

October 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  
777 Talcottville Road, Vernon, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 150-foot level of the existing 170-foot tower at 777 Talcottville Road in Vernon, Connecticut (the Property”). The tower is owned by American Tower Corporation. The Council approved Cellco’s use of this tower in 2002. Cellco now intends to modify its facility by replacing all of its existing antennas with three (3) model LNX-6514DS-VTM, 700 MHz antennas; three (3) model LNX-6514DS-VTM, 850 MHz antennas; three (3) model HBXX-6517DS-VTM, 1900 MHz antennas; and three (3) HBXX-6517DS-VTM, 2100 MHz antennas, all at the same 150-foot level on the tower. Cellco also intends to install six (6) remote radio heads (“RRHs”), three (3) each behind its 1900 MHz and 2100 MHz antennas and two (2) HYBRIFLEX™ antenna cables. Included in Attachment 1 are specifications for Cellco’s new antennas, RRHs and HYBRIFLEX™ cables.

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 Daniel A. Champagne, Mayor for the Town of Vernon. A copy of this letter is also being sent to 777 Realty LLC, 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).

13187798-v1

# Robinson+Cole

Melanie A. Bachman

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1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be installed at the 150-foot level of the existing 170-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 replacement antennas 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 General Power Density table 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:

Daniel A. Champagne, Vernon Mayor  
777 Realty LLC  
Sandy M. Carter

# **ATTACHMENT 1**

# Product Specifications

COMMSCOPE®

HBXX-6517DS-VTM

Andrew® Quad Port Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY



## Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	18.5	18.6	18.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	0 °   18.4	0 °   18.4	0 °   18.7
	3 °   18.7	3 °   18.7	3 °   18.9
	6 °   18.4	6 °   18.5	6 °   18.6
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	25	26	26
CPR at Boresight, dB	22	23	22
CPR at Sector, dB	10	10	9
Isolation, dB	30	30	30
VSWR   Return Loss, dB	1.4   15.6	1.4   15.6	1.4   15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°

\*Values calculated using NGMN Alliance N-P-BASTA v9.6

## Mechanical Specifications

Color   Radome Material	Light gray   PVC, UV resistant
Connector Interface   Location   Quantity	7-16 DIN Female   Bottom   4
Wind Loading, maximum	668.0 N @ 150 km/h 150.2 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h   149.8 mph
Antenna Dimensions, L x W x D	1903.0 mm x 305.0 mm x 166.0 mm   74.9 in x 12.0 in x 6.5 in
Net Weight	19.5 kg   43.0 lb
Model with factory installed AISG 2.0 RET	HBXX-6517DS-A2M



# Product Specifications

COMMSCOPE®

LNX-6514DS-VTM

Andrew® Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY



## Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.7	16.3
Beamwidth, Horizontal, degrees	65	65
Beamwidth, Horizontal Tolerance, degrees	±3	±3
Beamwidth, Vertical, degrees	12.5	11.2
Beam Tilt, degrees	0–10	0–10
USLS, typical, dB	17	18
Front-to-Back Ratio at 180°, dB	32	30
CPR at Boresight, dB	20	20
CPR at Sector, dB	10	10
Isolation, dB	30	30
VSWR   Return Loss, dB	1.4   15.6	1.4   15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°

## Mechanical Specifications

Color   Radome Material	Light gray   Fiberglass, UV resistant
Connector Interface   Location   Quantity	7-16 DIN Female   Bottom   2
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h   149.8 mph
Antenna Dimensions, L x W x D	1847.0 mm x 301.0 mm x 181.0 mm   72.7 in x 11.9 in x 7.1 in
Net Weight	17.6 kg   38.8 lb
Model with factory installed AISG 2.0 RET	LNX-6514DS-A1M



# PCS RF MODULES

## RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

<b>RRH2x60</b>	
RF Output Power	2x60W
Instantaneous Bandwidth	20MHz
Transmitter	2 TX
Receiver	1900 HW version 1900A HW version
Features	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3 AISG 2.0 for RET/TMA
Power	Internal Smart Bias-T -48VDC
CPRI Ports	2 CPRI Rate 3 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (top mounted)



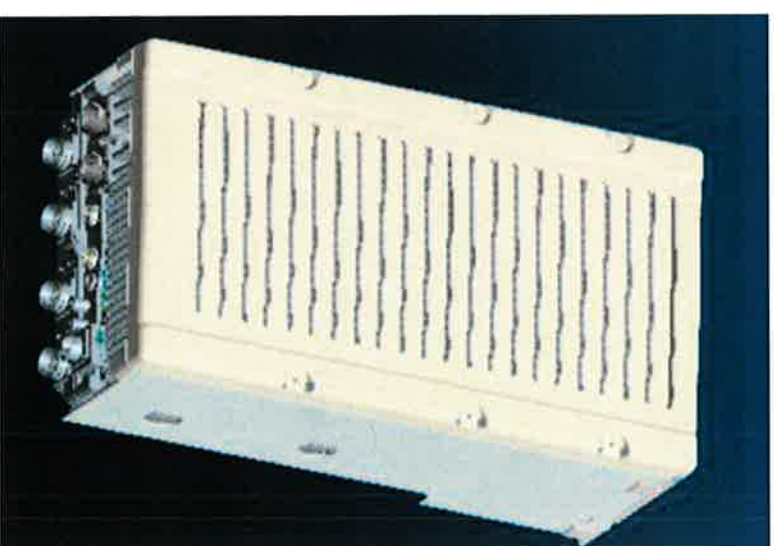
\*\* Not a Verizon Wireless deployed product

# NEW PCS RF MODULES FOR VZW RRH2X60 - HW CHARACTERISTICS

LR14.3

<b>RRH2x60</b>	
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w) x 9.4" (d)**
Weight	55lb**

\*\* - Includes solar shield but not mounting brackets (8 lbs.)



# ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the 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 a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-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.

#### SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

#### OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

#### EASY INSTALLATION

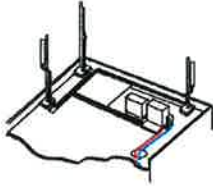
The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

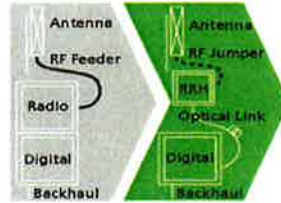
The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, 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.

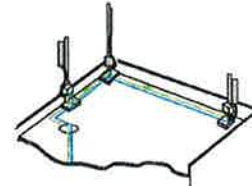




Macro



RRH for space-constrained cell sites



Distributed

## FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

## BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

silent solutions, with minimum impact on the neighborhood, which ease the deployment

- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

## TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

### Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

### Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

### RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

### Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

### Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

### Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

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**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.

**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

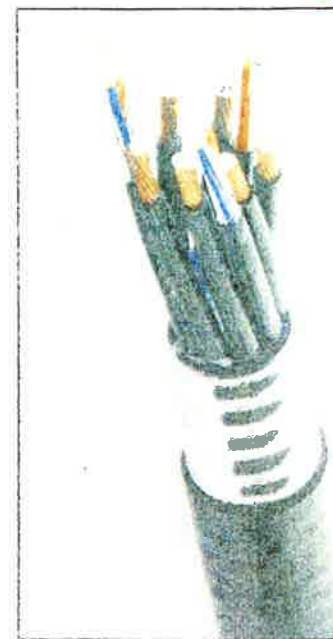


Figure 1: HYBRIFLEX Series

**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
<b>Mechanical Properties</b>			
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)
<b>Electrical Properties</b>			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable: 8.4mm <sup>2</sup> (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
<b>Optical Properties</b>			
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)			UL34-V0 UL1666 RoHS Compliant
<b>DC Power Cable Properties</b>			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (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/F4 RoHS Compliant
<b>Environment</b>			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

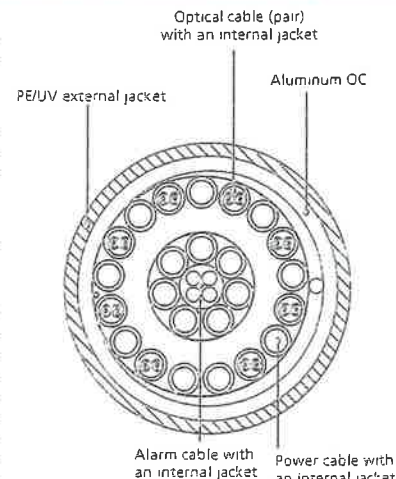


Figure 2: Construction Detail

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

\* This data is provisional and subject to change

# **ATTACHMENT 2**

Site Name: Vernon 3 Tower Height: 170 ft		General		Power		Density							
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*Nextel	9	100	160	0.0126	851	0.5673	2.23%						
*AT&T UMTS	2	565	142	0.0202	880	0.5867	3.43%						
*AT&T UMTS	2	875	142	0.0312	1900	1.0000	3.12%						
*AT&T GSM	1	283	142	0.0050	880	0.5867	0.86%						
*AT&T GSM	4	525	142	0.0374	1900	1.0000	3.74%						
*AT&T LTE	1	1313	142	0.0234	734	0.4893	4.78%						
*Pocket (now MetroPCS)	3	631	120	0.0473	2130	1.0000	4.73%						
*Sprint CDMA/LTE	5	551	130	0.0586	1900	1.0000	5.86%						
*Sprint CDMA/LTE	1	276	130	0.0059	850	0.5667	1.04%						
*Sprint CDMA/LTE	2	693	130	0.0295	2500	1.0000	2.95%						
*Clearwire	2	153	168	0.0039	2496	1.0000	0.39%						
*Clearwire	1	211	168	0.0027	11 GHz	1.0000	0.27%						
<b>Verizon</b>	<b>11</b>	<b>408</b>	<b>150</b>	<b>0.0717</b>	<b>1970</b>	<b>1.0000</b>	<b>7.17%</b>						
<b>Verizon</b>	<b>9</b>	<b>386</b>	<b>150</b>	<b>0.0555</b>	<b>869</b>	<b>0.5793</b>	<b>9.58%</b>						
<b>Verizon</b>	<b>1</b>	<b>1750</b>	<b>150</b>	<b>0.0280</b>	<b>2145</b>	<b>1.0000</b>	<b>2.80%</b>						
<b>Verizon</b>	<b>1</b>	<b>1050</b>	<b>150</b>	<b>0.0168</b>	<b>746</b>	<b>0.4973</b>	<b>3.37%</b>						<b>56.33%</b>
* Source: Siting Council													

# **ATTACHMENT 3**



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 170 ft Monopole  
**ATC Site Name** : Vernon CT 6, CT  
**ATC Site Number** : 302529  
**Engineering Number** : 60052022  
**Proposed Carrier** : Verizon  
**Carrier Site Name** : Vernon 3, CT  
**Carrier Site Number** : N/A  
**Site Location** : 777 Talcotville Road  
Vernon Rockville, CT 06066-2318  
41.863453,-72.483283  
**County** : Tolland  
**Date** : September 18, 2014  
**Max Usage** : 56%  
**Result** : Pass

Daniel Motter



Sep 18 2014 2:27 PM



Eng. Number 60052022  
September 18, 2014

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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 170 ft monopole to reflect the change in loading by Verizon.

## Supporting Documents

<b>Tower Drawings</b>	Summit, PJF Job #29201-0893, dated July 26, 2001
<b>Foundation Drawing</b>	Summit, PJF Job #29201-0893, dated September 21, 2001
<b>Geotechnical Report</b>	Dr. Clarence Welti Geotechnical Engineering Job #CT-1065, dated January 2, 2001
<b>Modifications</b>	ATC Job #44531032, dated March 3, 2010

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

<b>Basic Wind Speed:</b>	85 mph (Fastest Mile), 100 mph (3-Second Gust)
<b>Basic Wind Speed w/ Ice:</b>	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
<b>Code:</b>	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (4) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 & 2011 CT Amendments

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



**Existing and Reserved Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
168.0	168.0	2	DragonWave Horizon Compact	Collar	(6) 5/16" Coax (2) 1/2" Coax	Clearwire
		3	NextNet BTS-2500			
		2	DragonWave A-ANT-18G-2-C			
		3	Argus LLPX310R			
160.0	160.0	9	48" x 12" Panel	Low Profile Platform	(12) 1 5/8" Coax	Sprint Nextel
		3	72" x 12" Panel			
150.0	150.0	6	RFS FD9R6004/2C-3L	Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
142.0	142.0	3	Powerwave LGP21901	T-Arms	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Cable (1) 3" Conduit	AT&T Mobility
		3	14" x 9" TTA			
		1	Raycap DC6-48-60-18-8F			
		6	Powerwave LGP21401			
		3	36" x 8" x 6" Panel			
		6	Ericsson RRUS 11(Band 12)			
		9	72" x 12" Panel			
130.0	130.0	6	Alcatel-Lucent 4X40W RRH	Low Profile Platform	(4) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	Alcatel-Lucent 800MHz RRH w/ Notch Filter			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXV/TM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSP18-C-A20			
120.0	121.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Antel BXA-70063-6CF-EDIN-X	-	-	Verizon
		6	Antel LPA-80063-4CF-EDIN-X			
		3	Antel BXA-171063-8BF-EDIN-X			

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Alcatel-Lucent RRH 2X60-AWS	Low Profile Platform	-	Verizon
		3	Alcatel-Lucent RRH2x60W			
		2	RFS DB-T1-6Z-8AB-OZ			
		6	Andrew LNX-6514DS-A1M			
		6	Andrew HBXX-6517DS-A2M			

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	54%	Pass
Shaft	56%	Pass
Base Plate	52%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	8,100.0	4,765.8	59%
Shear (Kips)	61.0	39.9	65%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
150.0	1.230	0.884

\*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.



