ROBINSON & COLE LLP

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

February 21, 2014

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

Re: **Notice of Exempt Modification – Facility Modification**
400 Main Street, Somers, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 179-foot level of the existing 187-foot tower at 400 Main Street in Somers, Connecticut (the "Property"). The tower is owned by Crown Castle. The Council approved Cellco's use of the existing tower in 2005. Cellco now intends to replace six (6) of its existing antennas with three (3) model 742 213V01, 1900 MHz antennas and three (3) model 742 213V01, 2100 MHz antennas, all at the same 179-foot level on the tower. Cellco also intends to install three (3) remote radio heads ("RRHs") behind its 2100 MHz antennas and one (1) HYBRIFLEX™ antenna cable attached to the outside of the tower. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 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.C.S.A. § 16-50j-73, a copy of this letter is being sent to Lisa Pellegrini, First Selectman of the Town of Somers. The Town of Somers is the owner of the Property.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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NEW YORK CITY
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www.rc.com

1. The proposed modifications will not result in an increase in the height of the existing tower. The replacement antennas and RRHs will be located at the 179-foot level on the 187-foot tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications 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 modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for Cellco's modified facility is included in Attachment 2.

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

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis Report included in Attachment 3).

For the foregoing reasons, Cellco 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).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Lisa Pellegrini, Somers First Selectman
Sandy M. Carter

ATTACHMENT 1

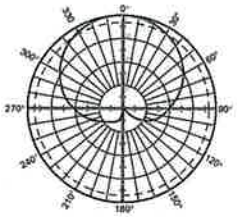
KATHREIN
SCALA DIVISION

742 213V01

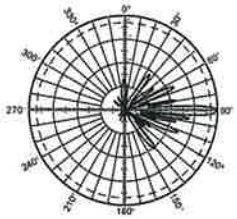
65° Panel Antenna

Kathrein's X-polarized adjustable electrical downtilt antennas offer the wireless carrier the ability to tailor polarization diversity sites for optimum performance. Using variable downtilt, only a few models need be procured to accommodate the needs of widely varying conditions. Remotely controlled downtilt is available as a retrofitable option.

- 0-6° downtilt range.
- UV resistant pulltruded fiberglass radome.
- DC Grounded metallic parts for impulse suppression.
- No moving electrical connections.
- Wideband vector dipole technology.
- Optional remote downtilt Control.
- Will accomodate future 3G / UMTS applications.



Horizontal pattern
±45°- polarization



Vertical pattern
±45°- polarization
0°–6° electrical downtilt

General specifications:

Frequency range	1710–2200 MHz
VSWR	< 1.5:1
Impedance	50 ohms
Intermodulation (2x20w)	IM3: <-150 dBc
Polarization	+45° and -45°
Front-to-back ratio (180°±30°)	>30 dB (co-polar) >25 dB (total power)
Maximum input power	300 watts per input (at 50°C)
Electrical downtilt continuously adjustable	0–6 degrees
Connector	2 x 7-16 DIN female
Isolation	>30 dB
Cross polar ratio Main direction 0° Sector ±60°	 25 dB (typical) >10 dB
Tracking, average	0.5 dB
Squint	±2.0°
Weight	19.8 lb (9 kg) 24.3 lb (11 kg) clamps included
Dimensions	76.9 x 6.1 x 2.8 inches (1954 x 155 x 70 mm)
Wind load Front/Side/Rear Mounting category	at 93 mph (150kph) 115 lbf / 32 lbf / 115 lbf (510 N) / (140 N) / (510 N) M (Medium)
Wind survival rating*	120 mph (200 kph)
Shipping dimensions	88 x 6.8 x 3.6 inches (2235 x 172 x 92 mm)
Shipping weight	28.7 lb (13 kg)
Mounting	Fixed mounts for 2 to 4.6 inch (50 to 115 mm) OD masts are included and tilt options are available.
See reverse for order information.	

Specifications:	**1710–1880 MHz**	**1850–1990 MHz**	**1920–2200 MHz**
Gain	19 dBi	19.2 dBi	19.5 dBi
+45° and -45° polarization horizontal beamwidth	67° (half-power)	65° (half-power)	63° (half-power)
+45° and -45° polarization vertical beamwidth	4.7° (half-power)	4.5° (half-power)	4.3° (half-power)
Sidelobe suppression for first sidelobe above main beam	0° 2° 4° 6° T 18 18 16 15 dB	0° 2° 4° 6° T 18 18 17 16 dB	0° 2° 4° 6° T 18 18 18 18 dB

RoHS Lead-Free

11271-B
936.3740/b

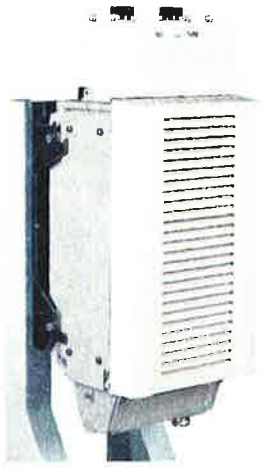
*Mechanical design is based on environmental conditions as stipulated in TIA-222-G-2 (December 2009) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

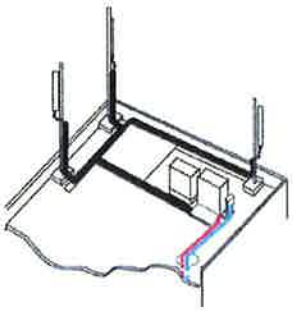
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced.
The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.

Features

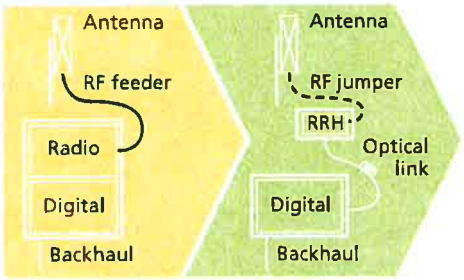
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

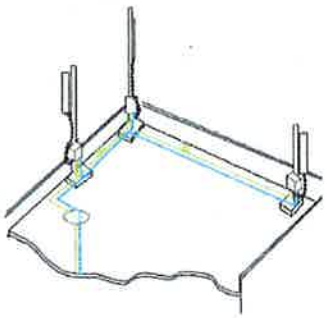
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170m (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
  - ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
  - ¬ Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)
- Enclosure protection
  - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
  - ¬ TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
  - ¬ One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
  - ¬ Single mode dual fiber (SM/DF)
- Multi-mode variant
  - ¬ Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

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CPG2809100912 (09)

Alcatel·Lucent

Product Data Sheet **HB158-1-08U8-S8J18**

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

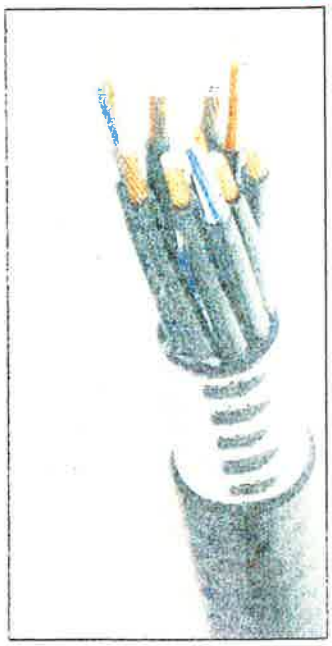


Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

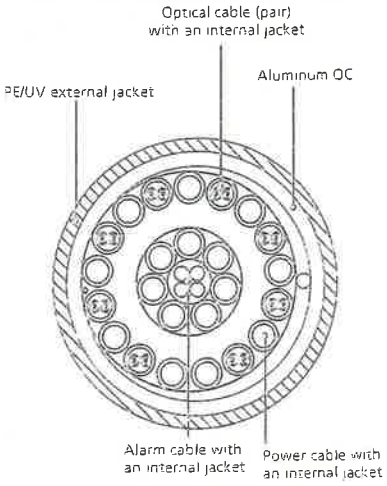


Figure 2: Construction Detail

* This data is provisional and subject to change

All information contained in the present datasheet is subject to confirmation at time of ordering

ATTACHMENT 2

	General	Power	Density					
Site Name: Somers 2								
Tower Height: Verizon @ 179ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Sprint CDMA/LTE	2	693	190	0.0138	1900	1.0000	1.38%	
*Sprint CDMA/LTE	1	390	190	0.0039	850	0.5667	0.69%	
*Pocket (now MetroPCS)	3	631	150	0.0303	2130	1.0000	3.03%	
*AT&T UMTS	2	1077	160	0.0303	1900	1.0000	3.03%	
*AT&T UMTS	2	565	160	0.0159	880	0.5867	2.71%	
*AT&T GSM	1	283	160	0.0040	880	0.5867	0.68%	
*AT&T GSM	4	646	160	0.0363	1900	1.0000	3.63%	
*AT&T LTE	1	1615	160	0.0227	734	0.4893	4.64%	
*T-Mobile	9	246	168	0.0282	1935	1.0000	2.82%	
*Town	1	200	115	0.0054	30	0.2000	2.72%	
*Town	1	180	128	0.0040	150	0.2000	1.98%	
*Town	1	150	194	0.0014	450	0.3000	0.48%	
Verizon	**11**	**477**	**179**	**0.0589**	**1970**	**1.0000**	**5.89%**	
Verizon	**9**	**208**	**179**	**0.0210**	**869**	**0.5793**	**3.63%**	
Verizon	**1**	**1750**	**179**	**0.0196**	**2145**	**1.0000**	**1.96%**	
Verizon	**1**	**548**	**179**	**0.0061**	**698**	**0.4653**	**1.32%**	
								40.56%
* Source: Siting Council								

