Filed by:
Kri Pelletier, Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3804 - kpelletier@sbasite.com

January 27, 2016

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

Notice of Exempt Modification
1021 Blue Hills Ave., Bloomfield, CT 06002
41.82013 N
72.69649 W
T-Mobile#: CT11162B_L700

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 125-foot level of the existing 125-foot Self-Support Tower at 1021 Blue Hills Avenue. The tower is owned by SBA Towers, LLC. The property is owned by Blue Hills Fire District. T-Mobile now intends to install three (3) new L700MHz antennas. These antennas would be installed at the 125-foot level of the tower. T-Mobile also intends to:

Remove:

- None

Remove and Replace:

- None

Install:

- (3) Andrew LNX-6515DS Panel Antennas
- (3) Ericsson S11B12 Remote Radio Heads

Existing Equipment to Remain (Entitlements):

- (1) 3106 Equipment Cabinet
- (1) S8000 Equipment Cabinet
- (1) S12000 Equipment Cabinet
- (12) 1-5/8" Coax Lines
- (1) 1-1/4" Hybrid Fiber Line
- (3) Ericsson AIR21 B2A/B4P Panel Antennas
- (3) Ericsson AIR21 B4A/B2P Panel Antennas
- (3) Tower Mounted Amplifiers

This facility was approved with Special Permit by the Board of Appeals of the Town of Bloomfield on December 1, 1997. The tower was to be located 12 feet from the property line at 1021 Blue Hills Ave with an 8' chain link fence placed around the tower. This modification complies with the aforementioned conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Honorable Joan Gamble, Mayor of the Town of Bloomfield, as well as the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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 structure.
2. The proposed modification 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 emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-referenced telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581

508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C
kpelletier@sbasite.com

Attachments
cc: The Honorable Joan Gamble–as elected official
800 Bloomfield Avenue, Bloomfield, CT 06002-0337
Blue Hills Fire District–as property owner
1021 Blue Hills Avenue Bloomfield CT 06002-3715

POWER DENSITY

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	1.19	Antenna B1 MPE%	1.19	Antenna C1 MPE%	1.19
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	1.19	Antenna B2 MPE%	1.19	Antenna C2 MPE%	1.19
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.47	Antenna B3 MPE%	0.47	Antenna C3 MPE%	0.47

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	2.84 %
AT&T	3.85 %
Verizon Wireless	7.16 %
MetroPCS	2.55 %
Clearwire	0.15 %
Sprint	2.32 %
Nextel	0.44 %
XM Satellite Radio	0.16 %
PageNet	0.08 %
Blue Hills FD	1.75
Site Total MPE %:	**21.30 %**

T-Mobile Sector 1 Total:	2.84 %
T-Mobile Sector 2 Total:	2.84 %
T-Mobile Sector 3 Total:	2.84 %
Site Total:	21.30 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	125	11.85	2100	1000	1.19 %
T-Mobile 1900 MHz (PCS) GSM/UMTS	2	1167.14	125	5.93	1900	1000	0.59 %
T-Mobile 2100 MHz (AWS) UMTS	2	1167.14	125	5.93	2100	1000	0.59 %
T-Mobile 700 MHz LTE	1	865.21	125	2.20	700	467	0.47 %
						Total:	2.84%

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

T-Mobile Existing Facility

Site ID: CT11162B

Bluehills/ Jn of Rt-187_1
1021 Blue Hills Avenue
Bloomfield, CT 06002

January 13, 2016

EBI Project Number: 6216000244

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	21.30 %

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

EBI Consulting
environmental | engineering | due diligence

January 13, 2016

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11162B – Bluehills/ Jn of Rt-187_1**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1021 Blue Hills Avenue, Bloomfield, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1021 Blue Hills Avenue, Bloomfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 2 GSM / UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P** & **B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P** & **B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is **125 feet** above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	1.19	Antenna B1 MPE%	1.19	Antenna C1 MPE%	1.19
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	1.19	Antenna B2 MPE%	1.19	Antenna C2 MPE%	1.19
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	125	Height (AGL):	125	Height (AGL):	125
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.47	Antenna B3 MPE%	0.47	Antenna C3 MPE%	0.47

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.84 %**
AT&T	3.85 %
Verizon Wireless	7.16 %
MetroPCS	2.55 %
Clearwire	0.15 %
Sprint	2.32 %
Nextel	0.44 %
XM Satellite Radio	0.16 %
PageNet	0.08 %
Blue Hills FD	1.75
Site Total MPE %:	**21.30 %**

T-Mobile Sector 1 Total:	2.84 %
T-Mobile Sector 2 Total:	2.84 %
T-Mobile Sector 3 Total:	2.84 %
Site Total:	21.30 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	**2**	**2334.27**	**125**	**11.85**	**2100**	**1000**	**1.19 %**
T-Mobile 1900 MHz (PCS) GSM/UMTS	**2**	**1167.14**	**125**	**5.93**	**1900**	**1000**	**0.59 %**
T-Mobile 2100 MHz (AWS) UMTS	**2**	**1167.14**	**125**	**5.93**	**2100**	**1000**	**0.59 %**
T-Mobile 700 MHz LTE	**1**	**865.21**	**125**	**2.20**	**700**	**467**	**0.47 %**
						Total:	**2.84%**

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Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector 1:	2.84 %
Sector 2:	2.84 %
Sector 3 :	2.84 %
T-Mobile Per Sector Maximum:	2.84 %
Site Total:	21.30 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **21.30%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

January 18, 2016

Mark Luther
SBA Communications Corporation
9900 Westpoint Drive, Suite 116
Indianapolis, IN 46256
(570) 561-3200

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CT11162B
	Site Name:	CT11162B
SBA Communications Designation:	**Site Number:**	CT01725-A
	Site Name:	Bloomfield
	Application Number:	25220, v1
Engineering Firm Designation:	**B+T Group Project Number:**	101023.002.01b
Site Data:	**1021 Blue Hills Avenue, Bloomfield, Hartford County, CT** **Latitude *41° 49' 12.43"*, Longitude *-72° 41' 47.45"*** **125 Foot - Self Support Tower**	

Dear Mark Luther,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

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

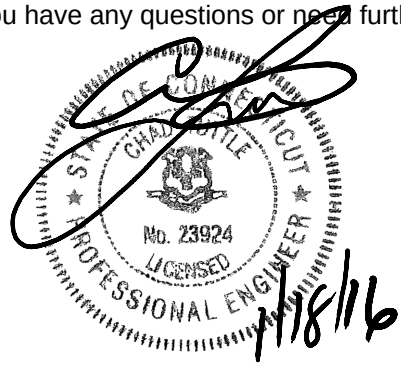
Existing + Proposed Equipment Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.	**Sufficient Capacity** Tower: 99.8% Foundation: 55.6%

The analysis has been performed in accordance with the TIA/EIA-222-F standard and IBC 2006 based upon a wind speed of 80 mph fastest mile.

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

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and SBA Communications Corporation. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.



Brandon Sevier, E.I.
Project Engineer

Chad E. Tuttle, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2016

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1) INTRODUCTION

This tower is a 125 ft. Self Support tower designed by Fred A. Nudd Corporation in March of 1998. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-E.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 28.1 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 – Existing Applicant Antenna and Cable Information

Center Line Elevation (ft)	Number of Antennas	Description	Feed Lines	Note	Mount Level (ft)	Mount Type
135.0	3	Celwave PD455	(1) 1-1/4 (2) 1/2 (2) 7/8	Blue Hills Fire & PD	125.0	(1) Platform w/Rails
	2	20' Omni				
	3	Ericsson AIR21 B2A/B4P	(13) 1-5/8	T-Mobile		
	3	Ericsson AIR21 B4A/B2P				
	3	Ericsson KRY 112 144/1				
123.0	1	Andrew VHLP2.5	(3) 1-1/4 (7) 5/16 (2) 1/2	Clearwire Existing	120.0	(3) Sector Frames
120.0	3	Samsung U-RAS				
	2	Dragonwave HORIZON DUO				
	3	Kathrein 840 10054				
119.0	1	Andrew VHLP2.5				
110.0	1	RFS Celwave DB-T1-6Z-8AB-C	(19) 1-5/8 (2) 1/2	Verizon	107.0	(3) Sector Frames
	2	GPS				
	3	Alcatel Lucent RRH2X40-AWS				
	3	Antel BXA-171063/12CF				
	3	Antel BXA-171063/8CF				
	3	Antel BXA-70063/4CF				
	1	Antel BXA-70080/4CF				
	2	Swedcom SLCP 2x6014				
98.0	2	Andrew SBNH-1D6565C	(12) 7/8 (2) 3/4 (1) 3/8 (1) 3	AT&T	98.0	(3) Sector Frames
	6	Ericsson RRUS-11				
	1	KMW AM-X-CD-16-65-00T-RET				
	6	Powerwave Tech.7770.00				
	6	Powerwave Tech.LGP21401				
	6	Powerwave Tech.LGP21903				
96.0	1	Raycap DC6-48-60-18-8F			96.0	Direct Mount
87.0	3	Alcatel Lucent 1900MHz RRH	(3) 1-1/4 (1) 0.7	Sprint	87.0	(3) Sector Mounts
	3	Alcatel Lucent 800MHZ RRH				
	3	Alcatel Lucent TD-RRH8x20-25				
	4	RFS Celwave ACU-A20-N				
	3	RFS Celwave APXVSPP18-C-A20				
	3	RFS Celwave APXVTM14-C-120				
	3	Samsung 800 MHz Filter				

Center Line Elevation (ft)	Number of Antennas	Description	Feed Lines	Note	Mount Level (ft)	Mount Type
75.0	3	RFS Celwave APXV18-206517S-C	(6) 1-5/8	Metro	75.0	Direct Mount
51.0	1	2' Omni	--	Unknown	50.0	(1) Standoff

Table 2 – Proposed Final Applicant Antenna and Cable Information

Center Line Elevation (ft)	Number of Antennas	Description	Feed Lines	Note	Mount Level (ft)	Mount Type
125.0	3	Commscope LNX-6515DS-A1M	(13) 1-5/8	T-Mobile	125.0	(1) Platform w/Rails
	3	Ericsson S11B12				
	3	Ericsson AIR21 B2A/B4P				
	3	Ericsson AIR21 B4A/B2P				
	3	Ericsson KRY 112 144/1				

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
125	125	6	Allgon	ALP9212	9	1-5/8
		3	Antennae	PD 10017		
		3	Generic	12' Cellular Boom		
118	120	9	Allgon	ALP9212	9	1-5/8
	118	3	Generic	12' Cellular Boom		
98	100	9	Allgon	ALP9212	9	1-5/8
	98	3	Generic	12' Cellular Boom		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Tower Data	Manufacturer Drawings by Fred A Nudd Corporation, Project No: 5566A	Date: 03/11/1998	SBA
Foundation Data	Foundation Drawings by Fred A Nudd Corporation, Project No: 97-5566-2	Date: 12/16/1997	SBA
Soil Properties	Geotech Report by FDH, Project No: 1206690EG1	Date: 08/10/2012	SBA
Existing Loading	SBA Site Summary	Date: 09/10/2015	SBA
Existing Loading	Previous SA by FDH	Date: 01/21/2014	SBA
Proposed Loading	App #: 25220, v1	Date: 09/22/2015	SBA

3.1) Analysis Method

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

3.2) Assumptions

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

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	125 - 120	Leg	P2.5x.203	3	-9.705	66.831	14.5	Pass
T2	120 - 100	Leg	P2.5x.203	27	-39.212	53.921	72.7	Pass
T3	100 - 80	Leg	P3.5x.226	54	-82.712	97.412	84.9	Pass
T4	80 - 60	Leg	P5x.258	81	-124.194	158.579	78.3	Pass
T5	60 - 40	Leg	P6x.28	102	-161.606	214.348	75.4	Pass
T6	40 - 20	Leg	P6x.28	123	-190.941	191.273	99.8	Pass
T7	20 - 0	Leg	P8x.322	138	-220.238	313.084	70.3	Pass
T1	125 - 120	Diagonal	5/8	15	3.909	8.834	44.2	Pass
T2	120 - 100	Diagonal	L1 1/2x1 1/2x3/16	32	-3.969	5.770	68.8	Pass
T3	100 - 80	Diagonal	L2x2x3/16	59	-5.809	10.238	56.7 74.6 (b)	Pass
T4	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	86	-6.070	12.719	47.7 80.0 (b)	Pass
T5	60 - 40	Diagonal	L2 1/2x2 1/2x3/16	107	-5.700	10.556	54.0 69.6 (b)	Pass
T6	40 - 20	Diagonal	L3x3x3/16	128	-6.690	10.802	61.9 77.1 (b)	Pass
T7	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	143	-7.276	19.998	36.4 61.2 (b)	Pass
T1	125 - 120	Horizontal	L1 1/2x1 1/2x3/16	18	-3.072	6.385	48.1	Pass
T1	125 - 120	Top Girt	L1 1/2x1 1/2x3/16	6	-1.671	6.385	26.2	Pass
T1	125 - 120	Bottom Girt	L1 1/2x1 1/2x3/16	9	-1.559	6.385	24.4	Pass
							Summary	
						Leg (T6)	99.8	Pass
						Diagonal (T4)	80.0	Pass
						Horizontal (T1)	48.1	Pass
						Top Girt (T1)	26.2	Pass
						Bottom Girt (T1)	24.4	Pass
						Bolt Checks	80.0	Pass
						RATING =	99.8	Pass

Table 6 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
--	Anchor Rods	Base	55.2	Pass
1	Base Foundation (Soil Interaction)	Base	55.6	Pass

Structure Rating (max from all components) =	99.8%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Capacities up to 100% are considered acceptable based on analysis methods used.

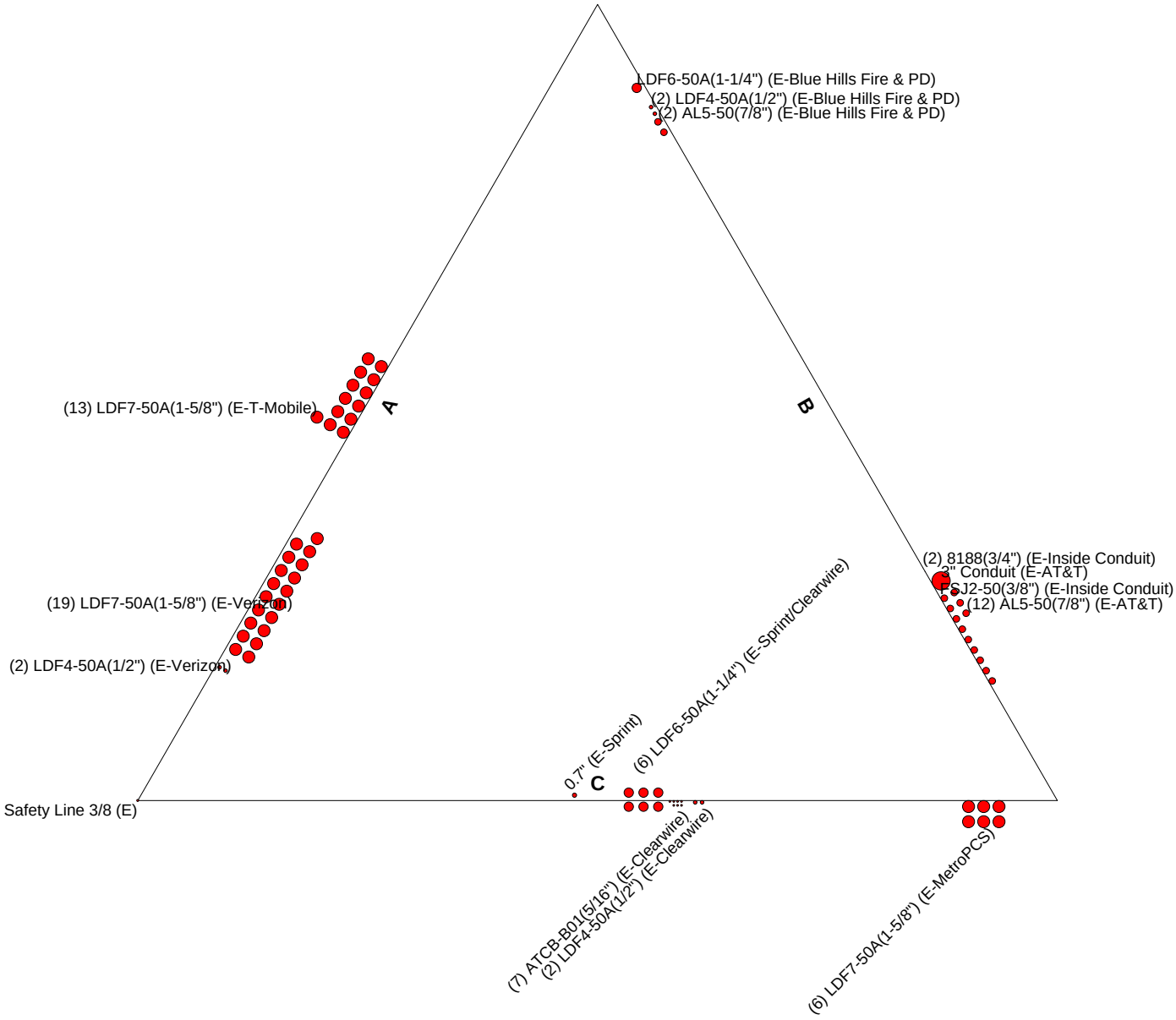
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