## **Standard Conditions**

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

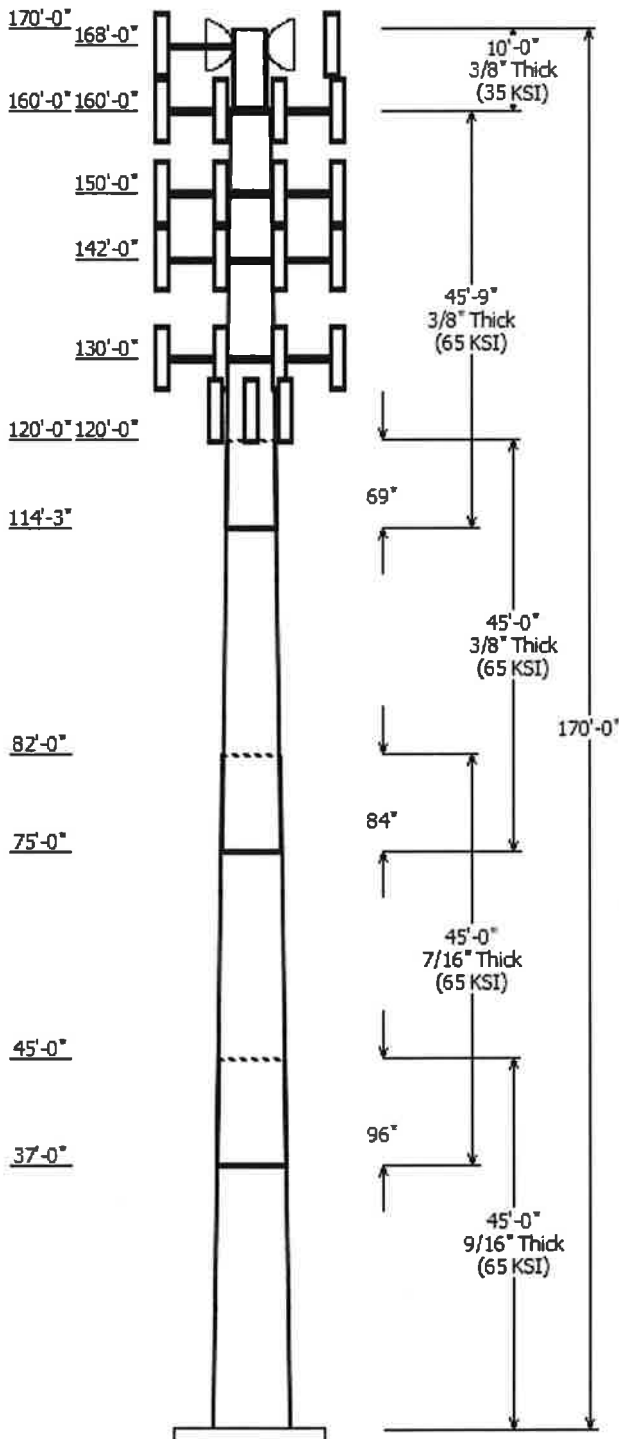
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

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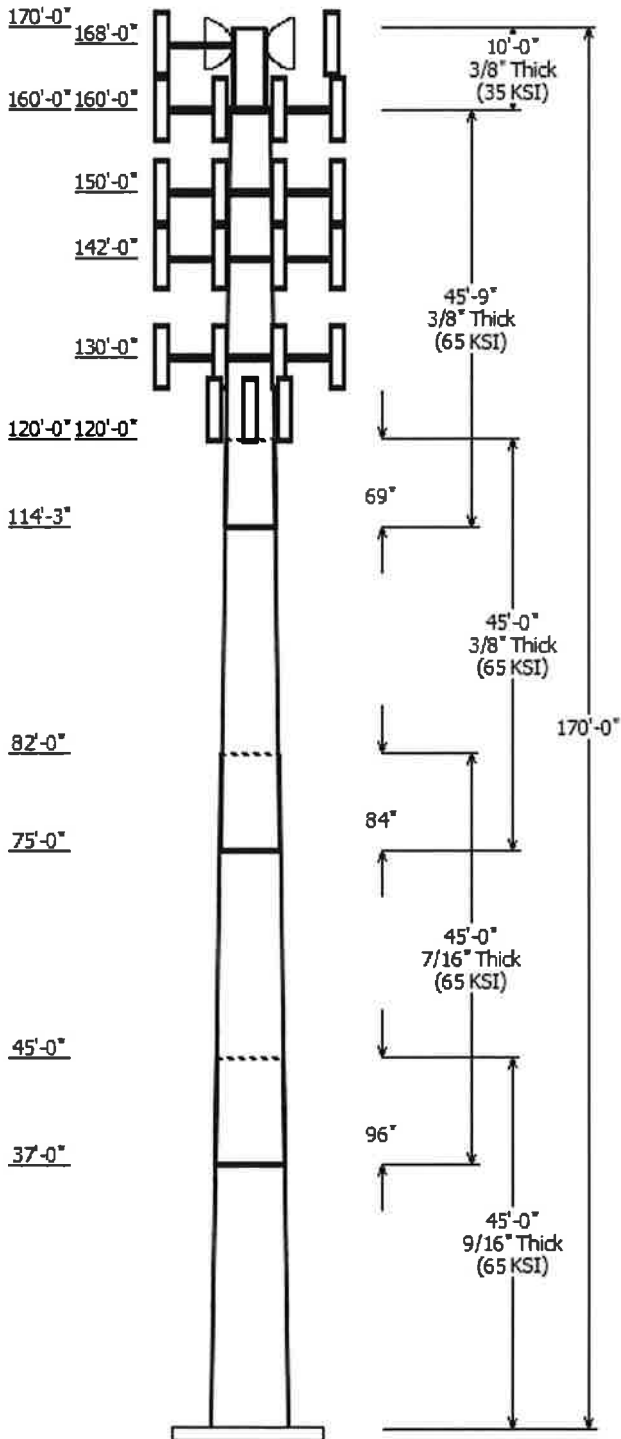


Job Information	
Pole :	302529
Code:	TIA/EIA-222 Rev F
Description :	160 ft Monopole w/10 ft Extension
Client :	Verizon Wireless
Location :	Vernon CT 6, CT
Shape :	18 Sides
Height :	170.00 (ft)
Base Elev (ft):	0.00
Taper:	0.25131(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap		Steel Grade (ksi)
		Across Top	Flats Bottom			Length (in)	Taper (in/ft)	
1	45.000	60.82	72.13	0.563		0.000	0.251317	65
2	45.000	52.39	63.70	0.438	Slip Joint	96.000	0.251317	65
3	45.000	43.59	54.90	0.375	Slip Joint	84.000	0.251317	65
4	45.750	34.29	45.79	0.375	Slip Joint	69.000	0.251317	65
5	10.000	30.00	30.00	0.375	Butt Joint	0.000	0.000000	35

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
168.000	168.000	1	Collar
168.000	168.000	3	NextNet BTS-2500
168.000	168.000	2	DragonWave A-ANT-18G-2-C
168.000	168.000	3	Argus LLPX310R
168.000	168.000	2	DragonWave Horizon Compact
160.000	160.000	3	72" x 12" Panel
160.000	160.000	9	48" x 12" Panel
160.000	160.000	1	Flat Low Profile Platform
150.000	150.000	6	Andrew HBXX-6517DS-A2M
150.000	150.000	6	Andrew LNX-6514DS-A1M
150.000	150.000	2	RFS DB-T1-6Z-8AB-0Z
150.000	150.000	3	Alcatel-Lucent RRH2x60W
150.000	150.000	3	Alcatel-Lucent RRH 2X60-AWS
150.000	150.000	6	RFS FD9R6004/2C-3L
150.000	150.000	1	Round Low Profile Platform
142.000	142.000	6	Powerwave LGP21401
142.000	142.000	1	Raycap DC6-48-60-18-8F
142.000	142.000	6	Ericsson RRUS 11(Band 12)
142.000	142.000	3	Round T-Arm
142.000	142.000	3	Powerwave LGP21901
142.000	142.000	9	72" x 12" Panel
142.000	142.000	3	36" x 8" x 6" Panel
142.000	142.000	3	14" x 9" TTA
130.000	130.000	3	RFS APXVTM 14-C-120
130.000	130.000	3	Alcatel-Lucent TD-RRH8x20
130.000	130.000	6	Alcatel-Lucent 4X40W RRH
130.000	130.000	3	Alcatel-Lucent 800 MHz RRH w/
130.000	130.000	1	RFS APXV9ERR18-C-A20
130.000	130.000	2	RFS APXVSPP18-C-A20
130.000	130.000	1	Round Low Profile Platform
120.000	121.000	3	RFS APXV18-206517S-C
120.000	120.000	3	Flush Mounts

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
2.000	120.0	1 5/8" Coax	No
2.000	130.0	1 1/4" Hybriflex	No
2.000	142.0	0.39" Cable	No
2.000	142.0	0.78" 8 AWG 6	No

