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Also admitted in Massachusetts

February 27, 2014

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

Re: **Notice of Exempt Modification – Antenna Swap**
50 Woodfield Road, Woodbridge, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 90-foot level of the existing 100-foot tower at 50 Woodfield Road in Woodbridge, Connecticut (the "Property"). The tower is owned by AT&T. The Council approved Cellco's use of the tower in 2008. Cellco now intends to replace six (6) of its existing antennas with three (3) model BXA-80063-4BF, 850 MHz antennas and three (3) model BXA-171063-8BF, 2100 MHz antennas, all at the same 90-foot level on the tower. Cellco also intends to install three (3) remote radio heads ("RRHs") behind its 2100 MHz antennas and one (1) HYBRIFLEX™ antenna cable, installed inside the monopole. 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 Ellen Scalettar, First Selectman for the Town of Woodbridge. The Town of Woodbridge is the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. The replaced antennas and RRHs will be located on Cellco's existing platform at the 90-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 modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A worst-case 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 can support Cellco's proposed facility modifications. (*See* Structural Analysis 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:
Ellen Scalettar, Woodbridge First Selectman
Sandy M. Carter

ATTACHMENT 1

BXA-80063-4BF-EDIN-X

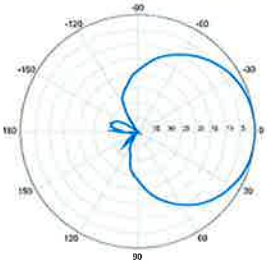
Replace "X" with desired electrical downtilt.

Antenna is also available with N connector(s). Replace "EDIN" with "N" in the model number when ordering.

X-Pol | FET Panel | 63° | 13.0 dBd

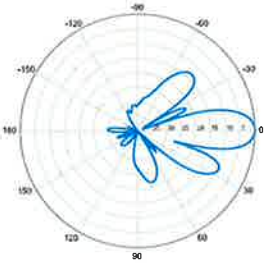
Electrical Characteristics				
Frequency bands	806-900 MHz*			
*Optional frequency band for iDEN	806-941 MHz (specify when ordering)			
Polarization	±45°			
Horizontal beamwidth	63°			
Vertical beamwidth	15°			
Gain	13.0 dBd (15.1 dBi)			
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14			
Impedance	50Ω			
VSWR	≤1.4:1			
Upper sidelobe suppression (0°)	-22.1 dB			
Front-to-back ratio (+/-30°)	-34.9 dB			
Null fill	5% (-26.02 dB)			
Isolation between ports	< -25 dB			
Input power with EDIN connectors	500 W			
Input power with N connectors	300 W			
Lightning protection	Direct Ground			
Connector(s)	2 Ports / EDIN or N / Female / Bottom			
Mechanical Characteristics				
Dimensions Length x Width x Depth	1134 x 285 x 135 mm		44.6 x 11.2 x 5.3 in	
Depth with z-brackets	175 mm		6.9 in	
Weight without mounting brackets	5.7 kg		12.6 lbs	
Survival wind speed	> 201 km/hr		> 125 mph	
Wind area	Front: 0.32 m² Side: 0.15 m²		Front: 3.5 ft² Side: 1.7 ft²	
Wind load @ 161 km/hr (100 mph)	Front: 469 N Side: 249 N		Front: 104 lbf Side: 53 lbf	
Mounting Options	Part Number	Fits Pipe Diameter	Weight	
2-Point Mounting & Downtilt Bracket Kit	36210006	40-115 mm 1.57-4.5 in	4.1 kg	9 lbs
Concealment Configurations	For concealment configurations, order BXA-80063-4BF-EDIN-X-FP			

BXA-80063-4BF-EDIN-X



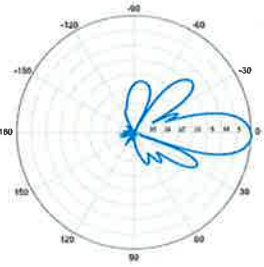
Horizontal

BXA-80063-4BF-EDIN-0



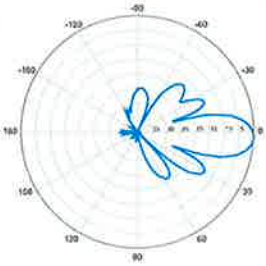
0° | Vertical

BXA-80063-4BF-EDIN-2



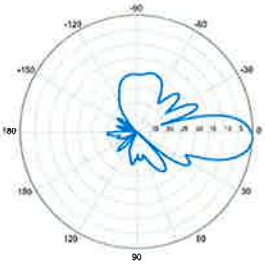
2° | Vertical

BXA-80063-4BF-EDIN-3



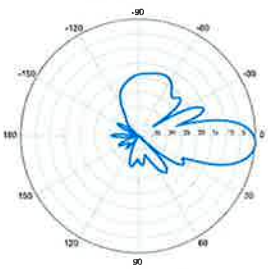
3° | Vertical

BXA-80063-4BF-EDIN-4



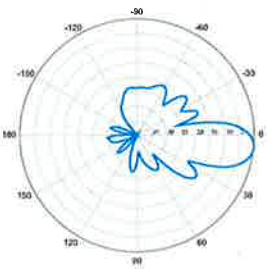
4° | Vertical

BXA-80063-4BF-EDIN-5



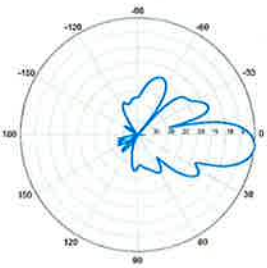
5° | Vertical

BXA-80063-4BF-EDIN-6



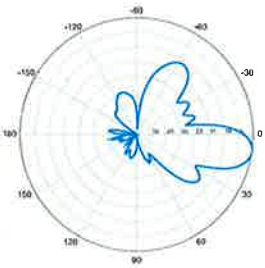
6° | Vertical

BXA-80063-4BF-EDIN-8



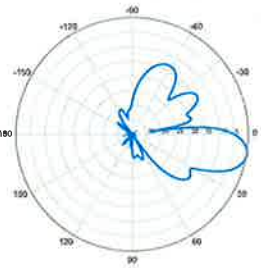
8° | Vertical

BXA-80063-4BF-EDIN-9



9° | Vertical

BXA-80063-4BF-EDIN-10

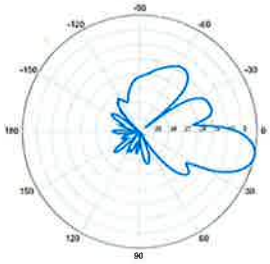


10° | Vertical

BXA-80063-4BF-EDIN-X

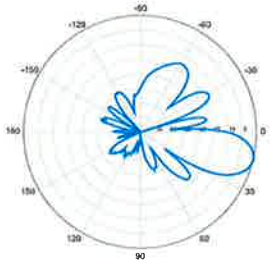
X-Pol | FET Panel | 63° | 13.0 dBd

BXA-80063-4BF-EDIN-12



12° | Vertical

BXA-80063-4BF-EDIN-14



14° | Vertical

BXA-171063-8BF-EDIN-X

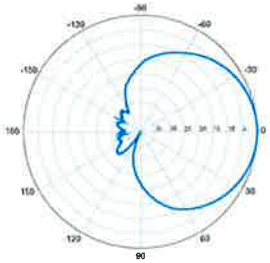
Replace "X" with desired electrical downtilt.

X-Pol | FET Panel | 63° | 17.4 dBi

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	7°	7°	7°
Gain	14.5 dBd / 16.6 dBi	14.9 dBd / 17.0 dBi	15.3 dBd / 17.4 dBi
Electrical downtilt (X)	0, 2, 4, 6, 8		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	< -25 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN / Female / Bottom		
Operating temperature	-40° to +60° C / -40° to +140° F		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1225 x 154 x 105 mm		48.2 x 6.1 x 4.1 in
Depth with t-brackets	133 mm		5.2 in
Weight without mounting brackets	4.2 kg		9.2 lbs
Survival wind speed	296 km/hr		184 mph
Wind area	Front: 0.19 m² Side: 0.14 m²		Front: 2.0 ft² Side: 1.5 ft²
Wind load @ 161 km/hr (100 mph)	Front: 281 N Side: 223 N		Front: 63 lbf Side: 50 lbf

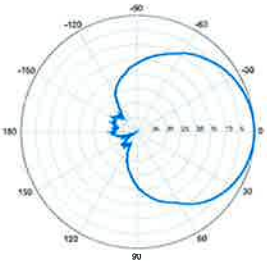
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-8BF-EDIN-X-FP		

BXA-171063-8BF-EDIN-X



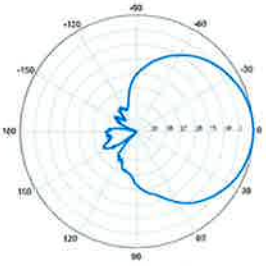
Horizontal | 1710-1880 MHz

BXA-171063-8BF-EDIN-X



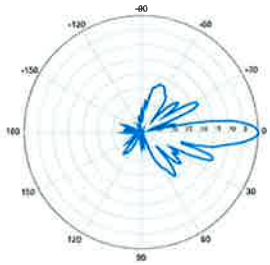
Horizontal | 1850-1990 MHz

BXA-171063-8BF-EDIN-X



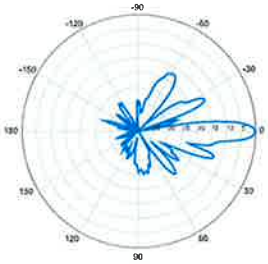
Horizontal | 1920-2170 MHz

BXA-171063-8BF-EDIN-0



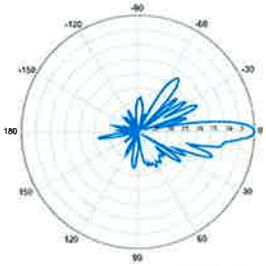
0° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-0