BASE LEVEL DRAWING

Feed Line Plan



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Job: ***101023.002.01 - Bloomfield, CT (Site# CT01725-A***		
Project:		
Client: SBA Network Services	Drawn by: B. Sevier	App'd:
Code: TIA/EIA-222-F	Date: 01/18/16	Scale: NTS
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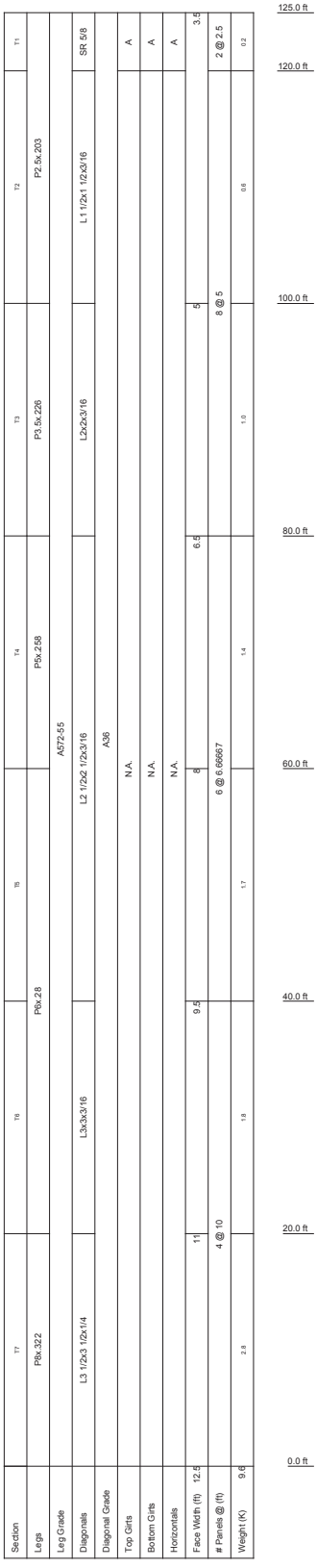
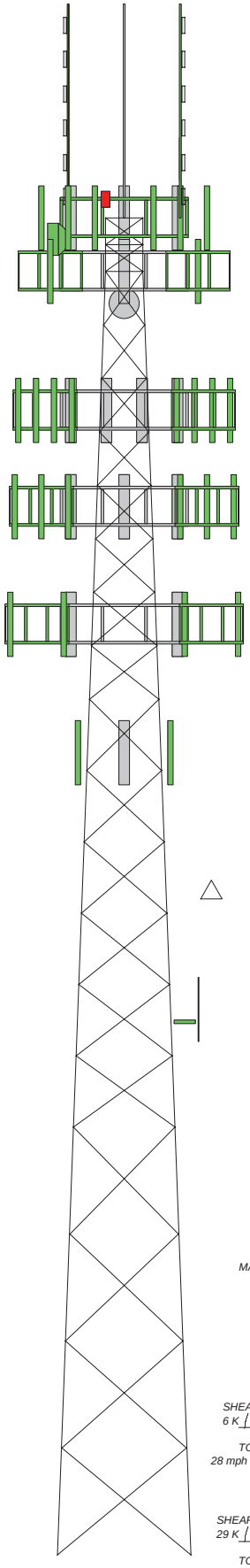
APPENDIX B

TNXTOWER OUTPUT





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8" x 5' (E)	125	Sector Mount [SM 802-3] (E)	107
Flash Beacon Lighting (E)	125	BXA-70080/4CF w/ Mount Pipe (E-Verizon)	107
PD455 (E-Blue Hills Fire ,PD)	125	SLCP 2x6014 w/ Mount Pipe (E-Verizon)	107
PD455 (E-Blue Hills Fire ,PD)	125	(2) 7770.00 w/ Mount Pipe (E-ATI)	98
PD455 (E-Blue Hills Fire ,PD)	125	AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-ATI)	98
20' x 3" Omni (E-Blue Hills Fire ,PD)	125	SBNH-1D6565C w/ Mount Pipe (E-ATI)	98
20' x 3" Omni (E-Blue Hills Fire ,PD)	125	SBNH-1D6565C w/ Mount Pipe (E-ATI)	98
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	125	(2) LGP21401 (E-ATI)	98
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	125	(2) LGP21401 (E-ATI)	98
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	125	(2) LGP21401 (E-ATI)	98
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	125	(2) RRUS-11 (E-ATI)	98
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	125	(2) RRUS-11 (E-ATI)	98
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	125	(2) RRUS-11 (E-ATI)	98
KRY 112 144/1 (E-T-Mobile)	125	(2) LGP21903 (E-ATI)	98
KRY 112 144/1 (E-T-Mobile)	125	(2) LGP21903 (E-ATI)	98
KRY 112 144/1 (E-T-Mobile)	125	(2) LGP21903 (E-ATI)	98
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	125	Sector Mount [SM 802-3] (E)	98
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	125	(2) 7770.00 w/ Mount Pipe (E-ATI)	98
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	125	(2) 7770.00 w/ Mount Pipe (E-ATI)	98
S11B12 (P-T-Mobile)	125	DC6-48-60-18-8F (E-ATI- Leg Mounted)	96
S11B12 (P-T-Mobile)	125	APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	87
S11B12 (P-T-Mobile)	125	APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	87
S11B12 (P-T-Mobile)	125	APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	87
Platform Mount [LP 602-1] (E)	125	APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	87
840 10054 w/ Mount Pipe (E-Clearwire)	120	TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	87
840 10054 w/ Mount Pipe (E-Clearwire)	120	TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	87
840 10054 w/ Mount Pipe (E-Clearwire)	120	TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	87
U-RAS (E-Clearwire)	120	1900MHz RRH (E-Sprint-Hz Offset Per Photo)	87
U-RAS (E-Clearwire)	120	1900MHz RRH (E-Sprint-Hz Offset Per Photo)	87
U-RAS (E-Clearwire)	120	1900MHz RRH (E-Sprint-Hz Offset Per Photo)	87
HORIZON DUO (E-Clearwire)	120	800MHZ RRH (E-Sprint-Hz Offset Per Photo)	87
HORIZON DUO (E-Clearwire)	120	800MHZ RRH (E-Sprint-Hz Offset Per Photo)	87
4' x 2" Pipe Mount (E-Per Photo)	120	800MHZ RRH (E-Sprint-Hz Offset Per Photo)	87
4' x 2" Pipe Mount (E-Per Photo)	120	800 MHz Filter (E-Sprint-Hz Offset Per Photo)	87
4' x 2" Pipe Mount (E-Per Photo)	120	800 MHz Filter (E-Sprint-Hz Offset Per Photo)	87
Sector Mount [SM 402-3] (E-2PIPIES/SEC)	120	800 MHz Filter (E-Sprint-Hz Offset Per Photo)	87
VHLP2.5 (E-CL Per Photo)	120	(2) ACU-A20-N (E-Sprint-Hz Offset Per Photo)	87
VHLP2.5 (E-CL Per Photo)	120	ACU-A20-N (E-Sprint-Hz Offset Per Photo)	87
SLCP 2x6014 w/ Mount Pipe (E-Verizon)	107	ACU-A20-N (E-Sprint-Hz Offset Per Photo)	87
BXA-70063/4CF w/ Mount Pipe (E-Verizon)	107	(2) 4' x 2" Pipe Mount (E)	87
BXA-70063/4CF w/ Mount Pipe (E-Verizon)	107	(2) 4' x 2" Pipe Mount (E)	87
BXA-70063/4CF w/ Mount Pipe (E-Verizon)	107	(2) 4' x 2" Pipe Mount (E)	87
BXA-171063/8CF w/ Mount Pipe (E-Verizon)	107	Sector Mount [SM 502-3] (E)	87
BXA-171063/8CF w/ Mount Pipe (E-Verizon)	107	APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	87
BXA-171063/8CF w/ Mount Pipe (E-Verizon)	107	APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	87
BXA-171063/12CF w/ Mount Pipe (E-Verizon)	107	APXV18-206517S-C w/ Mount Pipe (E-MetroPCS-Leg Mounted)	75
BXA-171063/12CF w/ Mount Pipe (E-Verizon)	107	APXV18-206517S-C w/ Mount Pipe (E-MetroPCS-Leg Mounted)	75
BXA-171063/12CF w/ Mount Pipe (E-Verizon)	107	APXV18-206517S-C w/ Mount Pipe (E-MetroPCS-Leg Mounted)	75
RRH2X40-AWS (E-Verizon)	107	2' Omni Whip (E)	50
RRH2X40-AWS (E-Verizon)	107	Side Arm Mount [SO 701-1] (E)	50
RRH2X40-AWS (E-Verizon)	107		
DB-T1-6Z-8AB-C (E-Verizon)	107		
GPS_A (E-Verizon)	107		
GPS_A (E-Verizon)	107		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16		

MATERIAL STRENGTH

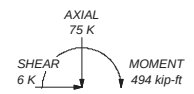
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-55	55 ksi	70 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

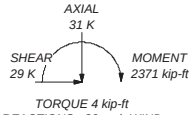
1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.8%

MAX. CORNER REACTIONS AT BASE:
DOWN: 229 K
SHEAR: 19 K

UPLIFT: -207 K
SHEAR: 17 K



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



TORQUE 4 kip-ft
REACTIONS - 80 mph WIND

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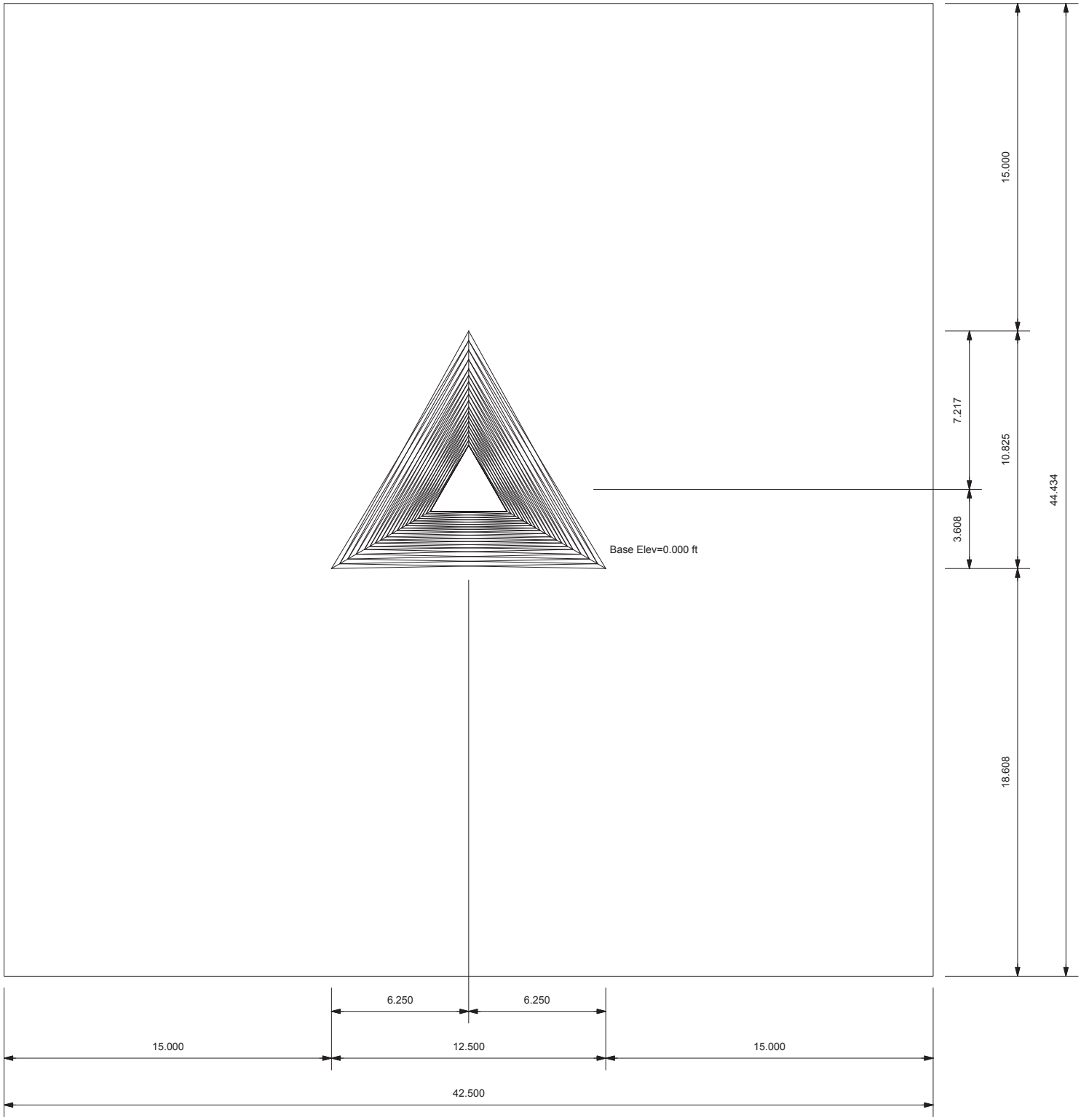
Project:			
Client: SBA Network Services	Drawn by: B. Sevier	App'd:	
Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS	
Path: S:\Projects\SBA\101023_CT01725-A_Bloomfield_CT\119\BDEngineering\Tower\101023_001_01_Bloomfield_CT.eri		Dwg No. E-1	

Plot Plan

Total Area - 0.04 Acres



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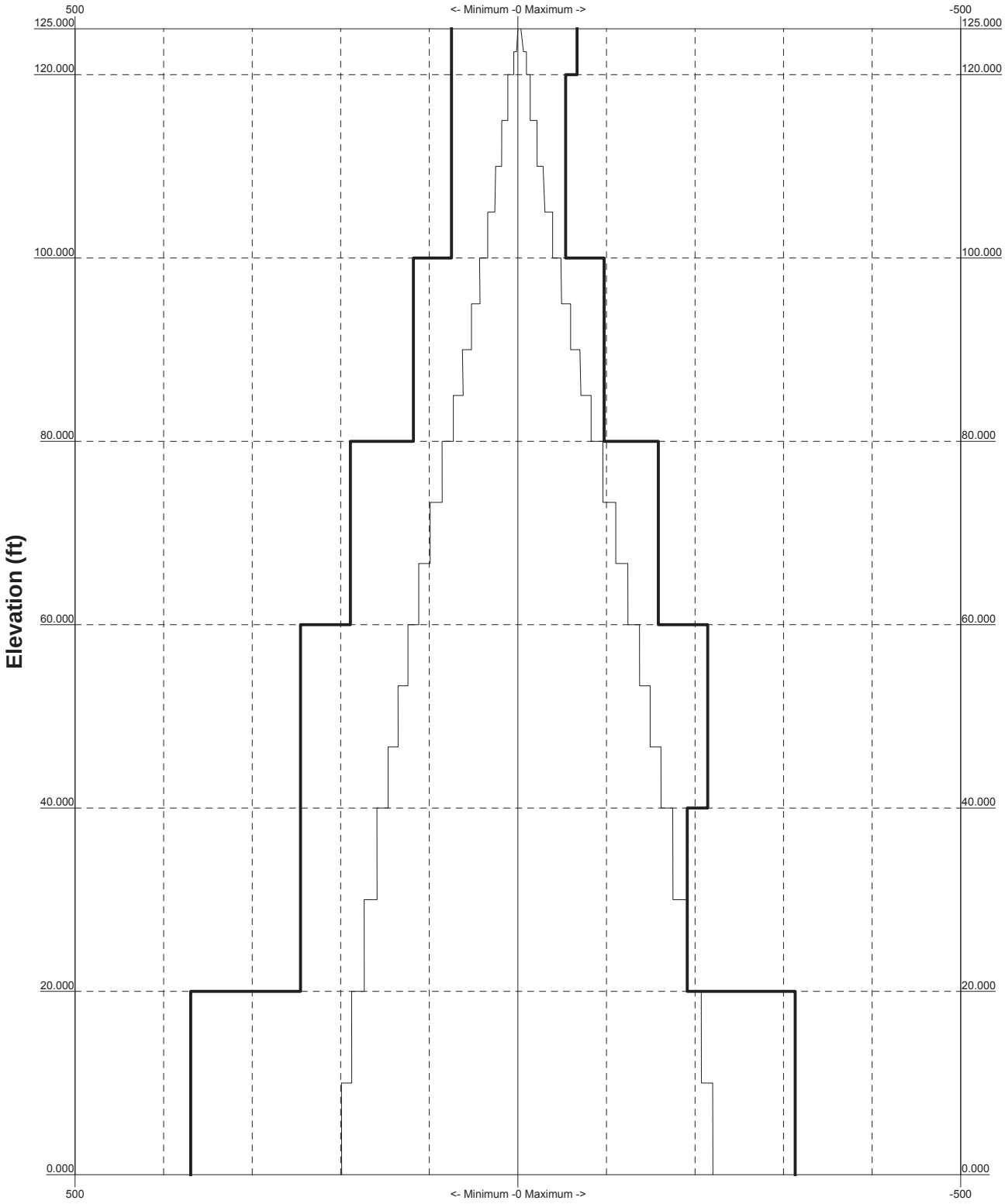
Project:		
Client: SBA Network Services	Drawn by: B. Sevier	App'd:
Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS
Path: S:\Projects\SBA\101023_CT01725-A_Bloomfield_CT11162B\Engineering\tnxTower\101023_001_01_Bloomfield_CT.eri		Dwg No. E-2

TIA/EIA-222-F - 80 mph/28 mph 1.000 in Ice

Leg Capacity ——— **Leg Compression (K)**



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Job: 101023.001.01 - Bloomfield, CT (Site# CT01725-A			
Project:			
Client: SBA Network Services	Drawn by: B. Sevier	App'd:	
Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS	
Path: S:\Projects\SBA\101023_CT01725-A_Bloomfield_CT11162B\Engineering\tnxTower\101023_001_01_Bloomfield_CT.eri		Dwg No. E-3	