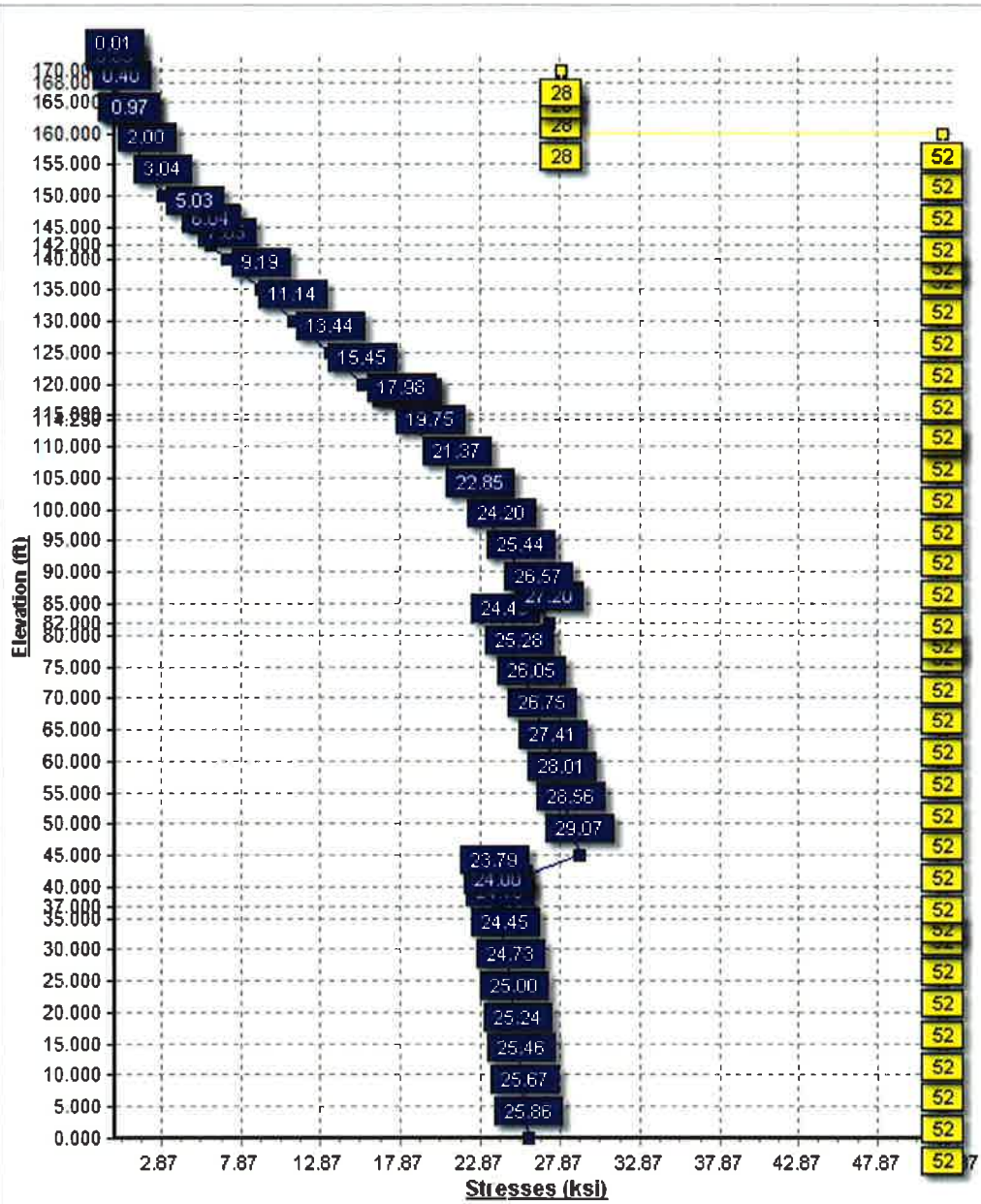


2.000	142.0	1 5/8" Coax	No
2.000	142.0	3" Conduit	No
2.000	150.0	1 5/8" Coax	No
2.000	150.0	1 5/8" Hybriflex	No
2.000	160.0	1 5/8" Coax	No
2.000	168.0	1/2" Coax	No
2.000	168.0	5/16" Coax	No

Load Cases	
No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	4765.83	39.91	64.97
Ice	3945.53	32.41	74.12
Twist/Sway	1649.43	13.81	65.00

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	168.00	18.122	0.893



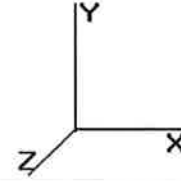
Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

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Base Elev : 0.000 (ft)

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**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	45.000	0.5625	65		0.00	18,019	72.13	0.00	127.77	82681.3	21.20	128.23	60.82	45.00	107.58	49352.3	17.65	108.12	0.251317
2-18	45.000	0.4375	65	Slip	96.00	12,250	63.70	37.00	87.85	44430.5	24.26	145.61	52.39	82.00	72.15	24609.7	19.71	119.76	0.251317
3-18	45.000	0.3750	65	Slip	84.00	8,908	54.90	75.00	64.90	24383.8	24.41	146.42	43.59	120.00	51.44	12141.6	19.09	116.26	0.251317
4-18	45.750	0.3750	65	Slip	69.00	7,350	45.79	114.25	54.06	14087.0	20.12	122.11	34.29	160.00	40.37	5868.1	14.71	91.45	0.251317
5-R	10.000	0.3750	35	Butt	0.00	1,188	30.00	160.00	34.90	3831.8	0.00	80.00	30.00	170.00	34.90	3831.8	0.00	80.00	0.000000
Shaft Weight						47,714													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
168.00	Arqus LLPX310R	3	28.60	4.820	0.70	54.50	5.360	0.70	0.000	0.000
168.00	Collar	1	560.00	8.500	1.00	680.00	10.500	1.00	0.000	0.000
168.00	DragonWave A-ANT-18G-2-C	2	27.10	4.690	1.00	55.10	5.050	1.00	0.000	0.000
168.00	DragonWave Horizon	2	10.60	0.430	0.50	17.00	0.580	0.50	0.000	0.000
168.00	NextNet BTS-2500	3	35.00	2.120	0.67	48.30	2.430	0.67	0.000	0.000
160.00	48" x 12" Panel	9	30.00	5.600	0.76	62.50	6.190	0.76	0.000	0.000
160.00	72" x 12" Panel	3	45.00	8.400	0.78	92.20	9.230	0.78	0.000	0.000
160.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
150.00	Alcatel-Lucent RRH 2X60-	3	44.00	2.190	0.67	55.40	2.500	0.67	0.000	0.000
150.00	Alcatel-Lucent RRH2x60W	3	55.00	2.570	0.67	75.30	2.910	0.67	0.000	0.000
150.00	Andrew HBXX-6517DS-A2M	6	43.00	8.740	0.80	93.40	9.590	0.80	0.000	0.000
150.00	Andrew LNX-6514DS-A1M	6	38.80	8.410	0.82	89.30	9.240	0.82	0.000	0.000
150.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	5.600	0.67	65.60	6.230	0.67	0.000	0.000
150.00	RFS FD9R6004/2C-3L	6	2.60	0.370	0.50	5.40	0.500	0.50	0.000	0.000
150.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
142.00	14" x 9" TTA	3	10.00	1.230	0.50	18.00	1.460	0.50	0.000	0.000
142.00	36" x 8" x 6" Panel	3	25.00	2.800	0.88	44.54	3.240	0.88	0.000	0.000
142.00	72" x 12" Panel	9	45.00	8.400	0.78	92.20	9.230	0.78	0.000	0.000
142.00	Ericsson RRUS 11(Band 12)	6	50.00	2.990	0.67	69.90	3.340	0.67	0.000	0.000
142.00	Powerwave LGP21401	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	0.000
142.00	Powerwave LGP21901	3	5.50	0.230	0.50	7.70	0.340	0.50	0.000	0.000
142.00	Raycap DC6-48-60-18-8F	1	20.00	1.270	1.00	35.10	1.460	1.00	0.000	0.000
142.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
130.00	Alcatel-Lucent 4X40W RRH	6	59.50	2.710	0.67	82.60	3.070	0.67	0.000	0.000
130.00	Alcatel-Lucent 800 MHz RRH	3	61.80	2.910	0.67	87.80	3.260	0.67	0.000	0.000
130.00	Alcatel-Lucent TD-RRH8x20	3	66.10	4.300	0.67	82.70	4.430	0.67	0.000	0.000
130.00	RFS APXV9ERR18-C-A20	1	62.00	8.260	0.85	113.90	9.080	0.85	0.000	0.000
130.00	RFS APXVSP18-C-A20	2	57.00	8.260	0.82	106.50	9.080	0.82	0.000	0.000
130.00	RFS APXVTM14-C-I20	3	56.20	6.900	0.76	92.40	7.580	0.76	0.000	0.000
130.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
120.00	Flush Mounts	3	65.00	2.000	0.67	100.00	2.500	0.67	0.000	0.000
120.00	RFS APXV18-206517S-C	3	26.40	5.170	0.80	53.13	5.850	0.80	0.000	1.000
Totals		110	9663.20			13,358.77			Number of Loadings : 32	

**Linear Appurtenance Properties**

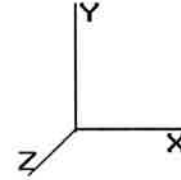
Elev From (ft)	Elev To (ft)	Description	No Ice		Ice		Exposed To Wind
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
2.00	168.00	(2) 1/2" Coax	0.30	0.00	0.30	0.00	N
2.00	168.00	(6) 5/16" Coax	0.24	0.00	0.24	0.00	N

**Pole :** 302529  
**Location :** Vernon CT 6, CT  
**Height :** 170.0 (ft)  
**Base Dia :** 72.13 (in)  
**Top Dia :** 30.00 (in)  
**Shape :** 18 Sides. Sect 5: Round  
**Taper :** 0.251317 (in/ft)

**Code:** TIA/EIA-222 Rev F

**Base Elev :** 0.000 (ft)

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2.00	160.00	(12) 1 5/8" Coax	12.00	0.00	12.00	0.00	N
2.00	150.00	(12) 1 5/8" Coax	12.00	0.00	12.00	0.00	N
2.00	150.00	(2) 1 5/8" Hybriflex	1.30	0.00	0.00	0.00	N
2.00	142.00	(1) 0.39" Cable	0.07	0.00	0.00	0.00	N
2.00	142.00	(2) 0.78" 8 AWG 6	0.59	0.00	0.00	0.00	N
2.00	142.00	(12) 1 5/8" Coax	12.00	0.00	12.00	0.00	N
2.00	142.00	(1) 3" Conduit	7.58	0.00	0.00	0.00	N
2.00	130.00	(4) 1 1/4" Hybriflex Cab	1.00	0.00	12.00	0.00	N
2.00	120.00	(6) 1 5/8" Coax	6.00	0.00	6.00	0.00	N
<b>Total Weight</b>			<b>7,623.64 (lb)</b>		<b>7,685.64 (lb)</b>		

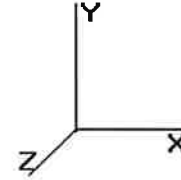


Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
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 Shape : 18 Sides. Sect 5: Round  
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**Segment Properties** (Max Len : 5 ft)

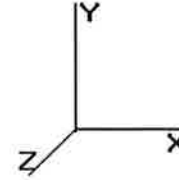
Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.5625	72.130	127.770	82,681.3	21.20	128.23	65	52	0.0
5.00		0.5625	70.873	125.526	78,402.1	20.81	126.00	65	52	2,154.8
10.00		0.5625	69.616	123.283	74,273.2	20.41	123.76	65	52	2,116.6
15.00		0.5625	68.360	121.039	70,291.9	20.02	121.53	65	52	2,078.4
20.00		0.5625	67.103	118.796	66,455.4	19.62	119.29	65	52	2,040.3
25.00		0.5625	65.847	116.553	62,761.1	19.23	117.06	65	52	2,002.1
30.00		0.5625	64.590	114.309	59,206.4	18.84	114.83	65	52	1,963.9
35.00		0.5625	63.334	112.066	55,788.4	18.44	112.59	65	52	1,925.8
37.00	Bot - Section 2	0.5625	62.831	111.168	54,459.0	18.28	111.70	65	52	759.6
40.00		0.5625	62.077	109.822	52,504.7	18.05	110.36	65	52	2,019.5
45.00	Top - Section 1	0.4375	61.695	85.061	40,328.1	23.45	141.02	65	52	3,311.5
50.00		0.4375	60.439	83.316	37,896.9	22.95	138.15	65	52	1,432.4
55.00		0.4375	59.182	81.571	35,565.4	22.44	135.27	65	52	1,402.7
60.00		0.4375	57.926	79.827	33,331.6	21.94	132.40	65	52	1,373.0
65.00		0.4375	56.669	78.082	31,193.3	21.43	129.53	65	52	1,343.3
70.00		0.4375	55.412	76.337	29,148.5	20.92	126.66	65	52	1,313.6
75.00	Bot - Section 3	0.4375	54.156	74.592	27,195.1	20.42	123.78	65	52	1,283.9
80.00		0.4375	52.899	72.847	25,330.9	19.91	120.91	65	52	2,345.8
82.00	Top - Section 2	0.3750	53.147	62.809	22,099.2	23.58	141.72	65	52	922.9
85.00		0.3750	52.393	61.912	21,165.5	23.22	139.71	65	52	636.6
90.00		0.3750	51.136	60.416	19,668.4	22.63	136.36	65	52	1,040.6
95.00		0.3750	49.880	58.921	18,243.6	22.04	133.01	65	52	1,015.2
100.00		0.3750	48.623	57.425	16,889.3	21.45	129.66	65	52	989.7
105.00		0.3750	47.366	55.929	15,603.7	20.86	126.31	65	52	964.3
110.00		0.3750	46.110	54.434	14,385.2	20.27	122.96	65	52	938.9
114.2	Bot - Section 4	0.3750	45.042	53.163	13,400.6	19.77	120.11	65	52	778.0
115.00		0.3750	44.853	52.938	13,231.7	19.68	119.61	65	52	273.1
120.00	Top - Section 3	0.3750	44.347	52.335	12,784.7	19.44	118.26	65	52	1,791.1
125.00		0.3750	43.090	50.840	11,719.7	18.85	114.91	65	52	877.7
130.00		0.3750	41.833	49.344	10,715.5	18.26	111.56	65	52	852.3
135.00		0.3750	40.577	47.849	9,770.4	17.67	108.20	65	52	826.8
140.00		0.3750	39.320	46.353	8,882.6	17.08	104.85	65	52	801.4
142.00		0.3750	38.818	45.755	8,543.1	16.84	103.51	65	52	313.4
145.00		0.3750	38.064	44.857	8,050.2	16.49	101.50	65	52	462.5
150.00		0.3750	36.807	43.362	7,271.6	15.90	98.15	65	52	750.5
155.00		0.3750	35.550	41.866	6,544.8	15.31	94.80	65	52	725.0
160.00	Top - Section 4	0.3750	34.294	40.371	5,868.1	14.71	91.45	65	52	699.6
160.00	Bot - Section 5	0.3750	30.000	34.901	3,831.8	0.00	80.00	35	28	
165.00		0.3750	30.000	34.901	3,831.8	0.00	80.00	35	28	593.8
168.00		0.3750	30.000	34.901	3,831.8	0.00	80.00	35	28	356.3
170.00		0.3750	30.000	34.901	3,831.8	0.00	80.00	35	28	237.5
										47,714.3