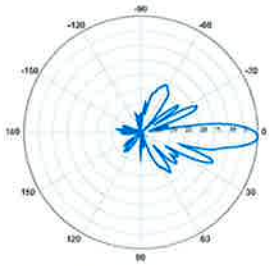


0° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-X

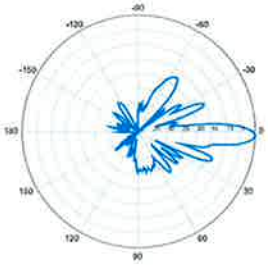
X-Pol | FET Panel | 63° | 17.4 dBi

BXA-171063-8BF-EDIN-2



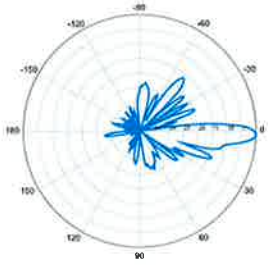
2° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-2



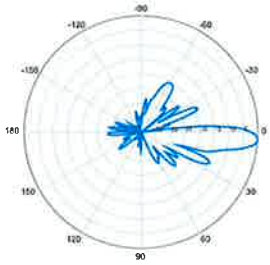
2° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-2



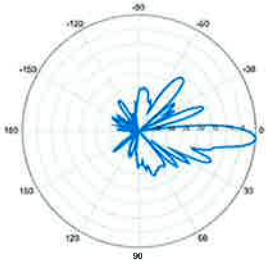
2° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-4



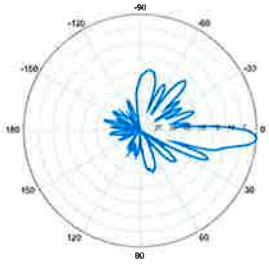
4° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-4



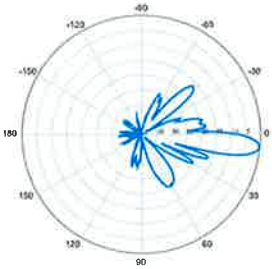
4° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-4



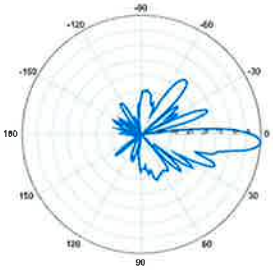
4° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-6



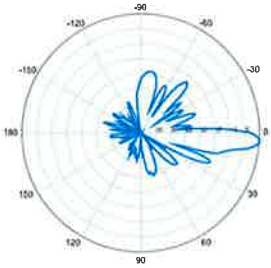
6° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-6



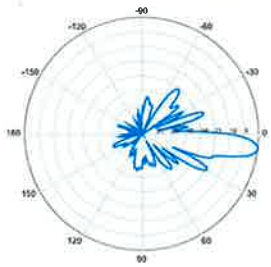
6° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-6



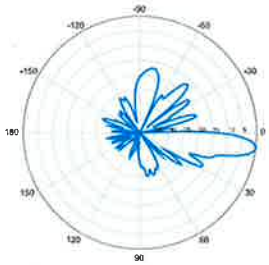
6° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-8



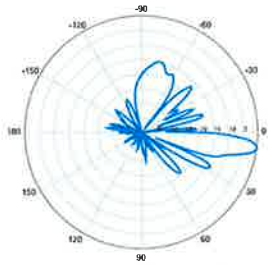
8° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-8



8° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-8



8° | Vertical | 1920-2170 MHz

Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

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

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

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

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

Fast, low-cost installation and deployment

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

Excellent RF performance

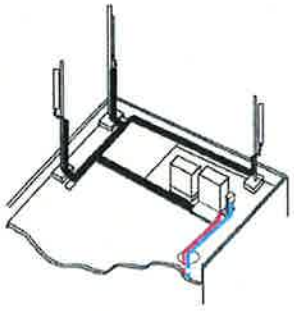
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation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

Features

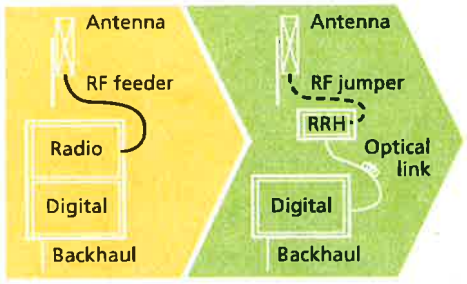
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

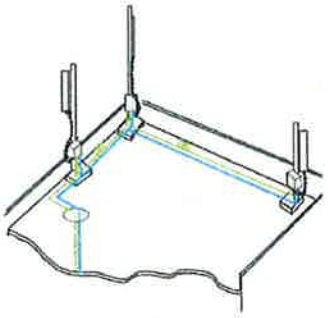
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility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



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

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

Power

- Power supply: -48VDC

Operating environment

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

RF characteristics

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

Optical characteristics

Type/number of fibers

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

Optical fiber length

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

Digital Ports and Alarms

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

Alcatel·Lucent

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

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

Product Description

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

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

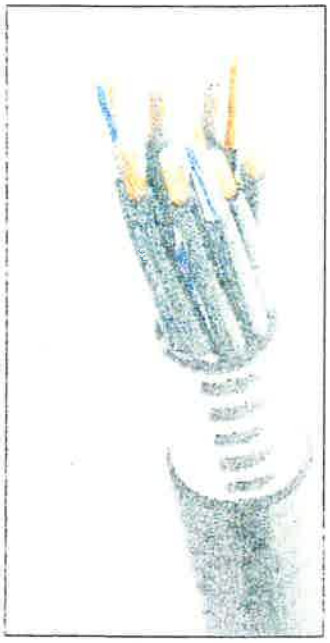


Figure 1: HYBRIFLEX Series

Features/Benefits

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

Technical Specifications

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

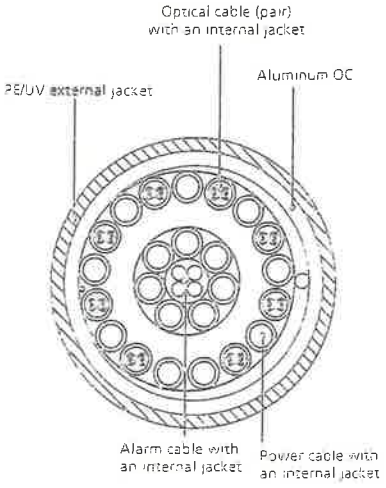


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Westville W (Woodbridge)								
Tower Height: Verizon @ 90ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T UMTS	2	565	103	0.0383	880	0.5867	6.53%	
*AT&T UMTS	2	875	103	0.0593	1900	1.0000	5.93%	
*AT&T GSM	1	283	103	0.0096	880	0.5867	1.63%	
*AT&T GSM	4	525	103	0.0712	1900	1.0000	7.12%	
*AT&T LTE	1	1313	101	0.0463	734	0.4893	9.46%	
*Clearwire	2	153	80	0.0172	2496	1.0000	1.72%	
*Clearwire	1	211	80	0.0119	11 GHz	1.0000	1.19%	
Verizon	**7**	**325.33**	**90**	**0.1011**	**1970**	**1.0000**	**10.11%**	
Verizon	**9**	**298.55**	**90**	**0.1193**	**869**	**0.5793**	**20.59%**	
Verizon	**1**	**1264.91**	**90**	**0.0562**	**2145**	**1.0000**	**5.62%**	
Verizon	**1**	**867.76**	**90**	**0.0385**	**698**	**0.4653**	**8.28%**	
								78.17%
* Source: Siting Council								

ATTACHMENT 3

AT&T Towers
2300 Northlake Center Dr Ste 405
Tucker, GA 30084

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119

January 30, 2014

B+T No.: 88557.002.01

STRUCTURAL ANALYSIS
100' Monopole Tower

AT&T DESIGNATION:	Site ID:	14243
	Site FA:	10071344
	Site Name:	Woodbridge Country Club
	AT&T Project:	3_Verizon-Modification 9-23-13
ANALYSIS CRITERIA:	Codes:	TIA/EIA-222-F (85 mph fastest mile) IBC 2003 2005 CT Building Code
SITE DATA:		50 Woodfield Road, Woodbridge , CT, New Haven County Latitude 41.327792°, Longitude -72.993899° Market MA/RI/VT/NH/ME/CT

Ms. Charlotte Malone,

B+T Group is pleased to submit this Structural Analysis Report to determine the structural integrity of the aformentioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results - LC1a: Existing + Maximum AT&T Future + Proposed

Tower Stress Level with Proposed Equipment:	**44.5%**	**Pass**
Foundation Ratio with Proposed Equipment:	**Unknown**	

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other project please give us a call.

Respectfully Submitted by:	B+T Engineering, Inc.
Analysis Prepared by:	Kristin Mears, E.I.
Analysis Reviewed by:	Chad E. Tuttle, P.E.

ANALYSIS RESULTS:

Table 1 - Section Capacity (Summary) - LC1a: Existing + Maximum AT&T Future + Proposed

Elevation (ft)	% Capacity	Pass / Fail
100 - 87	7.1	Pass
87 - 42.96	31.5	Pass
42.96 - 0	**42.9**	Pass

Table 2 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	36.8	**Pass**
1	Base Plate	Base	44.5	**Pass**
2	Base Foundation	Base	--	--

Structure Rating (max from all components) =	44.5%

Notes:

1) See additional documentation in "Appendix B - Calculations" for calculation supporting the % capacity consumed.
2) The base foundation could not be analyzed as part of this analysis, as foundation and geotechnical information was not available. It is assumed that the foundation was designed with capacities similar to the tower itself and is therefore considered sufficient for the purposes of this analysis.

Recommendations:

N/A

ANALYSIS PROCEDURE:

Table 3 - Documents Provided

Document	Description	Date	Source
Tower Data	BTE Manangement Project No. 15085	4/24/2012	On File
Foundation Information	Information Not Available	N/A	N/A
Geotech Report	Information Not Available	N/A	N/A
Loading	B+T Group Project 88557.001.01; 3_Verizon-Modification 9-23-13	10/21/2013	On File
	Site Lease Application; 3_Verizon-Modification 9-23-13	12/19/2013	Siterra
	NOC2; 3_Verizon-Modification 9-23-13	10/4/2013	Siterra
Previous Structural Analysis	B+T Group Project 88557.001.01; 3_Verizon-Modification 9-23-13	10/21/2013	On File
	Black & Veatch Project No. 176850; Verizon Tower Only Mod 7-9-2012	11/1/2012	Siterra
	B+T Group Project No. 84445.001.00; MOD LTE W3 020912	5/24/2012	On File

ANALYSIS METHOD:

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

ASSUMPTIONS:

1. Tower and structures were built in accordance with the manufacturer's specifications.
2. The tower and structures have been maintained in accordance with the manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Appendix A of this report.
4. Mount areas and weights are assumed based on photographs provided.
5. Refer to the base level drawing for transmission line distribution.
6. All loading for Verizon was taken from the Site Lease Application.
7. All existing/reserved loading was taken from the previous analysis.
8. The TIA/EIA-222-F wind speed was used for this analysis, instead of the wind speed indicated in the 2005 Connecticut Building Code. Refer to the attached approval letter from the State Building Inspector.
9. Manufacturer's drawings were not available, therefore, material grades were assumed. Nominal sizes and thicknesses were assumed based on measured dimensions provided in the tower mapping. Pole shaft splice lengths were assumed.