ATTACHMENT 3

Date: **January 20, 2014**

AeroSolutions LLC
Optimizing Your Tower Infrastructure

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

Aero Solutions, LLC
5500 Flatirons Parkway, Suite 100
Boulder, CO 80301
(720) 304-6882

Subject: **Structural Analysis Report**

Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	
	Carrier Site Name:	Somers 2, CT
Crown Castle Designation:	**Crown Castle BU Number:**	803934
	Crown Castle Site Name:	CT SOMERS FD CAC
	Crown Castle JDE Job Number:	255379
	Crown Castle Work Order Number:	700402
	Crown Castle Application Number:	210600 Rev. 1
Engineering Firm Designation:	**Aero Solutions, LLC Project Number:**	003-14-0052
Site Data:	**400 MAIN STREET, SOMERS, Tolland County, CT** **Latitude *41° 59' 1.48"*, Longitude *-72° 27' 56.87"*** **187 Foot - Monopole Tower**	

Dear Marianne Dunst,

Aero Solutions, LLC 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 609609, in accordance with application 210600, revision 1.

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

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

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

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

We at *Aero Solutions, LLC* 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: Joseph R. Sullivan, E.I.

Respectfully submitted by:

Shraddha Dharia, P.E.
Structural Engineer
CT PE#: PEN0029187
Expires: 1/31/2014

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 187 ft Monopole tower designed by Summit in April of 2001. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 38 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
181.0	181.0	3	alcatel lucent	RRH2X40-AWS	1	1-5/8"	1
		1	crown mounts	Side Arm Mount [SO 102-3]			
178.0	179.0	6	kathrein	742 213 w/ Mount Pipe			1
		1	rfs celwave	DB-T1-6Z-8AB-0Z			

Notes:
1) Proposed Equipment

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
188.0	193.0	1		DB404L-B	1 3	7/8" 1-1/4"	1
	190.0	2	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		1	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			1
	188.0	1	tower mounts	Platform Mount [LP-1201]	1	5/8"	1,3
	186.0	3	alcatel lucent	TD-RRH8x20-25			1
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
186.0	186.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER			1
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		1	crown mounts	Side Arm Mount [SO 102-3]			
178.0	179.0	3	antel	BXA-70080-6CF-EDIN-X w/ Mount Pipe	18	1-5/8"	1
		6	antel	LPA-185090/8CFx2 w/ Mount Pipe			2
		2	antel	LPA-80063/4CF w/ Mount Pipe			1
		4	antel	LPA-80080-4CF-EDIN-0			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
				w/ Mount Pipe			
	178.0	1	tower mounts	Platform Mount [LP-1201]			
168.0	169.0	3	ems wireless	RR90-17-02DP w/ Mount Pipe	6	1-5/8"	1
		6	ericsson	KRY 112 71/1			
	168.0	1	tower mounts	Platform Mount [LP-1201]			
160.0	160.0	1	crown mounts	T-Arm Mount [TA 601-3]	1 2 6	3/8" 3/4" 1-5/8"	1
		6	ericsson	RRUS-11			
		3	kathrein	800 10121 w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		3	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			
150.0	150.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8"	1
120.0	125.0	1	sinclair	SD212-SF2P2SNM Dipole	1	7/8"	1
	120.0	1	crown mounts	Side Arm Mount [SO 702-1]			
110.0	110.0	1	sinclair	SD110-SFXPASNM	1	1/2"	1
81.0	82.0	1	crown mounts	Side Arm Mount [SO 309-1]	1	7/8"	1
		1	telewave	ANT450D3			
48.0	48.0	1	crown mounts	Side Arm Mount [SO 701-1]	1	1/2"	1
	47.0	1	lucent	KS24019-L112A			

Notes:
1) Existing Equipment
2) Equipment To Be Removed
3) Reserved (Feedline Only)

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)
188	188	12	generic	Panel Antennas (CaAa = 75 ft2)		
178	178	12	generic	Panel Antennas (CaAa = 75 ft2)		
168	168	12	generic	Panel Antennas (CaAa = 75 ft2)		
158	158	12	generic	Panel Antennas (CaAa = 75 ft2)		
148	148	12	generic	Panel Antennas (CaAa = 75 ft2)		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138	138	12	generic	Panel Antennas (CaAa = 75 ft2)		
128	128	12	generic	Panel Antennas (CaAa = 75 ft2)		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	URS Corporation	1095648	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, LLC	1058248	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, LLC/PJF	419873	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	187 - 136	Pole	TP36.201x26x0.25	1	-13.337	1445.905	76.0	Pass
L2	136 - 89.5	Pole	TP45.003x34.801x0.375	2	-23.191	2690.300	84.0	Pass
L3	89.5 - 44.25	Pole	TP53.304x43.103x0.438	3	-36.562	3718.990	88.0	Pass
L4	44.25 - 0	Pole	TP61.28x51.079x0.5	4	-56.316	5014.559	85.8	Pass
							Summary	
						Pole (L3)	88.0	Pass
						Rating =	88.0	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	77.6	Pass
1	Base Plate	0	59.0	Pass
1	Base Foundation Soil Interaction	0	83.4	Pass

Structure Rating (max from all components) =	88%

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

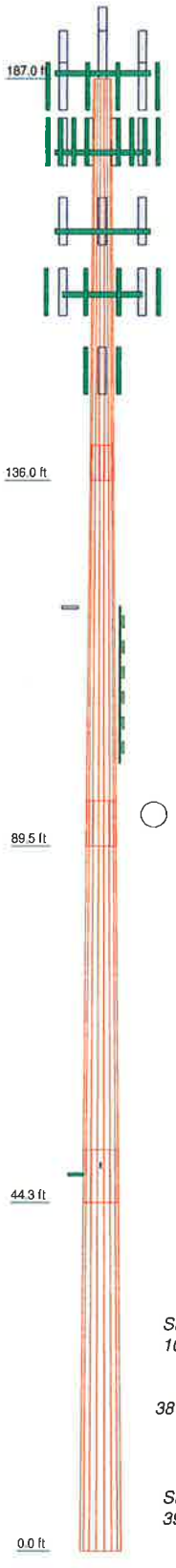
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	51.000	51.000	51.000	51.000
Number of Sides	18	18	18	18
Thickness (in)	0.250	0.375	0.438	0.500
Socket Length (ft)	4.500	5.750	6.750	
Top Dia (in)	26.000	34.801	43.103	51.079
Bot Dia (in)	36.201	45.003	53.304	61.280
Grade	A607-65			
Weight (K)	4.2	8.2	11.5	15.3