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** No Ice                      85.00 mph Wind with No Ice                      20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

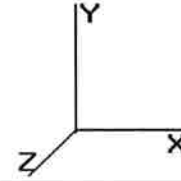
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 18.496	31.25 510.91	0.650	0.000	0.00	0.000	0.00	0.00	0.0	0.0	0.0
5.00		0.00	1.00 18.496	31.25 502.01	0.650	0.000	0.00	5.00 29.792	19.36	19.36	605.3	0.0	2,154.8
10.00		0.00	1.00 18.496	31.25 493.11	0.650	0.000	0.00	5.00 29.269	19.02	19.02	594.7	0.0	2,116.6
15.00		0.00	1.00 18.496	31.25 484.21	0.650	0.000	0.00	5.00 28.745	18.68	18.68	584.0	0.0	2,078.4
20.00		0.00	1.00 18.496	31.25 475.31	0.650	0.000	0.00	5.00 28.221	18.34	18.34	573.4	0.0	2,040.3
25.00		0.00	1.00 18.496	31.25 466.41	0.650	0.000	0.00	5.00 27.698	18.00	18.00	562.8	0.0	2,002.1
30.00		0.00	1.00 18.496	31.25 457.51	0.650	0.000	0.00	5.00 27.174	17.66	17.66	552.1	0.0	1,963.9
35.00		0.00	1.01 18.810	31.78 452.39	0.650	0.000	0.00	5.00 26.651	17.32	17.32	550.7	0.0	1,925.8
37.00	Bot - Section 2	0.00	1.03 19.111	32.29 452.38	0.650	0.000	0.00	2.00 10.514	6.83	6.83	220.7	0.0	759.6
40.00		0.00	1.05 19.541	33.02 451.96	0.650	0.000	0.00	3.00 15.832	10.29	10.29	339.9	0.0	2,019.5
45.00	Top - Section 1	0.00	1.09 20.210	34.15 450.32	0.650	0.000	0.00	5.00 25.968	16.88	16.88	576.5	0.0	3,311.5
50.00		0.00	1.12 20.827	35.19 454.28	0.650	0.000	0.00	5.00 25.445	16.54	16.54	582.1	0.0	1,432.4
55.00		0.00	1.15 21.402	36.17 450.94	0.650	0.000	0.00	5.00 24.921	16.20	16.20	585.9	0.0	1,402.7
60.00		0.00	1.18 21.941	37.08 446.88	0.650	0.000	0.00	5.00 24.397	15.86	15.86	588.0	0.0	1,373.0
65.00		0.00	1.21 22.449	37.93 442.22	0.650	0.000	0.00	5.00 23.874	15.52	15.52	588.7	0.0	1,343.3
70.00		0.00	1.24 22.929	38.75 437.01	0.650	0.000	0.00	5.00 23.350	15.18	15.18	588.1	0.0	1,313.6
75.00	Bot - Section 3	0.00	1.26 23.386	39.52 431.33	0.650	0.000	0.00	5.00 22.827	14.84	14.84	586.4	0.0	1,283.9
80.00		0.00	1.28 23.821	40.25 425.23	0.650	0.000	0.00	5.00 22.616	14.70	14.70	591.8	0.0	2,345.8
82.00	Top - Section 2	0.00	1.29 23.989	40.54 422.68	0.650	0.000	0.00	2.00 8.900	5.78	5.78	234.5	0.0	922.9
85.00		0.00	1.31 24.237	40.96 424.82	0.650	0.000	0.00	3.00 13.192	8.58	8.58	351.2	0.0	636.6
90.00		0.00	1.33 24.636	41.63 418.03	0.650	0.000	0.00	5.00 21.568	14.02	14.02	583.7	0.0	1,040.6
95.00		0.00	1.35 25.020	42.28 410.92	0.650	0.000	0.00	5.00 21.045	13.68	13.68	578.4	0.0	1,015.2
100.00		0.00	1.37 25.389	42.90 403.51	0.650	0.000	0.00	5.00 20.521	13.34	13.34	572.3	0.0	989.7
105.00		0.00	1.39 25.745	43.51 395.83	0.650	0.000	0.00	5.00 19.998	13.00	13.00	565.6	0.0	964.3
110.00		0.00	1.41 26.090	44.09 387.90	0.650	0.000	0.00	5.00 19.474	12.66	12.66	558.1	0.0	938.9
114.2	Bot - Section 4	0.00	1.42 26.374	44.57 380.97	0.650	0.000	0.00	4.25 16.141	10.49	10.49	467.6	0.0	778.0
115.0		0.00	1.42 26.423	44.65 379.73	0.650	0.000	0.00	0.75 2.856	1.86	1.86	82.9	0.0	273.1
120.0	Top - Section 3	0.00	1.44 26.747	45.20 371.35	0.650	0.000	0.00	5.00 18.740	12.18	12.18	550.6	0.0	1,791.1
125.0		0.00	1.46 27.060	45.73 369.18	0.650	0.000	0.00	5.00 18.216	11.84	11.84	541.5	0.0	877.7
130.0	Appertunance(s)	0.00	1.48 27.365	46.24 360.43	0.650	0.000	0.00	5.00 17.692	11.50	11.50	531.8	0.0	852.3
135.0		0.00	1.49 27.662	46.74 351.49	0.650	0.000	0.00	5.00 17.169	11.16	11.16	521.7	0.0	826.8
140.0		0.00	1.51 27.951	47.23 342.38	0.650	0.000	0.00	5.00 16.645	10.82	10.82	511.1	0.0	801.4
142.0	Appertunance(s)	0.00	1.51 28.064	47.42 338.69	0.650	0.000	0.00	2.00 6.511	4.23	4.23	200.7	0.0	313.4
145.0		0.00	1.52 28.233	47.71 333.10	0.650	0.000	0.00	3.00 9.610	6.25	6.25	298.0	0.0	462.5
150.0	Appertunance(s)	0.00	1.54 28.507	48.17 323.67	0.650	0.000	0.00	5.00 15.598	10.14	10.14	488.5	0.0	750.5
155.0		0.00	1.55 28.776	48.63 314.09	0.650	0.000	0.00	5.00 15.074	9.80	9.80	476.5	0.0	725.0
160.0	Top - Section 4	0.00	1.57 29.038	49.07 304.36	0.650	0.000	0.00	5.00 14.551	9.46	9.46	464.1	0.0	699.6
165.0		0.00	1.58 29.294	49.50 267.43	0.590	0.000	0.00	5.00 12.500	7.37	7.37	365.1	0.0	593.8
168.0	Appertunance(s)	0.00	1.59 29.446	49.76 268.12	0.590	0.000	0.00	3.00 7.500	4.42	4.42	220.2	0.0	356.3
170.0		0.00	1.59 29.545	49.93 268.57	0.590	0.000	0.00	2.00 5.000	2.95	2.95	147.3	0.0	237.5
<b>Totals:</b>								170.00			18,582.8	0.0	47,714.3

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** No Ice                      85.00 mph Wind with No Ice                      20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

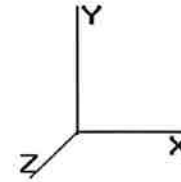
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	Flush Mounts	3	26.747	45.202	0.67	4.02	0.000	0.000	181.71	0.00	0.00	195.00
120.0	RFS APXV18-206517S-	3	26.810	45.309	0.80	12.41	0.000	1.000	562.19	0.00	562.19	79.20
130.0	Round Low Profile PI	1	27.365	46.247	1.00	21.70	0.000	0.000	1,003.56	0.00	0.00	1,500.00
130.0	RFS APXVSP18-C-	2	27.365	46.247	0.82	13.55	0.000	0.000	626.49	0.00	0.00	114.00
130.0	RFS APXV9ERR18-C-	1	27.365	46.247	0.85	7.02	0.000	0.000	324.70	0.00	0.00	62.00
130.0	Alcatel-Lucent 800 M	3	27.365	46.247	0.67	5.85	0.000	0.000	270.51	0.00	0.00	185.40
130.0	Alcatel-Lucent 4X40W	6	27.365	46.247	0.67	10.89	0.000	0.000	503.83	0.00	0.00	357.00
130.0	Alcatel-Lucent TD-RR	3	27.365	46.247	0.67	8.64	0.000	0.000	399.72	0.00	0.00	198.30
130.0	RFS APXVTM14-C-I20	3	27.365	46.247	0.76	15.73	0.000	0.000	727.56	0.00	0.00	168.60
142.0	14" x 9" TTA	3	28.064	47.429	0.50	1.85	0.000	0.000	87.51	0.00	0.00	30.00
142.0	36" x 8" x 6" Panel	3	28.064	47.429	0.88	7.39	0.000	0.000	350.59	0.00	0.00	75.00
142.0	72" x 12" Panel	9	28.064	47.429	0.78	58.97	0.000	0.000	2,796.79	0.00	0.00	405.00
142.0	Powerwave LGP21901	3	28.064	47.429	0.50	0.34	0.000	0.000	16.36	0.00	0.00	16.50
142.0	Round T-Arm	3	28.064	47.429	0.67	19.50	0.000	0.000	924.71	0.00	0.00	750.00
142.0	Ericsson RRUS 11(Ban	6	28.064	47.429	0.67	12.02	0.000	0.000	570.09	0.00	0.00	300.00
142.0	Raycap DC6-48-60-18-	1	28.064	47.429	1.00	1.27	0.000	0.000	60.23	0.00	0.00	20.00
142.0	Powerwave LGP21401	6	28.064	47.429	0.50	3.87	0.000	0.000	183.55	0.00	0.00	84.60
150.0	Alcatel-Lucent RRH 2	3	28.507	48.177	0.67	4.40	0.000	0.000	212.07	0.00	0.00	132.00
150.0	Alcatel-Lucent RRH2x	3	28.507	48.177	0.67	5.17	0.000	0.000	248.87	0.00	0.00	165.00
150.0	RFS DB-T1-6Z-8AB-0Z	2	28.507	48.177	0.67	7.50	0.000	0.000	361.52	0.00	0.00	88.00
150.0	Andrew LNX-6514DS-	6	28.507	48.177	0.82	41.38	0.000	0.000	1,993.45	0.00	0.00	232.80
150.0	Andrew HBXX-	6	28.507	48.177	0.80	41.95	0.000	0.000	2,021.14	0.00	0.00	258.00
150.0	Round Low Profile PI	1	28.507	48.177	1.00	21.70	0.000	0.000	1,045.45	0.00	0.00	1,500.00
150.0	RFS FD9R6004/2C-3L	6	28.507	48.177	0.50	1.11	0.000	0.000	53.48	0.00	0.00	15.60
160.0	Flat Low Profile Pla	1	29.038	49.074	1.00	26.10	0.000	0.000	1,280.83	0.00	0.00	1,500.00
160.0	48" x 12" Panel	9	29.038	49.074	0.76	38.30	0.000	0.000	1,879.73	0.00	0.00	270.00
160.0	72" x 12" Panel	3	29.038	49.074	0.78	19.66	0.000	0.000	964.60	0.00	0.00	135.00
168.0	DragonWave Horizon	2	29.446	49.763	0.50	0.43	0.000	0.000	21.40	0.00	0.00	21.20
168.0	Argus LLPX310R	3	29.446	49.763	0.70	10.12	0.000	0.000	503.70	0.00	0.00	85.80
168.0	DragonWave A-ANT-	2	29.446	49.763	1.00	9.38	0.000	0.000	466.78	0.00	0.00	54.20
168.0	NextNet BTS-2500	3	29.446	49.763	0.67	4.26	0.000	0.000	212.05	0.00	0.00	105.00
168.0	Collar	1	29.446	49.763	1.00	8.50	0.000	0.000	422.99	0.00	0.00	560.00
									21,278.16			9,663.20

