.05828
21	1.41000	1.56000	18.14750	-31.43239
22	1.41000	1.56000	25.66444	-25.66444
23	1.41000	1.56000	31.43239	-18.14750
24	1.41000	1.56000	35.05828	-9.39384

Concrete Properties:

Compressive Strength of Concrete = 3.0000000 ksi
Modulus of Elasticity of Concrete = 3122.0185778 ksi
Modulus of Rupture of Concrete = -0.4107919 ksi
Compression Strain at Peak Stress = 0.0016336
Tensile Strain at Fracture of Concrete = -0.0001160
Maximum Coarse Aggregate Size = 0.7500000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	47.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section

depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 47.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Concrete Stress ksi	Max Steel Stress ksi	Run Msg
0.000000313	2992.6325981	9576424314.	49.0832406	0.0000153	-0.0000109	0.0555957	0.4410106	
0.000000625	5970.6525137	9553044022.	45.5530446	0.0000285	-0.0000240	0.1027130	0.8180364	
0.000000938	8933.5335750	9529102480.	44.3763984	0.0000416	-0.0000371	0.1494504	1.1950646	
0.000001250	11881.	9505019056.	43.7881202	0.0000547	-0.0000503	0.1958081	1.5720944	
0.000001563	14814.	9480878703.	43.4351858	0.0000679	-0.0000634	0.2417858	1.9491256	
0.000001875	17731.	9456709873.	43.1999232	0.0000810	-0.0000765	0.2873837	2.3261583	
0.000002188	20634.	9432524752.	43.0319011	0.0000941	-0.0000896	0.3326018	2.7031925	
0.000002500	23521.	9408329442.	42.9059044	0.0001073	-0.0001027	0.3774399	3.0802281	
0.000002813	26393.	9384127339.	42.8079246	0.0001204	-0.0001159	0.4218981	3.4572651	
0.000003125	26393.	8445714605.	21.8625589	0.0000683	-0.0001942	0.2410701	-5.5931431	C
0.000003438	26393.	7677922368.	21.6070205	0.0000743	-0.0002145	0.2615401	-6.1779314	C
0.000003750	26393.	7038095504.	21.3938417	0.0000802	-0.0002348	0.2819310	-6.7627447	C
0.000004063	26393.	6496703542.	21.2071003	0.0000862	-0.0002551	0.3021556	-7.3483072	C
0.000004375	26393.	6032653289.	21.0478404	0.0000921	-0.0002754	0.3223170	-7.9337677	C
0.000004688	26393.	5630476403.	20.9105680	0.0000980	-0.0002957	0.3424149	-8.5191259	C
0.000005000	26393.	5278571628.	20.7911625	0.0001040	-0.0003160	0.3624493	-9.1043814	C
0.000005313	26393.	4968067415.	20.6864730	0.0001099	-0.0003364	0.3824200	-9.6895340	C
0.000005625	26393.	4692063669.	20.5940487	0.0001158	-0.0003567	0.4023271	-10.2745833	C
0.000005938	26393.	4445112950.	20.5087175	0.0001218	-0.0003770	0.4221049	-10.8600864	C
0.000006250	26393.	4222857302.	20.4319101	0.0001277	-0.0003973	0.4418069	-11.4455913	C
0.000006563	26393.	4021768859.	20.3629829	0.0001336	-0.0004176	0.4614459	-12.0309886	C
0.000006875	26393.	3838961184.	20.3008630	0.0001396	-0.0004379	0.4810217	-12.6162779	C
0.000007188	26393.	3672049828.	20.2446642	0.0001455	-0.0004582			

