Robinson+Cole

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Also admitted in Massachusetts

August 10, 2015

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

Re: **Notice of Exempt Modification – Facility Modification**
10 Tanner Marsh Road, Guilford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the top of the existing 150-foot tower at 10 Tanner Marsh Road in Guilford, Connecticut (the "Property"). The tower is owned by IWG Tower Assets I LLC, ("IWG"). The Council approved Cellco's use of this tower in 2013. Cellco now intends to replace 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) model HBXX-6517DS-VTM, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to install three (3) remote radio heads ("RRHs") and one (1) HYBRIFLEX™ fiber optic antenna cable. 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 Joseph S. Mazza, First Selectman of the Town of Guilford. The Town of Guilford is the owner of the Property. A copy of this letter is also being sent IWG, the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRH's will be located on its existing platform at the 150-foot level on the 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 worst-case 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* Tower 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:
Joseph S. Mazza, Guilford First Selectman
IWG Tower Assets I LLC
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

LNX-6514DS-VTM

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

POWERED BY ANDREW.

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

Product Specifications

COMMSCOPE®

POWERED BY ANDREW.

HBXX-6517DS-VTM

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

- Superior azimuth tracking and pattern symmetry with excellent passive intermodulation suppression

Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain, dBi	19.0	19.1	19.2
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	18	18
Front-to-Back Ratio at 180°, dB	30	30	30
CPR at Boresight, dB	21	22	21
CPR at Sector, dB	10	11	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°
Impedance	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

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 Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
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

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® quad
Band	Single band
Brand	DualPol® | Teletilt®
Operating Frequency Band	1710 – 2180 MHz

Product Specifications

HBXX-6517DS-VTM

Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Low loss circuit board
Radome Material	PVC, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	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

Dimensions

Depth	166.0 mm | 6.5 in
Length	1903.0 mm | 74.9 in
Width	305.0 mm | 12.0 in
Net Weight	19.5 kg | 43.0 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator	HBXX-6517DS-A2M
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

600899A-2 — Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

	RRH2x60
RF Output Power	2x60W
Instantaneous Bandwidth	20MHz
Transmitter	2 TX
Receiver 1900 HW version 1900A HW version	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3
Features	AISG 2.0 for RET/TMA
	Internal Smart Bias-T
Power	-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)

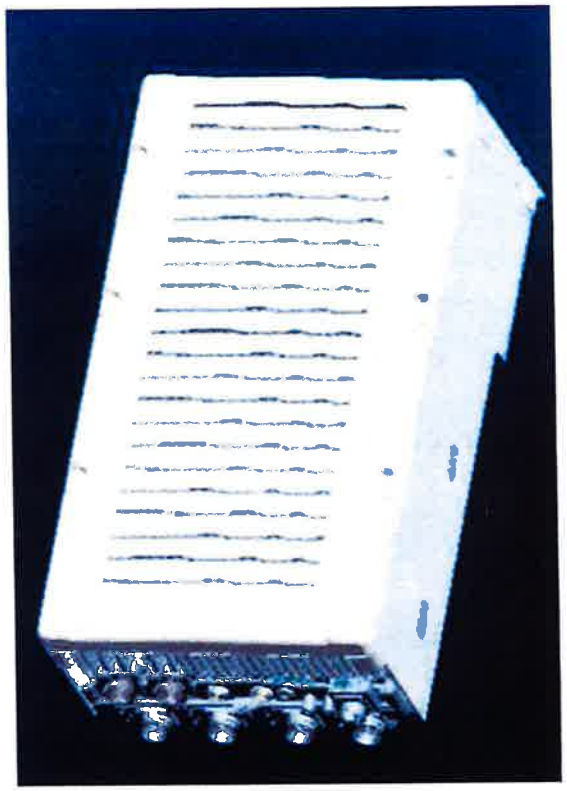
** Not a Verizon Wireless deployed product