AXIAL
87 K

SHEAR
10 K

MOMENT
1433 kip-ft

TORQUE 1 kip-ft
38 mph WIND - 1.000 in ICE

AXIAL
56 K

SHEAR
39 K

MOMENT
5302 kip-ft

TORQUE 3 kip-ft
REACTIONS - 85 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB404L-B	188	(2) LPA-80063/4CF w/ Mount Pipe	178
APXVSPP18-C-A20 w/ Mount Pipe	188	DB-T1-6Z-8AB-0Z	178
APXVSPP18-C-A20 w/ Mount Pipe	188	Platform Mount [LP-1201]	178
APXVSPP18-C-A20 w/ Mount Pipe	188	RR90-17-02DP w/ Mount Pipe	168
APXVTM14-C-120 w/ Mount Pipe	188	RR90-17-02DP w/ Mount Pipe	168
APXVTM14-C-120 w/ Mount Pipe	188	RR90-17-02DP w/ Mount Pipe	168
APXVTM14-C-120 w/ Mount Pipe	188	(2) KRY 112 71/1	168
TD-RRH8x20-25	188	(2) KRY 112 71/1	168
TD-RRH8x20-25	188	(2) KRY 112 71/1	168
TD-RRH8x20-25	188	(2) Pipe Mount 2 x 6'	168
Pipe Mount 2 x 8'	188	(2) Pipe Mount 2 x 6'	168
Pipe Mount 2 x 8'	188	(2) Pipe Mount 2 x 6'	168
Pipe Mount 2 x 8'	188	Platform Mount [LP-1201]	168
Platform Mount [LP-1201]	188	800 10121 w/ Mount Pipe	160
PCS 1900MHz 4x45W-65MHz	186	800 10121 w/ Mount Pipe	160
PCS 1900MHz 4x45W-65MHz	186	800 10121 w/ Mount Pipe	160
PCS 1900MHz 4x45W-65MHz	186	P65-17-XLH-RR w/ Mount Pipe	160
800MHz 2X50W RRH W/FILTER	186	P65-17-XLH-RR w/ Mount Pipe	160
800MHz 2X50W RRH W/FILTER	186	P65-17-XLH-RR w/ Mount Pipe	160
800MHz 2X50W RRH W/FILTER	186	(2) RRUS-11	160
Side Arm Mount [SO 102-3]	186	(2) RRUS-11	160
RRH2X40-AWS	181	(2) RRUS-11	160
RRH2X40-AWS	181	(2) LGP21401	160
RRH2X40-AWS	181	(2) LGP21401	160
Side Arm Mount [SO 102-3]	181	(2) LGP21401	160
BXA-70080-6CF-EDIN-X w/ Mount Pipe	178	DC6-48-60-18-8F	160
		T-Arm Mount [TA 601-3]	160
BXA-70080-6CF-EDIN-X w/ Mount Pipe	178	APXV18-206517S-C w/ Mount Pipe	150
		APXV18-206517S-C w/ Mount Pipe	150
BXA-70080-6CF-EDIN-X w/ Mount Pipe	178	APXV18-206517S-C w/ Mount Pipe	150
(2) 742 213 w/ Mount Pipe	178	SD212-SF2P2SNM Dipole	120
(2) 742 213 w/ Mount Pipe	178	Side Arm Mount [SO 702-1]	120
(2) 742 213 w/ Mount Pipe	178	SD110-SFXPASNM	110
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	178	Pipe Mount 2 x 16'	110
		ANT450D3	81
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	178	Side Arm Mount [SO 309-1]	81
		KS24019-L112A	48
		Side Arm Mount [SO 701-1]	48

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 88%

Aero Solutions, LLC
5500 Flatirons Parkway, Suite 100
Boulder, CO 80301
Phone: (720) 304-6882
FAX: (720) 304-6883

Job: *CT Somers FD CAC, BU 803934*			
Project: *1421691400*			
Client: Crown Castle	Drawn by: JRS	App'd:	
Code: TIA/EIA-222-F	Date: 01/20/14	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

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

2) Tower is located in Tolland County, Connecticut.
3) Basic wind speed of 85 mph.
4) Nominal ice thickness of 1.000 in.
5) Ice thickness is considered to increase with height.
6) Ice density of 56.000 pcf.
7) A wind speed of 38 mph is used in combination with ice.
8) Temperature drop of 50.000 °F.
9) Deflections calculated using a wind speed of 50 mph.
10) A non-linear (P-delta) analysis was used.
11) Pressures are calculated at each section.
12) Stress ratio used in pole design is 1.333.
13) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation 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	187.000-136.000	51.000	4.500	18	26.000	36.201	0.250	1.000	A607-65 (65 ksi)
L2	136.000-89.500	51.000	5.750	18	34.801	45.003	0.375	1.500	A607-65 (65 ksi)
L3	89.500-44.250	51.000	6.750	18	43.103	53.304	0.438	1.750	A607-65 (65 ksi)
L4	44.250-0.000	51.000		18	51.079	61.280	0.500	2.000	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t

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	26.401	20.433	1711.654	9.141	13.208	129.592	3425.561	10.218	4.136	16.544
	36.759	28.527	4658.191	12.763	18.390	253.299	9322.512	14.266	5.931	23.726
L2	36.252	40.975	6135.246	12.221	17.679	347.039	12278.566	20.492	5.465	14.573
	45.697	53.118	13365.891	15.843	22.862	584.646	26749.369	26.564	7.261	19.361
L3	44.936	59.246	13625.291	15.146	21.896	622.267	27268.510	29.629	6.816	15.58
	54.126	73.412	25921.737	18.768	27.078	957.284	51877.583	36.713	8.612	19.683
L4	53.238	80.269	25943.042	17.955	25.948	999.807	51920.220	40.142	8.110	16.22
	62.225	96.458	45019.064	21.577	31.130	1446.152	90097.366	48.238	9.905	19.811

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 187.000-136.000				1	1	1		
L2 136.000-89.500				1	1	1		
L3 89.500-44.250				1	1	1		
L4 44.250-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
HB114-1-08U4-M5J(1 1/4")	A	No	Inside Pole	187.000 - 8.000	3	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HCC 78-50J(7/8")	A	No	CaAa (Out Of Face)	178.000 - 8.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.003
						2" Ice	0.000	0.008
						4" Ice	0.000	0.025
HCC 78-50J(7/8")	C	No	CaAa (Out Of Face)	187.000 - 178.000	1	No Ice	0.110	0.001
						1/2" Ice	0.210	0.002
						1" Ice	0.310	0.003
						2" Ice	0.510	0.008
						4" Ice	0.910	0.025
HB058-M12-XXXF(5/8")	A	No	CaAa (Out Of Face)	187.000 - 8.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.002
						2" Ice	0.000	0.007
						4" Ice	0.000	0.024
**								
LDF7-50A(1-5/8")	C	No	Inside Pole	178.000 - 8.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF7-50A(1-5/8")	C	No	CaAa (Out Of	178.000 - 8.000	1	No Ice	0.198	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
			Face)			1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.011
						4" Ice	0.998	0.030
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	178.000 - 8.000	5	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
HB158-1-08U8-S8J18(1-5/8)	C	No	CaAa (Out Of Face)	178.000 - 8.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.005
						2" Ice	0.000	0.011
						4" Ice	0.000	0.031
**								
HJ7-50A(1-5/8")	B	No	Inside Pole	168.000 - 8.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
**								
LDF7-50A(1-5/8")	C	No	Inside Pole	160.000 - 5.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
FB-L98B-002-75000(3/8")	C	No	Inside Pole	160.000 - 5.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	160.000 - 5.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
**								
CR 50 1873(1-5/8")	A	No	Inside Pole	150.000 - 8.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
**								
HCC 78-50J(7/8")	A	No	Inside Pole	120.000 - 8.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
**								
HCC12-50J(1/2")	B	No	Inside Pole	115.000 - 8.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
**								
AVA5-50(7/8")	B	No	CaAa (Out Of Face)	81.000 - 8.000	1	No Ice	0.110	0.000
						1/2" Ice	0.210	0.001
						1" Ice	0.310	0.003
						2" Ice	0.510	0.008
						4" Ice	0.910	0.025
**								
LDF4-50A(1/2")	C	No	CaAa (Out Of Face)	48.000 - 8.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.002
						2" Ice	0.000	0.007
						4" Ice	0.000	0.023
**								

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	187.000-136.000	A	0.000	0.000	0.000	0.000	0.270
		B	0.000	0.000	0.000	0.000	0.200
		C	0.000	0.000	0.000	9.306	0.827
L2	136.000-89.500	A	0.000	0.000	0.000	0.000	0.434
		B	0.000	0.000	0.000	0.000	0.297
		C	0.000	0.000	0.000	9.207	1.033
L3	89.500-44.250	A	0.000	0.000	0.000	0.000	0.431
		B	0.000	0.000	0.000	4.050	0.305
		C	0.000	0.000	0.000	8.959	1.005
L4	44.250-0.000	A	0.000	0.000	0.000	0.000	0.345
		B	0.000	0.000	0.000	3.995	0.246
		C	0.000	0.000	0.000	7.177	0.829

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	187.000-136.000	A	1.209	0.000	0.000	0.000	0.000	0.586
		B		0.000	0.000	0.000	0.000	0.200
		C		0.000	0.000	0.000	21.637	2.303
L2	136.000-89.500	A	1.158	0.000	0.000	0.000	0.000	0.752
		B		0.000	0.000	0.000	0.000	0.297
		C		0.000	0.000	0.000	20.450	2.631
L3	89.500-44.250	A	1.088	0.000	0.000	0.000	0.000	0.718
		B		0.000	0.000	0.000	12.563	0.428
		C		0.000	0.000	0.000	19.441	2.474
L4	44.250-0.000	A	1.000	0.000	0.000	0.000	0.000	0.551
		B		0.000	0.000	0.000	11.884	0.355
		C		0.000	0.000	0.000	15.067	1.975

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	187.000-136.000	-0.224	0.129	-0.446	0.258
L2	136.000-89.500	-0.243	0.140	-0.480	0.277
L3	89.500-44.250	-0.130	0.202	-0.157	0.437
L4	44.250-0.000	-0.087	0.177	-0.079	0.386

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
/// DB404L-B	A	From Leg	2.000 0.000	0.000	188.000	No Ice 1/2"	1.140 2.052	1.140 2.052	0.014 0.018

