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

November 29, 2016

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

Notice of Exempt Modification
500 Moosehill Road, Monroe, CT 06468
41.3209561 N
-73.2014239 W
AT&T #: 10035397_LTE

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 139-foot level of the existing 149-foot Monopole Tower at 500 Moosehill Road. The tower is owned by SBA Infrastructure, LLC. The property is owned by St. John's Greek Catholic Cemetery Association, Inc. AT&T does not propose any changes to the antenna configuration, but rather the proposed work as follows:

Remove:
- (3) Ericsson RRUS11 RRUs

Remove and Replace:
- Remove (3) LTR RRUS-12 + RRUS-A2 and replace with (3) RRUS-32
- Remove (12) Powerwave LGP21401 TMAs and replace with (6) Powerwave LGP13519 TMAs

Install:
- (12) Powerwave 7020 RET

Existing Equipment to Remain (including Entitlements):
- (6) Powerwave 7770 Panel Antennas
- (3) CCI HPA-65R-BUU – Panel Antennas
- (12) 1-1/4" hybrid
- (6) Powerwave LGP21901 Diplexer
- (1) ½" fiber
- (2) ¾" DC
- (1) Raycap DC6-48-60-18-8F
- (3) Commscope ABT-DRDM-ADBH Bias Ts
- (3) Ericsson RRUS11 RRUs
- (3) Ericsson RRUS12 RRUs

This facility was approved by the Council in docket #207 on 3/21/02 and by the Town of Monroe's Planning and Zoning Commission by Special Exception Permit on 6/6/02. This approval set conditions regarding original landscaping and fence installation, that no lighting be placed within the facility except for emergency work lights to be used when active maintenance was to be performed, the installation of a gate or other lockable movable barrier, and that the gravel access drive beyond the gate would give access only to the facility. This modification complies with all 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 Stephen J. Vavrek, First Selectman for the Town of Monroe, as well as the property owner, St. John's Greek Catholic Cemetery Association, Inc. (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, AT&T 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: First Selectman Stephen J. Vavrek–as elected official
Monroe Town Hall Offices, 7 Fan Hill Road, Monroe, Connecticut 06468
St. John's Greek Catholic Cemetery Association, Inc–as property owner
50 Paradise Green Place, Stratford, CT 06414

POWER DENSITY

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	**0.56 %**	Antenna B1 MPE%	**0.56 %**	Antenna C1 MPE%	**0.56 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A2 MPE%	**0.30 %**	Antenna B2 MPE%	**0.30 %**	Antenna C2 MPE%	**0.30 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A3 MPE%	**1.55 %**	Antenna B3 MPE%	**1.55 %**	Antenna C3 MPE%	**1.55 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**2.41 %**
T-Mobile	3.04 %
Clearwire	0.09 %
Sprint	1.77 %
Town PD	0.00 %
Nextel	0.74 %
Verizon Wireless	7.03 %
Site Total MPE %:	**15.08 %**

AT&T Sector A Total:	2.41 %
AT&T Sector B Total:	2.41 %
AT&T Sector C Total:	2.41 %
Site Total:	15.08 %

AT&T _ Frequency Band / Technology 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
AT&T 850 MHz UMTS	2	414.12	139	1.68	850 MHz	567	0.30%
AT&T 1900 MHz (PCS) UMTS	2	656.33	139	2.67	1900 MHz (PCS)	1000	0.27%
AT&T 850 MHz GSM	2	414.12	139	1.68	850 MHz	567	0.30%
AT&T 700 MHz LTE	2	940.05	139	3.82	700 MHz	467	0.82%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	139	7.28	1900 MHz (PCS)	1000	0.73%
						Total:	2.41%

500 MOOSE HILL RD

Location 500 MOOSE HILL RD
Map/Lot 051/ 067/ 0C/ /
Acct# 0510670C
Owner ST JOHN THE BAPTIST GREEK CATHOLIC CEM
Assessment $902,300
Appraisal $1,288,900
PID 8045
Building Count 1
Survey 2806 2859

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$60,500	$1,228,400	$1,288,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$42,400	$859,900	$902,300

Owner of Record

Owner ST JOHN THE BAPTIST GREEK CATHOLIC CEM
Co-Owner ASSOC INC
Address 50 PARADISE GREEN PL
STRATFORD, CT 06414

Sale Price $0
Certificate 1
Book & Page 176/ 349
Sale Date 08/01/1978

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
ST JOHN THE BAPTIST GREEK CATHOLIC CEM	$0	1	176/ 349	08/01/1978

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	
Stories:	

Building Photo

Occupancy	
Exterior Wall 1	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Rooms:	
Fireplaces	
Basement Gar.	
Basement	
In Law Apt	

(http://images.vgsi.com/photos/MonroeCTPhotos//\00\00\01/25.JPG)

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	906V
Description	Church
Zone	RF1
Neighborhood	
Alt Land Approved	No
Category	

Land Line Valuation

Size (Acres)	52.42
Appraised Value	$1,228,400

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
RG5	Garage 1/2S			1920 S.F.	$60,500	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$60,500	$1,228,400	$1,288,900
2009		$1,263,400	$1,372,100

Assessment

Valuation Year	Improvements	Land	Total
2015	$42,400	$859,900	$902,300
2009		$884,380	$960,470

EBI Consulting
environmental | engineering | due diligence

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

AT&T Existing Facility

Site ID: CT2203

Monroe Center
500 Moose Hill Road
Monroe, CT 06468

November 10, 2016

EBI Project Number: 6216005156

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	15.08 %

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

EBI Consulting
environmental | engineering | due diligence

November 10, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2203 – Monroe Center**

EBI Consulting was directed to analyze the proposed AT&T facility located at **500 Moose Hill Road, Monroe, CT**, for the purpose of determining whether the emissions from the Proposed AT&T 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 limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 AT&T Wireless antenna facility located at **500 Moose Hill Road, Monroe, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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 UMTS channels (850 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 (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 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.

7) For the following calculations the sample point was the top of a 6-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.

8) The antennas used in this modeling are the **Powerwave 7770 and the CCI HPA-65R-BUU-H6** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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.

9) The antenna mounting height centerlines of the proposed antennas are **139 feet** above ground level (AGL) for **Sector A**, **139 feet** above ground level (AGL) for **Sector B** and **139 feet** above ground level (AGL) for Sector C.

10) 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.

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	**0.56 %**	Antenna B1 MPE%	**0.56 %**	Antenna C1 MPE%	**0.56 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A2 MPE%	**0.30 %**	Antenna B2 MPE%	**0.30 %**	Antenna C2 MPE%	**0.30 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**139 feet**	Height (AGL):	**139 feet**	Height (AGL):	**139 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A3 MPE%	**1.55 %**	Antenna B3 MPE%	**1.55 %**	Antenna C3 MPE%	**1.55 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**2.41 %**
T-Mobile	3.04 %
Clearwire	0.09 %
Sprint	1.77 %
Town PD	0.00 %
Nextel	0.74 %
Verizon Wireless	7.03 %
Site Total MPE %:	**15.08 %**

AT&T Sector A Total:	2.41 %
AT&T Sector B Total:	2.41 %
AT&T Sector C Total:	2.41 %
Site Total:	15.08 %

AT&T _ Frequency Band / Technology 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
AT&T 850 MHz UMTS	2	414.12	139	1.68	850 MHz	567	0.30%
AT&T 1900 MHz (PCS) UMTS	2	656.33	139	2.67	1900 MHz (PCS)	1000	0.27%
AT&T 850 MHz GSM	2	414.12	139	1.68	850 MHz	567	0.30%
AT&T 700 MHz LTE	2	940.05	139	3.82	700 MHz	467	0.82%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	139	7.28	1900 MHz (PCS)	1000	0.73%
						Total:	2.41%

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 AT&T 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:

AT&T Sector	Power Density Value (%)
Sector A:	2.41 %
Sector B:	2.41 %
Sector C:	2.41 %
AT&T Maximum Total (per sector):	2.41 %
Site Total:	15.08 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.08 %** 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.

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 149 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13056-A

Customer Site Name: Moosehill

Carrier Name: AT&T

Carrier Site ID / Name: USID# 24509 / Monroe-Moose-Hill Road Tenant Fixed

Site Location: 500 Moosehill Road

Monroe, Connecticut

Fairfield County

Latitude: 41.320966

Longitude: -73.201422

Analysis Result:

Max Structural Usage: 77.0% [Pass]

Max Foundation Usage: 64.0% [Pass]

Report Prepared By: Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 149 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Structural design report prepared by Sabre communication corporation. job #: 02-03107. dated 04/03/2002.
Foundation Drawing	Foundation report prepared by Sabre communication corporation. job #: 02-03107. dated 04/03/2002.
Geotechnical Report	Geotechnical report prepared by ST. Johns Cemetary. dated 03/20/2002.
Modification Drawings	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-G**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.204, S_1 = 0.065

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	152.5	1	Decibel DB404-B - Whip	Pipe Mount	(1) 7/8"	Town of Monroe
2	147.0	1	Andrew VHLP2-11 - Dish	12.5' Low Profile Platform	(4) 1 1/4" (2) 1/2" (6) 5/16"	Sprint/ Clearwire
3		1	Andrew VHLP800-11-DW1 - Dish			
4		3	Argus LLPX310R - Panel			
5		4	RFS ACU-A20-N			
6		3	RFS APXVSPP18-C-A20 - Panel			
7		3	RFS APXVTM14-C-120 - Panel			
8		3	ALU 800MHz RRH w/ filter			
9		3	ALU 1900MHz RRH			
10		3	ALU 800MHz RRH			
11		3	ALU TD-RRH8x20-25			
12		3	U-RAS Flexible RRH ODUs			
-	139.0	3	CCI HPA-65R-BUU-H8 - Panel	13' Low Profile Platform	(12) 1-1/4" Hybrid (1) 1/2" (2) 3/4" DC	AT&T
-		3	Commscope ABT-DRDM-ADBH			
-		6	Ericsson RRUS 11 RRUs			
-		3	Ericsson RRUS 12 RRUs			
-		3	Ericsson RRUS A2 Module			
-		6	Powerwave 7770.00 - Panel			
-		6	Powerwave LGP21901 Diplexer			
-		12	Powerwave LGP21401 TMAs			
-		1	Raycap DC6-48-60-18-8F			
-	128.0	-	-	12.5' Low Profile Platform	-	-
23	121.0	3	Commscope LNX-6515DS - Panel	13' Low Profile Platform SitePro PRK1245	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
24		3	Ericsson Air 21 B2A/B4P - Panel			
25		3	Ericsson AIR21 B4A/B12P - Panel			
26		3	Ericsson KRY 112 144/1			
27		3	Ericsson S11B12			
-	~~109.0~~	~~12~~	~~Decibel DB844H90E-XY - Panel~~	~~14' Low Profile Platform~~	~~(12) 7/8"~~	~~Nextel~~[2]
28	99.0	2	Antel BXA-171063-8BF - Panel	12.5' Low Profile Platform	(1) 1 5/8" Fiber (12) 1 5/8"	Verizon
29		1	Antel BXA-70063-4CF - Panel			
30		1	Antel BXA-70063-6CF - Panel			
31		2	Antel LPA-80063-6CF - Panel			
32		1	BXA-171063-12BF - Panel			
33		3	Kathrein 7442213_2110_P45_02.0 - Panel			
34		3	ALU RRH2x40-AWS			
35		4	RFS APL866513-42T0 - Panel			
36		1	RFS DB-T1-6Z-8AB-0Z			
37		6	RFS FD9R6004/2C-3L			
38		1	Swedcom SLCP 2x6014F - Panel			
39	65.5	1	Decibel 26OB	3' Standoff @ 64.0	(1) 1/2"	Sprint

Nextel is now terminated and removed.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
13	139.0	6	Powerwave - 7770 - Panel	Low Profile Platform	(12) 1-1/4" Hybrid (1) 1/2" Fiber (2) 3/4" DC	AT&T
14		3	CCI - HPA-65R-BUU-H6 - Panel			
15		6	Powerwave LGP13519 TMAs			
16		12	Powerwave 7020.00 RET			
17		3	Ericsson RRUS 11 RRUs			
18		3	Ericsson RRUS 12 RRUs			
19		3	Ericsson RRUS-32 B2s RRUs			
20		6	Powerwave LGP21901 Diplexer			
21		1	Raycap DC6-48-60-18-8F DC Surge Suppression System			
22		3	Commscope ABT-DRDM-ADBH Bias T's			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate	Flange Plate
Max. Usage:	**77.0%**	**74.2%**	**63.6%**	**62.5%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	4184.0	39.0	45.0
Analysis Reactions	4033.2	37.2	80.0
Factored Reactions*	5648.4	52.7	60.8

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2859 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