0.5005342	-13.2014590	C				
0.000007500	26393.		3519047752.	20.1936481	0.0001515	-0.0004785
0.5199834	-13.7865315	C				
0.000007813	26393.		3378285842.	20.1471941	0.0001574	-0.0004989
0.5393691	-14.3714951	C				
0.000008125	26393.		3248351771.	20.1047775	0.0001634	-0.0005191
0.5586913	-14.9563493	C				
0.000008438	26393.		3128042446.	20.0659512	0.0001693	-0.0005394
0.5779498	-15.5410938	C				
0.000008750	26393.		3016326645.	20.0303317	0.0001753	-0.0005597
0.5971444	-16.1257283	C				
0.000009063	26393.		2912315381.	19.9975889	0.0001812	-0.0005800
0.6162752	-16.7102524	C				
0.000009375	26393.		2815238202.	19.9674363	0.0001872	-0.0006003
0.6353420	-17.2946657	C				
0.000009688	26393.		2724424066.	19.9396246	0.0001932	-0.0006206
0.6543447	-17.8789679	C				
0.0000100	26393.		2639285814.	19.9139356	0.0001991	-0.0006409
0.6732831	-18.4631586	C				
0.0000103	26393.		2559307456.	19.8901777	0.0002051	-0.0006611
0.6921572	-19.0472375	C				
0.0000106	26393.		2484033707.	19.8681815	0.0002111	-0.0006814
0.7109669	-19.6312041	C				
0.0000109	26393.		2413061316.	19.8477973	0.0002171	-0.0007017
0.7297119	-20.2150580	C				
0.0000113	26393.		2346031835.	19.8288919	0.0002231	-0.0007219
0.7483923	-20.7987993	C				
0.0000116	26393.		2282625569.	19.8113466	0.0002291	-0.0007422
0.7670080	-21.3824269	C				
0.0000119	26393.		2222556475.	19.7950550	0.0002351	-0.0007624
0.7855587	-21.9659407	C				
0.0000122	26393.		2165567847.	19.7799219	0.0002411	-0.0007827
0.8040445	-22.5493403	C				
0.0000128	26393.		2059930391.	19.7527960	0.0002531	-0.0008232
0.8408205	-23.7157955	C				
0.0000134	26393.		1964119676.	19.7288397	0.0002651	-0.0008636
0.8773128	-24.8819990	C				
0.0000141	26393.		1876825468.	19.7076154	0.0002771	-0.0009041
0.9135200	-26.0479568	C				
0.0000147	26393.		1796960554.	19.6893462	0.0002892	-0.0009446
0.9494670	-27.2134253	C				
0.0000153	26393.		1723615225.	19.6736782	0.0003013	-0.0009850
0.9851527	-28.3784014	C				
0.0000159	26393.		1656022472.	19.6603133	0.0003133	-0.0010254
1.0205764	-29.5428805	C				
0.0000166	26942.		1626659729.	19.6489984	0.0003254	-0.0010658
1.0557368	-30.7068594	C				
0.0000172	27904.		1623515475.	19.6395172	0.0003376	-0.0011062
1.0906331	-31.8703345	C				
0.0000178	28866.		1620536956.	19.6316842	0.0003497	-0.0011466
1.1252642	-33.0333020	C				
0.0000184	29826.		1617706974.	19.6253388	0.0003618	-0.0011869
1.1596291	-34.1957580	C				
0.0000191	30786.		1615010581.	19.6203417	0.0003740	-0.0012272
1.1937268	-35.3576986	C				
0.0000197	31745.		1612434727.	19.6165714	0.0003862	-0.0012675
1.2275562	-36.5191200	C				
0.0000203	32702.		1609967960.	19.6139214	0.0003984	-0.0013078
1.2611162	-37.6800181	C				
0.0000209	33659.		1607600193.	19.6122981	0.0004106	-0.0013481
1.2944059	-38.8403890	C				
0.0000216	34615.		1605322504.	19.6116187	0.0004229	-0.0013884
1.3274240	-40.0002284	C				