Alcatel·Lucent

NEW PCS RF MODULES FOR VZW
RRH2X60 - HW CHARACTERISTICS

LR14.3

	RRH2x60
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

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 CELLFLEX² 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)

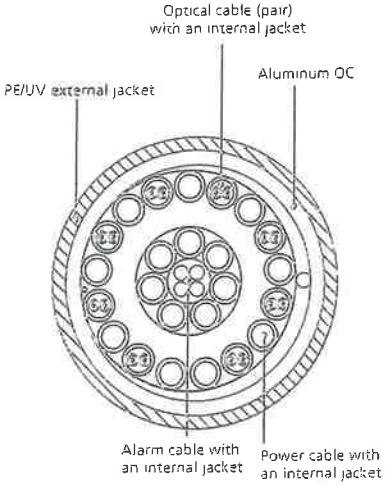


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Guilford 3								
Tower Height: 150Ft.								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Sprint CDMA/LTE	2	693	140	0.0254	1900	1.0000	2.54%	
*Sprint CDMA/LTE	1	390	140	0.0072	850	0.5667	1.26%	
*Sprint CDMA/LTE	1	780	140	0.0143	2500	1.0000	1.43%	
*TCI	1	1	90	0.0000	444.5	0.2963	0.01%	
Verizon PCS	**1**	**4190**	**150**	**0.0670**	**1970**	**1.0000**	**6.70%**	
Verizon Cellular	**9**	**331**	**150**	**0.0476**	**869**	**0.5793**	**8.22%**	
Verizon AWS	**1**	**5623**	**150**	**0.0899**	**2145**	**1.0000**	**8.99%**	
Verizon 700	**1**	**1344**	**150**	**0.0215**	**746**	**0.4973**	**4.32%**	
								33.47%
* Source: Siting Council								

ATTACHMENT 3

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Tower Analysis Report

July 8, 2015

Site Name	CT702 Guilford
Infinigy Job Number	337-000
Client	InSite Wireless
Proposed Carrier	Verizon
Site Location	10 Tanner Marsh Rd. Guilford, CT 06437 41° 17' 19.95" N NAD83 72° 39' 29.80" W NAD83
Structure Type	150' Monopole
Structural Usage Ratio	**87.8%**
Overall Result	**Pass**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower and foundations are therefore deemed adequate to support the existing and proposed loading as listed in this report.

Aaron Estabrooks
Structural Engineer I

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Calculations..... Appended

Introduction

Infinigy Engineering has been requested to perform a structural analysis on the existing 150' Monopole Tower. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The tower was analyzed using tnxTower version 6.1.3.1 tower analysis software.

Supporting Documentation

Antenna Loading	CT702 Guilford – Verizon 1st AMD Exhibit A, dated 6/22/2015
Previous Analysis	FDH Engineering Project # 1426101400, dated 4/8/2014

Analysis Code Requirements

Wind Speed	85 mph (Fastest Mile)
Wind Speed w/ ice	50 mph (Fastest Mile) w/ 3/4" ice
TIA Revision	ANSI/TIA/EIA-222-F
Adopted IBC	2003 IBC / 2005 CT Supplement / 2013 CT Amendment
Structure Class	2
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower and foundations are therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Aaron Estabrooks
Structural Engineer I | **INFINIGY**
1033 Watervliet Shaker Road, Albany, NY 12205
(O) (518) 690-0790 | (M) (518) 944-4097
aestabrooks@infinigy.com | www.infinigy.com

Existing and Reserved Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
150.0	6	Antel BXA-70063/6CF	Platform w/ Handrails	(18) 1-5/8" (1) 1-5/8" Fiber	Verizon
	6	Antel BXA-171063-12CF			
	3	Alcatel Lucent RRH 2x40-AWS			
	3	Alcatel Lucent RRH 2x40 LTE			
	3	Alcatel Lucent RRH 2x60-AWS			
	3	Alcatel Lucent RRH 2x60 LTE			
	1	RFS DB-T1-6Z-8AB-0Z			
140.0	3	RFS APXVTM14-C-120	Platform w/ Handrails	(3) 1-1/4" (1) .7"	Sprint
	3	RFS APXVSPP18-C-A20			
	3	Alcatel Lucent 800 MHz RRH			
	3	Alcatel Lucent TD-RRH8x20-25			
	3	Alcatel Lucent 1900 MHz RRH			
	3	Alcatel Lucent 800 MHz 2x50W External Notch Filter			