If any of these assumptions have been made in error, B+T Group should be notified to determine the effect on the structural integrity of the tower.

APPENDIX A

TOWER ANALYSIS LOADING

TOWER ANALYSIS LOADING:

Existing / Reserved Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)
AT&T Mobility	**98**	**99**	**3**	**Powerwave**	**RA21.7770**	**1**	**L.P. Platform**	**9**	**1 5/8"**
AT&T Mobility	**98**	**99**	**3**	**KMW**	**AM-X-CD-16-65-00T**			**2**	**7/8"**
AT&T Mobility	**98**	**99**	**6**	**Ericsson**	**RBS6601**			**1**	**1/2"**
AT&T Mobility	**98**	**99**	**6**	**Powerwave**	**LGP 21401**				
AT&T Mobility	**98**	**99**	**1**	**Raycap**	**DC6-48-60-18-8F**				
Verizon Wireless	**90**	**90**	**3**	**Antel**	**BXA-70063-6CF**	**1**	**L.P. Platform**	**12**	**1-5/8"**
Verizon Wireless	**90**	**90**	**6***	**Antel**	**LPA-80063-4CF**				
Verizon Wireless	**90**	**90**	**3**	**Antel**	**BXA-171063-8CF**				
Verizon Wireless	**90**	**90**	**6**	**RFS**	**FD9R6004/2C-3L**				
Clearwire Wireless	**80**	**83**	**3**	**Dragonwave**	**A-ANT-18G-2-C**	**3**	**Stand-off Mount**	**3**	**1/2"**
Clearwire Wireless	**80**	**83**	**3**	**Dragonwave**	**Horizon ODU**			**1**	**2.3"**
Clearwire Wireless	**80**	**80**	**3**	**Argus**	**LLPX310R**			**6**	**5/16"**
Clearwire Wireless	**80**	**80**	**3**	**Samsung**	**U-RAS**			**1**	**2.3"**

*Equipment to be Removed

Proposed Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)
Verizon Wireless	**90**	**90**	**3**	**Antel**	**BXA-80063-4BF**			**1**	**1-5/8"**
Verizon Wireless	**90**	**90**	**3**	**Antel**	**BXA-171063-8BF**				
Verizon Wireless	**90**	**90**	**3**	**Alcatel**	**ALU RH_2x40-AWS**				
Verizon Wireless	**90**	**90**	**1**	**RFS**	**DB-T1-6Z-8AB-0Z**				

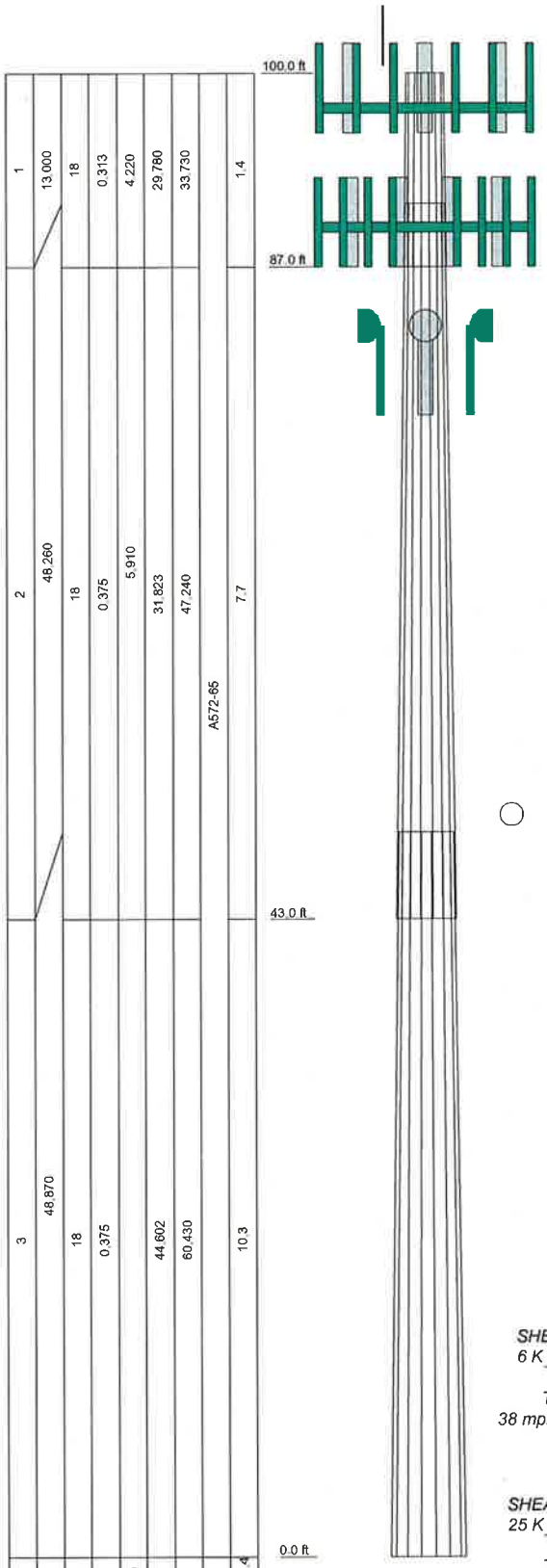
Note: See Base Level Drawing For Transmission Line Distribution

Future Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)
AT&T Mobility	**98**	**99**	**3**	**Generic**	**409.50 Sq. In. Generic Appurtenance**			**1**	**15.92 Sq. In.**

APPENDIX B

CALCULATIONS



Section	1	2	3
Length (ft)	13.000	48.260	48.870
Number of Sides	18	18	18
Thickness (in)	0.313	0.375	0.375
Socket Length (ft)	4.220	5.910	
Top Dia (in)	29.780	31.823	44.602
Bot Dia (in)	33.730	47.240	60.430
Grade	A572-65	A572-65	A572-65
Weight (K)	1.4	7.7	10.3

19.4

DESIGNED APPURTENANCE LOADING

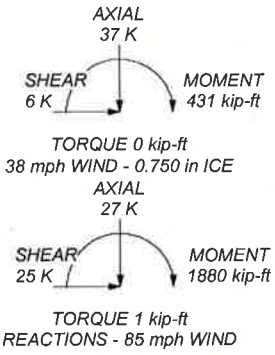
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8" x 5' (E)	100	(2) FD9R6004/2C-3L (Verizon-E)	90
5409.50 Sq. In. Generic Appurtenance (Future)	98	(2) FD9R6004/2C-3L (Verizon-E)	90
		(2) FD9R6004/2C-3L (Verizon-E)	90
5409.50 Sq. In. Generic Appurtenance (Future)	98	BXA-80063-4BF w/ Mount Pipe (Verizon-P)	90
5409.50 Sq. In. Generic Appurtenance (Future)	98	BXA-80063-4BF w/ Mount Pipe (Verizon-P)	90
RA21.7770.00 W/ Mount Pipe (ATI-E)	98	BXA-80063-4BF w/ Mount Pipe (Verizon-P)	90
RA21.7770.00 W/ Mount Pipe (ATI-E)	98	BXA-171063-8BF w/ Mount Pipe (Verizon-P)	90
RA21.7770.00 W/ Mount Pipe (ATI-E)	98	BXA-171063-8BF w/ Mount Pipe (Verizon-P)	90
AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-E)	98	BXA-171063-8BF w/ Mount Pipe (Verizon-P)	90
AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-E)	98	RRH2X40-AWS (Verizon-P)	90
		RRH2X40-AWS (Verizon-P)	90
AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-E)	98	RRH2X40-AWS (Verizon-P)	90
(2) RBS 6601 (ATI-E)	98	DB-T1-6Z-8AB-0Z (Verizon-P)	90
(2) RBS 6601 (ATI-E)	98	Platform Mount [LP 304-1] (E)	90
(2) RBS 6601 (ATI-E)	98	LLPX310R w/Mount Pipe (Clearwire-E)	80
(2) LGP21401 (ATI-E)	98	LLPX310R w/Mount Pipe (Clearwire-E)	80
(2) LGP21401 (ATI-E)	98		
(2) LGP21401 (ATI-E)	98	LLPX310R w/Mount Pipe (Clearwire-E)	80
DC6-48-60-18-8F (ATI-E)	98		
(2) 6' x 2" Mount Pipe (ATI-E)	98	Horizon ODU (Clearwire-E)	80
(2) 6' x 2" Mount Pipe (ATI-E)	98	Horizon ODU (Clearwire-E)	80
(2) 6' x 2" Mount Pipe (ATI-E)	98	Horizon ODU (Clearwire-E)	80
Platform Mount [LP 714-1] (ATI-E)	98	U-RAS (Clearwire-E)	80
		U-RAS (Clearwire-E)	80
BXA-171063-8CF w/ Mount Pipe (Verizon-E)	90	U-RAS (Clearwire-E)	80
		6' x 3" Mount Pipe (E-Dish)	80
BXA-171063-8CF w/ Mount Pipe (Verizon-E)	90	6' x 3" Mount Pipe (E-Dish)	80
BXA-171063-8CF w/ Mount Pipe (Verizon-E)	90	6' x 3" Mount Pipe (E-Dish)	80
		Side Arm Mount [SO 102-3] (Clearwire-E)	80
BXA-70063-6CF w/Mount Pipe (Verizon-E)	90	A-ANT-18G-2-C (Clearwire-E)	80
BXA-70063-6CF w/Mount Pipe (Verizon-E)	90	A-ANT-18G-2-C (Clearwire-E)	80
BXA-70063-6CF w/Mount Pipe (Verizon-E)	90	A-ANT-18G-2-C (Clearwire-E)	80

