Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

November 27, 2017

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

RE: **Notice of Exempt Modification for Sprint PCS / Crown Site BU: 842859**
T-Mobile Site ID: CT54XC710
Located at: 371 Terryville Avenue, Bristol, CT 06010
Latitude: 41° 40' 47.71"/ Longitude: -72° 57' 45.18"

Dear Ms. Bachman,

Sprint PCS ("Sprint") currently maintains nine (9) antennas at the 158-foot level of the existing 168-foot monopole tower located at 371 Terryville Avenue, Bristol, CT. The tower is owned by Crown Castle. The property is owned by Laviero Realty LLC. Sprint now proposes to add three (3) new antennas, add three (3) remote radio units (non-antennas), add one (1) cable, and remove six (6) of the Sprint Legacy antennas. All work is to be completed within the existing area and the antennas would be installed at the same 158-foot level of the tower.

This facility was approved by the Connecticut Siting Council on October 14, 2003, Docket Number 250 and the City of Bristol Zoning Commission on December 9, 2003, zoning permit number 17647. This approval included the condition(s) that:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level.
2. The facility shall be relocated down gradient from the originally proposed Site A location, approximately 20 to 30 feet to the east onto a flat area.

3. The access road shall be relocated to use the existing driveway and parking lot on the property.
4. The Certificate Holder shall prepare a D&M Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a. a final site plan(s) of site development to include specifications for the tower, tower location, tower foundation, antennas, equipment building, access road, utility line, and landscaping; and
    b. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power densities of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antenna becomes obsolete and ceases to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Ellen Zoppo-Sassu, Mayor for the City of Bristol, the Zoning Commission for the City of Bristol, the property owner and the tower owner..

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modification will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-970-0053
Jeff.Barbadora@Crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 4: Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)

cc: The Honorable Ellen Zoppo-Sassu
111 North Main St.
Bristol, CT 06010

Brian Skinner, Chairman Zoning Commission
111 N. Main Street
Bristol, CT 06010

Crown Castle (Tower Owner)
12 Gill Street, Suite 5800
Woburn, Ma 01801

Laviero Realty LLC (Property Owner)
70 Maureen Drive
Bristol, CT 06010

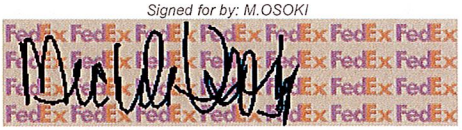
770834815526

Ship date:
Mon 11/27/2017

Crown Castle
Amanda Goodall
12 Gill Street
Woburn, MA US 01801
339 205-7017

Delivered

Signed for by: M.OSOKI



Actual delivery:
Tue 11/28/2017 10:53 am

Zoning Commission
Chairman Brian Skinner
111 North Main Street
BRISTOL, CT US 06010
860 584-6250

Travel History

Date/Time	Activity	Location
- 11/28/2017 - Tuesday		
10:53 am	Delivered	BRISTOL, CT
8:23 am	On FedEx vehicle for delivery	WATERTOWN, CT
8:14 am	At local FedEx facility	WATERTOWN, CT
- 11/27/2017 - Monday		
11:31 pm	Arrived at FedEx location	NEWARK, NJ
8:05 pm	Left FedEx origin facility	WILMINGTON, MA
6:08 pm	Picked up	WILMINGTON, MA
1:25 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	770834815526	**Service**	FedEx Priority Overnight
Reference	1766.6680	**Weight**	1 lbs / 0.45 kgs
Delivery attempts	1	**Delivered To**	Receptionist/Front Desk
Total pieces	1	**Total shipment weight**	1 lbs / 0.45 kgs
Terms	Not Available	**Shipper reference**	1766.6680
Packaging	FedEx Envelope	**Special handling section**	Deliver Weekday
Standard transit	11/28/2017 by 10:30 am		

Shipping Tracking Printing Services Locations Support Amanda

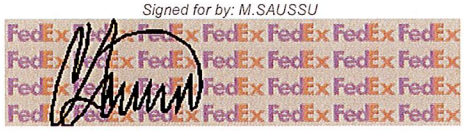
770834787934

Ship date:
Mon 11/27/2017

Crown Castle
Amanda Goodall
12 Gill Street
Woburn, MA US 01801
339 205-7017

Delivered

Signed for by: M.SAUSSU



Actual delivery:
Tue 11/28/2017 10:54 am

City of Bristol
The Honorable Ellen Zoppo-Sassu
3rd Floor
111 North Main Street
BRISTOL, CT US 06010
860 584-6250

Travel History

Date/Time	Activity	Location
11/28/2017 - Tuesday		
10:54 am	Delivered	BRISTOL, CT
8:23 am	On FedEx vehicle for delivery	WATERTOWN, CT
8:15 am	At local FedEx facility	WATERTOWN, CT
11/27/2017 - Monday		
11:31 pm	Arrived at FedEx location	NEWARK, NJ
8:05 pm	Left FedEx origin facility	WILMINGTON, MA
6:08 pm	Picked up	WILMINGTON, MA
1:25 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	770834787934	**Service**	FedEx Priority Overnight
Reference	1766.6680	**Weight**	1 lbs / 0.45 kgs
Delivery attempts	1	**Delivered To**	Receptionist/Front Desk
Total pieces	1	**Total shipment weight**	1 lbs / 0.45 kgs
Terms	Not Available	**Shipper reference**	1766.6680
Packaging	FedEx Envelope	**Special handling section**	Deliver Weekday
Standard transit	11/28/2017 by 10:30 am		

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Ex. Shipping Tracking Printing Services Locations Support Amanda

770834857393

Ship date:
Mon 11/27/2017

Crown Castle
Amanda Goodall
12 Gill Street
Woburn, MA US 01801
339 205-7017

Delivered
Signature not required

Actual delivery:
Tue 11/28/2017 10:02 am

LAVIERO REALTY LLC
70 MAUREEN DR
BRISTOL, CT US 06010
860 589-7579

Travel History

Date/Time	Activity	Location
- 11/28/2017 - Tuesday		
10:02 am	Delivered Left at front door. Package delivered to recipient address - release authorized	BRISTOL, CT
8:22 am	On FedEx vehicle for delivery	WATERTOWN, CT
8:15 am	At local FedEx facility	WATERTOWN, CT
- 11/27/2017 - Monday		
11:31 pm	Arrived at FedEx location	NEWARK, NJ
8:05 pm	Left FedEx origin facility	WILMINGTON, MA
6:08 pm	Picked up	WILMINGTON, MA
1:25 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	770834857393	**Service**	FedEx Priority Overnight
Reference	1766.6680	**Weight**	1 lbs / 0.45 kgs
Delivery attempts	1	**Delivered To**	Residence
Total pieces	1	**Total shipment weight**	1 lbs / 0.45 kgs
Terms	Not Available	**Shipper reference**	1766.6680
Packaging	FedEx Envelope	**Special handling section**	Deliver Weekday, Residential Delivery
Standard transit	11/28/2017 by 10:30 am		

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LANGUAGE

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English

Fee Received $15.00

CT-833 17647

ZONING PERMIT
CITY OF BRISTOL ZONING COMMISSION

THIS IS TO CERTIFY that in accordance with Section XII.D of the Zoning Regulations, This Permit is hereby granted.

PROPERTY INFORMATION

Location: 371 Terryville Avenue,

Zoning District: I, Property Use: Telecommunications.

TYPE OF PERMIT

- ☐ New Construction
- ☐ Addition
- ☐ Accessory Structure
- ☐ Fence
- ☐ Deck
- ☐ Swimming Pool
- ☐ Home Business/Office
- ☐ Change of Use
- ☒ Other: See Below

SIGNS

Classification: ☐ Permanent ☐ Temporary (30-day) ☐ Portable (1-Year)

Type: ☐ Wall ☐ Freestanding ☐ A-Frame ☐ Sandwich ☐ Other: _____

DESCRIPTION OF ACTIVITY

Construct telecommunications facility, 171' high tower retaining walls & associated equipment per submitted plans

OTHER APPROVALS

Description: CT. Siting Council approval 4/3/02

APPLICANT INFORMATION

Applicant Name(s): Peter Maxwell

Business Name: Verizon Corp.

This permit is based upon the plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the City of Bristol Zoning Regulations.

Approved by: _____ 12/9/03

Zoning Enforcement Officer — Date Issued

Google Maps 371 Terryville Ave

Imagery ©2017 Google, Map data ©2017 Google 50 ft

TERRYVILLE AVE

Location	TERRYVILLE AVE	**Mblu**	61/ / 67-3/ /
Acct#	0272831	**Owner**	LAVIERO REALTY LLC
Assessment	$150,290	**Appraisal**	$214,700
PID	101154	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$107,900	$106,800	$214,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$75,530	$74,760	$150,290

Owner of Record

Owner	LAVIERO REALTY LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	70 MAUREEN DR BRISTOL, CT 06010	**Book & Page**	1564/0795
		Sale Date	06/08/2004
		Instrument	06

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
LAVIERO REALTY LLC	$0		1564/0795	06	06/08/2004

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**

Style	Outbuildings
Model	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Attic	
Bsmt	
Bsmt Gar	
Fireplaces	
Fin Bsmt	
Fin Bsmt Qual	
MHP	

Building Photo

(http://images.vgsi.com/photos2/BristolCTPhotos//\00\03\08/73

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	302
Description	Ind Vac Lnd
Zone	I

Land Line Valuation

Size (Acres)	0.63
Frontage	
Depth	

Neighborhood
Alt Land Appr No
Category

Assessed Value $74,760
Appraised Value $106,800

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CB3	PreCastConcCel			290 S.F.	$0	1
FN4	Fence 8'			290 L.F.	$2,900	1
CELL	Cell Tower/Site			1 UNITS	$105,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$102,700	$113,000	$215,700
2015	$102,700	$113,000	$215,700
2014	$102,700	$113,000	$215,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$71,890	$79,100	$150,990
2015	$71,890	$79,100	$150,990
2014	$71,890	$79,100	$150,990

Sprint

CROWN CASTLE

PROJECT:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	NORTH BRISTOL - AT&T - LAVERO
SITE CASCADE:	CT54XC710
SITE NUMBER:	842859
SITE ADDRESS:	371 TERRYVILLE AVE BRISTOL, CT 06010
SITE TYPE:	SELF SUPPORT TOWER
MARKET:	NORTHERN CONNECTICUT

SITE INFORMATION

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

LATITUDE (NAD83):
41° 40' 47.9" N
41.679972°

LONGITUDE (NAD83):
72° 57' 44.1" W
-72.96225°

COUNTY:
HARTFORD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

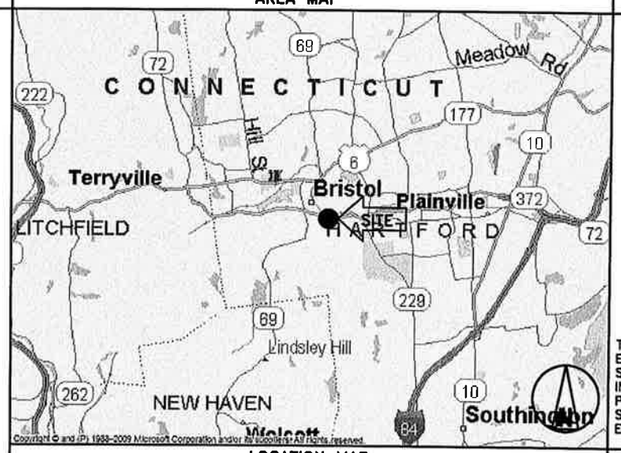
ZONING DISTRICT:
HOSPITAL 94

POWER COMPANY:
CL&P
(800) 286-2000

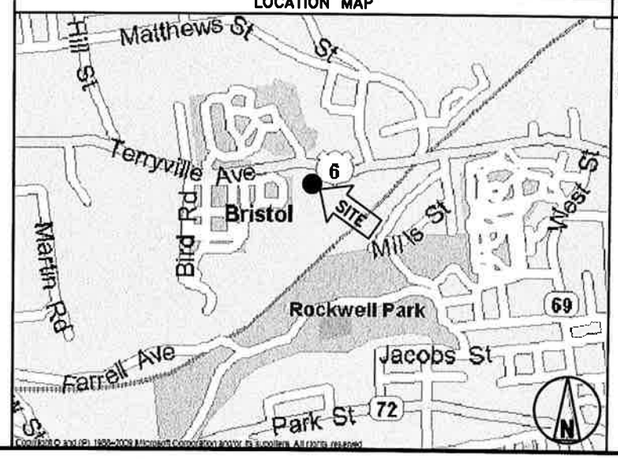
SPRINT CM:
PETER CULBERT
(603) 203-6446
(603) 969-0686
PETER.CULBERT@SPRINT.COM

CROWN CASTLE 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 (1) 9929 EQUIPMENT CABINET IN EXISTING LEASE SPACE
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (27) JUMPER CABLES
- INSTALL (1) FIBER CABLE

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-F 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
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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
E-3	ELECTRICAL & GROUNDING DETAILS	0
E-4	RRH DETAILS & CONNECTIVITY TO DISTRIBUTION BOX	0

APPROVED
By Craig Koppang at 9:36 am, Oct 02, 2017

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

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

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 29 2017
No. 24705
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:
NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:
CT54XC710

SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

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 353-000

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 26 2017
No. 24705
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:
NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:
CT54XC710

SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

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

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.

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

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 26 2017
No. 24705
LICENSED
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:

NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

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 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 26 2017
No. 24705
LICENSED
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:

NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

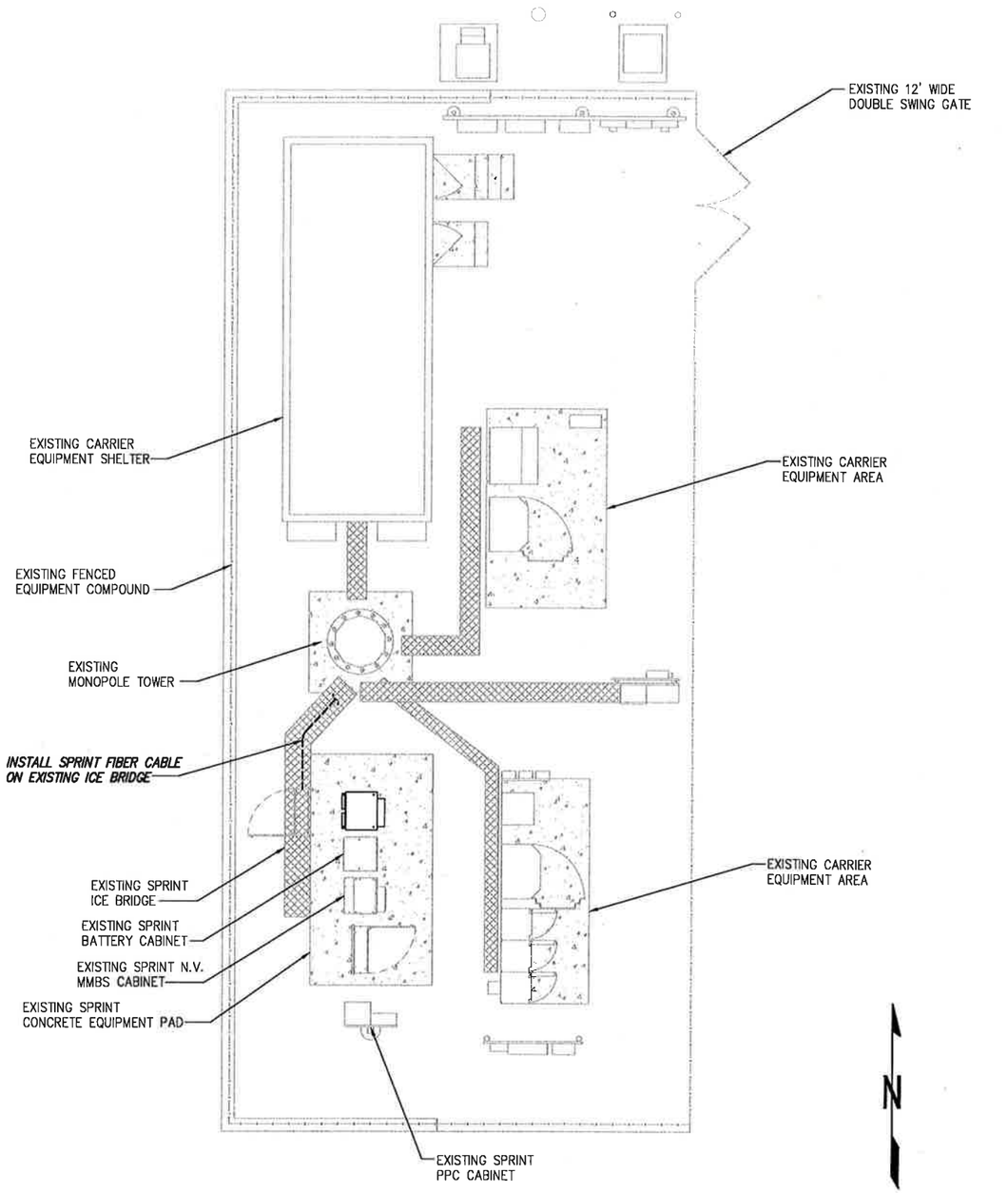
SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

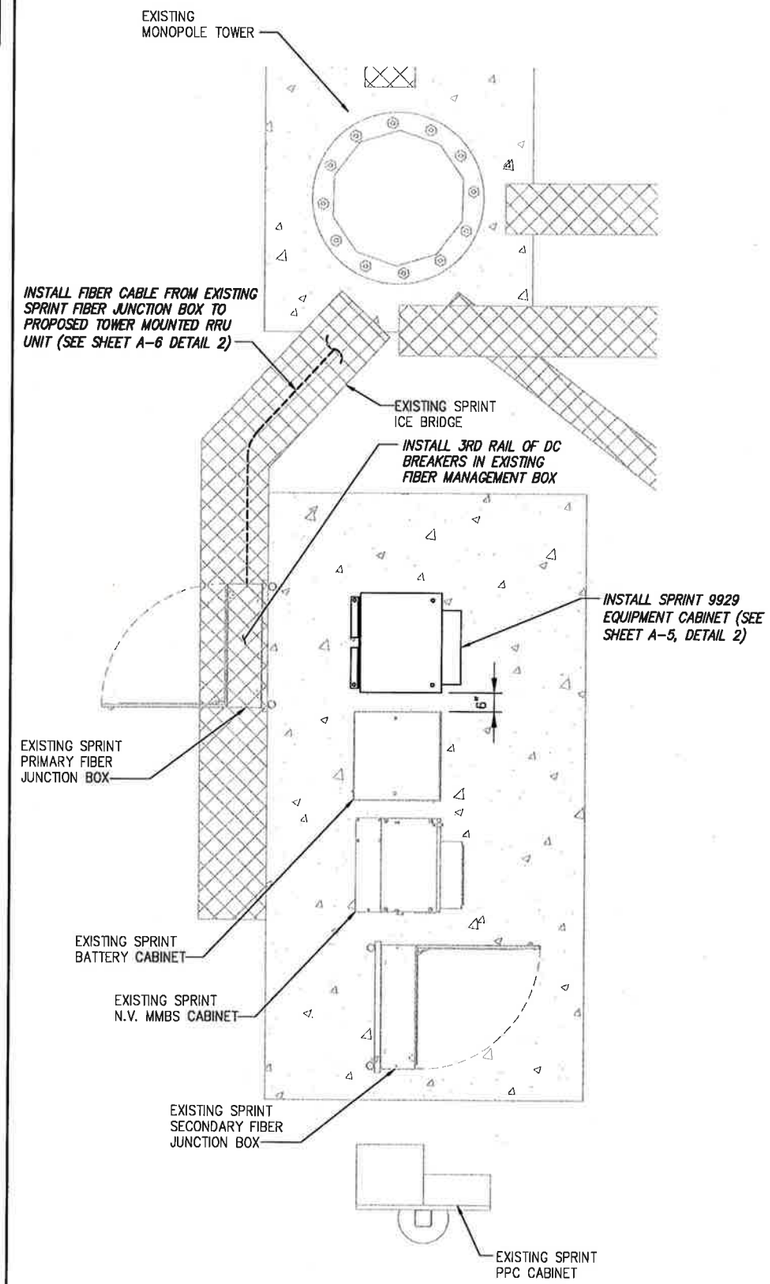
SHEET NUMBER:

SP-3

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



OVERALL SITE PLAN | SCALE: AS NOTED | 1



SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 26 2017
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:

NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

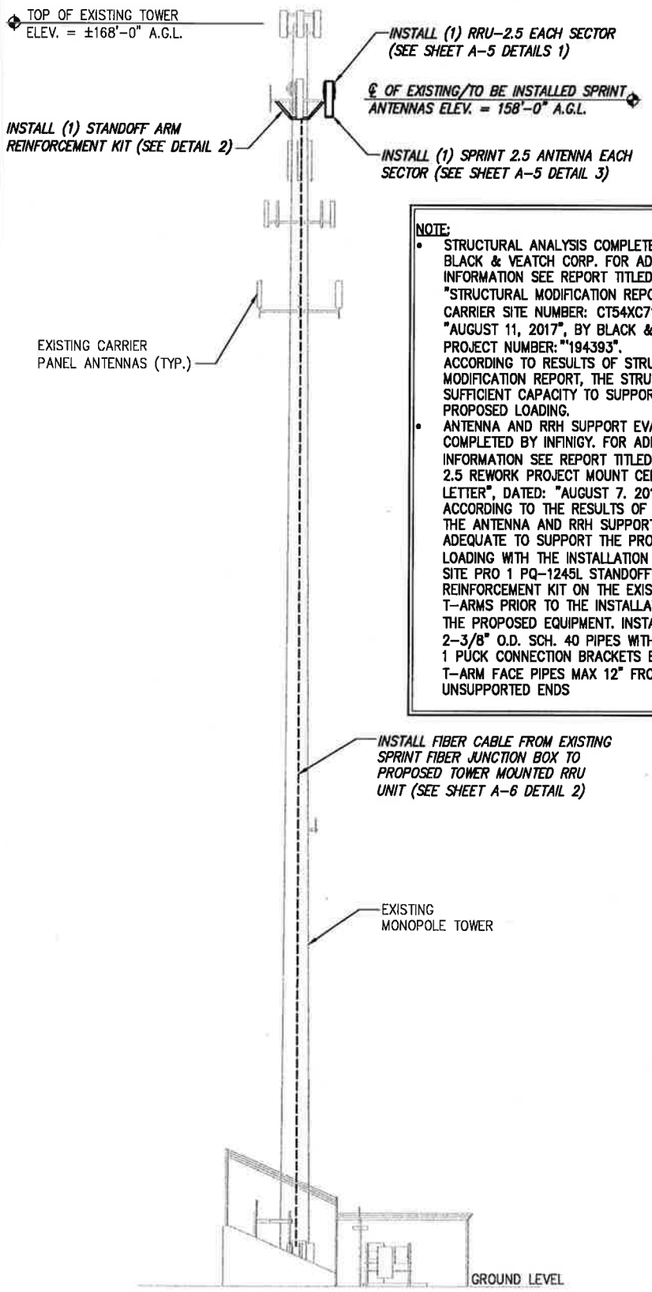
SITE PLAN

SHEET NUMBER:

A-1

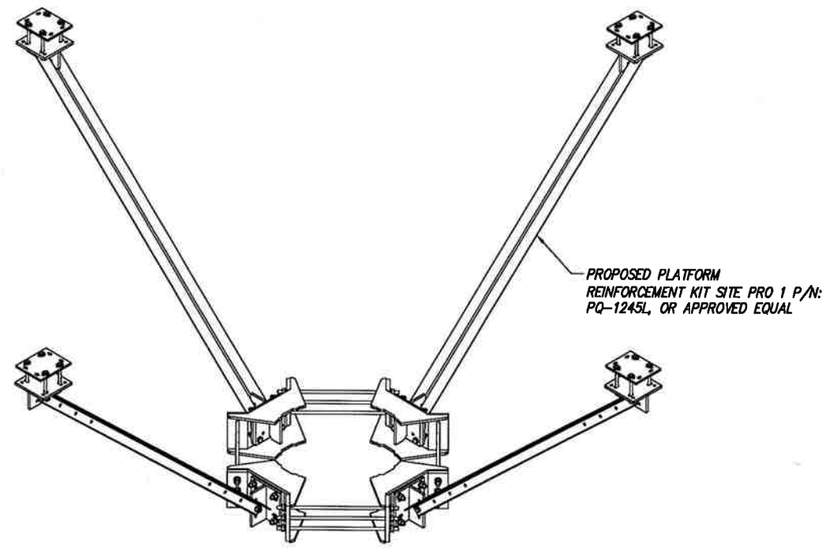
NOTE:
SPRINT TOWER TOP WORK CONTINGENT ON FOLLOWING: COMPLETION OF STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE, COMPLETION OF ANTENNA/RRH MOUNTING ASSESSMENT (PROVIDED BY AE)

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



NOTE:
- STRUCTURAL ANALYSIS COMPLETED BY BLACK & VEATCH CORP. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL MODIFICATION REPORT, CARRIER SITE NUMBER: CT54XC710", DATED: "AUGUST 11, 2017", BY BLACK & VEATCH PROJECT NUMBER: "194393". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT 2.5 REWORK PROJECT MOUNT CERTIFICATION LETTER", DATED: "AUGUST 7. 2017". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS WILL BE ADEQUATE TO SUPPORT THE PROPOSED LOADING WITH THE INSTALLATION OF (1) SITE PRO 1 PQ-1245L STANDOFF ARM REINFORCEMENT KIT ON THE EXISTING T-ARMS PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT. INSTALL (3) 2-3/8" O.D. SCH. 40 PIPES WITH SITE PRO 1 PUCK CONNECTION BRACKETS BETWEEN T-ARM FACE PIPES MAX 12" FROM UNSUPPORTED ENDS

TOWER ELEVATION | NO SCALE | 1



STANDOFF ARM REINFORCEMENT KIT DETAIL | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

PLANS PREPARED FOR:

Sprint
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Overland Park, Kansas 66251

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Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JUSTIN S. STEVENS
SEP 26 2017
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:
NORTH BRISTOL - AT&T - LAVERO

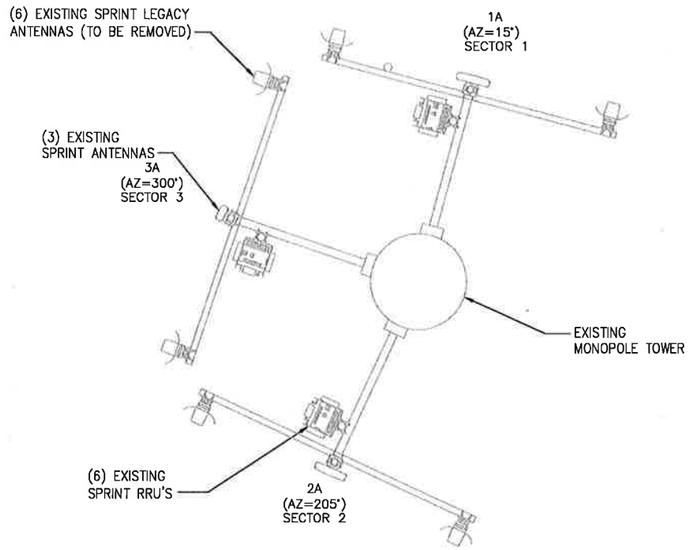
SITE CASCADE:
CT54XC710

SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:
TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:
A-2

NOTE:
NO EXISTING ANTENNA INFORMATION OR PHOTOS WITHIN 2.5 AUDIT. EXISTING AND PROPOSED CONDITIONS BASED ON N.V. DRAWINGS

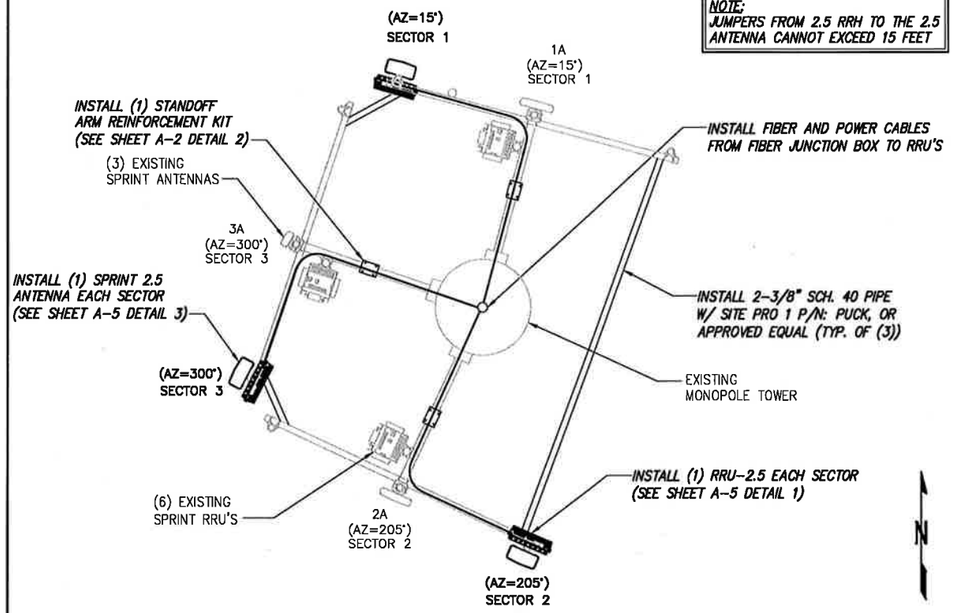


0° = TRUE NORTH

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.

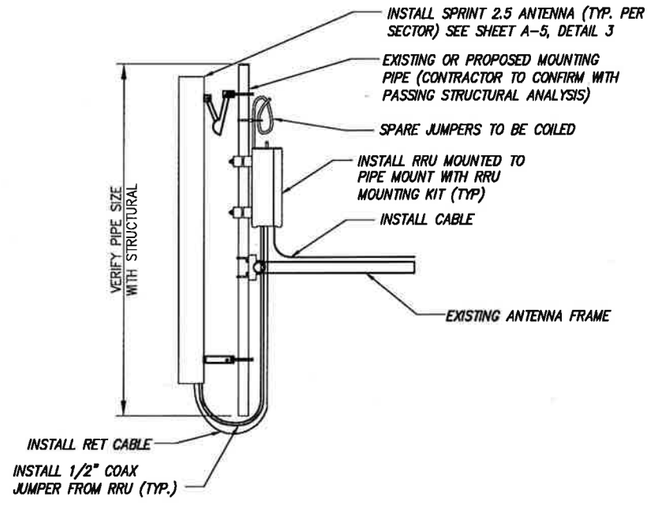
NOTE:
JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET



0° = TRUE NORTH

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.
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Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24203
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:

NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:

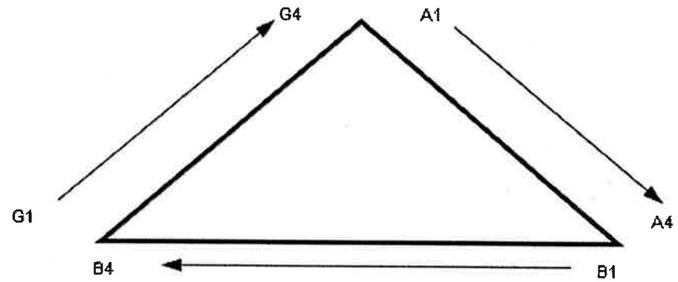
A-3

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.

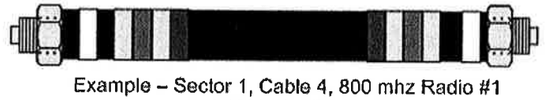
Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Blue	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Blue	Blue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

PLANS PREPARED FOR:
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Overland Park, Kansas 66251

PLANS PREPARED BY:
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Office # (518) 690-0790
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JOB NUMBER 353-000

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:
NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:
CT54XC710

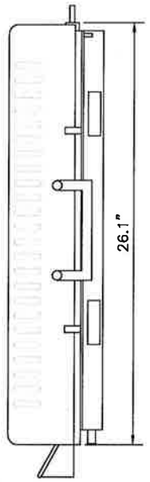
SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:
COLOR CODING AND NOTES

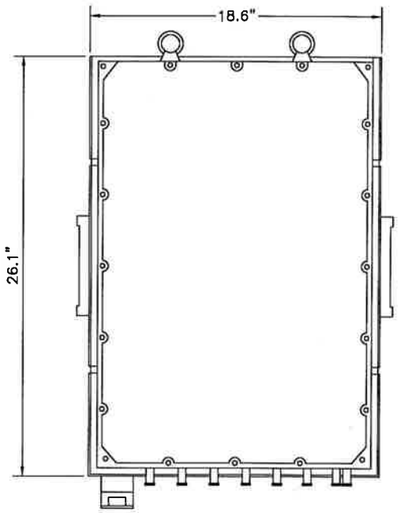
SHEET NUMBER:
A-4

RRU: ALCATEL LUCENT TD-RRH8X20

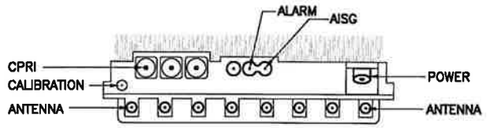
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW

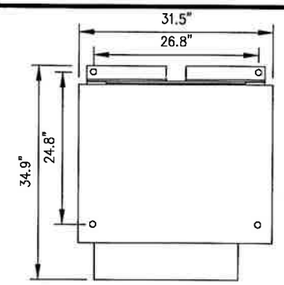


PLAN VIEW

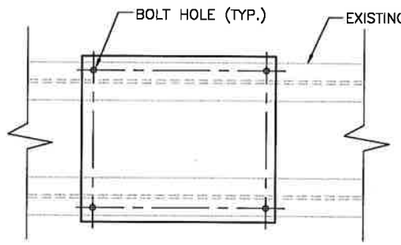
NOTES

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

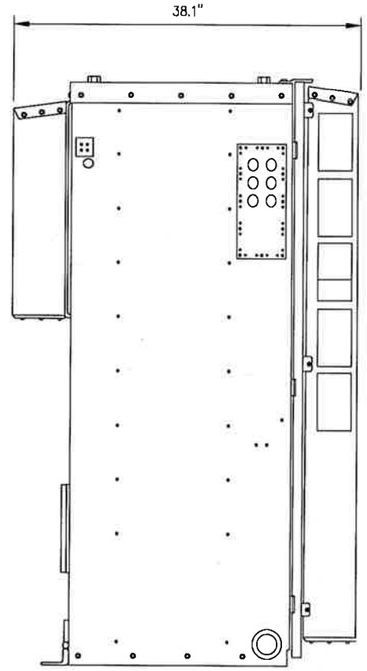
2.5 RRU	NO SCALE	1



BOTTOM VIEW



1. VERIFY BOLT HOLE SPACING WITH EQUIPMENT CUT SHEETS.
2. NEW EQUIPMENT CABINET TO BE MOUNTED TO EXISTING SUPPORT SURFACE WITH BOLT-DOWN SYSTEM PER MANUFACTURER'S SPECIFICATION AND FIELD DRILL HOLES THROUGH EXISTING STEEL BEAMS AS REQUIRED.
3. MAINTAIN A MINIMUM OF 1" DISTANCE FROM CENTER OF BOLT HOLE TO EDGE OF FLANGE.