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** No Ice                      85.00 mph Wind with No Ice                      20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Applied Segment Forces Summary**

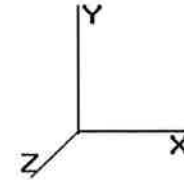
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	605.31	2,314.01	0.00	0.00
10.00	594.68	2,382.00	0.00	0.00
15.00	584.04	2,343.83	0.00	0.00
20.00	573.40	2,305.67	0.00	0.00
25.00	562.76	2,267.50	0.00	0.00
30.00	552.12	2,229.33	0.00	0.00
35.00	550.67	2,191.16	0.00	0.00
37.00	220.71	865.78	0.00	0.00
40.00	339.85	2,178.70	0.00	0.00
45.00	576.51	3,576.88	0.00	0.00
50.00	582.15	1,697.78	0.00	0.00
55.00	585.91	1,668.09	0.00	0.00
60.00	588.04	1,638.40	0.00	0.00
65.00	588.73	1,608.72	0.00	0.00
70.00	588.14	1,579.03	0.00	0.00
75.00	586.40	1,549.34	0.00	0.00
80.00	591.79	2,611.18	0.00	0.00
82.00	234.53	1,029.04	0.00	0.00
85.00	351.24	795.84	0.00	0.00
90.00	583.70	1,306.04	0.00	0.00
95.00	578.40	1,280.59	0.00	0.00
100.0	572.34	1,255.15	0.00	0.00
105.0	565.56	1,229.70	0.00	0.00
110.0	558.12	1,204.25	0.00	0.00
114.2	467.65	1,003.61	0.00	0.00
115.0	82.90	312.87	0.00	0.00
120.0	1,294.49	2,330.71	0.00	562.19
125.0	541.48	1,113.10	0.00	0.00
130.0	4,388.21	3,672.96	0.00	0.00
135.0	521.70	1,057.21	0.00	0.00
140.0	511.08	1,031.77	0.00	0.00
142.0	5,190.57	2,086.68	0.00	0.00
145.0	298.04	540.02	0.00	0.00
150.0	6,424.44	3,271.07	0.00	0.00
155.0	476.51	787.73	0.00	0.00
160.0	4,589.31	2,667.28	0.00	0.00
165.0	365.12	596.50	0.00	0.00
168.0	1,847.11	1,184.10	0.00	0.00
170.0	147.30	237.52	0.00	0.00
<b>Totals:</b>	<b>39,861.01</b>	<b>65,001.14</b>	<b>0.00</b>	<b>562.19</b>

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides, Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** No Ice                      85.00 mph Wind with No Ice                      20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

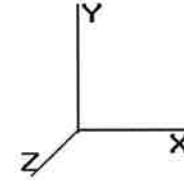
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-39.907	-64.972	0.000	0.000	0.000	-4,765.833	0.000	0.000	0.000	0.000
5.00	-39.389	-62.603	0.000	0.000	0.000	-4,566.299	-0.044	0.000	0.044	-0.080
10.00	-38.874	-60.167	0.000	0.000	0.000	-4,369.359	-0.172	0.000	0.172	-0.161
15.00	-38.365	-57.770	0.000	0.000	0.000	-4,174.990	-0.385	0.000	0.385	-0.243
20.00	-37.860	-55.413	0.000	0.000	0.000	-3,983.168	-0.685	0.000	0.685	-0.326
25.00	-37.361	-53.095	0.000	0.000	0.000	-3,793.869	-1.071	0.000	1.071	-0.409
30.00	-36.866	-50.816	0.000	0.000	0.000	-3,607.070	-1.545	0.000	1.545	-0.493
35.00	-36.345	-48.592	0.000	0.000	0.000	-3,422.745	-2.107	0.000	2.107	-0.577
37.00	-36.151	-47.702	0.000	0.000	0.000	-3,350.057	-2.356	0.000	2.356	-0.612
40.00	-35.841	-45.484	0.000	0.000	0.000	-3,241.606	-2.758	0.000	2.758	-0.663
45.00	-35.283	-41.862	0.000	0.000	0.000	-3,062.402	-3.499	0.000	3.499	-0.749
50.00	-34.745	-40.114	0.000	0.000	0.000	-2,885.988	-4.330	0.000	4.330	-0.835
55.00	-34.204	-38.393	0.000	0.000	0.000	-2,712.267	-5.261	0.000	5.261	-0.940
60.00	-33.655	-36.703	0.000	0.000	0.000	-2,541.252	-6.303	0.000	6.303	-1.045
65.00	-33.099	-35.045	0.000	0.000	0.000	-2,372.982	-7.454	0.000	7.454	-1.150
70.00	-32.539	-33.420	0.000	0.000	0.000	-2,207.489	-8.715	0.000	8.715	-1.254
75.00	-31.975	-31.827	0.000	0.000	0.000	-2,044.797	-10.085	0.000	10.085	-1.358
80.00	-31.355	-29.192	0.000	0.000	0.000	-1,884.927	-11.563	0.000	11.563	-1.461
82.00	-31.120	-28.141	0.000	0.000	0.000	-1,822.217	-12.184	0.000	12.184	-1.502
85.00	-30.789	-27.308	0.000	0.000	0.000	-1,728.860	-13.148	0.000	13.148	-1.564
90.00	-30.218	-25.961	0.000	0.000	0.000	-1,574.919	-14.847	0.000	14.847	-1.675
95.00	-29.647	-24.644	0.000	0.000	0.000	-1,423.831	-16.660	0.000	16.660	-1.783
100.0	-29.077	-23.355	0.000	0.000	0.000	-1,275.596	-18.585	0.000	18.585	-1.888
105.0	-28.509	-22.096	0.000	0.000	0.000	-1,130.213	-20.619	0.000	20.619	-1.990
110.0	-27.940	-20.870	0.000	0.000	0.000	-987.672	-22.756	0.000	22.756	-2.086
114.2	-27.451	-19.863	0.000	0.000	0.000	-868.930	-24.649	0.000	24.649	-2.164
115.0	-27.373	-19.530	0.000	0.000	0.000	-848.342	-24.991	0.000	24.991	-2.178
120.0	-26.013	-17.215	0.000	0.000	0.000	-710.917	-27.318	0.000	27.318	-2.262
125.0	-25.447	-16.093	0.000	0.000	0.000	-580.853	-29.729	0.000	29.729	-2.338
130.0	-20.923	-12.584	0.000	0.000	0.000	-453.620	-32.213	0.000	32.213	-2.400
135.0	-20.367	-11.533	0.000	0.000	0.000	-349.006	-34.757	0.000	34.757	-2.454
140.0	-19.817	-10.514	0.000	0.000	0.000	-247.173	-37.351	0.000	37.351	-2.497
142.0	-14.542	-8.653	0.000	0.000	0.000	-207.540	-38.400	0.000	38.400	-2.512
145.0	-14.224	-8.121	0.000	0.000	0.000	-163.913	-39.985	0.000	39.985	-2.530
150.0	-7.662	-5.136	0.000	0.000	0.000	-92.794	-42.648	0.000	42.648	-2.553
155.0	-7.152	-4.369	0.000	0.000	0.000	-54.482	-45.329	0.000	45.329	-2.567
160.0	-2.448	-1.910	0.000	0.000	0.000	-18.723	-48.022	0.000	48.022	-2.575
165.0	-2.056	-1.330	0.000	0.000	0.000	-6.484	-50.720	0.000	50.720	-2.578
168.0	-0.158	-0.231	0.000	0.000	0.000	-0.316	-52.340	0.000	52.340	-2.579
170.0	-0.147	0.000	0.000	0.000	0.000	0.000	-53.420	0.000	53.420	-2.579

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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<b>Load Case:</b> No Ice	<b>85.00 mph Wind with No Ice</b>	<b>20 Iterations</b>
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

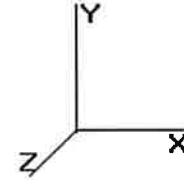
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.51	0.63	0.00	0.00	0.00	25.33	25.86	52.0	0.0	0.498
5.00	0.50	0.63	0.00	0.00	0.00	25.15	25.67	52.0	0.0	0.494
10.00	0.49	0.64	0.00	0.00	0.00	24.95	25.46	52.0	0.0	0.490
15.00	0.48	0.64	0.00	0.00	0.00	24.74	25.24	52.0	0.0	0.486
20.00	0.47	0.64	0.00	0.00	0.00	24.50	25.00	52.0	0.0	0.481
25.00	0.46	0.65	0.00	0.00	0.00	24.25	24.73	52.0	0.0	0.476
30.00	0.44	0.65	0.00	0.00	0.00	23.97	24.45	52.0	0.0	0.470
35.00	0.43	0.65	0.00	0.00	0.00	23.67	24.13	52.0	0.0	0.464
37.00	0.43	0.66	0.00	0.00	0.00	23.55	24.00	52.0	0.0	0.462
40.00	0.41	0.66	0.00	0.00	0.00	23.35	23.79	52.0	0.0	0.458
45.00	0.49	0.84	0.00	0.00	0.00	28.54	29.07	52.0	0.0	0.559
50.00	0.48	0.84	0.00	0.00	0.00	28.04	28.56	52.0	0.0	0.549
55.00	0.47	0.85	0.00	0.00	0.00	27.50	28.01	52.0	0.0	0.539
60.00	0.46	0.85	0.00	0.00	0.00	26.91	27.41	52.0	0.0	0.527
65.00	0.45	0.85	0.00	0.00	0.00	26.27	26.75	52.0	0.0	0.515
70.00	0.44	0.86	0.00	0.00	0.00	25.57	26.05	52.0	0.0	0.501
75.00	0.43	0.86	0.00	0.00	0.00	24.81	25.28	52.0	0.0	0.486
80.00	0.40	0.87	0.00	0.00	0.00	23.98	24.43	52.0	0.0	0.470
82.00	0.45	1.00	0.00	0.00	0.00	26.70	27.20	52.0	0.0	0.523
85.00	0.44	1.00	0.00	0.00	0.00	26.07	26.57	52.0	0.0	0.511
90.00	0.43	1.01	0.00	0.00	0.00	24.95	25.44	52.0	0.0	0.489
95.00	0.42	1.01	0.00	0.00	0.00	23.72	24.20	52.0	0.0	0.466
100.00	0.41	1.02	0.00	0.00	0.00	22.37	22.85	52.0	0.0	0.440
105.00	0.40	1.03	0.00	0.00	0.00	20.90	21.37	52.0	0.0	0.411
110.00	0.38	1.03	0.00	0.00	0.00	19.29	19.75	52.0	0.0	0.380
114.25	0.37	1.04	0.00	0.00	0.00	17.79	18.26	52.0	0.0	0.351
115.00	0.37	1.04	0.00	0.00	0.00	17.52	17.98	52.0	0.0	0.346
120.00	0.33	1.00	0.00	0.00	0.00	15.02	15.45	52.0	0.0	0.297
125.00	0.32	1.01	0.00	0.00	0.00	13.01	13.44	52.0	0.0	0.259
130.00	0.26	0.85	0.00	0.00	0.00	10.79	11.14	52.0	0.0	0.214
135.00	0.24	0.86	0.00	0.00	0.00	8.83	9.19	52.0	0.0	0.177
140.00	0.23	0.86	0.00	0.00	0.00	6.67	7.05	52.0	0.0	0.136
142.00	0.19	0.64	0.00	0.00	0.00	5.75	6.04	52.0	0.0	0.116
145.00	0.18	0.64	0.00	0.00	0.00	4.72	5.03	52.0	0.0	0.097
150.00	0.12	0.36	0.00	0.00	0.00	2.86	3.04	52.0	0.0	0.059
155.00	0.10	0.34	0.00	0.00	0.00	1.80	2.00	52.0	0.0	0.038
160.00	0.05	0.12	0.00	0.00	0.00	0.67	0.74	52.0	0.0	0.014
160.00	0.05	0.14	0.00	0.00	0.00	0.88	0.97	28.0	0.0	0.034
165.00	0.04	0.12	0.00	0.00	0.00	0.30	0.40	28.0	0.0	0.014
168.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	28.0	0.0	0.001
170.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	28.0	0.0	0.001