To Be Removed Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
150.0	6	Antel BXA-70063/6CF	--	(12) 1-5/8"	Verizon
	6	Antel BXA-171063-12CF			
	3	Alcatel Lucent RRH 2x40-AWS			
	3	Alcatel Lucent RRH 2x40 LTE			

Proposed Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
150.0	6	Andrew LNX-6514DS-A1M	--	(1) 1-5/8" Fiber	Verizon
	6	Commscope HBXX-6517DS-A2M			
	3	Alcatel Lucent 2x60-PCS			
	1	RFS DB-T1-6Z-8AB-OZ			

Final Configuration

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
150.0	6	Andrew LNX-6516DS-A1M	Platform w/ Handrails	(2) 1-5/8" Fiber (6) 1-5/8"	Verizon
	6	Commscope HBXX-6517DS-A2M			
	3	Alcatel Lucent 2x60 AWS			
	3	Alcatel Lucent 2x60 LTE			
	3	Alcatel Lucent 2x60-PCS			
	2	RFS DB-T1-6Z-8AB-OZ			
140.0	3	RFS APXVTM14-C-120	Platform w/ Handrails	(3) 1-1/4" (1) .7"	Sprint
	3	RFS APXVSPP18-C-A20			
	3	Alcatel Lucent 800 MHz RRH			
	3	Alcatel Lucent TD-RRH8x20-25			
	3	Alcatel Lucent 1900 MHz RRH			
	3	Alcatel Lucent 800 MHz 2x50W External Notch Filter			

Structure Usages

Pole (L1)	87.8	Pass
Base Bolts	72.7	Pass
RATING =	**87.8**	**Pass**

Foundation Reactions

Reaction Data	Design Reactions (Rev-G)	Design Reactions / 1.35	Analysis Reactions (Rev-F)	Result
Axial (k)	44.0	32.6	29.9	91.7 %
Shear (k)	49.0	36.3	25.7	70.8 %
Moment (k-ft)	5150.0	3814.8	2882.9	75.6 %

*** Design reactions are multiplied by 1.35 per ANSI/TIA-222-G 15.5.1**

Tower base reactions are acceptable when compared to the allowable reactions listed in the previous analysis by Sabre Industries. These reactions are assumed to be accurate and applicable to the site.

Deflection, Twist, and Sway

Antenna Elevation (ft)	Deflection (in)	Twist (°)	Sway (°)
150.0	27.4	0.07	2.00

*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.
*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.
*Per ANSI/TIA-222-G Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.
*It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-G Annex D or other appropriate microwave signal degradation limits based on the provided values above.

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the tower structure only and does not reflect adequacy of any existing antenna mounts, mount connections, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

Section	1	2	3	4
Length (ft)	37.00	26.00	50.00	53.00
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.3750
Socket Length (ft)	4.25	5.00	6.75	
Top Dia (in)	20.0000	28.9012	34.3529	45.9824
Bot Dia (in)	30.4800	36.2700	48.5200	61.0000
Grade	A572-65			
Weight (lb)	1877.1	2270.1	6940.0	11401.9