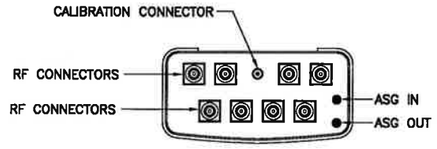


SIDE VIEW

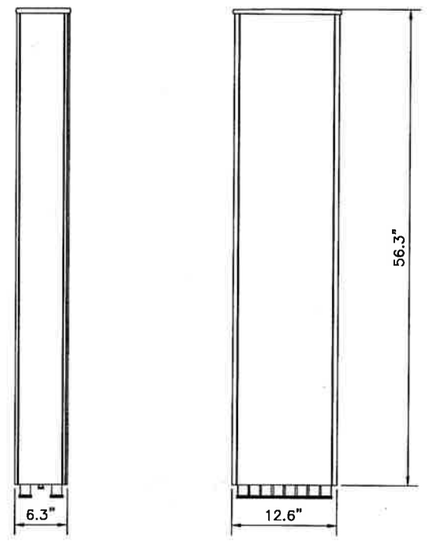
9929 GROWTH CABINET	NO SCALE	2

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

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
9/26/17
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

SITE NAME:

NORTH BRISTOL -
AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

EQUIPMENT &
MOUNTING DETAILS

SHEET NUMBER:

A-5

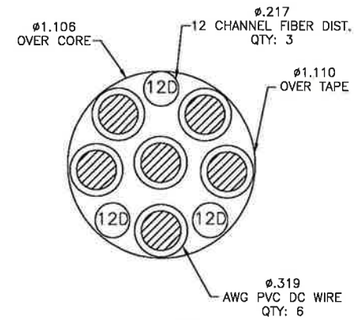
RFS HYBRIFLEX RISER CABLE SCHEDULE

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

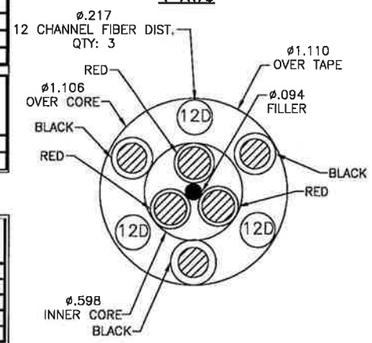
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

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

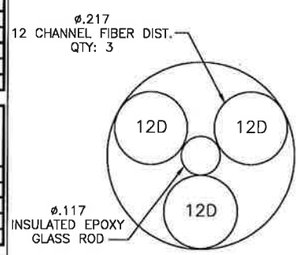
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG

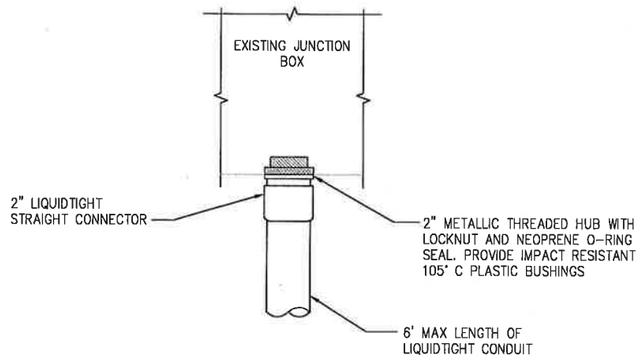


8 & 6 AWG



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

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
SEP 26 2017
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

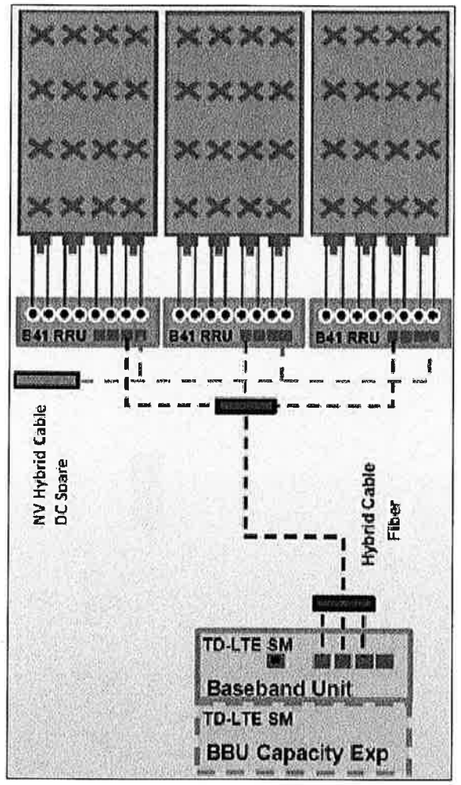
SITE NAME:
NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:
CT54XC710

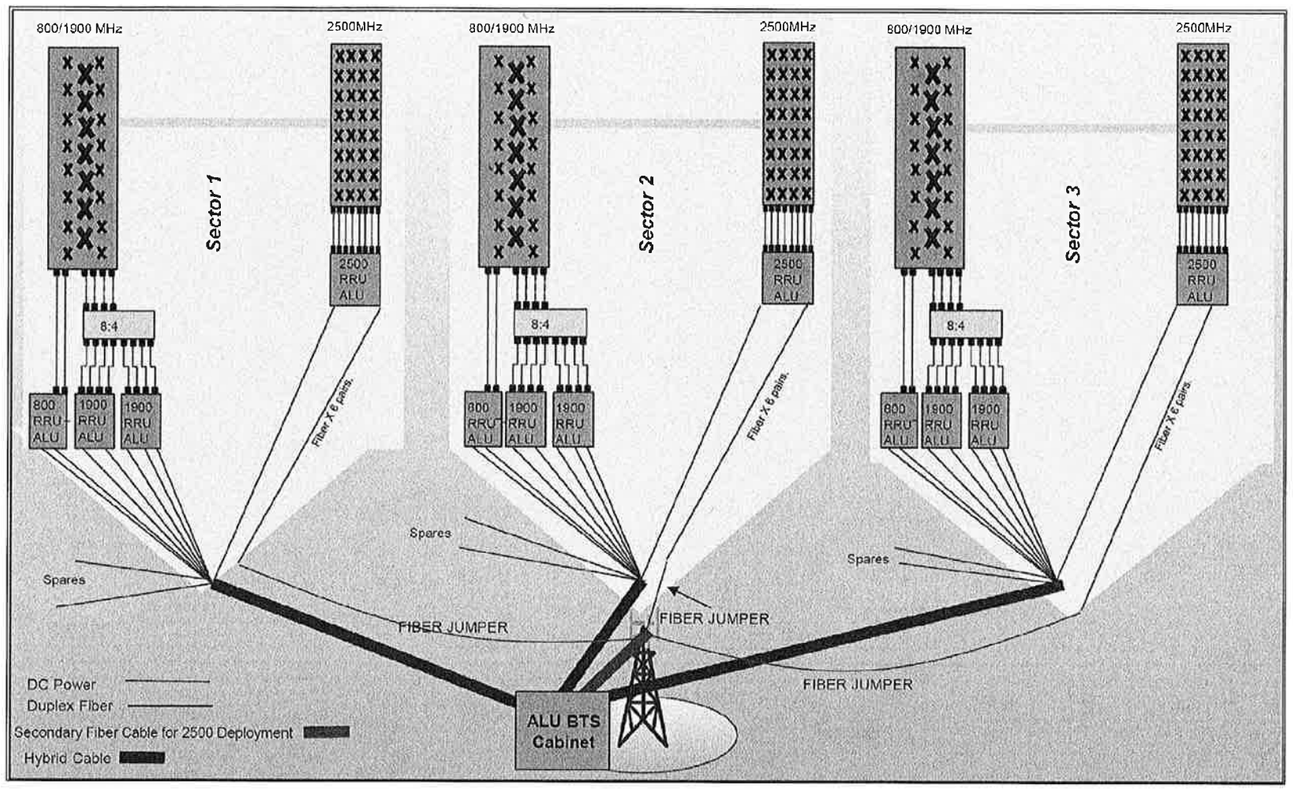
SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:
CIVIL DETAILS

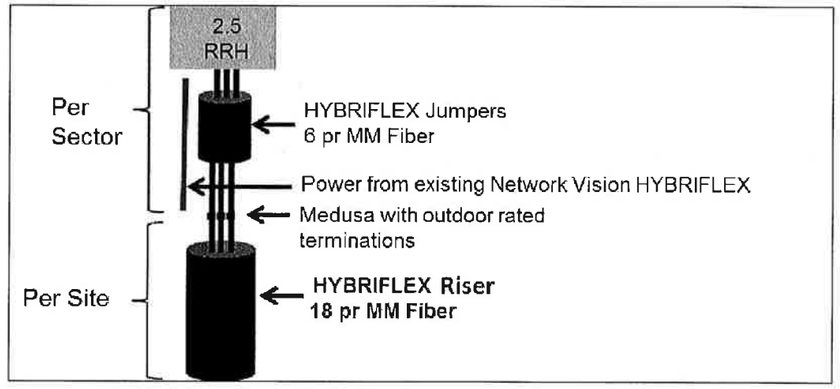
SHEET NUMBER:
A-6



ALU 2.5 ALU SCENARIO 1



RAN WIRING DIAGRAM



RF 2.5 ALU SCENARIO 1

PLUMBING DIAGRAM

NO SCALE

1

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

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Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
PROFESSIONAL ENGINEER
LICENSED
No. 24705
Sep 26 2017

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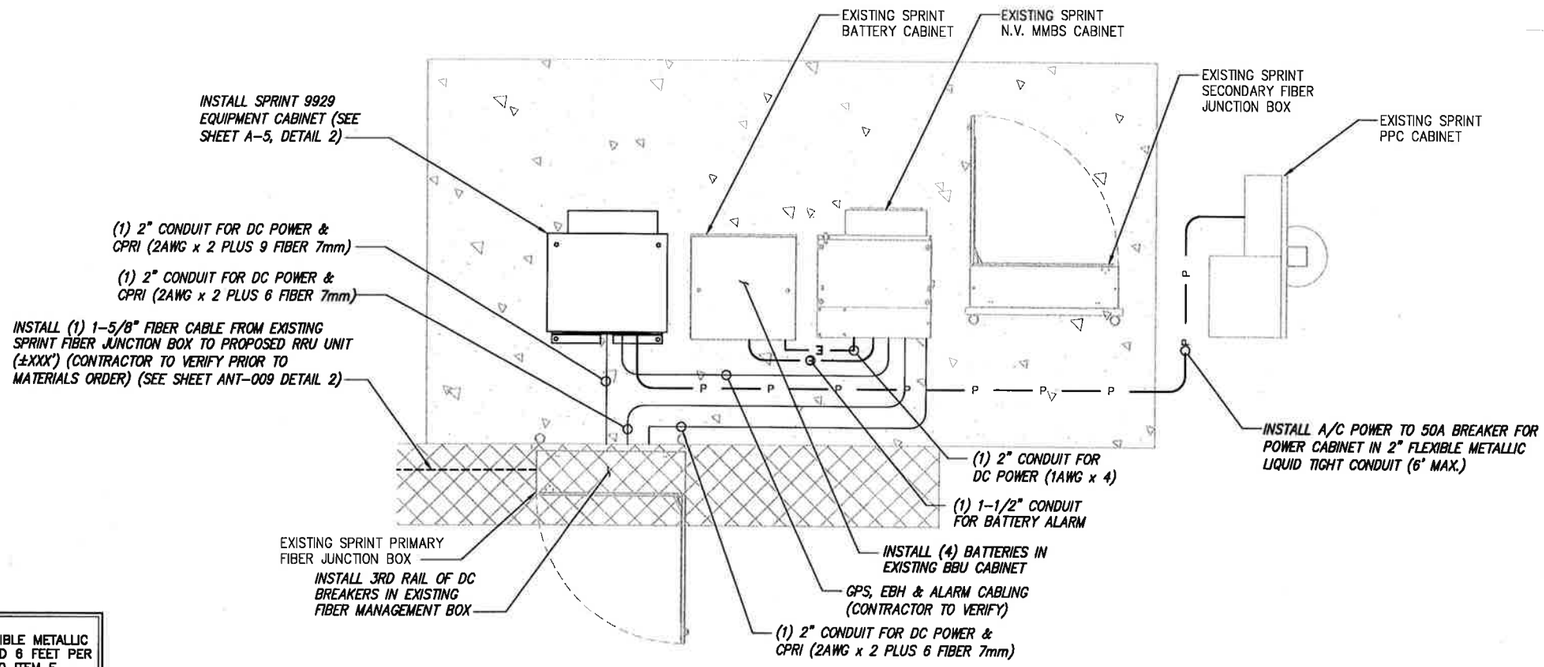
BRISTOL, CT 06010

SHEET DESCRIPTION:

CIVIL DETAILS

SHEET NUMBER:

A-7



LEGEND:

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

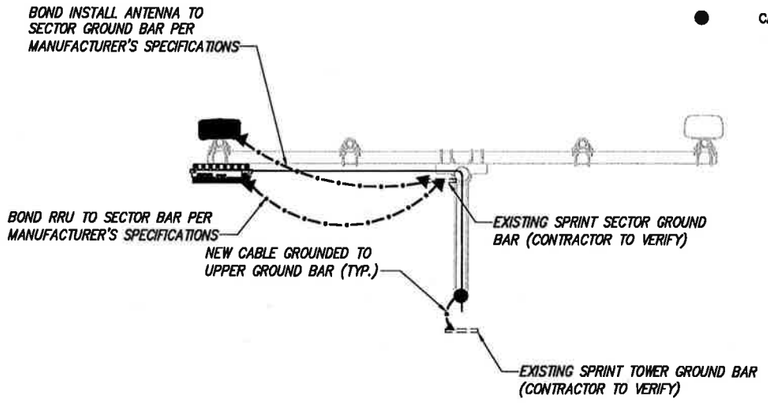
NOTE:
NO LIQUID TIGHT FLEXIBLE METALLIC CONDUIT IS TO EXCEED 6 FEET PER SP-2 SECTION 26 200 ITEM E.

ELECTRICAL & GROUNDING PLAN

NO SCALE | 1

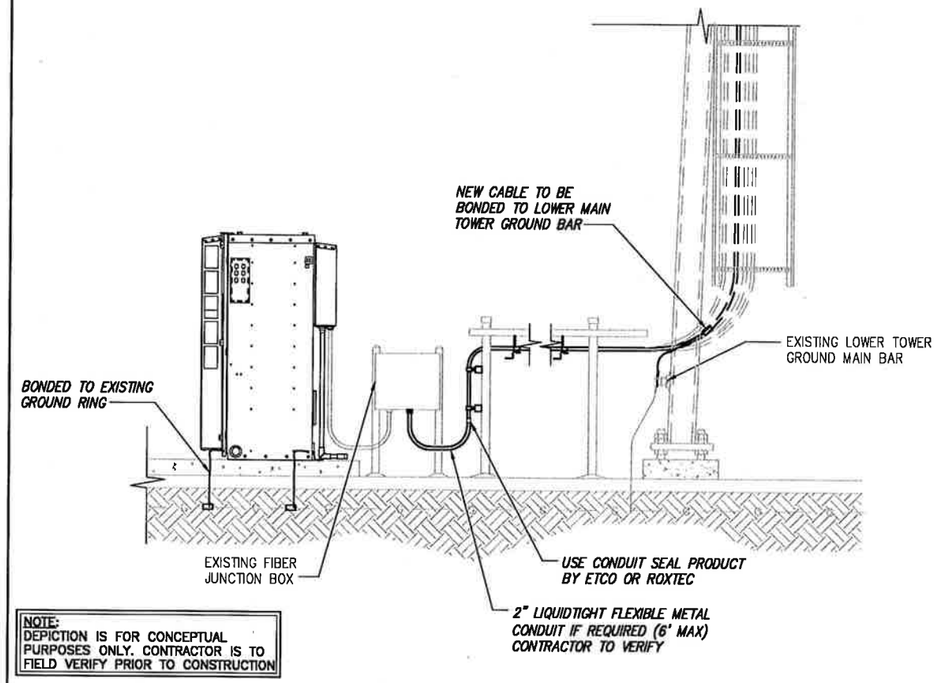
LEGEND:

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2



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

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION)

NO SCALE | 3

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Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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

JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT JOHN S. STEVENS SEP 26 2017 No. 24705 LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

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NORTH BRISTOL - AT&T - LAVERO

SITE CASCADE:

CT54XC710

SITE ADDRESS:

371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

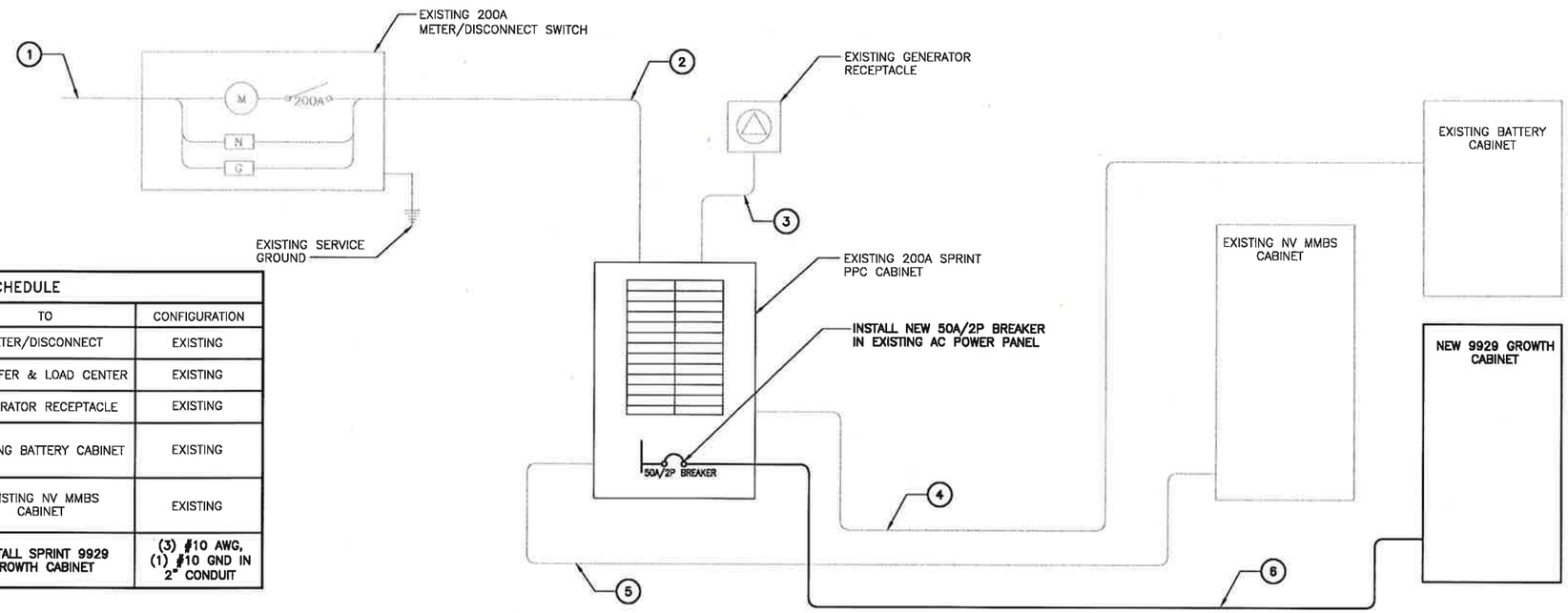
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

NOTES

GC 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 BATTERY CABINET	EXISTING
5	TRANSFER & LOAD CENTER	EXISTING NV MMBS CABINET	EXISTING
6	**TRANSFER & LOAD CENTER**	**INSTALL SPRINT 9929 GROWTH CABINET**	**(3) #10 AWG, (1) #10 GND IN 2" CONDUIT**

ELECTRICAL ONE-LINE DIAGRAM

NO SCALE | 1

120/240V, 1 PHASE, 3W
200A BUS, 10 KAIC

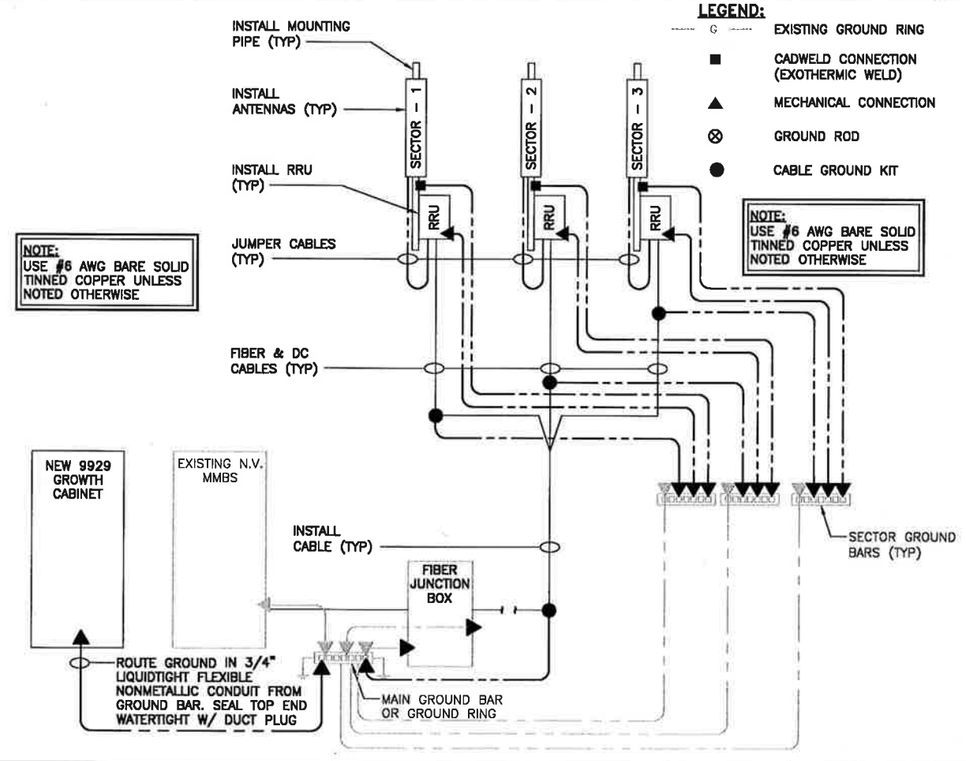
PANEL SCHEDULE

CKT NO.	CKT BKR AMPS	CKT BKR POLES	DESCRIPTION	LOAD (WATTS) L1	L2	LCL	L2	L1	DESCRIPTION	CKT POLES	CKT BKR AMPS	CKT NO.
1	60	2	TVSS	TBD			TBD		TELCO RECEPT.	1	10	2
3					TBD			TBD	TELCO RECEPT.	1	15	4
5	100	2	MMBTS	6000			180		SITE LIGHTS	1	TBD	6
7					6000							8
9	**50**	**2**	**GROWTH CABINET**	**6000**								10
11					**6000**							12
13												14
15												16
17												18
19												20
21												22
23												24
PHASE TOTALS (WATTS)				TBD*	TBD*		TBD*	TBD*				
TOTAL CONNECTED (WATTS)				TBD*	TBD*							
PHASE BALANCE				TBD*	TBD*							
TOTAL AMPS PER PHASE (AMPS)				TBD*	TBD*							
TOTAL LOAD (AMPS)				TBD*								

* – INSUFFICIENT FIELD DATA TO SHOW SITE-SPECIFIC INFORMATION

PANEL SCHEDULE

NO SCALE | 2



GROUNDING RISER DIAGRAM

NO SCALE | 3

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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 353-000

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CROWN CASTLE

ENGINEERING LICENSE:

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CT54XC710

SITE ADDRESS:

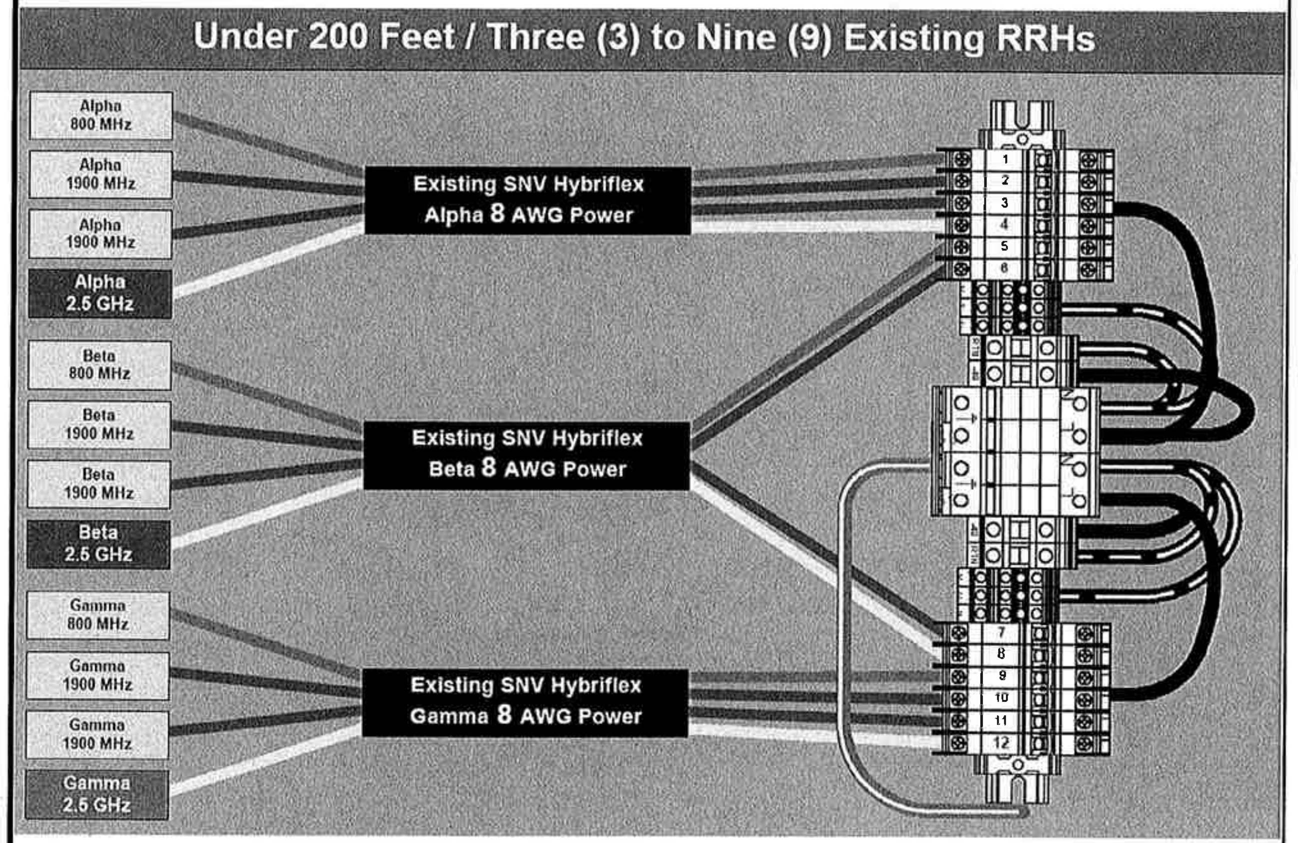
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

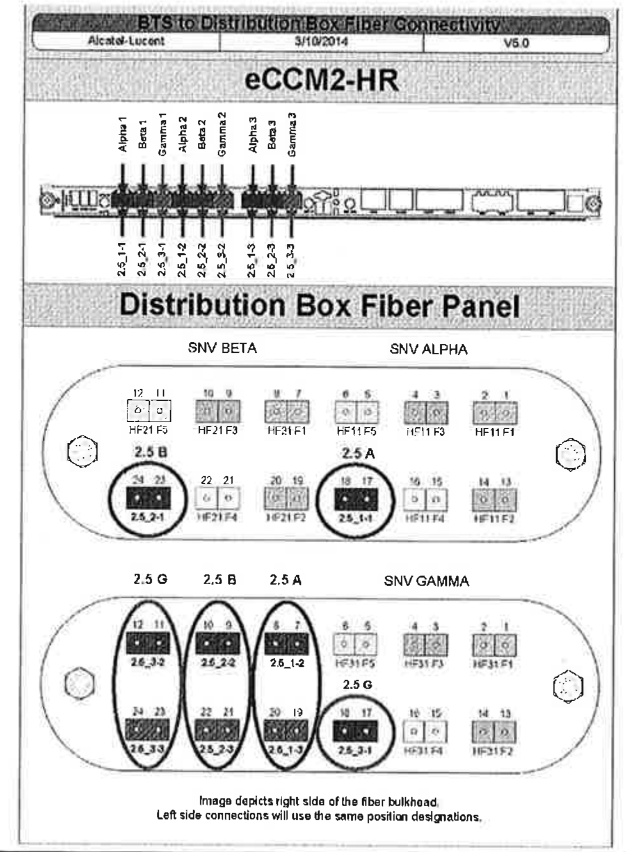
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

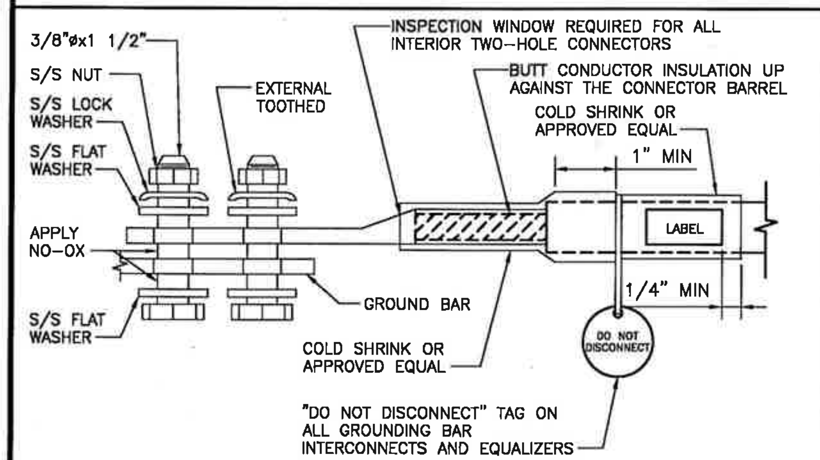
E-2



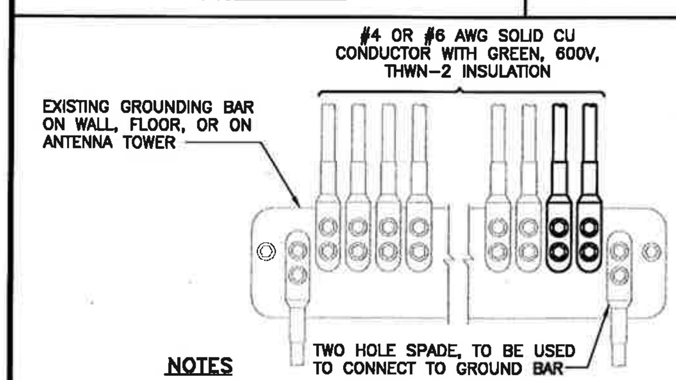
RRH TO DISTRIBUTION BOX POWER CONNECTION DIAGRAM	NO SCALE	1



BTS TO DISTRIBUTION BOX FIBER CONNECTIVITY	NO SCALE	2



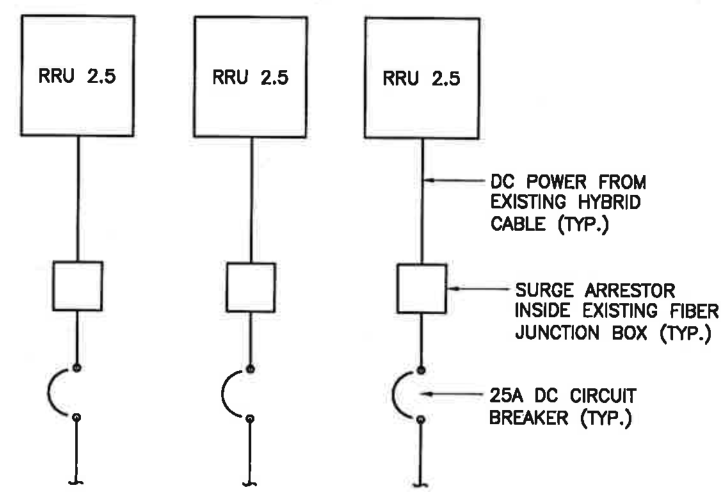
TWO HOLE LUG	NO SCALE	3



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	4



NOTES:
- CONTRACTOR TO UPGRADE DC BREAKERS AS REQUIRED PER RRU EQUIPMENT SPECIFICATIONS.
- CONTRACTOR TO USE EXISTING SPARE NV HYBRIFLEX DC CONDUCTORS.