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 0.0000222        35569.   1603126973.    19.6118098     0.0004351    -0.0014286
1.3601696   -41.1595323  C
 0.0000228        36523.   1601006544.    19.6128064     0.0004474    -0.0014688
1.3926415   -42.3182964  C
 0.0000234        37476.   1598954909.    19.6145503     0.0004597    -0.0015090
1.4248386   -43.4765165  C
 0.0000241        38427.   1596966411.    19.6169894     0.0004720    -0.0015492
1.4567597   -44.6341883  C
 0.0000247        39377.   1595035965.    19.6200771     0.0004844    -0.0015894
1.4884038   -45.7913073  C
 0.0000253        40327.   1593158981.    19.6237714     0.0004967    -0.0016295
1.5197697   -46.9478691  C
 0.0000259        41275.   1591331309.    19.6280345     0.0005091    -0.0016696
1.5508562   -48.1038691  C
 0.0000266        42222.   1589549186.    19.6328321     0.0005215    -0.0017098
1.5816621   -49.2593028  C
 0.0000272        43169.   1587809190.    19.6381334     0.0005339    -0.0017498
1.6121862   -50.4141655  C
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1.6424273   -51.5684525  C
 0.0000284        45058.   1584443384.    19.6501370     0.0005588    -0.0018299
1.6723842   -52.7221590  C
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1.7020557   -53.8752802  C
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1.7314404   -55.0278110  C
 0.0000303        47883.   1579640896.    19.6712948     0.0005963    -0.0019500
1.7605372   -56.1797464  C
 0.0000309        48822.   1578096717.    19.6791085     0.0006088    -0.0019899
1.7893447   -57.3310815  C
 0.0000316        49761.   1576577619.    19.6872743     0.0006214    -0.0020299
1.8178617   -58.4818109  C
 0.0000322        50698.   1575081877.    19.6957774     0.0006340    -0.0020698
1.8460867   -59.6319295  C
 0.0000328        51634.   1573607892.    19.7046042     0.0006466    -0.0021097
1.8740185   -60.0000000  CY
 0.0000334        52569.   1572154183.    19.7137420     0.0006592    -0.0021496
1.9016558   -60.0000000  CY
 0.0000341        53503.   1570719373.    19.7231793     0.0006718    -0.0021894
1.9289971   -60.0000000  CY
 0.0000347        54435.   1569302154.    19.7329054     0.0006845    -0.0022293
1.9560410   -60.0000000  CY
 0.0000353        55353.   1567523371.    19.7412020     0.0006971    -0.0022691
1.9826572   -60.0000000  CY
 0.0000359        56185.   1563416247.    19.7396141     0.0007094    -0.0023094
2.0082016   -60.0000000  CY
 0.0000366        56890.   1555968599.    19.7231246     0.0007211    -0.0023501
2.0322807   -60.0000000  CY
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2.1427815   -60.0000000  CY
 0.0000422        61603.   1460226381.    19.4344820     0.0008199    -0.0027239
2.2229369   -60.0000000  CY
 0.0000447        63011.   1410034983.    19.2584718     0.0008606    -0.0028931
2.2953250   -60.0000000  CY
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2.3630109   -60.0000000  CY
 0.0000497        65477.   1317771286.    18.9337501     0.0009408    -0.0032330
2.4274276   -60.0000000  CY
 0.0000522        66346.   1271304862.    18.7462847     0.0009783    -0.0034054
2.4844999   -60.0000000  CY
 0.0000547        67113.   1227205289.    18.5642482     0.0010152    -0.0035785
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2.5881274   -60.0000000  CY
 0.0000597        68632.   1149854575.    18.2537869     0.0010895    -0.0039242
2.6358874   -60.0000000  CY
 0.0000622        69348.   1115140795.    18.1159182     0.0011266    -0.0040972
2.6805089   -60.0000000  CY
 0.0000647        69824.   1079406584.    17.9514133     0.0011612    -0.0042725
2.7195118   -60.0000000  CY