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case: Ice**

73.61 mph Wind with Ice

20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

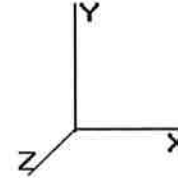
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	13.871	23.44	442.45	0.650	0.500	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	13.871	23.44	434.74	0.650	0.500	5.00	30.209	19.64	460.3	220.2	2,375.0
10.00		0.00	1.00	13.871	23.44	427.03	0.650	0.500	5.00	29.685	19.30	452.3	216.4	2,333.0
15.00		0.00	1.00	13.871	23.44	419.33	0.650	0.500	5.00	29.162	18.96	444.4	212.5	2,290.9
20.00		0.00	1.00	13.871	23.44	411.62	0.650	0.500	5.00	28.638	18.61	436.4	208.6	2,248.9
25.00		0.00	1.00	13.871	23.44	403.91	0.650	0.500	5.00	28.115	18.27	428.4	204.7	2,206.8
30.00		0.00	1.00	13.871	23.44	396.20	0.650	0.500	5.00	27.591	17.93	420.4	200.8	2,164.8
35.00		0.00	1.01	14.106	23.84	391.77	0.650	0.500	5.00	27.067	17.59	419.4	197.0	2,122.7
37.00	Bot - Section 2	0.00	1.03	14.332	24.22	391.76	0.650	0.500	2.00	10.680	6.94	168.1	78.2	837.8
40.00		0.00	1.05	14.655	24.76	391.40	0.650	0.500	3.00	16.082	10.45	258.9	117.5	2,136.9
45.00	Top - Section 1	0.00	1.09	15.156	25.61	389.98	0.650	0.500	5.00	26.385	17.15	439.3	191.9	3,503.4
50.00		0.00	1.12	15.620	26.39	393.41	0.650	0.500	5.00	25.861	16.81	443.7	188.0	1,620.4
55.00		0.00	1.15	16.051	27.12	390.51	0.650	0.500	5.00	25.338	16.47	446.8	184.2	1,586.9
60.00		0.00	1.18	16.455	27.80	387.00	0.650	0.500	5.00	24.814	16.13	448.5	180.3	1,553.3
65.00		0.00	1.21	16.836	28.45	382.96	0.650	0.500	5.00	24.291	15.79	449.2	176.4	1,519.7
70.00		0.00	1.24	17.196	29.06	378.45	0.650	0.500	5.00	23.767	15.45	448.9	172.5	1,486.2
75.00	Bot - Section 3	0.00	1.26	17.538	29.64	373.53	0.650	0.500	5.00	23.243	15.11	447.8	168.7	1,452.6
80.00		0.00	1.28	17.865	30.19	368.25	0.650	0.500	5.00	23.032	14.97	452.0	167.1	2,512.9
82.00	Top - Section 2	0.00	1.29	17.991	30.40	366.04	0.650	0.500	2.00	9.066	5.89	179.2	66.2	989.1
85.00		0.00	1.31	18.177	30.71	367.89	0.650	0.500	3.00	13.442	8.74	268.4	97.9	734.5
90.00		0.00	1.33	18.476	31.22	362.01	0.650	0.500	5.00	21.985	14.29	446.2	159.3	1,200.0
95.00		0.00	1.35	18.764	31.71	355.86	0.650	0.500	5.00	21.462	13.95	442.4	155.5	1,170.6
100.00		0.00	1.37	19.041	32.17	349.44	0.650	0.500	5.00	20.938	13.61	437.9	151.6	1,141.3
105.00		0.00	1.39	19.308	32.63	342.79	0.650	0.500	5.00	20.414	13.27	433.0	147.7	1,112.0
110.00		0.00	1.41	19.566	33.06	335.92	0.650	0.500	5.00	19.891	12.93	427.5	143.8	1,082.7
114.2	Bot - Section 4	0.00	1.42	19.779	33.42	329.92	0.650	0.500	4.25	16.496	10.72	358.4	119.4	897.5
115.00		0.00	1.42	19.816	33.49	328.85	0.650	0.500	0.75	2.919	1.90	63.5	21.3	294.4
120.00	Top - Section 3	0.00	1.44	20.059	33.89	321.59	0.650	0.500	5.00	19.156	12.45	422.1	138.4	1,929.5
125.00		0.00	1.46	20.294	34.29	319.71	0.650	0.500	5.00	18.633	12.11	415.4	134.5	1,012.2
130.00	Appertunance(s)	0.00	1.48	20.523	34.68	312.13	0.650	0.500	5.00	18.109	11.77	408.3	130.6	982.9
135.00		0.00	1.49	20.745	35.06	304.39	0.650	0.500	5.00	17.585	11.43	400.7	126.8	953.6
140.00		0.00	1.51	20.962	35.42	296.50	0.650	0.500	5.00	17.062	11.09	392.9	122.9	924.2
142.00	Appertunance(s)	0.00	1.51	21.047	35.57	293.30	0.650	0.500	2.00	6.678	4.34	154.4	48.5	362.0
145.00		0.00	1.52	21.173	35.78	288.47	0.650	0.500	3.00	9.860	6.41	229.3	71.4	533.9
150.00	Appertunance(s)	0.00	1.54	21.379	36.13	280.30	0.650	0.500	5.00	16.015	10.41	376.1	115.1	865.6
155.00		0.00	1.55	21.581	36.47	272.00	0.650	0.500	5.00	15.491	10.07	367.2	111.2	836.3
160.00	Top - Section 4	0.00	1.57	21.777	36.80	263.58	0.650	0.500	5.00	14.968	9.73	358.1	107.4	806.9
165.00		0.00	1.58	21.969	37.12	231.59	0.590	0.500	5.00	12.917	7.62	282.9	93.1	686.9
168.00	Appertunance(s)	0.00	1.59	22.083	37.32	232.19	0.590	0.500	3.00	7.750	4.57	170.6	55.9	412.1
170.00		0.00	1.59	22.158	37.44	232.58	0.590	0.500	2.00	5.167	3.05	114.1	37.2	274.8
							Totals:	170.00			14,213.7	5,440.8	53,155.1	

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Ice                      73.61 mph Wind with Ice                      20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	Flush Mounts	3	20.059	33.899	0.67	5.03	0.000	0.000	170.34	0.00	0.00	300.00
120.0	RFS APXV18-206517S-	3	20.106	33.980	0.80	14.04	0.000	1.000	477.08	0.00	477.08	159.39
130.0	Round Low Profile PI	1	20.523	34.684	1.00	27.20	0.000	0.000	943.39	0.00	0.00	1,700.00
130.0	RFS APXVSP18-C-	2	20.523	34.684	0.82	14.89	0.000	0.000	516.48	0.00	0.00	213.00
130.0	RFS APXV9ERR18-C-	1	20.523	34.684	0.85	7.72	0.000	0.000	267.69	0.00	0.00	113.90
130.0	Alcatel-Lucent 800 M	3	20.523	34.684	0.67	6.55	0.000	0.000	227.27	0.00	0.00	263.40
130.0	Alcatel-Lucent 4X40W	6	20.523	34.684	0.67	12.34	0.000	0.000	428.04	0.00	0.00	495.60
130.0	Alcatel-Lucent TD-RR	3	20.523	34.684	0.67	8.90	0.000	0.000	308.83	0.00	0.00	248.10
130.0	RFS APXVTM14-C-I20	3	20.523	34.684	0.76	17.28	0.000	0.000	599.41	0.00	0.00	277.20
142.0	14" x 9" TTA	3	21.047	35.570	0.50	2.19	0.000	0.000	77.90	0.00	0.00	54.00
142.0	36" x 8" x 6" Panel	3	21.047	35.570	0.88	8.55	0.000	0.000	304.25	0.00	0.00	133.62
142.0	72" x 12" Panel	9	21.047	35.570	0.78	64.79	0.000	0.000	2,304.72	0.00	0.00	829.80
142.0	Powerwave LGP21901	3	21.047	35.570	0.50	0.51	0.000	0.000	18.14	0.00	0.00	23.10
142.0	Round T-Arm	3	21.047	35.570	0.67	24.32	0.000	0.000	865.09	0.00	0.00	942.00
142.0	Ericsson RRUS 11(Ban	6	21.047	35.570	0.67	13.43	0.000	0.000	477.59	0.00	0.00	419.40
142.0	Raycap DC6-48-60-18-	1	21.047	35.570	1.00	1.46	0.000	0.000	51.93	0.00	0.00	35.10
142.0	Powerwave LGP21401	6	21.047	35.570	0.50	4.59	0.000	0.000	163.26	0.00	0.00	127.56
150.0	Alcatel-Lucent RRH 2	3	21.379	36.131	0.67	5.03	0.000	0.000	181.56	0.00	0.00	166.20
150.0	Alcatel-Lucent RRH2x	3	21.379	36.131	0.67	5.85	0.000	0.000	211.33	0.00	0.00	225.90
150.0	RFS DB-T1-6Z-8AB-0Z	2	21.379	36.131	0.67	8.35	0.000	0.000	301.63	0.00	0.00	131.20
150.0	Andrew LNX-6514DS-	6	21.379	36.131	0.82	45.46	0.000	0.000	1,642.54	0.00	0.00	535.80
150.0	Andrew HBXX-	6	21.379	36.131	0.80	46.03	0.000	0.000	1,663.18	0.00	0.00	560.40
150.0	Round Low Profile PI	1	21.379	36.131	1.00	27.20	0.000	0.000	982.76	0.00	0.00	1,700.00
150.0	RFS FD9R6004/2C-3L	6	21.379	36.131	0.50	1.50	0.000	0.000	54.20	0.00	0.00	32.40
160.0	Flat Low Profile Pla	1	21.777	36.803	1.00	31.60	0.000	0.000	1,162.99	0.00	0.00	1,700.00
160.0	48" x 12" Panel	9	21.777	36.803	0.76	42.34	0.000	0.000	1,558.24	0.00	0.00	562.50
160.0	72" x 12" Panel	3	21.777	36.803	0.78	21.60	0.000	0.000	794.89	0.00	0.00	276.60
168.0	DragonWave Horizon	2	22.083	37.320	0.50	0.58	0.000	0.000	21.65	0.00	0.00	34.00
168.0	Argus LLPX310R	3	22.083	37.320	0.70	11.26	0.000	0.000	420.07	0.00	0.00	163.50
168.0	DragonWave A-ANT-	2	22.083	37.320	1.00	10.10	0.000	0.000	376.93	0.00	0.00	110.20
168.0	NextNet BTS-2500	3	22.083	37.320	0.67	4.88	0.000	0.000	182.28	0.00	0.00	144.90
168.0	Collar	1	22.083	37.320	1.00	10.50	0.000	0.000	391.86	0.00	0.00	680.00
									18,147.51			13,358.77

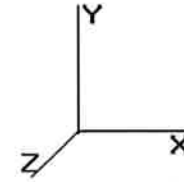


Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Ice

73.61 mph Wind with Ice

20 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	460.31	2,534.25	0.00	0.00
10.00	452.33	2,598.36	0.00	0.00
15.00	444.35	2,556.32	0.00	0.00
20.00	436.37	2,514.27	0.00	0.00
25.00	428.40	2,472.22	0.00	0.00
30.00	420.42	2,430.18	0.00	0.00
35.00	419.43	2,388.13	0.00	0.00
37.00	168.15	943.94	0.00	0.00
40.00	258.90	2,296.18	0.00	0.00
45.00	439.29	3,768.80	0.00	0.00
50.00	443.73	1,885.82	0.00	0.00
55.00	446.75	1,852.25	0.00	0.00
60.00	448.53	1,818.69	0.00	0.00
65.00	449.23	1,785.12	0.00	0.00
70.00	448.95	1,751.56	0.00	0.00
75.00	447.80	1,717.99	0.00	0.00
80.00	451.99	2,778.27	0.00	0.00
82.00	179.18	1,095.25	0.00	0.00
85.00	268.41	893.76	0.00	0.00
90.00	446.21	1,465.37	0.00	0.00
95.00	442.36	1,436.05	0.00	0.00
100.0	437.94	1,406.73	0.00	0.00
105.0	432.98	1,377.40	0.00	0.00
110.0	427.52	1,348.08	0.00	0.00
114.2	358.41	1,123.06	0.00	0.00
115.0	63.53	334.21	0.00	0.00
120.0	1,069.52	2,654.29	0.00	477.08
125.0	415.38	1,247.61	0.00	0.00
130.0	3,699.37	4,529.49	0.00	0.00
135.0	400.75	1,183.96	0.00	0.00
140.0	392.88	1,154.64	0.00	0.00
142.0	4,417.27	3,018.69	0.00	0.00
145.0	229.33	611.42	0.00	0.00
150.0	5,413.31	4,346.69	0.00	0.00
155.0	367.24	898.97	0.00	0.00
160.0	3,874.17	3,408.75	0.00	0.00
165.0	282.95	689.61	0.00	0.00
168.0	1,563.44	1,546.37	0.00	0.00
170.0	114.15	274.77	0.00	0.00
<b>Totals:</b>	<b>32,361.23</b>	<b>74,137.52</b>	<b>0.00</b>	<b>477.08</b>