DC ONE LINE DIAGRAM	NO SCALE	5

DETAIL NOT USED	NO SCALE	6

PLANS PREPARED FOR:

Sprint
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PLANS PREPARED BY:

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Fax # (518) 690-0793
JOB NUMBER 353-000

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT JOHN S. STEVENS No. 24705 LICENSED PROFESSIONAL ENGINEER
SEP 26 2017

DRAWING NOTICE:

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	9/26/17	ETC	0

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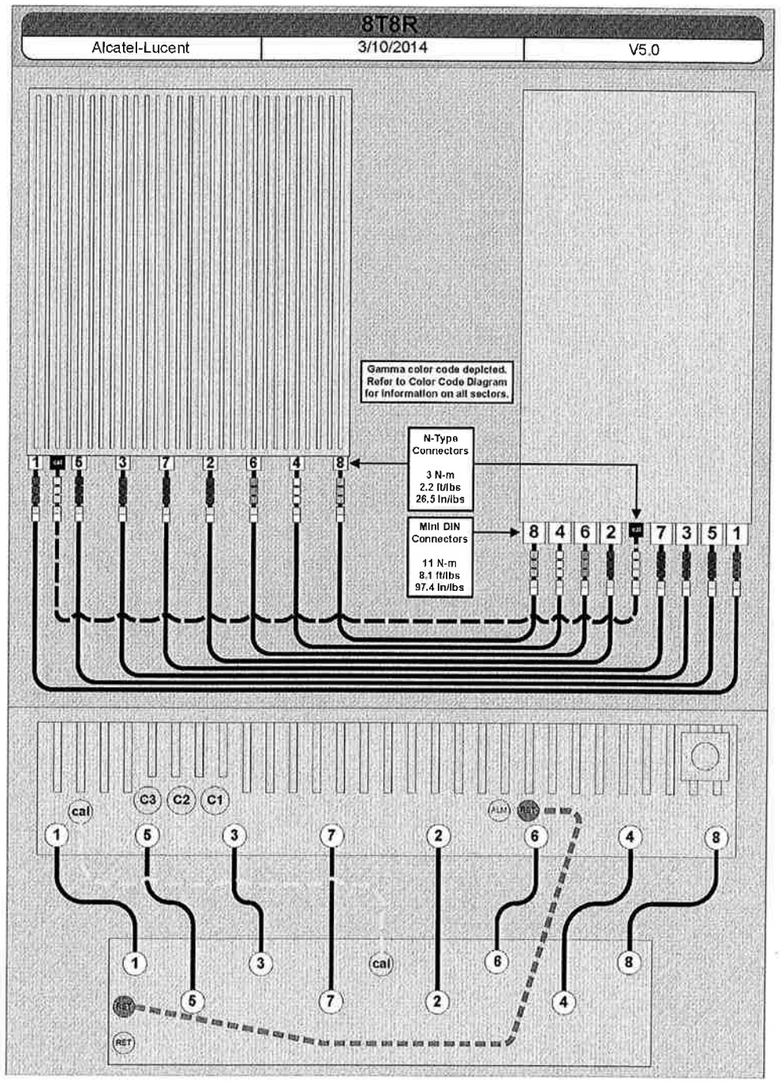
BRISTOL, CT 06010

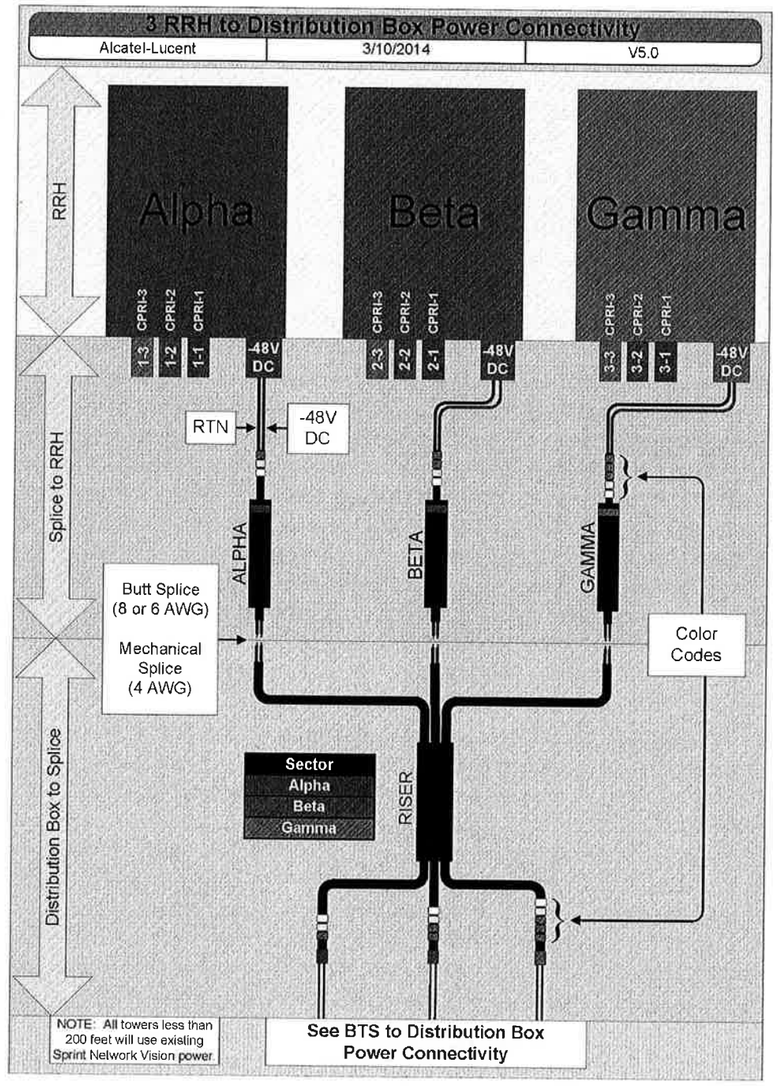
SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-3





8T8R DETAIL | NO SCALE | 1

RRH TO DISTRIBUTION BOX FIBER CONNECTIVITY | NO SCALE | 2

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Sprint
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Overland Park, Kansas 66251

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371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET DESCRIPTION:

RRH DETAIL & CONNECTIVITY TO DISTRIBUTION BOX

SHEET NUMBER:

E-4

Date: **August 11, 2017**

Marianne Dunst
Crown Castle
3530 Toringdon Way
Charlotte, NC 28277

Black & Veatch Corp.
6800 W 115th St. Suite 2292
Overland Park, KS 66211
(913) 458-8145

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT54XC710
	Carrier Site Name:	CT54XC710
Crown Castle Designation:	**Crown Castle BU Number:**	842859
	Crown Castle Site Name:	BRISTOL CENTER
	Crown Castle JDE Job Number:	450833
	Crown Castle Work Order Number:	1436672
	Crown Castle Application Number:	399481 Rev. 0
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	194393
Site Data:	**371 Terryville Avenue, Bristol, Hartford County, CT** **Latitude *41° 40' 47.71"*, Longitude *-72° 57' 45.18"*** **168.333 Foot - Monopole Tower**	

Dear Marianne Dunst,

Black & Veatch Corp. 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 1067545, in accordance with application 399481, revision 0.

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

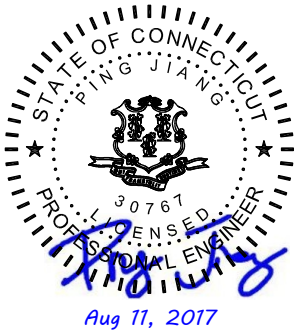
LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C with a maximum topographic factor, K_{zt}, of 1.000 and Risk Category II were used in this analysis. Seismic forces have been evaluated based on Site Class D with spectral response factors S_S of 0.185g and S_1 of 0.064g.

We at *Black & Veatch Corp.* 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: Narongkorn Wongwattanapong / Jumpon Uea-areevorakul

Respectfully submitted by:



Ping Jiang, P.E.
Professional Engineer

tnxTower Report - version 7.0.5.1

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1) INTRODUCTION

This tower is a 168.333 ft Monopole tower designed by Engineered Endeavors, Inc. in December of 2003. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

The tower has been modified multiple times in the past to accommodate additional loading.

The tower has been modified per reinforcement drawings prepared by Black & Veatch Corp., in May of 2012. Reinforcement consists of addition of reinforcement plates at 0' – 120', stiffener plates at baseplate, and new anchor rods at baseplate. Refer to post modification inspection report by Black & Veatch Corp., in October of 2012. All reinforcement plates are considered ineffective in this analysis.

The tower was later modified per reinforcement drawings prepared by GPD Group, in February of 2013. Reinforcement consists of removal of all stiffener plates. And addition of reinforcement plates at 0.75' – 115.83', stiffener plates at baseplate, and transition stiffeners at baseplate. Refer to legacy modification inspection report by B+T Group in March of 2015.

The tower was later modified per reinforcement drawings prepared by GPD Group, in August of 2013. Reinforcement consists of addition of new rebar into the existing foundation. Refer to post modification observation report by GPD Group in December of 2013.

The tower was later modified per reinforcement drawings prepared by Black & Veatch Corp., in September of 2015. Reinforcement consists of removal of some reinforcement plates at 0' – 84.67'' and all stiffener plates. And addition of reinforcement plates at 1.25' – 84.33' and 87.92' – 127.33', stiffener plates at baseplate, transition stiffeners at baseplate, and new rebar into the existing foundation. Refer to modification inspection report by Engineered Tower Solutions, PLLC., in February of 2016.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas using a 3-second gust wind speed of 93 mph with no ice, 50 mph with 1 inch ice thickness and 60 mph under service loads, exposure category C with topographic category 1 and crest height of 0 feet. Seismic forces have been evaluated based on Site Class D with spectral response factors S_S of 0.185g and S_1 of 0.064g.

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
158.0	158.0	3	alcatel lucent	TD-RRH8x20-25	1	1-1/4	1
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
	155.5	1	sitepro1	PQ-1245L [NA 509-3]			

Notes:
1) See Appendix B for proposed coax configuration

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
168.0	169.0	3	ericsson	RRUS 11	6 2 1 1	1-5/8 7/8 3/8 1/2	1
		1	andrew	SBNH-1D6565C w/ Mount Pipe			
		3	kathrein	800 10121 w/ Mount Pipe			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		6	kathrein	860 10025			
		1	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		1	kmw communications	AM-X-CD-17-65-00T-RET w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		1	raycap	DC6-48-60-18-8F			
	168.0	1	cci tower mounts	Platform Mount [LP 303-1]			
158.0	160.0	3	alcatel lucent	1900MHz RRH (65MHz)	-	-	4
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ RRH			
	158.0	-	-	-	1	1/2	5
		1	cci tower mounts	T-Arm Mount [TA 602-3]	3	1-1/4	1
		2	powerwave technologies	P40-16-XLPP-RR-A w/ Mount Pipe			
		1	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
148.0	148.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8	3
138.0	140.0	3	alcatel lucent	RRH2X60-PCS	1	1-5/8	2
		3	alcatel lucent	RRH2x60-700			
		3	alcatel lucent	RRH2x60-AWS			
		6	commscope	SBNHH-1D65B w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		4	antel	BXA-70063/4CF w/ Mount Pipe	12	1-5/8	1
		2	antel	BXA-70080-6CF-4 w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		6	rfs celwave	FD9R6004/2C-3L			
	138.0	1	cci tower mounts	Platform Mount [LP 303-1]			
128.0	130.0	3	andrew	ONEBASE TWIN DUAL DUPLEX TMA	12 1	1-5/8 1-1/4	1
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
	128.0	1	cci tower mounts	Platform Mount [LP 303-1]			
70.0	70.0	1	cci tower mounts	Side Arm Mount [SO 701-1]	1	1/2	1
		1	gps	GPS_A			

Notes:
1) Existing Equipment
2) Reserved Equipment

3) Abandoned Equipment; Considered in This Analysis
4) Equipment To Be Relocated To Center Line Elevation 158'
5) Equipment To Be Removed; Not Considered in This Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
169.0	169.0	6	allgon	7920.00	-	-
160.0	160.0	12	decibel	DB980	-	-
150.0	150.0	6	unknown	4ft Panel Antenna	-	-
140.0	140.0	6	unknown	4ft Panel Antenna	-	-
130.0	130.0	3	unknown	4ft Panel Antenna	-	-
120.0	120.0	3	unknown	4ft Panel Antenna	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Engineering, Inc.	5452600	CCISITES
4-POST-MODIFICATION INSPECTION	Black & Veatch Corp.	5111172	CCISITES
4-POST-MODIFICATION INSPECTION	GPD Group	5114340	CCISITES
4-POST-MODIFICATION INSPECTION	B+T Group	5595874	CCISITES
4-POST-MODIFICATION INSPECTION	Engineered Tower Solutions, PLLC	6121087	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	4529295	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	5135435	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group	4964264	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group	5111173	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Black & Veatch Corp.	5907572	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Black & Veatch Corp. (Mod Design)	5111174	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Black & Veatch Corp.	6660399	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) The existing base plate grout was not considered in this analysis.
5) This analysis was performed under the assumption that all information provided to Black & Veatch is current and correct. This is to include site data, existing/proposed appurtenance loading, tower/foundation details, and geotechnical data. The existing/proposed loading on the structure is based on CAD level drawings and carrier applications provided by the owner. If any of this information is not current and correct, this report should be considered obsolete and further analysis will be required.

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

4) ANALYSIS RESULTS

4.1) Wind Results

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	7.3%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	13.3%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	24.8%	Pass
153.33 - 148.33	Pole	TP22.338x21.503x0.1875	Pole	35.3%	Pass
148.33 - 143.33	Pole	TP23.172x22.338x0.1875	Pole	45.5%	Pass
143.33 - 138.33	Pole	TP24.006x23.172x0.1875	Pole	55.0%	Pass
138.33 - 134.16	Pole	TP25.314x24.006x0.1875	Pole	68.3%	Pass
134.16 - 129.16	Pole	TP25.15x24.327x0.25	Pole	57.6%	Pass
129.16 - 125.5	Pole	TP25.753x25.15x0.25	Pole	65.0%	Pass
125.5 - 125.25	Pole	TP25.794x25.753x0.25	Pole	67.8%	Pass
125.25 - 120.25	Pole	TP26.617x25.794x0.25	Pole	77.2%	Pass
120.25 - 115.25	Pole	TP27.44x26.617x0.25	Pole	85.6%	Pass
115.25 - 113.83	Pole	TP27.674x27.44x0.25	Pole	87.9%	Pass
113.83 - 113.58	Pole + Reinf.	TP27.715x27.674x0.65	Reinf. 10 Tension Rupture	56.0%	Pass
113.58 - 108.58	Pole + Reinf.	TP28.538x27.715x0.6375	Reinf. 10 Tension Rupture	61.5%	Pass
108.58 - 103.58	Pole + Reinf.	TP29.361x28.538x0.625	Reinf. 10 Tension Rupture	66.6%	Pass
103.58 - 98.58	Pole + Reinf.	TP30.184x29.361x0.6125	Reinf. 10 Tension Rupture	71.5%	Pass
98.58 - 93.58	Pole + Reinf.	TP31.007x30.184x0.6	Reinf. 10 Tension Rupture	76.2%	Pass
93.58 - 89.11	Pole + Reinf.	TP32.493x31.007x0.6	Reinf. 10 Tension Rupture	80.1%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.242x0.575	Reinf. 2 Tension Rupture	89.2%	Pass
83.55 - 82.83	Pole + Reinf.	TP32.274x32.155x0.575	Reinf. 2 Tension Rupture	89.7%	Pass
82.83 - 82.58	Pole + Reinf.	TP32.315x32.274x0.6875	Reinf. 2 Tension Rupture	75.5%	Pass
82.58 - 77.58	Pole + Reinf.	TP33.135x32.315x0.675	Reinf. 2 Tension Rupture	78.8%	Pass
77.58 - 73.42	Pole + Reinf.	TP33.818x33.135x0.6625	Reinf. 2 Tension Rupture	81.4%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.859x33.818x1.0125	Reinf. 2 Tension Rupture	55.7%	Pass
73.17 - 72.75	Pole + Reinf.	TP33.928x33.859x1.0125	Reinf. 2 Tension Rupture	55.9%	Pass
72.75 - 72.5	Pole + Reinf.	TP33.969x33.928x0.925	Reinf. 9 Tension Rupture	62.1%	Pass
72.5 - 67.5	Pole + Reinf.	TP34.79x33.969x0.9125	Reinf. 9 Tension Rupture	64.6%	Pass
67.5 - 64.25	Pole + Reinf.	TP35.323x34.79x0.8875	Reinf. 9 Tension Rupture	66.2%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	76.0%	Pass
64 - 59	Pole + Reinf.	TP36.185x35.364x0.7375	Reinf. 3 Tension Rupture	78.5%	Pass
59 - 54	Pole + Reinf.	TP37.006x36.185x0.7125	Reinf. 3 Tension Rupture	80.9%	Pass
54 - 49	Pole + Reinf.	TP38.702x37.006x0.7125	Reinf. 3 Tension Rupture	83.1%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.7625	Reinf. 4 Tension Rupture	77.6%	Pass
42.66 - 37.66	Pole + Reinf.	TP39.063x38.242x0.75	Reinf. 4 Tension Rupture	79.2%	Pass
37.66 - 32.66	Pole + Reinf.	TP39.885x39.063x0.75	Reinf. 4 Tension Rupture	80.8%	Pass
32.66 - 28.25	Pole + Reinf.	TP40.61x39.885x0.7375	Reinf. 4 Tension Rupture	82.2%	Pass
28.25 - 28	Pole + Reinf.	TP40.651x40.61x1.075	Reinf. 4 Tension Rupture	58.2%	Pass
28 - 27.75	Pole + Reinf.	TP40.692x40.651x1.075	Reinf. 4 Tension Rupture	58.3%	Pass
27.75 - 27.5	Pole + Reinf.	TP40.733x40.692x0.95	Reinf. 8 Tension Rupture	69.9%	Pass
27.5 - 22.5	Pole + Reinf.	TP41.554x40.733x0.95	Reinf. 8 Tension Rupture	71.3%	Pass
22.5 - 19.25	Pole + Reinf.	TP42.088x41.554x0.9375	Reinf. 8 Tension Rupture	72.2%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	74.7%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	76.0%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	77.1%	Pass
9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	78.2%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	79.0%	Pass
				Summary	
			Pole	87.9%	Pass
			Reinforcement	89.7%	Pass
			Overall	89.7%	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	54.4	Pass
	Base Plate		41.9	Pass
	Plate Stiffeners		57.4	Pass
	Pole Punching Shear		20.6	Pass
1	Base Foundation	0	82.9	Pass
	Base Foundation Soil Interaction		45.2	Pass

4.2) Seismic Results

Tower and foundation have been analyzed based on the seismic criteria outlined in section 2 of this report. Based on the analysis, seismic loading is not governing the tower and foundation stress. Wind loading is governing the tower and foundation stress.

Structure Rating (max from all components) =	89.7%

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

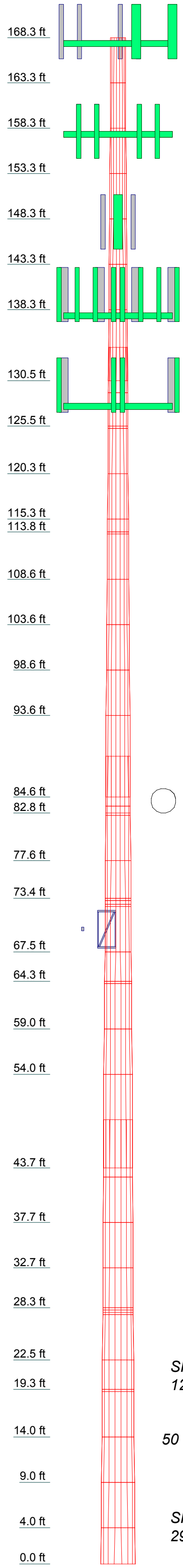
4.3) Recommendations

The tower, its anchor rods, base plate and 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	5.00	18	0.1875		19.0000	19.8344	A572-65	0.2
2	5.00	18	0.1875		19.8344	20.6688		0.2
3	5.00	18	0.1875		20.6688	21.5032		0.2
4	5.00	18	0.1875		21.5032	22.3375		0.2
5	5.00	18	0.1875		22.3375	23.1719		0.2
6	5.00	18	0.1875		23.1719	24.0063		0.2
7	5.00 / 7.83	18	0.1875	3.66	24.0063	25.3135		0.4
8	[illegible]	18	[illegible]		[illegible]	[illegible]		0.3
9	[illegible]	18	[illegible]		[illegible]	[illegible]		0.2
10	[illegible]	18	[illegible]		[illegible]	[illegible]		0.0
11	5.00	18	0.2500		[illegible]	[illegible]		0.4
12	5.00	18	[illegible]		[illegible]	[illegible]		0.4
13	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
14	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
15	5.00	18	[illegible]		[illegible]	[illegible]		0.9
16	5.00	18	0.6250		28.5382	29.3612		0.9
17	5.00	18	0.6125		29.3612	30.1842		0.9
18	5.00	18	0.6000		30.1842	31.0072		1.0
19	5.56 / 9.03	18	0.6000	4.56	31.0072	32.4932		1.8
20–22	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
23	5.00	18	[illegible]		[illegible]	[illegible]		1.3
24	[illegible]	18	[illegible]		[illegible]	[illegible]		1.1
25–27	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
28	5.00	18	[illegible]		[illegible]	[illegible]		1.6
29	[illegible]	18	[illegible]		[illegible]	[illegible]		1.1
30	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
31	5.00	18	[illegible]		[illegible]	[illegible]		1.3
32	5.00	18	0.7125		36.1850	37.0056		1.3
33	6.34 / 10.34	18	0.7125	5.34	37.0056	38.7021		2.8
34	[illegible]	18	[illegible]		[illegible]	[illegible]		2.1
35	5.00	18	0.7500		[illegible]	[illegible]		1.7
36	5.00	18	0.7500		39.0633	39.8846		1.7
37	[illegible]	18	[illegible]		[illegible]	[illegible]		1.5
38–40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
41	5.00	18	[illegible]		[illegible]	[illegible]		2.0
42	[illegible]	18	[illegible]		[illegible]	[illegible]		1.3
43	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
44	5.00	18	[illegible]		[illegible]	[illegible]		1.8
45	5.00	18	0.8000		42.9504	43.7717		1.8
46	5.00	18	0.7875		43.7717	44.5930		1.8
47	4.00	18	0.7750		44.5930	45.2500		1.5
								38.3



DESIGNED APPURTENANCE LOADING

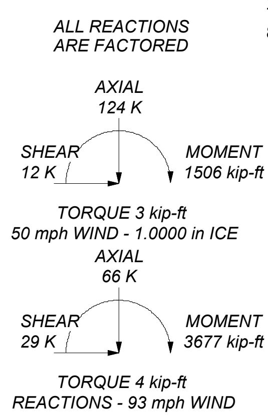
TYPE	ELEVATION	TYPE	ELEVATION
Platform Mount [LP 303-1]	168	APXV18-206517S-C w/ Mount Pipe	148
6' x 2" Mount Pipe	168	APXV18-206517S-C w/ Mount Pipe	148
6' x 2" Mount Pipe	168	Platform Mount [LP 303-1]	138
6' x 2" Mount Pipe	168	BXA-70063/4CF w/ Mount Pipe	138
6' x 2" Mount Pipe	168	BXA-70063/4CF w/ Mount Pipe	138
6' x 2" Mount Pipe	168	BXA-70063/4CF w/ Mount Pipe	138
6' x 2" Mount Pipe	168	BXA-70080-6CF-4 w/ Mount Pipe	138
800 10121 w/ Mount Pipe	168	BXA-70063/4CF w/ Mount Pipe	138
800 10121 w/ Mount Pipe	168	BXA-70080-6CF-4 w/ Mount Pipe	138
800 10121 w/ Mount Pipe	168	SBNHH-1D65B w/ Mount Pipe	138
SBNH-1D6565C w/ Mount Pipe	168	SBNHH-1D65B w/ Mount Pipe	138
AM-X-CD-17-65-00T-RET w/ Mount Pipe	168	SBNHH-1D65B w/ Mount Pipe	138
AM-X-CD-16-65-00T-RET w/ Mount Pipe	168	SBNHH-1D65B w/ Mount Pipe	138
(2) 860 10025	168	SBNHH-1D65B w/ Mount Pipe	138
(2) 860 10025	168	SBNHH-1D65B w/ Mount Pipe	138
(2) 860 10025	168	(2) FD9R6004/2C-3L	138
(2) LGP21401	168	(2) FD9R6004/2C-3L	138
(2) LGP21401	168	(2) FD9R6004/2C-3L	138
(2) LGP21401	168	DB-T1-6Z-8AB-0Z	138
RRUS 11	168	DB-T1-6Z-8AB-0Z	138
RRUS 11	168	RRH2x60-700	138
RRUS 11	168	RRH2x60-700	138
DC6-48-60-18-8F	168	RRH2x60-700	138
T-Arm Mount [TA 602-3]	158	RRH2x60-AWS	138
PQ-1245L [NA 509-3]	158	RRH2x60-AWS	138
(2) 6' x 2" Mount Pipe	158	RRH2x60-AWS	138
(2) 6' x 2" Mount Pipe	158	RRH2X60-PCS	138
(2) 6' x 2" Mount Pipe	158	RRH2X60-PCS	138
6' x 2" Mount Pipe	158	RRH2X60-PCS	138
6' x 2" Mount Pipe	158	Platform Mount [LP 303-1]	128
6' x 2" Mount Pipe	158	6' x 2" Mount Pipe	128
P40-16-XLPP-RR-A w/ Mount Pipe	158	6' x 2" Mount Pipe	128
P40-16-XLPP-RR-A w/ Mount Pipe	158	6' x 2" Mount Pipe	128
APXVSPP18-C-A20 w/ Mount Pipe	158	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	128
APXVTM14-C-120 w/ Mount Pipe	158	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	128
APXVTM14-C-120 w/ Mount Pipe	158	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	128
APXVTM14-C-120 w/ Mount Pipe	158	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	128
1900MHz RRH (65MHz)	158	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	128
1900MHz RRH (65MHz)	158	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	128
1900MHz RRH (65MHz)	158	ONEBASE TWIN DUAL DUPLEX TMA	128
800 EXTERNAL NOTCH FILTER	158	ONEBASE TWIN DUAL DUPLEX TMA	128
800 EXTERNAL NOTCH FILTER	158	ONEBASE TWIN DUAL DUPLEX TMA	128
800 EXTERNAL NOTCH FILTER	158	Side Arm Mount [SO 701-1]	70
800MHZ RRH	158	GPS_A	70
800MHZ RRH	158		
800MHZ RRH	158		
TD-RRH8x20-25	158		
TD-RRH8x20-25	158		
TD-RRH8x20-25	158		
APXV18-206517S-C w/ Mount Pipe	148		

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 Exposure C to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 84.9%



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Job: BRISTOL CENTER (BU # 842859)			
Project: 194393 (842859.1436672)			
Client: Crown Castle	Drawn by: Jumpon Uea-areevorakul		App'd:
Code: TIA-222-G	Date: 08/11/17		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 93 mph.
3) Structure Class II.
4) Exposure Category C.
5) Topographic Category 1.
6) Crest Height 0.00 ft.
7) Nominal ice thickness of 1.0000 in.
8) Ice thickness is considered to increase with height.
9) Ice density of 56 pcf.
10) A wind speed of 50 mph is used in combination with ice.
11) Temperature drop of 50 °F.
12) Deflections calculated using a wind speed of 60 mph.
13) A non-linear (P-delta) analysis was used.
14) Pressures are calculated at each section.
15) Stress ratio used in pole design is 1.
16) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	168.33-163.33	5.00	0.00	18	19.0000	19.8344	0.1875	0.7500	A572-65 (65 ksi)
L2	163.33-158.33	5.00	0.00	18	19.8344	20.6688	0.1875	0.7500	A572-65 (65 ksi)
L3	158.33-153.33	5.00	0.00	18	20.6688	21.5032	0.1875	0.7500	A572-65 (65 ksi)
L4	153.33-148.33	5.00	0.00	18	21.5032	22.3375	0.1875	0.7500	A572-65 (65 ksi)
L5	148.33-143.33	5.00	0.00	18	22.3375	23.1719	0.1875	0.7500	A572-65 (65 ksi)
L6	143.33-138.33	5.00	0.00	18	23.1719	24.0063	0.1875	0.7500	A572-65

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
									(65 ksi)
L7	138.33-130.50	7.83	3.66	18	24.0063	25.3135	0.1875	0.7500	A572-65 (65 ksi)
L8	130.50-129.16	5.00	0.00	18	24.3270	25.1500	0.2500	1.0000	A572-65 (65 ksi)
L9	129.16-125.50	3.66	0.00	18	25.1500	25.7532	0.2500	1.0000	A572-65 (65 ksi)
L10	125.50-125.25	0.25	0.00	18	25.7532	25.7943	0.2500	1.0000	A572-65 (65 ksi)
L11	125.25-120.25	5.00	0.00	18	25.7943	26.6173	0.2500	1.0000	A572-65 (65 ksi)
L12	120.25-115.25	5.00	0.00	18	26.6173	27.4403	0.2500	1.0000	A572-65 (65 ksi)
L13	115.25-113.83	1.42	0.00	18	27.4403	27.6740	0.2500	1.0000	A572-65 (65 ksi)
L14	113.83-113.58	0.25	0.00	18	27.6740	27.7152	0.6500	2.6000	A572-65 (65 ksi)
L15	113.58-108.58	5.00	0.00	18	27.7152	28.5382	0.6375	2.5500	A572-65 (65 ksi)
L16	108.58-103.58	5.00	0.00	18	28.5382	29.3612	0.6250	2.5000	A572-65 (65 ksi)
L17	103.58-98.58	5.00	0.00	18	29.3612	30.1842	0.6125	2.4500	A572-65 (65 ksi)
L18	98.58-93.58	5.00	0.00	18	30.1842	31.0072	0.6000	2.4000	A572-65 (65 ksi)
L19	93.58-84.55	9.03	4.56	18	31.0072	32.4932	0.6000	2.4000	A572-65 (65 ksi)
L20	84.55-83.55	5.56	0.00	18	31.2422	32.1552	0.5750	2.3000	A572-65 (65 ksi)
L21	83.55-82.83	0.72	0.00	18	32.1552	32.2737	0.5750	2.3000	A572-65 (65 ksi)
L22	82.83-82.58	0.25	0.00	18	32.2737	32.3147	0.6875	2.7500	A572-65 (65 ksi)
L23	82.58-77.58	5.00	0.00	18	32.3147	33.1354	0.6750	2.7000	A572-65 (65 ksi)
L24	77.58-73.42	4.16	0.00	18	33.1354	33.8182	0.6625	2.6500	A572-65 (65 ksi)
L25	73.42-73.17	0.25	0.00	18	33.8182	33.8592	1.0125	4.0500	A572-65 (65 ksi)
L26	73.17-72.75	0.42	0.00	18	33.8592	33.9282	1.0125	4.0500	A572-65 (65 ksi)
L27	72.75-72.50	0.25	0.00	18	33.9282	33.9692	0.9250	3.7000	A572-65 (65 ksi)
L28	72.50-67.50	5.00	0.00	18	33.9692	34.7899	0.9125	3.6500	A572-65 (65 ksi)
L29	67.50-64.25	3.25	0.00	18	34.7899	35.3233	0.8875	3.5500	A572-65 (65 ksi)
L30	64.25-64.00	0.25	0.00	18	35.3233	35.3643	0.7375	2.9500	A572-65 (65 ksi)
L31	64.00-59.00	5.00	0.00	18	35.3643	36.1850	0.7375	2.9500	A572-65 (65 ksi)
L32	59.00-54.00	5.00	0.00	18	36.1850	37.0056	0.7125	2.8500	A572-65 (65 ksi)
L33	54.00-43.66	10.34	5.34	18	37.0056	38.7021	0.7125	2.8500	A572-65 (65 ksi)
L34	43.66-42.66	6.34	0.00	18	37.2009	38.2420	0.7625	3.0500	A572-65 (65 ksi)
L35	42.66-37.66	5.00	0.00	18	38.2420	39.0633	0.7500	3.0000	A572-65 (65 ksi)
L36	37.66-32.66	5.00	0.00	18	39.0633	39.8846	0.7500	3.0000	A572-65 (65 ksi)
L37	32.66-28.25	4.41	0.00	18	39.8846	40.6097	0.7375	2.9500	A572-65 (65 ksi)
L38	28.25-28.00	0.25	0.00	18	40.6097	40.6507	1.0750	4.3000	A572-65 (65 ksi)
L39	28.00-27.75	0.25	0.00	18	40.6507	40.6918	1.0750	4.3000	A572-65 (65 ksi)
L40	27.75-27.50	0.25	0.00	18	40.6918	40.7329	0.9500	3.8000	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
L41	27.50-22.50	5.00	0.00	18	40.7329	41.5542	0.9500	3.8000	A572-65 (65 ksi)
L42	22.50-19.25	3.25	0.00	18	41.5542	42.0880	0.9375	3.7500	A572-65 (65 ksi)
L43	19.25-19.00	0.25	0.00	18	42.0880	42.1291	0.8250	3.3000	A572-65 (65 ksi)
L44	19.00-14.00	5.00	0.00	18	42.1291	42.9504	0.8000	3.2000	A572-65 (65 ksi)
L45	14.00-9.00	5.00	0.00	18	42.9504	43.7717	0.8000	3.2000	A572-65 (65 ksi)
L46	9.00-4.00	5.00	0.00	18	43.7717	44.5930	0.7875	3.1500	A572-65 (65 ksi)
L47	4.00-0.00	4.00		18	44.5930	45.2500	0.7750	3.1000	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	19.2931	11.1958	500.5935	6.6784	9.6520	51.8642	1001.8456	5.5990	3.0140	16.075
	20.1404	11.6924	570.1993	6.9746	10.0759	56.5906	1141.1489	5.8473	3.1609	16.858
L2	20.1404	11.6924	570.1993	6.9746	10.0759	56.5906	1141.1489	5.8473	3.1609	16.858
	20.9876	12.1889	645.9757	7.2709	10.4997	61.5231	1292.8013	6.0956	3.3077	17.641
L3	20.9876	12.1889	645.9757	7.2709	10.4997	61.5231	1292.8013	6.0956	3.3077	17.641
	21.8349	12.6855	728.1846	7.5671	10.9236	66.6616	1457.3274	6.3439	3.4546	18.424
L4	21.8349	12.6855	728.1846	7.5671	10.9236	66.6616	1457.3274	6.3439	3.4546	18.424
	22.6821	13.1820	817.0882	7.8633	11.3475	72.0062	1635.2516	6.5923	3.6014	19.208
L5	22.6821	13.1820	817.0882	7.8633	11.3475	72.0062	1635.2516	6.5923	3.6014	19.208
	23.5294	13.6786	912.9485	8.1595	11.7713	77.5569	1827.0983	6.8406	3.7483	19.991
L6	23.5294	13.6786	912.9485	8.1595	11.7713	77.5569	1827.0983	6.8406	3.7483	19.991
	24.3766	14.1752	1016.0276	8.4557	12.1952	83.3137	2033.3921	7.0889	3.8951	20.774
L7	24.3766	14.1752	1016.0276	8.4557	12.1952	83.3137	2033.3921	7.0889	3.8951	20.774
	25.7040	14.9531	1192.6574	8.9197	12.8593	92.7470	2386.8842	7.4780	4.1252	22.001
L8	25.3147	19.1051	1399.2459	8.5474	12.3581	113.2246	2800.3330	9.5544	3.8416	15.366
	25.5380	19.7582	1547.6936	8.8395	12.7762	121.1386	3097.4237	9.8810	3.9864	15.946
L9	25.5380	19.7582	1547.6936	8.8395	12.7762	121.1386	3097.4237	9.8810	3.9864	15.946
	26.1504	20.2368	1662.9011	9.0536	13.0826	127.1078	3327.9903	10.1203	4.0926	16.37
L10	26.1504	20.2368	1662.9011	9.0536	13.0826	127.1078	3327.9903	10.1203	4.0926	16.37
	26.1922	20.2694	1670.9635	9.0682	13.1035	127.5203	3344.1257	10.1366	4.0998	16.399
L11	26.1922	20.2694	1670.9635	9.0682	13.1035	127.5203	3344.1257	10.1366	4.0998	16.399
	27.0279	20.9225	1837.7313	9.3604	13.5216	135.9108	3677.8807	10.4632	4.2446	16.979
L12	27.0279	20.9225	1837.7313	9.3604	13.5216	135.9108	3677.8807	10.4632	4.2446	16.979
	27.8636	21.5755	2015.2413	9.6526	13.9397	144.5687	4033.1343	10.7898	4.3895	17.558
L13	27.8636	21.5755	2015.2413	9.6526	13.9397	144.5687	4033.1343	10.7898	4.3895	17.558
	28.1010	21.7610	2067.6595	9.7355	14.0584	147.0763	4138.0396	10.8826	4.4306	17.723
L14	28.1010	55.7533	5144.0940	9.5935	14.0584	365.9085	10294.9566	27.8820	3.7266	5.733
	28.1427	55.8382	5167.6288	9.6081	14.0793	367.0368	10342.0572	27.9244	3.7339	5.744
L15	28.1427	54.7897	5075.2768	9.6126	14.0793	360.4774	10157.2318	27.4001	3.7559	5.892
	28.9784	56.4550	5552.2602	9.9047	14.4974	382.9830	11111.8263	28.2329	3.9007	6.119
L16	28.9784	55.3728	5450.7119	9.9092	14.4974	375.9784	10908.5959	27.6917	3.9227	6.276
	29.8141	57.0054	5947.1987	10.2014	14.9155	398.7263	11902.2229	28.5081	4.0676	6.508
L17	29.8141	55.8896	5835.8637	10.2058	14.9155	391.2620	11679.4065	27.9501	4.0896	6.677
	30.6498	57.4896	6351.5464	10.4980	15.3336	414.2248	12711.4503	28.7503	4.2344	6.913
L18	30.6498	56.3402	6229.8164	10.5024	15.3336	406.2860	12467.8301	28.1754	4.2564	7.094
	31.4855	57.9075	6764.3347	10.7946	15.7517	429.4363	13537.5700	28.9592	4.4013	7.335