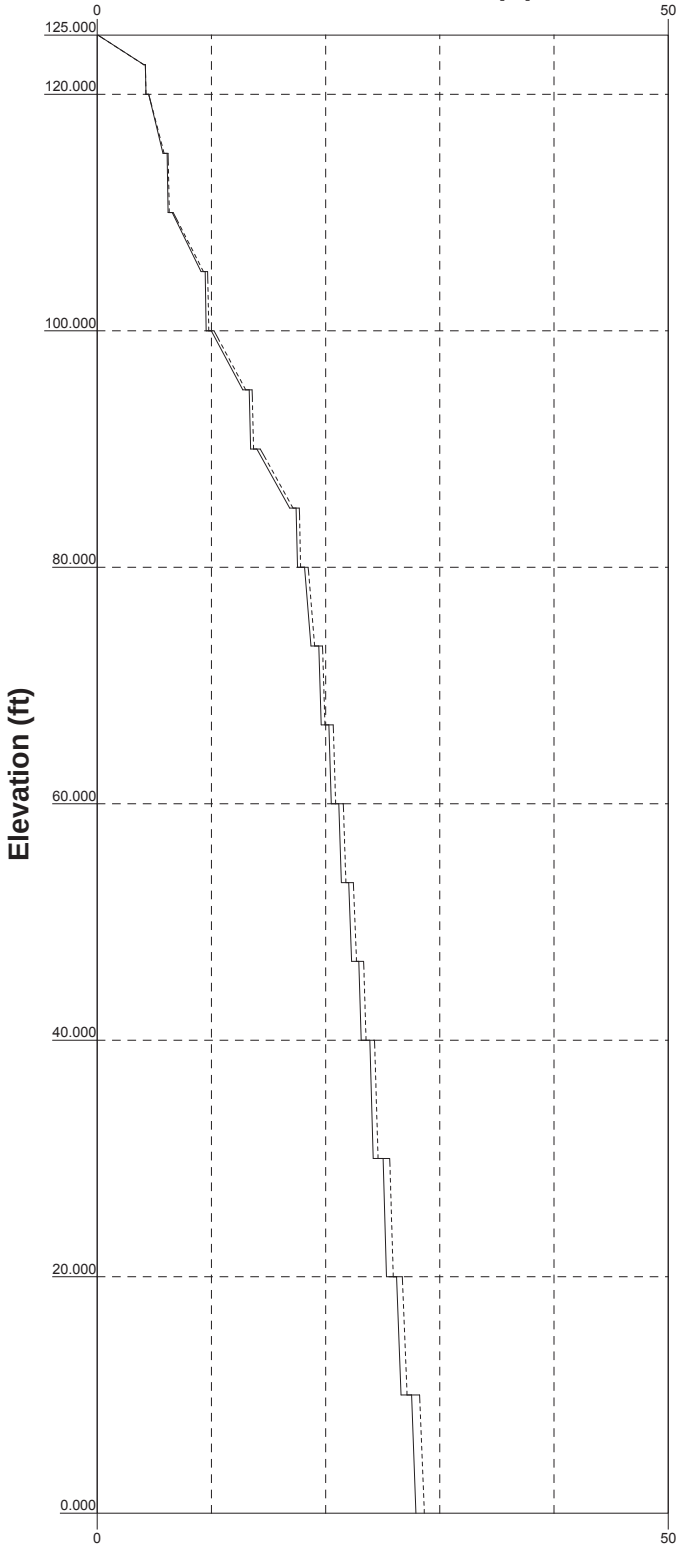
TIA/EIA-222-F - 80 mph/28 mph 1.000 in Ice

Vx Vz

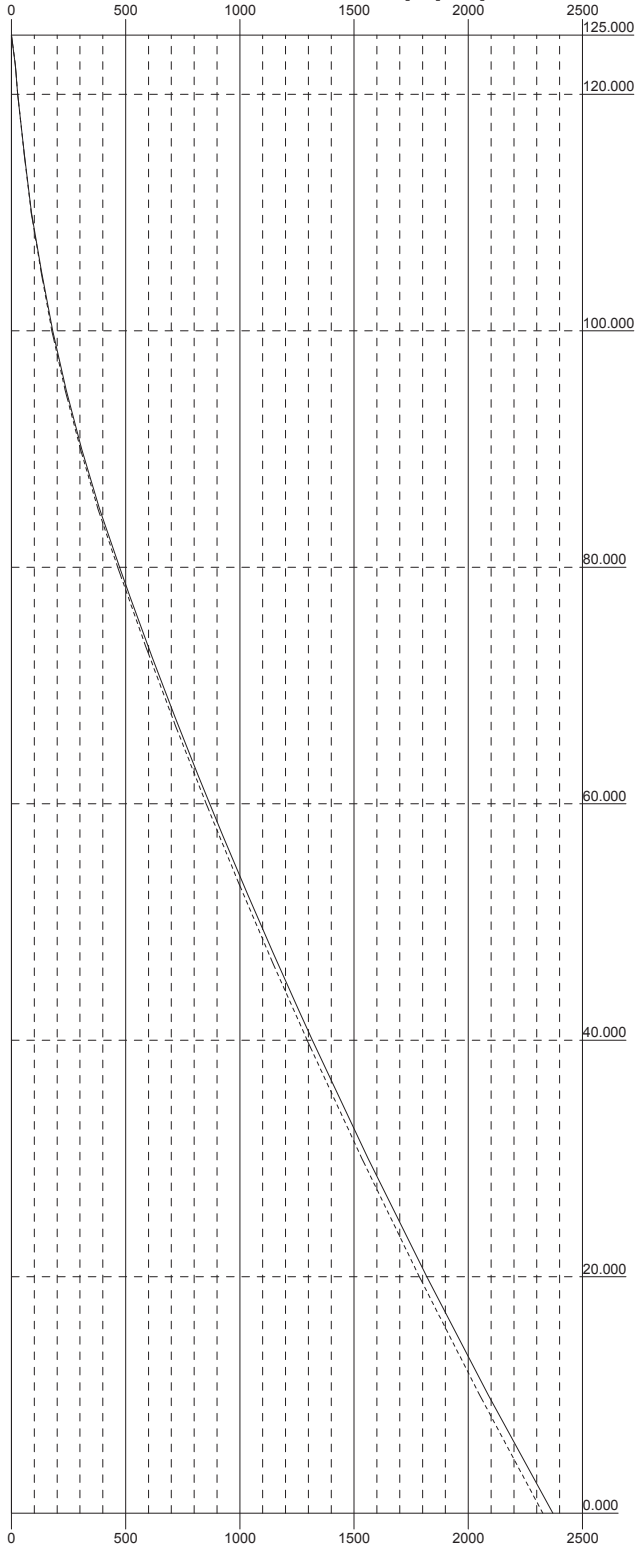
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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Job: 101023.001.01 - Bloomfield, CT (Site# CT01725-A			
Project:			
Client: SBA Network Services	Drawn by: B. Sevier	App'd:	
Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS	
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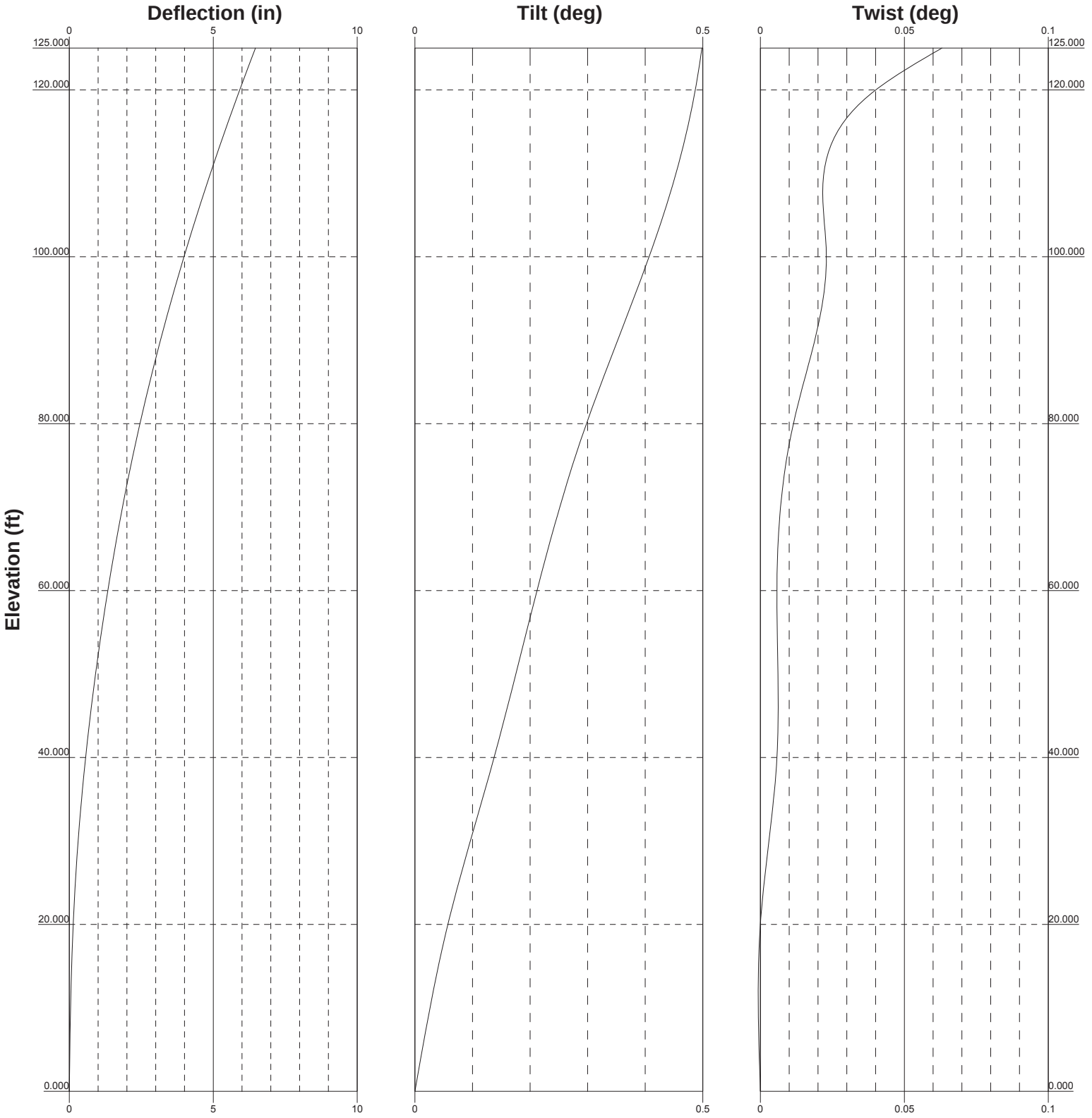
TIA/EIA-222-F - Service - 50 mph

Maximum Values



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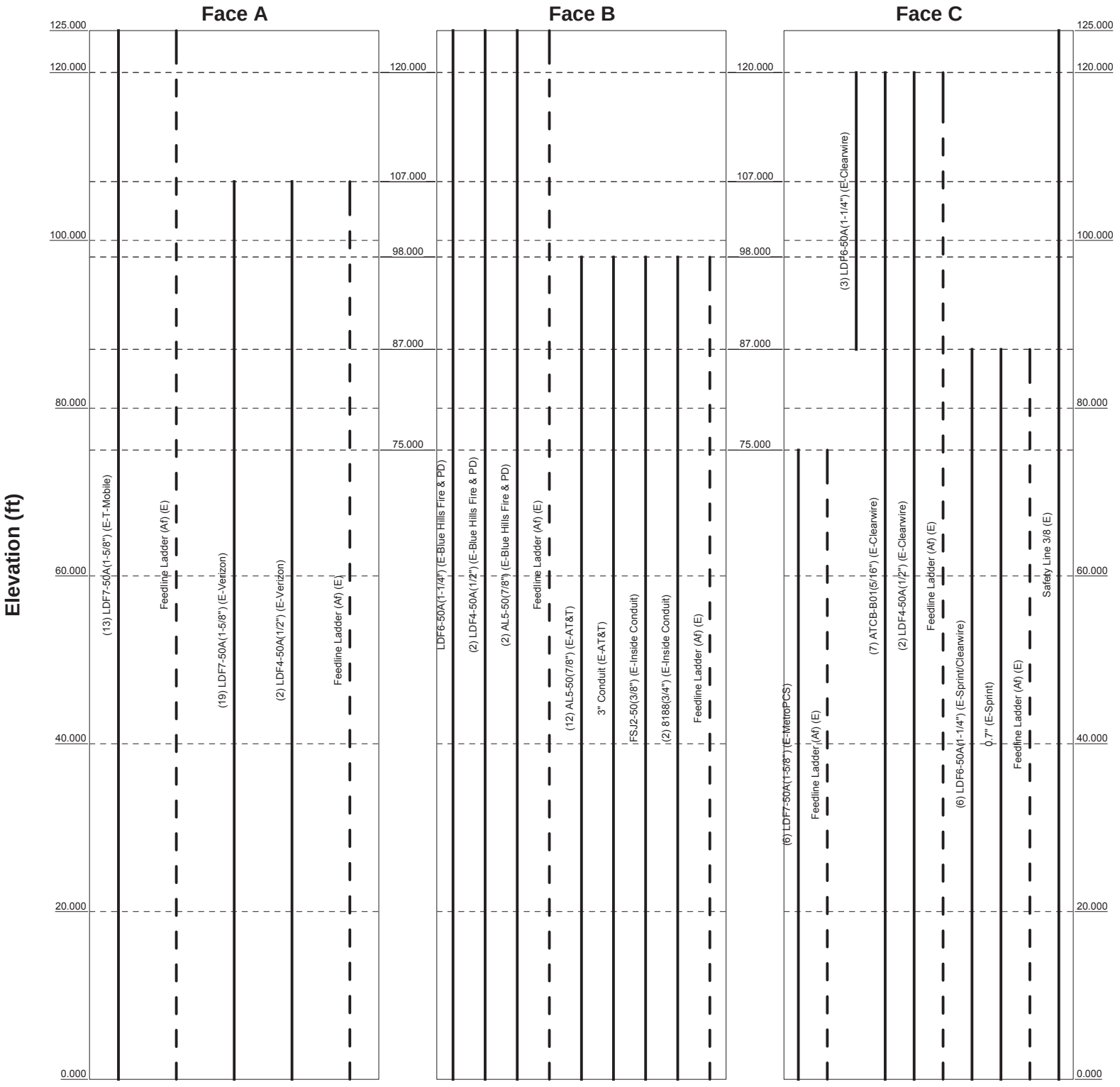
Job: ***101023.001.01 - Bloomfield, CT (Site# CT01725-A***			
Project:			
Client: SBA Network Services	Drawn by: B. Sevier	App'd:	
Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS	
Path: S:\Projects\SBA\101023_CT01725-A_Bloomfield_CT11162B\Engineering\tnxTower\101023_001_01_Bloomfield_CT.eri		Dwg No. E-5	

Feed Line Distribution Chart

0' - 125'

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



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Project:			
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Code: TIA/EIA-222-F	Date: 09/25/15	Scale: NTS	
Path: S:\Projects\SBA\101023_CT01725-A_Bloomfield_CT11162B\Engineering\tnxTower\101023_001_01_Bloomfield_CT.eri		Dwg No. E-7	

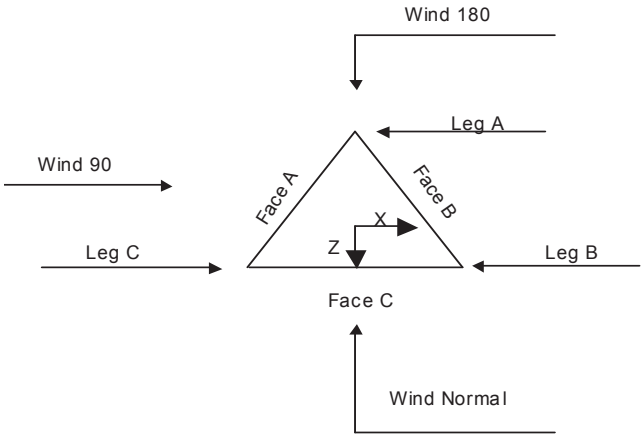
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 125.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 3.500 ft at the top and 12.500 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 28 mph is used in combination with ice.
Temperature drop of 50.000 °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 tower member 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		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	125.000-120.000			3.500	1	5.000
T2	120.000-100.000			3.500	1	20.000
T3	100.000-80.000			5.000	1	20.000
T4	80.000-60.000			6.500	1	20.000
T5	60.000-40.000			8.000	1	20.000
T6	40.000-20.000			9.500	1	20.000
T7	20.000-0.000			11.000	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	125.000-120.000	2.500	TX Brace	No	Yes	0.000	0.000
T2	120.000-100.000	5.000	X Brace	No	No	0.000	0.000
T3	100.000-80.000	5.000	X Brace	No	No	0.000	0.000
T4	80.000-60.000	6.667	X Brace	No	No	0.000	0.000
T5	60.000-40.000	6.667	X Brace	No	No	0.000	0.000
T6	40.000-20.000	10.000	X Brace	No	No	0.000	0.000
T7	20.000-0.000	10.000	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 125.000-120.000	Pipe	P2.5x.203	A572-55 (55 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 120.000-100.000	Pipe	P2.5x.203	A572-55 (55 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 100.000-80.000	Pipe	P3.5x.226	A572-55 (55 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 80.000-60.000	Pipe	P5x.258	A572-55 (55 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 60.000-40.000	Pipe	P6x.28	A572-55 (55 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 40.000-20.000	Pipe	P6x.28	A572-55 (55 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 20.000-0.000	Pipe	P8x.322	A572-55 (55 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 125.000-120.000	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 125.000-120.000	None	Single Angle		A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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
T1 125.000-120.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000
T2 120.000-100.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000
T3	0.000	0.000	A36	1	1	1	0.000	0.000