Total Weight: 22489.0

AXIAL
39890 lb

SHEAR
9528 lb

MOMENT
1112903 lb-ft

TORQUE 6293 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL
30474 lb

SHEAR
25048 lb

MOMENT
2790319 lb-ft

TORQUE 14672 lb-ft
REACTIONS - 85 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) LNX-6514DS-A1M (Verizon)	150	Lightning Rod	150
(2) LNX-6514DS-A1M (Verizon)	150	APXVSPP18-C-A20 (Sprint)	140
(2) LNX-6514DS-A1M (Verizon)	150	APXVSPP18-C-A20 (Sprint)	140
(2) HBXX-6517DS-A2M (Verizon)	150	APXVSPP18-C-A20 (Sprint)	140
(2) HBXX-6517DS-A2M (Verizon)	150	1900MHz RRH (Sprint)	140
(2) HBXX-6517DS-A2M (Verizon)	150	1900MHz RRH (Sprint)	140
RRH2x60-AWS (Verizon)	150	1900MHz RRH (Sprint)	140
RRH2x60-AWS (Verizon)	150	TD-RRH8X20 (Sprint)	140
RRH2x60-AWS (Verizon)	150	TD-RRH8X20 (Sprint)	140
2x60 LTE (Verizon)	150	TD-RRH8X20 (Sprint)	140
2x60 LTE (Verizon)	150	800 MHz w/ Notch Filter (Sprint)	140
2x60 LTE (Verizon)	150	800 MHz w/ Notch Filter (Sprint)	140
2x60-PCS (Verizon)	150	800 MHz w/ Notch Filter (Sprint)	140
2x60-PCS (Verizon)	150	Angle Platform w/ Handrails (Sprint)	140
2x60-PCS (Verizon)	150	APXVTM14-C-120 (Sprint)	140
DB-T1-6Z-8AB-OZ (Verizon)	150	APXVTM14-C-120 (Sprint)	140
DB-T1-6Z-8AB-OZ (Verizon)	150	APXVTM14-C-120 (Sprint)	140
Angle Platform w/ Handrails (Verizon)	150		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven 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 50 mph basic wind with 0.75 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 87.8%

Infinigy Solutions, LLC
1033 Watervliet Shaker Road
Albany, NY 12205
Phone: (518) 690-0790
FAX: (518) 690-0793

Job:	CT702 Guilford		
Project:	337-000		
Client:	InSite	Drawn by: ATE	App'd:
Code:	TIA/EIA-222-F	Date: 07/08/15	Scale: N
Path:			Dwg No.

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-113.00	37.00	4.25	18	20.0000	30.4800	0.1875	0.7500	A572-65 (65 ksi)
L2	113.00-91.25	26.00	5.00	18	28.9012	36.2700	0.2500	1.0000	A572-65 (65 ksi)
L3	91.25-46.25	50.00	6.75	18	34.3529	48.5200	0.3125	1.2500	A572-65 (65 ksi)
L4	46.25-0.00	53.00		18	45.9824	61.0000	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	20.3085	11.7909	584.7409	7.0334	10.1600	57.5532	1170.2512	5.8966	3.1900	17.013
	30.9502	18.0278	2090.0227	10.7538	15.4838	134.9809	4182.7954	9.0156	5.0345	26.851
L2	30.5702	22.7347	2357.8358	10.1712	14.6818	160.5956	4718.7741	11.3695	4.6466	18.586
	36.8295	28.5819	4685.0638	12.7871	18.4252	254.2753	9376.2923	14.2937	5.9435	23.774
L3	36.3214	33.7638	4942.8719	12.0844	17.4513	283.2383	9892.2477	16.8851	5.4961	17.588
	49.2685	47.8158	14039.0663	17.1137	24.6482	569.5787	28096.6055	23.9125	7.9895	25.566
L4	48.6339	54.2843	14265.3644	16.1906	23.3591	610.6988	28549.4995	27.1473	7.4329	19.821
	61.9410	72.1589	33506.6412	21.5219	30.9880	1081.2780	67057.3713	36.0863	10.0760	26.869