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			5.000				Ice	2.964	2.964	0.022
							1" Ice	4.788	4.788	0.031
							2" Ice	8.436	8.436	0.048
							4" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000		80.000	188.000	No Ice	8.498	6.946	0.083
			0.000				1/2"	9.149	8.127	0.151
			2.000				Ice	9.767	9.021	0.227
							1" Ice	11.031	10.844	0.406
							2" Ice	13.679	14.851	0.909
							4" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000		40.000	188.000	No Ice	8.498	6.946	0.083
			0.000				1/2"	9.149	8.127	0.151
			2.000				Ice	9.767	9.021	0.227
							1" Ice	11.031	10.844	0.406
							2" Ice	13.679	14.851	0.909
							4" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000		30.000	188.000	No Ice	8.498	6.946	0.083
			0.000				1/2"	9.149	8.127	0.151
			2.000				Ice	9.767	9.021	0.227
							1" Ice	11.031	10.844	0.406
							2" Ice	13.679	14.851	0.909
							4" Ice			
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000		80.000	188.000	No Ice	7.134	4.959	0.077
			0.000				1/2"	7.662	5.754	0.131
			-2.000				Ice	8.183	6.472	0.193
							1" Ice	9.256	8.010	0.338
							2" Ice	11.526	11.412	0.752
							4" Ice			
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000		40.000	188.000	No Ice	7.134	4.959	0.077
			0.000				1/2"	7.662	5.754	0.131
			-2.000				Ice	8.183	6.472	0.193
							1" Ice	9.256	8.010	0.338
							2" Ice	11.526	11.412	0.752
							4" Ice			
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000		30.000	188.000	No Ice	7.134	4.959	0.077
			0.000				1/2"	7.662	5.754	0.131
			-2.000				Ice	8.183	6.472	0.193
							1" Ice	9.256	8.010	0.338
							2" Ice	11.526	11.412	0.752
							4" Ice			
TD-RRH8x20-25	A	From Leg	4.000		80.000	188.000	No Ice	4.720	1.703	0.070
			0.000				1/2"	5.014	1.920	0.097
			-2.000				Ice	5.316	2.145	0.128
							1" Ice	5.948	2.622	0.201
							2" Ice	7.314	3.680	0.397
							4" Ice			
TD-RRH8x20-25	B	From Leg	4.000		40.000	188.000	No Ice	4.720	1.703	0.070
			0.000				1/2"	5.014	1.920	0.097
			-2.000				Ice	5.316	2.145	0.128
							1" Ice	5.948	2.622	0.201
							2" Ice	7.314	3.680	0.397
							4" Ice			
TD-RRH8x20-25	C	From Leg	4.000		30.000	188.000	No Ice	4.720	1.703	0.070
			0.000				1/2"	5.014	1.920	0.097
			-2.000				Ice	5.316	2.145	0.128
							1" Ice	5.948	2.622	0.201
							2" Ice	7.314	3.680	0.397
							4" Ice			
Pipe Mount 2 x 8'	A	From Leg	4.000		0.000	188.000	No Ice	1.900	1.900	0.029
			0.000				1/2"	2.728	2.728	0.044
			2.000				Ice	3.401	3.401	0.063
							1" Ice	4.396	4.396	0.119
							2" Ice	6.498	6.498	0.300
							4" Ice			
Pipe Mount 2 x 8'	B	From Leg	4.000		0.000	188.000	No Ice	1.900	1.900	0.029

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000				1/2"	2.728	2.728	0.044
			2.000				Ice	3.401	3.401	0.063
							1" Ice	4.396	4.396	0.119
							2" Ice	6.498	6.498	0.300
							4" Ice			
Pipe Mount 2 x 8'	C	From Leg	4.000		0.000	188.000	No Ice	1.900	1.900	0.029
			0.000				1/2"	2.728	2.728	0.044
			2.000				Ice	3.401	3.401	0.063
							1" Ice	4.396	4.396	0.119
							2" Ice	6.498	6.498	0.300
							4" Ice			
Platform Mount [LP-1201]	C	None			0.000	188.000	No Ice	23.100	23.100	2.100
							1/2"	26.800	26.800	2.500
							Ice	30.500	30.500	2.900
							1" Ice	37.900	37.900	3.700
							2" Ice	52.700	52.700	5.300
							4" Ice			
***										
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.000		80.000	186.000	No Ice	2.709	2.611	0.060
			0.000				1/2"	2.948	2.847	0.083
			0.000				Ice	3.195	3.092	0.110
							1" Ice	3.716	3.608	0.173
							2" Ice	4.862	4.744	0.347
							4" Ice			
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.000		40.000	186.000	No Ice	2.709	2.611	0.060
			0.000				1/2"	2.948	2.847	0.083
			0.000				Ice	3.195	3.092	0.110
							1" Ice	3.716	3.608	0.173
							2" Ice	4.862	4.744	0.347
							4" Ice			
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.000		30.000	186.000	No Ice	2.709	2.611	0.060
			0.000				1/2"	2.948	2.847	0.083
			0.000				Ice	3.195	3.092	0.110
							1" Ice	3.716	3.608	0.173
							2" Ice	4.862	4.744	0.347
							4" Ice			
800MHz 2X50W RRH W/FILTER	A	From Leg	1.000		80.000	186.000	No Ice	2.401	2.254	0.064
			0.000				1/2"	2.613	2.460	0.086
			0.000				Ice	2.833	2.675	0.111
							1" Ice	3.300	3.132	0.172
							2" Ice	4.337	4.148	0.338
							4" Ice			
800MHz 2X50W RRH W/FILTER	B	From Leg	1.000		40.000	186.000	No Ice	2.401	2.254	0.064
			0.000				1/2"	2.613	2.460	0.086
			0.000				Ice	2.833	2.675	0.111
							1" Ice	3.300	3.132	0.172
							2" Ice	4.337	4.148	0.338
							4" Ice			
800MHz 2X50W RRH W/FILTER	C	From Leg	1.000		30.000	186.000	No Ice	2.401	2.254	0.064
			0.000				1/2"	2.613	2.460	0.086
			0.000				Ice	2.833	2.675	0.111
							1" Ice	3.300	3.132	0.172
							2" Ice	4.337	4.148	0.338
							4" Ice			
Side Arm Mount [SO 102-3]	C	None			0.000	186.000	No Ice	3.000	3.000	0.081
							1/2"	3.480	3.480	0.111
							Ice	3.960	3.960	0.141
							1" Ice	4.920	4.920	0.201
							2" Ice	6.840	6.840	0.321
							4" Ice			
///										
RRH2X40-AWS	A	From Leg	1.000		30.000	181.000	No Ice	2.603	2.023	0.042
			0.000				1/2"	2.840	2.244	0.062
			0.000				Ice	3.085	2.474	0.084
							1" Ice	3.601	2.959	0.140

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							2" Ice	4.737	4.034	0.296
							4" Ice			
RRH2X40-AWS	B	From Leg	1.000		30.000	181.000	No Ice	2.603	2.023	0.042
			0.000				1/2"	2.840	2.244	0.062
			0.000				Ice	3.085	2.474	0.084
							1" Ice	3.601	2.959	0.140
							2" Ice	4.737	4.034	0.296
							4" Ice			
RRH2X40-AWS	C	From Leg	1.000		30.000	181.000	No Ice	2.603	2.023	0.042
			0.000				1/2"	2.840	2.244	0.062
			0.000				Ice	3.085	2.474	0.084
							1" Ice	3.601	2.959	0.140
							2" Ice	4.737	4.034	0.296
							4" Ice			
Side Arm Mount [SO 102-3]	C	None			0.000	181.000	No Ice	3.000	3.000	0.081
							1/2"	3.480	3.480	0.111
							Ice	3.960	3.960	0.141
							1" Ice	4.920	4.920	0.201
							2" Ice	6.840	6.840	0.321
							4" Ice			
***										
BXA-70080-6CF-EDIN-X w/ Mount Pipe	A	From Leg	4.000		30.000	178.000	No Ice	6.006	6.203	0.043
			0.000				1/2"	6.562	7.359	0.098
			1.000				Ice	7.083	8.229	0.160
							1" Ice	8.167	10.019	0.310
							2" Ice	10.691	13.840	0.750
							4" Ice			
BXA-70080-6CF-EDIN-X w/ Mount Pipe	B	From Leg	4.000		30.000	178.000	No Ice	6.006	6.203	0.043
			0.000				1/2"	6.562	7.359	0.098
			1.000				Ice	7.083	8.229	0.160
							1" Ice	8.167	10.019	0.310
							2" Ice	10.691	13.840	0.750
							4" Ice			
BXA-70080-6CF-EDIN-X w/ Mount Pipe	C	From Leg	4.000		30.000	178.000	No Ice	6.006	6.203	0.043
			0.000				1/2"	6.562	7.359	0.098
			1.000				Ice	7.083	8.229	0.160
							1" Ice	8.167	10.019	0.310
							2" Ice	10.691	13.840	0.750
							4" Ice			
(2) 742 213 w/ Mount Pipe	A	From Leg	4.000		30.000	178.000	No Ice	5.373	4.620	0.049
			0.000				1/2"	5.950	6.000	0.094
			1.000				Ice	6.501	6.982	0.146
							1" Ice	7.611	8.852	0.277
							2" Ice	9.933	12.794	0.683
							4" Ice			
(2) 742 213 w/ Mount Pipe	B	From Leg	4.000		30.000	178.000	No Ice	5.373	4.620	0.049
			0.000				1/2"	5.950	6.000	0.094
			1.000				Ice	6.501	6.982	0.146
							1" Ice	7.611	8.852	0.277
							2" Ice	9.933	12.794	0.683
							4" Ice			
(2) 742 213 w/ Mount Pipe	C	From Leg	4.000		30.000	178.000	No Ice	5.373	4.620	0.049
			0.000				1/2"	5.950	6.000	0.094
			1.000				Ice	6.501	6.982	0.146
							1" Ice	7.611	8.852	0.277
							2" Ice	9.933	12.794	0.683
							4" Ice			
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	A	From Leg	4.000		30.000	178.000	No Ice	2.856	7.227	0.030
			0.000				1/2"	3.220	7.922	0.076
			1.000				Ice	3.592	8.634	0.128
							1" Ice	4.450	10.112	0.253
							2" Ice	6.318	13.339	0.613
							4" Ice			
(2) LPA-80080-4CF-EDIN-0 w/ Mount Pipe	B	From Leg	4.000		30.000	178.000	No Ice	2.856	7.227	0.030
			0.000				1/2"	3.220	7.922	0.076