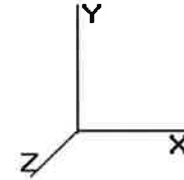


Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case: Twist/Sway**

50.00 mph Wind with No Ice

19 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

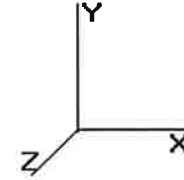
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	300.54	0.650	0.000	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	295.30	0.650	0.000	5.00	29.792	19.36	209.5	0.0	2,154.8
10.00		0.00	1.00	6.400	10.81	290.06	0.650	0.000	5.00	29.269	19.02	205.8	0.0	2,116.6
15.00		0.00	1.00	6.400	10.81	284.83	0.650	0.000	5.00	28.745	18.68	202.1	0.0	2,078.4
20.00		0.00	1.00	6.400	10.81	279.59	0.650	0.000	5.00	28.221	18.34	198.4	0.0	2,040.3
25.00		0.00	1.00	6.400	10.81	274.36	0.650	0.000	5.00	27.698	18.00	194.7	0.0	2,002.1
30.00		0.00	1.00	6.400	10.81	269.12	0.650	0.000	5.00	27.174	17.66	191.0	0.0	1,963.9
35.00		0.00	1.01	6.509	10.99	266.11	0.650	0.000	5.00	26.651	17.32	190.5	0.0	1,925.8
37.00	Bot - Section 2	0.00	1.03	6.613	11.17	266.10	0.650	0.000	2.00	10.514	6.83	76.4	0.0	759.6
40.00		0.00	1.05	6.762	11.42	265.86	0.650	0.000	3.00	15.832	10.29	117.6	0.0	2,019.5
45.00	Top - Section 1	0.00	1.09	6.993	11.81	264.89	0.650	0.000	5.00	25.968	16.88	199.5	0.0	3,311.5
50.00		0.00	1.12	7.207	12.17	267.22	0.650	0.000	5.00	25.445	16.54	201.4	0.0	1,432.4
55.00		0.00	1.15	7.406	12.51	265.26	0.650	0.000	5.00	24.921	16.20	202.7	0.0	1,402.7
60.00		0.00	1.18	7.592	12.83	262.87	0.650	0.000	5.00	24.397	15.86	203.5	0.0	1,373.0
65.00		0.00	1.21	7.768	13.12	260.13	0.650	0.000	5.00	23.874	15.52	203.7	0.0	1,343.3
70.00		0.00	1.24	7.934	13.40	257.07	0.650	0.000	5.00	23.350	15.18	203.5	0.0	1,313.6
75.00	Bot - Section 3	0.00	1.26	8.092	13.67	253.72	0.650	0.000	5.00	22.827	14.84	202.9	0.0	1,283.9
80.00		0.00	1.28	8.242	13.93	250.13	0.650	0.000	5.00	22.616	14.70	204.8	0.0	2,345.8
82.00	Top - Section 2	0.00	1.29	8.301	14.02	248.63	0.650	0.000	2.00	8.900	5.78	81.2	0.0	922.9
85.00		0.00	1.31	8.387	14.17	249.89	0.650	0.000	3.00	13.192	8.58	121.5	0.0	636.6
90.00		0.00	1.33	8.525	14.40	245.90	0.650	0.000	5.00	21.568	14.02	202.0	0.0	1,040.6
95.00		0.00	1.35	8.657	14.63	241.72	0.650	0.000	5.00	21.045	13.68	200.1	0.0	1,015.2
100.00		0.00	1.37	8.785	14.84	237.36	0.650	0.000	5.00	20.521	13.34	198.0	0.0	989.7
105.00		0.00	1.39	8.908	15.05	232.84	0.650	0.000	5.00	19.998	13.00	195.7	0.0	964.3
110.00		0.00	1.41	9.028	15.25	228.18	0.650	0.000	5.00	19.474	12.66	193.1	0.0	938.9
114.2	Bot - Section 4	0.00	1.42	9.126	15.42	224.10	0.650	0.000	4.25	16.141	10.49	161.8	0.0	778.0
115.00		0.00	1.42	9.143	15.45	223.37	0.650	0.000	0.75	2.856	1.86	28.7	0.0	273.1
120.00	Top - Section 3	0.00	1.44	9.255	15.64	218.44	0.650	0.000	5.00	18.740	12.18	190.5	0.0	1,791.1
125.00		0.00	1.46	9.363	15.82	217.16	0.650	0.000	5.00	18.216	11.84	187.4	0.0	877.7
130.00	Appertunance(s)	0.00	1.48	9.469	16.00	212.01	0.650	0.000	5.00	17.692	11.50	184.0	0.0	852.3
135.00		0.00	1.49	9.572	16.17	206.76	0.650	0.000	5.00	17.169	11.16	180.5	0.0	826.8
140.00		0.00	1.51	9.672	16.34	201.40	0.650	0.000	5.00	16.645	10.82	176.8	0.0	801.4
142.00	Appertunance(s)	0.00	1.51	9.711	16.41	199.23	0.650	0.000	2.00	6.511	4.23	69.5	0.0	313.4
145.00		0.00	1.52	9.769	16.51	195.94	0.650	0.000	3.00	9.610	6.25	103.1	0.0	462.5
150.00	Appertunance(s)	0.00	1.54	9.864	16.67	190.39	0.650	0.000	5.00	15.598	10.14	169.0	0.0	750.5
155.00		0.00	1.55	9.957	16.82	184.76	0.650	0.000	5.00	15.074	9.80	164.9	0.0	725.0
160.00	Top - Section 4	0.00	1.57	10.048	16.98	179.04	0.650	0.000	5.00	14.551	9.46	160.6	0.0	699.6
165.00		0.00	1.58	10.136	17.13	157.31	0.590	0.000	5.00	12.500	7.37	126.3	0.0	593.8
168.00	Appertunance(s)	0.00	1.59	10.189	17.21	157.71	0.590	0.000	3.00	7.500	4.42	76.2	0.0	356.3
170.00		0.00	1.59	10.223	17.27	157.98	0.590	0.000	2.00	5.000	2.95	51.0	0.0	237.5
							Totals:	170.00			6,430.1	0.0	47,714.3	

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Twist/Sway      **50.00 mph Wind with No Ice**      **19 Iterations**

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

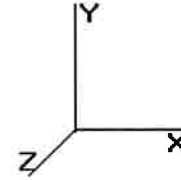
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	Flush Mounts	3	9.255	15.641	0.67	4.02	0.000	0.000	62.88	0.00	0.00	195.00
120.0	RFS APXV18-206517S-	3	9.277	15.678	0.80	12.41	0.000	1.000	194.53	0.00	194.53	79.20
130.0	Round Low Profile Pl	1	9.469	16.003	1.00	21.70	0.000	0.000	347.25	0.00	0.00	1,500.00
130.0	RFS APXVSP18-C-	2	9.469	16.003	0.82	13.55	0.000	0.000	216.78	0.00	0.00	114.00
130.0	RFS APXV9ERR18-C-	1	9.469	16.003	0.85	7.02	0.000	0.000	112.35	0.00	0.00	62.00
130.0	Alcatel-Lucent 800 M	3	9.469	16.003	0.67	5.85	0.000	0.000	93.60	0.00	0.00	185.40
130.0	Alcatel-Lucent 4X40W	6	9.469	16.003	0.67	10.89	0.000	0.000	174.34	0.00	0.00	357.00
130.0	Alcatel-Lucent TD-RR	3	9.469	16.003	0.67	8.64	0.000	0.000	138.31	0.00	0.00	198.30
130.0	RFS APXVTM14-C-I20	3	9.469	16.003	0.76	15.73	0.000	0.000	251.75	0.00	0.00	168.60
142.0	14" x 9" TTA	3	9.711	16.411	0.50	1.85	0.000	0.000	30.28	0.00	0.00	30.00
142.0	36" x 8" x 6" Panel	3	9.711	16.411	0.88	7.39	0.000	0.000	121.31	0.00	0.00	75.00
142.0	72" x 12" Panel	9	9.711	16.411	0.78	58.97	0.000	0.000	967.75	0.00	0.00	405.00
142.0	Powerwave LGP21901	3	9.711	16.411	0.50	0.34	0.000	0.000	5.66	0.00	0.00	16.50
142.0	Round T-Arm	3	9.711	16.411	0.67	19.50	0.000	0.000	319.97	0.00	0.00	750.00
142.0	Ericsson RRUS 11(Ban	6	9.711	16.411	0.67	12.02	0.000	0.000	197.26	0.00	0.00	300.00
142.0	Raycap DC6-48-60-18-	1	9.711	16.411	1.00	1.27	0.000	0.000	20.84	0.00	0.00	20.00
142.0	Powerwave LGP21401	6	9.711	16.411	0.50	3.87	0.000	0.000	63.51	0.00	0.00	84.60
150.0	Alcatel-Lucent RRH 2	3	9.864	16.670	0.67	4.40	0.000	0.000	73.38	0.00	0.00	132.00
150.0	Alcatel-Lucent RRH2x	3	9.864	16.670	0.67	5.17	0.000	0.000	86.11	0.00	0.00	165.00
150.0	RFS DB-T1-6Z-8AB-0Z	2	9.864	16.670	0.67	7.50	0.000	0.000	125.09	0.00	0.00	88.00
150.0	Andrew LNX-6514DS-	6	9.864	16.670	0.82	41.38	0.000	0.000	689.77	0.00	0.00	232.80
150.0	Andrew HBXX-	6	9.864	16.670	0.80	41.95	0.000	0.000	699.36	0.00	0.00	258.00
150.0	Round Low Profile Pl	1	9.864	16.670	1.00	21.70	0.000	0.000	361.75	0.00	0.00	1,500.00
150.0	RFS FD9R6004/2C-3L	6	9.864	16.670	0.50	1.11	0.000	0.000	18.50	0.00	0.00	15.60
160.0	Flat Low Profile Pla	1	10.048	16.981	1.00	26.10	0.000	0.000	443.19	0.00	0.00	1,500.00
160.0	48" x 12" Panel	9	10.048	16.981	0.76	38.30	0.000	0.000	650.43	0.00	0.00	270.00
160.0	72" x 12" Panel	3	10.048	16.981	0.78	19.66	0.000	0.000	333.77	0.00	0.00	135.00
168.0	DragonWave Horizon	2	10.189	17.219	0.50	0.43	0.000	0.000	7.40	0.00	0.00	21.20
168.0	Argus LLPX310R	3	10.189	17.219	0.70	10.12	0.000	0.000	174.29	0.00	0.00	85.80
168.0	DragonWave A-ANT-	2	10.189	17.219	1.00	9.38	0.000	0.000	161.51	0.00	0.00	54.20
168.0	NextNet BTS-2500	3	10.189	17.219	0.67	4.26	0.000	0.000	73.37	0.00	0.00	105.00
168.0	Collar	1	10.189	17.219	1.00	8.50	0.000	0.000	146.36	0.00	0.00	560.00
									<b>7,362.68</b>			<b>9,663.20</b>