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 150.00-113.00				1	1	1		
L2 113.00-91.25				1	1	1		
L3 91.25-46.25				1	1	1		
L4 46.25-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 5/8 (Verizon)	A	No	Inside Pole	150.00 - 5.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1 1/4 (Sprint)	A	No	Inside Pole	140.00 - 5.00	6	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
5/8 (Sprint)	A	No	Inside Pole	140.00 - 5.00	1	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
						1" Ice	0.00	0.40
1 5/8 (Verizon)	A	No	Inside Pole	150.00 - 5.00	2	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04

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 lb
L1	150.00-113.00	A	0.000	0.000	0.000	0.000	425.56
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	113.00-91.25	A	0.000	0.000	0.000	0.000	275.79
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

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 lb
L3	91.25-46.25	A	0.000	0.000	0.000	0.000	570.60
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L4	46.25-0.00	A	0.000	0.000	0.000	0.000	523.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	150.00-113.00	A	0.750	0.000	0.000	0.000	0.000	425.56
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	113.00-91.25	A	0.750	0.000	0.000	0.000	0.000	275.79
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	91.25-46.25	A	0.750	0.000	0.000	0.000	0.000	570.60
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L4	46.25-0.00	A	0.750	0.000	0.000	0.000	0.000	523.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-113.00	0.0000	0.0000	0.0000	0.0000
L2	113.00-91.25	0.0000	0.0000	0.0000	0.0000
L3	91.25-46.25	0.0000	0.0000	0.0000	0.0000
L4	46.25-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
APXVTM14-C-120 (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	6.53 6.96 7.40	3.38 3.72 4.07	52.90 90.49 132.96
APXVTM14-C-120 (Sprint)	B	From Leg	4.00 0.00	0.0000	140.00	No Ice 1/2" Ice	6.53 6.96	3.38 3.72	52.90 90.49