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 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. LC1a = EXISTING/RESERVED + PROPOSED + FUTURE
6. TOWER RATING: 42.9%



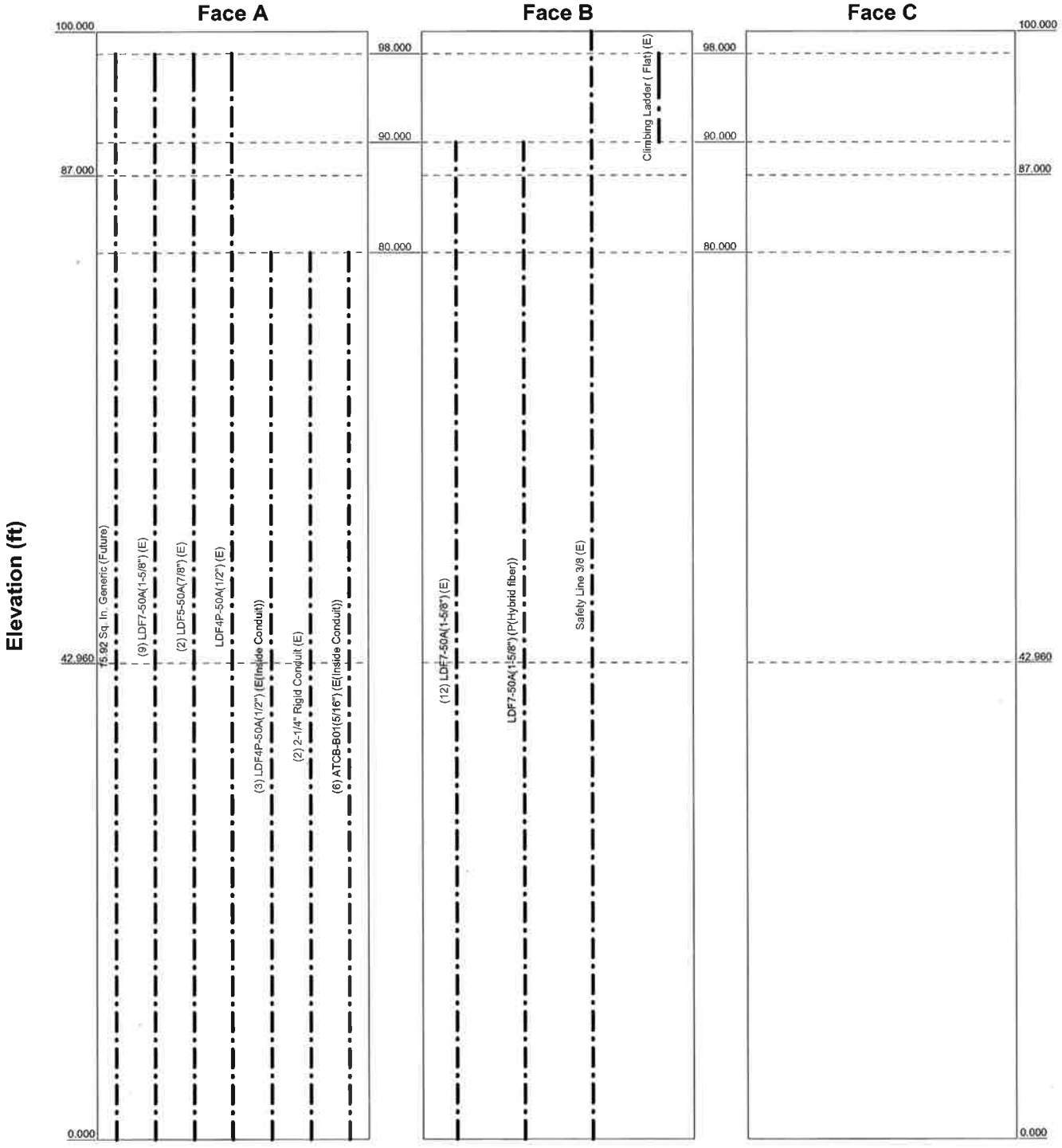
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 88557.002.01 - Woodbridge Country Club, CT (USID# 1424		
Project: 3_Verizon-Modification 9-23-13		
Client: AT&T Towers	Drawn by: K. Mears	App'd:
Code: TIA/EIA-222-F	Date: 01/30/14	Scale: NTS
Path:		Dwg No. E-1

PROJECT#: 88557.001.01

Feed Line Distribution Chart
0' - 100'

Round — Flat — App In Face — App Out Face — Truss Leg



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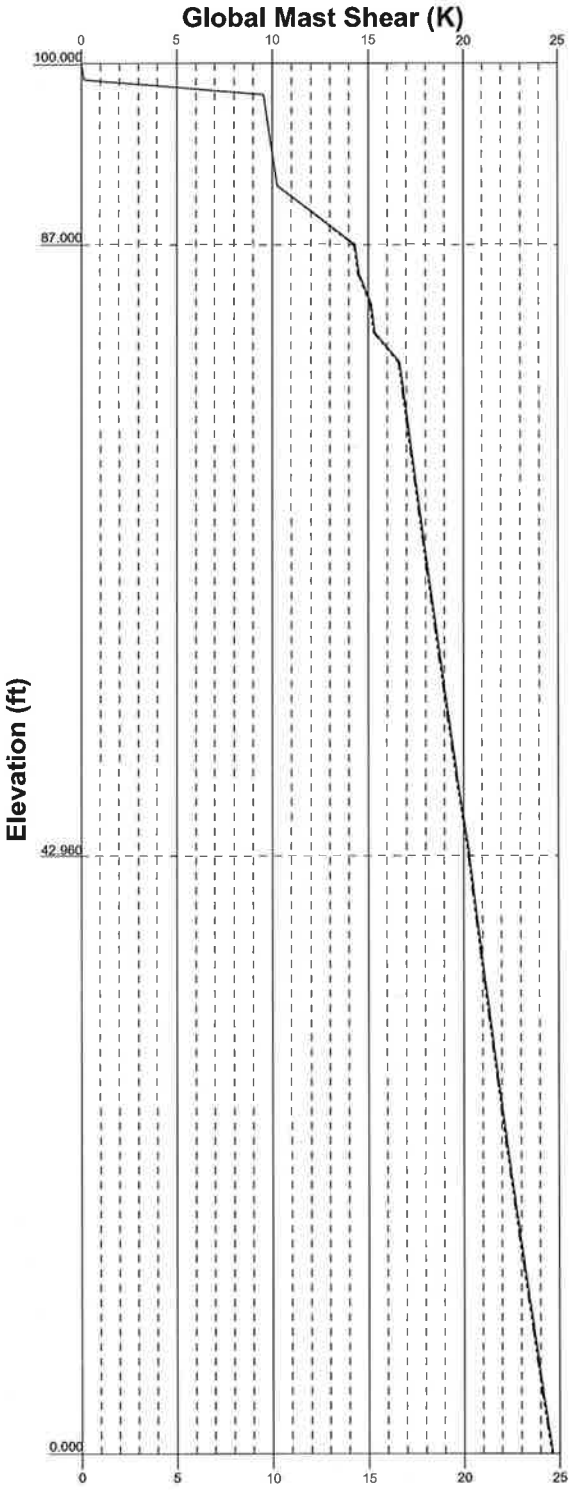
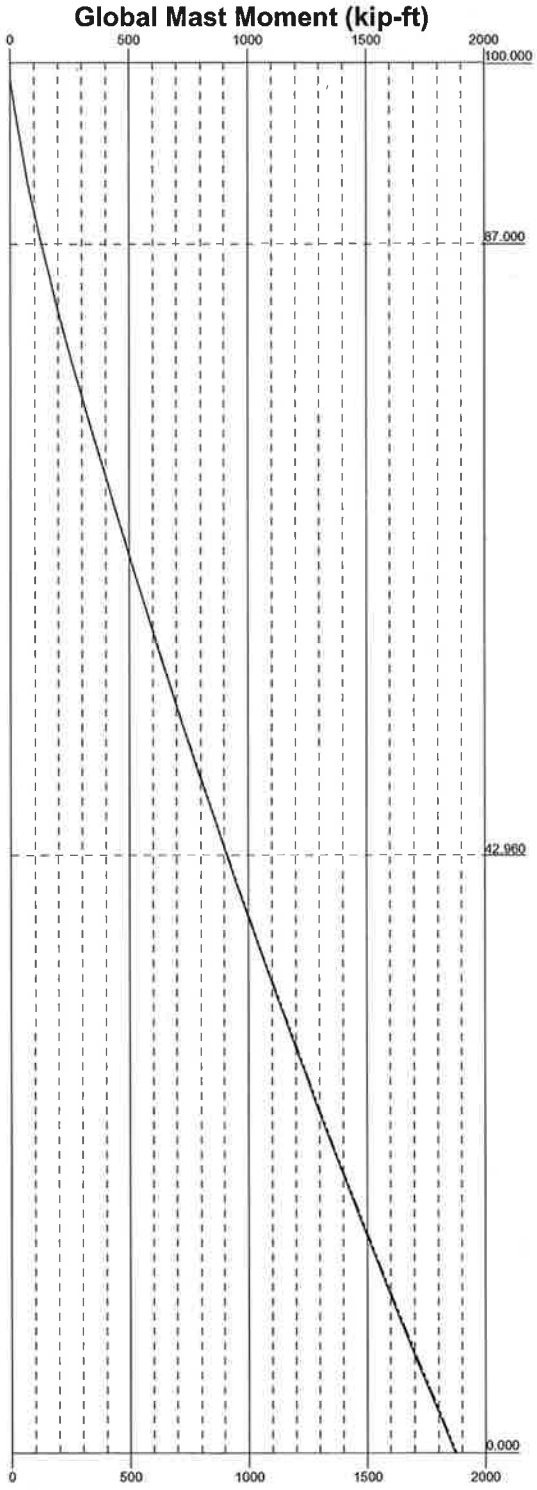
Job: 88557.002.01 - Woodbridge Country Club, CT (USID# 1424		
Project: 3_Verizon-Modification 9-23-13		
Client: AT&T Towers	Drawn by: K. Mears	App'd:
Code: TIA/EIA-222-F	Date: 01/30/14	Scale: NTS
Path:		Dwg No. E-7

TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Maximum Values

——— Vx ---------- Vz ——— Mx ---------- Mz





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1717 S. Boulder, Suite 300
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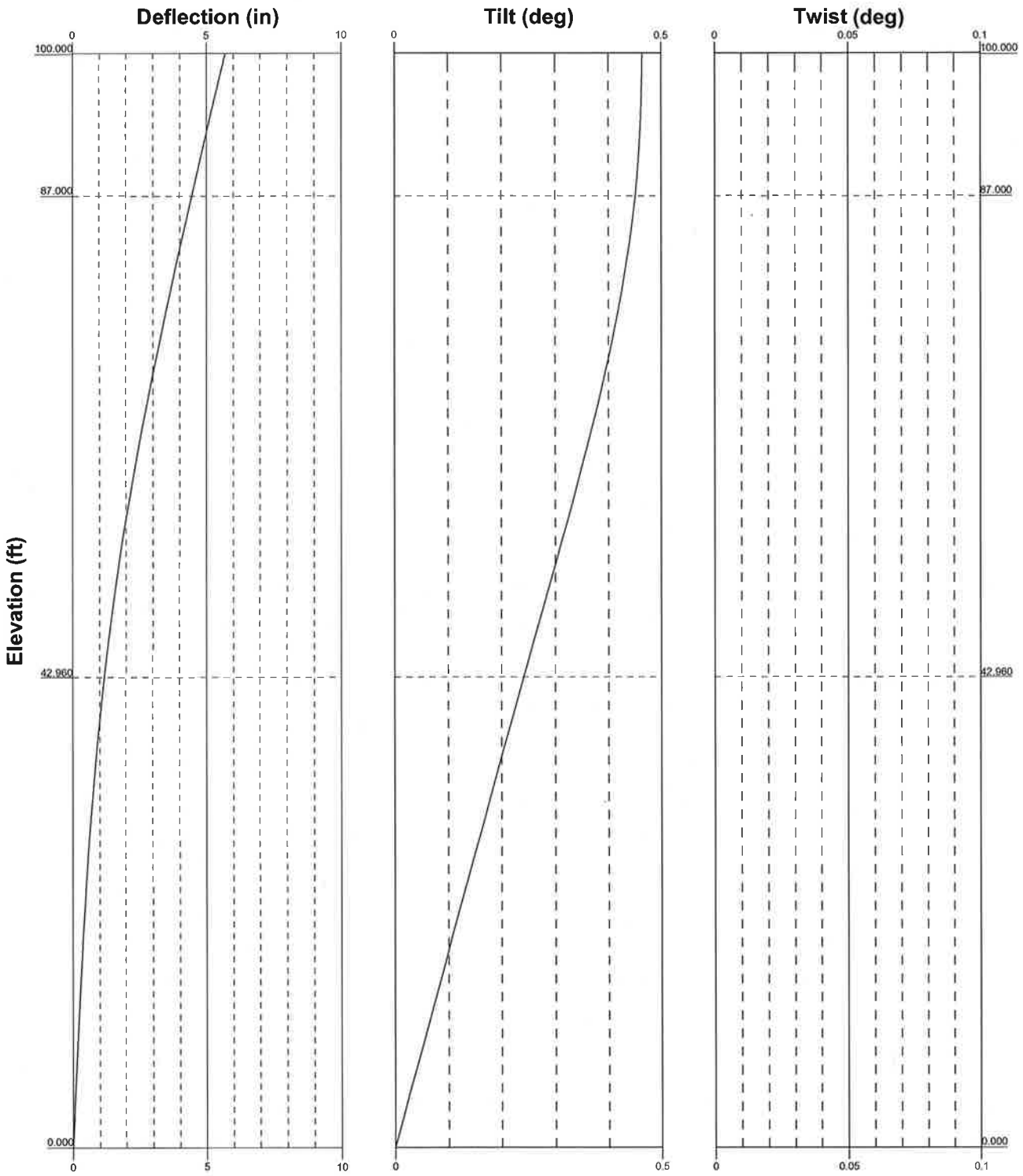
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 88557.002.01 - Woodbridge Country Club, CT (USID# 1424		
Project: 3_Verizon-Modification 9-23-13		
Client: AT&T Towers	Drawn by: K. Mears	App'd:
Code: TIA/EIA-222-F	Date: 01/30/14	Scale: NTS
Path:		Dwg No. E-4

TIA/EIA-222-F - Service - 50 mph

Maximum Values



B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job: 88557.002.01 - Woodbridge Country Club, CT (USID# 1424		
	Project: 3_Verizon-Modification 9-23-13		
	Client: AT&T Towers	Drawn by: K. Mears	App'd:
	Code: TIA/EIA-222-F	Date: 01/30/14	Scale: NTS
	Path:		Dwg No. E-5

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 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
LC1a = EXISTING/RESERVED + PROPOSED + FUTURE.
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	100.000-87.000	13.000	4.220	18	29.780	33.730	0.313	1.250	A572-65 (65 ksi)
L2	87.000-42.960	48.260	5.910	18	31.823	47.240	0.375	1.500	A572-65 (65 ksi)
L3	42.960-0.000	48.870		18	44.602	60.430	0.375	1.500	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	30.239	29.228	3206.449	10.461	15.128	211.951	6417.116	14.617	4.691	15.012
	34.250	33.146	4676.450	11.863	17.135	272.921	9359.053	16.576	5.386	17.237
L2	33.683	37.431	4676.761	11.164	16.166	289.297	9359.676	18.719	4.941	13.175
	47.969	55.781	15478.237	16.637	23.998	644.982	30976.842	27.896	7.654	20.411
L3	47.234	52.641	13008.808	15.701	22.658	574.142	26034.733	26.326	7.190	19.173
	61.362	71.480	32570.405	21.320	30.698	1060.979	65183.666	35.747	9.976	26.602

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 100.000-87.000				1	1	1		
L2 87.000-42.960				1	1	1		
L3 42.960-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
15.92 Sq. In. Generic (Future)	A	No	CaAa (Out Of Face)	98.000 - 0.000	0.000	0	1	No Ice	0.450	0.001
								1/2" Ice	0.450	0.001
								1" Ice	0.450	0.001
								2" Ice	0.450	0.001
								4" Ice	0.450	0.001
LDF7-50A(1-5/8") (E)	A	No	Inside Pole	98.000 - 0.000	0.000	0	9	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
LDF5-50A(7/8") (E)	A	No	Inside Pole	98.000 - 0.000	0.000	0	2	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
LDF4P-50A(1/2") (E)	A	No	Inside Pole	98.000 - 0.000	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
////										
LDF7-50A(1-5/8") (E)	B	No	Inside Pole	90.000 - 0.000	0.000	0	12	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
LDF7-50A(1-5/8") (P(Hybrid fiber))	B	No	Inside Pole	90.000 - 0.000	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
////										
LDF4P-50A(1/2") (E(Inside Conduit))	A	No	Inside Pole	80.000 - 0.000	0.000	0	3	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
2-1/4" Rigid Conduit (E)	A	No	Inside Pole	80.000 - 0.000	0.000	0	2	No Ice	0.000	0.003
								1/2" Ice	0.000	0.003
								1" Ice	0.000	0.003
								2" Ice	0.000	0.003
								4" Ice	0.000	0.003
ATCB-B01(5/16") (E(Inside Conduit))	A	No	Inside Pole	80.000 - 0.000	0.000	0	6	No Ice	0.000	0.000
								1/2" Ice	0.000	0.000
								1" Ice	0.000	0.000
								2" Ice	0.000	0.000
								4" Ice	0.000	0.000
////										
Safety Line 3/8 (E)	B	No	CaAa (Out Of Face)	100.000 - 0.000	0.000	0	1	No Ice	0.037	0.000
								1/2" Ice	0.137	0.001
								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
////										
Climbing Ladder (Flat) (E)	B	No	CaAa (Out Of Face)	98.000 - 90.000	24.000	0	1	No Ice	0.584	0.005
								1/2" Ice	1.030	0.007
								1" Ice	1.476	0.010
								2" Ice	2.368	0.020
								4" Ice	4.151	0.049
////										

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	100.000-87.000	A	0.000	0.000	0.000	4.952	0.099
		B	0.000	0.000	0.000	5.163	0.073
		C	0.000	0.000	0.000	0.000	0.000
L2	87.000-42.960	A	0.000	0.000	0.000	19.826	0.652
		B	0.000	0.000	0.000	1.652	0.479
		C	0.000	0.000	0.000	0.000	0.000
L3	42.960-0.000	A	0.000	0.000	0.000	19.340	0.683

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	1.611	0.467
		C	0.000	0.000	0.000	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	100.000-87.000	A	0.850	0.000	0.000	0.000	4.950	0.099
		B		0.000	0.000	0.000	13.432	0.122
		C		0.000	0.000	0.000	0.000	0.000
L2	87.000-42.960	A	0.812	0.000	0.000	0.000	19.819	0.652
		B		0.000	0.000	0.000	9.136	0.519
		C		0.000	0.000	0.000	0.000	0.000
L3	42.960-0.000	A	0.750	0.000	0.000	0.000	19.334	0.683
		B		0.000	0.000	0.000	8.591	0.504
		C		0.000	0.000	0.000	0.000	0.000

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	100.000-87.000	0.397	-0.217	0.842	0.123
L2	87.000-42.960	0.043	-0.565	0.218	-0.419
L3	42.960-0.000	0.044	-0.583	0.221	-0.446

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Azimuth Adjustment ° / Vert ft	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 5' (E)	C	From Leg	2.000 0.000 2.500	100.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.313 0.826 1.322 1.957 3.338	0.313 0.826 1.322 1.957 3.338	0.031 0.035 0.041 0.065 0.159
////`								
5409.50 Sq. In. Generic Appurtenance (Future)	A	From Leg	4.000 0.000 1.000	0.000	- No No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	75.130 75.130 75.130 75.130 75.130	6.130 6.130 6.130 6.130 6.130	0.070 0.100 0.130 0.190 0.310
5409.50 Sq. In. Generic Appurtenance	B	From Leg	4.000 0.000	0.000	98.000 No Ice 1/2" Ice	75.130 75.130	6.130 6.130	0.070 0.100