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
100.000-80.000			(36 ksi)					
T4 80.000-60.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000
T5 60.000-40.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000
T6 40.000-20.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000
T7 20.000-0.000	0.000	0.000	A36 (36 ksi)	1	1	1	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 125.000-120.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 120.000-100.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 100.000-80.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 80.000-60.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 60.000-40.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 40.000-20.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 20.000-0.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 125.000-120.000	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 120.000-100.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T3 100.000-80.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 80.000-60.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 60.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 125.000-120.000	Flange	0.750 A325N	4	0.000 A325X	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T2 120.000-100.000	Flange	0.750 A325N	6	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T3 100.000-80.000	Flange	1.000 A325N	6	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T4 80.000-60.000	Flange	1.000 A325N	8	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T5 60.000-40.000	Flange	1.000 A325N	8	0.625 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T6 40.000-20.000	Flange	1.250 A325N	8	0.625 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T7 20.000-0.000	Flange	1.500 A36	0	0.625 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
LDF7-50A(1-5/8") (E-T-Mobile)	A	Yes	Ar (CfAe)	125.000 - 0.000	0.000	0	13	6	0.500	1.980		0.001
Feedline Ladder (Af) (E)	A	Yes	Af (CfAe)	125.000 - 0.000	0.000	0	1	1	3.000	1.500	6.000	0.008

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
#												
LDF6-50A(1-1/4") (E-Blue Hills Fire & PD)	B	Yes	Ar (CfAe)	125.000 - 0.000	-0.500	-0.4	1	1	0.850 0.750	1.550		0.001
LDF4-50A(1/2") (E-Blue Hills Fire & PD)	B	Yes	Ar (CfAe)	125.000 - 0.000	-0.500	-0.37	2	2	0.630	0.630		0.000
AL5-50(7/8") (E-Blue Hills Fire & PD)	B	Yes	Ar (CfAe)	125.000 - 0.000	-0.500	-0.35	2	2	0.850 0.750	1.100		0.000
Feedline Ladder (Af) (E)	B	Yes	Af (CfAe)	125.000 - 0.000	-0.500	-0.33	1	1	3.000	3.000	12.000	0.008
#												
LDF7-50A(1-5/8") (E-Verizon)	A	Yes	Ar (CfAe)	107.000 - 0.000	-3.000	-0.23	19	10	0.500	1.980		0.001
LDF4-50A(1/2") (E-Verizon)	A	Yes	Ar (CfAe)	107.000 - 0.000	-1.500	-0.33	2	1	0.500	0.630		0.000
Feedline Ladder (Af) (E)	A	Yes	Af (CfAe)	107.000 - 0.000	-0.500	-0.3	1	1	3.000	1.500	6.000	0.008
#												
LDF7-50A(1-5/8") (E-MetroPCS)	C	Yes	Ar (CfAe)	75.000 - 0.000	0.000	-0.42	6	3	0.500	1.980		0.001
Feedline Ladder (Af) (E)	C	Yes	Af (CfAe)	75.000 - 0.000	0.000	-0.42	1	1	3.000	3.000	12.000	0.008
#												
LDF6-50A(1-1/4") (E-Clearwire)	C	Yes	Ar (CfAe)	120.000 - 87.000	0.000	-0.05	3	3	0.850 0.750	1.550		0.001
ATCB-B01(5/16") (E-Clearwire)	C	Yes	Ar (CfAe)	120.000 - 0.000	0.000	-0.085	7	4	0.315	0.315		0.000
LDF4-50A(1/2") (E-Clearwire)	C	Yes	Ar (CfAe)	120.000 - 0.000	0.000	-0.1	2	2	0.500	0.630		0.000
Feedline Ladder (Af) (E)	C	Yes	Af (CfAe)	120.000 - 0.000	0.000	-0.05	1	1	3.000	3.000	12.000	0.008
#												
AL5-50(7/8") (E-AT&T)	B	Yes	Ar (CfAe)	98.000 - 0.000	0.000	0.3	12	9	0.850 0.750	1.100		0.000
3" Conduit (E-AT&T)	B	Yes	Ar (CfAe)	98.000 - 0.000	0.000	0.23	1	1	3.000	3.000		0.003
FSJ2-50(3/8") (E-Inside Conduit)	B	No	Ar (CfAe)	98.000 - 0.000	0.000	0.23	1	1	0.425	0.000		0.000
8188(3/4") (E-Inside Conduit)	B	No	Ar (CfAe)	98.000 - 0.000	0.000	0.23	2	2	0.750	0.000		0.000
Feedline Ladder (Af) (E)	B	Yes	Af (CfAe)	98.000 - 0.000	0.000	0.25	1	1	3.000	3.000	12.000	0.008
#												
LDF6-50A(1-	C	Yes	Ar (CfAe)	87.000 - 0.000	-0.500	-0.05	6	3	0.850	1.550		0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1/4") (E-Sprint/Clearwire)									0.750			
0.7" (E-Sprint)	C	Yes	Ar (CfAe)	87.000 - 0.000	-0.500	0.025	1	1	0.630	0.700		0.000
Feedline Ladder (Af) (E) **#**	C	Yes	Af (CfAe)	87.000 - 0.000	-0.500	0	1	1	3.000	3.000	12.000	0.008
Safety Line 3/8 (E)	C	No	Ar (Leg)	125.000 - 0.000	0.000	0	1	1	0.375	0.375		0.000

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
T1	125.000-120.000	A	5.106	0.625	0.000	0.000	0.095
		B	2.087	1.250	0.000	0.000	0.049
		C	0.156	0.000	0.000	0.000	0.001
T2	120.000-100.000	A	32.343	3.375	0.000	0.000	0.551
		B	8.350	5.000	0.000	0.000	0.198
		C	12.575	5.000	0.000	0.000	0.229
T3	100.000-80.000	A	54.475	5.000	0.000	0.000	0.867
		B	27.700	9.500	0.000	0.000	0.469
		C	12.983	6.750	0.000	0.000	0.302
T4	80.000-60.000	A	54.475	5.000	0.000	0.000	0.867
		B	29.850	10.000	0.000	0.000	0.500
		C	21.167	13.750	0.000	0.000	0.640
T5	60.000-40.000	A	54.475	5.000	0.000	0.000	0.867
		B	29.850	10.000	0.000	0.000	0.500
		C	23.642	15.000	0.000	0.000	0.706
T6	40.000-20.000	A	54.475	5.000	0.000	0.000	0.867
		B	29.850	10.000	0.000	0.000	0.500
		C	23.642	15.000	0.000	0.000	0.706
T7	20.000-0.000	A	54.475	5.000	0.000	0.000	0.867
		B	29.850	10.000	0.000	0.000	0.500
		C	23.642	15.000	0.000	0.000	0.706

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
T1	125.000-120.000	A	1.170	2.932	6.442	0.000	0.000	0.273
		B		4.293	3.238	0.000	0.000	0.153
		C		1.132	0.000	0.000	0.000	0.012
T2	120.000-100.000	A	1.155	15.846	40.528	0.000	0.000	1.625
		B		17.021	12.918	0.000	0.000	0.606
		C		20.189	20.601	0.000	0.000	0.777
T3	100.000-80.000	A	1.128	23.314	67.880	0.000	0.000	2.593
		B		36.431	44.137	0.000	0.000	1.599
		C		21.547	23.167	0.000	0.000	0.941

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
T4	80.000-60.000	A	1.094	22.867	67.731	0.000	0.000	2.552
		B		37.837	47.464	0.000	0.000	1.671
		C		29.402	39.672	0.000	0.000	1.774
T5	60.000-40.000	A	1.051	22.290	67.538	0.000	0.000	2.500
		B		36.826	47.272	0.000	0.000	1.619
		C		30.273	43.308	0.000	0.000	1.898
T6	40.000-20.000	A	1.000	21.608	67.311	0.000	0.000	2.440
		B		35.633	47.044	0.000	0.000	1.560
		C		29.250	42.967	0.000	0.000	1.838
T7	20.000-0.000	A	1.000	21.608	67.311	0.000	0.000	2.440
		B		35.633	47.044	0.000	0.000	1.560
		C		29.250	42.967	0.000	0.000	1.838

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	125.000-120.000	A	0.285	3.085	0.418	0.643
		B	0.171	2.828	0.250	0.589
		C	0.000	0.000	0.000	0.000
T2	120.000-100.000	A	0.000	6.422	2.728	4.168
		B	0.000	3.739	1.038	2.427
		C	0.000	4.502	1.317	2.922
T3	100.000-80.000	A	0.000	8.926	5.214	7.914
		B	0.000	7.501	3.296	6.650
		C	0.000	4.200	1.693	3.723
T4	80.000-60.000	A	0.000	6.610	5.006	7.549
		B	0.000	5.897	3.390	6.735
		C	0.000	5.075	2.917	5.796
T5	60.000-40.000	A	0.000	5.823	4.629	6.924
		B	0.000	5.171	3.134	6.149
		C	0.000	4.825	2.990	5.738
T6	40.000-20.000	A	0.000	4.063	4.114	6.094
		B	0.000	3.588	2.786	5.381
		C	0.000	3.336	2.657	5.004
T7	20.000-0.000	A	0.000	3.818	4.510	6.681
		B	0.000	3.371	3.054	5.900
		C	0.000	3.135	2.913	5.487

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	125.000-120.000	-2.912	-4.131	-1.267	-0.735
T2	120.000-100.000	-4.376	-1.369	-2.872	-0.620
T3	100.000-80.000	-2.698	0.454	-1.141	0.730
T4	80.000-60.000	-0.698	2.224	-0.031	1.976
T5	60.000-40.000	-0.209	2.907	0.284	2.504
T6	40.000-20.000	-0.269	3.371	0.357	3.009
T7	20.000-0.000	-0.293	3.397	0.351	3.157

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 K
Lightning Rod 5/8" x 5' (E)	B	From Leg	4.000 0.000 5.500	0.000	125.000	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
Flash Beacon Lighting (E)	C	From Leg	0.000 0.000 1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.700 3.100 3.500 4.300 5.900	2.700 3.100 3.500 4.300 5.900	0.050 0.070 0.090 0.130 0.210
#									
PD455 (E-Blue Hills Fire & PD)	A	From Leg	4.000 0.000 10.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.560 7.130 10.700 17.840 32.120	3.560 7.130 10.700 17.840 32.120	0.023 0.046 0.069 0.115 0.207
PD455 (E-Blue Hills Fire & PD)	B	From Leg	4.000 0.000 10.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.560 7.130 10.700 17.840 32.120	3.560 7.130 10.700 17.840 32.120	0.023 0.046 0.069 0.115 0.207
PD455 (E-Blue Hills Fire & PD)	C	From Leg	4.000 0.000 10.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.560 7.130 10.700 17.840 32.120	3.560 7.130 10.700 17.840 32.120	0.023 0.046 0.069 0.115 0.207
20' x 3" Omni (E-Blue Hills Fire & PD)	A	From Leg	4.000 0.000 10.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.000 8.033 10.083 14.233 21.700	6.000 8.033 10.083 14.233 21.700	0.050 0.093 0.149 0.299 0.759
20' x 3" Omni (E-Blue Hills Fire & PD)	C	From Leg	4.000 0.000 10.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.000 8.033 10.083 14.233 21.700	6.000 8.033 10.083 14.233 21.700	0.050 0.093 0.149 0.299 0.759
#									
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.533 6.978 7.432 8.365 10.336	4.356 4.775 5.202 6.084 7.951	0.070 0.112 0.159 0.269 0.559
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.533 6.978 7.432 8.365 10.336	4.356 4.775 5.202 6.084 7.951	0.070 0.112 0.159 0.269 0.559
AIR21 B2A/B4P w/ Mount Pipe (E-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice	6.533 6.978 7.432	4.356 4.775 5.202	0.070 0.112 0.159

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	8.365	6.084	0.269
						4" Ice	10.336	7.951	0.559
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.840 7.397 7.932 9.035 11.370	5.681 6.581 7.376 9.019 12.521	0.044 0.101 0.165 0.317 0.745
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.840 7.397 7.932 9.035 11.370	5.681 6.581 7.376 9.019 12.521	0.044 0.101 0.165 0.317 0.745
AIR21 B4A/B2P w/ Mount Pipe (E-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.840 7.397 7.932 9.035 11.370	5.681 6.581 7.376 9.019 12.521	0.044 0.101 0.165 0.317 0.745
KRY 112 144/1 (E-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
KRY 112 144/1 (E-T-Mobile)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
KRY 112 144/1 (E-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.083 0.173 0.273 0.506 1.151
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.083 0.173 0.273 0.506 1.151
LNX-6515DS-A1M w/ Mount Pipe (P-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.083 0.173 0.273 0.506 1.151
S11B12 (P-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.306 3.550 3.802 4.334 5.501	1.361 1.540 1.728 2.130 3.038	0.051 0.072 0.096 0.154 0.314
S11B12 (P-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.306 3.550 3.802 4.334 5.501	1.361 1.540 1.728 2.130 3.038	0.051 0.072 0.096 0.154 0.314

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
S11B12	B	From Leg	4.000	0.000	125.000	No Ice	3.306	1.361	0.051
(P-T-Mobile)			0.000			1/2" Ice	3.550	1.540	0.072
			0.000			1" Ice	3.802	1.728	0.096
						2" Ice	4.334	2.130	0.154
						4" Ice	5.501	3.038	0.314
S11B12	C	From Leg	4.000	0.000	125.000	No Ice	3.306	1.361	0.051
(P-T-Mobile)			0.000			1/2" Ice	3.550	1.540	0.072
			0.000			1" Ice	3.802	1.728	0.096
						2" Ice	4.334	2.130	0.154
						4" Ice	5.501	3.038	0.314
Platform Mount [LP 602-1]	C	None		0.000	125.000	No Ice	32.030	32.030	1.343
(E)						1/2" Ice	38.710	38.710	1.800
						1" Ice	45.390	45.390	2.257
						2" Ice	58.750	58.750	3.170
						4" Ice	85.470	85.470	4.998
#									
840 10054 w/ Mount Pipe	A	From Leg	4.000	0.000	120.000	No Ice	5.413	2.385	0.051
(E-Clearwire)			0.000			1/2" Ice	5.833	2.917	0.088
			0.000			1" Ice	6.263	3.466	0.129
						2" Ice	7.156	4.614	0.230
						4" Ice	9.093	7.316	0.533
840 10054 w/ Mount Pipe	B	From Leg	4.000	0.000	120.000	No Ice	5.413	2.385	0.051
(E-Clearwire)			0.000			1/2" Ice	5.833	2.917	0.088
			0.000			1" Ice	6.263	3.466	0.129
						2" Ice	7.156	4.614	0.230
						4" Ice	9.093	7.316	0.533
840 10054 w/ Mount Pipe	C	From Leg	4.000	0.000	120.000	No Ice	5.413	2.385	0.051
(E-Clearwire)			0.000			1/2" Ice	5.833	2.917	0.088
			0.000			1" Ice	6.263	3.466	0.129
						2" Ice	7.156	4.614	0.230
						4" Ice	9.093	7.316	0.533
U-RAS	A	From Leg	4.000	0.000	120.000	No Ice	1.804	0.778	0.030
(E-Clearwire)			0.000			1/2" Ice	1.988	0.918	0.045
			0.000			1" Ice	2.180	1.067	0.058
						2" Ice	2.589	1.391	0.094
						4" Ice	3.512	2.143	0.201
U-RAS	B	From Leg	4.000	0.000	120.000	No Ice	1.804	0.778	0.030
(E-Clearwire)			0.000			1/2" Ice	1.988	0.918	0.045
			0.000			1" Ice	2.180	1.067	0.058
						2" Ice	2.589	1.391	0.094
						4" Ice	3.512	2.143	0.201
U-RAS	C	From Leg	4.000	0.000	120.000	No Ice	1.804	0.778	0.030
(E-Clearwire)			0.000			1/2" Ice	1.988	0.918	0.045
			0.000			1" Ice	2.180	1.067	0.058
						2" Ice	2.589	1.391	0.094
						4" Ice	3.512	2.143	0.201
HORIZON DUO	A	From Leg	4.000	0.000	120.000	No Ice	0.547	0.343	0.007
(E-Clearwire)			0.000			1/2" Ice	0.648	0.426	0.012
			0.000			1" Ice	0.759	0.518	0.018
						2" Ice	1.005	0.728	0.036
						4" Ice	1.601	1.252	0.097
HORIZON DUO	C	From Leg	4.000	0.000	120.000	No Ice	0.547	0.343	0.007
(E-Clearwire)			0.000			1/2" Ice	0.648	0.426	0.012
			0.000			1" Ice	0.759	0.518	0.018
						2" Ice	1.005	0.728	0.036
						4" Ice	1.601	1.252	0.097
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	120.000	No Ice	0.785	0.785	0.029

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E-Per Photo)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	120.000	No Ice	0.785	0.785	0.029
(E-Per Photo)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	120.000	No Ice	0.785	0.785	0.029
(E-Per Photo)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
Sector Mount [SM 402-3]	C	None		0.000	120.000	No Ice	18.910	18.910	0.851
(E-2PIPIES/SEC)						1/2" Ice	26.780	26.780	1.233
						1" Ice	34.650	34.650	1.616
						2" Ice	50.390	50.390	2.381
						4" Ice	81.870	81.870	3.910
#									
BXA-70080/4CF w/ Mount Pipe	A	From Leg	4.000	0.000	107.000	No Ice	5.442	3.997	0.031
			0.000			1/2" Ice	5.890	4.611	0.075
(E-Verizon)			3.000			1" Ice	6.348	5.255	0.125
						2" Ice	7.295	6.652	0.245
						4" Ice	9.325	9.711	0.595
SLCP 2x6014 w/ Mount Pipe	B	From Leg	4.000	0.000	107.000	No Ice	7.451	6.955	0.040
(E-Verizon)			0.000			1/2" Ice	7.961	7.756	0.105
			3.000			1" Ice	8.470	8.520	0.176
						2" Ice	9.519	10.100	0.343
						4" Ice	11.742	13.475	0.799
SLCP 2x6014 w/ Mount Pipe	C	From Leg	4.000	0.000	107.000	No Ice	7.451	6.955	0.040
(E-Verizon)			0.000			1/2" Ice	7.961	7.756	0.105
			3.000			1" Ice	8.470	8.520	0.176
						2" Ice	9.519	10.100	0.343
						4" Ice	11.742	13.475	0.799
BXA-70063/4CF w/ Mount Pipe	A	From Leg	4.000	0.000	107.000	No Ice	5.399	3.616	0.028
			0.000			1/2" Ice	5.844	4.217	0.070
(E-Verizon)			3.000			1" Ice	6.299	4.834	0.118
						2" Ice	7.240	6.161	0.233
						4" Ice	9.261	9.183	0.573
BXA-70063/4CF w/ Mount Pipe	B	From Leg	4.000	0.000	107.000	No Ice	5.399	3.616	0.028
			0.000			1/2" Ice	5.844	4.217	0.070
(E-Verizon)			3.000			1" Ice	6.299	4.834	0.118
						2" Ice	7.240	6.161	0.233
						4" Ice	9.261	9.183	0.573
BXA-70063/4CF w/ Mount Pipe	C	From Leg	4.000	0.000	107.000	No Ice	5.399	3.616	0.028
			0.000			1/2" Ice	5.844	4.217	0.070
(E-Verizon)			3.000			1" Ice	6.299	4.834	0.118
						2" Ice	7.240	6.161	0.233
						4" Ice	9.261	9.183	0.573
BXA-171063/8CF w/ Mount Pipe	A	From Leg	4.000	0.000	107.000	No Ice	3.140	3.510	0.029
			0.000			1/2" Ice	3.515	4.130	0.062
(E-Verizon)			3.000			1" Ice	3.915	4.757	0.100
						2" Ice	4.804	6.059	0.196
						4" Ice	6.715	9.095	0.492
BXA-171063/8CF w/ Mount Pipe	B	From Leg	4.000	0.000	107.000	No Ice	3.140	3.510	0.029
			0.000			1/2" Ice	3.515	4.130	0.062