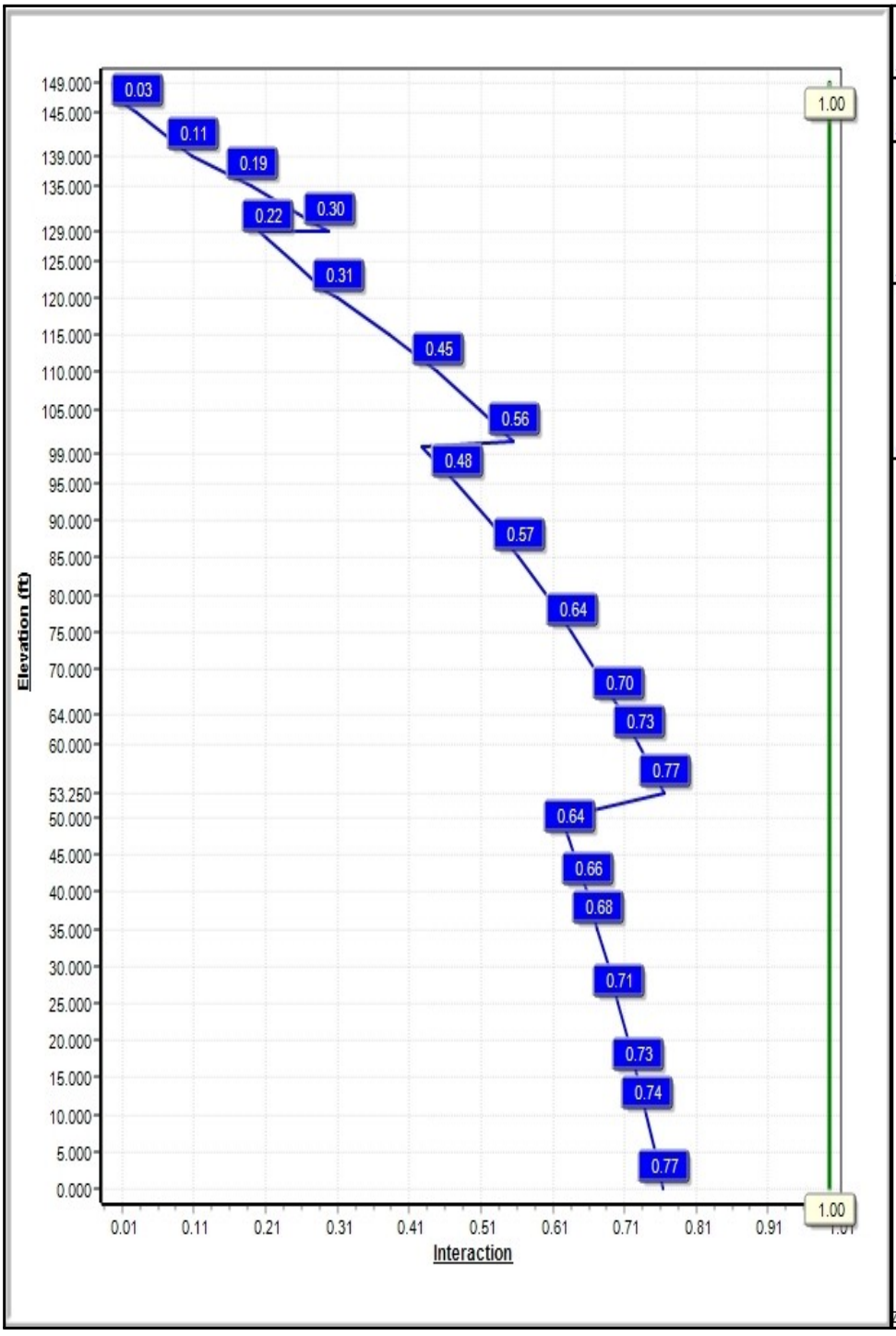
Usage Diagram - Max Ratio 76.98% at 53.3ft

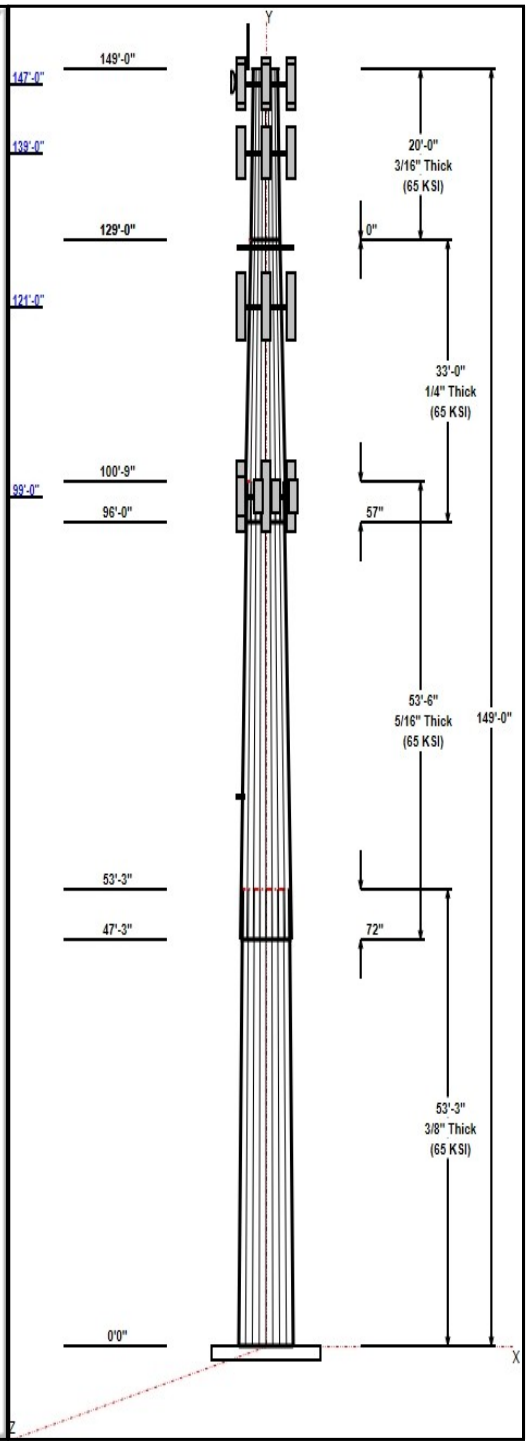
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	24
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT13056-A-SBA

Type: Tapered
Site Name: Moosehill
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24185

11/7/2016

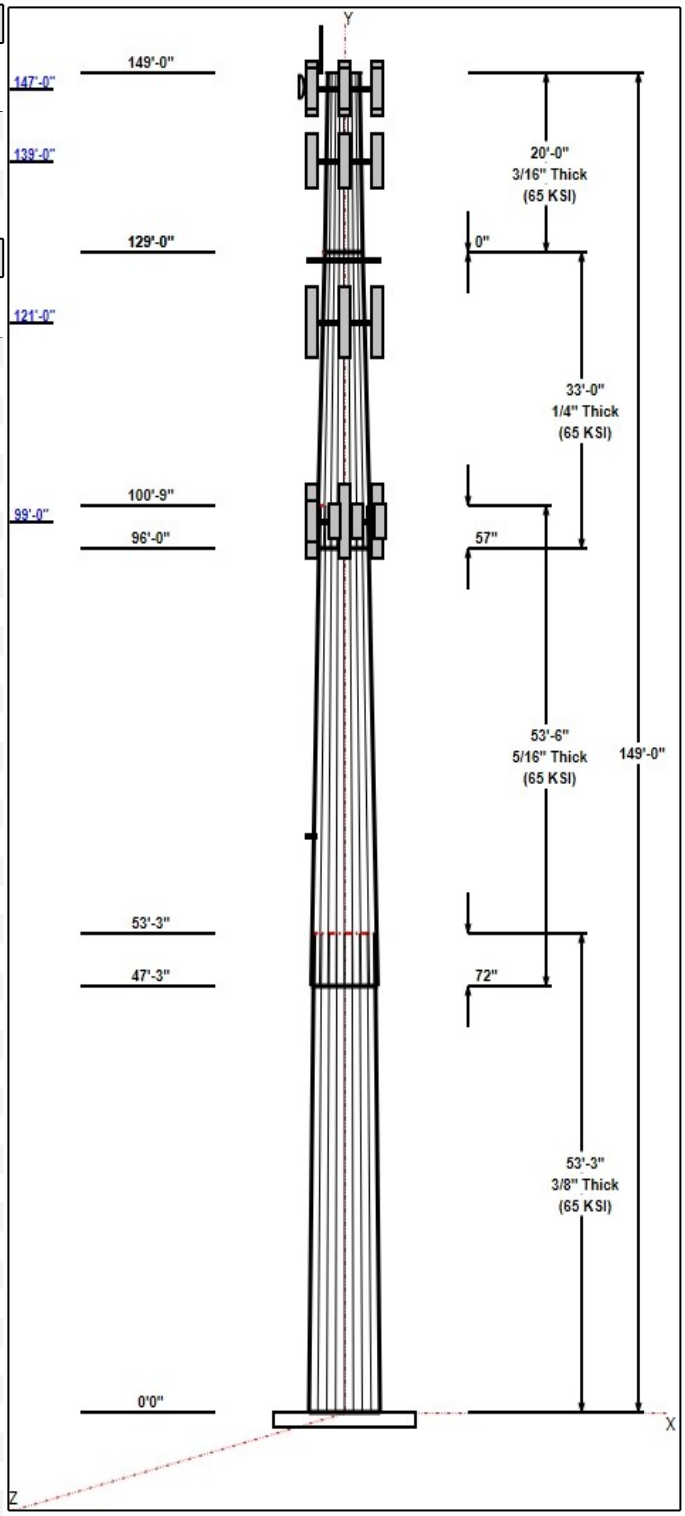
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	46.03	58.91	0.375		0.24185	65
2	53.50	35.17	48.11	0.313	Slip	0.24185	65
3	33.00	28.84	36.82	0.250	Slip	0.24185	65
4	20.00	24.00	28.84	0.188	Butt	0.24185	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.00	151.50	1	Decibel DB404-B	Town of Monroe
149.00	149.00	1	Pipe Mount	Town of Monroe
147.00	147.00	3	RFS APXVTM14-C-120	Sprint/Clearwire
147.00	147.00	3	ALU TD-RRH8x20-25	Sprint/Clearwire
147.00	147.00	3	RFS APXVSPP18-C-A20	Sprint/Clearwire
147.00	147.00	3	ALU 1900MHz RRH	Sprint/Clearwire
147.00	147.00	3	ALU 800MHz RRH	Sprint/Clearwire
147.00	147.00	3	800MHz RRH w/ filter	Sprint/Clearwire
147.00	147.00	4	RFS ACU-A20-N	Sprint/Clearwire
147.00	147.00	3	Argus LLPX310R	Sprint/Clearwire
147.00	147.00	1	Andrew VHLP2-11	Sprint/Clearwire
147.00	147.00	1	Andrew VHLP800-11-DW1	Sprint/Clearwire
147.00	147.00	3	U-RAS Flexible RRH	Sprint/Clearwire
147.00	147.00	1	12.5' Low Profile Platform	Sprint/Clearwire
139.00	139.00	1	Low Profile Platform	AT&T
139.00	139.00	6	Powerwave LGP13519	AT&T
139.00	139.00	12	Powerwave 7020.00 RET	AT&T
139.00	139.00	3	Ericsson RRUS-32 B2s	AT&T
139.00	139.00	6	Powerawve LGP21901	AT&T
139.00	139.00	6	7770	AT&T
139.00	139.00	3	HPA-65R-BUU-H6	AT&T
139.00	139.00	3	Ericsson RRUS 11 RRUs	AT&T
139.00	139.00	3	Ericsson RRUS 12 RRUs	AT&T
139.00	139.00	1	Raycap DC6-48-60-18-8F	AT&T
139.00	139.00	3	Commscope	AT&T
128.00	128.00	1	Low Profile Platform	Unknown
121.00	121.00	3	Ericsson AIR21 B4A/B12P	T-Mobile
121.00	121.00	3	Ericsson Air 21 B2A/B4P	T-Mobile
121.00	121.00	3	Commscope LNX-6515DS	T-Mobile
121.00	121.00	3	Ericsson S11B12	T-Mobile
121.00	121.00	3	Ericsson KRY 112 144/1	T-Mobile
121.00	121.00	1	Low Profile Platform	T-Mobile
121.00	121.00	1	SitePro PRK1245	T-Mobile
99.00	99.00	1	Antel BXA-70063-4CF	Verizon
99.00	99.00	2	Antel BXA-171063-8BF	Verizon
99.00	99.00	1	Antel BXA-70063-6CF	Verizon
99.00	99.00	1	BXA-171063-12BF	Verizon
99.00	99.00	4	RFS APL866513-42T0	Verizon
99.00	99.00	2	Antel LPA-80063-6CF	Verizon
99.00	99.00	1	Swedcom SLCP 2x6014F	Verizon
99.00	99.00	3	Kathrein	Verizon
99.00	99.00	3	ALU RRH2x40-AWS	Verizon
99.00	99.00	6	RFS FD9R6004/2C-3L	Verizon
99.00	99.00	1	RFS DB-T1-6Z-8AB-0Z	Verizon
99.00	99.00	1	12.5' Low Profile Platform	Verizon



65.50	65.50	1	Decibel 26OB	Sprint
64.00	64.00	1	3 ft Standoff	Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	152.50	Inside	7/8" Coax	Town of Monroe
0.00	147.00	Outside	1 1/4" Coax	Sprint/Clearwire
0.00	147.00	Inside	1/2" Coax	Sprint/Clearwire
0.00	147.00	Inside	5/16" Coax	Sprint/Clearwire
0.00	139.00	Inside	1-1/4" Hybrid	AT&T
0.00	121.00	Inside	1 5/8" Coax	T-Mobile
0.00	121.00	Inside	1 5/8" Fiber	T-Mobile
0.00	99.00	Outside	1 5/8" Coax	Verizon
0.00	99.00	Inside	1 5/8" Fiber	Verizon
0.00	64.00	Outside	1/2" Coax	Sprint

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	60.0	Clipped

Reactions

Load Case	Moment	Shear	Axial
1.2D + 1.6W 97 mph Wind	4033.2	37.2	48.0
0.9D + 1.6W 97 mph Wind	3994.9	37.2	36.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1119.2	10.4	80.0
1.2D + 1.0E	262.1	2.2	48.1
0.9D + 1.0E	259.4	2.2	36.0
1.0D + 1.0W 60 mph Wind	959.4	8.9	40.0

Structure: CT13056-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Moosehill
Height: 149.00 (ft)