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
			1.000			Ice	3.592	8.634	0.128
						1" Ice	4.450	10.112	0.253
						2" Ice	6.318	13.339	0.613
						4" Ice			
(2) LPA-80063/4CF w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	30.000	178.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.248 7.719 8.200 9.195 11.320	7.260 7.957 8.672 10.156 13.391	0.038 0.104 0.176 0.344 0.796
DB-T1-6Z-8AB-0Z	C	From Leg	4.000 0.000 1.000	30.000	178.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.600 5.915 6.240 6.914 8.365	2.333 2.558 2.791 3.284 4.373	0.044 0.080 0.120 0.213 0.455
Platform Mount [LP-1201]	C	None		0.000	178.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	23.100 26.800 30.500 37.900 52.700	23.100 26.800 30.500 37.900 52.700	2.100 2.500 2.900 3.700 5.300
///									
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.593 5.088 5.578 6.588 8.731	3.319 4.089 4.784 6.225 9.308	0.034 0.072 0.115 0.224 0.557
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.593 5.088 5.578 6.588 8.731	3.319 4.089 4.784 6.225 9.308	0.034 0.072 0.115 0.224 0.557
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.593 5.088 5.578 6.588 8.731	3.319 4.089 4.784 6.225 9.308	0.034 0.072 0.115 0.224 0.557
(2) KRY 112 71/1	A	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.681 0.802 0.932 1.219 1.896	0.450 0.559 0.677 0.939 1.566	0.013 0.018 0.025 0.044 0.111
(2) KRY 112 71/1	B	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.681 0.802 0.932 1.219 1.896	0.450 0.559 0.677 0.939 1.566	0.013 0.018 0.025 0.044 0.111
(2) KRY 112 71/1	C	From Leg	4.000 0.000 1.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.681 0.802 0.932 1.219 1.896	0.450 0.559 0.677 0.939 1.566	0.013 0.018 0.025 0.044 0.111
(2) Pipe Mount 2 x 6'	A	From Leg	4.000 0.000 0.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) Pipe Mount 2 x 6'	B	From Leg	4.000 0.000 0.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
(2) Pipe Mount 2 x 6'	C	From Leg	4.000 0.000 0.000	0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
Platform Mount [LP-1201]	C	None		0.000	168.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	23.100 26.800 30.500 37.900 52.700	23.100 26.800 30.500 37.900 52.700	2.100 2.500 2.900 3.700 5.300
///									
800 10121 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	40.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
800 10121 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
800 10121 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.114 0.168 0.298 0.675
P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	40.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.704 12.424 13.153 14.639 17.906	8.938 10.450 11.986 14.313 19.144	0.092 0.178 0.273 0.498 1.126
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.704 12.424 13.153 14.639 17.906	8.938 10.450 11.986 14.313 19.144	0.092 0.178 0.273 0.498 1.126
P65-17-XLH-RR w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.704 12.424 13.153 14.639 17.906	8.938 10.450 11.986 14.313 19.144	0.092 0.178 0.273 0.498 1.126
(2) RRUS-11	A	From Leg	4.000 0.000 0.000	40.000	160.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.942 3.172 3.410 3.913 5.023	1.246 1.412 1.587 1.963 2.819	0.055 0.074 0.097 0.151 0.302
(2) RRUS-11	B	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice 1/2" Ice 1" Ice	2.942 3.172 3.410 3.913	1.246 1.412 1.587 1.963	0.055 0.074 0.097 0.151

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	5.023	2.819	0.302
						4" Ice			
(2) RRUS-11	C	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice	2.942	1.246	0.055
						1/2" Ice	3.172	1.412	0.074
						1" Ice	3.410	1.587	0.097
						2" Ice	3.913	1.963	0.151
						4" Ice	5.023	2.819	0.302
(2) LGP21401	A	From Leg	4.000 0.000 0.000	40.000	160.000	No Ice	1.288	0.233	0.014
						1/2" Ice	1.445	0.313	0.021
						1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
(2) LGP21401	B	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice	1.288	0.233	0.014
						1/2" Ice	1.445	0.313	0.021
						1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
(2) LGP21401	C	From Leg	4.000 0.000 0.000	30.000	160.000	No Ice	1.288	0.233	0.014
						1/2" Ice	1.445	0.313	0.021
						1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
DC6-48-60-18-8F	A	From Leg	4.000 0.000 0.000	40.000	160.000	No Ice	2.567	2.567	0.033
						1/2" Ice	2.798	2.798	0.055
						1" Ice	3.038	3.038	0.081
						2" Ice	3.543	3.543	0.143
						4" Ice	4.658	4.658	0.313
T-Arm Mount [TA 601-3]	C	None		0.000	160.000	No Ice	10.900	10.900	0.726
						1/2" Ice	14.650	14.650	0.926
						1" Ice	18.400	18.400	1.125
						2" Ice	25.900	25.900	1.524
						4" Ice	40.900	40.900	2.322
///									
APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.000 0.000 0.000	30.000	150.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.000 0.000 0.000	30.000	150.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.000 0.000 0.000	30.000	150.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
///									
SD212-SF2P2SNM Dipole	A	From Leg	6.000 0.000 5.000	90.000	120.000	No Ice	4.510	4.510	0.048
						1/2" Ice	5.510	5.510	0.062
						1" Ice	6.510	6.510	0.077
						2" Ice	8.510	8.510	0.106
						4" Ice	12.510	12.510	0.163
Side Arm Mount [SO 702-	A	From Face	3.000	90.000	120.000	No Ice	1.000	1.430	0.027

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment ft	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
1]			0.000				1/2"	1.000	2.050	0.038
			0.000				Ice	1.000	2.670	0.049
							1" Ice	1.000	3.910	0.071
							2" Ice	1.000	6.390	0.115
							4" Ice			
///										
SD110-SFXPASNM	B	From Leg	1.000		15.000	110.000	No Ice	4.510	4.510	0.048
			0.000				1/2"	5.510	5.510	0.062
			0.000				Ice	6.510	6.510	0.077
							1" Ice	8.510	8.510	0.106
							2" Ice	12.510	12.510	0.163
							4" Ice			
Pipe Mount 2 x 16'	B	From Leg	0.500		0.000	110.000	No Ice	3.808	3.808	0.060
			0.000				1/2"	5.436	5.436	0.088
			0.000				Ice	7.081	7.081	0.127
							1" Ice	10.421	10.421	0.235
							2" Ice	15.464	15.464	0.581
							4" Ice			
///										
ANT450D3	A	From Leg	3.000		90.000	81.000	No Ice	5.592	5.592	0.041
			0.000				1/2"	7.656	7.656	0.082
			1.000				Ice	9.738	9.738	0.135
							1" Ice	13.950	13.950	0.282
							2" Ice	21.924	21.924	0.735
							4" Ice			
Side Arm Mount [SO 309-1]	A	From Leg	1.000		90.000	81.000	No Ice	2.820	2.200	0.040
			0.000				1/2"	4.070	3.160	0.062
			1.000				Ice	5.320	4.120	0.084
							1" Ice	7.820	6.040	0.128
							2" Ice	12.820	9.880	0.216
							4" Ice			
///										
KS24019-L112A	A	From Leg	3.000		0.000	48.000	No Ice	0.156	0.156	0.005
			0.000				1/2"	0.225	0.225	0.007
			1.000				Ice	0.302	0.302	0.009
							1" Ice	0.484	0.484	0.018
							2" Ice	0.951	0.951	0.056
							4" Ice			
Side Arm Mount [SO 701-1]	C	From Leg	1.500		0.000	48.000	No Ice	0.850	1.670	0.065
			0.000				1/2"	1.140	2.340	0.079
			0.000				Ice	1.430	3.010	0.093
							1" Ice	2.010	4.350	0.121
							2" Ice	3.170	7.030	0.177
							4" Ice			
///										