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

19 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

### Applied Segment Forces Summary

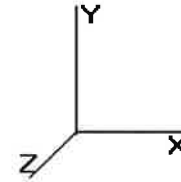
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	209.45	2,314.01	0.00	0.00
10.00	205.77	2,382.00	0.00	0.00
15.00	202.09	2,343.83	0.00	0.00
20.00	198.41	2,305.67	0.00	0.00
25.00	194.73	2,267.50	0.00	0.00
30.00	191.05	2,229.33	0.00	0.00
35.00	190.54	2,191.16	0.00	0.00
37.00	76.37	865.78	0.00	0.00
40.00	117.60	2,178.70	0.00	0.00
45.00	199.48	3,576.88	0.00	0.00
50.00	201.43	1,697.78	0.00	0.00
55.00	202.74	1,668.09	0.00	0.00
60.00	203.47	1,638.40	0.00	0.00
65.00	203.71	1,608.72	0.00	0.00
70.00	203.51	1,579.03	0.00	0.00
75.00	202.91	1,549.34	0.00	0.00
80.00	204.77	2,611.18	0.00	0.00
82.00	81.15	1,029.04	0.00	0.00
85.00	121.54	795.84	0.00	0.00
90.00	201.97	1,306.04	0.00	0.00
95.00	200.14	1,280.59	0.00	0.00
100.0	198.04	1,255.15	0.00	0.00
105.0	195.70	1,229.70	0.00	0.00
110.0	193.12	1,204.25	0.00	0.00
114.2	161.82	1,003.61	0.00	0.00
115.0	28.69	312.87	0.00	0.00
120.0	447.92	2,330.71	0.00	194.53
125.0	187.36	1,113.10	0.00	0.00
130.0	1,518.41	3,672.96	0.00	0.00
135.0	180.52	1,057.21	0.00	0.00
140.0	176.84	1,031.77	0.00	0.00
142.0	1,796.05	2,086.68	0.00	0.00
145.0	103.13	540.02	0.00	0.00
150.0	2,222.99	3,271.07	0.00	0.00
155.0	164.88	787.73	0.00	0.00
160.0	1,588.00	2,667.28	0.00	0.00
165.0	126.34	596.50	0.00	0.00
168.0	639.14	1,184.10	0.00	0.00
170.0	50.97	237.52	0.00	0.00
<b>Totals:</b>	<b>13,792.73</b>	<b>65,001.14</b>	<b>0.00</b>	<b>194.53</b>

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

19 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

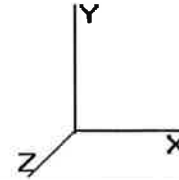
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-13.808	-64.998	0.000	0.000	0.000	-1,649.428	0.000	0.000	0.000	0.000
5.00	-13.628	-62.677	0.000	0.000	0.000	-1,580.390	-0.015	0.000	0.015	-0.028
10.00	-13.451	-60.289	0.000	0.000	0.000	-1,512.249	-0.059	0.000	0.059	-0.056
15.00	-13.274	-57.938	0.000	0.000	0.000	-1,444.997	-0.133	0.000	0.133	-0.084
20.00	-13.100	-55.627	0.000	0.000	0.000	-1,378.627	-0.237	0.000	0.237	-0.113
25.00	-12.927	-53.353	0.000	0.000	0.000	-1,313.129	-0.371	0.000	0.371	-0.142
30.00	-12.756	-51.118	0.000	0.000	0.000	-1,248.495	-0.535	0.000	0.535	-0.171
35.00	-12.576	-48.923	0.000	0.000	0.000	-1,184.717	-0.729	0.000	0.729	-0.200
37.00	-12.509	-48.054	0.000	0.000	0.000	-1,159.566	-0.816	0.000	0.816	-0.212
40.00	-12.402	-45.871	0.000	0.000	0.000	-1,122.041	-0.955	0.000	0.955	-0.230
45.00	-12.209	-42.288	0.000	0.000	0.000	-1,060.033	-1.211	0.000	1.211	-0.259
50.00	-12.023	-40.584	0.000	0.000	0.000	-998.989	-1.499	0.000	1.499	-0.289
55.00	-11.836	-38.910	0.000	0.000	0.000	-938.876	-1.821	0.000	1.821	-0.325
60.00	-11.646	-37.265	0.000	0.000	0.000	-879.698	-2.181	0.000	2.181	-0.362
65.00	-11.454	-35.651	0.000	0.000	0.000	-821.468	-2.580	0.000	2.580	-0.398
70.00	-11.261	-34.066	0.000	0.000	0.000	-764.197	-3.016	0.000	3.016	-0.434
75.00	-11.066	-32.512	0.000	0.000	0.000	-707.893	-3.491	0.000	3.491	-0.470
80.00	-10.852	-29.898	0.000	0.000	0.000	-652.564	-4.002	0.000	4.002	-0.506
82.00	-10.771	-28.866	0.000	0.000	0.000	-630.861	-4.217	0.000	4.217	-0.520
85.00	-10.657	-28.066	0.000	0.000	0.000	-598.549	-4.551	0.000	4.551	-0.541
90.00	-10.460	-26.755	0.000	0.000	0.000	-545.268	-5.139	0.000	5.139	-0.580
95.00	-10.262	-25.470	0.000	0.000	0.000	-492.971	-5.767	0.000	5.767	-0.617
100.0	-10.066	-24.211	0.000	0.000	0.000	-441.659	-6.433	0.000	6.433	-0.654
105.0	-9.869	-22.977	0.000	0.000	0.000	-391.332	-7.137	0.000	7.137	-0.689
110.0	-9.673	-21.771	0.000	0.000	0.000	-341.986	-7.877	0.000	7.877	-0.722
114.2	-9.504	-20.767	0.000	0.000	0.000	-300.877	-8.533	0.000	8.533	-0.749
115.0	-9.477	-20.451	0.000	0.000	0.000	-293.749	-8.651	0.000	8.651	-0.754
120.0	-9.007	-18.122	0.000	0.000	0.000	-246.169	-9.457	0.000	9.457	-0.783
125.0	-8.811	-17.008	0.000	0.000	0.000	-201.135	-10.292	0.000	10.292	-0.809
130.0	-7.245	-13.355	0.000	0.000	0.000	-157.080	-11.152	0.000	11.152	-0.831
135.0	-7.053	-12.298	0.000	0.000	0.000	-120.855	-12.033	0.000	12.033	-0.849
140.0	-6.862	-11.268	0.000	0.000	0.000	-85.593	-12.931	0.000	12.931	-0.864
142.0	-5.036	-9.209	0.000	0.000	0.000	-71.868	-13.295	0.000	13.295	-0.869
145.0	-4.926	-8.670	0.000	0.000	0.000	-56.761	-13.843	0.000	13.843	-0.876
150.0	-2.653	-5.433	0.000	0.000	0.000	-32.133	-14.765	0.000	14.765	-0.884
155.0	-2.477	-4.647	0.000	0.000	0.000	-18.866	-15.694	0.000	15.694	-0.889
160.0	-0.848	-2.005	0.000	0.000	0.000	-6.483	-16.626	0.000	16.626	-0.891
165.0	-0.712	-1.411	0.000	0.000	0.000	-2.245	-17.561	0.000	17.561	-0.893
168.0	-0.055	-0.237	0.000	0.000	0.000	-0.109	-18.122	0.000	18.122	-0.893
170.0	-0.051	0.000	0.000	0.000	0.000	0.000	-18.496	0.000	18.496	-0.893

Pole : 302529  
 Location : Vernon CT 6, CT  
 Height : 170.0 (ft)  
 Base Dia : 72.13 (in)  
 Top Dia : 30.00 (in)  
 Shape : 18 Sides. Sect 5: Round  
 Taper : 0.251317 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

19 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.51	0.22	0.00	0.00	0.00	8.77	9.28	52.0	0.0	0.179
5.00	0.50	0.22	0.00	0.00	0.00	8.70	9.21	52.0	0.0	0.177
10.00	0.49	0.22	0.00	0.00	0.00	8.64	9.13	52.0	0.0	0.176
15.00	0.48	0.22	0.00	0.00	0.00	8.56	9.05	52.0	0.0	0.174
20.00	0.47	0.22	0.00	0.00	0.00	8.48	8.96	52.0	0.0	0.172
25.00	0.46	0.22	0.00	0.00	0.00	8.39	8.86	52.0	0.0	0.170
30.00	0.45	0.22	0.00	0.00	0.00	8.30	8.75	52.0	0.0	0.168
35.00	0.44	0.23	0.00	0.00	0.00	8.19	8.64	52.0	0.0	0.166
37.00	0.43	0.23	0.00	0.00	0.00	8.15	8.59	52.0	0.0	0.165
40.00	0.42	0.23	0.00	0.00	0.00	8.08	8.51	52.0	0.0	0.164
45.00	0.50	0.29	0.00	0.00	0.00	9.88	10.39	52.0	0.0	0.200
50.00	0.49	0.29	0.00	0.00	0.00	9.71	10.21	52.0	0.0	0.196
55.00	0.48	0.29	0.00	0.00	0.00	9.52	10.01	52.0	0.0	0.193
60.00	0.47	0.29	0.00	0.00	0.00	9.31	9.79	52.0	0.0	0.188
65.00	0.46	0.30	0.00	0.00	0.00	9.09	9.56	52.0	0.0	0.184
70.00	0.45	0.30	0.00	0.00	0.00	8.85	9.31	52.0	0.0	0.179
75.00	0.44	0.30	0.00	0.00	0.00	8.59	9.04	52.0	0.0	0.174
80.00	0.41	0.30	0.00	0.00	0.00	8.30	8.73	52.0	0.0	0.168
82.00	0.46	0.35	0.00	0.00	0.00	9.24	9.72	52.0	0.0	0.187
85.00	0.45	0.35	0.00	0.00	0.00	9.03	9.50	52.0	0.0	0.183
90.00	0.44	0.35	0.00	0.00	0.00	8.64	9.10	52.0	0.0	0.175
95.00	0.43	0.35	0.00	0.00	0.00	8.21	8.67	52.0	0.0	0.167
100.00	0.42	0.35	0.00	0.00	0.00	7.75	8.19	52.0	0.0	0.158
105.00	0.41	0.36	0.00	0.00	0.00	7.24	7.67	52.0	0.0	0.148
110.00	0.40	0.36	0.00	0.00	0.00	6.68	7.11	52.0	0.0	0.137
114.25	0.39	0.36	0.00	0.00	0.00	6.16	6.58	52.0	0.0	0.127
115.00	0.39	0.36	0.00	0.00	0.00	6.07	6.48	52.0	0.0	0.125
120.00	0.35	0.35	0.00	0.00	0.00	5.20	5.58	52.0	0.0	0.107
125.00	0.33	0.35	0.00	0.00	0.00	4.51	4.88	52.0	0.0	0.094
130.00	0.27	0.30	0.00	0.00	0.00	3.74	4.04	52.0	0.0	0.078
135.00	0.26	0.30	0.00	0.00	0.00	3.06	3.35	52.0	0.0	0.065
140.00	0.24	0.30	0.00	0.00	0.00	2.31	2.60	52.0	0.0	0.050
142.00	0.20	0.22	0.00	0.00	0.00	1.99	2.22	52.0	0.0	0.043
145.00	0.19	0.22	0.00	0.00	0.00	1.64	1.87	52.0	0.0	0.036
150.00	0.13	0.12	0.00	0.00	0.00	0.99	1.14	52.0	0.0	0.022
155.00	0.11	0.12	0.00	0.00	0.00	0.62	0.76	52.0	0.0	0.015
160.00	0.05	0.04	0.00	0.00	0.00	0.23	0.29	52.0	0.0	0.006
160.00	0.06	0.05	0.00	0.00	0.00	0.30	0.37	28.0	0.0	0.013
165.00	0.04	0.04	0.00	0.00	0.00	0.11	0.16	28.0	0.0	0.006
168.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	28.0	0.0	0.000
170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	28.0	0.0	0.000

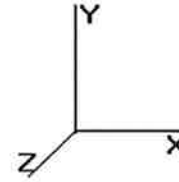


**Pole :** 302529  
**Location :** Vernon CT 6, CT  
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**Shape :** 18 Sides. Sect 5: Round  
**Taper :** 0.251317 (in/ft)

**Code:** TIA/EIA-222 Rev F

**Base Elev :** 0.000 (ft)

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**Analysis Summary**

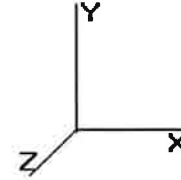
Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	39.9	0.00	64.97	0.00	0.00	4765.83	29.07	52.0	45.00	0.559
Ice	32.4	0.00	74.12	0.00	0.00	3945.53	24.42	52.0	45.00	0.470
Twist/Sway	13.8	0.00	65.00	0.00	0.00	1649.43	10.39	52.0	45.00	0.200

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## Base Summary

### Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
8,100.00	72.00	61.00	4,765.83	74.12	39.91	58.84

### Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Moment (kip-in)	Allow Stress (ksi)	Applied Stress (ksi)	Stress Ratio
55.0	3.250	81.000	Clipped	0	18.00	8.176	412.30	55.00	28.65	0.52

### Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Cluster Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
80.00	28	2.25" 18J	2.25	75.00	100.00	Clustered	6.00	45.0	104.77	195.00	0.54	99.48	195.00	0.51