11/7/2016

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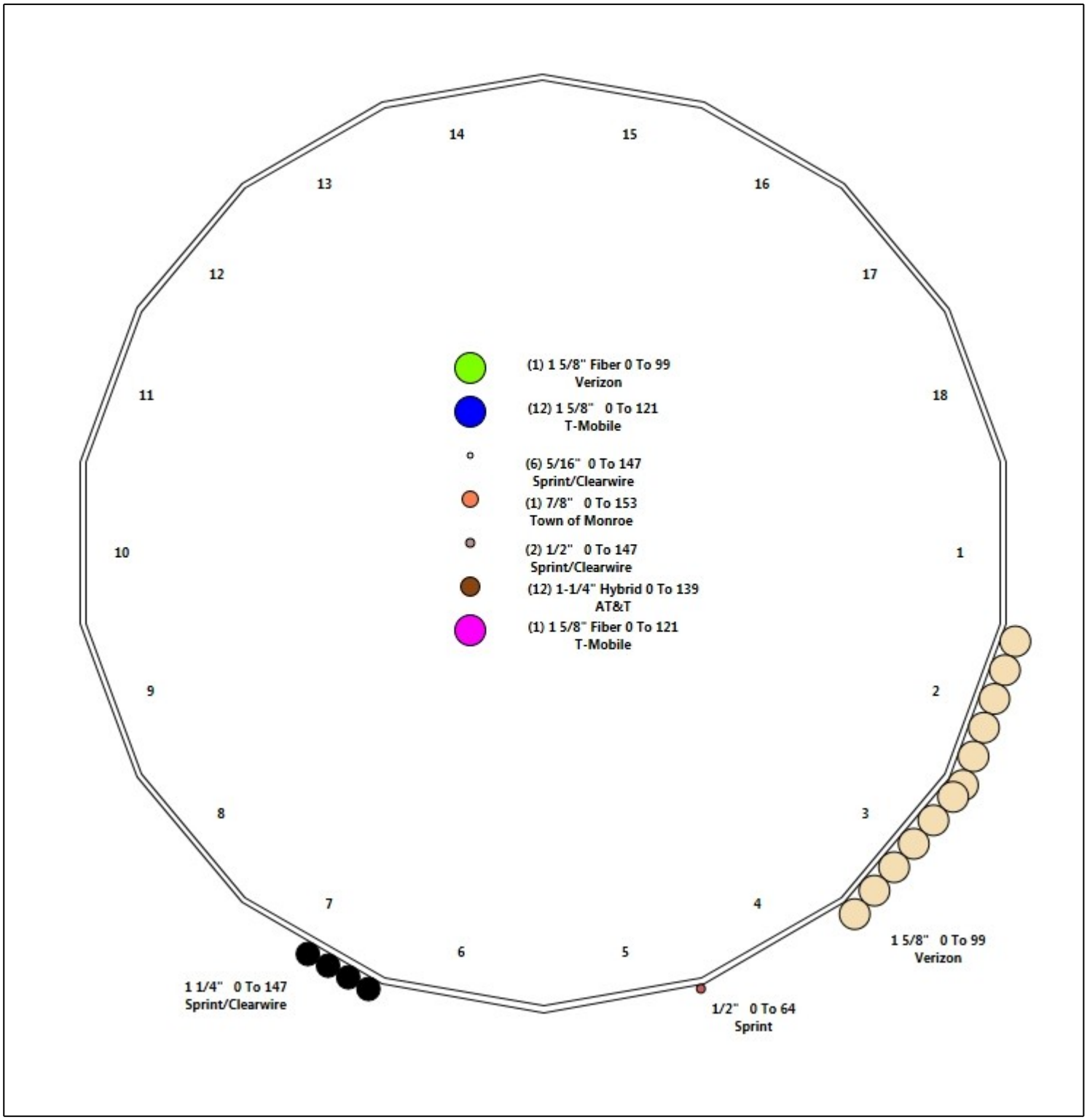


Shaft Properties

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.3750	65		0.00	11,235
2	18	53.500	0.3125	65	Slip	72.00	7,462
3	18	33.000	0.2500	65	Slip	57.00	2,903
4	18	20.000	0.1875	65	Flange	0.00	1,062
					Total Shaft Weight:		**22,662**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	58.91	0.00	69.67	30159.39	26.29	157.09	46.03	53.25	54.34	14311.6	20.23	122.7	0.241846
2	48.11	47.25	47.41	13682.01	25.73	153.94	35.17	100.75	34.57	5306.98	18.43	112.5	0.241846
3	36.82	96.00	29.02	4902.09	24.56	147.27	28.84	129.00	22.68	2342.00	18.93	115.3	0.241846
4	28.84	129.0	17.05	1768.04	25.71	153.80	24.00	149.00	14.17	1015.22	21.16	128.0	0.241846

Load Summary

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 6

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	149.00	Decibel DB404-B	1	14.00	1.03	1.00	46.44	3.836	1.00	0.00	2.50
2	149.00	Pipe Mount	1	350.00	5.00	1.00	643.00	8.488	1.00	0.00	0.00
3	147.00	RFS APXVTM14-C-120	3	56.00	6.34	0.79	216.02	7.451	0.79	0.00	0.00
4	147.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.69	180.19	4.861	0.69	0.00	0.00
5	147.00	RFS APXVSPP18-C-A20	3	57.00	8.02	0.83	229.50	10.808	0.83	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	44.00	3.80	0.88	152.94	5.187	0.88	0.00	0.00
7	147.00	ALU 800MHz RRH	3	59.50	2.64	0.87	137.35	3.795	0.87	0.00	0.00
8	147.00	800MHz RRH w/ filter	3	68.30	3.46	1.00	158.56	4.771	1.00	0.00	0.00
9	147.00	RFS ACU-A20-N	4	1.00	0.14	0.79	5.29	0.436	0.79	0.00	0.00
10	147.00	Argus LLPX310R	3	28.60	4.30	0.69	118.72	5.957	0.69	0.00	0.00
11	147.00	Andrew VHLP2-11	1	27.00	4.68	1.00	124.66	5.952	1.00	0.00	0.00
12	147.00	Andrew VHLP800-11-DW1	1	49.00	6.70	1.00	186.88	8.222	1.00	0.00	0.00
13	147.00	U-RAS Flexible RRH ODUs	3	50.70	2.23	0.78	109.37	3.289	0.78	0.00	0.00
14	147.00	12.5' Low Profile Platform	1	1500.00	22.00	1.00	2806.27	39.626	1.00	0.00	0.00
15	139.00	Low Profile Platform	1	1500.00	22.00	1.00	2798.98	39.528	1.00	0.00	0.00
16	139.00	Powerwave LGP13519 TMAs	6	5.30	0.34	1.00	14.73	0.791	1.00	0.00	0.00
17	139.00	Powerwave 7020.00 RET	12	2.20	0.40	0.65	12.36	0.880	0.65	0.00	0.00
18	139.00	Ericsson RRUS-32 B2s RRUs	3	60.00	2.74	0.81	147.18	3.463	0.81	0.00	0.00
19	139.00	Powerawve LGP21901 Diplexer	6	5.50	0.23	0.75	13.13	0.595	0.75	0.00	0.00
20	139.00	7770	6	35.00	5.50	0.73	168.92	6.556	0.73	0.00	0.00
21	139.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	296.92	11.015	0.85	0.00	0.00
22	139.00	Ericsson RRUS 11 RRUs	3	55.00	2.94	0.71	121.91	4.146	0.71	0.00	0.00
23	139.00	Ericsson RRUS 12 RRUs	3	58.00	3.15	0.70	152.51	3.858	0.75	0.00	0.00
24	139.00	Raycap DC6-48-60-18-8F DC Surge	1	32.80	1.47	1.00	94.15	2.164	1.00	0.00	0.00
25	139.00	Commscope ABT-DRDM-ADBH Bias	3	1.10	0.05	0.98	3.31	0.241	0.98	0.00	0.00
26	128.00	Low Profile Platform	1	1500.00	22.00	1.00	2788.32	39.384	1.00	0.00	0.00
27	121.00	Ericsson AIR21 B4A/B12P	3	123.00	11.54	0.89	401.19	13.162	0.89	0.00	0.00
28	121.00	Ericsson Air 21 B2A/B4P	3	91.50	6.09	0.86	256.12	7.162	0.86	0.00	0.00
29	121.00	Commscope LNX-6515DS	3	49.80	11.47	0.80	274.47	14.667	0.80	0.00	0.00
30	121.00	Ericsson S11B12	3	51.00	2.83	0.70	119.12	3.487	0.70	0.00	0.00
31	121.00	Ericsson KRY 112 144/1	3	11.00	0.41	0.70	21.55	0.875	0.70	0.00	0.00
32	121.00	Low Profile Platform	1	1500.00	22.00	1.00	2781.09	39.286	1.00	0.00	0.00
33	121.00	SitePro PRK1245	1	350.00	5.00	1.00	636.96	8.416	1.00	0.00	0.00
34	99.00	Antel BXA-70063-4CF	1	9.90	4.72	0.73	107.60	6.493	0.73	0.00	0.00
35	99.00	Antel BXA-171063-8BF	2	10.50	2.94	0.84	73.38	4.531	0.84	0.00	0.00
36	99.00	Antel BXA-70063-6CF	1	17.00	7.57	0.73	182.64	8.775	0.73	0.00	0.00
37	99.00	BXA-171063-12BF	1	15.00	4.74	0.84	106.07	6.994	0.84	0.00	0.00
38	99.00	RFS APL866513-42T0	4	15.70	4.05	0.93	120.46	5.837	0.93	0.00	0.00
39	99.00	Antel LPA-80063-6CF	2	27.00	9.76	0.93	277.84	12.401	0.93	0.00	0.00
40	99.00	Swedcom SLCP 2x6014F	1	20.00	6.49	0.89	189.07	8.481	0.89	0.00	0.00
41	99.00	Kathrein 7442213_2110_P45_02.0	3	57.30	10.56	0.77	245.94	13.714	0.77	0.00	0.00
42	99.00	ALU RRH2x40-AWS	3	44.00	2.52	0.82	102.25	3.693	0.82	0.00	0.00
43	99.00	RFS FD9R6004/2C-3L	6	3.10	0.36	1.00	10.80	0.785	1.00	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.71	155.78	5.636	0.71	0.00	0.00
45	99.00	12.5' Low Profile Platform	1	1500.00	22.00	1.00	2755.64	38.943	1.00	0.00	0.00
46	65.50	Decibel 26OB	1	50.00	2.00	1.00	210.64	5.213	1.00	0.00	0.00
47	64.00	3 ft Standoff	1	40.00	2.63	1.00	113.73	8.111	1.00	0.00	0.00
		Totals:	**126**	**12,215.60**			**29,662.50**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	152.50	(1) 7/8" Coax	0.00	Inside
0.00	147.00	(4) 1 1/4" Coax	0.00	Outside
0.00	147.00	(2) 1/2" Coax	0.00	Inside
0.00	147.00	(6) 5/16" Coax	0.00	Inside
0.00	139.00	(12) 1-1/4" Hybrid	0.00	Inside
0.00	121.00	(12) 1 5/8" Coax	0.00	Inside
0.00	121.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	99.00	(12) 1 5/8" Coax	0.00	Outside
0.00	99.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	64.00	(1) 1/2" Coax	0.00	Outside

Shaft Section Properties

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	58.910	69.669	30159.4	26.29	157.09	70.5	1008.	0.0
5.00		0.3750	57.701	68.230	28328.6	25.72	153.87	71.1	967.0	1173.1
10.00		0.3750	56.492	66.790	26573.5	25.15	150.64	71.8	926.5	1148.6
15.00		0.3750	55.282	65.351	24892.4	24.58	147.42	72.5	886.9	1124.1
20.00		0.3750	54.073	63.912	23283.7	24.01	144.19	73.2	848.1	1099.6
25.00		0.3750	52.864	62.473	21745.9	23.45	140.97	73.8	810.2	1075.1
30.00		0.3750	51.655	61.033	20277.3	22.88	137.75	74.5	773.2	1050.7
35.00		0.3750	50.445	59.594	18876.4	22.31	134.52	75.2	737.0	1026.2
40.00		0.3750	49.236	58.155	17541.5	21.74	131.30	75.8	701.7	1001.7
45.00		0.3750	48.027	56.716	16271.1	21.17	128.07	76.5	667.3	977.2
47.25	Bot - Section 2	0.3750	47.483	56.068	15720.1	20.92	126.62	76.8	652.1	431.8
50.00		0.3750	46.818	55.276	15063.6	20.60	124.85	77.2	633.7	961.5
53.25	Top - Section 1	0.3125	46.657	45.966	12473.3	24.92	149.30	0.0	0.0	1118.8
55.00		0.3125	46.233	45.546	12134.7	24.68	147.95	72.4	517.0	272.5
60.00		0.3125	45.024	44.347	11201.1	23.99	144.08	73.2	490.0	764.7
64.00		0.3125	44.057	43.387	10489.7	23.45	140.98	73.8	469.0	597.1
65.00		0.3125	43.815	43.148	10316.6	23.31	140.21	74.0	463.8	147.2
65.50		0.3125	43.694	43.028	10230.8	23.24	139.82	74.1	461.2	73.3
70.00		0.3125	42.606	41.948	9480.0	22.63	136.34	74.8	438.3	650.6
75.00		0.3125	41.397	40.749	8689.9	21.95	132.47	75.6	413.5	703.5
80.00		0.3125	40.187	39.549	7945.0	21.26	128.60	76.4	389.4	683.1
85.00		0.3125	38.978	38.350	7243.8	20.58	124.73	77.2	366.0	662.7
90.00		0.3125	37.769	37.151	6585.2	19.90	120.86	78.0	343.4	642.3
95.00		0.3125	36.560	35.951	5967.8	19.22	116.99	78.8	321.5	621.9
96.00	Bot - Section 3	0.3125	36.318	35.711	5849.2	19.08	116.22	79.0	317.2	121.9
99.00		0.3125	35.592	34.992	5502.7	18.67	113.90	79.4	304.5	654.1
100.00		0.3125	35.350	34.752	5390.3	18.54	113.12	79.6	300.3	215.1
100.75	Top - Section 2	0.2500	35.669	28.104	4454.5	23.75	142.68	0.0	0.0	160.4
105.00		0.2500	34.641	27.288	4077.8	23.02	138.56	74.3	231.9	400.5
110.00		0.2500	33.432	26.329	3662.6	22.17	133.73	75.3	215.8	456.1
115.00		0.2500	32.223	25.369	3276.6	21.32	128.89	76.3	200.3	439.8
120.00		0.2500	31.014	24.410	2918.7	20.46	124.05	77.3	185.4	423.5
121.00		0.2500	30.772	24.218	2850.4	20.29	123.09	77.5	182.4	82.7
125.00		0.2500	29.804	23.450	2587.9	19.61	119.22	78.3	171.0	324.4
128.00		0.2500	29.079	22.875	2401.9	19.10	116.32	78.9	162.7	236.5
129.00	Top - Section 3	0.2500	28.837	22.683	2342.0	18.93	115.35	79.1	160.0	77.5
129.00	Bot - Section 4	0.1875	28.837	17.049	1768.0	25.24	153.80	71.2	120.8	
130.00		0.1875	28.595	16.905	1723.6	25.48	152.51	71.4	118.7	57.8
135.00		0.1875	27.386	16.186	1512.8	24.34	146.06	72.8	108.8	281.5
139.00		0.1875	26.418	15.610	1357.0	23.43	140.90	73.8	101.2	216.4
140.00		0.1875	26.177	15.466	1319.8	23.21	139.61	74.1	99.3	52.9
145.00		0.1875	24.967	14.747	1144.0	22.07	133.16	75.4	90.3	257.0
147.00		0.1875	24.484	14.459	1078.4	21.61	130.58	76.0	86.7	99.4
149.00		0.1875	24.000	14.171	1015.2	21.16	128.00	76.5	83.3	97.4
										22662.1