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00					1" Ice	7.40	4.07	132.96
APXVTM14-C-120 (Sprint)	C	From Leg	4.00			0.0000	140.00	No Ice	6.53	3.38	52.90
			0.00					1/2" Ice	6.96	3.72	90.49
			0.00					1" Ice	7.40	4.07	132.96
APXVSPP18-C-A20 (Sprint)	A	From Leg	4.00			0.0000	140.00	No Ice	8.26	5.28	57.00
			0.00					1/2" Ice	8.81	5.74	106.52
			0.00					1" Ice	9.36	6.20	162.12
APXVSPP18-C-A20 (Sprint)	B	From Leg	4.00			0.0000	140.00	No Ice	8.26	5.28	57.00
			0.00					1/2" Ice	8.81	5.74	106.52
			0.00					1" Ice	9.36	6.20	162.12
APXVSPP18-C-A20 (Sprint)	C	From Leg	4.00			0.0000	140.00	No Ice	8.26	5.28	57.00
			0.00					1/2" Ice	8.81	5.74	106.52
			0.00					1" Ice	9.36	6.20	162.12
1900MHz RRH (Sprint)	A	From Leg	4.00			0.0000	140.00	No Ice	2.70	2.77	60.00
			0.00					1/2" Ice	2.94	3.01	83.90
			0.00					1" Ice	3.18	3.26	111.08
1900MHz RRH (Sprint)	B	From Leg	4.00			0.0000	140.00	No Ice	2.70	2.77	60.00
			0.00					1/2" Ice	2.94	3.01	83.90
			0.00					1" Ice	3.18	3.26	111.08
1900MHz RRH (Sprint)	C	From Leg	4.00			0.0000	140.00	No Ice	2.70	2.77	60.00
			0.00					1/2" Ice	2.94	3.01	83.90
			0.00					1" Ice	3.18	3.26	111.08
TD-RRH8X20 (Sprint)	A	From Leg	4.00			0.0000	140.00	No Ice	4.32	1.41	66.14
			0.00					1/2" Ice	4.60	1.61	90.08
			0.00					1" Ice	4.89	1.83	117.36
TD-RRH8X20 (Sprint)	B	From Leg	4.00			0.0000	140.00	No Ice	4.32	1.41	66.14
			0.00					1/2" Ice	4.60	1.61	90.08
			0.00					1" Ice	4.89	1.83	117.36
TD-RRH8X20 (Sprint)	C	From Leg	4.00			0.0000	140.00	No Ice	4.32	1.41	66.14
			0.00					1/2" Ice	4.60	1.61	90.08
			0.00					1" Ice	4.89	1.83	117.36
800 MHz w/ Notch Filter (Sprint)	A	From Leg	4.00			0.0000	140.00	No Ice	2.49	2.91	61.80
			0.00					1/2" Ice	2.71	3.14	87.79
			0.00					1" Ice	2.93	3.38	117.08
800 MHz w/ Notch Filter (Sprint)	B	From Leg	4.00			0.0000	140.00	No Ice	2.49	2.91	61.80
			0.00					1/2" Ice	2.71	3.14	87.79
			0.00					1" Ice	2.93	3.38	117.08
800 MHz w/ Notch Filter (Sprint)	C	From Leg	4.00			0.0000	140.00	No Ice	2.49	2.91	61.80
			0.00					1/2" Ice	2.71	3.14	87.79
			0.00					1" Ice	2.93	3.38	117.08
Angle Platform w/ Handrails (Sprint)	A	From Leg	3.00			0.0000	140.00	No Ice	42.40	42.40	2000.00
			0.00					1/2" Ice	48.40	48.40	2450.00
			0.00					1" Ice	54.40	54.40	2900.00
***											
(2) LNX-6514DS-A1M (Verizon)	A	From Leg	4.00			0.0000	150.00	No Ice	8.41	5.88	38.30
			0.00					1/2" Ice	8.96	6.34	91.03
			0.00					1" Ice	9.52	6.81	149.94
(2) LNX-6514DS-A1M (Verizon)	B	From Leg	4.00			0.0000	150.00	No Ice	11.45	9.42	84.54
			0.00					1/2" Ice	12.06	10.38	169.14
			0.00					1" Ice	12.69	11.35	263.89
(2) LNX-6514DS-A1M (Verizon)	C	From Leg	4.00			0.0000	150.00	No Ice	11.45	9.42	84.54
			0.00					1/2" Ice	12.06	10.38	169.14
			0.00					1" Ice	12.69	11.35	263.89
(2) HBXX-6517DS-A2M (Verizon)	A	From Leg	4.00			0.0000	150.00	No Ice	8.74	6.57	69.75
			0.00					1/2" Ice	9.31	7.34	135.90
			0.00					1" Ice	9.88	8.13	210.46
(2) HBXX-6517DS-A2M	B	From Leg	4.00			0.0000	150.00	No Ice	8.74	6.57	69.75