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 K
(Future)			1.000			1" Ice	75.130	6.130	0.130
						2" Ice	75.130	6.130	0.190
						4" Ice	75.130	6.130	0.310
5409.50 Sq. In. Generic Appurtenance	C	From Leg	4.000 0.000	0.000	98.000	No Ice 1/2" Ice	75.130 75.130	6.130 6.130	0.070 0.100
(Future)			1.000			1" Ice	75.130	6.130	0.130
						2" Ice	75.130	6.130	0.190
						4" Ice	75.130	6.130	0.310
RA21.7770.00 W/ Mount Pipe	A	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	7.031 7.608	5.002 5.960	0.060 0.114
(AT&T-E)			1.000			1" Ice	8.165	6.747	0.175
						2" Ice	9.310	8.370	0.322
						4" Ice	11.721	11.872	0.746
RA21.7770.00 W/ Mount Pipe	B	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	7.031 7.608	5.002 5.960	0.060 0.114
(AT&T-E)			1.000			1" Ice	8.165	6.747	0.175
						2" Ice	9.310	8.370	0.322
						4" Ice	11.721	11.872	0.746
RA21.7770.00 W/ Mount Pipe	C	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	7.031 7.608	5.002 5.960	0.060 0.114
(AT&T-E)			1.000			1" Ice	8.165	6.747	0.175
						2" Ice	9.310	8.370	0.322
						4" Ice	11.721	11.872	0.746
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	8.498 9.149	6.304 7.479	0.074 0.139
(AT&T-E)			1.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	8.498 9.149	6.304 7.479	0.074 0.139
(AT&T-E)			1.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0.000	20.000	98.000	No Ice 1/2" Ice	8.498 9.149	6.304 7.479	0.074 0.139
(AT&T-E)			1.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
(2) RBS 6601	A	From Leg	4.000 0.000	0.000	98.000	No Ice 1/2" Ice	0.480 0.625	0.348 0.459	0.022 0.034
(AT&T-E)			1.000			1" Ice	0.778	0.578	0.049
						2" Ice	1.110	0.842	0.087
						4" Ice	1.878	1.474	0.202
(2) RBS 6601	B	From Leg	4.000 0.000	0.000	98.000	No Ice 1/2" Ice	0.480 0.625	0.348 0.459	0.022 0.034
(AT&T-E)			1.000			1" Ice	0.778	0.578	0.049
						2" Ice	1.110	0.842	0.087
						4" Ice	1.878	1.474	0.202
(2) RBS 6601	C	From Leg	4.000 0.000	0.000	98.000	No Ice 1/2" Ice	0.480 0.625	0.348 0.459	0.022 0.034
(AT&T-E)			1.000			1" Ice	0.778	0.578	0.049
						2" Ice	1.110	0.842	0.087
						4" Ice	1.878	1.474	0.202
(2) LGP21401	A	From Leg	4.000 0.000	0.000	98.000	No Ice 1/2" Ice	1.288 1.445	0.233 0.313	0.014 0.021
(AT&T-E)			1.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055

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 K
						4" Ice	2.788	1.121	0.135
(2) LGP21401	B	From Leg	4.000	0.000	98.000	No Ice	1.288	0.233	0.014
(AT&T-E)			0.000			1/2" Ice	1.445	0.313	0.021
			1.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
(2) LGP21401	C	From Leg	4.000	0.000	98.000	No Ice	1.288	0.233	0.014
(AT&T-E)			0.000			1/2" Ice	1.445	0.313	0.021
			1.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
DC6-48-60-18-8F	C	From Leg	4.000	0.000	98.000	No Ice	1.266	1.266	0.020
(AT&T-E)			0.000			1/2" Ice	1.456	1.456	0.035
			1.000			1" Ice	1.658	1.658	0.053
						2" Ice	2.093	2.093	0.095
						4" Ice	3.098	3.098	0.215
(2) 6' x 2" Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(2) 6' x 2" Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(2) 6' x 2" Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 714-1]	C	None		0.000	98.000	No Ice	37.470	37.470	1.600
(AT&T-E)						1/2" Ice	44.230	44.230	2.040
						1" Ice	50.990	50.990	2.480
						2" Ice	64.510	64.510	3.360
						4" Ice	91.550	91.550	5.119
////									
BXA-171063-8CF w/ Mount Pipe	A	From Leg	4.000	0.000	90.000	No Ice	3.407	3.581	0.032
(Verizon-E)			0.000			1/2" Ice	3.883	4.383	0.067
			0.000			1" Ice	4.350	5.062	0.107
						2" Ice	5.360	6.471	0.208
						4" Ice	7.519	9.639	0.522
BXA-171063-8CF w/ Mount Pipe	B	From Leg	4.000	0.000	90.000	No Ice	3.407	3.581	0.032
(Verizon-E)			0.000			1/2" Ice	3.883	4.383	0.067
			0.000			1" Ice	4.350	5.062	0.107
						2" Ice	5.360	6.471	0.208
						4" Ice	7.519	9.639	0.522
BXA-171063-8CF w/ Mount Pipe	C	From Leg	4.000	0.000	90.000	No Ice	3.407	3.581	0.032
(Verizon-E)			0.000			1/2" Ice	3.883	4.383	0.067
			0.000			1" Ice	4.350	5.062	0.107
						2" Ice	5.360	6.471	0.208
						4" Ice	7.519	9.639	0.522
BXA-70063-6CF w/Mount Pipe	A	From Leg	4.000	0.000	90.000	No Ice	7.979	5.695	0.040
(Verizon-E)			0.000			1/2" Ice	8.621	6.849	0.100
			0.000			1" Ice	9.228	7.715	0.168
						2" Ice	10.473	9.497	0.331
						4" Ice	13.082	13.262	0.798

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 K
BXA-70063-6CF w/Mount Pipe (Verizon-E)	B	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.979 8.621 9.228 10.473 13.082	5.695 6.849 7.715 9.497 13.262	0.040 0.100 0.168 0.331 0.798
BXA-70063-6CF w/Mount Pipe (Verizon-E)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.979 8.621 9.228 10.473 13.082	5.695 6.849 7.715 9.497 13.262	0.040 0.100 0.168 0.331 0.798
(2) FD9R6004/2C-3L (Verizon-E)	A	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (Verizon-E)	B	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (Verizon-E)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
BXA-80063-4BF w/ Mount Pipe (Verizon-P)	A	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.399 5.955 6.470 7.537 9.816	3.801 4.588 5.256 6.721 9.864	0.035 0.079 0.128 0.248 0.601
BXA-80063-4BF w/ Mount Pipe (Verizon-P)	B	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.399 5.955 6.470 7.537 9.816	3.801 4.588 5.256 6.721 9.864	0.035 0.079 0.128 0.248 0.601
BXA-80063-4BF w/ Mount Pipe (Verizon-P)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.399 5.955 6.470 7.537 9.816	3.801 4.588 5.256 6.721 9.864	0.035 0.079 0.128 0.248 0.601
BXA-171063-8BF w/ Mount Pipe (Verizon-P)	A	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.407 3.883 4.350 5.360 7.519	3.581 4.383 5.062 6.471 9.639	0.032 0.067 0.107 0.208 0.522
BXA-171063-8BF w/ Mount Pipe (Verizon-P)	B	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.407 3.883 4.350 5.360 7.519	3.581 4.383 5.062 6.471 9.639	0.032 0.067 0.107 0.208 0.522
BXA-171063-8BF w/ Mount Pipe (Verizon-P)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.407 3.883 4.350 5.360 7.519	3.581 4.383 5.062 6.471 9.639	0.032 0.067 0.107 0.208 0.522
RRH2X40-AWS (Verizon-P)	A	From Leg	4.000 0.000	0.000	90.000	No Ice 1/2" Ice	2.522 2.753	1.589 1.795	0.044 0.061

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 K
			0.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2X40-AWS (Verizon-P)	B	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.522 2.753 2.993 3.499 4.615	1.589 1.795 2.010 2.465 3.479	0.044 0.061 0.082 0.132 0.275
RRH2X40-AWS (Verizon-P)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.522 2.753 2.993 3.499 4.615	1.589 1.795 2.010 2.465 3.479	0.044 0.061 0.082 0.132 0.275
DB-T1-6Z-8AB-0Z (Verizon-P)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.600 5.915 6.240 6.914 8.365	2.333 2.558 2.791 3.284 4.373	0.044 0.080 0.120 0.213 0.455
Platform Mount [LP 304-1] (E)	C	None		0.000	90.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	17.460 22.440 27.420 37.380 57.300	17.460 22.440 27.420 37.380 57.300	1.349 1.625 1.900 2.451 3.554
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LLPX310R w/Mount Pipe (Clearwire-E)	A	From Leg	2.000 0.000 0.000	30.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.429 5.990 6.506 7.574 9.862	3.381 4.150 4.795 6.193 9.252	0.051 0.092 0.140 0.255 0.597
LLPX310R w/Mount Pipe (Clearwire-E)	B	From Leg	2.000 0.000 0.000	30.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.429 5.990 6.506 7.574 9.862	3.381 4.150 4.795 6.193 9.252	0.051 0.092 0.140 0.255 0.597
LLPX310R w/Mount Pipe (Clearwire-E)	C	From Leg	2.000 0.000 0.000	30.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.429 5.990 6.506 7.574 9.862	3.381 4.150 4.795 6.193 9.252	0.051 0.092 0.140 0.255 0.597
Horizon ODU (Clearwire-E)	A	From Leg	2.000 0.000 3.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.841 0.966 1.099 1.392 2.082	0.429 0.525 0.629 0.863 1.435	0.012 0.018 0.026 0.048 0.122
Horizon ODU (Clearwire-E)	B	From Leg	2.000 0.000 3.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.841 0.966 1.099 1.392 2.082	0.429 0.525 0.629 0.863 1.435	0.012 0.018 0.026 0.048 0.122
Horizon ODU (Clearwire-E)	C	From Leg	2.000 0.000 3.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.841 0.966 1.099 1.392 2.082	0.429 0.525 0.629 0.863 1.435	0.012 0.018 0.026 0.048 0.122
U-RAS (Clearwire-E)	A	From Leg	2.000 0.000 0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice	1.822 2.006 2.199	0.833 0.977 1.129	0.033 0.045 0.059