Wind Loading - Shaft

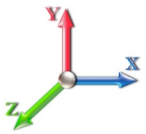
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	445.80	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	436.65	0.650	0.000	5.00	24.669	16.03	548.9	0.0	1407.7
10.00		1.00	0.85	19.450	21.40	427.50	0.650	0.000	5.00	24.157	15.70	537.5	0.0	1378.3
15.00		1.00	0.85	19.450	21.40	418.35	0.650	0.000	5.00	23.645	15.37	526.1	0.0	1348.9
20.00		1.00	0.90	20.638	22.70	421.50	0.650	0.000	5.00	23.134	15.04	546.2	0.0	1319.6
25.00		1.00	0.95	21.630	23.79	421.87	0.650	0.000	5.00	22.622	14.70	559.8	0.0	1290.2
30.00		1.00	0.98	22.477	24.72	420.20	0.650	0.000	5.00	22.111	14.37	568.5	0.0	1260.8
35.00		1.00	1.01	23.218	25.54	417.08	0.650	0.000	5.00	21.599	14.04	573.7	0.0	1231.4
40.00		1.00	1.04	23.880	26.27	412.84	0.650	0.000	5.00	21.087	13.71	576.1	0.0	1202.0
45.00		1.00	1.07	24.479	26.93	407.73	0.650	0.000	5.00	20.576	13.37	576.2	0.0	1172.6
47.25	Bot - Section 2	1.00	1.08	24.732	27.21	405.18	0.650	0.000	2.25	9.092	5.91	257.3	0.0	518.1
50.00		1.00	1.09	25.029	27.53	401.90	0.650	0.000	2.75	11.117	7.23	318.3	0.0	1153.8
53.25	Top - Section 1	1.00	1.11	25.363	27.90	397.78	0.650	0.000	3.25	12.939	8.41	375.4	0.0	1342.5
55.00		1.00	1.12	25.536	28.09	400.88	0.650	0.000	1.75	6.878	4.47	200.9	0.0	327.0
60.00		1.00	1.14	26.008	28.61	393.99	0.650	0.000	5.00	19.305	12.55	574.4	0.0	917.7
64.00	Appurtenance(s)	1.00	1.15	26.364	29.00	388.15	0.650	0.000	4.00	15.076	9.80	454.7	0.0	716.5
65.00		1.00	1.16	26.450	29.09	386.65	0.650	0.000	1.00	3.718	2.42	112.5	0.0	176.7
65.50	Appurtenance(s)	1.00	1.16	26.493	29.14	385.90	0.650	0.000	0.50	1.851	1.20	56.1	0.0	88.0
70.00		1.00	1.17	26.866	29.55	378.93	0.650	0.000	4.50	16.431	10.68	505.0	0.0	780.7
75.00		1.00	1.19	27.259	29.98	370.85	0.650	0.000	5.00	17.770	11.55	554.2	0.0	844.2
80.00		1.00	1.21	27.632	30.39	362.48	0.650	0.000	5.00	17.259	11.22	545.6	0.0	819.7
85.00		1.00	1.22	27.987	30.79	353.82	0.650	0.000	5.00	16.747	10.89	536.2	0.0	795.2
90.00		1.00	1.24	28.325	31.16	344.91	0.650	0.000	5.00	16.236	10.55	526.1	0.0	770.7
95.00		1.00	1.25	28.650	31.51	335.77	0.650	0.000	5.00	15.724	10.22	515.4	0.0	746.3
96.00	Bot - Section 3	1.00	1.25	28.713	31.58	333.92	0.650	0.000	1.00	3.083	2.00	101.3	0.0	146.3
99.00	Appurtenance(s)	1.00	1.26	28.900	31.79	328.31	0.650	0.000	3.00	9.254	6.02	306.0	0.0	785.0
100.00		1.00	1.27	28.961	31.86	326.43	0.650	0.000	1.00	3.044	1.98	100.8	0.0	258.1
100.75	Top - Section 2	1.00	1.27	29.006	31.91	325.01	0.650	0.000	0.75	2.269	1.48	75.3	0.0	192.4
105.00		1.00	1.28	29.260	32.19	321.52	0.650	0.000	4.25	12.643	8.22	423.2	0.0	480.6
110.00		1.00	1.29	29.548	32.50	311.82	0.650	0.000	5.00	14.401	9.36	486.8	0.0	547.3
115.00		1.00	1.30	29.826	32.81	301.96	0.650	0.000	5.00	13.889	9.03	473.9	0.0	527.8
120.00		1.00	1.32	30.094	33.10	291.93	0.650	0.000	5.00	13.377	8.70	460.6	0.0	508.2
121.00	Appurtenance(s)	1.00	1.32	30.147	33.16	289.91	0.650	0.000	1.00	2.614	1.70	90.2	0.0	99.3
125.00		1.00	1.33	30.354	33.39	281.75	0.650	0.000	4.00	10.252	6.66	356.0	0.0	389.3
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	275.58	0.650	0.000	3.00	7.474	4.86	260.8	0.0	283.7
129.00	Top - Section 3	1.00	1.34	30.556	33.61	273.51	0.650	0.000	1.00	2.450	1.59	85.7	0.0	93.0
130.00		1.00	1.34	30.605	33.67	271.44	0.650	0.000	1.00	2.430	1.58	85.1	0.0	69.3
135.00		1.00	1.35	30.850	33.93	261.00	0.650	0.000	5.00	11.843	7.70	417.9	0.0	337.8
139.00	Appurtenance(s)	1.00	1.36	31.040	34.14	252.55	0.650	0.000	4.00	9.106	5.92	323.3	0.0	259.7
140.00		1.00	1.36	31.087	34.20	250.43	0.650	0.000	1.00	2.225	1.45	79.1	0.0	63.4
145.00		1.00	1.37	31.317	34.45	239.75	0.650	0.000	5.00	10.819	7.03	387.6	0.0	308.4
147.00	Appurtenance(s)	1.00	1.37	31.408	34.55	235.44	0.650	0.000	2.00	4.184	2.72	150.4	0.0	119.3
149.00	Appurtenance(s)	1.00	1.38	31.497	34.65	231.12	0.650	0.000	2.00	4.103	2.67	147.8	0.0	116.9
								Totals:	**149.00**			**15,356.8**		**27,194.5**

Discrete Appurtenance Forces

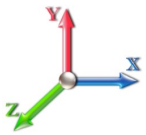
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	Decibel DB404-B	1	31.608	34.768	1.00	1.00	1.03	16.80	0.000	2.500	57.30	0.00	143.25
2	149.00	Pipe Mount	1	31.497	34.647	1.00	1.00	5.00	420.00	0.000	0.000	277.17	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	31.408	34.548	0.90	0.90	9.34	245.88	0.000	0.000	516.40	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	31.408	34.548	0.71	0.90	13.52	201.60	0.000	0.000	747.53	0.00	0.00
5	147.00	ALU TD-RRH8x20-25	3	31.408	34.548	0.62	0.90	7.55	252.00	0.000	0.000	417.08	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	31.408	34.548	0.79	0.90	9.03	158.40	0.000	0.000	499.09	0.00	0.00
7	147.00	ALU 800MHz RRH	3	31.408	34.548	0.78	0.90	6.20	214.20	0.000	0.000	342.79	0.00	0.00
8	147.00	RFS APXVSPP18-C-A20	3	31.408	34.548	0.75	0.90	17.97	205.20	0.000	0.000	993.49	0.00	0.00
9	147.00	Argus LLPX310R	3	31.408	34.548	0.62	0.90	8.01	102.96	0.000	0.000	442.82	0.00	0.00
10	147.00	Andrew VHLP2-11	1	31.408	34.548	0.90	0.90	4.21	32.40	0.000	0.000	232.83	0.00	0.00
11	147.00	Andrew	1	31.408	34.548	0.90	0.90	6.03	58.80	0.000	0.000	333.32	0.00	0.00
12	147.00	U-RAS Flexible RRH	3	31.408	34.548	0.78	1.00	5.22	182.52	0.000	0.000	288.45	0.00	0.00
13	147.00	12.5' Low Profile Platform	1	31.408	34.548	1.00	1.00	22.00	1800.00	0.000	0.000	1216.10	0.00	0.00
14	147.00	RFS ACU-A20-N	4	31.408	34.548	0.71	0.90	0.40	4.80	0.000	0.000	22.01	0.00	0.00
15	139.00	7770	6	31.040	34.144	0.58	0.80	19.27	252.00	0.000	0.000	1052.83	0.00	0.00
16	139.00	Powerwave 7020.00 RET	12	31.040	34.144	0.52	0.80	2.50	31.68	0.000	0.000	136.36	0.00	0.00
17	139.00	Ericsson RRUS-32 B2s	3	31.040	34.144	0.65	0.80	5.33	216.00	0.000	0.000	290.99	0.00	0.00
18	139.00	Powerawve LGP21901	6	31.040	34.144	0.60	0.80	0.83	39.60	0.000	0.000	45.23	0.00	0.00
19	139.00	Raycap DC6-48-60-18-8F	1	31.040	34.144	0.80	0.80	1.18	39.36	0.000	0.000	64.24	0.00	0.00
20	139.00	HPA-65R-BUU-H6	3	31.040	34.144	0.68	0.80	19.71	183.60	0.000	0.000	1076.56	0.00	0.00
21	139.00	Ericsson RRUS 11 RRUs	3	31.040	34.144	0.57	0.80	5.01	198.00	0.000	0.000	273.68	0.00	0.00
22	139.00	Ericsson RRUS 12 RRUs	3	31.040	34.144	0.56	0.80	5.29	208.80	0.000	0.000	289.10	0.00	0.00
23	139.00	Commscope	3	31.040	34.144	0.78	0.80	0.12	3.96	0.000	0.000	6.42	0.00	0.00
24	139.00	Powerwave LGP13519	6	31.040	34.144	0.80	0.80	1.63	38.16	0.000	0.000	89.16	0.00	0.00
25	139.00	Low Profile Platform	1	31.040	34.144	1.00	1.00	22.00	1800.00	0.000	0.000	1201.86	0.00	0.00
26	128.00	Low Profile Platform	1	30.506	33.556	1.00	1.00	22.00	1800.00	0.000	0.000	1181.18	0.00	0.00
27	121.00	Ericsson AIR21 B4A/B12P	3	30.147	33.161	0.71	0.80	24.65	442.80	0.000	0.000	1307.85	0.00	0.00
28	121.00	Ericsson Air 21 B2A/B4P	3	30.147	33.161	0.69	0.80	12.57	329.40	0.000	0.000	666.93	0.00	0.00
29	121.00	Commscope LNX-6515DS	3	30.147	33.161	0.64	0.80	22.02	179.28	0.000	0.000	1168.47	0.00	0.00
30	121.00	Ericsson S11B12	3	30.147	33.161	0.56	0.80	4.75	183.60	0.000	0.000	252.26	0.00	0.00
31	121.00	Ericsson KRY 112 144/1	3	30.147	33.161	0.56	0.80	0.69	39.60	0.000	0.000	36.55	0.00	0.00
32	121.00	Low Profile Platform	1	30.147	33.161	1.00	1.00	22.00	1800.00	0.000	0.000	1167.28	0.00	0.00
33	121.00	SitePro PRK1245	1	30.147	33.161	0.80	0.80	4.00	420.00	0.000	0.000	212.23	0.00	0.00
34	99.00	RFS APL866513-42T0	4	28.900	31.790	0.74	0.80	12.05	75.36	0.000	0.000	613.04	0.00	0.00
35	99.00	BXA-171063-12BF	1	28.900	31.790	0.67	0.80	3.19	18.00	0.000	0.000	162.01	0.00	0.00
36	99.00	Antel BXA-70063-6CF	1	28.900	31.790	0.58	0.80	4.42	20.40	0.000	0.000	224.86	0.00	0.00
37	99.00	Antel LPA-80063-6CF	2	28.900	31.790	0.74	0.80	14.52	64.80	0.000	0.000	738.68	0.00	0.00
38	99.00	Antel BXA-171063-8BF	2	28.900	31.790	0.67	0.80	3.95	25.20	0.000	0.000	200.98	0.00	0.00
39	99.00	Antel BXA-70063-4CF	1	28.900	31.790	0.58	0.80	2.76	11.88	0.000	0.000	140.20	0.00	0.00
40	99.00	RFS FD9R6004/2C-3L	6	28.900	31.790	0.80	0.80	1.73	22.32	0.000	0.000	87.89	0.00	0.00
41	99.00	Swedcom SLCP 2x6014F	1	28.900	31.790	0.71	0.80	4.62	24.00	0.000	0.000	235.03	0.00	0.00
42	99.00	Kathrein	3	28.900	31.790	0.62	0.80	19.51	206.28	0.000	0.000	992.59	0.00	0.00
43	99.00	ALU RRH2x40-AWS	3	28.900	31.790	0.66	0.80	4.96	158.40	0.000	0.000	252.25	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	28.900	31.790	0.57	0.80	2.73	22.68	0.000	0.000	138.67	0.00	0.00
45	99.00	12.5' Low Profile Platform	1	28.900	31.790	0.80	0.80	17.60	1800.00	0.000	0.000	895.19	0.00	0.00
46	65.50	Decibel 26OB	1	26.493	29.142	0.80	0.80	1.60	60.00	0.000	0.000	74.60	0.00	0.00
47	64.00	3 ft Standoff	1	26.364	29.000	1.00	1.00	2.63	48.00	0.000	0.000	122.03	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Totals:	**14,658.72**	**21,783.60**