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
L19	31.4855	57.9075	6764.3347	10.7946	15.7517	429.4363	13537.5700	28.9592	4.4013	7.335
	32.9945	60.7374	7805.3056	11.3221	16.5065	472.8612	15620.8816	30.3745	4.6628	7.771
L20	32.4846	55.9692	6650.2054	10.8869	15.8710	419.0150	13309.1614	27.9899	4.4866	7.803
	32.6512	57.6354	7262.0073	11.2110	16.3348	444.5717	14533.5701	28.8232	4.6473	8.082
L21	32.6512	57.6354	7262.0073	11.2110	16.3348	444.5717	14533.5701	28.8232	4.6473	8.082
	32.7716	57.8517	7344.0771	11.2530	16.3950	447.9448	14697.8178	28.9314	4.6682	8.119
L22	32.7716	68.9251	8687.8013	11.2131	16.3950	529.9040	17387.0342	34.4691	4.4702	6.502
	32.8133	69.0146	8721.7037	11.2277	16.4159	531.2963	17454.8836	34.5139	4.4774	6.513
L23	32.8133	67.7866	8573.2845	11.2321	16.4159	522.2552	17157.8499	33.8997	4.4994	6.666
	33.6466	69.5448	9257.8502	11.5234	16.8328	549.9891	18527.8821	34.7790	4.6438	6.88
L24	33.6466	68.2832	9096.9097	11.5279	16.8328	540.4280	18205.7893	34.1481	4.6658	7.043
	34.3399	69.7190	9682.8869	11.7703	17.1796	563.6255	19378.5148	34.8661	4.7860	7.224
L25	34.3399	105.4269	14334.6579	11.6460	17.1796	834.3978	28688.1776	52.7234	4.1700	4.119
	34.3816	105.5587	14388.5141	11.6606	17.2005	836.5177	28795.9609	52.7894	4.1772	4.126
L26	34.3816	105.5587	14388.5141	11.6606	17.2005	836.5177	28795.9609	52.7894	4.1772	4.126
	34.4516	105.7803	14479.2953	11.6851	17.2355	840.0851	28977.6427	52.9002	4.1894	4.138
L27	34.4516	96.8957	13333.7711	11.7161	17.2355	773.6221	26685.0871	48.4570	4.3434	4.696
	34.4932	97.0161	13383.5668	11.7307	17.2564	775.5733	26784.7440	48.5173	4.3506	4.703
L28	34.4932	95.7413	13217.6965	11.7351	17.2564	765.9611	26452.7851	47.8797	4.3726	4.792
	35.3266	98.1182	14226.7598	12.0265	17.6732	804.9883	28472.2396	49.0684	4.5170	4.95
L29	35.3266	95.5004	13867.6415	12.0353	17.6732	784.6684	27753.5303	47.7593	4.5610	5.139
	35.8682	97.0030	14532.5880	12.2247	17.9442	809.8752	29084.2984	48.5107	4.6549	5.245
L30	35.8682	80.9593	12234.8760	12.2780	17.9442	681.8278	24485.8510	40.4873	4.9189	6.67
	35.9099	81.0553	12278.4745	12.2925	17.9651	683.4635	24573.1054	40.5354	4.9261	6.679
L31	35.9099	81.0553	12278.4745	12.2925	17.9651	683.4635	24573.1054	40.5354	4.9261	6.679
	36.7432	82.9764	13172.3323	12.5839	18.3820	716.5897	26361.9972	41.4961	5.0706	6.875
L32	36.7432	80.2201	12752.7569	12.5927	18.3820	693.7643	25522.2943	40.1177	5.1146	7.178
	37.5765	82.0760	13658.5026	12.8841	18.7989	726.5598	27334.9773	41.0458	5.2590	7.381
L33	37.5765	82.0760	13658.5026	12.8841	18.7989	726.5598	27334.9773	41.0458	5.2590	7.381
	39.2991	85.9125	15664.7477	13.4863	19.6607	796.7557	31350.1074	42.9644	5.5576	7.8
L34	38.6652	88.1873	14793.1753	12.9356	18.8980	782.7886	29605.8158	44.1020	5.2054	6.827
	38.8320	90.7070	16097.8115	13.3052	19.4270	828.6328	32216.8049	45.3621	5.3886	7.067
L35	38.8320	89.2498	15849.7608	13.3097	19.4270	815.8644	31720.3771	44.6334	5.4106	7.214
	39.6659	91.2049	16914.3523	13.6012	19.8442	852.3587	33850.9609	45.6111	5.5551	7.407
L36	39.6659	91.2049	16914.3523	13.6012	19.8442	852.3587	33850.9609	45.6111	5.5551	7.407

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
	40.4999	93.1600	18025.5794	13.8928	20.2614	889.6516	36074.8773	46.5888	5.6997	7.6
L37	40.4999	91.6366	17742.1433	13.8972	20.2614	875.6627	35507.6321	45.8270	5.7217	7.758
	41.2362	93.3338	18746.3364	14.1546	20.6297	908.7054	37517.3397	46.6758	5.8493	7.931
L38	41.2362	134.8943	26637.1396	14.0348	20.6297	1291.2023	53309.3290	67.4600	5.2553	4.889
	41.2779	135.0344	26720.2305	14.0494	20.6506	1293.9216	53475.6201	67.5300	5.2625	4.895
L39	41.2779	135.0344	26720.2305	14.0494	20.6506	1293.9216	53475.6201	67.5300	5.2625	4.895
	41.3195	135.1745	26803.4940	14.0640	20.6714	1296.6437	53642.2567	67.6001	5.2698	4.902
L40	41.3195	119.8335	23911.7285	14.1083	20.6714	1156.7519	47854.9207	59.9281	5.4898	5.779
	41.3612	119.9573	23985.9287	14.1229	20.6923	1159.1716	48003.4188	59.9901	5.4970	5.786
L41	41.3612	119.9573	23985.9287	14.1229	20.6923	1159.1716	48003.4188	59.9901	5.4970	5.786
	42.1952	122.4338	25502.3355	14.4145	21.1095	1208.0965	51038.2276	61.2285	5.6415	5.938
L42	42.1952	120.8600	25190.0284	14.4189	21.1095	1193.3018	50413.2024	60.4415	5.6635	6.041
	42.7373	122.4485	26196.3897	14.6084	21.3807	1225.2347	52427.2492	61.2359	5.7575	6.141
L43	42.7373	108.0493	23242.4103	14.6484	21.3807	1087.0738	46515.4035	54.0349	5.9555	7.219
	42.7790	108.1568	23311.8703	14.6629	21.4016	1089.2597	46654.4149	54.0887	5.9627	7.228
L44	42.7790	104.9428	22646.5218	14.6718	21.4016	1058.1710	45322.8425	52.4814	6.0067	7.508
	43.6130	107.0282	24023.6315	14.9634	21.8188	1101.0524	48078.8739	53.5243	6.1513	7.689
L45	43.6130	107.0282	24023.6315	14.9634	21.8188	1101.0524	48078.8739	53.5243	6.1513	7.689
	44.4469	109.1137	25455.4644	15.2549	22.2360	1144.7857	50944.4238	54.5672	6.2958	7.87
L46	44.4469	107.4400	25079.5962	15.2594	22.2360	1127.8821	50192.1928	53.7302	6.3178	8.023
	45.2809	109.4929	26544.8203	15.5509	22.6532	1171.7899	53124.5690	54.7568	6.4624	8.206
L47	45.2809	107.7856	26145.8435	15.5554	22.6532	1154.1775	52326.0904	53.9031	6.4844	8.367
	45.9481	109.4018	27339.7126	15.7886	22.9870	1189.3554	54715.3996	54.7113	6.6000	8.516

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	Double Angle Stitch Bolt Spacing Redundants in
L1 168.33-163.33				1	1	1			
L2 163.33-158.33				1	1	1			
L3 158.33-153.33				1	1	1			
L4 153.33-148.33				1	1	1			
L5 148.33-143.33				1	1	1			
L6 143.33-138.33				1	1	1			
L7 138.33-130.50				1	1	1			
L8 130.50-129.16				1	1	1			
L9 129.16-				1	1	1			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
125.50									
L10 125.50-125.25				1	1	1			
L11 125.25-120.25				1	1	1			
L12 120.25-115.25				1	1	1			
L13 115.25-113.83				1	1	1			
L14 113.83-113.58				1	1	0.967882			
L15 113.58-108.58				1	1	0.968876			
L16 108.58-103.58				1	1	0.970976			
L17 103.58-98.58				1	1	0.974158			
L18 98.58-93.58				1	1	0.978406			
L19 93.58-84.55				1	1	0.965148			
L20 84.55-83.55				1	1	0.981772			
L21 83.55-82.83				1	1	0.980134			
L22 82.83-82.58				1	1	1.08301			
L23 82.58-77.58				1	1	1.08646			
L24 77.58-73.42				1	1	1.09346			
L25 73.42-73.17				1	1	0.959434			
L26 73.17-72.75				1	1	0.958071			
L27 72.75-72.50				1	1	0.972884			
L28 72.50-67.50				1	1	0.970253			
L29 67.50-64.25				1	1	0.986861			
L30 64.25-64.00				1	1	0.95945			
L31 64.00-59.00				1	1	0.947048			
L32 59.00-54.00				1	1	0.967354			
L33 54.00-43.66				1	1	0.955668			
L34 43.66-42.66				1	1	1.09223			
L35 42.66-37.66				1	1	1.09699			
L36 37.66-32.66				1	1	1.08446			
L37 32.66-28.25				1	1	1.09169			
L38 28.25-28.00				1	1	0.977093			
L39 28.00-27.75				1	1	0.976442			
L40 27.75-27.50				1	1	1.00068			
L41 27.50-22.50				1	1	0.988421			
L42 22.50-19.25				1	1	0.993491			

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	Double Angle Stitch Bolt Spacing Redundants in
L43 19.25-19.00				1	1	0.958791			
L44 19.00-14.00				1	1	0.978034			
L45 14.00-9.00				1	1	0.968301			
L46 9.00-4.00				1	1	0.973875			
L47 4.00-0.00				1	1	0.981834			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	C	Surface Ar (CaAa)	168.33 - 10.00	1	1	0.000 0.000	0.3750		0.22
***									
PL0.625x5 Reinforcement - Wind Area/Weight	B	Surface Af (CaAa)	84.67 - 0.00	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	Surface Af (CaAa)	84.67 - 0.00	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	A	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	B	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	0.0000	0.0000	10.63
***									
PL1.25x6 Reinforcement - Wind Area	A	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	Surface Af (CaAa)	30.75 - 0.00	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	A	Surface Af (CaAa)	47.92 - 27.75	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	Surface Af (CaAa)	47.92 - 27.75	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	Surface Af (CaAa)	47.92 - 27.75	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	Surface Af (CaAa)	75.42 - 45.38	2	2	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	Surface Af (CaAa)	75.42 - 45.38	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	Surface Af (CaAa)	75.42 - 45.38	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	Surface Af (CaAa)	87.92 - 72.75	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	Surface Af (CaAa)	87.92 - 72.75	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	Surface Af (CaAa)	87.92 - 72.75	2	2	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
***									
CCI-SFP-060100	A	Surface Af (CaAa)	43.75 - 0.00	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-SFP-060100	B	Surface Af	43.75 - 0.00	2	2	0.000	6.0000	14.0000	0.00

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
		(CaAa)				0.000			
CCI-SFP-060100	C	Surface Af (CaAa)	43.75 - 0.00	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-SFP-045100	A	Surface Af (CaAa)	84.33 - 43.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	Surface Af (CaAa)	84.33 - 43.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	Surface Af (CaAa)	84.33 - 43.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	Surface Af (CaAa)	27.75 - 17.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	Surface Af (CaAa)	27.75 - 17.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	Surface Af (CaAa)	27.75 - 17.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	Surface Af (CaAa)	72.75 - 62.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	Surface Af (CaAa)	72.75 - 62.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	Surface Af (CaAa)	72.75 - 62.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	Surface Af (CaAa)	127.33 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	Surface Af (CaAa)	127.33 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	Surface Af (CaAa)	127.33 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
***									
LDF4-50A(1/2)	C	Surface Ar (CaAa)	70.00 - 8.00	1	1	-0.400 -0.385	0.6250		0.15
HB158-1-08U8-S8J18(1-5/8)	A	Surface Ar (CaAa)	138.00 - 8.00	1	1	-0.365 -0.309	1.9800		1.30

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
***								
3/8" Ground Wire	A	No	Inside Pole	168.33 - 0.00	2	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
***								
LDF2-50(3/8)	C	No	Inside Pole	168.00 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
LDF5-50A(7/8)	C	No	Inside Pole	168.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
LDF7-50A(1-5/8)	C	No	Inside Pole	168.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
2" innerduct conduit	C	No	Inside Pole	168.00 - 8.00	1	No Ice	0.00	0.20
						1/2" Ice	0.00	0.20
						1" Ice	0.00	0.20
LDF4-50A(1/2)	C	No	Inside Pole	168.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
LDF6-50A(1-1/4)	C	No	Inside Pole	158.00 - 8.00	3	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
HB114-21U3M12-XXXF(1-1/4)	C	No	Inside Pole	158.00 - 8.00	1	No Ice	0.00	1.22
						1/2" Ice	0.00	1.22
						1" Ice	0.00	1.22
***								

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8)	B	No	Inside Pole	148.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
***								
LDF7-50A(1-5/8)	A	No	Inside Pole	138.00 - 8.00	11	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
HB158-1-08U8-S8J18(1-5/8)	A	No	Inside Pole	138.00 - 8.00	1	No Ice	0.00	1.30
						1/2" Ice	0.00	1.30
						1" Ice	0.00	1.30
***								
LDF7-50A(1-5/8)	A	No	Inside Pole	128.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	A	No	Inside Pole	128.00 - 8.00	1	No Ice	0.00	0.68
						1/2" Ice	0.00	0.68
						1" Ice	0.00	0.68

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	168.33-163.33	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	0.188	0.000	0.03
L2	163.33-158.33	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	0.188	0.000	0.03
L3	158.33-153.33	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	0.188	0.000	0.05
L4	153.33-148.33	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	0.188	0.000	0.05
L5	148.33-143.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.188	0.000	0.05
L6	143.33-138.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.188	0.000	0.05
L7	138.33-130.50	A	0.000	0.000	1.485	0.000	0.09
		B	0.000	0.000	0.000	0.000	0.04
		C	0.000	0.000	0.294	0.000	0.07
L8	130.50-129.16	A	0.000	0.000	0.265	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.050	0.000	0.01
L9	129.16-125.50	A	0.000	0.000	2.098	0.000	0.07
		B	0.000	0.000	1.373	0.000	0.02
		C	0.000	0.000	1.510	0.000	0.03
L10	125.50-125.25	A	0.000	0.000	0.237	0.000	0.01
		B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.197	0.000	0.00
L11	125.25-120.25	A	0.000	0.000	4.740	0.000	0.11
		B	0.000	0.000	3.750	0.000	0.02
		C	0.000	0.000	3.938	0.000	0.05
L12	120.25-115.25	A	0.000	0.000	5.223	0.000	0.16
		B	0.000	0.000	4.233	0.000	0.08
		C	0.000	0.000	4.421	0.000	0.10
L13	115.25-113.83	A	0.000	0.000	2.529	0.000	0.05
		B	0.000	0.000	2.248	0.000	0.02
		C	0.000	0.000	2.302	0.000	0.03
L14	113.83-113.58	A	0.000	0.000	0.445	0.000	0.01
		B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.405	0.000	0.00
L15	113.58-108.58	A	0.000	0.000	8.907	0.000	0.16

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
		B	0.000	0.000	7.917	0.000	0.08
		C	0.000	0.000	8.104	0.000	0.10
L16	108.58-103.58	A	0.000	0.000	8.907	0.000	0.16
		B	0.000	0.000	7.917	0.000	0.08
		C	0.000	0.000	8.104	0.000	0.10
L17	103.58-98.58	A	0.000	0.000	8.907	0.000	0.16
		B	0.000	0.000	7.917	0.000	0.08
		C	0.000	0.000	8.104	0.000	0.10
L18	98.58-93.58	A	0.000	0.000	8.907	0.000	0.16
		B	0.000	0.000	7.917	0.000	0.08
		C	0.000	0.000	8.104	0.000	0.10
L19	93.58-84.55	A	0.000	0.000	15.297	0.000	0.30
		B	0.000	0.000	13.510	0.000	0.14
		C	0.000	0.000	16.655	0.000	0.18
L20	84.55-83.55	A	0.000	0.000	1.615	0.000	0.02
		B	0.000	0.000	2.000	0.000	0.02
		C	0.000	0.000	2.288	0.000	0.02
L21	83.55-82.83	A	0.000	0.000	1.286	0.000	0.02
		B	0.000	0.000	1.685	0.000	0.01
		C	0.000	0.000	1.772	0.000	0.01
L22	82.83-82.58	A	0.000	0.000	0.445	0.000	0.01
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.614	0.000	0.00
L23	82.58-77.58	A	0.000	0.000	8.907	0.000	0.11
		B	0.000	0.000	11.667	0.000	0.08
		C	0.000	0.000	12.271	0.000	0.10
L24	77.58-73.42	A	0.000	0.000	10.744	0.000	0.09
		B	0.000	0.000	11.373	0.000	0.06
		C	0.000	0.000	11.876	0.000	0.08
L25	73.42-73.17	A	0.000	0.000	0.862	0.000	0.01
		B	0.000	0.000	0.792	0.000	0.00
		C	0.000	0.000	0.822	0.000	0.00
L26	73.17-72.75	A	0.000	0.000	1.448	0.000	0.01
		B	0.000	0.000	1.330	0.000	0.01
		C	0.000	0.000	1.381	0.000	0.01
L27	72.75-72.50	A	0.000	0.000	0.841	0.000	0.01
		B	0.000	0.000	0.771	0.000	0.00
		C	0.000	0.000	0.780	0.000	0.00
L28	72.50-67.50	A	0.000	0.000	16.823	0.000	0.11
		B	0.000	0.000	15.417	0.000	0.08
		C	0.000	0.000	15.760	0.000	0.10
L29	67.50-64.25	A	0.000	0.000	10.935	0.000	0.07
		B	0.000	0.000	10.021	0.000	0.05
		C	0.000	0.000	10.346	0.000	0.07
L30	64.25-64.00	A	0.000	0.000	0.841	0.000	0.01
		B	0.000	0.000	0.771	0.000	0.00
		C	0.000	0.000	0.796	0.000	0.01
L31	64.00-59.00	A	0.000	0.000	14.011	0.000	0.11
		B	0.000	0.000	12.604	0.000	0.08
		C	0.000	0.000	10.292	0.000	0.10
L32	59.00-54.00	A	0.000	0.000	13.073	0.000	0.11
		B	0.000	0.000	11.667	0.000	0.08
		C	0.000	0.000	8.417	0.000	0.10
L33	54.00-43.66	A	0.000	0.000	32.707	0.000	0.23
		B	0.000	0.000	26.990	0.000	0.16
		C	0.000	0.000	20.250	0.000	0.21
L34	43.66-42.66	A	0.000	0.000	3.198	0.000	0.02
		B	0.000	0.000	3.000	0.000	0.02
		C	0.000	0.000	2.100	0.000	0.02
L35	42.66-37.66	A	0.000	0.000	15.990	0.000	0.11
		B	0.000	0.000	15.000	0.000	0.08
		C	0.000	0.000	10.500	0.000	0.10
L36	37.66-32.66	A	0.000	0.000	15.990	0.000	0.11
		B	0.000	0.000	15.000	0.000	0.08
		C	0.000	0.000	10.500	0.000	0.10
L37	32.66-28.25	A	0.000	0.000	16.616	0.000	0.10
		B	0.000	0.000	15.742	0.000	0.07
		C	0.000	0.000	14.270	0.000	0.09
L38	28.25-28.00	A	0.000	0.000	1.050	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
		B	0.000	0.000	1.000	0.000	0.00
		C	0.000	0.000	1.025	0.000	0.01
L39	28.00-27.75	A	0.000	0.000	1.050	0.000	0.01
		B	0.000	0.000	1.000	0.000	0.00
		C	0.000	0.000	1.025	0.000	0.01
L40	27.75-27.50	A	0.000	0.000	0.737	0.000	0.01
		B	0.000	0.000	0.938	0.000	0.00
		C	0.000	0.000	1.150	0.000	0.01
L41	27.50-22.50	A	0.000	0.000	14.740	0.000	0.11
		B	0.000	0.000	18.750	0.000	0.08
		C	0.000	0.000	23.000	0.000	0.10
L42	22.50-19.25	A	0.000	0.000	9.581	0.000	0.07
		B	0.000	0.000	12.188	0.000	0.05
		C	0.000	0.000	14.950	0.000	0.07
L43	19.25-19.00	A	0.000	0.000	0.737	0.000	0.01
		B	0.000	0.000	0.938	0.000	0.00
		C	0.000	0.000	1.150	0.000	0.01
L44	19.00-14.00	A	0.000	0.000	11.928	0.000	0.11
		B	0.000	0.000	15.938	0.000	0.08
		C	0.000	0.000	17.375	0.000	0.10
L45	14.00-9.00	A	0.000	0.000	10.990	0.000	0.11
		B	0.000	0.000	15.000	0.000	0.08
		C	0.000	0.000	15.462	0.000	0.10
L46	9.00-4.00	A	0.000	0.000	10.198	0.000	0.02
		B	0.000	0.000	15.000	0.000	0.06
		C	0.000	0.000	15.063	0.000	0.06
L47	4.00-0.00	A	0.000	0.000	8.000	0.000	0.00
		B	0.000	0.000	12.000	0.000	0.04
		C	0.000	0.000	12.000	0.000	0.04

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	168.33-163.33	A	2.350	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	2.538	0.000	0.07
L2	163.33-158.33	A	2.343	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	2.531	0.000	0.07
L3	158.33-153.33	A	2.336	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	2.523	0.000	0.08
L4	153.33-148.33	A	2.328	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	2.516	0.000	0.08
L5	148.33-143.33	A	2.320	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.02
		C		0.000	0.000	2.508	0.000	0.08
L6	143.33-138.33	A	2.312	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.02
		C		0.000	0.000	2.500	0.000	0.08
L7	138.33-130.50	A	2.302	0.000	0.000	4.937	0.000	0.18
		B		0.000	0.000	0.000	0.000	0.04
		C		0.000	0.000	3.899	0.000	0.13
L8	130.50-129.16	A	2.294	0.000	0.000	0.879	0.000	0.03
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.665	0.000	0.02
L9	129.16-125.50	A	2.289	0.000	0.000	4.613	0.000	0.15
		B		0.000	0.000	2.210	0.000	0.05
		C		0.000	0.000	4.025	0.000	0.09
L10	125.50-125.25	A	2.286	0.000	0.000	0.466	0.000	0.01
		B		0.000	0.000	0.302	0.000	0.01
		C		0.000	0.000	0.425	0.000	0.01
L11	125.25-120.25	A	2.281	0.000	0.000	9.301	0.000	0.26

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
		B		0.000	0.000	6.031	0.000	0.11
		C		0.000	0.000	8.499	0.000	0.17
L12	120.25-115.25	A	2.271	0.000	0.000	12.187	0.000	0.35
		B		0.000	0.000	8.926	0.000	0.21
		C		0.000	0.000	11.385	0.000	0.27
L13	115.25-113.83	A	2.265	0.000	0.000	5.103	0.000	0.13
		B		0.000	0.000	4.178	0.000	0.08
		C		0.000	0.000	4.875	0.000	0.10
L14	113.83-113.58	A	2.263	0.000	0.000	0.898	0.000	0.02
		B		0.000	0.000	0.735	0.000	0.01
		C		0.000	0.000	0.858	0.000	0.02
L15	113.58-108.58	A	2.258	0.000	0.000	17.939	0.000	0.44
		B		0.000	0.000	14.691	0.000	0.29
		C		0.000	0.000	17.136	0.000	0.35
L16	108.58-103.58	A	2.248	0.000	0.000	17.897	0.000	0.44
		B		0.000	0.000	14.660	0.000	0.29
		C		0.000	0.000	17.095	0.000	0.35
L17	103.58-98.58	A	2.237	0.000	0.000	17.854	0.000	0.43
		B		0.000	0.000	14.627	0.000	0.29
		C		0.000	0.000	17.052	0.000	0.35
L18	98.58-93.58	A	2.226	0.000	0.000	17.809	0.000	0.43
		B		0.000	0.000	14.593	0.000	0.29
		C		0.000	0.000	17.006	0.000	0.35
L19	93.58-84.55	A	2.209	0.000	0.000	30.409	0.000	0.76
		B		0.000	0.000	24.686	0.000	0.50
		C		0.000	0.000	24.941	0.000	0.63
L20	84.55-83.55	A	2.196	0.000	0.000	2.777	0.000	0.06
		B		0.000	0.000	1.651	0.000	0.06
		C		0.000	0.000	1.848	0.000	0.07
L21	83.55-82.83	A	2.194	0.000	0.000	2.190	0.000	0.05
		B		0.000	0.000	1.189	0.000	0.05
		C		0.000	0.000	1.519	0.000	0.06
L22	82.83-82.58	A	2.192	0.000	0.000	0.758	0.000	0.02
		B		0.000	0.000	0.411	0.000	0.02
		C		0.000	0.000	0.526	0.000	0.02
L23	82.58-77.58	A	2.185	0.000	0.000	15.143	0.000	0.34
		B		0.000	0.000	8.218	0.000	0.32
		C		0.000	0.000	10.494	0.000	0.38
L24	77.58-73.42	A	2.173	0.000	0.000	12.572	0.000	0.33
		B		0.000	0.000	9.357	0.000	0.30
		C		0.000	0.000	11.234	0.000	0.35
L25	73.42-73.17	A	2.166	0.000	0.000	0.755	0.000	0.02
		B		0.000	0.000	0.726	0.000	0.02
		C		0.000	0.000	0.838	0.000	0.02
L26	73.17-72.75	A	2.165	0.000	0.000	1.268	0.000	0.04
		B		0.000	0.000	1.220	0.000	0.03
		C		0.000	0.000	1.408	0.000	0.04
L27	72.75-72.50	A	2.164	0.000	0.000	0.701	0.000	0.02
		B		0.000	0.000	0.672	0.000	0.02
		C		0.000	0.000	0.838	0.000	0.02
L28	72.50-67.50	A	2.156	0.000	0.000	14.002	0.000	0.46
		B		0.000	0.000	13.429	0.000	0.40
		C		0.000	0.000	17.963	0.000	0.47
L29	67.50-64.25	A	2.143	0.000	0.000	9.080	0.000	0.29
		B		0.000	0.000	8.708	0.000	0.26
		C		0.000	0.000	12.436	0.000	0.32
L30	64.25-64.00	A	2.137	0.000	0.000	0.698	0.000	0.02
		B		0.000	0.000	0.669	0.000	0.02
		C		0.000	0.000	0.955	0.000	0.02
L31	64.00-59.00	A	2.128	0.000	0.000	10.231	0.000	0.39
		B		0.000	0.000	9.658	0.000	0.33
		C		0.000	0.000	19.059	0.000	0.39
L32	59.00-54.00	A	2.110	0.000	0.000	8.961	0.000	0.37
		B		0.000	0.000	8.388	0.000	0.31
		C		0.000	0.000	18.969	0.000	0.36
L33	54.00-43.66	A	2.080	0.000	0.000	18.418	0.000	0.83
		B		0.000	0.000	21.075	0.000	0.68
		C		0.000	0.000	42.780	0.000	0.79
L34	43.66-42.66	A	2.054	0.000	0.000	2.030	0.000	0.08

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
		B		0.000	0.000	1.827	0.000	0.07
		C		0.000	0.000	4.175	0.000	0.08
L35	42.66-37.66	A	2.040	0.000	0.000	10.069	0.000	0.38
		B		0.000	0.000	9.057	0.000	0.33
		C		0.000	0.000	20.676	0.000	0.37
L36	37.66-32.66	A	2.013	0.000	0.000	10.015	0.000	0.38
		B		0.000	0.000	9.008	0.000	0.33
		C		0.000	0.000	20.546	0.000	0.36
L37	32.66-28.25	A	1.984	0.000	0.000	12.283	0.000	0.37
		B		0.000	0.000	11.399	0.000	0.33
		C		0.000	0.000	18.017	0.000	0.38
L38	28.25-28.00	A	1.968	0.000	0.000	0.845	0.000	0.02
		B		0.000	0.000	0.795	0.000	0.02
		C		0.000	0.000	1.017	0.000	0.02
L39	28.00-27.75	A	1.967	0.000	0.000	0.844	0.000	0.02
		B		0.000	0.000	0.795	0.000	0.02
		C		0.000	0.000	1.016	0.000	0.02
L40	27.75-27.50	A	1.965	0.000	0.000	1.087	0.000	0.02
		B		0.000	0.000	0.689	0.000	0.02
		C		0.000	0.000	0.668	0.000	0.03
L41	27.50-22.50	A	1.945	0.000	0.000	21.670	0.000	0.39
		B		0.000	0.000	13.735	0.000	0.38
		C		0.000	0.000	13.281	0.000	0.50
L42	22.50-19.25	A	1.910	0.000	0.000	14.006	0.000	0.25
		B		0.000	0.000	8.871	0.000	0.24
		C		0.000	0.000	8.542	0.000	0.32
L43	19.25-19.00	A	1.894	0.000	0.000	1.074	0.000	0.02
		B		0.000	0.000	0.680	0.000	0.02
		C		0.000	0.000	0.654	0.000	0.02
L44	19.00-14.00	A	1.866	0.000	0.000	17.789	0.000	0.33
		B		0.000	0.000	9.933	0.000	0.32
		C		0.000	0.000	12.964	0.000	0.40
L45	14.00-9.00	A	1.800	0.000	0.000	16.389	0.000	0.30
		B		0.000	0.000	8.600	0.000	0.29
		C		0.000	0.000	12.302	0.000	0.36
L46	9.00-4.00	A	1.700	0.000	0.000	13.938	0.000	0.17
		B		0.000	0.000	8.400	0.000	0.26
		C		0.000	0.000	8.802	0.000	0.26
L47	4.00-0.00	A	1.511	0.000	0.000	10.417	0.000	0.09
		B		0.000	0.000	6.417	0.000	0.18
		C		0.000	0.000	6.417	0.000	0.18

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	168.33-163.33	0.0000	0.0552	0.0000	0.4939
L2	163.33-158.33	0.0000	0.0552	0.0000	0.4999
L3	158.33-153.33	0.0000	0.0552	0.0000	0.5055
L4	153.33-148.33	0.0000	0.0552	0.0000	0.5106
L5	148.33-143.33	0.0000	0.0552	0.0000	0.5154
L6	143.33-138.33	0.0000	0.0552	0.0000	0.5198
L7	138.33-130.50	-0.2686	0.1002	-0.5742	0.5387
L8	130.50-129.16	-0.2793	0.1021	-0.5977	0.5424
L9	129.16-125.50	-0.1901	0.0695	-0.4024	0.3651
L10	125.50-125.25	-0.1448	0.0529	-0.3048	0.2766
L11	125.25-120.25	-0.1459	0.0534	-0.3078	0.2794
L12	120.25-115.25	-0.1395	0.0511	-0.2538	0.2306
L13	115.25-113.83	-0.0983	0.0360	-0.1865	0.1694
L14	113.83-113.58	-0.0986	0.0361	-0.1871	0.1701
L15	113.58-108.58	-0.0995	0.0365	-0.1892	0.1720
L16	108.58-103.58	-0.1013	0.0371	-0.1930	0.1755
L17	103.58-98.58	-0.1030	0.0378	-0.1968	0.1790
L18	98.58-93.58	-0.1047	0.0385	-0.2005	0.1824