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E-Verizon)			3.000			1" Ice	3.915	4.757	0.100
						2" Ice	4.804	6.059	0.196
						4" Ice	6.715	9.095	0.492
BXA-171063/8CF w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	107.000	No Ice 1/2" Ice	3.140 3.515	3.510 4.130	0.029 0.062
(E-Verizon)			3.000			1" Ice	3.915	4.757	0.100
						2" Ice	4.804	6.059	0.196
						4" Ice	6.715	9.095	0.492
BXA-171063/12CF w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	107.000	No Ice 1/2" Ice	5.029 5.583	5.289 6.459	0.041 0.087
(E-Verizon)			3.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
BXA-171063/12CF w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	107.000	No Ice 1/2" Ice	5.029 5.583	5.289 6.459	0.041 0.087
(E-Verizon)			3.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
BXA-171063/12CF w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	107.000	No Ice 1/2" Ice	5.029 5.583	5.289 6.459	0.041 0.087
(E-Verizon)			3.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
						4" Ice	9.438	12.947	0.677
RRH2X40-AWS	A	From Leg	4.000	0.000	107.000	No Ice	2.522	1.589	0.044
(E-Verizon)			0.000			1/2" Ice	2.753	1.795	0.061
			3.000			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	B	From Leg	4.000	0.000	107.000	No Ice	2.522	1.589	0.044
(E-Verizon)			0.000			1/2" Ice	2.753	1.795	0.061
			3.000			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	C	From Leg	4.000	0.000	107.000	No Ice	2.522	1.589	0.044
(E-Verizon)			0.000			1/2" Ice	2.753	1.795	0.061
			3.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
DB-T1-6Z-8AB-C	A	From Leg	4.000	0.000	107.000	No Ice	5.600	2.333	0.040
(E-Verizon)			0.000			1/2" Ice	5.915	2.558	0.080
			3.000			1" Ice	6.240	2.791	0.120
						2" Ice	6.914	3.284	0.213
						4" Ice	8.365	4.373	0.455
GPS_A	A	From Leg	4.000	0.000	107.000	No Ice	0.297	0.297	0.001
(E-Verizon)			0.000			1/2" Ice	0.374	0.374	0.005
			3.000			1" Ice	0.459	0.459	0.010
						2" Ice	0.655	0.655	0.025
						4" Ice	1.151	1.151	0.079
GPS_A	B	From Leg	4.000	0.000	107.000	No Ice	0.297	0.297	0.001
(E-Verizon)			0.000			1/2" Ice	0.374	0.374	0.005
			3.000			1" Ice	0.459	0.459	0.010
						2" Ice	0.655	0.655	0.025
						4" Ice	1.151	1.151	0.079
Sector Mount [SM 802-3]	C	None		0.000	107.000	No Ice	24.410	24.410	0.930
(E)						1/2" Ice	31.390	31.390	1.362
						1" Ice	38.370	38.370	1.794
						2" Ice	52.330	52.330	2.658

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	80.250	80.250	4.386
#									
(2) 7770.00 w/ Mount Pipe (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.119 6.626 7.128 8.164 10.360	4.254 5.014 5.711 7.155 10.412	0.055 0.103 0.157 0.287 0.665
(2) 7770.00 w/ Mount Pipe (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.119 6.626 7.128 8.164 10.360	4.254 5.014 5.711 7.155 10.412	0.055 0.103 0.157 0.287 0.665
(2) 7770.00 w/ Mount Pipe (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.119 6.626 7.128 8.164 10.360	4.254 5.014 5.711 7.155 10.412	0.055 0.103 0.157 0.287 0.665
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.139 0.212 0.385 0.874
SBNH-1D6565C w/ Mount Pipe (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.099 0.189 0.288 0.522 1.167
SBNH-1D6565C w/ Mount Pipe (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.099 0.189 0.288 0.522 1.167
(2) LGP21401 (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) LGP21401 (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) LGP21401 (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) RRUS-11 (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310
(2) RRUS-11 (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310

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) RRUS-11 (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.249 3.491 3.741 4.268 5.426	1.373 1.551 1.738 2.138 3.042	0.048 0.068 0.092 0.150 0.310
(2) LGP21903 (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.270 0.343 0.425 0.616 1.101	0.184 0.248 0.322 0.494 0.943	0.011 0.013 0.017 0.028 0.072
(2) LGP21903 (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.270 0.343 0.425 0.616 1.101	0.184 0.248 0.322 0.494 0.943	0.011 0.013 0.017 0.028 0.072
(2) LGP21903 (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.270 0.343 0.425 0.616 1.101	0.184 0.248 0.322 0.494 0.943	0.011 0.013 0.017 0.028 0.072
Sector Mount [SM 802-3] (E)	C	None		0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	24.410 31.390 38.370 52.330 80.250	24.410 31.390 38.370 52.330 80.250	0.930 1.362 1.794 2.658 4.386
# DC6-48-60-18-8F (E-AT&T- Leg Mounted)	C	From Leg	1.000 0.000 0.000	0.000	96.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.467 1.667 1.878 2.333 3.378	1.467 1.667 1.878 2.333 3.378	0.019 0.037 0.057 0.105 0.239
# APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	A	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	B	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe (E-Sprint)	C	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	A	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	B	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-C-120 w/ Mount Pipe (E-Sprint)	C	From Leg	4.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	A	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	B	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E-Sprint-Hz Offset Per Photo)	C	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
1900MHz RRH (E-Sprint-Hz Offset Per Photo)	A	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.907 3.145 3.391 3.909 5.050	3.801 4.065 4.337 4.908 6.152	0.044 0.075 0.110 0.192 0.407
1900MHz RRH (E-Sprint-Hz Offset Per Photo)	B	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.907 3.145 3.391 3.909 5.050	3.801 4.065 4.337 4.908 6.152	0.044 0.075 0.110 0.192 0.407
1900MHz RRH (E-Sprint-Hz Offset Per Photo)	C	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.907 3.145 3.391 3.909 5.050	3.801 4.065 4.337 4.908 6.152	0.044 0.075 0.110 0.192 0.407
800MHZ RRH (E-Sprint-Hz Offset Per Photo)	A	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHZ RRH (E-Sprint-Hz Offset Per Photo)	B	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHZ RRH (E-Sprint-Hz Offset Per Photo)	C	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800 MHz Filter (E-Sprint-Hz Offset Per Photo)	A	From Leg	2.000 0.000 0.000	0.000	87.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.820 2.008 2.205 2.625 3.568	0.604 0.747 0.899 1.228 1.991	0.009 0.019 0.032 0.064 0.165
800 MHz Filter (E-Sprint-Hz Offset Per	B	From Leg	2.000 0.000	0.000	87.000	No Ice 1/2" Ice	1.820 2.008	0.604 0.747	0.009 0.019

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
Photo)			0.000			1" Ice	2.205	0.899	0.032
						2" Ice	2.625	1.228	0.064
						4" Ice	3.568	1.991	0.165
800 MHz Filter	C	From Leg	2.000	0.000	87.000	No Ice	1.820	0.604	0.009
(E-Sprint-Hz Offset Per			0.000			1/2" Ice	2.008	0.747	0.019
Photo)			0.000			1" Ice	2.205	0.899	0.032
						2" Ice	2.625	1.228	0.064
						4" Ice	3.568	1.991	0.165
(2) ACU-A20-N	A	From Leg	2.000	0.000	87.000	No Ice	0.078	0.136	0.001
(E-Sprint-Hz Offset Per			0.000			1/2" Ice	0.121	0.189	0.002
Photo)			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
ACU-A20-N	B	From Leg	2.000	0.000	87.000	No Ice	0.078	0.136	0.001
(E-Sprint-Hz Offset Per			0.000			1/2" Ice	0.121	0.189	0.002
Photo)			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
ACU-A20-N	C	From Leg	2.000	0.000	87.000	No Ice	0.078	0.136	0.001
(E-Sprint-Hz Offset Per			0.000			1/2" Ice	0.121	0.189	0.002
Photo)			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(2) 4' x 2" Pipe Mount	A	From Leg	4.000	0.000	87.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
(2) 4' x 2" Pipe Mount	B	From Leg	4.000	0.000	87.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
(2) 4' x 2" Pipe Mount	C	From Leg	4.000	0.000	87.000	No Ice	0.785	0.785	0.029
(E)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
Sector Mount [SM 502-3]	C	None		0.000	87.000	No Ice	33.020	33.020	1.673
(E)						1/2" Ice	47.360	47.360	2.224
						1" Ice	61.700	61.700	2.775
						2" Ice	90.380	90.380	3.876
						4" Ice	147.740	147.740	6.080
#									
APXV18-206517S-C w/	A	From Leg	1.000	0.000	75.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E-MetroPCS-Leg Mounted)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	B	From Leg	1.000	0.000	75.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E-MetroPCS-Leg Mounted)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	C	From Leg	1.000	0.000	75.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E-MetroPCS-Leg Mounted)			0.000			1" Ice	6.481	6.734	0.150

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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	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
#									
2' Omni Whip (E)	B	From Leg	3.000 0.000 1.000	0.000	50.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.411 0.556 0.722 1.089 1.956	0.411 0.556 0.722 1.089 1.956	0.010 0.015 0.021 0.039 0.103
Side Arm Mount [SO 701-1] (E)	B	From Leg	1.500 0.000 0.000	0.000	50.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.850 1.140 1.430 2.010 3.170	1.670 2.340 3.010 4.350 7.030	0.065 0.079 0.093 0.121 0.177
#									

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
VHLP2.5 (E-CL Per Photo)	A	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 -3.000	0.000		120.000	2.917	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.681 7.069 7.456 8.230 9.779	0.048 0.077 0.106 0.164 0.280
VHLP2.5 (E-CL Per Photo)	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 3.000	0.000		120.000	2.917	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.681 7.069 7.456 8.230 9.779	0.048 0.077 0.106 0.164 0.280
#											

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

Comb. No.	Description
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
T1	125 - 120	Leg	Max Tension	12	4.660	0.143	0.118
			Max. Compression	2	-9.705	-0.045	0.213
			Max. Mx	6	-9.346	-0.164	-0.129
			Max. My	2	-9.705	-0.045	0.213
			Max. Vy	5	-1.373	0.000	-0.000
			Max. Vx	8	-1.460	0.000	0.000
		Diagonal	Max Tension	3	3.909	0.000	0.000
		Horizontal	Max Tension	2	0.168	0.000	0.000
			Max. Compression	9	-3.072	0.000	0.000
			Max. Mx	14	0.044	-0.010	0.000
			Max. My	8	0.086	0.000	0.000
			Max. Vy	14	0.012	0.000	0.000
			Max. Vx	8	-0.000	0.000	0.000
		Top Girt	Max Tension	6	0.644	0.000	0.000
			Max. Compression	2	-1.671	0.000	0.000
			Max. Mx	14	0.001	-0.010	0.000
			Max. My	3	-1.489	0.000	-0.000
			Max. Vy	14	0.012	0.000	0.000
			Max. Vx	3	0.000	0.000	0.000
		Bottom Girt	Max Tension	6	0.191	0.000	0.000
			Max. Compression	3	-1.559	0.000	0.000
			Max. Mx	14	-0.024	-0.010	0.000
			Max. My	9	-1.534	0.000	-0.000
			Max. Vy	14	0.012	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	120 - 100	Leg	Max Tension	8	34.100	-0.372	-0.009
			Max. Compression	2	-39.212	0.202	0.017
			Max. Mx	2	-28.537	-0.627	0.013
			Max. My	7	-2.623	-0.013	0.658
			Max. Vy	8	0.489	-0.372	-0.009
			Max. Vx	7	0.552	-0.013	-0.429
		Diagonal	Max Tension	9	3.979	0.000	0.000
			Max. Compression	3	-3.969	0.000	0.000
			Max. Mx	2	3.337	0.018	0.000
			Max. My	3	-3.415	-0.006	0.007
			Max. Vy	15	-0.011	0.013	-0.001
			Max. Vx	3	-0.003	0.000	0.000
T3	100 - 80	Leg	Max Tension	8	72.814	-0.702	-0.008
			Max. Compression	2	-82.712	0.215	0.012
			Max. Mx	4	42.350	0.773	-0.018
			Max. My	7	-4.028	-0.007	0.841
			Max. Vy	4	0.656	-0.700	0.004
			Max. Vx	13	-0.555	-0.012	0.462
		Diagonal	Max Tension	3	5.681	0.000	0.000
			Max. Compression	3	-5.809	0.000	0.000
			Max. Mx	8	4.403	0.036	0.000
			Max. My	9	-5.766	-0.022	-0.007
			Max. Vy	23	-0.018	0.022	0.001
			Max. Vx	9	0.002	0.000	0.000
T4	80 - 60	Leg	Max Tension	8	112.017	-0.543	-0.009
			Max. Compression	2	-124.194	0.847	0.006
			Max. Mx	2	-124.194	0.847	0.006
			Max. My	9	-5.705	-0.019	0.806
			Max. Vy	4	0.219	-0.823	0.003
			Max. Vx	13	-0.143	0.009	0.570
		Diagonal	Max Tension	3	6.101	0.000	0.000
			Max. Compression	3	-6.284	0.000	0.000
			Max. Mx	2	4.461	0.064	0.003
			Max. My	8	-5.413	-0.019	-0.007
			Max. Vy	23	-0.025	0.041	0.003
			Max. Vx	8	0.002	0.000	0.000
T5	60 - 40	Leg	Max Tension	8	146.574	-1.054	0.001
			Max. Compression	2	-161.606	1.377	0.010
			Max. Mx	2	-161.606	1.377	0.010
			Max. My	9	-6.693	-0.004	1.185
			Max. Vy	17	0.097	-0.520	-0.000
			Max. Vx	9	-0.121	-0.004	1.185
		Diagonal	Max Tension	3	5.678	0.000	0.000
			Max. Compression	3	-5.855	0.000	0.000
			Max. Mx	2	4.291	0.051	0.002
			Max. My	9	-5.679	-0.025	-0.008
			Max. Vy	23	-0.026	0.036	0.002
			Max. Vx	9	0.002	0.000	0.000
T6	40 - 20	Leg	Max Tension	8	173.591	-0.721	-0.010
			Max. Compression	2	-190.941	2.042	0.014
			Max. Mx	2	-190.941	2.042	0.014
			Max. My	9	-8.518	-0.122	2.098
			Max. Vy	2	-0.198	2.042	0.014
			Max. Vx	9	0.256	-0.122	2.098
		Diagonal	Max Tension	3	6.286	0.000	0.000
			Max. Compression	3	-6.733	0.000	0.000
			Max. Mx	2	4.891	0.116	0.008
			Max. My	9	-6.695	-0.060	-0.022
			Max. Vy	23	-0.035	0.069	-0.007
			Max. Vx	9	0.004	0.000	0.000
T7	20 - 0	Leg	Max Tension	8	199.184	-1.929	-0.022

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	2	-220.238	-0.000	-0.000
			Max. Mx	2	-206.974	2.042	0.014
			Max. My	9	-10.079	-0.182	4.237
			Max. Vy	4	-0.262	-1.918	0.015
			Max. Vx	9	0.491	-0.182	4.237
		Diagonal	Max Tension	8	6.650	0.000	0.000
			Max. Compression	2	-7.276	0.000	0.000
			Max. Mx	9	1.463	0.171	-0.015
			Max. My	7	-6.482	-0.054	-0.032
			Max. Vy	23	-0.053	0.129	0.006
			Max. Vx	7	0.005	-0.054	-0.032

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	228.727	16.331	-9.387
	Max. H_x	10	228.727	16.331	-9.387
	Max. H_z	4	-204.614	-15.026	8.651
	Min. Vert	4	-204.614	-15.026	8.651
	Min. H_x	4	-204.614	-15.026	8.651
	Min. H_z	10	228.727	16.331	-9.387
Leg B	Max. Vert	6	227.704	-16.358	-9.245
	Max. H_x	12	-203.848	15.033	8.498
	Max. H_z	12	-203.848	15.033	8.498
	Min. Vert	12	-203.848	15.033	8.498
	Min. H_x	6	227.704	-16.358	-9.245
	Min. H_z	6	227.704	-16.358	-9.245
Leg A	Max. Vert	2	229.274	-0.136	18.910
	Max. H_x	11	9.365	0.859	0.487
	Max. H_z	2	229.274	-0.136	18.910
	Min. Vert	8	-206.721	0.136	-17.441
	Min. H_x	5	11.014	-0.867	0.592
	Min. H_z	8	-206.721	0.136	-17.441