Total Applied Force Summary

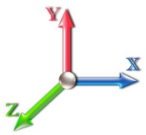
Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		548.91	1664.08	0.00	0.00
10.00		537.52	1634.70	0.00	0.00
15.00		526.14	1605.31	0.00	0.00
20.00		546.18	1575.93	0.00	0.00
25.00		559.79	1546.54	0.00	0.00
30.00		568.53	1517.16	0.00	0.00
35.00		573.70	1487.77	0.00	0.00
40.00		576.08	1458.39	0.00	0.00
45.00		576.21	1429.01	0.00	0.00
47.25		257.25	633.47	0.00	0.00
50.00		318.32	1294.77	0.00	0.00
53.25		375.43	1509.18	0.00	0.00
55.00		200.92	416.69	0.00	0.00
60.00		574.39	1174.03	0.00	0.00
64.00	(1) attachments	576.72	969.59	0.00	0.00
65.00		112.50	227.76	0.00	0.00
65.50	(1) attachments	130.71	173.51	0.00	0.00
70.00		504.99	1010.58	0.00	0.00
75.00		554.16	1099.61	0.00	0.00
80.00		545.56	1075.12	0.00	0.00
85.00		536.19	1050.63	0.00	0.00
90.00		526.10	1026.15	0.00	0.00
95.00		515.36	1001.66	0.00	0.00
96.00		101.28	197.39	0.00	0.00
99.00	(26) attachments	4987.37	3387.54	0.00	0.00
100.00		100.85	292.92	0.00	0.00
100.75		75.31	218.53	0.00	0.00
105.00		423.20	628.48	0.00	0.00
110.00		486.78	721.27	0.00	0.00
115.00		473.90	701.68	0.00	0.00
120.00		460.55	682.09	0.00	0.00
121.00	(17) attachments	4901.71	3528.75	0.00	0.00
125.00		355.99	463.25	0.00	0.00
128.00	(1) attachments	1442.01	2139.21	0.00	0.00
129.00		85.65	111.50	0.00	0.00
130.00		85.08	87.81	0.00	0.00
135.00		417.95	430.25	0.00	0.00
139.00	(47) attachments	4849.78	3344.79	0.00	0.00
140.00		79.14	68.20	0.00	0.00
145.00		387.62	332.18	0.00	0.00
147.00	(31) attachments	6202.26	3587.52	0.00	0.00
149.00	(2) attachments	482.30	554.95	0.00	143.25
	Totals:	**37,140.38**	**48,059.95**	**0.00**	**143.25**

Linear Appurtenance Segment Forces (Factored)

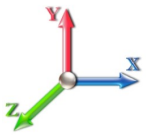
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	15.84
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	74.88
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	0.96
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	15.84
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	74.88
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	0.96
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	15.84
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	74.88
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	0.96
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	15.84
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	74.88
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	0.96
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	15.84
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	74.88
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	0.96
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	15.84
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	74.88
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	0.96
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	7.13
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	33.70
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	0.43
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	8.71
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	41.18
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	0.53
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	10.30
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	48.67
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	0.62
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	5.54
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	26.21
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	0.34
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	15.84
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	74.88
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	0.96
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	12.67
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	59.90
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	0.77
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	3.17
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	14.98

Linear Appurtenance Segment Forces (Factored)

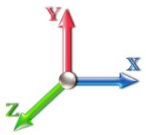
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	1.58
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	7.49
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	14.26
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	67.39
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	15.84
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	74.88
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	15.84
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	74.88
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	15.84
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	74.88
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	15.84
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	74.88
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	15.84
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	74.88
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	3.17
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	14.98
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	9.50
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	44.93
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.961	0.00	3.17
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	2.38
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	29.260	0.00	13.46
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.548	0.00	15.84
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.826	0.00	15.84
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.094	0.00	15.84
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	3.17
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	30.354	0.00	12.67
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	30.506	0.00	9.50
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.556	0.00	3.17
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.605	0.00	3.17
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.850	0.00	15.84
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.040	0.00	12.67
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.087	0.00	3.17
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.317	0.00	15.84
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.408	0.00	6.34
									Totals:		**0.0**	**1,960.6**

Calculated Forces

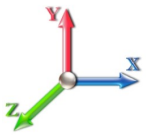
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.00	-37.22	0.00	-4033.2	0.00	4033.20	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.768
5.00	-46.21	-36.82	0.00	-3847.1	0.00	3847.10	4369.00	2184.50	10304.7	5160.05	0.10	-0.186	0.000	0.756
10.00	-44.46	-36.42	0.00	-3663.0	0.00	3663.00	4317.04	2158.52	9966.05	4990.43	0.40	-0.374	0.000	0.745
15.00	-42.74	-36.03	0.00	-3480.9	0.00	3480.90	4263.35	2131.68	9628.61	4821.46	0.89	-0.566	0.000	0.732
20.00	-41.05	-35.60	0.00	-3300.7	0.00	3300.77	4207.92	2103.96	9292.72	4653.26	1.59	-0.759	0.000	0.719
25.00	-39.39	-35.15	0.00	-3122.7	0.00	3122.77	4150.77	2075.38	8958.64	4485.98	2.49	-0.956	0.000	0.706
30.00	-37.76	-34.69	0.00	-2947.0	0.00	2947.00	4091.88	2045.94	8626.63	4319.73	3.60	-1.154	0.000	0.692
35.00	-36.17	-34.21	0.00	-2773.5	0.00	2773.55	4031.25	2015.63	8296.96	4154.65	4.91	-1.355	0.000	0.677
40.00	-34.61	-33.72	0.00	-2602.5	0.00	2602.50	3968.90	1984.45	7969.88	3990.86	6.44	-1.557	0.000	0.661
45.00	-33.11	-33.19	0.00	-2433.8	0.00	2433.89	3904.81	1952.40	7645.65	3828.51	8.18	-1.762	0.000	0.644
47.25	-32.42	-32.97	0.00	-2359.2	0.00	2359.22	3875.40	1937.70	7500.75	3755.95	9.04	-1.856	0.000	0.637
50.00	-31.07	-32.68	0.00	-2268.5	0.00	2268.54	3838.99	1919.49	7324.54	3667.71	10.14	-1.971	0.000	0.627
53.25	-29.51	-32.30	0.00	-2162.3	0.00	2162.34	2982.57	1491.28	5685.98	2847.22	11.53	-2.107	0.000	0.770
55.00	-29.02	-32.17	0.00	-2105.8	0.00	2105.81	2966.84	1483.42	5604.01	2806.17	12.32	-2.181	0.000	0.761
60.00	-27.75	-31.65	0.00	-1944.9	0.00	1944.97	2920.75	1460.37	5370.68	2689.33	14.73	-2.419	0.000	0.733
64.00	-26.74	-31.09	0.00	-1818.3	0.00	1818.37	2882.62	1441.31	5185.10	2596.40	16.84	-2.610	0.000	0.710
65.00	-26.50	-30.98	0.00	-1787.2	0.00	1787.29	2872.92	1436.46	5138.87	2573.25	17.39	-2.659	0.000	0.704
65.50	-26.27	-30.90	0.00	-1771.8	0.00	1771.80	2868.04	1434.02	5115.78	2561.69	17.67	-2.683	0.000	0.701
70.00	-25.16	-30.44	0.00	-1632.7	0.00	1632.76	2823.36	1411.68	4908.84	2458.07	20.30	-2.896	0.000	0.674
75.00	-23.97	-29.93	0.00	-1480.5	0.00	1480.55	2772.06	1386.03	4680.84	2343.90	23.46	-3.130	0.000	0.641
80.00	-22.81	-29.41	0.00	-1330.9	0.00	1330.91	2719.04	1359.52	4455.15	2230.89	26.86	-3.360	0.000	0.605
85.00	-21.69	-28.90	0.00	-1183.8	0.00	1183.84	2664.28	1332.14	4232.01	2119.15	30.50	-3.585	0.000	0.567
90.00	-20.59	-28.39	0.00	-1039.3	0.00	1039.35	2607.79	1303.89	4011.70	2008.83	34.37	-3.803	0.000	0.526
95.00	-19.57	-27.84	0.00	-897.42	0.00	897.42	2549.57	1274.78	3794.46	1900.05	38.47	-4.013	0.000	0.480
96.00	-19.34	-27.76	0.00	-869.58	0.00	869.58	2537.71	1268.86	3751.41	1878.49	39.31	-4.055	0.000	0.471
99.00	-16.29	-22.56	0.00	-786.31	0.00	786.31	2501.74	1250.87	3623.07	1814.23	41.90	-4.176	0.000	0.440
100.00	-15.99	-22.45	0.00	-763.75	0.00	763.75	2489.61	1244.80	3580.57	1792.94	42.78	-4.216	0.000	0.433
100.75	-15.74	-22.39	0.00	-746.91	0.00	746.91	1858.32	929.16	2706.71	1355.36	43.44	-4.246	0.000	0.560
105.00	-15.07	-21.97	0.00	-651.77	0.00	651.77	1825.33	912.67	2580.97	1292.40	47.29	-4.405	0.000	0.513
110.00	-14.32	-21.47	0.00	-541.95	0.00	541.95	1784.92	892.46	2434.45	1219.03	52.02	-4.613	0.000	0.453
115.00	-13.59	-20.99	0.00	-434.59	0.00	434.59	1742.78	871.39	2289.70	1146.55	56.95	-4.803	0.000	0.387
120.00	-12.92	-20.49	0.00	-329.66	0.00	329.66	1698.90	849.45	2146.98	1075.09	62.06	-4.969	0.000	0.315
121.00	-9.81	-15.31	0.00	-309.17	0.00	309.17	1689.92	844.96	2118.70	1060.93	63.11	-5.000	0.000	0.298
125.00	-9.35	-14.93	0.00	-247.92	0.00	247.92	1653.30	826.65	2006.56	1004.77	67.34	-5.111	0.000	0.253
128.00	-7.34	-13.31	0.00	-203.13	0.00	203.13	1625.10	812.55	1923.51	963.18	70.57	-5.185	0.000	0.216
129.00	-7.23	-13.22	0.00	-189.82	0.00	189.82	1615.56	807.78	1896.04	949.43	71.66	-5.209	0.000	0.205
129.00	-7.23	-13.22	0.00	-189.82	0.00	189.82	1091.97	545.98	1287.15	644.53	71.66	-5.209	0.000	0.302
130.00	-7.14	-13.13	0.00	-176.60	0.00	176.60	1086.82	543.41	1270.20	636.04	72.75	-5.231	0.000	0.285
135.00	-6.73	-12.69	0.00	-110.93	0.00	110.93	1060.04	530.02	1185.82	593.79	78.29	-5.350	0.000	0.194
139.00	-3.85	-7.55	0.00	-60.18	0.00	60.18	1037.37	518.68	1118.90	560.28	82.80	-5.414	0.000	0.111
140.00	-3.78	-7.47	0.00	-52.63	0.00	52.63	1031.53	515.76	1102.27	551.95	83.93	-5.426	0.000	0.099
145.00	-3.49	-7.05	0.00	-15.31	0.00	15.31	1001.28	500.64	1019.81	510.66	89.63	-5.462	0.000	0.034
147.00	-0.51	-0.53	0.00	-1.21	0.00	1.21	988.70	494.35	987.19	494.33	91.92	-5.466	0.000	0.003
149.00	0.00	-0.48	0.00	-0.14	0.00	0.14	975.84	487.92	954.81	478.11	94.20	-5.467	0.000	0.000