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L19	93.58-84.55	-0.1063	0.2075	-0.2090	0.0428
L20	84.55-83.55	0.1464	0.2982	-0.3582	0.0161
L21	83.55-82.83	0.2006	0.2405	-0.4062	0.0550
L22	82.83-82.58	0.2009	0.2409	-0.4069	0.0550
L23	82.58-77.58	0.2028	0.2430	-0.4109	0.0550
L24	77.58-73.42	0.0384	0.1313	-0.2130	0.1333
L25	73.42-73.17	-0.0947	0.0404	-0.0475	0.1978
L26	73.17-72.75	-0.0948	0.0404	-0.0476	0.1980
L27	72.75-72.50	-0.0974	0.0102	-0.0492	0.2610
L28	72.50-67.50	-0.0900	0.0178	-0.0033	0.3018
L29	67.50-64.25	-0.0830	0.0255	0.0416	0.3431
L30	64.25-64.00	-0.0834	0.0257	0.0418	0.3449
L31	64.00-59.00	-0.1023	-0.2176	0.0497	0.6377
L32	59.00-54.00	-0.1118	-0.3278	0.0535	0.7700
L33	54.00-43.66	-0.2088	-0.3636	0.1524	0.7813
L34	43.66-42.66	-0.0679	-0.3768	0.0259	0.7832
L35	42.66-37.66	-0.0684	-0.3802	0.0251	0.7875
L36	37.66-32.66	-0.0693	-0.3857	0.0250	0.7979
L37	32.66-28.25	-0.0588	-0.1164	0.0212	0.4626
L38	28.25-28.00	-0.0526	0.0393	0.0189	0.2629
L39	28.00-27.75	-0.0527	0.0393	0.0189	0.2630
L40	27.75-27.50	0.2518	0.4852	-0.3100	-0.1751
L41	27.50-22.50	0.2538	0.4889	-0.3131	-0.1785
L42	22.50-19.25	0.2569	0.4948	-0.3182	-0.1843
L43	19.25-19.00	0.2583	0.4973	-0.3204	-0.1869
L44	19.00-14.00	0.3065	0.3476	-0.3760	0.0179
L45	14.00-9.00	0.3303	0.2847	-0.4077	0.0686
L46	9.00-4.00	0.4002	0.2497	-0.3692	-0.1752
L47	4.00-0.00	0.4212	0.2459	-0.3674	-0.2151

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	Safety Line 3/8	163.33 - 168.33	1.0000	1.0000
L2	1	Safety Line 3/8	158.33 - 163.33	1.0000	1.0000
L3	1	Safety Line 3/8	153.33 - 158.33	1.0000	1.0000
L4	1	Safety Line 3/8	148.33 - 153.33	1.0000	1.0000
L5	1	Safety Line 3/8	143.33 - 148.33	1.0000	1.0000
L6	1	Safety Line 3/8	138.33 - 143.33	1.0000	1.0000
L7	1	Safety Line 3/8	130.50 - 138.33	1.0000	1.0000
L7	58	HB158-1-08U8-S8J18(1-5/8)	130.50 - 138.00	1.0000	1.0000
L9	1	Safety Line 3/8	125.50 - 129.16	1.0000	1.0000
L9	39	CCI-SFP-045100	125.50 - 127.33	1.0000	1.0000
L9	40	CCI-SFP-045100	125.50 - 127.33	1.0000	1.0000
L9	41	CCI-SFP-045100	125.50 - 127.33	1.0000	1.0000
L9	58	HB158-1-08U8-S8J18(1-5/8)	125.50 - 129.16	1.0000	1.0000
L10	1	Safety Line 3/8	125.25 - 125.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	39	CCI-SFP-045100	125.25 - 125.50	1.0000	1.0000
L10	40	CCI-SFP-045100	125.25 - 125.50	1.0000	1.0000
L10	41	CCI-SFP-045100	125.25 - 125.50	1.0000	1.0000
L10	58	HB158-1-08U8-S8J18(1-5/8)	125.25 - 125.50	1.0000	1.0000
L11	1	Safety Line 3/8	120.25 - 125.25	1.0000	1.0000
L11	39	CCI-SFP-045100	120.25 - 125.25	1.0000	1.0000
L11	40	CCI-SFP-045100	120.25 - 125.25	1.0000	1.0000
L11	41	CCI-SFP-045100	120.25 - 125.25	1.0000	1.0000
L11	58	HB158-1-08U8-S8J18(1-5/8)	120.25 - 125.25	1.0000	1.0000
L12	1	Safety Line 3/8	115.25 - 120.25	1.0000	1.0000
L12	7	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L12	8	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L12	9	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L12	23	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L12	24	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L12	25	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L12	39	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L12	40	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L12	41	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L12	58	HB158-1-08U8-S8J18(1-5/8)	115.25 - 120.25	1.0000	1.0000
L13	1	Safety Line 3/8	113.83 - 115.25	1.0000	1.0000
L13	7	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L13	8	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L13	9	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L13	23	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L13	24	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L13	25	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L13	39	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L13	40	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L13	41	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L13	58	HB158-1-08U8-S8J18(1-5/8)	113.83 - 115.25	1.0000	1.0000
L14	1	Safety Line 3/8	113.58 - 113.83	1.0000	1.0000
L14	7	PL0.625x5 Reinforcement - Wind Area/Weight	113.58 - 113.83	1.0000	1.0000
L14	8	PL0.625x5 Reinforcement - Wind Area/Weight	113.58 - 113.83	1.0000	1.0000
L14	9	PL0.625x5 Reinforcement	113.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		- Wind Area/Weight	113.83		
L14	23	PL1.25x5 Reinforcement - Wind Area	113.58 - 113.83	1.0000	1.0000
L14	24	PL1.25x5 Reinforcement - Wind Area	113.58 - 113.83	1.0000	1.0000
L14	25	PL1.25x5 Reinforcement - Wind Area	113.58 - 113.83	1.0000	1.0000
L14	39	CCI-SFP-045100	113.58 - 113.83	1.0000	1.0000
L14	40	CCI-SFP-045100	113.58 - 113.83	1.0000	1.0000
L14	41	CCI-SFP-045100	113.58 - 113.83	1.0000	1.0000
L14	58	HB158-1-08U8-S8J18(1-5/8)	113.58 - 113.83	1.0000	1.0000
L15	1	Safety Line 3/8	108.58 - 113.58	1.0000	1.0000
L15	7	PL0.625x5 Reinforcement - Wind Area/Weight	108.58 - 113.58	1.0000	1.0000
L15	8	PL0.625x5 Reinforcement - Wind Area/Weight	108.58 - 113.58	1.0000	1.0000
L15	9	PL0.625x5 Reinforcement - Wind Area/Weight	108.58 - 113.58	1.0000	1.0000
L15	23	PL1.25x5 Reinforcement - Wind Area	108.58 - 113.58	1.0000	1.0000
L15	24	PL1.25x5 Reinforcement - Wind Area	108.58 - 113.58	1.0000	1.0000
L15	25	PL1.25x5 Reinforcement - Wind Area	108.58 - 113.58	1.0000	1.0000
L15	39	CCI-SFP-045100	108.58 - 113.58	1.0000	1.0000
L15	40	CCI-SFP-045100	108.58 - 113.58	1.0000	1.0000
L15	41	CCI-SFP-045100	108.58 - 113.58	1.0000	1.0000
L15	58	HB158-1-08U8-S8J18(1-5/8)	108.58 - 113.58	1.0000	1.0000
L16	1	Safety Line 3/8	103.58 - 108.58	1.0000	1.0000
L16	7	PL0.625x5 Reinforcement - Wind Area/Weight	103.58 - 108.58	1.0000	1.0000
L16	8	PL0.625x5 Reinforcement - Wind Area/Weight	103.58 - 108.58	1.0000	1.0000
L16	9	PL0.625x5 Reinforcement - Wind Area/Weight	103.58 - 108.58	1.0000	1.0000
L16	23	PL1.25x5 Reinforcement - Wind Area	103.58 - 108.58	1.0000	1.0000
L16	24	PL1.25x5 Reinforcement - Wind Area	103.58 - 108.58	1.0000	1.0000
L16	25	PL1.25x5 Reinforcement - Wind Area	103.58 - 108.58	1.0000	1.0000
L16	39	CCI-SFP-045100	103.58 - 108.58	1.0000	1.0000
L16	40	CCI-SFP-045100	103.58 - 108.58	1.0000	1.0000
L16	41	CCI-SFP-045100	103.58 - 108.58	1.0000	1.0000
L16	58	HB158-1-08U8-S8J18(1-5/8)	103.58 - 108.58	1.0000	1.0000
L17	1	Safety Line 3/8	98.58 - 103.58	1.0000	1.0000
L17	7	PL0.625x5 Reinforcement - Wind Area/Weight	98.58 - 103.58	1.0000	1.0000
L17	8	PL0.625x5 Reinforcement - Wind Area/Weight	98.58 - 103.58	1.0000	1.0000
L17	9	PL0.625x5 Reinforcement - Wind Area/Weight	98.58 - 103.58	1.0000	1.0000
L17	23	PL1.25x5 Reinforcement - Wind Area	98.58 - 103.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L17	24	PL1.25x5 Reinforcement - Wind Area	98.58 - 103.58	1.0000	1.0000
L17	25	PL1.25x5 Reinforcement - Wind Area	98.58 - 103.58	1.0000	1.0000
L17	39	CCI-SFP-045100	98.58 - 103.58	1.0000	1.0000
L17	40	CCI-SFP-045100	98.58 - 103.58	1.0000	1.0000
L17	41	CCI-SFP-045100	98.58 - 103.58	1.0000	1.0000
L17	58	HB158-1-08U8-S8J18(1-5/8)	98.58 - 103.58	1.0000	1.0000
L18	1	Safety Line 3/8	93.58 - 98.58	1.0000	1.0000
L18	7	PL0.625x5 Reinforcement - Wind Area/Weight	93.58 - 98.58	1.0000	1.0000
L18	8	PL0.625x5 Reinforcement - Wind Area/Weight	93.58 - 98.58	1.0000	1.0000
L18	9	PL0.625x5 Reinforcement - Wind Area/Weight	93.58 - 98.58	1.0000	1.0000
L18	23	PL1.25x5 Reinforcement - Wind Area	93.58 - 98.58	1.0000	1.0000
L18	24	PL1.25x5 Reinforcement - Wind Area	93.58 - 98.58	1.0000	1.0000
L18	25	PL1.25x5 Reinforcement - Wind Area	93.58 - 98.58	1.0000	1.0000
L18	39	CCI-SFP-045100	93.58 - 98.58	1.0000	1.0000
L18	40	CCI-SFP-045100	93.58 - 98.58	1.0000	1.0000
L18	41	CCI-SFP-045100	93.58 - 98.58	1.0000	1.0000
L18	58	HB158-1-08U8-S8J18(1-5/8)	93.58 - 98.58	1.0000	1.0000
L19	1	Safety Line 3/8	84.55 - 93.58	1.0000	1.0000
L19	5	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	1.0000	1.0000
L19	6	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	1.0000	1.0000
L19	7	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.58	1.0000	1.0000
L19	8	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.58	1.0000	1.0000
L19	9	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.58	1.0000	1.0000
L19	20	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L19	21	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L19	22	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L19	23	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.58	1.0000	1.0000
L19	24	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.58	1.0000	1.0000
L19	25	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.58	1.0000	1.0000
L19	39	CCI-SFP-045100	87.92 - 93.58	1.0000	1.0000
L19	40	CCI-SFP-045100	87.92 - 93.58	1.0000	1.0000
L19	41	CCI-SFP-045100	87.92 - 93.58	1.0000	1.0000
L19	58	HB158-1-08U8-S8J18(1-5/8)	84.55 - 93.58	1.0000	1.0000
L19	30	CCI-SFP-045100	84.55 - 84.33	1.0000	1.0000
L19	31	CCI-SFP-045100	84.55 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	32	CCI-SFP-045100	84.33 - 84.55	1.0000	1.0000
L21	1	Safety Line 3/8	82.83 - 84.33	1.0000	1.0000
L21	5	PL0.625x5 Reinforcement - Wind Area/Weight	82.83 - 83.55	1.0000	1.0000
L21	6	PL0.625x5 Reinforcement - Wind Area/Weight	82.83 - 83.55	1.0000	1.0000
L21	20	PL1.25x5 Reinforcement - Wind Area	82.83 - 83.55	1.0000	1.0000
L21	21	PL1.25x5 Reinforcement - Wind Area	82.83 - 83.55	1.0000	1.0000
L21	22	PL1.25x5 Reinforcement - Wind Area	82.83 - 83.55	1.0000	1.0000
L21	30	CCI-SFP-045100	82.83 - 83.55	1.0000	1.0000
L21	31	CCI-SFP-045100	82.83 - 83.55	1.0000	1.0000
L21	32	CCI-SFP-045100	82.83 - 83.55	1.0000	1.0000
L21	58	HB158-1-08U8-S8J18(1-5/8)	82.83 - 83.55	1.0000	1.0000
L22	1	Safety Line 3/8	82.58 - 82.83	1.0000	1.0000
L22	5	PL0.625x5 Reinforcement - Wind Area/Weight	82.58 - 82.83	1.0000	1.0000
L22	6	PL0.625x5 Reinforcement - Wind Area/Weight	82.58 - 82.83	1.0000	1.0000
L22	20	PL1.25x5 Reinforcement - Wind Area	82.58 - 82.83	1.0000	1.0000
L22	21	PL1.25x5 Reinforcement - Wind Area	82.58 - 82.83	1.0000	1.0000
L22	22	PL1.25x5 Reinforcement - Wind Area	82.58 - 82.83	1.0000	1.0000
L22	30	CCI-SFP-045100	82.58 - 82.83	1.0000	1.0000
L22	31	CCI-SFP-045100	82.58 - 82.83	1.0000	1.0000
L22	32	CCI-SFP-045100	82.58 - 82.83	1.0000	1.0000
L22	58	HB158-1-08U8-S8J18(1-5/8)	82.58 - 82.83	1.0000	1.0000
L23	1	Safety Line 3/8	77.58 - 82.58	1.0000	1.0000
L23	5	PL0.625x5 Reinforcement - Wind Area/Weight	77.58 - 82.58	1.0000	1.0000
L23	6	PL0.625x5 Reinforcement - Wind Area/Weight	77.58 - 82.58	1.0000	1.0000
L23	20	PL1.25x5 Reinforcement - Wind Area	77.58 - 82.58	1.0000	1.0000
L23	21	PL1.25x5 Reinforcement - Wind Area	77.58 - 82.58	1.0000	1.0000
L23	22	PL1.25x5 Reinforcement - Wind Area	77.58 - 82.58	1.0000	1.0000
L23	30	CCI-SFP-045100	77.58 - 82.58	1.0000	1.0000
L23	31	CCI-SFP-045100	77.58 - 82.58	1.0000	1.0000
L23	32	CCI-SFP-045100	77.58 - 82.58	1.0000	1.0000
L23	58	HB158-1-08U8-S8J18(1-5/8)	77.58 - 82.58	1.0000	1.0000
L24	1	Safety Line 3/8	73.42 - 77.58	1.0000	1.0000
L24	5	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.58	1.0000	1.0000
L24	6	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	17	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L24	18	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L24	19	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L24	20	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.58	1.0000	1.0000
L24	21	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.58	1.0000	1.0000
L24	22	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.58	1.0000	1.0000
L24	30	CCI-SFP-045100	73.42 - 77.58	1.0000	1.0000
L24	31	CCI-SFP-045100	73.42 - 77.58	1.0000	1.0000
L24	32	CCI-SFP-045100	73.42 - 77.58	1.0000	1.0000
L24	58	HB158-1-08U8-S8J18(1-5/8)	73.42 - 77.58	1.0000	1.0000
L25	1	Safety Line 3/8	73.17 - 73.42	1.0000	1.0000
L25	5	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L25	6	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L25	17	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	18	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	19	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	20	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	21	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	22	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L25	30	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L25	31	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L25	32	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L25	58	HB158-1-08U8-S8J18(1-5/8)	73.17 - 73.42	1.0000	1.0000
L26	1	Safety Line 3/8	72.75 - 73.17	1.0000	1.0000
L26	5	PL0.625x5 Reinforcement - Wind Area/Weight	72.75 - 73.17	1.0000	1.0000
L26	6	PL0.625x5 Reinforcement - Wind Area/Weight	72.75 - 73.17	1.0000	1.0000
L26	17	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	18	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	19	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	20	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	21	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	22	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L26	30	CCI-SFP-045100	72.75 - 73.17	1.0000	1.0000
L26	31	CCI-SFP-045100	72.75 - 73.17	1.0000	1.0000
L26	32	CCI-SFP-045100	72.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			73.17		
L26	58	HB158-1-08U8-S8J18(1-5/8)	72.75 - 73.17	1.0000	1.0000
L27	1	Safety Line 3/8	72.50 - 72.75	1.0000	1.0000
L27	5	PL0.625x5 Reinforcement - Wind Area/Weight	72.50 - 72.75	1.0000	1.0000
L27	6	PL0.625x5 Reinforcement - Wind Area/Weight	72.50 - 72.75	1.0000	1.0000
L27	17	PL1.25x5 Reinforcement - Wind Area	72.50 - 72.75	1.0000	1.0000
L27	18	PL1.25x5 Reinforcement - Wind Area	72.50 - 72.75	1.0000	1.0000
L27	19	PL1.25x5 Reinforcement - Wind Area	72.50 - 72.75	1.0000	1.0000
L27	30	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	31	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	32	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	36	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	37	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	38	CCI-SFP-045100	72.50 - 72.75	1.0000	1.0000
L27	58	HB158-1-08U8-S8J18(1-5/8)	72.50 - 72.75	1.0000	1.0000
L28	1	Safety Line 3/8	67.50 - 72.50	1.0000	1.0000
L28	5	PL0.625x5 Reinforcement - Wind Area/Weight	67.50 - 72.50	1.0000	1.0000
L28	6	PL0.625x5 Reinforcement - Wind Area/Weight	67.50 - 72.50	1.0000	1.0000
L28	17	PL1.25x5 Reinforcement - Wind Area	67.50 - 72.50	1.0000	1.0000
L28	18	PL1.25x5 Reinforcement - Wind Area	67.50 - 72.50	1.0000	1.0000
L28	19	PL1.25x5 Reinforcement - Wind Area	67.50 - 72.50	1.0000	1.0000
L28	30	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	31	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	32	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	36	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	37	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	38	CCI-SFP-045100	67.50 - 72.50	1.0000	1.0000
L28	49	LDF4-50A(1/2)	67.50 - 70.00	1.0000	1.0000
L28	58	HB158-1-08U8-S8J18(1-5/8)	67.50 - 72.50	1.0000	1.0000
L29	1	Safety Line 3/8	64.25 - 67.50	1.0000	1.0000
L29	5	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 67.50	1.0000	1.0000
L29	6	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 67.50	1.0000	1.0000
L29	17	PL1.25x5 Reinforcement - Wind Area	64.25 - 67.50	1.0000	1.0000
L29	18	PL1.25x5 Reinforcement - Wind Area	64.25 - 67.50	1.0000	1.0000
L29	19	PL1.25x5 Reinforcement - Wind Area	64.25 - 67.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	30	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	31	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	32	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	36	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	37	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	38	CCI-SFP-045100	64.25 - 67.50	1.0000	1.0000
L29	49	LDF4-50A(1/2)	64.25 - 67.50	1.0000	1.0000
L29	58	HB158-1-08U8-S8J18(1-5/8)	64.25 - 67.50	1.0000	1.0000
L30	1	Safety Line 3/8	64.00 - 64.25	1.0000	1.0000
L30	5	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L30	6	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L30	17	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L30	18	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L30	19	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L30	30	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	31	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	32	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	36	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	37	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	38	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L30	49	LDF4-50A(1/2)	64.00 - 64.25	1.0000	1.0000
L30	58	HB158-1-08U8-S8J18(1-5/8)	64.00 - 64.25	1.0000	1.0000
L31	1	Safety Line 3/8	59.00 - 64.00	1.0000	1.0000
L31	5	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L31	6	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L31	17	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L31	18	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L31	19	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L31	30	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L31	31	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L31	32	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L31	36	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L31	37	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L31	38	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L31	49	LDF4-50A(1/2)	59.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			64.00		
L31	58	HB158-1-08U8-S8J18(1-5/8)	59.00 - 64.00	1.0000	1.0000
L32	1	Safety Line 3/8	54.00 - 59.00	1.0000	1.0000
L32	5	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L32	6	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L32	17	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L32	18	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L32	19	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L32	30	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L32	31	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L32	32	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L32	49	LDF4-50A(1/2)	54.00 - 59.00	1.0000	1.0000
L32	58	HB158-1-08U8-S8J18(1-5/8)	54.00 - 59.00	1.0000	1.0000
L33	1	Safety Line 3/8	43.66 - 54.00	1.0000	1.0000
L33	5	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 54.00	1.0000	1.0000
L33	6	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 54.00	1.0000	1.0000
L33	14	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L33	15	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L33	16	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L33	17	PL1.25x5 Reinforcement - Wind Area	45.38 - 54.00	1.0000	1.0000
L33	18	PL1.25x5 Reinforcement - Wind Area	45.38 - 54.00	1.0000	1.0000
L33	19	PL1.25x5 Reinforcement - Wind Area	45.38 - 54.00	1.0000	1.0000
L33	27	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L33	28	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L33	29	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L33	30	CCI-SFP-045100	43.75 - 54.00	1.0000	1.0000
L33	31	CCI-SFP-045100	43.75 - 54.00	1.0000	1.0000
L33	32	CCI-SFP-045100	43.75 - 54.00	1.0000	1.0000
L33	49	LDF4-50A(1/2)	43.66 - 54.00	1.0000	1.0000
L33	58	HB158-1-08U8-S8J18(1-5/8)	43.66 - 54.00	1.0000	1.0000
L35	1	Safety Line 3/8	37.66 - 42.66	1.0000	1.0000
L35	5	PL0.625x5 Reinforcement - Wind Area/Weight	37.66 - 42.66	1.0000	1.0000
L35	6	PL0.625x5 Reinforcement - Wind Area/Weight	37.66 - 42.66	1.0000	1.0000
L35	14	PL1.25x6 Reinforcement - Wind Area	37.66 - 42.66	1.0000	1.0000
L35	15	PL1.25x6 Reinforcement - Wind Area	37.66 - 42.66	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	16	PL1.25x6 Reinforcement - Wind Area	37.66 - 42.66	1.0000	1.0000
L35	27	CCI-SFP-060100	37.66 - 42.66	1.0000	1.0000
L35	28	CCI-SFP-060100	37.66 - 42.66	1.0000	1.0000
L35	29	CCI-SFP-060100	37.66 - 42.66	1.0000	1.0000
L35	49	LDF4-50A(1/2)	37.66 - 42.66	1.0000	1.0000
L35	58	HB158-1-08U8-S8J18(1-5/8)	37.66 - 42.66	1.0000	1.0000
L36	1	Safety Line 3/8	32.66 - 37.66	1.0000	1.0000
L36	5	PL0.625x5 Reinforcement - Wind Area/Weight	32.66 - 37.66	1.0000	1.0000
L36	6	PL0.625x5 Reinforcement - Wind Area/Weight	32.66 - 37.66	1.0000	1.0000
L36	14	PL1.25x6 Reinforcement - Wind Area	32.66 - 37.66	1.0000	1.0000
L36	15	PL1.25x6 Reinforcement - Wind Area	32.66 - 37.66	1.0000	1.0000
L36	16	PL1.25x6 Reinforcement - Wind Area	32.66 - 37.66	1.0000	1.0000
L36	27	CCI-SFP-060100	32.66 - 37.66	1.0000	1.0000
L36	28	CCI-SFP-060100	32.66 - 37.66	1.0000	1.0000
L36	29	CCI-SFP-060100	32.66 - 37.66	1.0000	1.0000
L36	49	LDF4-50A(1/2)	32.66 - 37.66	1.0000	1.0000
L36	58	HB158-1-08U8-S8J18(1-5/8)	32.66 - 37.66	1.0000	1.0000
L37	1	Safety Line 3/8	28.25 - 32.66	1.0000	1.0000
L37	5	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 32.66	1.0000	1.0000
L37	6	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 32.66	1.0000	1.0000
L37	11	PL1.25x6 Reinforcement - Wind Area	28.25 - 30.75	1.0000	1.0000
L37	12	PL1.25x6 Reinforcement - Wind Area	28.25 - 30.75	1.0000	1.0000
L37	13	PL1.25x6 Reinforcement - Wind Area	28.25 - 30.75	1.0000	1.0000
L37	14	PL1.25x6 Reinforcement - Wind Area	28.25 - 32.66	1.0000	1.0000
L37	15	PL1.25x6 Reinforcement - Wind Area	28.25 - 32.66	1.0000	1.0000
L37	16	PL1.25x6 Reinforcement - Wind Area	28.25 - 32.66	1.0000	1.0000
L37	27	CCI-SFP-060100	28.25 - 32.66	1.0000	1.0000
L37	28	CCI-SFP-060100	28.25 - 32.66	1.0000	1.0000
L37	29	CCI-SFP-060100	28.25 - 32.66	1.0000	1.0000
L37	49	LDF4-50A(1/2)	28.25 - 32.66	1.0000	1.0000
L37	58	HB158-1-08U8-S8J18(1-5/8)	28.25 - 32.66	1.0000	1.0000
L38	1	Safety Line 3/8	28.00 - 28.25	1.0000	1.0000
L38	5	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L38	6	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L38	11	PL1.25x6 Reinforcement -	28.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	28.25		
L38	12	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L38	13	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L38	14	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L38	15	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L38	16	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L38	27	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L38	28	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L38	29	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L38	49	LDF4-50A(1/2)	28.00 - 28.25	1.0000	1.0000
L38	58	HB158-1-08U8-S8J18(1-5/8)	28.00 - 28.25	1.0000	1.0000
L39	1	Safety Line 3/8	27.75 - 28.00	1.0000	1.0000
L39	5	PL0.625x5 Reinforcement - Wind Area/Weight	27.75 - 28.00	1.0000	1.0000
L39	6	PL0.625x5 Reinforcement - Wind Area/Weight	27.75 - 28.00	1.0000	1.0000
L39	11	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	12	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	13	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	14	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	15	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	16	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L39	27	CCI-SFP-060100	27.75 - 28.00	1.0000	1.0000
L39	28	CCI-SFP-060100	27.75 - 28.00	1.0000	1.0000
L39	29	CCI-SFP-060100	27.75 - 28.00	1.0000	1.0000
L39	49	LDF4-50A(1/2)	27.75 - 28.00	1.0000	1.0000
L39	58	HB158-1-08U8-S8J18(1-5/8)	27.75 - 28.00	1.0000	1.0000
L40	1	Safety Line 3/8	27.50 - 27.75	1.0000	1.0000
L40	5	PL0.625x5 Reinforcement - Wind Area/Weight	27.50 - 27.75	1.0000	1.0000
L40	6	PL0.625x5 Reinforcement - Wind Area/Weight	27.50 - 27.75	1.0000	1.0000
L40	11	PL1.25x6 Reinforcement - Wind Area	27.50 - 27.75	1.0000	1.0000
L40	12	PL1.25x6 Reinforcement - Wind Area	27.50 - 27.75	1.0000	1.0000
L40	13	PL1.25x6 Reinforcement - Wind Area	27.50 - 27.75	1.0000	1.0000
L40	27	CCI-SFP-060100	27.50 - 27.75	1.0000	1.0000
L40	28	CCI-SFP-060100	27.50 - 27.75	1.0000	1.0000
L40	29	CCI-SFP-060100	27.50 - 27.75	1.0000	1.0000
L40	33	CCI-SFP-045100	27.50 - 27.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	34	CCI-SFP-045100	27.50 - 27.75	1.0000	1.0000
L40	35	CCI-SFP-045100	27.50 - 27.75	1.0000	1.0000
L40	49	LDF4-50A(1/2)	27.50 - 27.75	1.0000	1.0000
L40	58	HB158-1-08U8-S8J18(1-5/8)	27.50 - 27.75	1.0000	1.0000
L41	1	Safety Line 3/8	22.50 - 27.50	1.0000	1.0000
L41	5	PL0.625x5 Reinforcement - Wind Area/Weight	22.50 - 27.50	1.0000	1.0000
L41	6	PL0.625x5 Reinforcement - Wind Area/Weight	22.50 - 27.50	1.0000	1.0000
L41	11	PL1.25x6 Reinforcement - Wind Area	22.50 - 27.50	1.0000	1.0000
L41	12	PL1.25x6 Reinforcement - Wind Area	22.50 - 27.50	1.0000	1.0000
L41	13	PL1.25x6 Reinforcement - Wind Area	22.50 - 27.50	1.0000	1.0000
L41	27	CCI-SFP-060100	22.50 - 27.50	1.0000	1.0000
L41	28	CCI-SFP-060100	22.50 - 27.50	1.0000	1.0000
L41	29	CCI-SFP-060100	22.50 - 27.50	1.0000	1.0000
L41	33	CCI-SFP-045100	22.50 - 27.50	1.0000	1.0000
L41	34	CCI-SFP-045100	22.50 - 27.50	1.0000	1.0000
L41	35	CCI-SFP-045100	22.50 - 27.50	1.0000	1.0000
L41	49	LDF4-50A(1/2)	22.50 - 27.50	1.0000	1.0000
L41	58	HB158-1-08U8-S8J18(1-5/8)	22.50 - 27.50	1.0000	1.0000
L42	1	Safety Line 3/8	19.25 - 22.50	1.0000	1.0000
L42	5	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 22.50	1.0000	1.0000
L42	6	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 22.50	1.0000	1.0000
L42	11	PL1.25x6 Reinforcement - Wind Area	19.25 - 22.50	1.0000	1.0000
L42	12	PL1.25x6 Reinforcement - Wind Area	19.25 - 22.50	1.0000	1.0000
L42	13	PL1.25x6 Reinforcement - Wind Area	19.25 - 22.50	1.0000	1.0000
L42	27	CCI-SFP-060100	19.25 - 22.50	1.0000	1.0000
L42	28	CCI-SFP-060100	19.25 - 22.50	1.0000	1.0000
L42	29	CCI-SFP-060100	19.25 - 22.50	1.0000	1.0000
L42	33	CCI-SFP-045100	19.25 - 22.50	1.0000	1.0000
L42	34	CCI-SFP-045100	19.25 - 22.50	1.0000	1.0000
L42	35	CCI-SFP-045100	19.25 - 22.50	1.0000	1.0000
L42	49	LDF4-50A(1/2)	19.25 - 22.50	1.0000	1.0000
L42	58	HB158-1-08U8-S8J18(1-5/8)	19.25 - 22.50	1.0000	1.0000
L43	1	Safety Line 3/8	19.00 - 19.25	1.0000	1.0000
L43	5	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	1.0000	1.0000
L43	6	PL0.625x5 Reinforcement	19.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		- Wind Area/Weight	19.25		
L43	11	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L43	12	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L43	13	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L43	27	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L43	28	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L43	29	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L43	33	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L43	34	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L43	35	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L43	49	LDF4-50A(1/2)	19.00 - 19.25	1.0000	1.0000
L43	58	HB158-1-08U8-S8J18(1-5/8)	19.00 - 19.25	1.0000	1.0000
L44	1	Safety Line 3/8	14.00 - 19.00	1.0000	1.0000
L44	5	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L44	6	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L44	11	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L44	12	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L44	13	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L44	27	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L44	28	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L44	29	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L44	33	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L44	34	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L44	35	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L44	49	LDF4-50A(1/2)	14.00 - 19.00	1.0000	1.0000
L44	58	HB158-1-08U8-S8J18(1-5/8)	14.00 - 19.00	1.0000	1.0000
L45	1	Safety Line 3/8	10.00 - 14.00	1.0000	1.0000
L45	5	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L45	6	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L45	11	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L45	12	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L45	13	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L45	27	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L45	28	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L45	29	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L45	49	LDF4-50A(1/2)	9.00 - 14.00	1.0000	1.0000
L45	58	HB158-1-08U8-S8J18(1-5/8)	9.00 - 14.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	5	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L46	6	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L46	11	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L46	12	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L46	13	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L46	27	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L46	28	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L46	29	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L46	49	LDF4-50A(1/2)	8.00 - 9.00	1.0000	1.0000
L46	58	HB158-1-08U8-S8J18(1-5/8)	8.00 - 9.00	1.0000	1.0000
L47	5	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L47	6	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L47	11	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L47	12	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L47	13	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L47	27	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000
L47	28	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000
L47	29	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000

Discrete Tower Loads

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
Platform Mount [LP 303-1]	C	None		0.0000	168.00	No Ice	14.66	14.66	1.25
						1/2" Ice	18.87	18.87	1.48
						1" Ice	23.08	23.08	1.71
6' x 2" Mount Pipe	A	From Face	3.00 6.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Face	3.00 6.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Face	3.00 6.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	A	From Face	3.00 2.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Face	3.00 2.00 0.00	0.0000	168.00	No Ice 1/2" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05