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	187 - 136	Pole	Max Tension	27	0.000	0.000	-0.000
			Max. Compression	14	-29.627	3.279	-0.786
			Max. Mx	11	-13.337	782.510	2.024
			Max. My	8	-13.555	-1.493	-734.233
			Max. Vy	11	-24.146	782.510	2.024
			Max. Vx	2	-22.909	2.622	734.125
			Max. Torque	12			-1.614
L2	136 - 89.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-43.956	5.962	-1.309
			Max. Mx	11	-23.191	1998.243	3.664
			Max. My	2	-23.344	4.472	1893.252
			Max. Vy	11	-29.611	1998.243	3.664
			Max. Vx	2	-28.360	4.472	1893.252
			Max. Torque	5			2.239
L3	89.5 - 44.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-61.909	8.923	-1.540
			Max. Mx	11	-36.562	3424.168	5.380
			Max. My	2	-36.644	6.594	3262.813
			Max. Vy	11	-34.540	3424.168	5.380
			Max. Vx	8	33.278	-3.856	-3262.457
			Max. Torque	5			3.192
L4	44.25 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-86.528	12.191	-3.056
			Max. Mx	11	-56.316	5301.561	7.467
			Max. My	8	-56.318	-5.556	-5076.794
			Max. Vy	11	-38.869	5301.561	7.467
			Max. Vx	8	37.669	-5.556	-5076.794
			Max. Torque	5			3.038

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	24	86.528	9.837	0.016
	Max. H_x	11	56.342	38.831	0.047
	Max. H_z	2	56.342	0.047	37.632
	Max. M_x	2	5076.460	0.047	37.632
	Max. M_z	5	5297.360	-38.831	-0.047
	Max. Torsion	5	2.968	-38.831	-0.047
	Min. Vert	1	56.342	0.000	0.000
	Min. H_x	5	56.342	-38.831	-0.047
	Min. H_z	8	56.342	-0.047	-37.632
	Min. M_x	8	-5076.794	-0.047	-37.632
	Min. M_z	11	-5301.561	38.831	0.047
	Min. Torsion	11	-2.965	38.831	0.047

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	56.342	0.000	0.000	0.173	2.006	0.000
Dead+Wind 0 deg - No Ice	56.342	-0.047	-37.632	-5076.460	9.760	0.227
Dead+Wind 30 deg - No Ice	56.342	19.374	-32.567	-4392.337	-2641.392	-1.303
Dead+Wind 60 deg - No Ice	56.342	33.605	-18.775	-2531.186	-4583.801	-2.472
Dead+Wind 90 deg - No Ice	56.342	38.831	0.047	7.846	-5297.360	-2.968
Dead+Wind 120 deg - No Ice	56.342	33.652	18.857	2544.788	-4591.388	-2.668
Dead+Wind 150 deg - No Ice	56.342	19.456	32.614	4400.292	-2654.607	-1.664
Dead+Wind 180 deg - No Ice	56.342	0.047	37.632	5076.794	-5.556	-0.225
Dead+Wind 210 deg - No Ice	56.342	-19.374	32.567	4392.673	2645.571	1.274
Dead+Wind 240 deg - No Ice	56.342	-33.605	18.775	2531.544	4587.967	2.441
Dead+Wind 270 deg - No Ice	56.342	-38.831	-0.047	-7.466	5301.561	2.965
Dead+Wind 300 deg - No Ice	56.342	-33.652	-18.857	-2544.409	4595.591	2.697
Dead+Wind 330 deg - No Ice	56.342	-19.456	-32.614	-4399.935	2658.823	1.696
Dead+Ice+Temp	86.528	-0.000	0.000	3.056	12.191	0.000
Dead+Wind 0 deg+Ice+Temp	86.528	-0.016	-9.603	-1372.903	14.584	0.027
Dead+Wind 30 deg+Ice+Temp	86.528	4.904	-8.308	-1187.459	-696.205	-0.427
Dead+Wind 60 deg+Ice+Temp	86.528	8.511	-4.787	-683.002	-1217.118	-0.766
Dead+Wind 90 deg+Ice+Temp	86.528	9.837	0.016	5.291	-1408.581	-0.898
Dead+Wind 120 deg+Ice+Temp	86.528	8.528	4.816	692.995	-1219.299	-0.789
Dead+Wind 150 deg+Ice+Temp	86.528	4.933	8.324	1195.848	-699.987	-0.470
Dead+Wind 180 deg+Ice+Temp	86.528	0.016	9.603	1379.105	10.212	-0.026
Dead+Wind 210 deg+Ice+Temp	86.528	-4.904	8.308	1193.658	720.994	0.426
Dead+Wind 240 deg+Ice+Temp	86.528	-8.511	4.787	689.206	1241.902	0.764
Dead+Wind 270 deg+Ice+Temp	86.528	-9.837	-0.016	0.919	1433.366	0.898
Dead+Wind 300 deg+Ice+Temp	86.528	-8.528	-4.816	-686.783	1244.091	0.793
Dead+Wind 330 deg+Ice+Temp	86.528	-4.933	-8.324	-1189.640	724.784	0.474
Dead+Wind 0 deg - Service	56.342	-0.016	-13.022	-1759.041	4.759	0.080
Dead+Wind 30 deg - Service	56.342	6.704	-11.269	-1522.025	-913.994	-0.451
Dead+Wind 60 deg - Service	56.342	11.628	-6.497	-877.127	-1587.261	-0.859
Dead+Wind 90 deg - Service	56.342	13.436	0.016	2.827	-1834.647	-1.036
Dead+Wind 120 deg - Service	56.342	11.644	6.525	882.066	-1589.911	-0.934

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+Wind 150 deg - Service	56.342	6.732	11.285	1525.018	-918.589	-0.584
Dead+Wind 180 deg - Service	56.342	0.016	13.022	1759.380	-0.551	-0.079
Dead+Wind 210 deg - Service	56.342	-6.704	11.269	1522.364	918.199	0.447
Dead+Wind 240 deg - Service	56.342	-11.628	6.497	877.468	1591.464	0.855
Dead+Wind 270 deg - Service	56.342	-13.436	-0.016	-2.483	1838.851	1.035
Dead+Wind 300 deg - Service	56.342	-11.644	-6.525	-881.723	1594.119	0.938
Dead+Wind 330 deg - Service	56.342	-6.732	-11.285	-1524.677	922.798	0.589

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-56.342	0.000	0.000	56.342	0.000	0.000%
2	-0.047	-56.342	-37.632	0.047	56.342	37.632	0.000%
3	19.374	-56.342	-32.567	-19.374	56.342	32.567	0.000%
4	33.605	-56.342	-18.775	-33.605	56.342	18.775	0.000%
5	38.831	-56.342	0.047	-38.831	56.342	-0.047	0.000%
6	33.652	-56.342	18.857	-33.652	56.342	-18.857	0.000%
7	19.456	-56.342	32.614	-19.456	56.342	-32.614	0.000%
8	0.047	-56.342	37.632	-0.047	56.342	-37.632	0.000%
9	-19.374	-56.342	32.567	19.374	56.342	-32.567	0.000%
10	-33.605	-56.342	18.775	33.605	56.342	-18.775	0.000%
11	-38.831	-56.342	-0.047	38.831	56.342	0.047	0.000%
12	-33.652	-56.342	-18.857	33.652	56.342	18.857	0.000%
13	-19.456	-56.342	-32.614	19.456	56.342	32.614	0.000%
14	0.000	-86.528	0.000	0.000	86.528	-0.000	0.000%
15	-0.016	-86.528	-9.603	0.016	86.528	9.603	0.000%
16	4.904	-86.528	-8.308	-4.904	86.528	8.308	0.000%
17	8.511	-86.528	-4.787	-8.511	86.528	4.787	0.000%
18	9.837	-86.528	0.016	-9.837	86.528	-0.016	0.000%
19	8.528	-86.528	4.816	-8.528	86.528	-4.816	0.000%
20	4.933	-86.528	8.324	-4.933	86.528	-8.324	0.000%
21	0.016	-86.528	9.603	-0.016	86.528	-9.603	0.000%
22	-4.904	-86.528	8.308	4.904	86.528	-8.308	0.000%
23	-8.511	-86.528	4.787	8.511	86.528	-4.787	0.000%
24	-9.837	-86.528	-0.016	9.837	86.528	0.016	0.000%
25	-8.528	-86.528	-4.816	8.528	86.528	4.816	0.000%
26	-4.933	-86.528	-8.324	4.933	86.528	8.324	0.000%
27	-0.016	-56.342	-13.022	0.016	56.342	13.022	0.000%
28	6.704	-56.342	-11.269	-6.704	56.342	11.269	0.000%
29	11.628	-56.342	-6.497	-11.628	56.342	6.497	0.000%
30	13.436	-56.342	0.016	-13.436	56.342	-0.016	0.000%
31	11.644	-56.342	6.525	-11.644	56.342	-6.525	0.000%
32	6.732	-56.342	11.285	-6.732	56.342	-11.285	0.000%
33	0.016	-56.342	13.022	-0.016	56.342	-13.022	0.000%
34	-6.704	-56.342	11.269	6.704	56.342	-11.269	0.000%
35	-11.628	-56.342	6.497	11.628	56.342	-6.497	0.000%
36	-13.436	-56.342	-0.016	13.436	56.342	0.016	0.000%
37	-11.644	-56.342	-6.525	11.644	56.342	6.525	0.000%
38	-6.732	-56.342	-11.285	6.732	56.342	11.285	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00037419
3	Yes	6	0.00000001	0.00005311
4	Yes	6	0.00000001	0.00005522
5	Yes	4	0.00000001	0.00096750
6	Yes	6	0.00000001	0.00005312
7	Yes	6	0.00000001	0.00005458
8	Yes	4	0.00000001	0.00042181
9	Yes	6	0.00000001	0.00005408
10	Yes	6	0.00000001	0.00005305
11	Yes	5	0.00000001	0.00005249
12	Yes	6	0.00000001	0.00005576
13	Yes	6	0.00000001	0.00005321
14	Yes	4	0.00000001	0.00004381
15	Yes	5	0.00000001	0.00035740
16	Yes	5	0.00000001	0.00047046
17	Yes	5	0.00000001	0.00048100
18	Yes	5	0.00000001	0.00036771
19	Yes	5	0.00000001	0.00047996
20	Yes	5	0.00000001	0.00047796
21	Yes	5	0.00000001	0.00035891
22	Yes	5	0.00000001	0.00048753
23	Yes	5	0.00000001	0.00048877
24	Yes	5	0.00000001	0.00037554
25	Yes	5	0.00000001	0.00049479
26	Yes	5	0.00000001	0.00048465
27	Yes	4	0.00000001	0.00010694
28	Yes	5	0.00000001	0.00008471
29	Yes	5	0.00000001	0.00009219
30	Yes	4	0.00000001	0.00020008
31	Yes	5	0.00000001	0.00008522
32	Yes	5	0.00000001	0.00008951
33	Yes	4	0.00000001	0.00010862
34	Yes	5	0.00000001	0.00008818
35	Yes	5	0.00000001	0.00008528
36	Yes	4	0.00000001	0.00021074
37	Yes	5	0.00000001	0.00009430
38	Yes	5	0.00000001	0.00008539