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	30.838	0.000	0.000	4.157	2.754	0.000
Dead+Wind 0 deg - No Ice	30.838	0.126	-29.007	-2370.690	-12.272	-2.984
Dead+Wind 30 deg - No Ice	30.838	14.227	-24.761	-2035.288	-1167.305	-1.333
Dead+Wind 60 deg - No Ice	30.838	24.427	-14.283	-1176.553	-2006.881	0.439
Dead+Wind 90 deg - No Ice	30.838	28.358	-0.103	-7.956	-2326.224	2.079
Dead+Wind 120 deg - No Ice	30.838	24.922	14.473	1187.858	-2031.999	3.619
Dead+Wind 150 deg - No Ice	30.838	14.090	24.758	2043.554	-1151.181	4.030
Dead+Wind 180 deg - No Ice	30.838	-0.082	28.424	2349.103	12.454	3.056
Dead+Wind 210 deg - No Ice	30.838	-14.202	24.775	2045.003	1169.774	1.330
Dead+Wind 240 deg - No Ice	30.838	-24.910	14.612	1204.025	2035.456	-0.635
Dead+Wind 270 deg - No Ice	30.838	-28.313	0.050	9.899	2326.145	-2.073
Dead+Wind 300 deg - No Ice	30.838	-24.370	-14.155	-1161.627	2005.929	-3.493

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 330 deg - No Ice	30.838	-14.114	-24.693	-2027.320	1159.842	-4.033
Dead+Ice+Temp	75.488	0.000	0.000	11.566	7.411	0.000
Dead+Wind 0 deg+Ice+Temp	75.488	0.018	-5.835	-472.138	5.300	-0.381
Dead+Wind 30 deg+Ice+Temp	75.488	2.755	-4.789	-391.252	-223.992	-0.101
Dead+Wind 60 deg+Ice+Temp	75.488	4.669	-2.723	-218.833	-386.436	0.163
Dead+Wind 90 deg+Ice+Temp	75.488	5.494	-0.015	9.852	-453.806	0.396
Dead+Wind 120 deg+Ice+Temp	75.488	5.023	2.912	252.920	-408.164	0.608
Dead+Wind 150 deg+Ice+Temp	75.488	2.734	4.788	414.425	-221.634	0.576
Dead+Wind 180 deg+Ice+Temp	75.488	-0.012	5.424	470.097	8.892	0.383
Dead+Wind 210 deg+Ice+Temp	75.488	-2.751	4.791	414.673	238.514	0.101
Dead+Wind 240 deg+Ice+Temp	75.488	-5.022	2.933	255.288	422.866	-0.227
Dead+Wind 270 deg+Ice+Temp	75.488	-5.488	0.008	12.471	467.965	-0.396
Dead+Wind 300 deg+Ice+Temp	75.488	-4.660	-2.703	-216.646	400.427	-0.546
Dead+Wind 330 deg+Ice+Temp	75.488	-2.737	-4.779	-390.080	237.028	-0.577
Dead+Wind 0 deg - Service	30.838	0.049	-11.331	-923.557	-3.099	-1.165
Dead+Wind 30 deg - Service	30.838	5.557	-9.672	-792.531	-454.297	-0.530
Dead+Wind 60 deg - Service	30.838	9.542	-5.579	-457.070	-782.271	0.171
Dead+Wind 90 deg - Service	30.838	11.077	-0.040	-0.565	-907.022	0.821
Dead+Wind 120 deg - Service	30.838	9.735	5.654	466.567	-792.092	1.413
Dead+Wind 150 deg - Service	30.838	5.504	9.671	800.834	-448.008	1.566
Dead+Wind 180 deg - Service	30.838	-0.032	11.103	920.195	6.561	1.195
Dead+Wind 210 deg - Service	30.838	-5.548	9.678	801.401	458.664	0.530
Dead+Wind 240 deg - Service	30.838	-9.730	5.708	472.884	796.837	-0.248
Dead+Wind 270 deg - Service	30.838	-11.060	0.019	6.410	910.385	-0.819
Dead+Wind 300 deg - Service	30.838	-9.519	-5.529	-451.240	785.293	-1.365
Dead+Wind 330 deg - Service	30.838	-5.513	-9.646	-789.420	454.774	-1.568

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	-30.838	0.000	0.000	30.838	0.000	0.000%
2	0.126	-30.838	-29.007	-0.126	30.838	29.007	0.000%
3	14.227	-30.838	-24.761	-14.227	30.838	24.761	0.000%
4	24.427	-30.838	-14.283	-24.427	30.838	14.283	0.000%
5	28.358	-30.838	-0.103	-28.358	30.838	0.103	0.000%
6	24.922	-30.838	14.473	-24.922	30.838	-14.473	0.000%
7	14.090	-30.838	24.758	-14.090	30.838	-24.758	0.000%
8	-0.082	-30.838	28.424	0.082	30.838	-28.424	0.000%
9	-14.202	-30.838	24.775	14.202	30.838	-24.775	0.000%
10	-24.910	-30.838	14.612	24.910	30.838	-14.612	0.000%
11	-28.313	-30.838	0.050	28.313	30.838	-0.050	0.000%
12	-24.370	-30.838	-14.155	24.370	30.838	14.155	0.000%
13	-14.114	-30.838	-24.693	14.114	30.838	24.693	0.000%
14	0.000	-75.488	0.000	0.000	75.488	0.000	0.000%
15	0.018	-75.488	-5.835	-0.018	75.488	5.835	0.000%
16	2.755	-75.488	-4.789	-2.755	75.488	4.789	0.000%
17	4.669	-75.488	-2.723	-4.669	75.488	2.723	0.000%
18	5.494	-75.488	-0.015	-5.494	75.488	0.015	0.000%
19	5.023	-75.488	2.912	-5.023	75.488	-2.912	0.000%
20	2.734	-75.488	4.788	-2.734	75.488	-4.788	0.000%
21	-0.012	-75.488	5.424	0.012	75.488	-5.424	0.000%
22	-2.751	-75.488	4.791	2.751	75.488	-4.791	0.000%
23	-5.022	-75.488	2.933	5.022	75.488	-2.933	0.000%
24	-5.488	-75.488	0.008	5.488	75.488	-0.008	0.000%
25	-4.660	-75.488	-2.703	4.660	75.488	2.703	0.000%
26	-2.737	-75.488	-4.779	2.737	75.488	4.779	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
27	0.049	-30.838	-11.331	-0.049	30.838	11.331	0.000%
28	5.557	-30.838	-9.672	-5.557	30.838	9.672	0.000%
29	9.542	-30.838	-5.579	-9.542	30.838	5.579	0.000%
30	11.077	-30.838	-0.040	-11.077	30.838	0.040	0.000%
31	9.735	-30.838	5.654	-9.735	30.838	-5.654	0.000%
32	5.504	-30.838	9.671	-5.504	30.838	-9.671	0.000%
33	-0.032	-30.838	11.103	0.032	30.838	-11.103	0.000%
34	-5.548	-30.838	9.678	5.548	30.838	-9.678	0.000%
35	-9.730	-30.838	5.708	9.730	30.838	-5.708	0.000%
36	-11.060	-30.838	0.019	11.060	30.838	-0.019	0.000%
37	-9.519	-30.838	-5.529	9.519	30.838	5.529	0.000%
38	-5.513	-30.838	-9.646	5.513	30.838	9.646	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	0.00003883
3	Yes	4	0.00000001	0.00004889
4	Yes	6	0.00000001	0.00000880
5	Yes	4	0.00000001	0.00003741
6	Yes	4	0.00000001	0.00004705
7	Yes	4	0.00000001	0.00003759
8	Yes	4	0.00000001	0.00003460
9	Yes	4	0.00000001	0.00004829
10	Yes	4	0.00000001	0.00005064
11	Yes	4	0.00000001	0.00004016
12	Yes	5	0.00000001	0.00012542
13	Yes	4	0.00000001	0.00003792
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00001305
16	Yes	4	0.00000001	0.00001301
17	Yes	4	0.00000001	0.00072600
18	Yes	4	0.00000001	0.00001281
19	Yes	4	0.00000001	0.00001363
20	Yes	4	0.00000001	0.00001296
21	Yes	4	0.00000001	0.00090849
22	Yes	4	0.00000001	0.00001318
23	Yes	4	0.00000001	0.00001315
24	Yes	4	0.00000001	0.00001327
25	Yes	4	0.00000001	0.00002631
26	Yes	4	0.00000001	0.00001323
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	0.00000438
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00063448
38	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125 - 120	6.464	27	0.497	0.063
T2	120 - 100	5.922	27	0.490	0.042
T3	100 - 80	3.983	35	0.404	0.022
T4	80 - 60	2.454	35	0.300	0.013
T5	60 - 40	1.337	35	0.212	0.008
T6	40 - 20	0.567	35	0.135	0.004
T7	20 - 0	0.134	35	0.055	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	Lightning Rod 5/8" x 5'	27	6.464	0.497	0.063	14799
123.000	VHLP2.5	27	6.245	0.494	0.054	14799
120.000	840 10054 w/ Mount Pipe	27	5.922	0.490	0.042	14799
117.000	VHLP2.5	27	5.606	0.482	0.034	12415
107.000	BXA-70080/4CF w/ Mount Pipe	27	4.616	0.441	0.023	12051
98.000	(2) 7770.00 w/ Mount Pipe	35	3.812	0.393	0.021	11780
96.000	DC6-48-60-18-8F	35	3.644	0.382	0.021	11680
87.000	APXVSPP18-C-A20 w/ Mount Pipe	35	2.941	0.335	0.016	11231
75.000	APXV18-206517S-C w/ Mount Pipe	35	2.138	0.276	0.011	11653
50.000	2' Omni Whip	35	0.911	0.174	0.006	14556

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125 - 120	16.532	2	1.267	0.160
T2	120 - 100	15.151	2	1.250	0.108
T3	100 - 80	10.200	2	1.033	0.056
T4	80 - 60	6.282	2	0.767	0.032
T5	60 - 40	3.423	2	0.542	0.019
T6	40 - 20	1.451	2	0.346	0.010
T7	20 - 0	0.342	2	0.140	0.003

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	Lightning Rod 5/8" x 5'	2	16.532	1.267	0.160	5952
123.000	VHLP2.5	2	15.976	1.261	0.138	5952
120.000	840 10054 w/ Mount Pipe	2	15.151	1.250	0.108	5952
117.000	VHLP2.5	2	14.345	1.231	0.086	4981
107.000	BXA-70080/4CF w/ Mount Pipe	2	11.820	1.127	0.060	4779
98.000	(2) 7770.00 w/ Mount Pipe	2	9.761	1.006	0.055	4627
96.000	DC6-48-60-18-8F	2	9.332	0.978	0.053	4588
87.000	APXVSPP18-C-A20 w/ Mount Pipe	2	7.531	0.857	0.042	4408
75.000	APXV18-206517S-C w/ Mount Pipe	2	5.473	0.706	0.028	4566
50.000	2' Omni Whip	2	2.332	0.445	0.015	5687

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	125	Leg	A325N	0.750	4	1.165	19.439	0.060 ✔	1.333	Bolt Tension
T2	120	Leg	A325N	0.750	6	5.683	19.439	0.292 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.500	1	3.979	4.350	0.915 ✔	1.333	Member Block Shear
T3	100	Leg	A325N	1.000	6	12.136	34.557	0.351 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.500	1	5.681	5.709	0.995 ✔	1.333	Member Block Shear
T4	80	Leg	A325N	1.000	8	14.002	34.557	0.405 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.500	1	6.283	5.890	1.067 ✔	1.333	Bolt Shear
T5	60	Leg	A325N	1.000	8	18.322	34.557	0.530 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.625	1	5.677	6.117	0.928 ✔	1.333	Member Bearing
T6	40	Leg	A325N	1.250	8	21.699	53.996	0.402 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.625	1	6.285	6.117	1.027 ✔	1.333	Member Bearing
T7	20	Leg	A36	1.500	8	24.898	33.823	0.736 ✔	1.333	Bolt Tension
		Diagonal	A325X	0.625	1	6.649	8.156	0.815 ✔	1.333	Member Bearing

Compression Checks

Leg Design Data (Compression)

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 $\frac{P}{P_a}$
T1	125 - 120	P2.5x.203	5.000	2.500	31.7 K=1.00	29.422	1.704	-9.705	50.136	0.194 ✔
T2	120 - 100	P2.5x.203	20.019	5.005	63.4 K=1.00	23.738	1.704	-39.212	40.451	0.969 ✔
T3	100 - 80	P3.5x.226	20.019	5.005	44.9 K=1.00	27.272	2.680	-82.712	73.077	1.132 ✔
T4	80 - 60	P5x.258	20.019	6.673	42.6 K=1.00	27.667	4.300	-124.194	118.964	1.044 ✔
T5	60 - 40	P6x.28	20.019	6.673	35.7 K=1.00	28.810	5.581	-161.606	160.801	1.005 ✔
T6	40 - 20	P6x.28	20.019	10.009	53.5 K=1.00	25.709	5.581	-190.941	143.491	1.331 ✔
T7	20 - 0	P8x.322	20.019	10.009	40.9 K=1.00	27.963	8.399	-220.238	234.872	0.938 ✔

Diagonal Design Data (Compression)

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 $\frac{P}{P_a}$
T2	120 - 100	L1 1/2x1 1/2x3/16	6.941	3.297	134.9 K=1.00	8.208	0.527	-3.969	4.328	0.917 ✔
T3	100 - 80	L2x2x3/16	8.054	3.798	116.8 K=1.01	10.742	0.715	-5.809	7.680	0.756 ✔
T4	80 - 60	L2 1/2x2 1/2x3/16	10.224	4.836	117.9 K=1.01	10.578	0.902	-6.070	9.542	0.636 ✔
T5	60 - 40	L2 1/2x2 1/2x3/16	11.403	5.380	130.4 K=1.00	8.779	0.902	-5.700	7.919	0.720 ✔
T6	40 - 20	L3x3x3/16	14.592	7.039	141.7 K=1.00	7.434	1.090	-6.690	8.103	0.826 ✔
T7	20 - 0	L3 1/2x3 1/2x1/4	15.718	7.501	129.7 K=1.00	8.877	1.690	-7.276	15.002	0.485 ✔

Horizontal Design Data (Compression)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	128.2 K=0.96	9.083	0.527	-3.072	4.790	0.641 ✔

Top Girt Design Data (Compression)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	128.2 K=0.96	9.083	0.527	-1.671	4.790	0.349 ✔

Bottom Girt Design Data (Compression)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	128.2 K=0.96	9.083	0.527	-1.559	4.790	0.325 ✔

Tension Checks

Leg Design Data (Tension)

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 $\frac{P}{P_a}$
T1	125 - 120	P2.5x.203	5.000	2.500	31.7	33.000	1.704	4.660	56.234	0.083 ✔
T2	120 - 100	P2.5x.203	20.019	5.005	63.4	33.000	1.704	34.100	56.234	0.606 ✔
T3	100 - 80	P3.5x.226	20.019	5.005	44.9	33.000	2.680	72.814	88.425	0.823 ✔
T4	80 - 60	P5x.258	20.019	6.673	42.6	33.000	4.300	112.017	141.896	0.789 ✔
T5	60 - 40	P6x.28	20.019	6.673	35.7	33.000	5.581	146.574	184.185	0.796 ✔
T6	40 - 20	P6x.28	20.019	10.009	53.5	33.000	5.581	173.591	184.185	0.942 ✔
T7	20 - 0	P8x.322	20.019	10.009	40.9	33.000	8.399	199.184	277.175	0.719 ✔

Diagonal Design Data (Tension)

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 $\frac{P}{P_a}$
T1	125 - 120	5/8	4.301	4.007	307.7	21.600	0.307	3.909	6.627	0.590 ✔
T2	120 - 100	L1 1/2x1 1/2x3/16	6.941	3.297	90.2	29.000	0.308	3.979	8.921	0.446 ✔
T3	100 - 80	L2x2x3/16	8.054	3.798	76.5	29.000	0.448	5.681	13.002	0.437 ✔
T4	80 - 60	L2 1/2x2 1/2x3/16	9.488	4.479	71.2	29.000	0.589	6.101	17.070	0.357 ✔
T5	60 - 40	L2 1/2x2 1/2x3/16	10.608	4.989	79.0	29.000	0.571	5.678	16.560	0.343 ✔
T6	40 - 20	L3x3x3/16	14.056	6.780	88.4	29.000	0.712	6.286	20.649	0.304 ✔
T7	20 - 0	L3 1/2x3 1/2x1/4	15.718	7.501	84.1	29.000	1.127	6.650	32.679	0.203 ✔

Horizontal Design Data (Tension)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	85.7	21.600	0.527	0.168	11.391	0.015 ✔

Top Girt Design Data (Tension)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	85.7	21.600	0.527	0.644	11.391	0.057 ✔

Bottom Girt Design Data (Tension)