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 K
						2" Ice	2.610	1.458	0.096
						4" Ice	3.537	2.222	0.205
U-RAS (Clearwire-E)	B	From Leg	2.000 0.000 0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.822 2.006 2.199 2.610 3.537	0.833 0.977 1.129 1.458 2.222	0.033 0.045 0.059 0.096 0.205
U-RAS (Clearwire-E)	C	From Leg	2.000 0.000 0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.822 2.006 2.199 2.610 3.537	0.833 0.977 1.129 1.458 2.222	0.033 0.045 0.059 0.096 0.205
6' x 3" Mount Pipe (E-Dish)	A	From Leg	2.000 0.000 ,0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.767 2.129 2.501 3.272 4.926	1.767 2.129 2.501 3.272 4.926	0.030 0.044 0.061 0.109 0.260
6' x 3" Mount Pipe (E-Dish)	B	From Leg	2.000 0.000 0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.767 2.129 2.501 3.272 4.926	1.767 2.129 2.501 3.272 4.926	0.030 0.044 0.061 0.109 0.260
6' x 3" Mount Pipe (E-Dish)	C	From Leg	2.000 0.000 0.000	0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.767 2.129 2.501 3.272 4.926	1.767 2.129 2.501 3.272 4.926	0.030 0.044 0.061 0.109 0.260
Side Arm Mount [SO 102-3] (Clearwire-E)	C	None		0.000	80.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.000 3.480 3.960 4.920 6.840	3.000 3.480 3.960 4.920 6.840	0.081 0.111 0.141 0.201 0.321

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
A-ANT-18G-2-C (Clearwire-E)	A	Paraboloid w/Shroud (HP)	From Leg	2.000 0.000 3.000	30.000		80.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.720 4.010 4.300 4.880 6.040	0.030 0.030 0.360 0.065 0.188
A-ANT-18G-2-C (Clearwire-E)	B	Paraboloid w/Shroud (HP)	From Leg	2.000 0.000 3.000	30.000		80.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.720 4.010 4.300 4.880 6.040	0.030 0.030 0.360 0.065 0.188

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
A-ANT-18G-2-C (Clearwire-E)	C	Paraboloid w/Shroud (HP)	From Leg	2.000 0.000 3.000	30.000		80.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.720 4.010 4.300 4.880 6.040	0.030 0.030 0.360 0.065 0.188

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Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	100 - 87	Pole	Max Tension	14	0.000	0.000	0.000
			Max. Compression	14	-5.906	0.258	-0.221
			Max. Mx	11	-3.406	75.127	-0.112
			Max. My	8	-3.406	0.146	-75.093
			Max. Vy	11	-10.256	75.127	-0.112
			Max. Vx	8	10.255	0.146	-75.093
			Max. Torque	7			-0.450
L2	87 - 42.96	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-21.108	0.664	-0.509
			Max. Mx	5	-13.930	-795.871	2.256
			Max. My	8	-13.932	3.739	-793.447
			Max. Vy	5	19.663	-795.871	2.256
			Max. Vx	8	19.591	3.739	-793.447
			Max. Torque	7			-1.017
L3	42.96 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-36.569	0.565	-0.479
			Max. Mx	5	-26.920	-1876.691	5.226
			Max. My	8	-26.920	8.001	-1870.658
			Max. Vy	5	24.662	-1876.691	5.226
			Max. Vx	8	24.591	8.001	-1870.658
			Max. Torque	7			-0.910

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	36.569	0.000	0.000
	Max. H_x	11	26.928	24.633	-0.059
	Max. H_z	2	26.928	-0.031	24.582
	Max. M_x	2	1870.422	-0.031	24.582
	Max. M_z	5	1876.691	-24.654	0.059
	Max. Torsion	2	0.749	-0.031	24.582
	Min. Vert	1	26.928	0.000	0.000
	Min. H_x	5	26.928	-24.654	0.059
	Min. H_z	8	26.928	0.087	-24.582
	Min. M_x	8	-1870.658	0.087	-24.582
	Min. M_z	11	-1875.616	24.633	-0.059
	Min. Torsion	8	-0.823	0.087	-24.582

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	26.928	0.000	0.000	0.116	0.303	0.000
Dead+Wind 0 deg - No Ice	26.928	0.031	-24.582	-1870.422	-2.687	-0.749
Dead+Wind 30 deg - No Ice	26.928	12.368	-21.304	-1621.275	-941.975	-0.358
Dead+Wind 60 deg - No Ice	26.928	21.391	-12.318	-937.745	-1628.817	-0.190
Dead+Wind 90 deg - No Ice	26.928	24.654	-0.059	-5.226	-1876.691	-0.069
Dead+Wind 120 deg - No Ice	26.928	21.332	12.216	928.725	-1623.474	0.218
Dead+Wind 150 deg - No Ice	26.928	12.266	21.245	1616.169	-932.720	0.785
Dead+Wind 180 deg - No Ice	26.928	-0.087	24.582	1870.658	8.001	0.823

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 210 deg - No Ice	26.928	-12.378	21.321	1622.975	943.435	0.543
Dead+Wind 240 deg - No Ice	26.928	-21.363	12.366	942.050	1627.082	0.266
Dead+Wind 270 deg - No Ice	26.928	-24.633	0.059	5.462	1875.616	0.255
Dead+Wind 300 deg - No Ice	26.928	-21.304	-12.264	-932.559	1621.740	-0.142
Dead+Wind 330 deg - No Ice	26.928	-12.276	-21.262	-1617.396	934.180	-0.599
Dead+Ice+Temp	36.569	0.000	0.000	0.479	0.565	0.000
Dead+Wind 0 deg+Ice+Temp	36.569	0.006	-5.539	-428.330	0.001	-0.153
Dead+Wind 30 deg+Ice+Temp	36.569	2.785	-4.800	-371.159	-215.263	-0.042
Dead+Wind 60 deg+Ice+Temp	36.569	4.818	-2.774	-214.420	-372.701	0.009
Dead+Wind 90 deg+Ice+Temp	36.569	5.553	-0.012	-0.610	-429.576	0.037
Dead+Wind 120 deg+Ice+Temp	36.569	4.806	2.754	213.496	-371.601	0.087
Dead+Wind 150 deg+Ice+Temp	36.569	2.764	4.787	371.040	-213.358	0.189
Dead+Wind 180 deg+Ice+Temp	36.569	-0.018	5.539	429.310	2.200	0.169
Dead+Wind 210 deg+Ice+Temp	36.569	-2.787	4.803	372.465	216.608	0.083
Dead+Wind 240 deg+Ice+Temp	36.569	-4.812	2.785	216.305	373.336	0.007
Dead+Wind 270 deg+Ice+Temp	36.569	-5.549	0.012	1.590	430.357	0.005
Dead+Wind 300 deg+Ice+Temp	36.569	-4.800	-2.764	-213.420	372.237	-0.070
Dead+Wind 330 deg+Ice+Temp	36.569	-2.766	-4.791	-370.385	214.703	-0.147
Dead+Wind 0 deg - Service	26.928	0.011	-8.506	-647.184	-0.729	-0.259
Dead+Wind 30 deg - Service	26.928	4.279	-7.372	-560.967	-325.770	-0.124
Dead+Wind 60 deg - Service	26.928	7.402	-4.262	-324.430	-563.453	-0.066
Dead+Wind 90 deg - Service	26.928	8.531	-0.020	-1.731	-649.230	-0.024
Dead+Wind 120 deg - Service	26.928	7.381	4.227	321.464	-561.604	0.076
Dead+Wind 150 deg - Service	26.928	4.244	7.351	559.354	-322.567	0.272
Dead+Wind 180 deg - Service	26.928	-0.030	8.506	647.420	2.970	0.285
Dead+Wind 210 deg - Service	26.928	-4.283	7.378	561.710	326.678	0.188
Dead+Wind 240 deg - Service	26.928	-7.392	4.279	326.075	563.255	0.092
Dead+Wind 270 deg - Service	26.928	-8.524	0.020	1.967	649.260	0.088
Dead+Wind 300 deg - Service	26.928	-7.372	-4.244	-322.635	561.406	-0.049
Dead+Wind 330 deg - Service	26.928	-4.248	-7.357	-559.624	323.475	-0.208