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	187 - 136	46.872	36	2.270	0.003
L2	140.5 - 89.5	26.172	36	1.835	0.002
L3	95.25 - 44.25	11.641	36	1.186	0.001
L4	51 - 0	3.272	36	0.588	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
188.000	DB404L-B	36	46.872	2.270	0.003	33135
186.000	PCS 1900MHz 4x45W-65MHz	36	46.401	2.262	0.003	33135
181.000	RRH2X40-AWS	36	44.047	2.222	0.003	27612
178.000	BXA-70080-6CF-EDIN-X w/ Mount Pipe	36	42.639	2.198	0.003	18408
168.000	RR90-17-02DP w/ Mount Pipe	36	38.000	2.114	0.003	8719
160.000	800 10121 w/ Mount Pipe	36	34.385	2.042	0.002	6135
150.000	APXV18-206517S-C w/ Mount	36	30.046	1.942	0.002	4476

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	Pipe					
120.000	SD212-SF2P2SNM Dipole	36	18.809	1.557	0.002	3881
110.000	SD110-SFXPASNM	36	15.696	1.408	0.002	4060
81.000	ANT450D3	36	8.306	0.982	0.001	4097
48.000	KS24019-L112A	36	2.926	0.551	0.000	3874

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	187 - 136	134.800	11	6.531	0.010
L2	140.5 - 89.5	75.339	11	5.281	0.006
L3	95.25 - 44.25	33.534	11	3.417	0.004
L4	51 - 0	9.430	11	1.695	0.002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
188.000	DB404L-B	11	134.800	6.531	0.010	11785
186.000	PCS 1900MHz 4x45W-65MHz	11	133.447	6.508	0.010	11785
181.000	RRH2X40-AWS	11	126.686	6.393	0.010	9821
178.000	BXA-70080-6CF-EDIN-X w/ Mount Pipe	11	122.644	6.323	0.009	6546
168.000	RR90-17-02DP w/ Mount Pipe	11	109.320	6.083	0.008	3098
160.000	800 10121 w/ Mount Pipe	11	98.936	5.876	0.008	2178
150.000	APXV18-206517S-C w/ Mount Pipe	11	86.471	5.590	0.007	1587
120.000	SD212-SF2P2SNM Dipole	11	54.164	4.483	0.005	1366
110.000	SD110-SFXPASNM	11	45.207	4.054	0.005	1425
81.000	ANT450D3	11	23.930	2.829	0.003	1429
48.000	KS24019-L112A	11	8.433	1.589	0.001	1346

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	187 - 136 (1)	TP36.201x26x0.25	51.000	0.000	0.0	39.000	27.813	-13.337	1084.700	0.012
L2	136 - 89.5 (2)	TP45.003x34.801x0.375	51.000	0.000	0.0	39.000	51.749	-23.191	2018.230	0.011
L3	89.5 - 44.25 (3)	TP53.304x43.103x0.438	51.000	0.000	0.0	39.000	71.537	-36.562	2789.940	0.013
L4	44.25 - 0 (4)	TP61.28x51.079x0.5	51.000	0.000	0.0	39.000	96.458	-56.316	3761.860	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	187 - 136 (1)	TP36.201x26x0.25	782.513	39.007	39.000	1.000	0.000	0.000	39.000	0.000
L2	136 - 89.5 (2)	TP45.003x34.801x0.375	1998.250	43.223	39.000	1.108	0.000	0.000	39.000	0.000
L3	89.5 - 44.25 (3)	TP53.304x43.103x0.438	3424.175	45.213	39.000	1.159	0.000	0.000	39.000	0.000
L4	44.25 - 0 (4)	TP61.28x51.079x0.5	5301.567	43.992	39.000	1.128	0.000	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	187 - 136 (1)	TP36.201x26x0.25	24.146	0.868	26.000	0.067	0.576	0.014	26.000	0.001
L2	136 - 89.5 (2)	TP45.003x34.801x0.375	29.611	0.572	26.000	0.044	1.758	0.019	26.000	0.001
L3	89.5 - 44.25 (3)	TP53.304x43.103x0.438	34.540	0.483	26.000	0.037	3.131	0.020	26.000	0.001
L4	44.25 - 0 (4)	TP61.28x51.079x0.5	38.869	0.403	26.000	0.031	2.969	0.012	26.000	0.000