 0.0000672        70251.   1045595231.    17.7909500     0.0011953    -0.0044484
2.7553991   -60.0000000  CY
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2.7889651   -60.0000000  CY
 0.0000722        71095.    984863476.    17.5091265     0.0012639    -0.0047998
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 0.0000897        73405.    818453571.    16.7017720     0.0014979    -0.0060358
2.9662414   -60.0000000  CY
 0.0000922        73608.    798460372.    16.5965466     0.0015300    -0.0062138
2.9772407   -60.0000000  CY
 0.0000947        73809.    779497192.    16.4982954     0.0015622    -0.0063916
2.9861123   -60.0000000  CY
 0.0000972        74007.    761484030.    16.4065038     0.0015945    -0.0065692
2.9928283   -60.0000000  CY
 0.0000997        74198.    744305631.    16.3149845     0.0016264    -0.0067473
2.9972977   -60.0000000  CY
 0.0001022        74385.    727926363.    16.2268999     0.0016582    -0.0069256
2.9996239   -60.0000000  CY
 0.0001047        74569.    712303983.    16.1444922     0.0016901    -0.0071036
2.9973830   -60.0000000  CY
 0.0001072        74751.    697385449.    16.0673762     0.0017222    -0.0072815
2.9975803   -60.0000000  CY
 0.0001097        74930.    683126625.    15.9950387     0.0017545    -0.0074593
2.9996632   -60.0000000  CY
 0.0001122        75107.    669478854.    15.9273636     0.0017869    -0.0076369
2.9975207   -60.0000000  CY
 0.0001147        75281.    656402203.    15.8640529     0.0018194    -0.0078143
2.9966000   -60.0000000  CY
 0.0001172        75453.    643866475.    15.8045608     0.0018521    -0.0079917
2.9991464   -60.0000000  CY
 0.0001197        75611.    631740780.    15.7461774     0.0018846    -0.0081691
2.9999999   -60.0000000  CY
 0.0001222        75745.    619907888.    15.6870909     0.0019168    -0.0083470
2.9944719   -60.0000000  CY
 0.0001247        75860.    608404478.    15.6276247     0.0019486    -0.0085252
2.9970101   -60.0000000  CY
 0.0001272        75935.    597034077.    15.5628412     0.0019794    -0.0087044
2.9991129   -60.0000000  CY
 0.0001297        76005.    586065520.    15.4965246     0.0020097    -0.0088840
2.9999704   -60.0000000  CY
 0.0001322        76071.    575481151.    15.4311216     0.0020398    -0.0090639
2.9963418   -60.0000000  CY
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 0.0001347        76136.    565282091.    15.3688993     0.0020700    -0.0092438
2.9940617   -60.0000000  CY
 0.0001372        76201.    555449059.    15.3095631     0.0021003    -0.0094235
2.9969780   -60.0000000  CY
 0.0001522        76567.    503106809.    15.0078277     0.0022840    -0.0104997
2.9968823    60.0000000  CY
 0.0001672        76904.    459987499.    14.7790645     0.0024709    -0.0115729
2.9935870    60.0000000  CY
 0.0001822        77212.    423803959.    14.5872430     0.0026576    -0.0126461
2.9939117    60.0000000  CY
 0.0001972        77498.    393015614.    14.4263952     0.0028447    -0.0137190
2.9989102    60.0000000  CY
 0.0002122        77756.    366450198.    14.2939160     0.0030330    -0.0147908
2.9869866    60.0000000  CYT
 0.0002272        77891.    342850655.    14.1475480     0.0032141    -0.0158696
2.9980609    60.0000000  CYT
 0.0002422        77976.    321965196.    14.0102368     0.0033931    -0.0169506
2.9937007    60.0000000  CYT
 0.0002572        78030.    303397838.    13.9019934     0.0035754    -0.0180283
2.9862740    60.0000000  CYT
 0.0002722        78076.    286847147.    13.7967041     0.0037553    -0.0191085
2.9971529    60.0000000  CYT
 0.0002872        78076.    271864924.    13.8241007     0.0039701    -0.0201536
2.9906956    60.0000000  CYT