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			
6' x 2" Mount Pipe	C	From Face	3.00 2.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
800 10121 w/ Mount Pipe	A	From Face	3.00 -6.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	0.07 0.11 0.17
800 10121 w/ Mount Pipe	B	From Face	3.00 -6.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	0.07 0.11 0.17
800 10121 w/ Mount Pipe	C	From Face	3.00 -6.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	0.07 0.11 0.17
SBNH-1D6565C w/ Mount Pipe	A	From Face	3.00 -2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	11.68 12.40 13.14	9.84 11.37 12.91	0.10 0.19 0.29
AM-X-CD-17-65-00T-RET w/ Mount Pipe	B	From Face	3.00 -2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	11.55 12.27 13.00	8.94 10.45 11.99	0.09 0.18 0.27
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Face	3.00 -2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	0.07 0.14 0.21
(2) 860 10025	A	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.14 0.20 0.26	0.12 0.17 0.23	0.00 0.00 0.01
(2) 860 10025	B	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.14 0.20 0.26	0.12 0.17 0.23	0.00 0.00 0.01
(2) 860 10025	C	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.14 0.20 0.26	0.12 0.17 0.23	0.00 0.00 0.01
(2) LGP21401	A	From Face	3.00 0.00 1.00	90.0000	168.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.35 0.44 0.54	0.01 0.02 0.03
(2) LGP21401	B	From Face	3.00 0.00 1.00	90.0000	168.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.35 0.44 0.54	0.01 0.02 0.03
(2) LGP21401	C	From Face	3.00 0.00 1.00	90.0000	168.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.35 0.44 0.54	0.01 0.02 0.03
RRUS 11	A	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
RRUS 11	B	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
RRUS 11	C	From Face	3.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10

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
DC6-48-60-18-8F	A	From Face	1.00 0.00 1.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
**									
T-Arm Mount [TA 602-3]	C	None		0.0000	158.00	No Ice 1/2" Ice 1" Ice	11.59 15.44 19.29	11.59 15.44 19.29	0.77 0.99 1.21
PQ-1245L [NA 509-3]	C	From Leg	0.00 0.00 -2.50	0.0000	158.00	No Ice 1/2" Ice 1" Ice	11.84 16.96 22.08	11.84 16.96 22.08	0.28 0.30 0.32
(2) 6' x 2" Mount Pipe	A	From Face	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
(2) 6' x 2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
(2) 6' x 2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	A	From Face	2.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
P40-16-XLPP-RR-A w/ Mount Pipe	A	From Face	3.00 2.00 0.00	-5.0000	158.00	No Ice 1/2" Ice 1" Ice	8.24 8.70 9.16	4.83 5.57 6.27	0.07 0.14 0.21
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Leg	3.00 2.00 0.00	20.0000	158.00	No Ice 1/2" Ice 1" Ice	8.24 8.70 9.16	4.83 5.57 6.27	0.07 0.14 0.21
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	3.00 2.00 0.00	-20.0000	158.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.95 8.13 9.02	0.08 0.15 0.23
APXVTM14-C-120 w/ Mount Pipe	A	From Face	3.00 -2.00 0.00	-5.0000	158.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	3.00 -2.00 0.00	20.0000	158.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	3.00 -2.00 0.00	-20.0000	158.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
1900MHz RRH (65MHz)	A	From Face	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11

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
1900MHz RRH (65MHz)	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
1900MHz RRH (65MHz)	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
800 EXTERNAL NOTCH FILTER	A	From Face	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800MHZ RRH	A	From Face	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
800MHZ RRH	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
800MHZ RRH	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
TD-RRH8x20-25	A	From Face	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
**									
APXV18-206517S-C w/ Mount Pipe	A	From Face	1.00 0.00 0.00	25.0000	148.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.48	4.70 5.86 6.73	0.05 0.10 0.15
APXV18-206517S-C w/ Mount Pipe	B	From Face	1.00 0.00 0.00	10.0000	148.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.48	4.70 5.86 6.73	0.05 0.10 0.15
APXV18-206517S-C w/ Mount Pipe	C	From Face	1.00 0.00 0.00	10.0000	148.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.48	4.70 5.86 6.73	0.05 0.10 0.15
**									
Platform Mount [LP 303-1]	C	None		0.0000	138.00	No Ice 1/2" Ice 1" Ice	14.66 18.87 23.08	14.66 18.87 23.08	1.25 1.48 1.71
BXA-70063/4CF w/ Mount Pipe	A	From Leg	3.00 -6.00 2.00	0.0000	138.00	No Ice 1/2" Ice	4.95 5.32 5.71	3.62 4.22 4.83	0.03 0.07 0.12

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			
BXA-70063/4CF w/ Mount Pipe	B	From Leg	3.00 -2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.62 4.22 4.83	0.03 0.07 0.12
BXA-70063/4CF w/ Mount Pipe	C	From Leg	3.00 -2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.62 4.22 4.83	0.03 0.07 0.12
BXA-70080-6CF-4 w/ Mount Pipe	A	From Leg	3.00 6.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	6.01 6.56 7.08	6.20 7.36 8.23	0.04 0.10 0.16
BXA-70063/4CF w/ Mount Pipe	B	From Leg	3.00 6.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.62 4.22 4.83	0.03 0.07 0.12
BXA-70080-6CF-4 w/ Mount Pipe	C	From Leg	3.00 6.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	6.01 6.56 7.08	6.20 7.36 8.23	0.04 0.10 0.16
SBNHH-1D65B w/ Mount Pipe	A	From Leg	3.00 -2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
SBNHH-1D65B w/ Mount Pipe	B	From Leg	3.00 -6.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
SBNHH-1D65B w/ Mount Pipe	C	From Leg	3.00 -6.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
SBNHH-1D65B w/ Mount Pipe	A	From Leg	3.00 2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
SBNHH-1D65B w/ Mount Pipe	B	From Leg	3.00 2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
SBNHH-1D65B w/ Mount Pipe	C	From Leg	3.00 2.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.44 9.00 9.53	7.10 8.30 9.21	0.07 0.14 0.21
(2) FD9R6004/2C-3L	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
DB-T1-6Z-8AB-0Z	C	From Leg	1.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	0.04 0.08 0.12
DB-T1-6Z-8AB-0Z	C	From Leg	1.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	0.04 0.08 0.12

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
RRH2x60-700	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2x60-700	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2x60-700	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2x60-AWS	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
RRH2x60-AWS	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
RRH2x60-AWS	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
RRH2X60-PCS	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
**									
Platform Mount [LP 303-1]	C	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice	14.66 18.87 23.08	14.66 18.87 23.08	1.25 1.48 1.71
6' x 2" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	3.00 -6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.11 0.17 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	3.00 -6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.11 0.17 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	3.00 -6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.11 0.17 0.23

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
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	3.00 6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.32 6.76 7.20	5.63 6.41 7.12	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	3.00 6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.32 6.76 7.20	5.63 6.41 7.12	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	3.00 6.00 2.00	-30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.32 6.76 7.20	5.63 6.41 7.12	0.11 0.17 0.23
ONEBASE TWIN DUAL DUPLEX TMA	A	From Leg	3.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	0.58 0.67 0.78	0.26 0.34 0.42	0.01 0.02 0.02
ONEBASE TWIN DUAL DUPLEX TMA	B	From Leg	3.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	0.58 0.67 0.78	0.26 0.34 0.42	0.01 0.02 0.02
ONEBASE TWIN DUAL DUPLEX TMA	C	From Leg	3.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	0.58 0.67 0.78	0.26 0.34 0.42	0.01 0.02 0.02
**									
Side Arm Mount [SO 701-1]	A	From Face	0.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43	1.67 2.34 3.01	0.07 0.08 0.09
GPS_A	A	From Face	3.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.26 0.32 0.39	0.26 0.32 0.39	0.00 0.00 0.01

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	168.333 - 163.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.09	0.70	0.58
			Max. Mx	20	-2.15	24.23	0.01
			Max. My	2	-2.17	0.09	23.96
			Max. Vy	20	-4.69	24.23	0.01
			Max. Vx	14	4.65	0.10	-23.74
			Max. Torque	38			1.82
L2	163.333 - 158.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.73	0.79	0.51
			Max. Mx	20	-2.39	48.48	0.00
			Max. My	2	-2.42	0.13	47.99
			Max. Vy	20	-5.01	48.48	0.00
			Max. Vx	14	4.97	0.13	-47.77
			Max. Torque	38			1.82
L3	158.333 - 153.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.69	7.95	-3.45
			Max. Mx	20	-4.78	96.62	-0.04
			Max. My	14	-4.86	0.76	-93.57
			Max. Vy	20	-10.04	96.62	-0.04
			Max. Vx	14	9.71	0.76	-93.57
			Max. Torque	15			-3.88
L4	153.333 - 148.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.40	8.11	-3.56
			Max. Mx	20	-5.10	147.62	0.87
			Max. My	14	-5.17	-0.12	-142.91
			Max. Vy	20	-10.37	147.62	0.87
			Max. Vx	14	10.03	-0.12	-142.91
			Max. Torque	15			-3.87

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	148.333 - 143.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.22	8.26	-3.67
			Max. Mx	20	-5.57	203.19	1.78
			Max. My	14	-5.64	-0.99	-196.89
			Max. Vy	20	-11.33	203.19	1.78
			Max. Vx	14	11.01	-0.99	-196.89
			Max. Torque	15			-3.89
L6	143.333 - 138.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.99	8.39	-3.77
			Max. Mx	20	-5.97	260.64	2.69
			Max. My	14	-6.03	-1.88	-252.76
			Max. Vy	20	-11.66	260.64	2.69
			Max. Vx	14	11.34	-1.88	-252.76
			Max. Torque	15			-3.88
L7	138.333 - 130.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.76	8.74	-3.71
			Max. Mx	20	-8.80	339.09	2.99
			Max. My	14	-8.89	-2.20	-329.06
			Max. Vy	20	-17.33	339.09	2.99
			Max. Vx	14	16.86	-2.20	-329.06
			Max. Torque	15			-3.88
L8	130.5 - 129.164	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.29	8.97	-3.84
			Max. Mx	20	-9.60	426.70	3.56
			Max. My	14	-9.69	-2.73	-414.32
			Max. Vy	20	-17.71	426.70	3.56
			Max. Vx	14	17.25	-2.73	-414.32
			Max. Torque	3			3.84
L9	129.164 - 125.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.05	9.14	-3.94
			Max. Mx	20	-12.26	501.47	3.97
			Max. My	14	-12.35	-3.11	-487.36
			Max. Vy	20	-20.56	501.47	3.97
			Max. Vx	14	20.08	-3.11	-487.36
			Max. Torque	3			3.83
L10	125.5 - 125.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.12	9.15	-3.94
			Max. Mx	20	-12.31	506.61	4.00
			Max. My	14	-12.40	-3.14	-492.38
			Max. Vy	20	-20.56	506.61	4.00
			Max. Vx	14	20.09	-3.14	-492.38
			Max. Torque	3			3.83
L11	125.25 - 120.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.51	9.38	-4.07
			Max. Mx	20	-13.06	610.21	4.57
			Max. My	14	-13.15	-3.68	-593.60
			Max. Vy	20	-20.88	610.21	4.57
			Max. Vx	14	20.41	-3.68	-593.60
			Max. Torque	3			3.83
L12	120.25 - 115.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.25	9.58	-4.19
			Max. Mx	20	-14.04	715.38	5.13
			Max. My	14	-14.12	-4.22	-696.41
			Max. Vy	20	-21.20	715.38	5.13
			Max. Vx	14	20.73	-4.22	-696.41
			Max. Torque	3			3.83
L13	115.25 - 113.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.83	9.64	-4.23
			Max. Mx	20	-14.32	745.54	5.29
			Max. My	14	-14.39	-4.37	-725.90

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-21.30	745.54	5.29
			Max. Vx	14	20.83	-4.37	-725.90
			Max. Torque	3			3.82
L14	113.83 - 113.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.96	9.65	-4.23
			Max. Mx	20	-14.42	750.86	5.32
			Max. My	14	-14.49	-4.40	-731.10
			Max. Vy	20	-21.30	750.86	5.32
			Max. Vx	14	20.83	-4.40	-731.10
			Max. Torque	3			3.82
L15	113.58 - 108.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.64	9.84	-4.35
			Max. Mx	20	-15.97	858.46	5.89
			Max. My	14	-16.04	-4.94	-836.33
			Max. Vy	20	-21.74	858.46	5.89
			Max. Vx	14	21.27	-4.94	-836.33
			Max. Torque	3			3.82
L16	108.58 - 103.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.33	10.03	-4.46
			Max. Mx	20	-17.55	968.20	6.45
			Max. My	14	-17.62	-5.49	-943.70
			Max. Vy	20	-22.17	968.20	6.45
			Max. Vx	14	21.69	-5.49	-943.70
			Max. Torque	3			3.82
L17	103.58 - 98.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.04	10.21	-4.58
			Max. Mx	20	-19.15	1080.05	7.02
			Max. My	14	-19.21	-6.03	-1053.18
			Max. Vy	20	-22.59	1080.05	7.02
			Max. Vx	14	22.11	-6.03	-1053.18
			Max. Torque	3			3.82
L18	98.58 - 93.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.77	10.39	-4.69
			Max. Mx	20	-20.77	1193.97	7.59
			Max. My	14	-20.83	-6.58	-1164.72
			Max. Vy	20	-23.00	1193.97	7.59
			Max. Vx	14	22.52	-6.58	-1164.72
			Max. Torque	3			3.82
L19	93.58 - 84.5521	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.21	10.55	-4.81
			Max. Mx	20	-22.23	1297.42	8.10
			Max. My	14	-22.28	-7.07	-1266.04
			Max. Vy	20	-23.35	1297.42	8.10
			Max. Vx	14	22.88	-7.07	-1266.04
			Max. Torque	3			3.82
L20	84.5521 - 83.5521	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.71	10.71	-4.98
			Max. Mx	20	-25.06	1428.83	8.72
			Max. My	14	-25.11	-7.70	-1394.82
			Max. Vy	20	-23.90	1428.83	8.72
			Max. Vx	14	23.42	-7.70	-1394.82
			Max. Torque	3			3.81
L21	83.5521 - 82.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.11	10.72	-5.01
			Max. Mx	20	-25.29	1446.09	8.79
			Max. My	14	-25.34	-7.79	-1411.74
			Max. Vy	20	-23.95	1446.09	8.79
			Max. Vx	14	23.47	-7.79	-1411.74
			Max. Torque	3			3.81
L22	82.83 - 82.58	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-62.26	10.72	-5.02
			Max. Mx	20	-25.39	1452.07	8.82
			Max. My	14	-25.45	-7.82	-1417.61
			Max. Vy	20	-23.96	1452.07	8.82
			Max. Vx	14	23.48	-7.82	-1417.61
			Max. Torque	3			3.81
L23	82.58 - 77.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.35	10.72	-5.24
			Max. Mx	20	-27.33	1572.78	9.35
			Max. My	14	-27.38	-8.45	-1536.04
			Max. Vy	20	-24.36	1572.78	9.35
			Max. Vx	14	23.89	-8.45	-1536.04
			Max. Torque	3			3.81
L24	77.58 - 73.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.06	10.75	-5.40
			Max. Mx	20	-28.97	1674.68	9.78
			Max. My	14	-29.02	-8.98	-1636.06
			Max. Vy	20	-24.68	1674.68	9.78
			Max. Vx	14	24.21	-8.98	-1636.06
			Max. Torque	3			3.81
L25	73.42 - 73.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.26	10.75	-5.41
			Max. Mx	20	-29.10	1680.85	9.81
			Max. My	14	-29.15	-9.01	-1642.12
			Max. Vy	20	-24.70	1680.85	9.81
			Max. Vx	14	24.22	-9.01	-1642.12
			Max. Torque	3			3.81
L26	73.17 - 72.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.59	10.75	-5.43
			Max. Mx	20	-29.31	1691.22	9.85
			Max. My	14	-29.35	-9.06	-1652.30
			Max. Vy	20	-24.74	1691.22	9.85
			Max. Vx	14	24.26	-9.06	-1652.30
			Max. Torque	3			3.81
L27	72.75 - 72.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.78	10.76	-5.44
			Max. Mx	20	-29.42	1697.41	9.88
			Max. My	14	-29.47	-9.09	-1658.37
			Max. Vy	20	-24.76	1697.41	9.88
			Max. Vx	14	24.28	-9.09	-1658.37
			Max. Torque	3			3.81
L28	72.5 - 67.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.73	11.07	-5.47
			Max. Mx	20	-31.82	1822.42	10.42
			Max. My	14	-31.86	-9.59	-1780.98
			Max. Vy	20	-25.25	1822.42	10.42
			Max. Vx	14	24.78	-9.59	-1780.98
			Max. Torque	3			3.94
L29	67.5 - 64.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.22	11.07	-5.60
			Max. Mx	20	-33.34	1904.84	10.70
			Max. My	14	-33.39	-9.95	-1861.96
			Max. Vy	20	-25.52	1904.84	10.70
			Max. Vx	14	25.05	-9.95	-1861.96
			Max. Torque	3			3.94
L30	64.25 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.39	11.07	-5.62
			Max. Mx	20	-33.45	1911.21	10.73
			Max. My	14	-33.49	-9.98	-1868.22
			Max. Vy	20	-25.53	1911.21	10.73
			Max. Vx	14	25.06	-9.98	-1868.22
			Max. Torque	3			3.94
L31	64 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.65	11.07	-5.79
			Max. Mx	20	-35.46	2039.68	11.17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-35.49	-10.54	-1994.48
			Max. Vy	20	-25.90	2039.68	11.17
			Max. Vx	14	25.44	-10.54	-1994.48
			Max. Torque	3			3.94
L32	59 - 54	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.85	11.06	-5.94
			Max. Mx	20	-37.49	2169.93	11.60
			Max. My	14	-37.53	-11.10	-2122.53
			Max. Vy	20	-26.25	2169.93	11.60
			Max. Vx	14	25.79	-11.10	-2122.53
			Max. Torque	3			3.94
L33	54 - 43.6641	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.15	11.06	-6.09
			Max. Mx	20	-39.54	2301.80	12.04
			Max. My	14	-39.57	-11.67	-2252.21
			Max. Vy	20	-26.59	2301.80	12.04
			Max. Vx	14	26.12	-11.67	-2252.21
			Max. Torque	3			3.94
L34	43.6641 - 42.6641	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.12	11.06	-6.27
			Max. Mx	20	-44.34	2471.97	12.59
			Max. My	14	-44.37	-12.38	-2419.61
			Max. Vy	20	-27.15	2471.97	12.59
			Max. Vx	14	26.68	-12.38	-2419.61
			Max. Torque	3			3.93
L35	42.6641 - 37.6641	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.79	11.03	-6.40
			Max. Mx	20	-46.80	2608.29	13.02
			Max. My	14	-46.83	-12.94	-2553.76
			Max. Vy	20	-27.45	2608.29	13.02
			Max. Vx	14	26.99	-12.94	-2553.76
			Max. Torque	3			3.93
L36	37.6641 - 32.6641	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.47	10.96	-6.51
			Max. Mx	20	-49.28	2746.06	13.44
			Max. My	14	-49.31	-13.51	-2689.37
			Max. Vy	20	-27.73	2746.06	13.44
			Max. Vx	14	27.27	-13.51	-2689.37
			Max. Torque	3			3.93
L37	32.6641 - 28.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.88	10.89	-6.64
			Max. Mx	20	-51.50	2868.82	13.82
			Max. My	14	-51.51	-14.00	-2810.23
			Max. Vy	20	-27.96	2868.82	13.82
			Max. Vx	14	27.50	-14.00	-2810.23
			Max. Torque	3			3.93
L38	28.25 - 28	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.11	10.89	-6.65
			Max. Mx	20	-51.66	2875.80	13.84
			Max. My	14	-51.68	-14.03	-2817.10
			Max. Vy	20	-27.96	2875.80	13.84
			Max. Vx	14	27.50	-14.03	-2817.10
			Max. Torque	3			3.93
L39	28 - 27.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.34	10.88	-6.66
			Max. Mx	20	-51.82	2882.78	13.86
			Max. My	14	-51.83	-14.06	-2823.98
			Max. Vy	20	-27.98	2882.78	13.86
			Max. Vx	14	27.52	-14.06	-2823.98
			Max. Torque	3			3.93
L40	27.75 - 27.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.56	10.87	-6.67
			Max. Mx	20	-51.96	2889.78	13.88
			Max. My	14	-51.98	-14.09	-2830.87
			Max. Vy	20	-27.99	2889.78	13.88

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	27.53	-14.09	-2830.87
			Max. Torque	3			3.93
L41	27.5 - 22.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-107.85	10.72	-6.96
			Max. Mx	20	-54.82	3030.33	14.30
			Max. My	14	-54.84	-14.65	-2969.30
			Max. Vy	20	-28.29	3030.33	14.30
			Max. Vx	14	27.83	-14.65	-2969.30
			Max. Torque	3			3.93
L42	22.5 - 19.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.64	10.63	-7.14
			Max. Mx	20	-56.70	3122.43	14.57
			Max. My	14	-56.72	-15.01	-3060.02
			Max. Vy	20	-28.46	3122.43	14.57
			Max. Vx	14	28.00	-15.01	-3060.02
			Max. Torque	3			3.93
L43	19.25 - 19	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.84	10.62	-7.15
			Max. Mx	20	-56.84	3129.54	14.59
			Max. My	14	-56.85	-15.04	-3067.02
			Max. Vy	20	-28.46	3129.54	14.59
			Max. Vx	14	28.00	-15.04	-3067.02
			Max. Torque	3			3.93
L44	19 - 14	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-114.57	10.47	-7.39
			Max. Mx	20	-59.39	3272.21	15.00
			Max. My	14	-59.40	-15.60	-3207.59
			Max. Vy	20	-28.67	3272.21	15.00
			Max. Vx	14	28.23	-15.60	-3207.59
			Max. Torque	3			3.93
L45	14 - 9	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-118.21	10.32	-7.60
			Max. Mx	20	-61.96	3415.88	15.40
			Max. My	14	-61.97	-16.16	-3349.18
			Max. Vy	20	-28.87	3415.88	15.40
			Max. Vx	14	28.42	-16.16	-3349.18
			Max. Torque	3			3.93
L46	9 - 4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-121.57	10.13	-7.72
			Max. Mx	20	-64.39	3560.46	15.81
			Max. My	14	-64.39	-16.72	-3491.70
			Max. Vy	20	-29.05	3560.46	15.81
			Max. Vx	14	28.61	-16.72	-3491.70
			Max. Torque	3			3.93
L47	4 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-124.12	9.98	-7.81
			Max. Mx	20	-66.31	3676.75	16.13
			Max. My	14	-66.31	-17.18	-3606.37
			Max. Vy	20	-29.19	3676.75	16.13
			Max. Vx	14	28.75	-17.18	-3606.37
			Max. Torque	3			3.93

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	124.12	11.50	0.01
	Max. H_x	20	66.32	29.16	0.09
	Max. H_z	2	66.32	0.09	28.73
	Max. M_x	2	3602.32	0.09	28.73
	Max. M_z	8	3674.71	-29.16	-0.09
	Max. Torsion	3	3.93	0.09	28.73
	Min. Vert	17	49.74	14.50	-24.83
	Min. H_x	8	66.32	-29.16	-0.09

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_z	15	49.74	-0.09	-28.73
	Min. M_x	14	-3606.37	-0.09	-28.73
	Min. M_z	20	-3676.75	29.16	0.09
	Min. Torsion	15	-3.92	-0.09	-28.73

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	55.27	-0.00	0.00	1.63	0.80	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	66.32	-0.09	-28.73	-3602.32	19.15	-3.91
0.9 Dead+1.6 Wind 0 deg - No Ice	49.74	-0.09	-28.73	-3555.25	18.57	-3.93
1.2 Dead+1.6 Wind 30 deg - No Ice	66.32	14.50	-24.83	-3110.35	-1821.02	-3.20
0.9 Dead+1.6 Wind 30 deg - No Ice	49.74	14.50	-24.83	-3069.81	-1797.24	-3.21
1.2 Dead+1.6 Wind 60 deg - No Ice	66.32	25.20	-14.28	-1784.31	-3172.80	-1.62
0.9 Dead+1.6 Wind 60 deg - No Ice	49.74	25.20	-14.28	-1761.31	-3131.12	-1.63
1.2 Dead+1.6 Wind 90 deg - No Ice	66.32	29.16	0.09	20.20	-3674.71	0.38
0.9 Dead+1.6 Wind 90 deg - No Ice	49.74	29.16	0.09	19.36	-3626.38	0.39
1.2 Dead+1.6 Wind 120 deg - No Ice	66.32	25.29	14.44	1819.75	-3190.80	2.28
0.9 Dead+1.6 Wind 120 deg - No Ice	49.74	25.29	14.44	1795.17	-3148.84	2.30
1.2 Dead+1.6 Wind 150 deg - No Ice	66.32	14.76	25.11	3147.86	-1861.30	3.56
0.9 Dead+1.6 Wind 150 deg - No Ice	49.74	14.76	25.11	3105.83	-1836.93	3.59
1.2 Dead+1.6 Wind 180 deg - No Ice	66.32	0.09	28.73	3606.37	-17.18	3.89
0.9 Dead+1.6 Wind 180 deg - No Ice	49.74	0.09	28.73	3558.24	-17.17	3.92
1.2 Dead+1.6 Wind 210 deg - No Ice	66.32	-14.50	24.83	3114.44	1823.00	3.18
0.9 Dead+1.6 Wind 210 deg - No Ice	49.74	-14.50	24.83	3072.83	1798.65	3.20
1.2 Dead+1.6 Wind 240 deg - No Ice	66.32	-25.20	14.28	1788.41	3174.82	1.62
0.9 Dead+1.6 Wind 240 deg - No Ice	49.74	-25.20	14.28	1764.33	3132.56	1.63
1.2 Dead+1.6 Wind 270 deg - No Ice	66.32	-29.16	-0.09	-16.13	3676.75	-0.37
0.9 Dead+1.6 Wind 270 deg - No Ice	49.74	-29.16	-0.09	-16.37	3627.84	-0.38
1.2 Dead+1.6 Wind 300 deg - No Ice	66.32	-25.29	-14.44	-1815.71	3192.83	-2.27
0.9 Dead+1.6 Wind 300 deg - No Ice	49.74	-25.29	-14.44	-1792.20	3150.28	-2.29
1.2 Dead+1.6 Wind 330 deg - No Ice	66.32	-14.76	-25.11	-3143.84	1863.29	-3.56
0.9 Dead+1.6 Wind 330 deg - No Ice	49.74	-14.76	-25.11	-3102.87	1838.35	-3.59
1.2 Dead+1.0 Ice+1.0 Temp	124.12	-0.00	0.00	7.81	9.98	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	124.12	-0.01	-10.49	-1411.09	12.16	-2.78
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	124.12	5.52	-9.49	-1243.84	-719.03	-1.79
1.2 Dead+1.0 Wind 60	124.12	8.93	-5.11	-685.86	-1206.84	-0.31

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90	124.12	11.50	0.01	9.99	-1485.52	1.25
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120	124.12	8.94	5.12	705.27	-1208.95	2.47
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 150	124.12	5.83	10.03	1301.15	-745.44	3.03
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 180	124.12	0.01	10.49	1426.89	7.95	2.78
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 210	124.12	-5.52	9.49	1259.66	739.17	1.78
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 240	124.12	-8.93	5.11	701.66	1227.02	0.31
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 270	124.12	-11.50	-0.01	5.78	1505.70	-1.24
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 300	124.12	-8.94	-5.12	-689.53	1229.10	-2.47
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 330	124.12	-5.83	-10.03	-1285.39	765.56	-3.03
deg+1.0 Ice+1.0 Temp Dead+Wind 0 deg - Service	55.27	-0.02	-6.69	-831.37	5.06	-0.93
Dead+Wind 30 deg - Service	55.27	3.37	-5.78	-717.66	-420.25	-0.76
Dead+Wind 60 deg - Service	55.27	5.87	-3.32	-411.20	-732.71	-0.39
Dead+Wind 90 deg - Service	55.27	6.79	0.02	5.88	-848.75	0.09
Dead+Wind 120 deg - Service	55.27	5.89	3.36	421.85	-736.90	0.54
Dead+Wind 150 deg - Service	55.27	3.44	5.84	728.82	-429.58	0.85
Dead+Wind 180 deg - Service	55.27	0.02	6.69	834.75	-3.33	0.93
Dead+Wind 210 deg - Service	55.27	-3.37	5.78	721.05	421.97	0.76
Dead+Wind 240 deg - Service	55.27	-5.87	3.32	414.59	734.44	0.39
Dead+Wind 270 deg - Service	55.27	-6.79	-0.02	-2.50	850.48	-0.09
Dead+Wind 300 deg - Service	55.27	-5.89	-3.36	-418.47	738.63	-0.54
Dead+Wind 330 deg - Service	55.27	-3.44	-5.84	-725.44	431.30	-0.85

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-55.27	0.00	0.00	55.27	0.00	0.000%
2	-0.09	-66.32	-28.73	0.09	66.32	28.73	0.000%
3	-0.09	-49.74	-28.73	0.09	49.74	28.73	0.000%
4	14.50	-66.32	-24.83	-14.50	66.32	24.83	0.000%
5	14.50	-49.74	-24.83	-14.50	49.74	24.83	0.000%
6	25.20	-66.32	-14.28	-25.20	66.32	14.28	0.000%
7	25.20	-49.74	-14.28	-25.20	49.74	14.28	0.000%
8	29.16	-66.32	0.09	-29.16	66.32	-0.09	0.000%
9	29.16	-49.74	0.09	-29.16	49.74	-0.09	0.000%
10	25.29	-66.32	14.44	-25.29	66.32	-14.44	0.000%
11	25.29	-49.74	14.44	-25.29	49.74	-14.44	0.000%
12	14.76	-66.32	25.11	-14.76	66.32	-25.11	0.000%
13	14.76	-49.74	25.11	-14.76	49.74	-25.11	0.000%
14	0.09	-66.32	28.73	-0.09	66.32	-28.73	0.000%
15	0.09	-49.74	28.73	-0.09	49.74	-28.73	0.000%
16	-14.50	-66.32	24.83	14.50	66.32	-24.83	0.000%
17	-14.50	-49.74	24.83	14.50	49.74	-24.83	0.000%
18	-25.20	-66.32	14.28	25.20	66.32	-14.28	0.000%
19	-25.20	-49.74	14.28	25.20	49.74	-14.28	0.000%
20	-29.16	-66.32	-0.09	29.16	66.32	0.09	0.000%
21	-29.16	-49.74	-0.09	29.16	49.74	0.09	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
22	-25.29	-66.32	-14.44	25.29	66.32	14.44	0.000%
23	-25.29	-49.74	-14.44	25.29	49.74	14.44	0.000%
24	-14.76	-66.32	-25.11	14.76	66.32	25.11	0.000%
25	-14.76	-49.74	-25.11	14.76	49.74	25.11	0.000%
26	0.00	-124.12	0.00	0.00	124.12	-0.00	0.000%
27	-0.01	-124.12	-10.49	0.01	124.12	10.49	0.000%
28	5.52	-124.12	-9.49	-5.52	124.12	9.49	0.000%
29	8.93	-124.12	-5.11	-8.93	124.12	5.11	0.000%
30	11.50	-124.12	0.01	-11.50	124.12	-0.01	0.000%
31	8.94	-124.12	5.12	-8.94	124.12	-5.12	0.000%
32	5.83	-124.12	10.03	-5.83	124.12	-10.03	0.000%
33	0.01	-124.12	10.49	-0.01	124.12	-10.49	0.000%
34	-5.52	-124.12	9.49	5.52	124.12	-9.49	0.000%
35	-8.93	-124.12	5.11	8.93	124.12	-5.11	0.000%
36	-11.50	-124.12	-0.01	11.50	124.12	0.01	0.000%
37	-8.94	-124.12	-5.12	8.94	124.12	5.12	0.000%
38	-5.83	-124.12	-10.03	5.83	124.12	10.03	0.000%
39	-0.02	-55.27	-6.69	0.02	55.27	6.69	0.000%
40	3.37	-55.27	-5.78	-3.37	55.27	5.78	0.000%
41	5.87	-55.27	-3.32	-5.87	55.27	3.32	0.000%
42	6.79	-55.27	0.02	-6.79	55.27	-0.02	0.000%
43	5.89	-55.27	3.36	-5.89	55.27	-3.36	0.000%
44	3.44	-55.27	5.84	-3.44	55.27	-5.84	0.000%
45	0.02	-55.27	6.69	-0.02	55.27	-6.69	0.000%
46	-3.37	-55.27	5.78	3.37	55.27	-5.78	0.000%
47	-5.87	-55.27	3.32	5.87	55.27	-3.32	0.000%
48	-6.79	-55.27	-0.02	6.79	55.27	0.02	0.000%
49	-5.89	-55.27	-3.36	5.89	55.27	3.36	0.000%
50	-3.44	-55.27	-5.84	3.44	55.27	5.84	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000287
2	Yes	6	0.00000001	0.00014952
3	Yes	6	0.00000001	0.00005169
4	Yes	7	0.00000001	0.00006349
5	Yes	6	0.00000001	0.00037833
6	Yes	7	0.00000001	0.00006883
7	Yes	6	0.00000001	0.00041090
8	Yes	5	0.00000001	0.00066407
9	Yes	5	0.00000001	0.00030099
10	Yes	7	0.00000001	0.00007080
11	Yes	6	0.00000001	0.00042255
12	Yes	7	0.00000001	0.00006461
13	Yes	6	0.00000001	0.00038416
14	Yes	6	0.00000001	0.00011264
15	Yes	5	0.00000001	0.00096659
16	Yes	7	0.00000001	0.00007043
17	Yes	6	0.00000001	0.00042163
18	Yes	7	0.00000001	0.00006509
19	Yes	6	0.00000001	0.00038769
20	Yes	5	0.00000001	0.00024738
21	Yes	5	0.00000001	0.00009016
22	Yes	7	0.00000001	0.00006539
23	Yes	6	0.00000001	0.00038884
24	Yes	7	0.00000001	0.00007226
25	Yes	6	0.00000001	0.00043207
26	Yes	5	0.00000001	0.00062007
27	Yes	7	0.00000001	0.00074399
28	Yes	8	0.00000001	0.00017368
29	Yes	8	0.00000001	0.00017184
30	Yes	7	0.00000001	0.00073806
31	Yes	8	0.00000001	0.00018357

32	Yes	8	0.00000001	0.00018270
33	Yes	7	0.00000001	0.00075640
34	Yes	8	0.00000001	0.00019286
35	Yes	8	0.00000001	0.00018125
36	Yes	7	0.00000001	0.00076411
37	Yes	8	0.00000001	0.00017538
38	Yes	8	0.00000001	0.00020104
39	Yes	5	0.00000001	0.00014082
40	Yes	5	0.00000001	0.00030414
41	Yes	5	0.00000001	0.00036614
42	Yes	4	0.00000001	0.00098270
43	Yes	5	0.00000001	0.00039679
44	Yes	5	0.00000001	0.00032076
45	Yes	5	0.00000001	0.00013393
46	Yes	5	0.00000001	0.00040201
47	Yes	5	0.00000001	0.00032734
48	Yes	4	0.00000001	0.00093945
49	Yes	5	0.00000001	0.00032804
50	Yes	5	0.00000001	0.00042135