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 $\frac{P}{P_a}$
T1	125 - 120	L1 1/2x1 1/2x3/16	3.500	3.260	85.7	21.600	0.527	0.191	11.391	0.017 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
T1	125 - 120	Leg	P2.5x.203	3	-9.705	66.831	14.5	Pass
T2	120 - 100	Leg	P2.5x.203	27	-39.212	53.921	72.7	Pass
T3	100 - 80	Leg	P3.5x.226	54	-82.712	97.412	84.9	Pass
T4	80 - 60	Leg	P5x.258	81	-124.194	158.579	78.3	Pass
T5	60 - 40	Leg	P6x.28	102	-161.606	214.348	75.4	Pass
T6	40 - 20	Leg	P6x.28	123	-190.941	191.273	99.8	Pass
T7	20 - 0	Leg	P8x.322	138	-220.238	313.084	70.3	Pass
T1	125 - 120	Diagonal	5/8	15	3.909	8.834	44.2	Pass
T2	120 - 100	Diagonal	L1 1/2x1 1/2x3/16	32	-3.969	5.770	68.8	Pass
T3	100 - 80	Diagonal	L2x2x3/16	59	-5.809	10.238	56.7 74.6 (b)	Pass
T4	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	86	-6.070	12.719	47.7 80.0 (b)	Pass
T5	60 - 40	Diagonal	L2 1/2x2 1/2x3/16	107	-5.700	10.556	54.0 69.6 (b)	Pass
T6	40 - 20	Diagonal	L3x3x3/16	128	-6.690	10.802	61.9 77.1 (b)	Pass
T7	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	143	-7.276	19.998	36.4 61.2 (b)	Pass
T1	125 - 120	Horizontal	L1 1/2x1 1/2x3/16	18	-3.072	6.385	48.1	Pass
T1	125 - 120	Top Girt	L1 1/2x1 1/2x3/16	6	-1.671	6.385	26.2	Pass
T1	125 - 120	Bottom Girt	L1 1/2x1 1/2x3/16	9	-1.559	6.385	24.4	Pass
							Summary	
						Leg (T6)	99.8	Pass
						Diagonal (T4)	80.0	Pass
						Horizontal (T1)	48.1	Pass
						Top Girt (T1)	26.2	Pass
						Bottom Girt (T1)	24.4	Pass
						Bolt Checks	80.0	Pass
						RATING =	**99.8**	**Pass**

APPENDIX C

ADDITIONAL CALCULATIONS

PROJECT	**101023.002.01b - Bloomfield, CT**				
SUBJECT	**Pad Footing Analysis**				
DATE	**01/18/16**	PAGE	**1**	OF	**1**

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

101023_002_01b_SST_FDN_Mat Unit Base Unified_Square_Rev_F-G_V1.5.xls

Combined Footing Foundation Analysis

Rev. Type: F

Design Loads:

Input unfactored loads

Compression per leg (P_C)	=	**229.0**	(k)
Tension per leg (P_T)	=	**207.0**	(k)
Overturning Moment (M_O)	=	**2,371.0**	(k)
Total Tower Horizontal Load	=	**29.0**	(k-ft)
Tower + Appurtenances	=	**31.0**	(k)

Saftey Factors

Uplift S.F. (Conc. Wt.)	=	**1.25**
Uplift S.F. (Soil Wt.)	=	**2.00**
Overturning S.F.	=	**1.50**
Bearinging S.F.	=	**2.00**

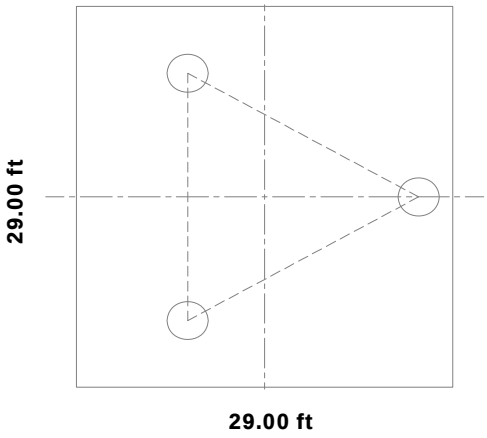
Tower Information

Tower base width	=	**12.50**	ft

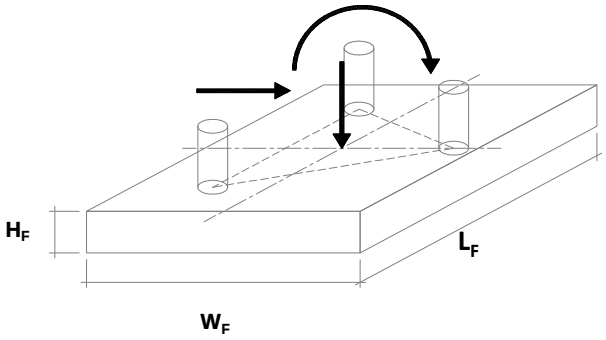
Pad & Pier Dimensions / Properties:

Tower Shape (triangle or square)	=	**T**	
Pad height above grade (D_A)	=	**0.50**	(ft)
Footing Width (W_F)	=	**29.00**	(ft)
Footing Thickness (H_F)	=	**4.25**	(ft)
Depth to BOC (D)	=	**3.75**	(ft)
Concrete Strength (F'c)	=	**3.00**	(ksi)
Rebar Strength (Fy)	=	**60.00**	(ksi)
Ultimate Load Factor	=	**1.30**	
Min. Cover over Rebar	=	**6.00**	
Qty of footing Rebar (1 layer)	=	**27**	
Size of footing Rebar	=	**# 8**	

Plan View for Triangle or Square Tower



Total Overview



Soil Data:

Allowable Values

Soil bearing	=	**5000**	(psf)
Soil bearing (ultimate)	=	10000	(psf)
Soil Cone for Uplift (θ)	=	**30**	(degrees)
Cohesion (C)	=	**0.00**	(ksf)
Top Soil to Neglect (N)	=	**0.00**	(ft)
Base Sliding (μ)	=	**0.20**	
Dry Soil Density (γ_{DRY})	=	**110**	(pcf)

Summary of Results

Overturing	51.7%
Soil Bearing	18.1%
Base Sliding	55.6%
One way Shear	5.9%
Punching Shear	28.5%
Pad Moment Capacity	27.1%

SITE NAME: BLUEHILLS/JN OF RT187_1

1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002
COUNTY COUNTY

SITE NUMBER: CT11162B

SITE CONFIG: 702Cu

SPECIAL CONSTRUCTION NOTE:

THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.

PROJECT NOTES

GENERAL NOTES:

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T–MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC, ROUTINE MAINTENANCE AND THEREFORE, DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T–MOBILE NORTHEAST LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES:

TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE–BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

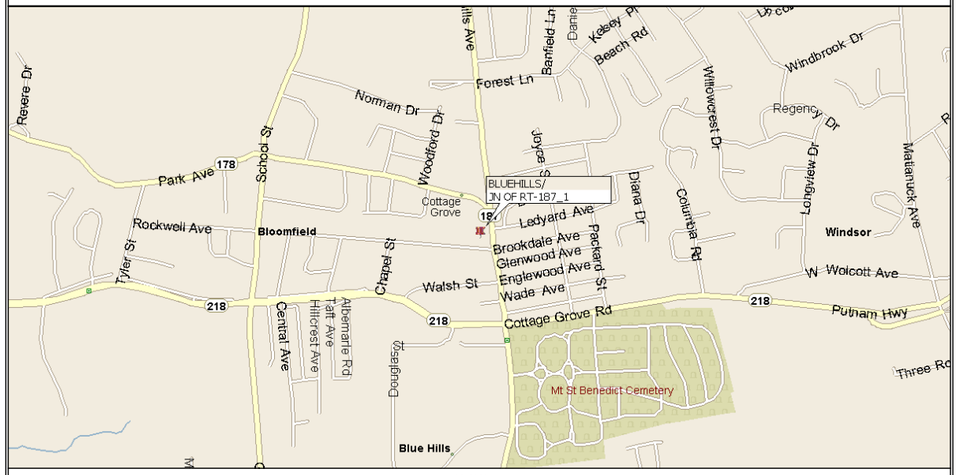
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND HAS DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOAD. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

B+T GROUP ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTIONS ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES.

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS	LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS NOT PERMITTED	DIPLEXERS:	UNRESTRICTED
SECTOR B:	ACCESS NOT PERMITTED	RADIO CABINETS:	UNRESTRICTED
SECTOR C:	ACCESS NOT PERMITTED	PPC DISCONNECT:	UNRESTRICTED
RRH:	ACCESS NOT PERMITTED	MAIN CIRCUIT D/C:	UNRESTRICTED
TMA:	ACCESS NOT PERMITTED	NIU/T DEMARC:	UNRESTRICTED
GPS/LMU:	CAUTION: OSHA APPROVED PORTABLE 8' STEP–LADDER REQUIRED	OTHER/SPECIAL:	NONE

LOCATION MAP



NO SCALE

APPROVALS

TITLE	SIGNATURE	DATE
PROJECT MANAGER:		
CONSTRUCTION:		
RF ENGINEERING:		
ZONING/SITE ACQ.:		
OPERATIONS:		
TOWER OWNER:		

ACCEPTANCE DOES NOT CONSTITUTE APPROVAL OF DESIGN, CALCULATIONS, ANALYSIS, TEST METHODS OF MATERIALS DEVELOPED OR SELECTED BY THE SUBCONTRACTOR AND DOES NOT RELIEVE SUBCONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY T–MOBILE EQUIPMENT MODERNIZATION
ZONING JURISDICTION: (TOWN OF BLOOMFIELD)	BASED ON INFORMATION PROVIDED BY T–MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A) AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE–EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).
SITE ADDRESS:	1021 BLUE HILLS AVENUE BLOOMFIELD, CT 06002
LATITUDE:	41.82013° N
LONGITUDE:	72.69649° W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES & ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
TOWER OWNER:	SBA TOWERS, LLC
SBA SITE ID:	CT01725–A
SBA SITE NAME:	BLOOMFIELD
SBA REGIONAL SITE MANAGER:	STEPHEN ROTH (860) 539–4920 sroth@sbasite.com

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T–1	TITLE SHEET	1
GN–1	GENERAL NOTES	1
C–1	COMPOUND AND ELEVATION PLAN	1
C–2	EXISTING AND PROPOSED ANTENNA PLANS	1
C–3	DETAILS	1
E–1	GROUNDING DETAILS AND NOTES	1

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33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752

CT11162B

BLUEHILLS/ JN OF RT187_1

1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002

PROJECT NO:	101023.001
CHECKED BY:	RCM

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/23/15	MDW	CONSTRUCTION
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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

10/8/15

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER

SHEET NUMBER:	REVISION:
T-1	1

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI OR NFPA) LIGHTING PROTECTION CODE AND GENERAL COMPLIANCE WITH TELECORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATION OR ADVERSE FINDING TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GE'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BUS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDED FITTINGS OR BY BINDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20' OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BAR TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR: SBA COMMUNICATIONS CORP.
   - SUBCONTRACTOR: GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER: T-MOBILE

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALL AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY, SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS NOTED OTHERWISE, PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WETHER SHALL BE HOT DIPPED GALVANIZED. TOUCH-UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW, USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, AL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION, EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT IF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    - BUILDING CODE: IBC 2009
    - ELECTRICAL CODE: NEC 2014

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318;
    BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION; ASD, FOURTEENTH EDITION

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G;
    STRUCTURAL STANDARDS FOR STEEL

    ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES;
    REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHOD OF CONSTRUCTION OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	GC	GENERAL CONTRACTOR	REF.	REFERENCE
AWG	AMERICAN WIRE GAUGE	MAX.	MAXIMUM	REQ.	REQUIRED
BCW	BARE COPPER WIRE	MGB	MASTER GROUND BAR	RF	RADIO FREQUENCY
BTS	BASE TRANSCEIVER STATION	MIN.	MINIMUM	T.B.D.	TO BE DETERMINED
(E)	EXISTING	(N)	PROPOSED	T.B.R.	TO BE REMOVED
EG	EQUIPMENT GROUND	N.T.S.	NOT TO SCALE	T.B.R.R.	TO BE REMOVED AND REPLACED
EGR	EQUIPMENT GROUND RING	RE:	REFERENCE	(TYP)	TYPICAL

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MARLBOROUGH, MA 01752

CT11162B

BLUEHILLS/ JN OF RT187_1

1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002

PROJECT NO:	101023.001
CHECKED BY:	RCM

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/23/15	MDW	CONSTRUCTION
1	10/8/15	MDW	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

10/8/15

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

SHEET NUMBER: GN-1
REVISION: 1

SPECIAL CONSTRUCTION NOTE:

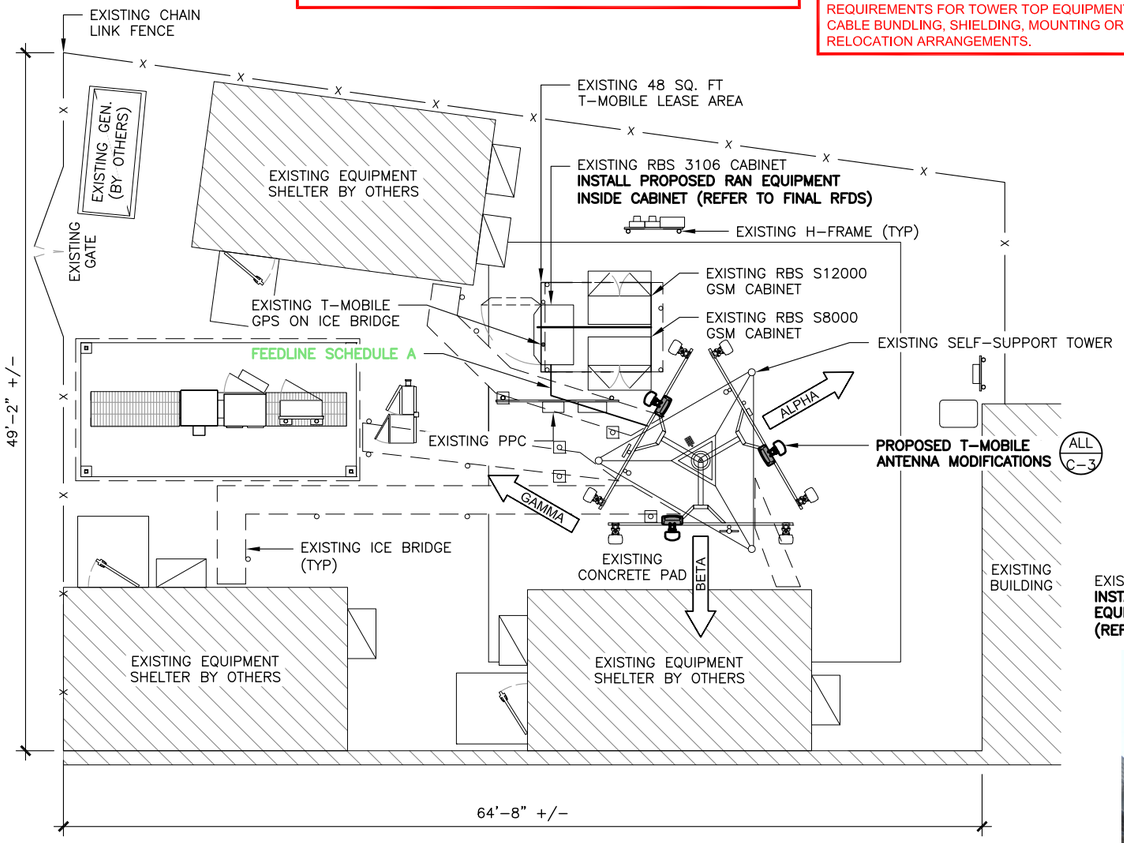
THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER MSTRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.

STRUCTURAL NOTES:

PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND HAS DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOADS. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.



1 OVERALL SITE PLAN

SCALE: 11x17 SCALE: 3/32"=1'-0" 22x34 SCALE: 3/16"=1'-0"

0' 5' 10' 15' 25'

N

2 C-2 ALL C-3 T-MOBILE MOUNT ELEV. = 125'± A.G.L. (SBA*)

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO REMAIN: (12) 1 5/8" COAX & (1) 1 1/4" HYBRID FIBER TO T-MOBILE RAD @ 125'	FACE OF TOWER
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER		

EXISTING (12) LINES OF 1 5/8" COAX AND (1) 1 1/4" HYBRID FIBER TO 125' TO REMAIN. **(REFER TO SBA PROVIDED STRUCTURAL ANALYSIS FOR SPECIAL CABLE INSTALLATION REQUIREMENTS, BUNDLING, SHIELDING, MOUNTING AND RELOCATION OF EXISTING CABLES)**

SOURCE: B+T 09-11-2015

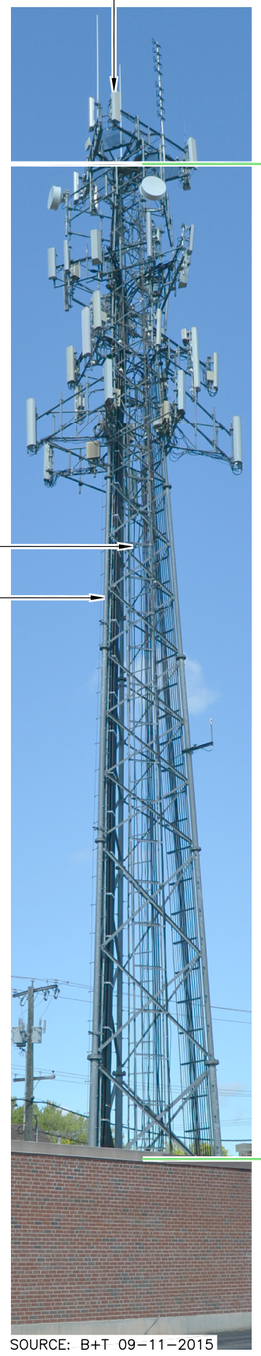
2A FEEDLINE PHOTO DETAIL @ TOWER BASE

SCALE: N.T.S.

SOURCE: B+T 09-11-2015

2B EQUIPMENT PHOTO DETAIL

SCALE: N.T.S.



SOURCE: B+T 09-11-2015

3 ELEVATION PHOTO DETAIL

SCALE: N.T.S.