--------------------------------------------------------------------------------
   Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1
--------------------------------------------------------------------------------

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

 Load           Axial Thrust        Nominal Mom. Cap.      Max. Comp.
  No.               kips                 in-kip              Strain
 ----         ---------------     ------------------     ------------
   1               47.000              77710.879           0.00300000

Note note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318-08, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are spirals or tied hoops.

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318-08, Section
9.3.2.2 or the value required by the design standard being followed.


ERROR 2 in computing i_BottomNodeInLayer
Num_Nodes_To_Assign = 101
ilayer = 5
klayer = 6
jlayer = 6
i_Number_of_Layers = 5


--------------------------------------------------------------------------------
                 Computed Values of Pile Loading and Deflection
                   for Lateral Loading for Load Case Number 1
--------------------------------------------------------------------------------

Pile-head conditions are Shear and Moment (Loading Type 1)
```

Horizontal shear force at pile head = 34000.000 lbs
Applied moment at pile head = 47988000.000 in-lbs
Axial thrust load on pile head = 47000.000 lbs

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. Spr. Distrib. p
Es*h Lat. Load							
inches	inches	in-lbs	lbs	radians	psi*	lb-in^2	lb/in
lb/inch	lb/inch						
0.00	1.7998	47988000.	34000.	-0.0134	0.000	1.579E+12	
0.000	0.000	0.000					
2.220	1.7701	48064874.	34000.	-0.0133	0.000	1.579E+12	
0.000	0.000	0.000					
4.440	1.7406	48141740.	34000.	-0.0133	0.000	1.579E+12	
0.000	0.000	0.000					
6.660	1.7113	48218600.	34000.	-0.0132	0.000	1.579E+12	
0.000	0.000	0.000					
8.880	1.6821	48295452.	34000.	-0.0131	0.000	1.579E+12	
0.000	0.000	0.000					
11.100	1.6530	48372298.	34000.	-0.0131	0.000	1.579E+12	
0.000	0.000	0.000					
13.320	1.6241	48449136.	33986.	-0.0130	0.000	1.579E+12	
-12.3749	16.9149	0.000					
15.540	1.5954	48525906.	33934.	-0.0129	0.000	1.579E+12	
-34.2667	47.6823	0.000					
17.760	1.5668	48602500.	33833.	-0.0128	0.000	1.578E+12	
-57.5419	81.5313	0.000					
19.980	1.5384	48678804.	33677.	-0.0128	0.000	1.578E+12	
-82.2344	118.6728	0.000					
22.200	1.5101	48754695.	33466.	-0.0127	0.000	1.578E+12	
-108.3788	159.3323	0.000					
24.420	1.4819	48830045.	33195.	-0.0126	0.000	1.578E+12	
-136.0098	203.7508	0.000					
26.640	1.4539	48904717.	32860.	-0.0126	0.000	1.578E+12	
-165.1624	252.1860	0.000					
28.860	1.4261	48978568.	32460.	-0.0125	0.000	1.578E+12	
-195.8719	304.9140	0.000					
31.080	1.3984	49051447.	31989.	-0.0124	0.000	1.578E+12	
-228.1740	362.2302	0.000					
33.300	1.3709	49123193.	31445.	-0.0124	0.000	1.578E+12	
-262.0934	424.4333	0.000					
35.520	1.3435	49193641.	30823.	-0.0123	0.000	1.577E+12	
-297.6512	491.8375	0.000					
37.740	1.3163	49262615.	30121.	-0.0122	0.000	1.577E+12	
-334.8752	564.7901	0.000					
39.960	1.2892	49329931.	29335.	-0.0122	0.000	1.577E+12	
-373.7924	643.6632	0.000					
42.180	1.2623	49395398.	28460.	-0.0121	0.000	1.577E+12	
-414.4294	728.8554	0.000					
44.400	1.2355	49458815.	27493.	-0.0120	0.000	1.577E+12	
-456.8124	820.7944	0.000					
46.620	1.2089	49519973.	26429.	-0.0119	0.000	1.577E+12	
-500.9666	919.9397	0.000					
48.840	1.1825	49578655.	25254.	-0.0119	0.000	1.577E+12	
-558.2089	1047.9847	0.000					
51.060	1.1562	49634579.	23958.	-0.0118	0.000	1.577E+12	
-609.1882	1169.7051	0.000					
53.280	1.1300	49687493.	22547.	-0.0117	0.000	1.577E+12	
-662.1972	1300.9004	0.000					