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.333 - 163.333	30.267	48	1.8249	0.0167
L2	163.333 - 158.333	28.359	48	1.8171	0.0163
L3	158.333 - 153.333	26.466	48	1.7973	0.0159
L4	153.333 - 148.333	24.602	48	1.7607	0.0137
L5	148.333 - 143.333	22.785	48	1.7065	0.0116
L6	143.333 - 138.333	21.033	48	1.6379	0.0097
L7	138.333 - 130.5	19.359	48	1.5570	0.0080
L8	134.164 - 129.164	18.034	48	1.4774	0.0068
L9	129.164 - 125.5	16.513	48	1.4183	0.0060
L10	125.5 - 125.25	15.451	48	1.3479	0.0053
L11	125.25 - 120.25	15.381	48	1.3429	0.0052
L12	120.25 - 115.25	14.029	48	1.2371	0.0043
L13	115.25 - 113.83	12.793	48	1.1230	0.0035
L14	113.83 - 113.58	12.464	48	1.0898	0.0032
L15	113.58 - 108.58	12.407	48	1.0874	0.0032
L16	108.58 - 103.58	11.294	48	1.0372	0.0029
L17	103.58 - 98.58	10.236	48	0.9842	0.0026
L18	98.58 - 93.58	9.234	48	0.9286	0.0023
L19	93.58 - 84.5521	8.292	48	0.8708	0.0021
L20	89.1146 - 83.5521	7.502	48	0.8184	0.0019
L21	83.5521 - 82.83	6.569	48	0.7773	0.0017
L22	82.83 - 82.58	6.452	48	0.7679	0.0017
L23	82.58 - 77.58	6.412	48	0.7652	0.0017
L24	77.58 - 73.42	5.640	48	0.7092	0.0015
L25	73.42 - 73.17	5.043	48	0.6618	0.0014
L26	73.17 - 72.75	5.008	48	0.6599	0.0014
L27	72.75 - 72.5	4.950	48	0.6567	0.0013
L28	72.5 - 67.5	4.916	48	0.6546	0.0013
L29	67.5 - 64.25	4.253	48	0.6123	0.0012
L30	64.25 - 64	3.845	48	0.5842	0.0011
L31	64 - 59	3.815	48	0.5816	0.0011
L32	59 - 54	3.233	48	0.5305	0.0010
L33	54 - 43.6641	2.705	48	0.4780	0.0009
L34	49.0026 - 42.6641	2.232	48	0.4260	0.0008

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L35	42.6641 - 37.6641	1.688	48	0.3885	0.0007
L36	37.6641 - 32.6641	1.308	48	0.3375	0.0006
L37	32.6641 - 28.25	0.981	48	0.2871	0.0005
L38	28.25 - 28	0.736	48	0.2424	0.0004
L39	28 - 27.75	0.724	48	0.2406	0.0004
L40	27.75 - 27.5	0.711	48	0.2388	0.0004
L41	27.5 - 22.5	0.699	48	0.2369	0.0004
L42	22.5 - 19.25	0.471	48	0.1975	0.0003
L43	19.25 - 19	0.346	48	0.1719	0.0003
L44	19 - 14	0.337	48	0.1697	0.0003
L45	14 - 9	0.183	48	0.1246	0.0002
L46	9 - 4	0.075	48	0.0801	0.0001
L47	4 - 0	0.015	48	0.0356	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	Platform Mount [LP 303-1]	48	30.140	1.8246	0.0167	20379
158.00	T-Arm Mount [TA 602-3]	48	26.341	1.7954	0.0158	10067
148.00	APXV18-206517S-C w/ Mount Pipe	48	22.666	1.7023	0.0115	4599
138.00	Platform Mount [LP 303-1]	48	19.251	1.5505	0.0079	3350
128.00	Platform Mount [LP 303-1]	48	16.170	1.3984	0.0058	3268
70.00	Side Arm Mount [SO 701-1]	48	4.579	0.6332	0.0013	6670

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.333 - 163.333	130.182	20	7.8191	0.0720
L2	163.333 - 158.333	122.031	20	7.7861	0.0704
L3	158.333 - 153.333	113.942	20	7.7018	0.0689
L4	153.333 - 148.333	105.971	20	7.5538	0.0595
L5	148.333 - 143.333	98.194	20	7.3296	0.0505
L6	143.333 - 138.333	90.683	20	7.0419	0.0422
L7	138.333 - 130.5	83.501	20	6.7003	0.0348
L8	134.164 - 129.164	77.806	20	6.3625	0.0292
L9	129.164 - 125.5	71.268	20	6.1107	0.0260
L10	125.5 - 125.25	66.700	20	5.8097	0.0227
L11	125.25 - 120.25	66.397	20	5.7883	0.0225
L12	120.25 - 115.25	60.578	20	5.3357	0.0185
L13	115.25 - 113.83	55.251	20	4.8464	0.0148
L14	113.83 - 113.58	53.833	20	4.7037	0.0138
L15	113.58 - 108.58	53.587	20	4.6934	0.0137
L16	108.58 - 103.58	48.789	20	4.4780	0.0124
L17	103.58 - 98.58	44.223	20	4.2500	0.0112
L18	98.58 - 93.58	39.901	20	4.0109	0.0100
L19	93.58 - 84.5521	35.833	20	3.7619	0.0089
L20	89.1146 -	32.423	20	3.5363	0.0080

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
	83.5521				
L21	83.5521 - 82.83	28.394	20	3.3589	0.0074
L22	82.83 - 82.58	27.889	20	3.3187	0.0072
L23	82.58 - 77.58	27.716	20	3.3069	0.0072
L24	77.58 - 73.42	24.381	20	3.0655	0.0064
L25	73.42 - 73.17	21.800	20	2.8608	0.0058
L26	73.17 - 72.75	21.651	20	2.8525	0.0058
L27	72.75 - 72.5	21.401	20	2.8386	0.0057
L28	72.5 - 67.5	21.252	20	2.8296	0.0057
L29	67.5 - 64.25	18.386	20	2.6471	0.0052
L30	64.25 - 64	16.626	20	2.5258	0.0048
L31	64 - 59	16.494	20	2.5147	0.0048
L32	59 - 54	13.977	20	2.2938	0.0042
L33	54 - 43.6641	11.694	20	2.0671	0.0037
L34	49.0026 - 42.6641	9.649	20	1.8421	0.0032
L35	42.6641 - 37.6641	7.299	20	1.6801	0.0028
L36	37.6641 - 32.6641	5.655	20	1.4594	0.0024
L37	32.6641 - 28.25	4.242	20	1.2414	0.0020
L38	28.25 - 28	3.184	20	1.0481	0.0016
L39	28 - 27.75	3.129	20	1.0405	0.0016
L40	27.75 - 27.5	3.075	20	1.0328	0.0016
L41	27.5 - 22.5	3.021	20	1.0243	0.0016
L42	22.5 - 19.25	2.037	20	0.8540	0.0013
L43	19.25 - 19	1.494	20	0.7433	0.0011
L44	19 - 14	1.455	20	0.7338	0.0011
L45	14 - 9	0.789	20	0.5386	0.0008
L46	9 - 4	0.326	20	0.3463	0.0005
L47	4 - 0	0.064	20	0.1540	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	Platform Mount [LP 303-1]	20	129.638	7.8176	0.0719	4983
158.00	T-Arm Mount [TA 602-3]	20	113.406	7.6940	0.0685	2530
148.00	APXV18-206517S-C w/ Mount Pipe	20	97.684	7.3121	0.0499	1136
138.00	Platform Mount [LP 303-1]	20	83.036	6.6726	0.0343	811
128.00	Platform Mount [LP 303-1]	20	69.793	6.0255	0.0250	781
70.00	Side Arm Mount [SO 701-1]	20	19.795	2.7374	0.0054	1552

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	168.333 - 163.333 (1)	TP19.8344x19x0.1875	5.00	0.00	0.0	11.6924	-2.15	858.40	0.002
L2	163.333 - 158.333 (2)	TP20.6688x19.8344x0.1875	5.00	0.00	0.0	12.1889	-2.39	884.75	0.003
L3	158.333 - 153.333 (3)	TP21.5032x20.6688x0.1875	5.00	0.00	0.0	12.6855	-4.78	910.27	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L4	153.333 - 148.333 (4)	TP22.3375x21.5032x0.1875	5.00	0.00	0.0	13.1820	-5.10	934.98	0.005
L5	148.333 - 143.333 (5)	TP23.1719x22.3375x0.1875	5.00	0.00	0.0	13.6786	-5.56	958.86	0.006
L6	143.333 - 138.333 (6)	TP24.0063x23.1719x0.1875	5.00	0.00	0.0	14.1752	-5.96	981.92	0.006
L7	138.333 - 130.5 (7)	TP25.3135x24.0063x0.1875	7.83	0.00	0.0	14.5892	-8.80	1000.51	0.009
L8	130.5 - 129.164 (8)	TP25.15x24.327x0.25	5.00	0.00	0.0	19.7582	-9.60	1467.93	0.007
L9	129.164 - 125.5 (9)	TP25.7532x25.15x0.25	3.66	0.00	0.0	20.2368	-12.26	1496.14	0.008
L10	125.5 - 125.25 (10)	TP25.7943x25.7532x0.25	0.25	0.00	0.0	20.2694	-12.31	1497.93	0.008
L11	125.25 - 120.25 (11)	TP26.6173x25.7943x0.25	5.00	0.00	0.0	20.9225	-13.06	1533.36	0.009
L12	120.25 - 115.25 (12)	TP27.4403x26.6173x0.25	5.00	0.00	0.0	21.5755	-14.04	1567.99	0.009
L13	115.25 - 113.83 (13)	TP27.674x27.4403x0.25	1.42	0.00	0.0	21.7610	-14.32	1577.67	0.009
L14	113.83 - 113.58 (14)	TP27.7152x27.674x0.65	0.25	0.00	0.0	55.8382	-14.42	4148.50	0.003
L15	113.58 - 108.58 (15)	TP28.5382x27.7152x0.6375	5.00	0.00	0.0	56.4550	-15.97	4194.32	0.004
L16	108.58 - 103.58 (16)	TP29.3612x28.5382x0.625	5.00	0.00	0.0	57.0054	-17.55	4235.22	0.004
L17	103.58 - 98.58 (17)	TP30.1842x29.3612x0.6125	5.00	0.00	0.0	57.4896	-19.15	4271.19	0.004
L18	98.58 - 93.58 (18)	TP31.0072x30.1842x0.6	5.00	0.00	0.0	57.9075	-20.77	4302.24	0.005
L19	93.58 - 84.5521 (19)	TP32.4932x31.0072x0.6	9.03	0.00	0.0	59.3072	-22.23	4406.23	0.005
L20	84.5521 - 83.5521 (20)	TP32.1552x31.2422x0.575	5.56	0.00	0.0	57.6354	-25.06	4282.03	0.006
L21	83.5521 - 82.83 (21)	TP32.2737x32.1552x0.575	0.72	0.00	0.0	57.8517	-25.29	4298.10	0.006
L22	82.83 - 82.58 (22)	TP32.3147x32.2737x0.6875	0.25	0.00	0.0	69.0146	-25.39	5127.44	0.005
L23	82.58 - 77.58 (23)	TP33.1354x32.3147x0.675	5.00	0.00	0.0	69.5448	-27.33	5166.83	0.005
L24	77.58 - 73.42 (24)	TP33.8182x33.1354x0.6625	4.16	0.00	0.0	69.7190	-28.97	5179.77	0.006
L25	73.42 - 73.17 (25)	TP33.8592x33.8182x1.0125	0.25	0.00	0.0	105.5590	-29.10	7842.49	0.004
L26	73.17 - 72.75 (26)	TP33.9282x33.8592x1.0125	0.42	0.00	0.0	105.7800	-29.31	7858.94	0.004
L27	72.75 - 72.5 (27)	TP33.9692x33.9282x0.925	0.25	0.00	0.0	97.0161	-29.42	7207.81	0.004
L28	72.5 - 67.5 (28)	TP34.7899x33.9692x0.9125	5.00	0.00	0.0	98.1182	-31.82	7289.69	0.004
L29	67.5 - 64.25 (29)	TP35.3233x34.7899x0.8875	3.25	0.00	0.0	97.0030	-33.34	7206.84	0.005
L30	64.25 - 64 (30)	TP35.3643x35.3233x0.7375	0.25	0.00	0.0	81.0553	-33.45	6022.01	0.006
L31	64 - 59 (31)	TP36.185x35.3643x0.7375	5.00	0.00	0.0	82.9764	-35.46	6164.73	0.006
L32	59 - 54 (32)	TP37.0056x36.185x0.7125	5.00	0.00	0.0	82.0760	-37.49	6097.84	0.006
L33	54 - 43.6641 (33)	TP38.7021x37.0056x0.7125	10.34	0.00	0.0	83.9310	-39.54	6235.65	0.006
L34	43.6641 - 42.6641 (34)	TP38.242x37.2009x0.7625	6.34	0.00	0.0	90.7070	-44.34	6739.08	0.007
L35	42.6641 - 37.6641 (35)	TP39.0633x38.242x0.75	5.00	0.00	0.0	91.2049	-46.80	6776.07	0.007
L36	37.6641 - 32.6641 (36)	TP39.8846x39.0633x0.75	5.00	0.00	0.0	93.1600	-49.28	6921.32	0.007
L37	32.6641 - 28.25 (37)	TP40.6097x39.8846x0.7375	4.41	0.00	0.0	93.3338	-51.50	6934.23	0.007
L38	28.25 - 28	TP40.6507x40.6097x1.07	0.25	0.00	0.0	135.03	-51.66	10032.40	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(38)	5				40			
L39	28 - 27.75	TP40.6918x40.6507x1.07	0.25	0.00	0.0	135.17	-51.82	10042.80	0.005
	(39)	5				50			
L40	27.75 - 27.5	TP40.7329x40.6918x0.95	0.25	0.00	0.0	119.95	-51.96	8912.23	0.006
	(40)					70			
L41	27.5 - 22.5	TP41.5542x40.7329x0.95	5.00	0.00	0.0	122.43	-54.82	9096.22	0.006
	(41)					40			
L42	22.5 - 19.25	TP42.088x41.5542x0.937	3.25	0.00	0.0	122.44	-56.70	9097.31	0.006
	(42)	5				90			
L43	19.25 - 19	TP42.1291x42.088x0.825	0.25	0.00	0.0	108.15	-56.84	8035.51	0.007
	(43)					70			
L44	19 - 14 (44)	TP42.9504x42.1291x0.8	5.00	0.00	0.0	107.02	-59.39	7951.66	0.007
						80			
L45	14 - 9 (45)	TP43.7717x42.9504x0.8	5.00	0.00	0.0	109.11	-61.96	8106.60	0.008
						40			
L46	9 - 4 (46)	TP44.593x43.7717x0.787	5.00	0.00	0.0	109.49	-64.39	8134.77	0.008
		5				30			
L47	4 - 0 (47)	TP45.25x44.593x0.775	4.00	0.00	0.0	109.40	-66.31	8128.01	0.008
						20			

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	168.333 - 163.333 (1)	TP19.8344x19x0.1875	24.23	346.22	0.070	0.00	346.22	0.000
L2	163.333 - 158.333 (2)	TP20.6688x19.8344x0.18 75	48.48	372.14	0.130	0.00	372.14	0.000
L3	158.333 - 153.333 (3)	TP21.5032x20.6688x0.18 75	96.62	398.62	0.242	0.00	398.62	0.000
L4	153.333 - 148.333 (4)	TP22.3375x21.5032x0.18 75	147.62	425.61	0.347	0.00	425.61	0.000
L5	148.333 - 143.333 (5)	TP23.1719x22.3375x0.18 75	203.44	453.06	0.449	0.00	453.06	0.000
L6	143.333 - 138.333 (6)	TP24.0063x23.1719x0.18 75	261.28	480.93	0.543	0.00	480.93	0.000
L7	138.333 - 130.5 (7)	TP25.3135x24.0063x0.18 75	339.49	504.46	0.673	0.00	504.46	0.000
L8	130.5 - 129.164 (8)	TP25.15x24.327x0.25	427.00	750.00	0.569	0.00	750.00	0.000
L9	129.164 - 125.5 (9)	TP25.7532x25.15x0.25	501.70	783.11	0.641	0.00	783.11	0.000
L10	125.5 - 125.25 (10)	TP25.7943x25.7532x0.25	506.83	785.32	0.645	0.00	785.32	0.000
L11	125.25 - 120.25 (11)	TP26.6173x25.7943x0.25	610.33	830.05	0.735	0.00	830.05	0.000
L12	120.25 - 115.25 (12)	TP27.4403x26.6173x0.25	715.41	875.53	0.817	0.00	875.53	0.000
L13	115.25 - 113.83 (13)	TP27.674x27.4403x0.25	745.54	888.58	0.839	0.00	888.58	0.000
L14	113.83 - 113.58 (14)	TP27.7152x27.674x0.65	750.88	2272.42	0.330	0.00	2272.42	0.000
L15	113.58 - 108.58 (15)	TP28.5382x27.7152x0.63 75	858.48	2371.14	0.362	0.00	2371.14	0.000
L16	108.58 - 103.58 (16)	TP29.3612x28.5382x0.62 5	968.23	2468.62	0.392	0.00	2468.62	0.000
L17	103.58 - 98.58 (17)	TP30.1842x29.3612x0.61 25	1080.08	2564.57	0.421	0.00	2564.57	0.000
L18	98.58 - 93.58 (18)	TP31.0072x30.1842x0.6	1194.00	2658.75	0.449	0.00	2658.75	0.000
L19	93.58 - 84.5521 (19)	TP32.4932x31.0072x0.6	1297.44	2790.11	0.465	0.00	2790.11	0.000
L20	84.5521 - 83.5521 (20)	TP32.1552x31.2422x0.57 5	1428.86	2752.46	0.519	0.00	2752.46	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L21	83.5521 - 82.83 (21)	TP32.2737x32.1552x0.575	1446.12	2773.34	0.521	0.00	2773.34	0.000
L22	82.83 - 82.58 (22)	TP32.3147x32.2737x0.6875	1452.10	3289.39	0.441	0.00	3289.39	0.000
L23	82.58 - 77.58 (23)	TP33.1354x32.3147x0.675	1572.80	3405.12	0.462	0.00	3405.12	0.000
L24	77.58 - 73.42 (24)	TP33.8182x33.1354x0.6625	1674.71	3489.55	0.480	0.00	3489.55	0.000
L25	73.42 - 73.17 (25)	TP33.8592x33.8182x1.0125	1680.88	5179.09	0.325	0.00	5179.09	0.000
L26	73.17 - 72.75 (26)	TP33.9282x33.8592x1.0125	1691.25	5201.18	0.325	0.00	5201.18	0.000
L27	72.75 - 72.5 (27)	TP33.9692x33.9282x0.925	1697.43	4801.77	0.354	0.00	4801.77	0.000
L28	72.5 - 67.5 (28)	TP34.7899x33.9692x0.9125	1822.45	4983.88	0.366	0.00	4983.88	0.000
L29	67.5 - 64.25 (29)	TP35.3233x34.7899x0.8875	1904.87	5014.14	0.380	0.00	5014.14	0.000
L30	64.25 - 64 (30)	TP35.3643x35.3233x0.7375	1911.24	4231.49	0.452	0.00	4231.49	0.000
L31	64 - 59 (31)	TP36.185x35.3643x0.7375	2039.71	4436.58	0.460	0.00	4436.58	0.000
L32	59 - 54 (32)	TP37.0056x36.185x0.7125	2169.96	4498.32	0.482	0.00	4498.32	0.000
L33	54 - 43.6641 (33)	TP38.7021x37.0056x0.7125	2301.82	4705.94	0.489	0.00	4705.94	0.000
L34	43.6641 - 42.6641 (34)	TP38.242x37.2009x0.7625	2472.00	5130.27	0.482	0.00	5130.27	0.000
L35	42.6641 - 37.6641 (35)	TP39.0633x38.242x0.75	2608.32	5277.17	0.494	0.00	5277.17	0.000
L36	37.6641 - 32.6641 (36)	TP39.8846x39.0633x0.75	2746.09	5508.06	0.499	0.00	5508.06	0.000
L37	32.6641 - 28.25 (37)	TP40.6097x39.8846x0.7375	2868.85	5626.02	0.510	0.00	5626.02	0.000
L38	28.25 - 28 (38)	TP40.6507x40.6097x1.075	2875.83	8010.99	0.359	0.00	8010.99	0.000
L39	28 - 27.75 (39)	TP40.6918x40.6507x1.075	2882.82	8027.84	0.359	0.00	8027.84	0.000
L40	27.75 - 27.5 (40)	TP40.7329x40.6918x0.95	2889.81	7176.72	0.403	0.00	7176.72	0.000
L41	27.5 - 22.5 (41)	TP41.5542x40.7329x0.95	3030.37	7479.62	0.405	0.00	7479.62	0.000
L42	22.5 - 19.25 (42)	TP42.088x41.5542x0.9375	3122.47	7585.73	0.412	0.00	7585.73	0.000
L43	19.25 - 19 (43)	TP42.1291x42.088x0.825	3129.57	6743.88	0.464	0.00	6743.88	0.000
L44	19 - 14 (44)	TP42.9504x42.1291x0.8	3272.25	6816.89	0.480	0.00	6816.89	0.000
L45	14 - 9 (45)	TP43.7717x42.9504x0.8	3415.92	7087.66	0.482	0.00	7087.66	0.000
L46	9 - 4 (46)	TP44.593x43.7717x0.7875	3560.49	7254.84	0.491	0.00	7254.84	0.000
L47	4 - 0 (47)	TP45.25x44.593x0.775	3676.79	7363.60	0.499	0.00	7363.60	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	168.333 - 163.333 (1)	TP19.8344x19x0.1875	4.69	429.20	0.011	0.70	693.28	0.001
L2	163.333 - 158.333 (2)	TP20.6688x19.8344x0.1875	5.01	442.37	0.011	0.70	745.20	0.001
L3	158.333 - 153.333 (3)	TP21.5032x20.6688x0.1875	10.04	455.14	0.022	0.72	798.22	0.001
L4	153.333 - 148.333 (4)	TP22.3375x21.5032x0.1875	10.37	467.49	0.022	0.72	852.25	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L5	148.333 - 143.333 (5)	TP23.1719x22.3375x0.1875	11.40	479.43	0.024	2.55	907.23	0.003
L6	143.333 - 138.333 (6)	TP24.0063x23.1719x0.1875	11.74	490.96	0.024	2.55	963.03	0.003
L7	138.333 - 130.5 (7)	TP25.3135x24.0063x0.1875	17.31	500.26	0.035	2.29	1010.16	0.002
L8	130.5 - 129.164 (8)	TP25.15x24.327x0.25	17.70	733.97	0.024	2.29	1501.83	0.002
L9	129.164 - 125.5 (9)	TP25.7532x25.15x0.25	20.54	748.07	0.027	2.29	1568.13	0.001
L10	125.5 - 125.25 (10)	TP25.7943x25.7532x0.25	20.55	748.96	0.027	2.28	1572.57	0.001
L11	125.25 - 120.25 (11)	TP26.6173x25.7943x0.25	20.87	766.68	0.027	2.28	1662.13	0.001
L12	120.25 - 115.25 (12)	TP27.4403x26.6173x0.25	21.18	783.99	0.027	2.28	1753.22	0.001
L13	115.25 - 113.83 (13)	TP27.674x27.4403x0.25	21.28	788.84	0.027	2.28	1779.35	0.001
L14	113.83 - 113.58 (14)	TP27.7152x27.674x0.65	21.30	2074.25	0.010	0.45	4550.39	0.000
L15	113.58 - 108.58 (15)	TP28.5382x27.7152x0.6375	21.74	2097.16	0.010	0.45	4748.08	0.000
L16	108.58 - 103.58 (16)	TP29.3612x28.5382x0.625	22.17	2117.61	0.010	0.45	4943.27	0.000
L17	103.58 - 98.58 (17)	TP30.1842x29.3612x0.6125	22.59	2135.60	0.011	0.45	5135.41	0.000
L18	98.58 - 93.58 (18)	TP31.0072x30.1842x0.6	23.00	2151.12	0.011	0.45	5324.00	0.000
L19	93.58 - 84.5521 (19)	TP32.4932x31.0072x0.6	23.35	2203.12	0.011	0.45	5587.04	0.000
L20	84.5521 - 83.5521 (20)	TP32.1552x31.2422x0.575	23.90	2141.01	0.011	0.45	5511.64	0.000
L21	83.5521 - 82.83 (21)	TP32.2737x32.1552x0.575	23.95	2149.05	0.011	0.45	5553.46	0.000
L22	82.83 - 82.58 (22)	TP32.3147x32.2737x0.6875	23.96	2563.72	0.009	0.45	6586.82	0.000
L23	82.58 - 77.58 (23)	TP33.1354x32.3147x0.675	24.36	2583.42	0.009	0.45	6818.57	0.000
L24	77.58 - 73.42 (24)	TP33.8182x33.1354x0.6625	24.68	2589.89	0.010	0.44	6987.62	0.000
L25	73.42 - 73.17 (25)	TP33.8592x33.8182x1.0125	24.70	3921.24	0.006	0.44	10370.83	0.000
L26	73.17 - 72.75 (26)	TP33.9282x33.8592x1.0125	24.74	3929.47	0.006	0.44	10415.08	0.000
L27	72.75 - 72.5 (27)	TP33.9692x33.9282x0.925	24.76	3603.91	0.007	0.44	9615.25	0.000
L28	72.5 - 67.5 (28)	TP34.7899x33.9692x0.9125	25.25	3644.84	0.007	0.37	9979.92	0.000
L29	67.5 - 64.25 (29)	TP35.3233x34.7899x0.8875	25.52	3603.42	0.007	0.37	10040.58	0.000
L30	64.25 - 64 (30)	TP35.3643x35.3233x0.7375	25.53	3011.00	0.008	0.37	8473.33	0.000
L31	64 - 59 (31)	TP36.185x35.3643x0.7375	25.90	3082.36	0.008	0.37	8884.00	0.000
L32	59 - 54 (32)	TP37.0056x36.185x0.7125	26.25	3048.92	0.009	0.37	9007.67	0.000
L33	54 - 43.6641 (33)	TP38.7021x37.0056x0.7125	26.59	3117.83	0.009	0.37	9423.42	0.000
L34	43.6641 - 42.6641 (34)	TP38.242x37.2009x0.7625	27.15	3369.54	0.008	0.37	10273.08	0.000
L35	42.6641 - 37.6641 (35)	TP39.0633x38.242x0.75	27.45	3388.03	0.008	0.37	10567.25	0.000
L36	37.6641 - 32.6641 (36)	TP39.8846x39.0633x0.75	27.73	3460.66	0.008	0.37	11029.58	0.000
L37	32.6641 - 28.25 (37)	TP40.6097x39.8846x0.7375	27.96	3467.12	0.008	0.37	11265.83	0.000
L38	28.25 - 28 (38)	TP40.6507x40.6097x1.075	27.96	5016.19	0.006	0.37	16041.58	0.000
L39	28 - 27.75	TP40.6918x40.6507x1.07	27.98	5021.40	0.006	0.37	16075.33	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(39)	5						
L40	27.75 - 27.5 (40)	TP40.7329x40.6918x0.95	27.99	4456.11	0.006	0.37	14371.00	0.000
L41	27.5 - 22.5 (41)	TP41.5542x40.7329x0.95	28.29	4548.11	0.006	0.37	14977.58	0.000
L42	22.5 - 19.25 (42)	TP42.088x41.5542x0.937 5	28.46	4548.66	0.006	0.37	15190.00	0.000
L43	19.25 - 19 (43)	TP42.1291x42.088x0.825	28.46	4017.75	0.007	0.37	13504.25	0.000
L44	19 - 14 (44)	TP42.9504x42.1291x0.8	28.67	3975.83	0.007	0.37	13650.42	0.000
L45	14 - 9 (45)	TP43.7717x42.9504x0.8	28.87	4053.30	0.007	0.37	14192.67	0.000
L46	9 - 4 (46)	TP44.593x43.7717x0.787 5	29.05	4067.39	0.007	0.37	14527.42	0.000
L47	4 - 0 (47)	TP45.25x44.593x0.775	29.19	4064.00	0.007	0.37	14745.17	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	168.333 - 163.333 (1)	0.002	0.070	0.000	0.011	0.001	0.073	1.000	4.8.2
L2	163.333 - 158.333 (2)	0.003	0.130	0.000	0.011	0.001	0.133	1.000	4.8.2
L3	158.333 - 153.333 (3)	0.005	0.242	0.000	0.022	0.001	0.248	1.000	4.8.2
L4	153.333 - 148.333 (4)	0.005	0.347	0.000	0.022	0.001	0.353	1.000	4.8.2
L5	148.333 - 143.333 (5)	0.006	0.449	0.000	0.024	0.003	0.456	1.000	4.8.2
L6	143.333 - 138.333 (6)	0.006	0.543	0.000	0.024	0.003	0.550	1.000	4.8.2
L7	138.333 - 130.5 (7)	0.009	0.673	0.000	0.035	0.002	0.683	1.000	4.8.2
L8	130.5 - 129.164 (8)	0.007	0.569	0.000	0.024	0.002	0.577	1.000	4.8.2
L9	129.164 - 125.5 (9)	0.008	0.641	0.000	0.027	0.001	0.650	1.000	4.8.2
L10	125.5 - 125.25 (10)	0.008	0.645	0.000	0.027	0.001	0.654	1.000	4.8.2
L11	125.25 - 120.25 (11)	0.009	0.735	0.000	0.027	0.001	0.745	1.000	4.8.2
L12	120.25 - 115.25 (12)	0.009	0.817	0.000	0.027	0.001	0.827	1.000	4.8.2
L13	115.25 - 113.83 (13)	0.009	0.839	0.000	0.027	0.001	0.849	1.000	4.8.2
L14	113.83 - 113.58 (14)	0.003	0.330	0.000	0.010	0.000	0.334	1.000	4.8.2
L15	113.58 - 108.58 (15)	0.004	0.362	0.000	0.010	0.000	0.366	1.000	4.8.2
L16	108.58 - 103.58 (16)	0.004	0.392	0.000	0.010	0.000	0.396	1.000	4.8.2
L17	103.58 - 98.58 (17)	0.004	0.421	0.000	0.011	0.000	0.426	1.000	4.8.2
L18	98.58 - 93.58 (18)	0.005	0.449	0.000	0.011	0.000	0.454	1.000	4.8.2
L19	93.58 - 84.5521 (19)	0.005	0.465	0.000	0.011	0.000	0.470	1.000	4.8.2
L20	84.5521 - 83.5521 (20)	0.006	0.519	0.000	0.011	0.000	0.525	1.000	4.8.2
L21	83.5521 - 82.83 (21)	0.006	0.521	0.000	0.011	0.000	0.527	1.000	4.8.2
L22	82.83 - 82.58	0.005	0.441	0.000	0.009	0.000	0.446	1.000	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(22)								
L23	82.58 - 77.58 (23)	0.005	0.462	0.000	0.009	0.000	0.467	1.000	4.8.2
L24	77.58 - 73.42 (24)	0.006	0.480	0.000	0.010	0.000	0.486	1.000	4.8.2
L25	73.42 - 73.17 (25)	0.004	0.325	0.000	0.006	0.000	0.328	1.000	4.8.2
L26	73.17 - 72.75 (26)	0.004	0.325	0.000	0.006	0.000	0.329	1.000	4.8.2
L27	72.75 - 72.5 (27)	0.004	0.354	0.000	0.007	0.000	0.358	1.000	4.8.2
L28	72.5 - 67.5 (28)	0.004	0.366	0.000	0.007	0.000	0.370	1.000	4.8.2
L29	67.5 - 64.25 (29)	0.005	0.380	0.000	0.007	0.000	0.385	1.000	4.8.2
L30	64.25 - 64 (30)	0.006	0.452	0.000	0.008	0.000	0.457	1.000	4.8.2
L31	64 - 59 (31)	0.006	0.460	0.000	0.008	0.000	0.466	1.000	4.8.2
L32	59 - 54 (32)	0.006	0.482	0.000	0.009	0.000	0.489	1.000	4.8.2
L33	54 - 43.6641 (33)	0.006	0.489	0.000	0.009	0.000	0.496	1.000	4.8.2
L34	43.6641 - 42.6641 (34)	0.007	0.482	0.000	0.008	0.000	0.488	1.000	4.8.2
L35	42.6641 - 37.6641 (35)	0.007	0.494	0.000	0.008	0.000	0.501	1.000	4.8.2
L36	37.6641 - 32.6641 (36)	0.007	0.499	0.000	0.008	0.000	0.506	1.000	4.8.2
L37	32.6641 - 28.25 (37)	0.007	0.510	0.000	0.008	0.000	0.517	1.000	4.8.2
L38	28.25 - 28 (38)	0.005	0.359	0.000	0.006	0.000	0.364	1.000	4.8.2
L39	28 - 27.75 (39)	0.005	0.359	0.000	0.006	0.000	0.364	1.000	4.8.2
L40	27.75 - 27.5 (40)	0.006	0.403	0.000	0.006	0.000	0.409	1.000	4.8.2
L41	27.5 - 22.5 (41)	0.006	0.405	0.000	0.006	0.000	0.411	1.000	4.8.2
L42	22.5 - 19.25 (42)	0.006	0.412	0.000	0.006	0.000	0.418	1.000	4.8.2
L43	19.25 - 19 (43)	0.007	0.464	0.000	0.007	0.000	0.471	1.000	4.8.2
L44	19 - 14 (44)	0.007	0.480	0.000	0.007	0.000	0.488	1.000	4.8.2
L45	14 - 9 (45)	0.008	0.482	0.000	0.007	0.000	0.490	1.000	4.8.2
L46	9 - 4 (46)	0.008	0.491	0.000	0.007	0.000	0.499	1.000	4.8.2
L47	4 - 0 (47)	0.008	0.499	0.000	0.007	0.000	0.508	1.000	4.8.2