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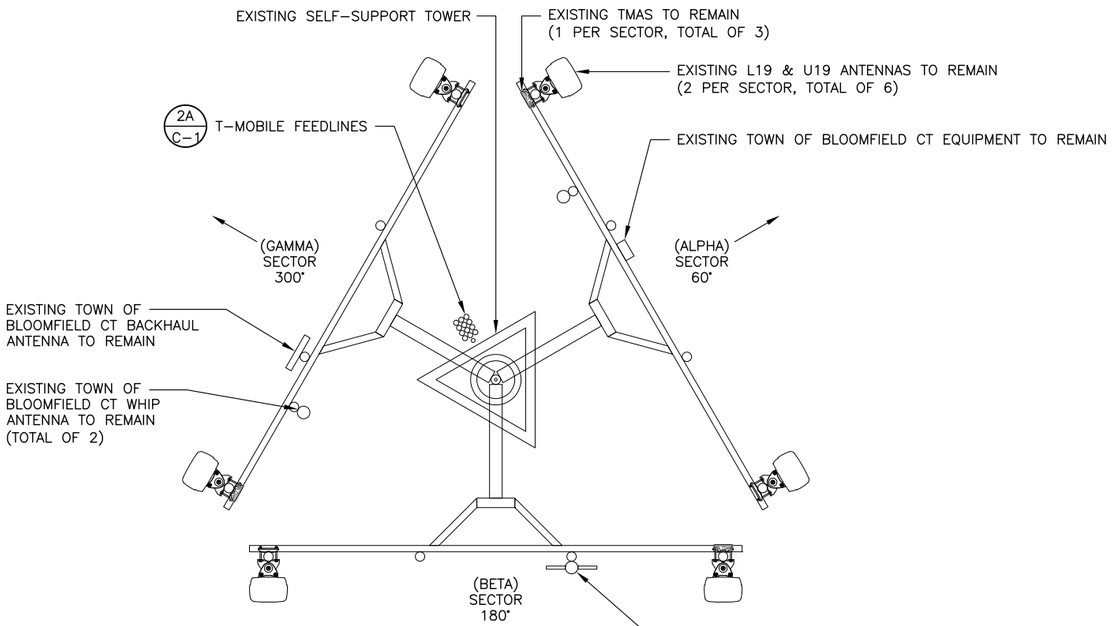
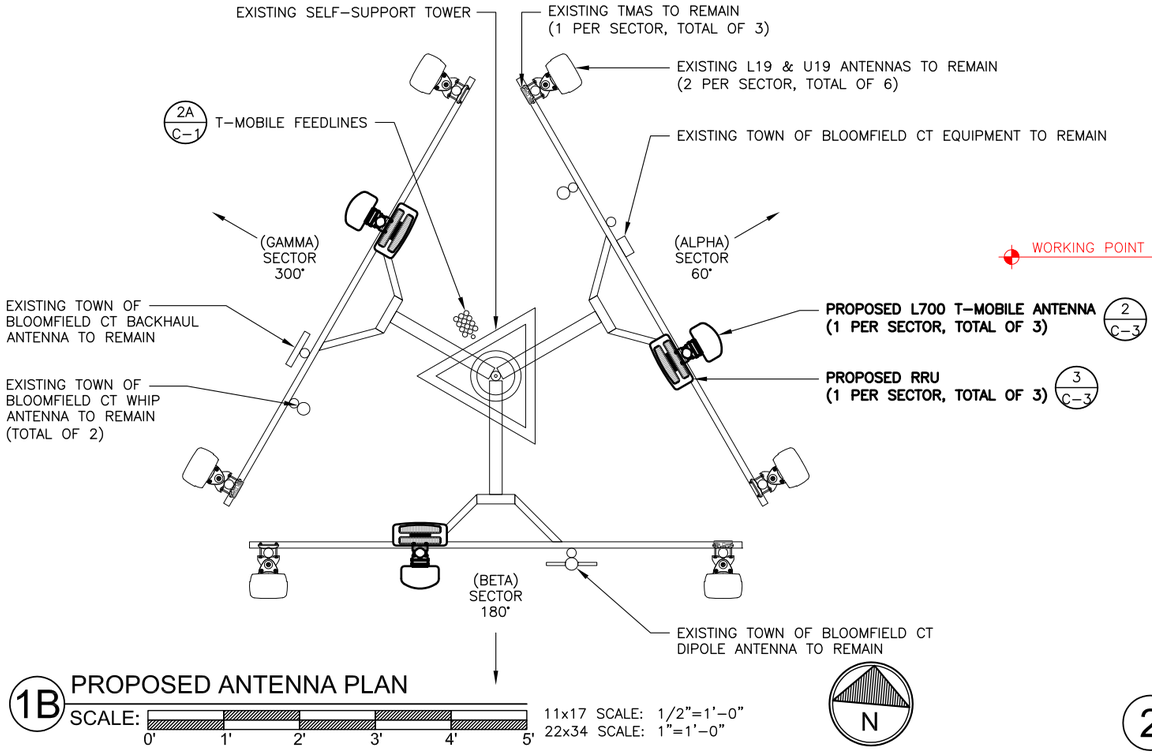
SHEET NUMBER:	REVISION:
C-1	1



1A EXISTING ANTENNA PLAN

SCALE: 0' 1' 2' 3' 4' 5'

11x17 SCALE: 1/2"=1'-0"
22x34 SCALE: 1"=1'-0"



1B PROPOSED ANTENNA PLAN

SCALE: 0' 1' 2' 3' 4' 5'

11x17 SCALE: 1/2"=1'-0"
22x34 SCALE: 1"=1'-0"

STRUCTURAL NOTES:

PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

SPECIAL WORK NOTE:

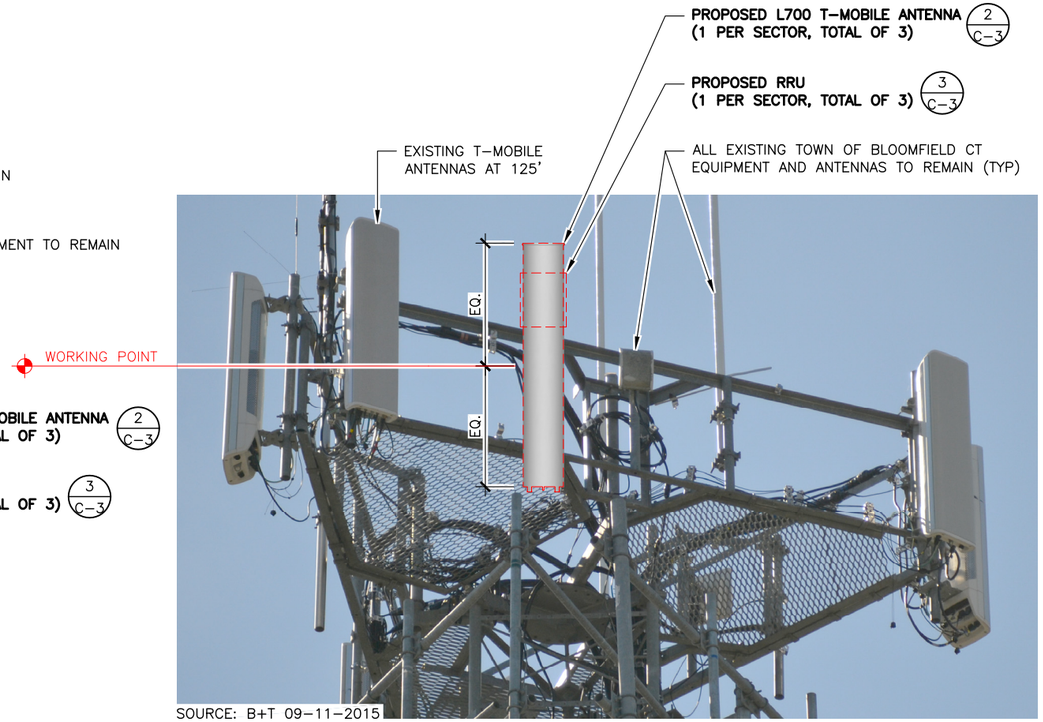
GC AND TOWER CREW SHALL CHECK WITH THE RF ENGINEER FOR LATEST RFDS, RAN SCENARIO AND TOWER TOP EQUIPMENT SPECIFICATIONS.

ANTENNA INSTALLATION SPECIAL WORK NOTE:

ANTENNA INSTALLATION WORKING POINT IS THE STRUCTURAL FACE FRAME VERTICAL CENTERLINE OF THE EXISTING ANTENNA SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE, VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.

SPECIAL CONSTRUCTION NOTE:

THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER MSTRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.



SOURCE: B+T 09-11-2015

2 ANTENNA MOUNT PHOTO DETAIL

SCALE: N.T.S.

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CT11162B

BLUEHILLS/ JN OF RT187_1

1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002

PROJECT NO:	101023.001
CHECKED BY:	RCM

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/23/15	MDW	CONSTRUCTION
1	10/8/15	MDW	CONSTRUCTION

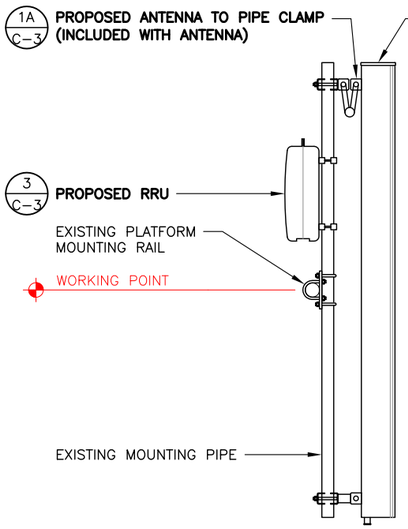
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

10/8/15

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

SHEET NUMBER: C-2

REVISION: 1

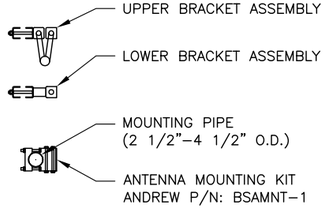


ANTENNA INSTALLATION SPECIAL WORK NOTE:

ANTENNA INSTALLATION WORKING POINT IS THE STRUCTURAL FACE FRAME VERTICAL CENTERLINE OF THE EXISTING ANTENNA SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.

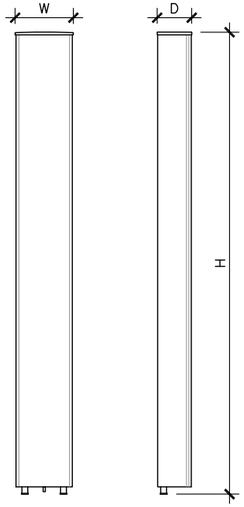
1 PROPOSED L700 ANTENNA & RRU MOUNTING DETAIL

SCALE: N.T.S.



1A L700 ANTENNA MOUNTING BRACKET

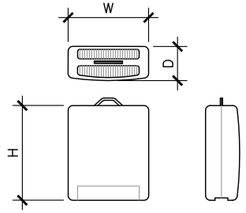
SCALE: N.T.S.



L700 ANTENNA SPECS	
MANUFACTURER	ANDREW
MODEL #	LNX-6515DS
WIDTH	11.9"
DEPTH	7.1"
HEIGHT	96.4"
WEIGHT	50.3 LBS

2 L700 ANTENNA DETAIL

SCALE: N.T.S.



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RRUS11 B12
WIDTH	17"
DEPTH	7"
HEIGHT	20"
WEIGHT	50.6 LBS

3 REMOTE RADIO UNIT (RRU)

SCALE: N.T.S.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

ENGINEER OF RECORD HAD MADE A VISUAL ASSESSMENT ONLY AND DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOADS. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

STRUCTURAL NOTES:

PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

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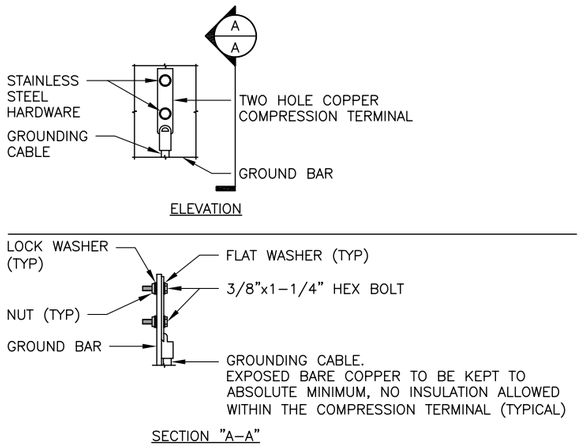
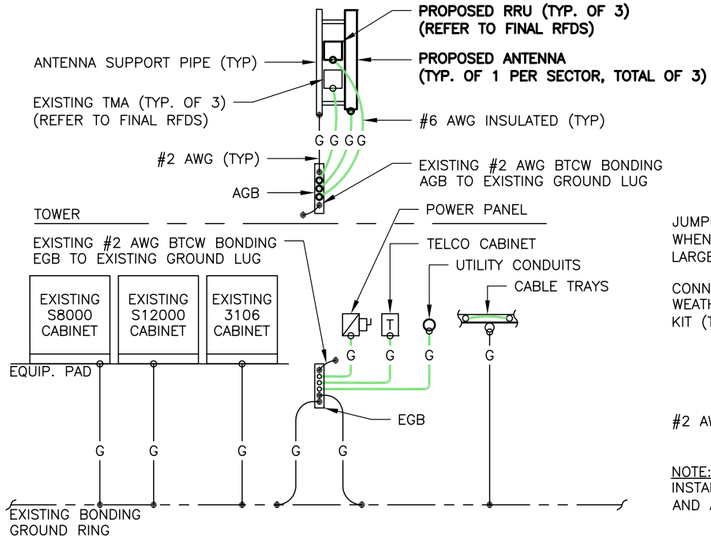
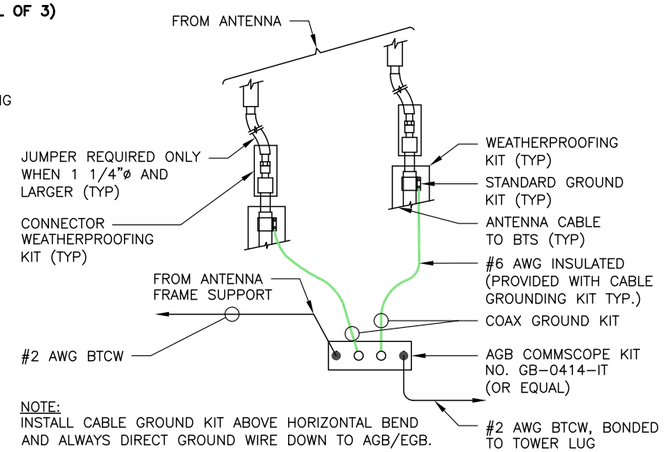


NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

1 TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

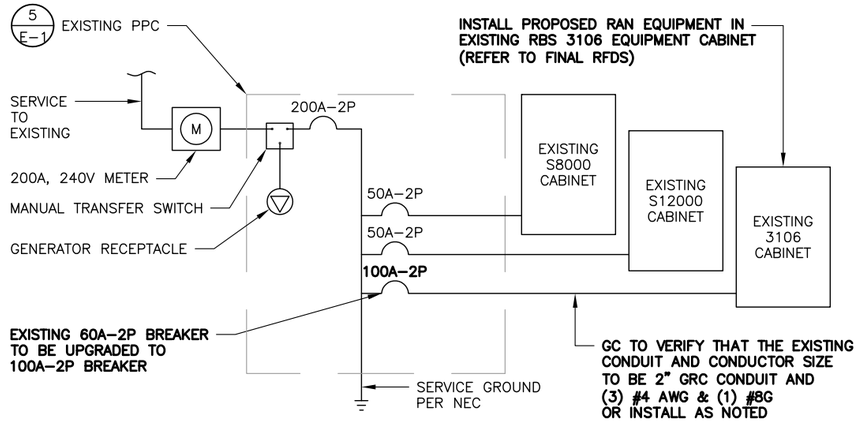


2 TYPICAL GROUNDING RISER DIAGRAM
SCALE: N.T.S.

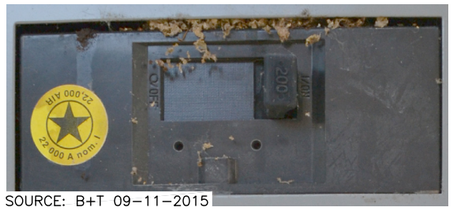


NOTE:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

3 TOWER TOP CABLE GROUNDING DETAIL
SCALE: N.T.S.



4 ONE-LINE POWER DIAGRAM
SCALE: N.T.S.



SOURCE: B+T 09-11-2015

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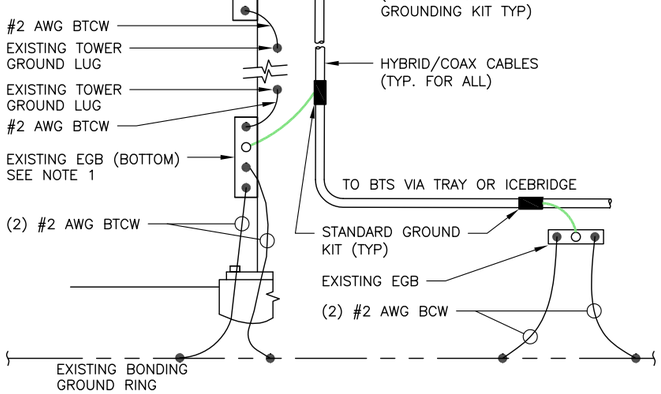
5 PHOTO DETAIL: PPC PANEL
SCALE: N.T.S.



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

6 TOWER BOTTOM CABLE GROUNDING DETAIL
SCALE: N.T.S.

ELECTRICAL LEGEND

A	AMPERE
BTCW	BARE TINNED (SOLID) COPPER WIRE
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
KWH	KILOWATT – HOUR
PPC	POWER PROTECTION CABINET
V	VOLT
	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
	GROUND
	EXOTHERMIC CONNECTION (CAD WELD) MECHANICAL CONNECTION
AGB/EGB	ANTENNA GROUND BAR/EQUIPMENT GROUND BAR
MGB	MASTER GROUND BAR
G	GROUND COPPER WIRE, SIZED AS NOTED
	EXPOSED WIRING, SIZE AS NOTED
	INSULATED WIRING, SIZE AS NOTED
	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
11. GROUNDING SHALL COMPLY WITH NEC ART. 250.
12. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
14. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
17. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
20. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

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