```
    55.500     1.1041  49737136.     21017.    -0.0117      0.000  1.577E+12
-716.0801  1439.8639      0.000
    57.720     1.0782  49783243.     19370.    -0.0116      0.000  1.577E+12
-767.9280  1581.1079      0.000
    59.940     1.0526  49825558.     17606.    -0.0115      0.000  1.576E+12
-821.0982  1731.8185      0.000
    62.160     1.0270  49863819.     15722.    -0.0115      0.000  1.576E+12
-875.5720  1892.5964      0.000
    64.380     1.0017  49897757.     13717.    -0.0114      0.000  1.576E+12
-931.3287  2064.0899      0.000
    66.600     0.9765  49927098.     11586.    -0.0113      0.000  1.576E+12
-988.3452  2246.9990      0.000
    68.820     0.9514  49951561.  9327.1863    -0.0112      0.000  1.576E+12
-1046.5961  2442.0814      0.000
    71.040     0.9265  49970858.  6937.7458    -0.0112      0.000  1.576E+12
-1106.0531  2650.1582      0.000
    73.260     0.9018  49984697.  4465.9892    -0.0111      0.000  1.576E+12
-1120.7547  2759.0499      0.000
    75.480     0.8772  49993005.  1914.5248    -0.0110      0.000  1.576E+12
-1177.8619  2980.8912      0.000
    77.700     0.8528  49995501.  -764.7986    -0.0110      0.000  1.576E+12
-1235.9428  3217.4692      0.000
    79.920     0.8285  49991898. -3574.1001    -0.0109      0.000  1.576E+12
-1294.9595  3469.8523      0.000
    82.140     0.8044  49981906. -6515.4119    -0.0108      0.000  1.576E+12
-1354.8709  3739.2102      0.000
    84.360     0.7804  49965229. -9590.6703    -0.0108      0.000  1.576E+12
-1415.6322  4026.8273      0.000
    86.580     0.7566  49941568.    -12802.    -0.0107      0.000  1.576E+12
-1477.1945  4334.1168      0.000
    88.800     0.7330  49910620.    -16150.    -0.0106      0.000  1.576E+12
-1539.5049  4662.6384      0.000
    91.020     0.7095  49872076.    -19638.    -0.0105      0.000  1.576E+12
-1602.5056  5014.1178      0.000
    93.240     0.6862  49825628.    -23266.    -0.0105      0.000  1.576E+12
-1666.1337  5390.4703      0.000
    95.460     0.6630  49770961.    -27036.    -0.0104      0.000  1.577E+12
-1730.3206  5793.8283      0.000
    97.680     0.6400  49707759.    -31025.    -0.0103      0.000  1.577E+12
-1863.1826  6463.1185      0.000
    99.900     0.6171  49635367.    -35248.    -0.0103      0.000  1.577E+12
-1941.0439  6982.6882      0.000
   102.120     0.5944  49553401.    -39637.    -0.0102      0.000  1.577E+12
-2013.3078  7519.3680      0.000
   104.340     0.5718  49461506.    -44182.    -0.0101      0.000  1.577E+12
-2081.1999  8079.5210      0.000
   106.560     0.5494  49359347.    -48877.    -0.0101      0.000  1.577E+12
-2148.7724  8681.9416      0.000
   108.780     0.5272  49246590.    -53722.  -0.009986      0.000  1.577E+12
-2215.8954  9330.9475      0.000
   111.000     0.5051  49122906.    -58715.  -0.009917      0.000  1.578E+12
-2282.4279     10031.      0.000
   113.220     0.4832  48987965.    -63855.  -0.009848      0.000  1.578E+12
-2348.2157     10789.      0.000
   115.440     0.4614  48841444.    -92068.  -0.009779      0.000  1.578E+12
-23069.    111000.       0.000
   117.660     0.4397  48581223.   -142081.  -0.009711      0.000  1.578E+12
-21987.    111000.       0.000
   119.880     0.4183  48212630.   -189701.  -0.009643      0.000  1.579E+12
-20913.    111000.       0.000
   122.100     0.3969  47740962.   -234945.  -0.009575      0.000  1.580E+12
-19847.    111000.       0.000
   124.320     0.3758  47171473.   -277829.  -0.009509      0.000  1.581E+12
```