Section Capacity Table

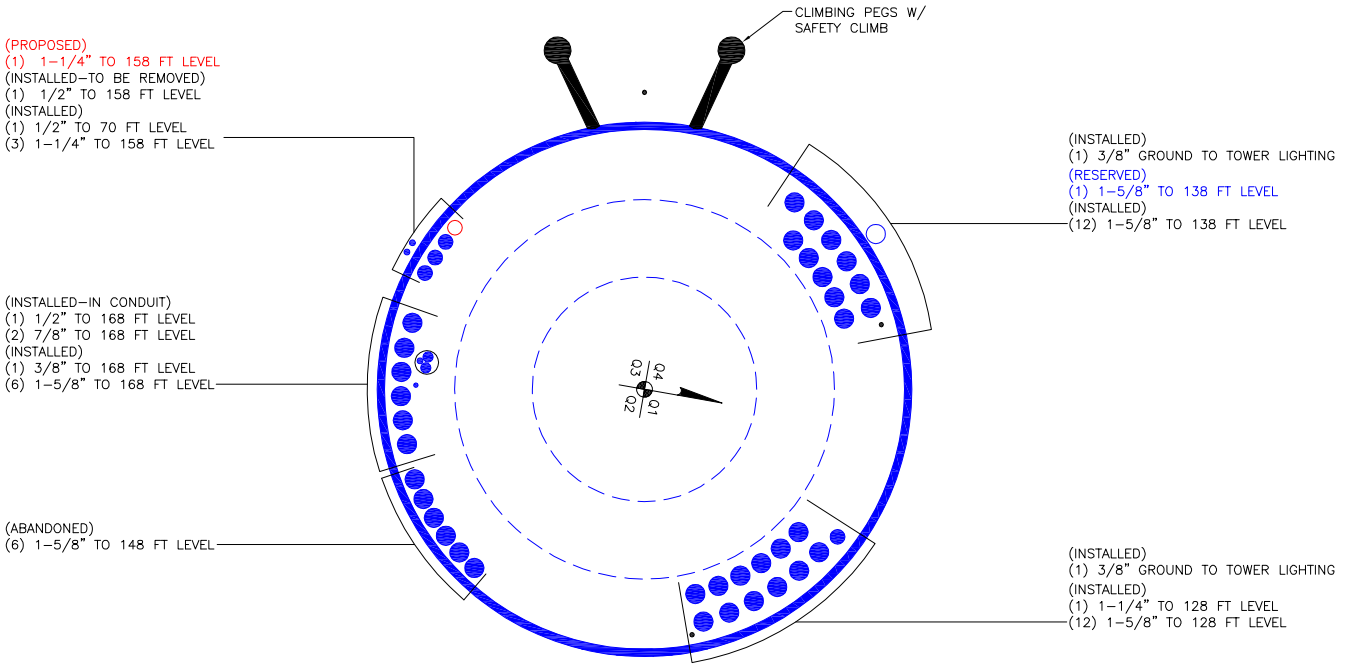
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	168.333 - 163.333	Pole	TP19.8344x19x0.1875	1	-2.15	858.40	7.3	Pass
L2	163.333 - 158.333	Pole	TP20.6688x19.8344x0.1875	2	-2.39	884.75	13.3	Pass
L3	158.333 - 153.333	Pole	TP21.5032x20.6688x0.1875	3	-4.78	910.27	24.8	Pass
L4	153.333 - 148.333	Pole	TP22.3375x21.5032x0.1875	4	-5.10	934.98	35.3	Pass
L5	148.333 - 143.333	Pole	TP23.1719x22.3375x0.1875	5	-5.56	958.86	45.6	Pass
L6	143.333 - 138.333	Pole	TP24.0063x23.1719x0.1875	6	-5.96	981.92	55.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L7	138.333 - 130.5	Pole	TP25.3135x24.0063x0.1875	7	-8.80	1000.51	68.3	Pass
L8	130.5 - 129.164	Pole	TP25.15x24.327x0.25	8	-9.60	1467.93	57.7	Pass
L9	129.164 - 125.5	Pole	TP25.7532x25.15x0.25	9	-12.26	1496.14	65.0	Pass
L10	125.5 - 125.25	Pole	TP25.7943x25.7532x0.25	10	-12.31	1497.93	65.4	Pass
L11	125.25 - 120.25	Pole	TP26.6173x25.7943x0.25	11	-13.06	1533.36	74.5	Pass
L12	120.25 - 115.25	Pole	TP27.4403x26.6173x0.25	12	-14.04	1567.99	82.7	Pass
L13	115.25 - 113.83	Pole	TP27.674x27.4403x0.25	13	-14.32	1577.67	84.9	Pass
L14	113.83 - 113.58	Pole	TP27.7152x27.674x0.65	14	-14.42	4148.50	33.4	Pass
L15	113.58 - 108.58	Pole	TP28.5382x27.7152x0.6375	15	-15.97	4194.32	36.6	Pass
L16	108.58 - 103.58	Pole	TP29.3612x28.5382x0.625	16	-17.55	4235.22	39.6	Pass
L17	103.58 - 98.58	Pole	TP30.1842x29.3612x0.6125	17	-19.15	4271.19	42.6	Pass
L18	98.58 - 93.58	Pole	TP31.0072x30.1842x0.6	18	-20.77	4302.24	45.4	Pass
L19	93.58 - 84.5521	Pole	TP32.4932x31.0072x0.6	19	-22.23	4406.23	47.0	Pass
L20	84.5521 - 83.5521	Pole	TP32.1552x31.2422x0.575	20	-25.06	4282.03	52.5	Pass
L21	83.5521 - 82.83	Pole	TP32.2737x32.1552x0.575	21	-25.29	4298.10	52.7	Pass
L22	82.83 - 82.58	Pole	TP32.3147x32.2737x0.6875	22	-25.39	5127.44	44.6	Pass
L23	82.58 - 77.58	Pole	TP33.1354x32.3147x0.675	23	-27.33	5166.83	46.7	Pass
L24	77.58 - 73.42	Pole	TP33.8182x33.1354x0.6625	24	-28.97	5179.77	48.6	Pass
L25	73.42 - 73.17	Pole	TP33.8592x33.8182x1.0125	25	-29.10	7842.49	32.8	Pass
L26	73.17 - 72.75	Pole	TP33.9282x33.8592x1.0125	26	-29.31	7858.94	32.9	Pass
L27	72.75 - 72.5	Pole	TP33.9692x33.9282x0.925	27	-29.42	7207.81	35.8	Pass
L28	72.5 - 67.5	Pole	TP34.7899x33.9692x0.9125	28	-31.82	7289.69	37.0	Pass
L29	67.5 - 64.25	Pole	TP35.3233x34.7899x0.8875	29	-33.34	7206.84	38.5	Pass
L30	64.25 - 64	Pole	TP35.3643x35.3233x0.7375	30	-33.45	6022.01	45.7	Pass
L31	64 - 59	Pole	TP36.185x35.3643x0.7375	31	-35.46	6164.73	46.6	Pass
L32	59 - 54	Pole	TP37.0056x36.185x0.7125	32	-37.49	6097.84	48.9	Pass
L33	54 - 43.6641	Pole	TP38.7021x37.0056x0.7125	33	-39.54	6235.65	49.6	Pass
L34	43.6641 - 42.6641	Pole	TP38.242x37.2009x0.7625	34	-44.34	6739.08	48.8	Pass
L35	42.6641 - 37.6641	Pole	TP39.0633x38.242x0.75	35	-46.80	6776.07	50.1	Pass
L36	37.6641 - 32.6641	Pole	TP39.8846x39.0633x0.75	36	-49.28	6921.32	50.6	Pass
L37	32.6641 - 28.25	Pole	TP40.6097x39.8846x0.7375	37	-51.50	6934.23	51.7	Pass
L38	28.25 - 28	Pole	TP40.6507x40.6097x1.075	38	-51.66	10032.40	36.4	Pass
L39	28 - 27.75	Pole	TP40.6918x40.6507x1.075	39	-51.82	10042.80	36.4	Pass
L40	27.75 - 27.5	Pole	TP40.7329x40.6918x0.95	40	-51.96	8912.23	40.9	Pass
L41	27.5 - 22.5	Pole	TP41.5542x40.7329x0.95	41	-54.82	9096.22	41.1	Pass
L42	22.5 - 19.25	Pole	TP42.088x41.5542x0.9375	42	-56.70	9097.31	41.8	Pass
L43	19.25 - 19	Pole	TP42.1291x42.088x0.825	43	-56.84	8035.51	47.1	Pass
L44	19 - 14	Pole	TP42.9504x42.1291x0.8	44	-59.39	7951.66	48.8	Pass
L45	14 - 9	Pole	TP43.7717x42.9504x0.8	45	-61.96	8106.60	49.0	Pass
L46	9 - 4	Pole	TP44.593x43.7717x0.7875	46	-64.39	8134.77	49.9	Pass
L47	4 - 0	Pole	TP45.25x44.593x0.775	47	-66.31	8128.01	50.8	Pass
							Summary	
						Pole (L13)	84.9	Pass
						RATING =	**84.9**	**Pass**

Note: Above Stress ratio for reinforced sections are approximate. More exact calculations are presented in Appendix C.

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842859 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- G

Site BU: 842859

Work Order: 1436672

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	168.3333	37.8333	3.6641	18	19	25.3135	0.1875	0.75	A572-65
2	134.1641	49.612	4.5625	18	24.33	32.4932	0.25	1	A572-65
3	89.1146	45.4505	5.3385	18	31.24	38.7021	0.3125	1.25	A572-65
4	49.0026	49.0026	0	18	37.20	45.25	0.375	1.5	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	87.83	113.83	plate	5"x1.25"	3				x						x						x		
2	72.75	87.92	plate	5"x1.25"	4			x					x						x				x
3	46.5	73.42	plate	5"x1.25"	4		x				x					x				x			
4	27.75	46.5	plate	6"x1.25"	4			x					x						x				x
5	0	28.25	plate	6"x1.25" (Welded)	4		x				x					x				x			
6	0	43.75	plate	CCI-SFP-060100	4	x						x			x						x		
7	43.75	82.83	plate	CCI-SFP-045100	4	x						x			x						x		
8	19.25	27.75	plate	CCI-SFP-045100	4			x					x						x				x
9	64.25	72.75	plate	CCI-SFP-045100	4			x					x						x				x
10	87.92	125.5	plate	I-SFP-045100 (Modifie	3			x					x						x				
11																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
2	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
3	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
4	6	1.25	7.5	0.625	30.000	30.000	18.000	5.938	1.1875	A572-65
5	6	1.25	7.5	0.625	n/a	30.000	18.000	5.938	1.1875	A572-65
6	6	1	6	0.5	24.000	24.000	5.000	4.750	1.1875	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
8	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
9	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	18.000	22.000	20.000	3.250	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	168.3333 - 163.3333	5		18	19.000	19.834	0.1875	A572-65	1.000
2	163.3333 - 158.3333	5		18	19.834	20.669	0.1875	A572-65	1.000
3	158.3333 - 153.3333	5		18	20.669	21.503	0.1875	A572-65	1.000
4	153.3333 - 148.3333	5		18	21.503	22.338	0.1875	A572-65	1.000
5	148.3333 - 143.3333	5		18	22.338	23.172	0.1875	A572-65	1.000
6	143.3333 - 138.3333	5		18	23.172	24.006	0.1875	A572-65	1.000
7	138.3333 - 134.1641	7.8333	3.6641	18	24.006	25.314	0.1875	A572-65	1.000
8	134.1641 - 129.1641	5		18	24.327	25.150	0.25	A572-65	1.000
9	129.1641 - 125.5	3.6641		18	25.150	25.753	0.25	A572-65	1.000
10	125.5 - 125.25	0.25		18	25.753	25.794	0.25	A572-65	1.000
11	125.25 - 120.25	5		18	25.794	26.617	0.25	A572-65	1.000
12	120.25 - 115.25	5		18	26.617	27.440	0.25	A572-65	1.000
13	115.25 - 113.83	1.42		18	27.440	27.674	0.25	A572-65	1.000
14	113.83 - 113.58	0.25		18	27.674	27.715	0.65	A572-65	0.968
15	113.58 - 108.58	5		18	27.715	28.538	0.6375	A572-65	0.969
16	108.58 - 103.58	5		18	28.538	29.361	0.625	A572-65	0.971
17	103.58 - 98.58	5		18	29.361	30.184	0.6125	A572-65	0.974
18	98.58 - 93.58	5		18	30.184	31.007	0.6	A572-65	0.978
19	93.58 - 89.1146	9.0279	4.5625	18	31.007	32.493	0.6	A572-65	0.965
20	89.1146 - 83.5521	5.5625		18	31.242	32.155	0.575	A572-65	0.982
21	83.5521 - 82.83	0.7221		18	32.155	32.274	0.575	A572-65	0.980
22	82.83 - 82.58	0.25		18	32.274	32.315	0.6875	A572-65	1.083
23	82.58 - 77.58	5		18	32.315	33.135	0.675	A572-65	1.086
24	77.58 - 73.42	4.16		18	33.135	33.818	0.6625	A572-65	1.093
25	73.42 - 73.17	0.25		18	33.818	33.859	1.0125	A572-65	0.959
26	73.17 - 72.75	0.42		18	33.859	33.928	1.0125	A572-65	0.958
27	72.75 - 72.5	0.25		18	33.928	33.969	0.925	A572-65	0.973
28	72.5 - 67.5	5		18	33.969	34.790	0.9125	A572-65	0.970
29	67.5 - 64.25	3.25		18	34.790	35.323	0.8875	A572-65	0.987
30	64.25 - 64	0.25		18	35.323	35.364	0.7375	A572-65	0.959
31	64 - 59	5		18	35.364	36.185	0.7375	A572-65	0.947
32	59 - 54	5		18	36.185	37.006	0.7125	A572-65	0.967
33	54 - 49.0026	10.3359	5.3385	18	37.006	38.702	0.7125	A572-65	0.956
34	49.0026 - 42.6641	6.3385		18	37.201	38.242	0.7625	A572-65	1.092
35	42.6641 - 37.6641	5		18	38.242	39.063	0.75	A572-65	1.097
36	37.6641 - 32.6641	5		18	39.063	39.885	0.75	A572-65	1.084
37	32.6641 - 28.25	4.4141		18	39.885	40.610	0.7375	A572-65	1.092
38	28.25 - 28	0.25		18	40.610	40.651	1.075	A572-65	0.977
39	28 - 27.75	0.25		18	40.651	40.692	1.075	A572-65	0.976
40	27.75 - 27.5	0.25		18	40.692	40.733	0.95	A572-65	1.001
41	27.5 - 22.5	5		18	40.733	41.554	0.95	A572-65	0.988
42	22.5 - 19.25	3.25		18	41.554	42.088	0.9375	A572-65	0.993
43	19.25 - 19	0.25		18	42.088	42.129	0.825	A572-65	0.959
44	19 - 14	5		18	42.129	42.950	0.8	A572-65	0.978
45	14 - 9	5		18	42.950	43.772	0.8	A572-65	0.968
46	9 - 4	5		18	43.772	44.593	0.7875	A572-65	0.974
47	4 - 0	4		18	44.593	45.250	0.775	A572-65	0.982

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	168.333 - 163.333	2.1456	24.226	4.6924
2	163.333 - 158.333	2.393	48.484	5.0131
3	158.333 - 153.333	4.7834	96.623	10.039
4	153.333 - 148.333	5.0999	147.62	10.367
5	148.333 - 143.333	5.5615	203.44	11.404
6	143.333 - 138.333	5.958	261.28	11.739
7	138.333 - 134.164	8.7999	339.49	17.31
8	134.164 - 129.164	9.6039	427	17.695
9	129.164 - 125.5	12.26	501.7	20.537
10	125.5 - 125.25	12.312	506.83	20.545
11	125.25 - 120.25	13.064	610.33	20.865
12	120.25 - 115.25	14.041	715.41	21.184
13	115.25 - 113.83	14.316	745.56	21.297
14	113.83 - 113.58	14.419	750.88	21.304
15	113.58 - 108.58	15.969	858.48	21.74
16	108.58 - 103.58	17.547	968.22	22.167
17	103.58 - 98.58	19.146	1080.1	22.586
18	98.58 - 93.58	20.765	1194	22.995
19	93.58 - 89.1146	22.227	1297.4	23.353
20	89.1146 - 83.5521	25.056	1428.9	23.896
21	83.5521 - 82.83	25.29	1446.1	23.945
22	82.83 - 82.58	25.393	1452.1	23.962
23	82.58 - 77.58	27.331	1572.8	24.363
24	77.58 - 73.42	28.968	1674.7	24.682
25	73.42 - 73.17	29.1	1680.9	24.697
26	73.17 - 72.75	29.306	1691.3	24.735
27	72.75 - 72.5	29.423	1697.4	24.758
28	72.5 - 67.5	31.817	1822.4	25.249
29	67.5 - 64.25	33.343	1904.9	25.519
30	64.25 - 64	33.45	1911.2	25.532
31	64 - 59	35.455	2039.7	25.904
32	59 - 54	37.491	2170	26.253
33	54 - 49.0026	39.542	2301.8	26.587
34	49.0026 - 42.6641	44.34	2472	27.146
35	42.6641 - 37.6641	46.801	2608.3	27.447
36	37.6641 - 32.6641	49.284	2746.1	27.73
37	32.6641 - 28.25	51.496	2868.8	27.961
38	28.25 - 28	51.661	2875.8	27.961
39	28 - 27.75	51.8	2882.8	28.0
40	27.75 - 27.5	52.0	2889.8	28.0
41	27.5 - 22.5	54.8	3030.4	28.3
42	22.5 - 19.25	56.7	3122.5	28.5
43	19.25 - 19	56.8	3129.6	28.5
44	19 - 14	59.4	3272.2	28.7
45	14 - 9	62.0	3415.9	28.9
46	9 - 4	64.4	3560.5	29.0
47	4 - 0	66.3	3676.8	29.2

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	7.3%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	13.3%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	24.8%	Pass
153.33 - 148.33	Pole	TP22.338x21.503x0.1875	Pole	35.3%	Pass
148.33 - 143.33	Pole	TP23.172x22.338x0.1875	Pole	45.5%	Pass
143.33 - 138.33	Pole	TP24.006x23.172x0.1875	Pole	55.0%	Pass
138.33 - 134.16	Pole	TP25.314x24.006x0.1875	Pole	68.3%	Pass
134.16 - 129.16	Pole	TP25.15x24.327x0.25	Pole	57.6%	Pass
129.16 - 125.5	Pole	TP25.753x25.15x0.25	Pole	65.0%	Pass
125.5 - 125.25	Pole	TP25.794x25.753x0.25	Pole	67.8%	Pass
125.25 - 120.25	Pole	TP26.617x25.794x0.25	Pole	77.2%	Pass
120.25 - 115.25	Pole	TP27.44x26.617x0.25	Pole	85.6%	Pass
115.25 - 113.83	Pole	TP27.674x27.44x0.25	Pole	87.9%	Pass
113.83 - 113.58	Pole + Reinf.	TP27.715x27.674x0.65	Reinf. 10 Tension Rupture	56.0%	Pass
113.58 - 108.58	Pole + Reinf.	TP28.538x27.715x0.6375	Reinf. 10 Tension Rupture	61.5%	Pass
108.58 - 103.58	Pole + Reinf.	TP29.361x28.538x0.625	Reinf. 10 Tension Rupture	66.6%	Pass
103.58 - 98.58	Pole + Reinf.	TP30.184x29.361x0.6125	Reinf. 10 Tension Rupture	71.5%	Pass
98.58 - 93.58	Pole + Reinf.	TP31.007x30.184x0.6	Reinf. 10 Tension Rupture	76.2%	Pass
93.58 - 89.11	Pole + Reinf.	TP32.493x31.007x0.6	Reinf. 10 Tension Rupture	80.1%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.242x0.575	Reinf. 2 Tension Rupture	89.2%	Pass
83.55 - 82.83	Pole + Reinf.	TP32.274x32.155x0.575	Reinf. 2 Tension Rupture	89.7%	Pass
82.83 - 82.58	Pole + Reinf.	TP32.315x32.274x0.6875	Reinf. 2 Tension Rupture	75.5%	Pass
82.58 - 77.58	Pole + Reinf.	TP33.135x32.315x0.675	Reinf. 2 Tension Rupture	78.8%	Pass
77.58 - 73.42	Pole + Reinf.	TP33.818x33.135x0.6625	Reinf. 2 Tension Rupture	81.4%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.859x33.818x1.0125	Reinf. 2 Tension Rupture	55.7%	Pass
73.17 - 72.75	Pole + Reinf.	TP33.928x33.859x1.0125	Reinf. 2 Tension Rupture	55.9%	Pass
72.75 - 72.5	Pole + Reinf.	TP33.969x33.928x0.925	Reinf. 9 Tension Rupture	62.1%	Pass
72.5 - 67.5	Pole + Reinf.	TP34.79x33.969x0.9125	Reinf. 9 Tension Rupture	64.6%	Pass
67.5 - 64.25	Pole + Reinf.	TP35.323x34.79x0.8875	Reinf. 9 Tension Rupture	66.2%	Pass
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	76.0%	Pass
64 - 59	Pole + Reinf.	TP36.185x35.364x0.7375	Reinf. 3 Tension Rupture	78.5%	Pass
59 - 54	Pole + Reinf.	TP37.006x36.185x0.7125	Reinf. 3 Tension Rupture	80.9%	Pass
54 - 49	Pole + Reinf.	TP38.702x37.006x0.7125	Reinf. 3 Tension Rupture	83.1%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.7625	Reinf. 4 Tension Rupture	77.6%	Pass
42.66 - 37.66	Pole + Reinf.	TP39.063x38.242x0.75	Reinf. 4 Tension Rupture	79.2%	Pass
37.66 - 32.66	Pole + Reinf.	TP39.885x39.063x0.75	Reinf. 4 Tension Rupture	80.8%	Pass
32.66 - 28.25	Pole + Reinf.	TP40.61x39.885x0.7375	Reinf. 4 Tension Rupture	82.2%	Pass
28.25 - 28	Pole + Reinf.	TP40.651x40.61x1.075	Reinf. 4 Tension Rupture	58.2%	Pass
28 - 27.75	Pole + Reinf.	TP40.692x40.651x1.075	Reinf. 4 Tension Rupture	58.3%	Pass
27.75 - 27.5	Pole + Reinf.	TP40.733x40.692x0.95	Reinf. 8 Tension Rupture	69.9%	Pass
27.5 - 22.5	Pole + Reinf.	TP41.554x40.733x0.95	Reinf. 8 Tension Rupture	71.3%	Pass
22.5 - 19.25	Pole + Reinf.	TP42.088x41.554x0.9375	Reinf. 8 Tension Rupture	72.2%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	74.7%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	76.0%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	77.1%	Pass
9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	78.2%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	79.0%	Pass
				Summary	
			Pole	87.9%	Pass
			Reinforcement	89.7%	Pass
			Overall	89.7%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
168.33 - 163.33	570	n/a	570	11.69	n/a	11.69	7.3%										
163.33 - 158.33	646	n/a	646	12.19	n/a	12.19	13.3%										
158.33 - 153.33	728	n/a	728	12.69	n/a	12.69	24.8%										
153.33 - 148.33	817	n/a	817	13.18	n/a	13.18	35.3%										
148.33 - 143.33	913	n/a	913	13.68	n/a	13.68	45.5%										
143.33 - 138.33	1016	n/a	1016	14.17	n/a	14.17	55.0%										
138.33 - 134.16	1107	n/a	1107	14.59	n/a	14.59	68.3%										
134.16 - 129.16	1547	n/a	1547	19.76	n/a	19.76	57.6%										
129.16 - 125.5	1662	n/a	1662	20.24	n/a	20.24	65.0%										
125.5 - 125.25	1676	n/a	1676	20.27	n/a	20.27	67.8%										
125.25 - 120.25	1843	n/a	1843	20.92	n/a	20.92	77.2%										
120.25 - 115.25	2021	n/a	2021	21.57	n/a	21.57	85.6%										
115.25 - 113.83	2074	n/a	2074	21.76	n/a	21.76	87.9%										
113.83 - 113.58	2079	3139	5218	21.79	32.25	54.04	34.8%	55.5%									56.0%
113.58 - 108.58	2272	3318	5590	22.45	32.25	54.70	38.5%	61.0%									61.5%
108.58 - 103.58	2476	3503	5979	23.10	32.25	55.35	42.2%	66.1%									66.6%
103.58 - 98.58	2692	3692	6384	23.75	32.25	56.00	45.6%	70.9%									71.5%
98.58 - 93.58	2920	3887	6807	24.40	32.25	56.65	49.0%	75.4%									76.2%
93.58 - 89.11	3134	4065	7199	24.99	32.25	57.24	52.0%	79.3%									80.1%
89.11 - 83.55	4047	3247	7294	31.58	25.00	56.58	53.4%		89.2%								
83.55 - 82.83	4093	3270	7362	31.70	25.00	56.70	53.7%		89.7%								
82.83 - 82.58	4109	4599	8708	31.74	43.00	74.74	45.9%		75.5%					68.8%			
82.58 - 77.58	4433	4825	9258	32.56	43.00	75.56	48.3%		78.8%					71.9%			
77.58 - 73.42	4715	5017	9732	33.23	43.00	76.23	50.2%		81.4%					74.4%			
73.42 - 73.17	4730	9616	14346	33.27	68.00	101.27	33.9%		55.7%	55.6%				55.1%			
73.17 - 72.75	4759	9653	14413	33.34	68.00	101.34	34.0%		55.9%	55.8%				55.2%			
72.75 - 72.5	4776	8625	13401	33.38	61.00	94.38	36.7%			59.7%				59.1%		62.1%	
72.5 - 67.5	5134	9030	14164	34.20	61.00	95.20	38.4%			62.1%				61.5%		64.6%	
67.5 - 64.25	5376	9298	14674	34.73	61.00	95.73	39.6%			63.5%				63.0%		66.2%	
64.25 - 64	5395	6949	12344	34.77	43.00	77.77	46.9%			76.0%				75.3%			
64 - 59	5783	7263	13046	35.58	43.00	78.58	48.8%			78.5%				77.8%			
59 - 54	6189	7584	13772	36.39	43.00	79.39	50.6%			80.9%				80.2%			
54 - 49	6613	7911	14524	37.21	43.00	80.21	52.4%			83.1%				82.4%			
49 - 42.66	8167	7908	16076	45.07	54.00	99.07	49.9%				77.6%		68.0%				
42.66 - 37.66	8710	8237	16947	46.05	54.00	100.05	51.3%				79.2%		69.6%				
37.66 - 32.66	9277	8573	17849	47.02	54.00	101.02	52.7%				80.8%		71.1%				
32.66 - 28.25	9797	8875	18671	47.89	54.00	101.89	53.8%				82.2%		72.3%				
28.25 - 28	9823	16750	26572	47.94	84.00	131.94	37.6%				58.2%	57.8%	55.1%				
28 - 27.75	9853	16782	26635	47.99	84.00	131.99	37.7%				58.3%	57.9%	55.1%				
27.75 - 27.5	9882	14297	24179	48.03	72.00	120.03	41.5%					63.1%	60.1%		69.9%		
27.5 - 22.5	10498	14859	25357	49.01	72.00	121.01	42.6%					64.4%	61.3%		71.3%		
22.5 - 19.25	10911	15230	26142	49.65	72.00	121.65	43.3%					65.2%	62.1%		72.2%		
19.25 - 19	10943	12189	23132	49.70	54.00	103.70	48.8%					74.7%	71.1%				
19 - 14	11601	12653	24254	50.67	54.00	104.67	49.9%					76.0%	72.3%				
14 - 9	12285	13125	25410	51.65	54.00	105.65	51.0%					77.1%	73.4%				
9 - 4	12996	13606	26602	52.63	54.00	106.63	52.0%					78.2%	74.5%				
4 - 0	13584	13997	27581	53.41	54.00	107.41	52.9%					79.0%	75.3%				

Note: Section capacity checked in 5 degree increments.

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

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	*842859*
Site Name:	*BRISTOL CENTER*
App #:	*399481 Rev.0*
Pole Manufacturer:	*Other*

Reactions		
Mu:	3677	ft-kips
Axial, Pu:	66	kips
Shear, Vu:	29	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

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

Anchor Rod Data		
Qty:	24	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	54	in

Plate Data		
Diam:	60	in
Thick:	2	in
Grade:	60	ksi
Single-Rod B-eff:	5.98	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Both	
Groove Depth:	0.375	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.375	in
Fillet V. Weld:	0.3125	in
Width:	7	in
Height:	15	in
Thick:	0.75	in
Notch:	0.75	in
Grade:	65	ksi
Weld str.:	80	ksi

Pole Data		
Diam:	45.25	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Anchor Rod Results

		Stiffened
Max Rod (Cu+ Vu/ń):	141.4 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	54.4% **Pass**	

Base Plate Results

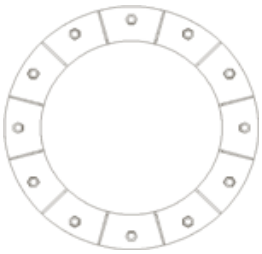
	Flexural Check	Stiffened
Base Plate Stress:	22.6 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	41.9% **Pass**	Y.L. Length:
		N/A, Roark

Stiffener Results

Horizontal Weld :	44.0% **Pass**
Vertical Weld:	57.4% **Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	20.1% **Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	44.3% **Pass**
Plate Comp. (AISC Bracket):	55.5% **Pass**

Pole Results

Pole Punching Shear Check:	20.6% **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

Drilled Pier Foundation

BU # :	842859
Site Name:	BRISTOL CENTER
App. Number:	399481 Rev.0

TIA-222 Revison:	G
Tower Type:	Monopole

Applied Loads	**Comp.**	**Uplift**
Moment (kip-ft)	3677	
Axial Force (kips)	66	
Shear Force (kips)	29	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	26	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 13.36' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	4.1875	in
Tie Size	5	
Rebar Quantity	8	
Rebar Size	11	
Rebar Cage Diameter	64	in
Pier Section 2		
From 13.36' below grade to 26' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	4.1875	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.49	-
Soil Safety Factor	2.94	-
Max Moment (kip-ft)	3815.50	-
Rating	*45.2%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	530.23	-
End Bearing (kips)	412.63	-
Weight of Concrete (kips)	161.27	-
Total Capacity (kips)	942.86	-
Axial (kips)	227.27	-
Rating	*24.1%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	14.36	-
Critical Moment (kip-ft)	3223.65	-
Critical Moment Capacity	3886.74	-
Rating	*82.9%*	-

Soil Interaction Rating	**45.2%**
Structural Foundation Rating	**82.9%**

Soil Profile

Groundwater Depth	n/a	ft	# of Layers: 9

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ultimate Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.3	3.3	105	150	0	28	0.000	0.000	0.00	0.00			Cohesionless
2	3.3	4	0.7	105	150	0	28	0.000	0.000	0.00	0.00			Cohesionless
3	4	5	1	110	150	0	28	0.000	0.000	0.00	0.00			Cohesionless
4	5	6	1	110	150	0	30	0.000	0.000	1.32	1.32			Cohesionless
5	6	8	2	115	150	0	31	0.000	0.000	0.59	0.59			Cohesionless
6	8	12	4	120	150	0	33	0.000	0.000	1.20	1.20			Cohesionless
7	12	20	8	115	150	0	31	0.00	0.00	1.73	1.73			Cohesionless
8	20	25	5	125	150	0	35	0.00	0.00	2.22	2.22			Cohesionless
9	25	26	1	130	150	0	37	0.00	0.00	2.40	2.40	16.58		Cohesionless

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

SPRINT Existing Facility

Site ID: CT54XC710

North Bristol - AT&T - Lavero
371 Terryville Avenue
Bristol, CT 06010

November 21, 2017

EBI Project Number: 6217005105

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	8.03 %

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

EBI Consulting
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November 21, 2017

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

Emissions Analysis for Site: **CT54XC710 – North Bristol - AT&T - Lavero**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **371 Terryville Avenue, Bristol, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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 limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) 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 SPRINT Wireless antenna facility located at **371 Terryville Avenue, Bristol, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) 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.

7) For the following calculations, the sample point was the top of a 6-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.

8) The antennas used in this modeling are the **Powerwave P40-16-XLPP-RR, RFS APXVSPP18-C-A20 and the RFS APXVTM14-C-120** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **158 feet** above ground level (AGL) for **Sector A**, **158 feet** above ground level (AGL) for **Sector B** and **158 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave P40-16-XLPP-RR	Make / Model:	Powerwave P40-16-XLPP-RR	Make / Model:	RFS APXVSPP18-C-A20
Gain:	14.2 / 15.9 dBd	Gain:	14.2 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**158 feet**	Height (AGL):	**158 feet**	Height (AGL):	**158 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,802.88	ERP (W):	7,802.88	ERP (W):	7,537.38
Antenna A1 MPE%	**1.40 %**	Antenna B1 MPE%	**1.40 %**	Antenna C1 MPE%	**1.33 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	**158 feet**	Height (AGL):	**158 feet**	Height (AGL):	**158 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	**0.97 %**	Antenna B2 MPE%	**0.97 %**	Antenna C2 MPE%	**0.97 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.37 %**
MetroPCS	0.54 %
AT&T	1.41 %
Verizon Wireless	3.69 %
T-Mobile	0.02 %
Site Total MPE %:	**8.03 %**

SPRINT Sector A Total:	2.37 %
SPRINT Sector B Total:	2.37 %
SPRINT Sector C Total:	2.30 %
Site Total:	8.03 %

SPRINT _ Max Values per Frequency Band / Technology (Sectors A & B)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Sprint 850 MHz CDMA	1	526.05	158	0.82	850 MHz	567	0.15%
Sprint 850 MHz LTE	2	526.05	158	1.64	850 MHz	567	0.29%
Sprint 1900 MHz (PCS) CDMA	5	622.47	158	4.84	1900 MHz (PCS)	1000	0.48%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	158	4.84	1900 MHz (PCS)	1000	0.48%
Sprint 2500 MHz (BRS) LTE	8	778.09	158	9.69	2500 MHz (BRS)	1000	0.97%
						Total:	**2.37%**

Summary

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

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	2.37 %
Sector B:	2.37 %
Sector C:	2.30 %
SPRINT Maximum Total (Sectors A & B):	2.37 %
Site Total:	8.03 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.03 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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