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(Verizon)			0.00			1/2" Ice	9.31	7.34	135.90
			0.00			1" Ice	9.88	8.13	210.46
(2) HBXX-6517DS-A2M	C	From Leg	4.00	0.0000	150.00	No Ice	8.74	6.57	69.75
(Verizon)			0.00			1/2" Ice	9.31	7.34	135.90
			0.00			1" Ice	9.88	8.13	210.46
RRH2x60-AWS	A	From Leg	4.00	0.0000	150.00	No Ice	3.96	2.16	60.00
(Verizon)			0.00			1/2" Ice	4.27	2.44	84.31
			0.00			1" Ice	4.60	2.73	112.31
RRH2x60-AWS	B	From Leg	4.00	0.0000	150.00	No Ice	3.96	2.16	60.00
(Verizon)			0.00			1/2" Ice	4.27	2.44	84.31
			0.00			1" Ice	4.60	2.73	112.31
RRH2x60-AWS	C	From Leg	4.00	0.0000	150.00	No Ice	3.96	2.16	60.00
(Verizon)			0.00			1/2" Ice	4.27	2.44	84.31
			0.00			1" Ice	4.60	2.73	112.31
2x60 LTE	A	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
2x60 LTE	B	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
2x60 LTE	C	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
2x60-PCS	A	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
2x60-PCS	B	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
2x60-PCS	C	From Leg	4.00	0.0000	150.00	No Ice	2.17	1.41	43.00
(Verizon)			0.00			1/2" Ice	2.38	1.59	58.81
			0.00			1" Ice	2.60	1.78	77.31
DB-T1-6Z-8AB-OZ	A	From Leg	4.00	0.0000	150.00	No Ice	0.00	0.00	0.00
(Verizon)			0.00			1/2" Ice	0.00	0.00	0.00
			0.00			1" Ice	0.00	0.00	0.00
DB-T1-6Z-8AB-OZ	B	From Leg	4.00	0.0000	150.00	No Ice	0.00	0.00	0.00
(Verizon)			0.00			1/2" Ice	0.00	0.00	0.00
			0.00			1" Ice	0.00	0.00	0.00
Angle Platform w/ Handrails	A	From Leg	3.00	0.0000	150.00	No Ice	42.40	42.40	2000.00
(Verizon)			0.00			1/2" Ice	48.40	48.40	2450.00
			0.00			1" Ice	54.40	54.40	2900.00
***									
***									
_Lightning Rod	C	From Leg	0.00	0.0000	150.00	No Ice	0.52	0.52	25.00
			2.00			1/2" Ice	1.05	1.05	29.84
			0.00			1" Ice	1.49	1.49	38.08

Load Combinations

Comb. No.	Description

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 90 deg - No Ice
4	Dead+Wind 180 deg - No Ice
5	Dead+Ice+Temp
6	Dead+Wind 0 deg+Ice+Temp
7	Dead+Wind 90 deg+Ice+Temp
8	Dead+Wind 180 deg+Ice+Temp
9	Dead+Wind 0 deg - Service
10	Dead+Wind 90 deg - Service
11	Dead+Wind 180 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 113	27.428	9	2.0038	0.0003
L2	117.25 - 91.25	15.227	9	1.4348	0.0001
L3	96.25 - 46.25	9.673	9	1.0630	0.0000
L4	53 - 0	2.667	9	0.4754	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(2) LNX-6514DS-A1M	9	27.428	2.0038	0.0687	14427
140.00	APXVTM14-C-120	9	23.432	1.8326	0.0531	7213

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 113	76.782	2	5.4610	0.0007
L2	117.25 - 91.25	43.085	2	4.0258	0.0002
L3	96.25 - 46.25	27.458	2	3.0042	0.0001
L4	53 - 0	7.599	2	1.3529	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(2) LNX-6514DS-A1M	2	76.782	5.4610	0.1974	5576
140.00	APXVTM14-C-120	2	65.786	5.0404	0.1525	2787

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
L1	150 - 113 (1)	TP30.48x20x0.1875	37.00	150.00	174.3	4.915	17.3114	-7111.13	85083.40	0.084
L2	113 - 91.25 (2)	TP36.27x28.9012x0.25	26.00	150.00	146.5	6.955	27.4574	-9615.32	190963.00	0.050
L3	91.25 - 46.25 (3)	TP48.52x34.3529x0.3125	50.00	150.00	109.5	12.449	45.9188	-16892.80	571637.00	0.030
L4	46.25 - 0 (4)	TP61x45.9824x0.375	53.00	150.00	83.6	20.491	72.1589	-30461.10	1478580.00	0.021

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	150 - 113 (1)	TP30.48x20x0.1875	433215.83	-41.778	38.433	1.087	0.00	0.000	38.433	0.000
L2	113 - 91.25 (2)	TP36.27x28.9012x0.25	772498.33	-39.515	39.000	1.013	0.00	0.000	39.000	0.000
L3	91.25 - 46.25 (3)	TP48.52x34.3529x0.3125	1582858.33	-36.170	39.000	0.927	0.00	0.000	39.000	0.000
L4	46.25 - 0 (4)	TP61x45.9824x0.375	2790316.67	-30.967	37.702	0.821	0.00	0.000	37.702	0.000