```
-18788.     111000.       0.000
   126.540      0.3547  46509385.   -318370.  -0.009443      0.000  1.582E+12
-17736.     111000.       0.000
   128.760      0.3338  45759880.   -356584.  -0.009378      0.000  1.583E+12
-16691.     111000.       0.000
   130.980      0.3131  44928107.   -392488.  -0.009315      0.000  1.585E+12
-15654.     111000.       0.000
   133.200      0.2925  44019179.   -426096.  -0.009252      0.000  1.586E+12
-14624.     111000.       0.000
   135.420      0.2720  43038173.   -457424.  -0.009191      0.000  1.588E+12
-13600.     111000.       0.000
   137.640      0.2517  41990136.   -486487.  -0.009132      0.000  1.590E+12
-12583.     111000.       0.000
   139.860      0.2315  40880078.   -513299.  -0.009074      0.000  1.592E+12
-11573.     111000.       0.000
   142.080      0.2114  39712980.   -537876.  -0.009018      0.000  1.594E+12
-10569.     111000.       0.000
   144.300      0.1914  38493790.   -560230.  -0.008964      0.000  1.597E+12
-9570.5978    111000.       0.000
   146.520      0.1716  37227427.   -580376.  -0.008911      0.000  1.599E+12
-8578.6023    111000.       0.000
   148.740      0.1518  35918780.   -598326.  -0.008860      0.000  1.602E+12
-7592.3422    111000.       0.000
   150.960      0.1322  34572710.   -614092.  -0.008812      0.000  1.605E+12
-6611.6060    111000.       0.000
   153.180      0.1127  33194049.   -627687.  -0.008765      0.000  1.609E+12
-5636.1764    111000.       0.000
   155.400      0.0933  31787607.   -639123.  -0.008720      0.000  1.612E+12
-4665.8314    111000.       0.000
   157.620      0.0740  30358165.   -648409.  -0.008677      0.000  1.616E+12
-3700.3446    111000.       0.000
   159.840      0.0548  28910482.   -655557.  -0.008637      0.000  1.620E+12
-2739.4866    111000.       0.000
   162.060      0.0357  27449293.   -660577.  -0.008598      0.000  1.625E+12
-1783.0250    111000.       0.000
   164.280      0.0166  25979314.   -663478.  -0.008576      0.000  9.387E+12
-830.7261     111000.       0.000
   166.500   -0.002418  24505239.   -664266.  -0.008570      0.000  9.399E+12
120.8910     111000.       0.000
   168.720     -0.0214  23031759.   -662942.  -0.008565      0.000  9.412E+12
1071.8656     111000.       0.000
   170.940     -0.0404  21563562.   -659508.  -0.008559      0.000  9.424E+12
2022.2371     111000.       0.000
   173.160     -0.0594  20105330.   -653964.  -0.008554      0.000  9.436E+12
2972.0449     111000.       0.000
   175.380     -0.0784  18661746.   -646313.  -0.008550      0.000  9.448E+12
3921.3276     111000.       0.000
   177.600     -0.0974  17237487.   -636554.  -0.008546      0.000  9.460E+12
4870.1235     111000.       0.000
   179.820     -0.1164  15837229.   -624690.  -0.008542      0.000  9.471E+12
5818.4705     111000.       0.000
   182.040     -0.1353  14465646.   -610721.  -0.008538      0.000  9.483E+12
6766.4054     111000.       0.000
   184.260     -0.1543  13127411.   -594647.  -0.008535      0.000  9.493E+12
7713.9645     111000.       0.000
   186.480     -0.1732  11827193.   -576471.  -0.008532      0.000  9.505E+12
8661.1828     111000.       0.000
   188.700     -0.1922  10569661.   -556192.  -0.008530      0.000  9.514E+12
9608.0945     111000.       0.000
   190.920     -0.2111   9359480.   -533811.  -0.008527      0.000  9.525E+12
10555.    111000.       0.000
   193.140     -0.2300   8201318.   -509329.  -0.008525      0.000  9.533E+12
11501.    111000.       0.000
```

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   195.360    -0.2489   7099837.   -482747.  -0.008523      0.000  9.542E+12
12447.    111000.      0.000
   197.580    -0.2679   6059702.   -454063.  -0.008522      0.000  9.552E+12
13393.    111000.      0.000
   199.800    -0.2868   5085574.   -423280.  -0.008521      0.000  9.557E+12
14339.    111000.      0.000
   202.020    -0.3057   4182115.   -390398.  -0.008519      0.000  9.563E+12
15285.    111000.      0.000
   204.240    -0.3246   3353986.   -355416.  -0.008519      0.000  9.571E+12
16230.    111000.      0.000
   206.460    -0.3435   2605847.   -318335.  -0.008518      0.000  9.576E+12
17176.    111000.      0.000
   208.680    -0.3624   1942358.   -279154.  -0.008517      0.000  9.576E+12
18121.    111000.      0.000
   210.900    -0.3813   1368179.   -237875.  -0.008517      0.000  9.576E+12
19067.    111000.      0.000
   213.120    -0.4002    887969.   -194498.  -0.008517      0.000  9.576E+12
20012.    111000.      0.000
   215.340    -0.4192    506387.   -149021.  -0.008517      0.000  9.576E+12
20958.    111000.      0.000
   217.560    -0.4381    228092.   -101446.  -0.008516      0.000  9.576E+12
21903.    111000.      0.000
   219.780    -0.4570     57743.    -51772.  -0.008516      0.000  9.576E+12
22848.    111000.      0.000
   222.000    -0.4759      0.000      0.000  -0.008516      0.000  9.576E+12
23794.     55500.      0.000

* This analysis makes computations of pile response using nonlinear moment-curvature
relationships.
  The above values of total stress are computed for combined axial stress and do not
equal the
  actual stresses in concrete and steel in the range of nonlinear bending.


Output Verification: Computed forces and moments are within specified convergence
limits.


Output Summary for Load Case No. 1:

Pile-head deflection             =      1.7998007 inches
Computed slope at pile head      =     -0.0133906 radians
Maximum bending moment           =      49995501. inch-lbs
Maximum shear force              =       -664266. lbs
Depth of maximum bending moment  =     77.7000000 inches below pile head
Depth of maximum shear force     =    166.5000000 inches below pile head
Number of iterations             =             50
Number of zero deflection points =              1

ERROR 2 in computing i_BottomNodeInLayer
Num_Nodes_To_Assign = 101
ilayer = 5
klayer = 6
jlayer = 6
i_Number_of_Layers = 5


---------------------------------------------------------------------------
            Pile-head Deflection vs. Pile Length for Load Case 1
---------------------------------------------------------------------------

Boundary Condition Type 1, Shear and Moment
```