Wind Loading - Shaft

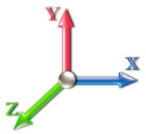
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	445.80	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	436.65	0.650	0.000	5.00	24.669	16.03	548.9	0.0	1055.8
10.00		1.00	0.85	19.450	21.40	427.50	0.650	0.000	5.00	24.157	15.70	537.5	0.0	1033.7
15.00		1.00	0.85	19.450	21.40	418.35	0.650	0.000	5.00	23.645	15.37	526.1	0.0	1011.7
20.00		1.00	0.90	20.638	22.70	421.50	0.650	0.000	5.00	23.134	15.04	546.2	0.0	989.7
25.00		1.00	0.95	21.630	23.79	421.87	0.650	0.000	5.00	22.622	14.70	559.8	0.0	967.6
30.00		1.00	0.98	22.477	24.72	420.20	0.650	0.000	5.00	22.111	14.37	568.5	0.0	945.6
35.00		1.00	1.01	23.218	25.54	417.08	0.650	0.000	5.00	21.599	14.04	573.7	0.0	923.6
40.00		1.00	1.04	23.880	26.27	412.84	0.650	0.000	5.00	21.087	13.71	576.1	0.0	901.5
45.00		1.00	1.07	24.479	26.93	407.73	0.650	0.000	5.00	20.576	13.37	576.2	0.0	879.5
47.25	Bot - Section 2	1.00	1.08	24.732	27.21	405.18	0.650	0.000	2.25	9.092	5.91	257.3	0.0	388.6
50.00		1.00	1.09	25.029	27.53	401.90	0.650	0.000	2.75	11.117	7.23	318.3	0.0	865.3
53.25	Top - Section 1	1.00	1.11	25.363	27.90	397.78	0.650	0.000	3.25	12.939	8.41	375.4	0.0	1006.9
55.00		1.00	1.12	25.536	28.09	400.88	0.650	0.000	1.75	6.878	4.47	200.9	0.0	245.2
60.00		1.00	1.14	26.008	28.61	393.99	0.650	0.000	5.00	19.305	12.55	574.4	0.0	688.2
64.00	Appurtenance(s)	1.00	1.15	26.364	29.00	388.15	0.650	0.000	4.00	15.076	9.80	454.7	0.0	537.4
65.00		1.00	1.16	26.450	29.09	386.65	0.650	0.000	1.00	3.718	2.42	112.5	0.0	132.5
65.50	Appurtenance(s)	1.00	1.16	26.493	29.14	385.90	0.650	0.000	0.50	1.851	1.20	56.1	0.0	66.0
70.00		1.00	1.17	26.866	29.55	378.93	0.650	0.000	4.50	16.431	10.68	505.0	0.0	585.5
75.00		1.00	1.19	27.259	29.98	370.85	0.650	0.000	5.00	17.770	11.55	554.2	0.0	633.1
80.00		1.00	1.21	27.632	30.39	362.48	0.650	0.000	5.00	17.259	11.22	545.6	0.0	614.8
85.00		1.00	1.22	27.987	30.79	353.82	0.650	0.000	5.00	16.747	10.89	536.2	0.0	596.4
90.00		1.00	1.24	28.325	31.16	344.91	0.650	0.000	5.00	16.236	10.55	526.1	0.0	578.1
95.00		1.00	1.25	28.650	31.51	335.77	0.650	0.000	5.00	15.724	10.22	515.4	0.0	559.7
96.00	Bot - Section 3	1.00	1.25	28.713	31.58	333.92	0.650	0.000	1.00	3.083	2.00	101.3	0.0	109.7
99.00	Appurtenance(s)	1.00	1.26	28.900	31.79	328.31	0.650	0.000	3.00	9.254	6.02	306.0	0.0	588.7
100.00		1.00	1.27	28.961	31.86	326.43	0.650	0.000	1.00	3.044	1.98	100.8	0.0	193.6
100.75	Top - Section 2	1.00	1.27	29.006	31.91	325.01	0.650	0.000	0.75	2.269	1.48	75.3	0.0	144.3
105.00		1.00	1.28	29.260	32.19	321.52	0.650	0.000	4.25	12.643	8.22	423.2	0.0	360.5
110.00		1.00	1.29	29.548	32.50	311.82	0.650	0.000	5.00	14.401	9.36	486.8	0.0	410.5
115.00		1.00	1.30	29.826	32.81	301.96	0.650	0.000	5.00	13.889	9.03	473.9	0.0	395.8
120.00		1.00	1.32	30.094	33.10	291.93	0.650	0.000	5.00	13.377	8.70	460.6	0.0	381.1
121.00	Appurtenance(s)	1.00	1.32	30.147	33.16	289.91	0.650	0.000	1.00	2.614	1.70	90.2	0.0	74.5
125.00		1.00	1.33	30.354	33.39	281.75	0.650	0.000	4.00	10.252	6.66	356.0	0.0	292.0
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	275.58	0.650	0.000	3.00	7.474	4.86	260.8	0.0	212.8
129.00	Top - Section 3	1.00	1.34	30.556	33.61	273.51	0.650	0.000	1.00	2.450	1.59	85.7	0.0	69.8
130.00		1.00	1.34	30.605	33.67	271.44	0.650	0.000	1.00	2.430	1.58	85.1	0.0	52.0
135.00		1.00	1.35	30.850	33.93	261.00	0.650	0.000	5.00	11.843	7.70	417.9	0.0	253.4
139.00	Appurtenance(s)	1.00	1.36	31.040	34.14	252.55	0.650	0.000	4.00	9.106	5.92	323.3	0.0	194.8
140.00		1.00	1.36	31.087	34.20	250.43	0.650	0.000	1.00	2.225	1.45	79.1	0.0	47.6
145.00		1.00	1.37	31.317	34.45	239.75	0.650	0.000	5.00	10.819	7.03	387.6	0.0	231.3
147.00	Appurtenance(s)	1.00	1.37	31.408	34.55	235.44	0.650	0.000	2.00	4.184	2.72	150.4	0.0	89.4
149.00	Appurtenance(s)	1.00	1.38	31.497	34.65	231.12	0.650	0.000	2.00	4.103	2.67	147.8	0.0	87.7
								Totals:	**149.00**			**15,356.8**		**20,395.9**

Discrete Appurtenance Forces

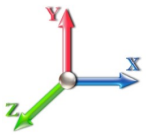
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	Decibel DB404-B	1	31.608	34.768	1.00	1.00	1.03	12.60	0.000	2.500	57.30	0.00	143.25
2	149.00	Pipe Mount	1	31.497	34.647	1.00	1.00	5.00	315.00	0.000	0.000	277.17	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	31.408	34.548	0.90	0.90	9.34	184.41	0.000	0.000	516.40	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	31.408	34.548	0.71	0.90	13.52	151.20	0.000	0.000	747.53	0.00	0.00
5	147.00	ALU TD-RRH8x20-25	3	31.408	34.548	0.62	0.90	7.55	189.00	0.000	0.000	417.08	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	31.408	34.548	0.79	0.90	9.03	118.80	0.000	0.000	499.09	0.00	0.00
7	147.00	ALU 800MHz RRH	3	31.408	34.548	0.78	0.90	6.20	160.65	0.000	0.000	342.79	0.00	0.00
8	147.00	RFS APXVSPP18-C-A20	3	31.408	34.548	0.75	0.90	17.97	153.90	0.000	0.000	993.49	0.00	0.00
9	147.00	Argus LLPX310R	3	31.408	34.548	0.62	0.90	8.01	77.22	0.000	0.000	442.82	0.00	0.00
10	147.00	Andrew VHLP2-11	1	31.408	34.548	0.90	0.90	4.21	24.30	0.000	0.000	232.83	0.00	0.00
11	147.00	Andrew	1	31.408	34.548	0.90	0.90	6.03	44.10	0.000	0.000	333.32	0.00	0.00
12	147.00	U-RAS Flexible RRH	3	31.408	34.548	0.78	1.00	5.22	136.89	0.000	0.000	288.45	0.00	0.00
13	147.00	12.5' Low Profile Platform	1	31.408	34.548	1.00	1.00	22.00	1350.00	0.000	0.000	1216.10	0.00	0.00
14	147.00	RFS ACU-A20-N	4	31.408	34.548	0.71	0.90	0.40	3.60	0.000	0.000	22.01	0.00	0.00
15	139.00	7770	6	31.040	34.144	0.58	0.80	19.27	189.00	0.000	0.000	1052.83	0.00	0.00
16	139.00	Powerwave 7020.00 RET	12	31.040	34.144	0.52	0.80	2.50	23.76	0.000	0.000	136.36	0.00	0.00
17	139.00	Ericsson RRUS-32 B2s	3	31.040	34.144	0.65	0.80	5.33	162.00	0.000	0.000	290.99	0.00	0.00
18	139.00	Powerawve LGP21901	6	31.040	34.144	0.60	0.80	0.83	29.70	0.000	0.000	45.23	0.00	0.00
19	139.00	Raycap DC6-48-60-18-8F	1	31.040	34.144	0.80	0.80	1.18	29.52	0.000	0.000	64.24	0.00	0.00
20	139.00	HPA-65R-BUU-H6	3	31.040	34.144	0.68	0.80	19.71	137.70	0.000	0.000	1076.56	0.00	0.00
21	139.00	Ericsson RRUS 11 RRUs	3	31.040	34.144	0.57	0.80	5.01	148.50	0.000	0.000	273.68	0.00	0.00
22	139.00	Ericsson RRUS 12 RRUs	3	31.040	34.144	0.56	0.80	5.29	156.60	0.000	0.000	289.10	0.00	0.00
23	139.00	Commscope	3	31.040	34.144	0.78	0.80	0.12	2.97	0.000	0.000	6.42	0.00	0.00
24	139.00	Powerwave LGP13519	6	31.040	34.144	0.80	0.80	1.63	28.62	0.000	0.000	89.16	0.00	0.00
25	139.00	Low Profile Platform	1	31.040	34.144	1.00	1.00	22.00	1350.00	0.000	0.000	1201.86	0.00	0.00
26	128.00	Low Profile Platform	1	30.506	33.556	1.00	1.00	22.00	1350.00	0.000	0.000	1181.18	0.00	0.00
27	121.00	Ericsson AIR21 B4A/B12P	3	30.147	33.161	0.71	0.80	24.65	332.10	0.000	0.000	1307.85	0.00	0.00
28	121.00	Ericsson Air 21 B2A/B4P	3	30.147	33.161	0.69	0.80	12.57	247.05	0.000	0.000	666.93	0.00	0.00
29	121.00	Commscope LNX-6515DS	3	30.147	33.161	0.64	0.80	22.02	134.46	0.000	0.000	1168.47	0.00	0.00
30	121.00	Ericsson S11B12	3	30.147	33.161	0.56	0.80	4.75	137.70	0.000	0.000	252.26	0.00	0.00
31	121.00	Ericsson KRY 112 144/1	3	30.147	33.161	0.56	0.80	0.69	29.70	0.000	0.000	36.55	0.00	0.00
32	121.00	Low Profile Platform	1	30.147	33.161	1.00	1.00	22.00	1350.00	0.000	0.000	1167.28	0.00	0.00
33	121.00	SitePro PRK1245	1	30.147	33.161	0.80	0.80	4.00	315.00	0.000	0.000	212.23	0.00	0.00
34	99.00	RFS APL866513-42T0	4	28.900	31.790	0.74	0.80	12.05	56.52	0.000	0.000	613.04	0.00	0.00
35	99.00	BXA-171063-12BF	1	28.900	31.790	0.67	0.80	3.19	13.50	0.000	0.000	162.01	0.00	0.00
36	99.00	Antel BXA-70063-6CF	1	28.900	31.790	0.58	0.80	4.42	15.30	0.000	0.000	224.86	0.00	0.00
37	99.00	Antel LPA-80063-6CF	2	28.900	31.790	0.74	0.80	14.52	48.60	0.000	0.000	738.68	0.00	0.00
38	99.00	Antel BXA-171063-8BF	2	28.900	31.790	0.67	0.80	3.95	18.90	0.000	0.000	200.98	0.00	0.00
39	99.00	Antel BXA-70063-4CF	1	28.900	31.790	0.58	0.80	2.76	8.91	0.000	0.000	140.20	0.00	0.00
40	99.00	RFS FD9R6004/2C-3L	6	28.900	31.790	0.80	0.80	1.73	16.74	0.000	0.000	87.89	0.00	0.00
41	99.00	Swedcom SLCP 2x6014F	1	28.900	31.790	0.71	0.80	4.62	18.00	0.000	0.000	235.03	0.00	0.00
42	99.00	Kathrein	3	28.900	31.790	0.62	0.80	19.51	154.71	0.000	0.000	992.59	0.00	0.00
43	99.00	ALU RRH2x40-AWS	3	28.900	31.790	0.66	0.80	4.96	118.80	0.000	0.000	252.25	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	28.900	31.790	0.57	0.80	2.73	17.01	0.000	0.000	138.67	0.00	0.00
45	99.00	12.5' Low Profile Platform	1	28.900	31.790	0.80	0.80	17.60	1350.00	0.000	0.000	895.19	0.00	0.00
46	65.50	Decibel 26OB	1	26.493	29.142	0.80	0.80	1.60	45.00	0.000	0.000	74.60	0.00	0.00
47	64.00	3 ft Standoff	1	26.364	29.000	1.00	1.00	2.63	36.00	0.000	0.000	122.03	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Totals:	**10,994.04**	**21,783.60**