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-26.928	0.000	0.000	26.928	0.000	0.000%
2	0.031	-26.928	-24.582	-0.031	26.928	24.582	0.000%
3	12.368	-26.928	-21.304	-12.368	26.928	21.304	0.000%
4	21.391	-26.928	-12.318	-21.391	26.928	12.318	0.000%
5	24.654	-26.928	-0.059	-24.654	26.928	0.059	0.000%
6	21.332	-26.928	12.216	-21.332	26.928	-12.216	0.000%
7	12.266	-26.928	21.245	-12.266	26.928	-21.245	0.000%
8	-0.087	-26.928	24.582	0.087	26.928	-24.582	0.000%
9	-12.378	-26.928	21.321	12.378	26.928	-21.321	0.000%
10	-21.363	-26.928	12.366	21.363	26.928	-12.366	0.000%
11	-24.633	-26.928	0.059	24.633	26.928	-0.059	0.000%
12	-21.304	-26.928	-12.264	21.304	26.928	12.264	0.000%
13	-12.276	-26.928	-21.262	12.276	26.928	21.262	0.000%
14	0.000	-36.569	0.000	0.000	36.569	0.000	0.000%
15	0.006	-36.569	-5.539	-0.006	36.569	5.539	0.000%
16	2.785	-36.569	-4.800	-2.785	36.569	4.800	0.000%
17	4.818	-36.569	-2.774	-4.818	36.569	2.774	0.000%
18	5.553	-36.569	-0.012	-5.553	36.569	0.012	0.000%
19	4.806	-36.569	2.754	-4.806	36.569	-2.754	0.000%
20	2.764	-36.569	4.787	-2.764	36.569	-4.787	0.000%
21	-0.018	-36.569	5.539	0.018	36.569	-5.539	0.000%
22	-2.787	-36.569	4.803	2.787	36.569	-4.803	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
23	-4.812	-36.569	2.785	4.812	36.569	-2.785	0.000%
24	-5.549	-36.569	0.012	5.549	36.569	-0.012	0.000%
25	-4.800	-36.569	-2.764	4.800	36.569	2.764	0.000%
26	-2.766	-36.569	-4.791	2.766	36.569	4.791	0.000%
27	0.011	-26.928	-8.506	-0.011	26.928	8.506	0.000%
28	4.279	-26.928	-7.372	-4.279	26.928	7.372	0.000%
29	7.402	-26.928	-4.262	-7.402	26.928	4.262	0.000%
30	8.531	-26.928	-0.020	-8.531	26.928	0.020	0.000%
31	7.381	-26.928	4.227	-7.381	26.928	-4.227	0.000%
32	4.244	-26.928	7.351	-4.244	26.928	-7.351	0.000%
33	-0.030	-26.928	8.506	0.030	26.928	-8.506	0.000%
34	-4.283	-26.928	7.378	4.283	26.928	-7.378	0.000%
35	-7.392	-26.928	4.279	7.392	26.928	-4.279	0.000%
36	-8.524	-26.928	0.020	8.524	26.928	-0.020	0.000%
37	-7.372	-26.928	-4.244	7.372	26.928	4.244	0.000%
38	-4.248	-26.928	-7.357	4.248	26.928	7.357	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00001033
3	Yes	4	0.00000001	0.00006632
4	Yes	4	0.00000001	0.00006801
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00007089
7	Yes	4	0.00000001	0.00006191
8	Yes	4	0.00000001	0.00001208
9	Yes	4	0.00000001	0.00007151
10	Yes	4	0.00000001	0.00006823
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00006470
13	Yes	4	0.00000001	0.00007310
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00007049
16	Yes	4	0.00000001	0.00007221
17	Yes	4	0.00000001	0.00007234
18	Yes	4	0.00000001	0.00007065
19	Yes	4	0.00000001	0.00007222
20	Yes	4	0.00000001	0.00007216
21	Yes	4	0.00000001	0.00007082
22	Yes	4	0.00000001	0.00007284
23	Yes	4	0.00000001	0.00007294
24	Yes	4	0.00000001	0.00007102
25	Yes	4	0.00000001	0.00007239
26	Yes	4	0.00000001	0.00007222
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001

36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 87	5.696	35	0.463	0.001
L2	91.22 - 42.96	4.849	35	0.456	0.001
L3	48.87 - 0	1.470	35	0.274	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	Lightning Rod 5/8" x 5'	35	5.696	0.463	0.001	62493
98.000	5409.50 Sq. In. Generic Appurtenance	35	5.502	0.462	0.001	62493
90.000	BXA-171063-8CF w/ Mount Pipe	35	4.733	0.454	0.001	32516
83.000	A-ANT-18G-2-C	35	4.078	0.438	0.001	20903
80.000	LLPX310R w/Mount Pipe	35	3.805	0.428	0.001	18170

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 87	16.447	10	1.336	0.003
L2	91.22 - 42.96	14.001	10	1.316	0.002
L3	48.87 - 0	4.245	10	0.792	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	Lightning Rod 5/8" x 5'	10	16.447	1.336	0.003	21826
98.000	5409.50 Sq. In. Generic Appurtenance	10	15.887	1.333	0.003	21826
90.000	BXA-171063-8CF w/ Mount Pipe	10	13.665	1.310	0.002	11342
83.000	A-ANT-18G-2-C	10	11.775	1.263	0.002	7271
80.000	LLPX310R w/Mount Pipe	10	10.987	1.236	0.002	6315

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	100 - 87 (1)	TP33.73x29.78x0.313	13.000	0.000	0.0	39.000	31.874	-3.405	1243.090	0.003
L2	87 - 42.96 (2)	TP47.24x31.823x0.375	48.260	0.000	0.0	39.000	53.534	-13.929	2087.820	0.007
L3	42.96 - 0 (3)	TP60.43x44.602x0.375	48.870	0.000	0.0	37.872	71.480	-26.920	2707.120	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	100 - 87 (1)	TP33.73x29.78x0.313	75.166	3.575	39.000	0.092	0.000	0.000	39.000	0.000
L2	87 - 42.96 (2)	TP47.24x31.823x0.375	797.870	16.122	39.000	0.413	0.000	0.000	39.000	0.000
L3	42.96 - 0 (3)	TP60.43x44.602x0.375	1880.125	21.265	37.872	0.561	0.000	0.000	37.872	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	100 - 87 (1)	TP33.73x29.78x0.313	10.256	0.322	26.000	0.025	0.001	0.000	26.000	0.000
L2	87 - 42.96 (2)	TP47.24x31.823x0.375	19.694	0.368	26.000	0.028	0.057	0.001	26.000	0.000
L3	42.96 - 0 (3)	TP60.43x44.602x0.375	24.693	0.345	26.000	0.027	0.266	0.001	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	100 - 87 (1)	0.003	0.092	0.000	0.025	0.000	0.095 ✔	1.333	H1-3+VT ✔
L2	87 - 42.96 (2)	0.007	0.413	0.000	0.028	0.000	0.420 ✔	1.333	H1-3+VT ✔
L3	42.96 - 0 (3)	0.010	0.561	0.000	0.027	0.000	0.572 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	100 - 87	Pole	TP33.73x29.78x0.313	1	-3.405	1657.039	7.1	Pass
L2	87 - 42.96	Pole	TP47.24x31.823x0.375	2	-13.929	2783.064	31.5	Pass
L3	42.96 - 0	Pole	TP60.43x44.602x0.375	3	-26.920	3608.591	42.9	Pass
							Summary	
						Pole (L3)	42.9	Pass
						RATING =	**42.9**	**Pass**

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PROJECT	**14243 - Woodbridge Country Club, CT**				
SUBJECT	**Base Analysis**				
DATE	**01/30/14**	PAGE	1	OF	1

B&T Engineering, Inc.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Circular Base Plate & Anchor Rods - TIA-222-F

Base Reactions:

Moment:	1880	(k-ft)
Axial:	27	(k)
Shear:	25	(k)

Anchor Rod Data:

Qty:	18				
Diam:	2.25	(in)			
Rod Material:	A615-J				
Strength (Fu):	100	(ksi)	Anchor Rod Tension:	71.8	(k)
Yield (Fy):	75	(ksi)	Allowable Tension:	195.0	(k)
Bolt Circle:	68.4	(in)	Anchor Rod Capacity:	36.8%	Pass

Base Plate Data:

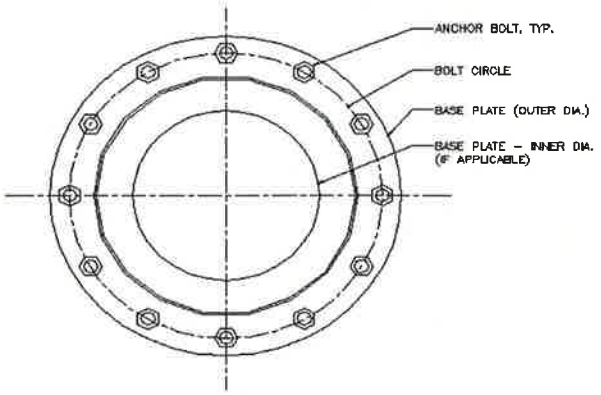
Diam:	74.43	(in)	Base Plate Stress:	26.7	(ksi)
Thick:	2.00	(in)	Allowable Stress:	60.0	(ksi)
Grade:	60	(ksi)	Base Plate Capacity:	44.5%	Pass

Pole Data:

Diam:	60.43	(in)			
Thick:	0.38	(in)			
Grade:	65	(ksi)			
# of Sides:	18				
Fu:	80	(ksi)	Punching Shear Capacity:		

Stiffener Data:

Qty:	None				
Wld Type:					
Groove Depth:		(in)			
Groove Angle:		(degrees)			
Fillet H. Weld:		(in)			
Fillet V. Weld:		(in)			
Width:		(in)			
Height:		(in)	Horizontal Weld:		
Thick:		(in)	Vertical Weld:		
Notch:		(in)	Plate Flex + Shear:		
Grade:		(ksi)	Plate Tension + Shear:		
Weld Str.:		(ksi)	Plate Compression:		



PROJECT	**88557.002.01 - Woodbridge Country Club, CT**			
SUBJECT	**Future Loading Calcs**			
DATE	**01/30/14**	PAGE 1	OF 1	

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Existing/Reserved AT&T Equipment

Equipment	QTY	Height (in)	Width (in)	Aa (ft^2)	
Powerwave RA21.7770	1	63.52	11	4.85	
KMW AM-X-CD-16-65-00T	1	72	11.8	5.90	
Ericsson RBS6601	2	17.4	11.3	2.73	
Powerwave LGP 21401	2	9.2	14.4	1.84	
				0.00	
DC6-48-60-18-8F	0.333333	23.5	9.7	0.53	
L.P. Platform				9.08	
				24.93	Per Sector

Total Frontal Area

24.93 ft^2 x 3 Sectors = 74.80 ft^2

Total Future Area

27000 in^2 = 187.5 ft^2
187.5 ft^2 - 74.80 ft^2 = 112.70 ft^2

Future Area/Sector

112.70 ft^2 / 3 Sectors = 37.57 ft^2 per sector
= 5409.50 in^2 per sector

CaAa

Ca = 2.00
CaAa = 75.13 ft^2 per sector

Equiv H & W = 6.13 ft
Depth = 0.50 ft
CaAa side = 6.13 ft^2

Existing/Reserved AT&T Feedlines

Feedlines	QTY	Width (in)	Cross-sectional Area (in^2)	
1-1/2"	9	1.5	15.904	
7/8"	2	1.09	1.866	
1/2"	1	0.63	0.312	
			0.000	
			0.000	
			0.000	
			0.000	
			0.000	
			0.000	
			0.000	
			18.082	Total

Total Future Area

34 in^2 - 18.08 in^2 = 15.92 in^2
4.501893437 in equivalent diameter