Pole Interaction Design Data

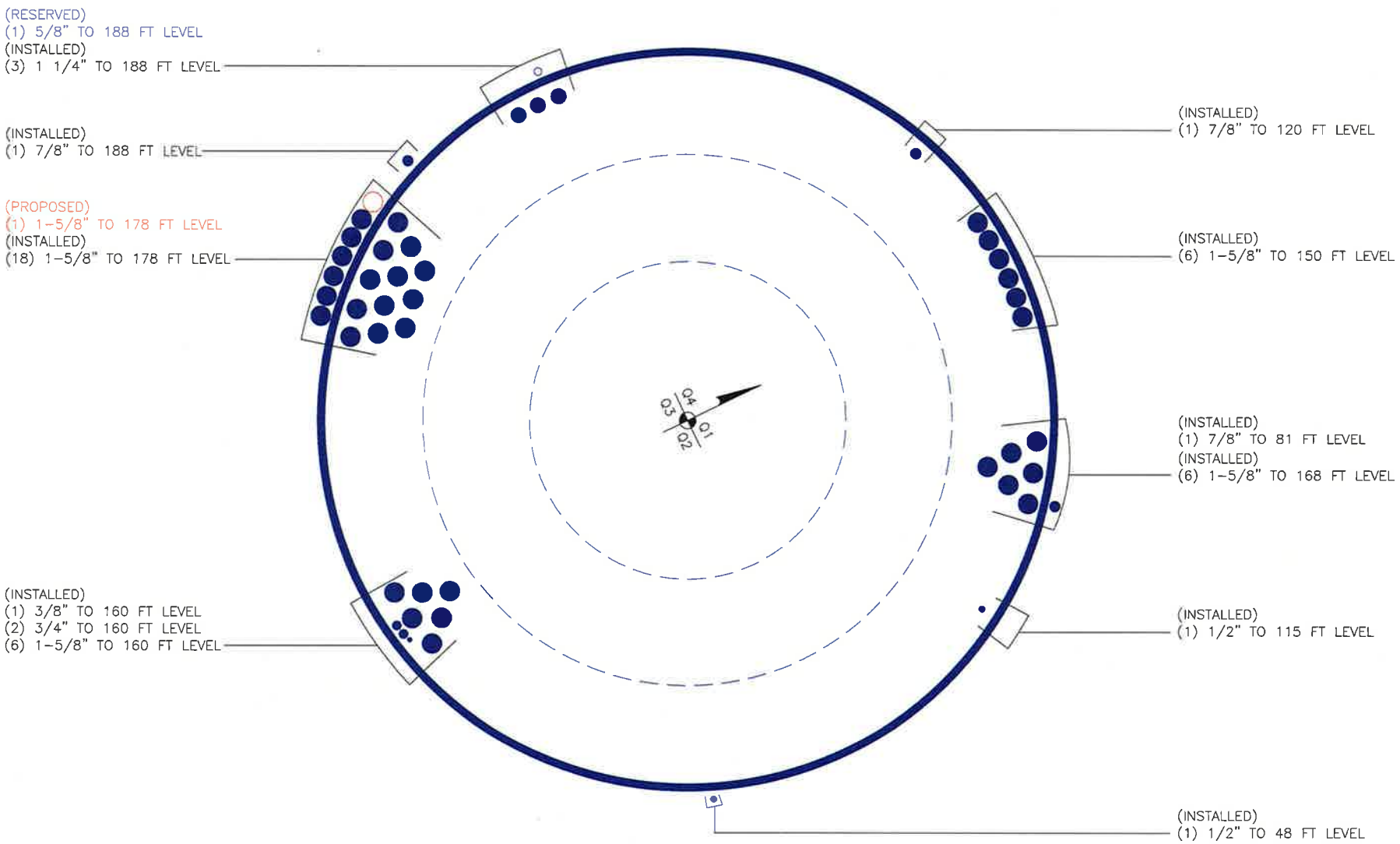
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	187 - 136 (1)	0.012	1.000	0.000	0.067	0.001	1.014 ✔	1.333	H1-3+VT ✔
L2	136 - 89.5 (2)	0.011	1.108	0.000	0.044	0.001	1.120 ✔	1.333	H1-3+VT ✔
L3	89.5 - 44.25 (3)	0.013	1.159	0.000	0.037	0.001	1.173 ✔	1.333	H1-3+VT ✔
L4	44.25 - 0 (4)	0.015	1.128	0.000	0.031	0.000	1.143 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	187 - 136	Pole	TP36.201x26x0.25	1	-13.337	1445.905	76.0	Pass
L2	136 - 89.5	Pole	TP45.003x34.801x0.375	2	-23.191	2690.300	84.0	Pass
L3	89.5 - 44.25	Pole	TP53.304x43.103x0.438	3	-36.562	3718.990	88.0	Pass
L4	44.25 - 0	Pole	TP61.28x51.079x0.5	4	-56.316	5014.559	85.8	Pass
							Summary	
						Pole (L3)	88.0	Pass
						RATING =	**88.0**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(RESERVED)
(1) 5/8" TO 188 FT LEVEL
(INSTALLED)
(3) 1 1/4" TO 188 FT LEVEL
(INSTALLED)
(1) 7/8" TO 188 FT LEVEL
(PROPOSED)
(1) 1-5/8" TO 178 FT LEVEL
(INSTALLED)
(18) 1-5/8" TO 178 FT LEVEL
(INSTALLED)
(1) 3/8" TO 160 FT LEVEL
(2) 3/4" TO 160 FT LEVEL
(6) 1-5/8" TO 160 FT LEVEL
(INSTALLED)
(1) 7/8" TO 120 FT LEVEL
(INSTALLED)
(6) 1-5/8" TO 150 FT LEVEL
(INSTALLED)
(1) 7/8" TO 81 FT LEVEL
(INSTALLED)
(6) 1-5/8" TO 168 FT LEVEL
(INSTALLED)
(1) 1/2" TO 115 FT LEVEL
(INSTALLED)
(1) 1/2" TO 48 FT LEVEL
Q1
Q2
Q3
Q4

APPENDIX C

ADDITIONAL CALCULATIONS

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

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

Site Data

BU#: *803934*
Site Name: *CT SOMERS FD CAC*
App #: *210600 R1*

Anchor Rod Data		
Qty:	24	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	69	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	70	in
Thick:	3.25	in
Grade:	55	ksi
Clip Distance:	6	in

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

Pole Data		
Diam:	61.28	in
Thick:	0.5	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	5301.56586	ft-kips
Unfactored Axial, P:	56.3156	kips
Unfactored Shear, V:	38.869329	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	151.3 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	77.6% **Pass**

Base Plate Results	Flexural Check
Base Plate Stress:	32.4 ksi
Allowable PL Bending Stress:	55.0 ksi
Base Plate Stress Ratio:	59.0% **Pass**

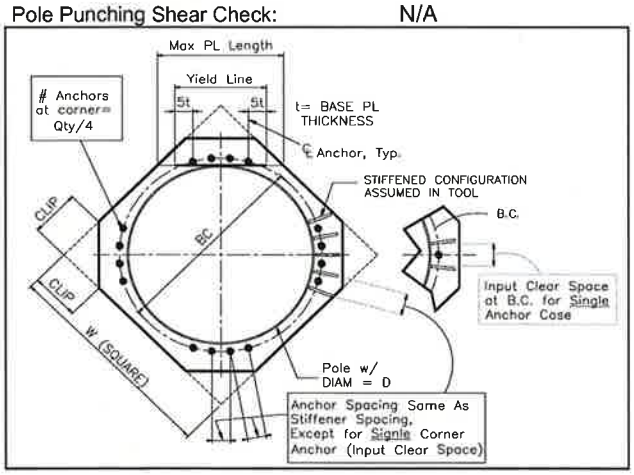
N/A - Unstiffened

Stiffener Results

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

Pole Results

Pole Punching Shear Check:	N/A



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

(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#: *803934*
Site Name: *CT SOMERS FD CAC*
App #: *????*

Enter Load Factors Below:		
For P (DL)	1.2	<---- Enter Factor
For P,V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data		
Base PL Dist. Above Pier:	0	in
Pier Dist. Above Grade:	6	in
Pad Bearing Depth, D:	4	ft
Pad Thickness, T:	4	ft
Pad Width=Length, L:	31	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	31	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	961.00	ft^2
Pier Height:	0.50	ft
Soil (above pad) Height:	0.00	ft

Soil Parameters		
Unit Weight, γ:	120.0	pcf
Ultimate Bearing Capacity, qn:	8.00	ksf
Strength Reduct. factor, ϕ:	0.75	
Angle of Friction, Φ:	34.0	degrees
Undrained Shear Strength, Cu:	0.00	ksf
Allowable Bearing: ϕ*qn:	6.00	ksf
Passive Pres. Coeff., Kp	3.54	

Forces/Moments due to Wind and Lateral Soil		
Minimum of (φ*Ultimate Pad Passive Force, Vu):	52.5	kips
Pad Force Location Above D:	1.33	ft
ϕ(Passive Pressure Moment):	69.96	ft-kips
Factored O.T. M(WL), "1.6W":	7393.2	ft-kips
Factored OT (MW-Msoil), M1	7323.28	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	0.00	ft
Sum of Soil Wedges Wt:	0.00	kips
Soil Wedges ecc, K1:	0.00	ft
Ftg+Soil above Pad wt:	648.7	kips
Unfactored (Total ftg-soil Wt):	648.68	kips
1.2D. **No Soil Wedges.**	845.99	kips
0.9D. **With Soil Wedges**	634.49	kips

Resistance due to Cohesion (Vertical)		
ϕ*(1/2*Cu)(Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces		
TIA Revision:	F	<--Pull Down
Unfactored DL Axial, PD:	56.3156	kips
Unfactored WL Axial, PW:	0	kips
Unfactored WL Shear, V:	38.86933	kips
Unfactored WL Moment, M:	5301.566	ft-kips

Load Factor	Shaft Factored Loads		
1.20	1.2D+1.6W, Pu:	67.57872	kips
0.90	0.9D+1.6W, Pu:	50.68404	kips
1.35	Vu:	52.47359	kips
	Mu:	7157.114	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(**No Soil Wedges**) [Reaction+Conc+Soil]	845.99	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	7323.28	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 =	8.66	ft
Orthogonal qu=	1.99	ksf
qu/ϕ*qn Ratio=	**33.23%**	**Pass**

Diagonal Direction:

ecc2 = (0.707M1)/P1 =	6.12	ft
Diagonal qu=	2.40	ksf
qu/ϕ*qn Ratio=	**40.06%**	**Pass**

Run <-- Press Upon Completing All Input

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(**w/ Soil Wedges**) [Reaction+Conc+Soil]	634.49	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	7323.28	ft-kips

Orthogonal ecc3 = M2/P2 =	11.54	ft
Ortho Non Bearing Length,NBL=	23.08	ft
Orthogonal qu=	2.59	ksf
Diagonal qu=	2.95	ksf

Max Reaction Moment (ft-kips) so that qu=ϕ*qn = 100% Capacity Rating			
Actual M:	5301.57		
M Orthogonal:	6360.18	**83.36%**	**Pass**
M Diagonal:	6360.18	**83.36%**	**Pass**