Total Applied Force Summary

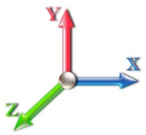
Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		548.91	1248.06	0.00	0.00
10.00		537.52	1226.02	0.00	0.00
15.00		526.14	1203.98	0.00	0.00
20.00		546.18	1181.95	0.00	0.00
25.00		559.79	1159.91	0.00	0.00
30.00		568.53	1137.87	0.00	0.00
35.00		573.70	1115.83	0.00	0.00
40.00		576.08	1093.79	0.00	0.00
45.00		576.21	1071.75	0.00	0.00
47.25		257.25	475.10	0.00	0.00
50.00		318.32	971.08	0.00	0.00
53.25		375.43	1131.88	0.00	0.00
55.00		200.92	312.52	0.00	0.00
60.00		574.39	880.52	0.00	0.00
64.00	(1) attachments	576.72	727.19	0.00	0.00
65.00		112.50	170.82	0.00	0.00
65.50	(1) attachments	130.71	130.13	0.00	0.00
70.00		504.99	757.94	0.00	0.00
75.00		554.16	824.70	0.00	0.00
80.00		545.56	806.34	0.00	0.00
85.00		536.19	787.97	0.00	0.00
90.00		526.10	769.61	0.00	0.00
95.00		515.36	751.24	0.00	0.00
96.00		101.28	148.04	0.00	0.00
99.00	(26) attachments	4987.37	2540.65	0.00	0.00
100.00		100.85	219.69	0.00	0.00
100.75		75.31	163.90	0.00	0.00
105.00		423.20	471.36	0.00	0.00
110.00		486.78	540.95	0.00	0.00
115.00		473.90	526.26	0.00	0.00
120.00		460.55	511.57	0.00	0.00
121.00	(17) attachments	4901.71	2646.56	0.00	0.00
125.00		355.99	347.44	0.00	0.00
128.00	(1) attachments	1442.01	1604.41	0.00	0.00
129.00		85.65	83.63	0.00	0.00
130.00		85.08	65.86	0.00	0.00
135.00		417.95	322.69	0.00	0.00
139.00	(47) attachments	4849.78	2508.59	0.00	0.00
140.00		79.14	51.15	0.00	0.00
145.00		387.62	249.14	0.00	0.00
147.00	(31) attachments	6202.26	2690.64	0.00	0.00
149.00	(2) attachments	482.30	416.21	0.00	143.25
	Totals:	**37,140.38**	**36,044.97**	**0.00**	**143.25**

Linear Appurtenance Segment Forces (Factored)

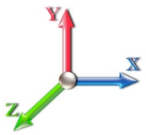
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	11.88
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	56.16
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	0.72
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	11.88
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	56.16
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	0.72
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	11.88
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	56.16
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	0.72
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	11.88
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	56.16
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	0.72
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	11.88
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	56.16
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	0.72
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	11.88
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	56.16
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	0.72
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	5.35
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	25.27
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	0.32
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	6.53
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	30.89
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	0.40
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	7.72
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	36.50
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	0.47
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	4.16
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	19.66
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	0.25
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	11.88
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	56.16
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	0.72
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	9.50
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	44.93
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	0.58
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	2.38
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	11.23

Linear Appurtenance Segment Forces (Factored)

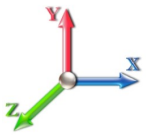
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	1.19
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	5.62
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	10.69
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	50.54
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	11.88
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	56.16
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	11.88
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	56.16
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	11.88
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	56.16
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	11.88
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	56.16
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	11.88
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	56.16
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	2.38
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	11.23
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	7.13
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	33.70
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.961	0.00	2.38
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	1.78
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	29.260	0.00	10.10
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.548	0.00	11.88
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.826	0.00	11.88
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.094	0.00	11.88
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	2.38
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	30.354	0.00	9.50
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	30.506	0.00	7.13
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.556	0.00	2.38
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.605	0.00	2.38
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.850	0.00	11.88
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.040	0.00	9.50
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.087	0.00	2.38
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.317	0.00	11.88
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.408	0.00	4.75
									Totals:		**0.0**	**1,470.5**

Calculated Forces

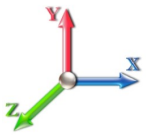
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-35.98	-37.20	0.00	-3994.8	0.00	3994.88	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.758
5.00	-34.62	-36.76	0.00	-3808.8	0.00	3808.89	4369.00	2184.50	10304.7	5160.05	0.10	-0.184	0.000	0.746
10.00	-33.28	-36.33	0.00	-3625.0	0.00	3625.09	4317.04	2158.52	9966.05	4990.43	0.39	-0.371	0.000	0.734
15.00	-31.96	-35.90	0.00	-3443.4	0.00	3443.47	4263.35	2131.68	9628.61	4821.46	0.88	-0.560	0.000	0.722
20.00	-30.66	-35.44	0.00	-3263.9	0.00	3263.99	4207.92	2103.96	9292.72	4653.26	1.57	-0.752	0.000	0.709
25.00	-29.39	-34.96	0.00	-3086.8	0.00	3086.80	4150.77	2075.38	8958.64	4485.98	2.46	-0.946	0.000	0.695
30.00	-28.15	-34.47	0.00	-2911.9	0.00	2911.99	4091.88	2045.94	8626.63	4319.73	3.56	-1.142	0.000	0.681
35.00	-26.92	-33.97	0.00	-2739.6	0.00	2739.63	4031.25	2015.63	8296.96	4154.65	4.86	-1.340	0.000	0.666
40.00	-25.73	-33.45	0.00	-2569.8	0.00	2569.80	3968.90	1984.45	7969.88	3990.86	6.37	-1.540	0.000	0.651
45.00	-24.59	-32.91	0.00	-2402.5	0.00	2402.53	3904.81	1952.40	7645.65	3828.51	8.10	-1.742	0.000	0.634
47.25	-24.06	-32.68	0.00	-2328.4	0.00	2328.49	3875.40	1937.70	7500.75	3755.95	8.94	-1.835	0.000	0.626
50.00	-23.03	-32.38	0.00	-2238.6	0.00	2238.61	3838.99	1919.49	7324.54	3667.71	10.03	-1.948	0.000	0.617
53.25	-21.86	-32.01	0.00	-2133.3	0.00	2133.38	2982.57	1491.28	5685.98	2847.22	11.40	-2.083	0.000	0.757
55.00	-21.47	-31.85	0.00	-2077.3	0.00	2077.37	2966.84	1483.42	5604.01	2806.17	12.18	-2.156	0.000	0.748
60.00	-20.49	-31.32	0.00	-1918.1	0.00	1918.11	2920.75	1460.37	5370.68	2689.33	14.57	-2.390	0.000	0.721
64.00	-19.73	-30.75	0.00	-1792.8	0.00	1792.84	2882.62	1441.31	5185.10	2596.40	16.65	-2.578	0.000	0.698
65.00	-19.55	-30.64	0.00	-1762.0	0.00	1762.08	2872.92	1436.46	5138.87	2573.25	17.20	-2.627	0.000	0.692
65.50	-19.36	-30.55	0.00	-1746.7	0.00	1746.76	2868.04	1434.02	5115.78	2561.69	17.47	-2.651	0.000	0.689
70.00	-18.51	-30.08	0.00	-1609.3	0.00	1609.30	2823.36	1411.68	4908.84	2458.07	20.07	-2.861	0.000	0.662
75.00	-17.60	-29.55	0.00	-1458.9	0.00	1458.92	2772.06	1386.03	4680.84	2343.90	23.19	-3.091	0.000	0.629
80.00	-16.71	-29.03	0.00	-1311.1	0.00	1311.16	2719.04	1359.52	4455.15	2230.89	26.55	-3.318	0.000	0.594
85.00	-15.85	-28.51	0.00	-1166.0	0.00	1166.02	2664.28	1332.14	4232.01	2119.15	30.14	-3.540	0.000	0.557
90.00	-15.01	-27.99	0.00	-1023.4	0.00	1023.49	2607.79	1303.89	4011.70	2008.83	33.97	-3.755	0.000	0.516
95.00	-14.24	-27.45	0.00	-883.56	0.00	883.56	2549.57	1274.78	3794.46	1900.05	38.01	-3.961	0.000	0.471
96.00	-14.06	-27.36	0.00	-856.10	0.00	856.10	2537.71	1268.86	3751.41	1878.49	38.84	-4.002	0.000	0.462
99.00	-11.85	-22.22	0.00	-774.02	0.00	774.02	2501.74	1250.87	3623.07	1814.23	41.39	-4.121	0.000	0.432
100.00	-11.62	-22.11	0.00	-751.80	0.00	751.80	2489.61	1244.80	3580.57	1792.94	42.26	-4.160	0.000	0.424
100.75	-11.43	-22.05	0.00	-735.21	0.00	735.21	1858.32	929.16	2706.71	1355.36	42.92	-4.190	0.000	0.549
105.00	-10.92	-21.62	0.00	-641.52	0.00	641.52	1825.33	912.67	2580.97	1292.40	46.72	-4.347	0.000	0.503
110.00	-10.34	-21.13	0.00	-533.41	0.00	533.41	1784.92	892.46	2434.45	1219.03	51.38	-4.552	0.000	0.444
115.00	-9.80	-20.65	0.00	-427.75	0.00	427.75	1742.78	871.39	2289.70	1146.55	56.24	-4.738	0.000	0.379
120.00	-9.29	-20.16	0.00	-324.52	0.00	324.52	1698.90	849.45	2146.98	1075.09	61.29	-4.902	0.000	0.308
121.00	-7.06	-15.06	0.00	-304.36	0.00	304.36	1689.92	844.96	2118.70	1060.93	62.32	-4.932	0.000	0.291
125.00	-6.72	-14.68	0.00	-244.13	0.00	244.13	1653.30	826.65	2006.56	1004.77	66.50	-5.042	0.000	0.247
128.00	-5.24	-13.11	0.00	-200.08	0.00	200.08	1625.10	812.55	1923.51	963.18	69.69	-5.115	0.000	0.211
129.00	-5.16	-13.02	0.00	-186.97	0.00	186.97	1615.56	807.78	1896.04	949.43	70.76	-5.138	0.000	0.200
129.00	-5.16	-13.02	0.00	-186.97	0.00	186.97	1091.97	545.98	1287.15	644.53	70.76	-5.138	0.000	0.295
130.00	-5.08	-12.94	0.00	-173.95	0.00	173.95	1086.82	543.41	1270.20	636.04	71.84	-5.160	0.000	0.279
135.00	-4.78	-12.50	0.00	-109.28	0.00	109.28	1060.04	530.02	1185.82	593.79	77.30	-5.277	0.000	0.189
139.00	-2.73	-7.44	0.00	-59.29	0.00	59.29	1037.37	518.68	1118.90	560.28	81.75	-5.340	0.000	0.109
140.00	-2.68	-7.36	0.00	-51.85	0.00	51.85	1031.53	515.76	1102.27	551.95	82.87	-5.352	0.000	0.097
145.00	-2.46	-6.95	0.00	-15.08	0.00	15.08	1001.28	500.64	1019.81	510.66	88.49	-5.388	0.000	0.032
147.00	-0.37	-0.52	0.00	-1.18	0.00	1.18	988.70	494.35	987.19	494.33	90.74	-5.392	0.000	0.003
149.00	0.00	-0.48	0.00	-0.14	0.00	0.14	975.84	487.92	954.81	478.11	93.00	-5.392	0.000	0.000

Wind Loading - Shaft

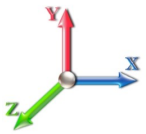
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.704	30.84	175.3	458.6	1866.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.266	30.32	172.4	482.2	1860.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.801	29.76	169.2	492.1	1841.1
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.323	29.19	176.1	496.0	1815.6
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.838	28.61	180.8	496.4	1786.6
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.349	28.02	184.1	494.6	1755.4
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.856	27.43	186.1	491.0	1722.4
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	22.362	26.83	187.3	486.2	1688.3
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.865	26.24	187.7	480.4	1653.1
47.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	1.555	2.25	9.675	11.61	83.9	214.9	733.0
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.75	11.834	14.20	103.9	264.0	1417.8
53.25	Top - Section 1	1.00	1.11	6.739	7.41	0.00	1.200	1.574	3.25	13.792	16.55	122.7	309.0	1651.5
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	1.75	7.338	8.81	65.7	165.5	492.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	20.632	24.76	188.2	464.9	1382.6
64.00	Appurtenance(s)	1.00	1.15	7.005	7.71	0.00	1.200	1.603	4.00	16.144	19.37	149.3	366.7	1083.2
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	1.00	3.985	4.78	37.0	91.3	268.0
65.50	Appurtenance(s)	1.00	1.16	7.039	7.74	0.00	1.200	1.606	0.50	1.985	2.38	18.4	45.6	133.5
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	4.50	17.644	21.17	166.2	403.1	1183.8
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	19.127	22.95	182.9	438.8	1283.0
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	18.625	22.35	180.5	429.3	1249.0
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	18.121	21.75	177.9	419.5	1214.8
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	17.618	21.14	175.0	409.5	1180.2
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	17.113	20.54	172.0	399.1	1145.4
96.00	Bot - Section 3	1.00	1.25	7.629	8.39	0.00	1.200	1.669	1.00	3.362	4.03	33.9	79.4	225.7
99.00	Appurtenance(s)	1.00	1.26	7.679	8.45	0.00	1.200	1.674	3.00	10.091	12.11	102.3	237.6	1022.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.00	3.323	3.99	33.8	78.8	336.9
100.75	Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	1.677	0.75	2.479	2.97	25.2	58.8	251.3
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	4.25	13.836	16.60	142.0	325.6	806.3
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	15.811	18.97	163.8	372.1	919.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	15.305	18.37	160.1	361.0	888.7
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	14.800	17.76	156.2	349.7	857.8
121.00	Appurtenance(s)	1.00	1.32	8.010	8.81	0.00	1.200	1.708	1.00	2.899	3.48	30.6	69.5	168.8
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	4.00	11.394	13.67	121.3	270.6	659.8
128.00	Appurtenance(s)	1.00	1.33	8.105	8.92	0.00	1.200	1.718	3.00	8.333	10.00	89.2	198.7	482.5
129.00	Top - Section 3	1.00	1.34	8.119	8.93	0.00	1.200	1.719	1.00	2.737	3.28	29.3	65.8	158.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	1.00	2.717	3.26	29.2	65.3	134.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.282	15.94	143.7	314.8	652.6
139.00	Appurtenance(s)	1.00	1.36	8.247	9.07	0.00	1.200	1.732	4.00	10.260	12.31	111.7	244.2	503.9
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	1.00	2.514	3.02	27.4	60.6	124.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.269	14.72	134.8	290.8	599.2
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	4.765	5.72	52.5	114.4	233.6
149.00	Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	2.00	4.684	5.62	51.7	112.4	229.3
								Totals:	**149.00**			**5,081.2**		**39,663.5**