Shear = 34000. lbs
Moment = 47988000. in-lbs
Axial Load = 47000. lbs

Pile Length inches	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
222.000	1.7998007	49995501.	-664266.

Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Load Case No.	Load Type No.	Pile-head Condition 1 Maximum Shear V(lbs) or y(inches) lbs	Pile-head Condition 2 Pile-head Rotation or in-lb, rad., in-lb/rad. radians	Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in-lbs
1	1	V = 34000.	M = 47988000.	47000.	1.79980074	49995501.
		-664266.	-0.01339059			

The analysis ended normally.

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT43XC847

Rocky Hill FD

52 New Britain avenue
Rocky Hill, CT 06067

July 24, 2014

EBI Project Number: 62143991

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

EBI Consulting
environmental | engineering | due diligence

July 24, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT43XC847 - Rocky Hill FD

Site Total: 51.16% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 52 New Britain avenue, Rocky Hill, 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 52 New Britain avenue, Rocky Hill, 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) 2 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 **140 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	CT43XC847 - Rocky Hill FD
Site Addresss	52 New Britain avenue, Rocky Hill, CT, 06067
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	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.28%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	140	134	1/2 "	0.5	0	39.00	0.14%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
														Sector total Power Density Value:		0.91%

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	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.28%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	140	134	1/2 "	0.5	0	39.00	0.14%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
														Sector total Power Density Value:		0.91%

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	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.28%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	140	134	1/2 "	0.5	0	39.00	0.14%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
														Sector total Power Density Value:		0.91%

Site Composite MPE %	
Carrier	MPE %
Sprint	2.72%
T-Mobile	0.13%
Verizon Wireless	33.99%
AT&T	11.39%
Police	1.00%
Fire	1.00%
Clearwire	0.93%
Total Site MPE %	**51.16%**

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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 **2.72% (0.91% from sector 1, 0.91% from sector 2 and 0.91% 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 **51.16%** 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.

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