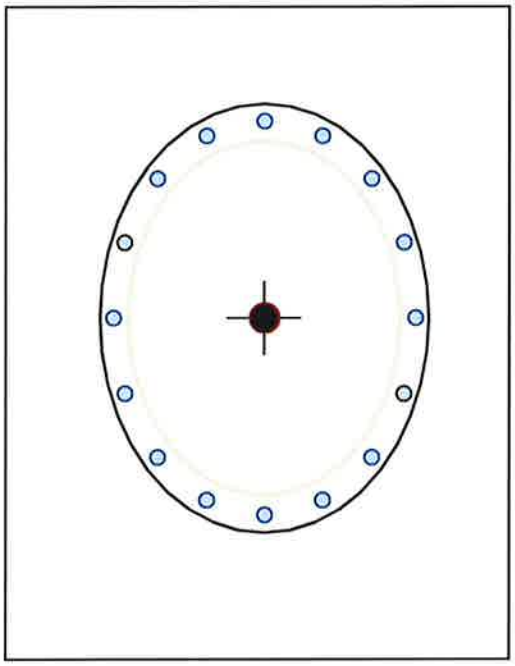
Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 113 (1)	TP30.48x20x0.1875	0.084	1.087	0.000	1.171 ✔	1.333	H1-3 ✔
L2	113 - 91.25 (2)	TP36.27x28.9012x0.25	0.050	1.013	0.000	1.064 ✔	1.333	H1-3 ✔
L3	91.25 - 46.25 (3)	TP48.52x34.3529x0.3125	0.030	0.927	0.000	0.957 ✔	1.333	H1-3 ✔
L4	46.25 - 0 (4)	TP61x45.9824x0.375	0.021	0.821	0.000	0.842 ✔	1.333	H1-3 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 113	Pole	TP30.48x20x0.1875	1	-7111.13	113416.17	87.8	Pass
L2	113 - 91.25	Pole	TP36.27x28.9012x0.25	2	-9615.32	254553.67	79.8	Pass
L3	91.25 - 46.25	Pole	TP48.52x34.3529x0.3125	3	-16892.80	761992.09	71.8	Pass
L4	46.25 - 0	Pole	TP61x45.9824x0.375	4	-30461.10	1970947.06	63.2	Pass
							Summary	
						Pole (L1)	87.8	Pass
						RATING =	**87.8**	**Pass**

Date:	7/8/2015
Customer:	InSite
Engineer:	ATE
Job #:	337-000
Baseplate/Flange:	Base Plate
Plate Shape:	Circle
Use Addendum 3:	No



Loading Data		
TIA Code Revision:	Rev-F	
Axial:	29.868	kips
Moment:	2882.871	k-ft
Plate Data		
Pole Base Diameter:	61	in
Pole Base Shape:	18 Sided	
Pole thickness:	0.375	in
Pole Fy:	65	ksi
Base Weld Size:	0.375	in
Plate Diameter:	74	in
Plate Thickness:	2	in
Plate Steel Grade:	A572 Gr. 60	ksi
Internal/External:	External	ksi
Anchor Bolt Data		
Bolt Diameter:	2.25	in
Bolt Hole Diameter:	2.625	in
Bolt Quantity:	16	
Bolt Grade:	A615 Gr. 75	psi
Bolt Circle:	68	in
Bolt Spacing:	6	in
Fully Developed:	Unknown	
Additional Bolt Data		
Bolt Diameter:		in
Bolt Quantity:		
Bolt Grade:		psi
Bolt Circle:		in
Angle:		deg
Stiffener Data		
Stiffener Quantity:		
Stiffener Height:		in
Stiffener Width:		in

Plate Ratio:	37.85
Bolt Ratio:	73.73
Additional Bolt Ratio:	-
Vertical Weld Ratio:	-
Horizontal Weld Ratio:	-
Stiffener Ratio:	-