Discrete Appurtenance Forces

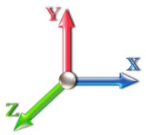
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	Decibel DB404-B	1	8.398	9.238	1.00	1.00	3.84	39.94	0.000	2.500	35.44	0.00	88.59
2	149.00	Pipe Mount	1	8.369	9.206	1.00	1.00	8.49	613.00	0.000	0.000	78.14	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	8.345	9.180	0.90	0.90	12.88	438.98	0.000	0.000	118.26	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	8.345	9.180	0.71	0.90	15.89	681.67	0.000	0.000	145.89	0.00	0.00
5	147.00	ALU TD-RRH8x20-25	3	8.345	9.180	0.62	0.90	9.06	582.58	0.000	0.000	83.14	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	8.345	9.180	0.79	0.90	12.32	391.63	0.000	0.000	113.14	0.00	0.00
7	147.00	ALU 800MHz RRH	3	8.345	9.180	0.78	0.90	8.91	380.54	0.000	0.000	81.83	0.00	0.00
8	147.00	RFS APXVSPP18-C-A20	3	8.345	9.180	0.75	0.90	24.22	574.21	0.000	0.000	222.34	0.00	0.00
9	147.00	Argus LLPX310R	3	8.345	9.180	0.62	0.90	11.10	295.62	0.000	0.000	101.87	0.00	0.00
10	147.00	Andrew VHLP2-11	1	8.345	9.180	0.90	0.90	5.36	102.06	0.000	0.000	49.17	0.00	0.00
11	147.00	Andrew	1	8.345	9.180	0.90	0.90	7.40	157.18	0.000	0.000	67.92	0.00	0.00
12	147.00	U-RAS Flexible RRH	3	8.345	9.180	0.78	1.00	7.70	308.13	0.000	0.000	70.66	0.00	0.00
13	147.00	12.5' Low Profile Platform	1	8.345	9.180	1.00	1.00	39.63	2806.27	0.000	0.000	363.75	0.00	0.00
14	147.00	RFS ACU-A20-N	4	8.345	9.180	0.71	0.90	1.24	16.75	0.000	0.000	11.39	0.00	0.00
15	139.00	7770	6	8.247	9.072	0.58	0.80	22.97	1055.50	0.000	0.000	208.42	0.00	0.00
16	139.00	Powerwave 7020.00 RET	12	8.247	9.072	0.52	0.80	5.49	118.78	0.000	0.000	49.83	0.00	0.00
17	139.00	Ericsson RRUS-32 B2s	3	8.247	9.072	0.65	0.80	6.73	477.54	0.000	0.000	61.07	0.00	0.00
18	139.00	Powerawve LGP21901	6	8.247	9.072	0.60	0.80	2.14	72.19	0.000	0.000	19.44	0.00	0.00
19	139.00	Raycap DC6-48-60-18-8F	1	8.247	9.072	0.80	0.80	1.73	83.01	0.000	0.000	15.71	0.00	0.00
20	139.00	HPA-65R-BUU-H6	3	8.247	9.072	0.68	0.80	22.47	921.35	0.000	0.000	203.86	0.00	0.00
21	139.00	Ericsson RRUS 11 RRUs	3	8.247	9.072	0.57	0.80	7.06	340.83	0.000	0.000	64.09	0.00	0.00
22	139.00	Ericsson RRUS 12 RRUs	3	8.247	9.072	0.60	0.80	6.95	492.32	0.000	0.000	63.01	0.00	0.00
23	139.00	Commscope	3	8.247	9.072	0.78	0.80	0.57	8.50	0.000	0.000	5.14	0.00	0.00
24	139.00	Powerwave LGP13519	6	8.247	9.072	0.80	0.80	3.79	78.51	0.000	0.000	34.43	0.00	0.00
25	139.00	Low Profile Platform	1	8.247	9.072	1.00	1.00	39.53	2798.98	0.000	0.000	358.60	0.00	0.00
26	128.00	Low Profile Platform	1	8.105	8.916	1.00	1.00	39.38	2788.32	0.000	0.000	351.14	0.00	0.00
27	121.00	Ericsson AIR21 B4A/B12P	3	8.010	8.811	0.71	0.80	28.11	1277.37	0.000	0.000	247.72	0.00	0.00
28	121.00	Ericsson Air 21 B2A/B4P	3	8.010	8.811	0.69	0.80	14.78	823.25	0.000	0.000	130.26	0.00	0.00
29	121.00	Commscope LNX-6515DS	3	8.010	8.811	0.64	0.80	28.16	655.90	0.000	0.000	248.13	0.00	0.00
30	121.00	Ericsson S11B12	3	8.010	8.811	0.56	0.80	5.86	339.67	0.000	0.000	51.62	0.00	0.00
31	121.00	Ericsson KRY 112 144/1	3	8.010	8.811	0.56	0.80	1.47	61.96	0.000	0.000	12.95	0.00	0.00
32	121.00	Low Profile Platform	1	8.010	8.811	1.00	1.00	39.29	2781.09	0.000	0.000	346.15	0.00	0.00
33	121.00	SitePro PRK1245	1	8.010	8.811	0.80	0.80	6.73	606.96	0.000	0.000	59.32	0.00	0.00
34	99.00	RFS APL866513-42T0	4	7.679	8.447	0.74	0.80	17.37	369.20	0.000	0.000	146.73	0.00	0.00
35	99.00	BXA-171063-12BF	1	7.679	8.447	0.67	0.80	4.70	81.87	0.000	0.000	39.70	0.00	0.00
36	99.00	Antel BXA-70063-6CF	1	7.679	8.447	0.58	0.80	5.12	186.04	0.000	0.000	43.29	0.00	0.00
37	99.00	Antel LPA-80063-6CF	2	7.679	8.447	0.74	0.80	18.45	416.68	0.000	0.000	155.86	0.00	0.00
38	99.00	Antel BXA-171063-8BF	2	7.679	8.447	0.67	0.80	6.09	113.35	0.000	0.000	51.43	0.00	0.00
39	99.00	Antel BXA-70063-4CF	1	7.679	8.447	0.58	0.80	3.79	80.48	0.000	0.000	32.03	0.00	0.00
40	99.00	RFS FD9R6004/2C-3L	6	7.679	8.447	0.80	0.80	3.77	54.72	0.000	0.000	31.84	0.00	0.00
41	99.00	Swedcom SLCP 2x6014F	1	7.679	8.447	0.71	0.80	6.04	142.67	0.000	0.000	51.00	0.00	0.00
42	99.00	Kathrein	3	7.679	8.447	0.62	0.80	25.34	603.29	0.000	0.000	214.07	0.00	0.00
43	99.00	ALU RRH2x40-AWS	3	7.679	8.447	0.66	0.80	7.27	280.96	0.000	0.000	61.39	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	7.679	8.447	0.57	0.80	3.20	159.56	0.000	0.000	27.04	0.00	0.00
45	99.00	12.5' Low Profile Platform	1	7.679	8.447	0.80	0.80	31.15	2755.64	0.000	0.000	263.15	0.00	0.00
46	65.50	Decibel 26OB	1	7.039	7.743	0.80	0.80	4.17	170.64	0.000	0.000	32.29	0.00	0.00
47	64.00	3 ft Standoff	1	7.005	7.705	1.00	1.00	8.11	98.73	0.000	0.000	62.50	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Tower Engineering Solutions

Totals:	**28,684.42**	**5,286.14**

Total Applied Force Summary

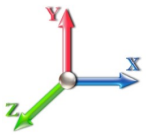
Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		175.34	2322.65	0.00	0.00
10.00		172.36	2331.65	0.00	0.00
15.00		169.18	2321.48	0.00	0.00
20.00		176.05	2302.91	0.00	0.00
25.00		180.84	2279.48	0.00	0.00
30.00		184.06	2252.86	0.00	0.00
35.00		186.12	2223.96	0.00	0.00
40.00		187.29	2193.32	0.00	0.00
45.00		187.73	2161.33	0.00	0.00
47.25		83.93	962.31	0.00	0.00
50.00		103.88	1698.87	0.00	0.00
53.25		122.68	1984.88	0.00	0.00
55.00		65.72	672.25	0.00	0.00
60.00		188.20	1898.82	0.00	0.00
64.00	(1) attachments	211.78	1596.34	0.00	0.00
65.00		36.97	367.52	0.00	0.00
65.50	(1) attachments	50.74	353.97	0.00	0.00
70.00		166.25	1633.31	0.00	0.00
75.00		182.87	1784.15	0.00	0.00
80.00		180.49	1751.84	0.00	0.00
85.00		177.87	1719.13	0.00	0.00
90.00		175.02	1686.06	0.00	0.00
95.00		171.96	1652.66	0.00	0.00
96.00		33.85	327.23	0.00	0.00
99.00	(26) attachments	1219.80	6572.03	0.00	0.00
100.00		33.75	384.00	0.00	0.00
100.75		25.22	286.61	0.00	0.00
105.00		141.99	1006.76	0.00	0.00
110.00		163.85	1155.70	0.00	0.00
115.00		160.10	1125.30	0.00	0.00
120.00		156.21	1094.72	0.00	0.00
121.00	(17) attachments	1126.81	6762.35	0.00	0.00
125.00		121.30	784.42	0.00	0.00
128.00	(1) attachments	440.30	3364.34	0.00	0.00
129.00		29.33	189.98	0.00	0.00
130.00		29.16	165.84	0.00	0.00
135.00		143.71	808.90	0.00	0.00
139.00	(47) attachments	1195.30	7076.62	0.00	0.00
140.00		27.41	141.60	0.00	0.00
145.00		134.76	687.41	0.00	0.00
147.00	(31) attachments	1481.84	7004.57	0.00	0.00
149.00	(2) attachments	165.32	883.52	0.00	88.59
	Totals:	**10,367.36**	**79,973.63**	**0.00**	**88.59**

Linear Appurtenance Segment Forces (Factored)

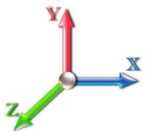
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	59.22
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	218.70
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	13.70
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	62.77
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	228.34
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	15.33
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	65.01
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	234.34
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	16.38
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	66.68
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	238.78
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	17.18
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	68.03
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	242.32
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	17.83
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	69.16
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	245.28
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	18.38
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	70.14
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	247.84
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	18.86
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	71.00
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	250.09
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	19.29
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	71.78
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	252.10
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	19.67
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	32.45
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	113.82
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	8.93
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	39.87
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	139.66
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	11.01
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	47.39
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	165.77
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	13.16
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	25.60
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	89.46
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	7.12
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	73.73
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	257.14
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	20.65
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	59.35
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	206.63
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	16.70
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	14.86
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	51.71

Linear Appurtenance Segment Forces (Factored)

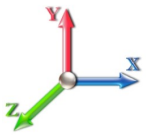
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	7.43
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	25.87
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	67.33
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	233.92
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	75.31
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	261.17
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	75.77
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	262.35
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	76.21
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	263.47
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	76.63
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	264.54
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	77.03
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	265.55
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.629	0.00	15.42
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.629	0.00	53.15
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.679	0.00	46.40
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.679	0.00	159.80
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	15.48
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	7.707	0.00	11.62
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	66.11
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	78.13
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	78.47
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	78.79
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.010	0.00	15.77
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	63.29
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.105	0.00	47.58
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.119	0.00	15.87
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	15.88
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	79.71
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.247	0.00	63.95
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	16.00
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	80.27
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.345	0.00	32.15
									Totals:		**0.0**	**7,379.6**

Calculated Forces

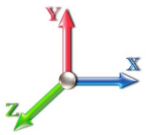
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-79.97	-10.40	0.00	-1119.1	0.00	1119.18	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.228
5.00	-77.64	-10.30	0.00	-1067.1	0.00	1067.17	4369.00	2184.50	10304.7	5160.05	0.03	-0.052	0.000	0.225
10.00	-75.30	-10.19	0.00	-1015.6	0.00	1015.68	4317.04	2158.52	9966.05	4990.43	0.11	-0.104	0.000	0.221
15.00	-72.97	-10.08	0.00	-964.72	0.00	964.72	4263.35	2131.68	9628.61	4821.46	0.25	-0.157	0.000	0.217
20.00	-70.65	-9.97	0.00	-914.30	0.00	914.30	4207.92	2103.96	9292.72	4653.26	0.44	-0.211	0.000	0.213
25.00	-68.37	-9.84	0.00	-864.46	0.00	864.46	4150.77	2075.38	8958.64	4485.98	0.69	-0.265	0.000	0.209
30.00	-66.10	-9.71	0.00	-815.25	0.00	815.25	4091.88	2045.94	8626.63	4319.73	1.00	-0.320	0.000	0.205
35.00	-63.87	-9.57	0.00	-766.69	0.00	766.69	4031.25	2015.63	8296.96	4154.65	1.36	-0.375	0.000	0.200
40.00	-61.67	-9.43	0.00	-718.83	0.00	718.83	3968.90	1984.45	7969.88	3990.86	1.79	-0.431	0.000	0.196
45.00	-59.51	-9.27	0.00	-671.67	0.00	671.67	3904.81	1952.40	7645.65	3828.51	2.27	-0.488	0.000	0.191
47.25	-58.54	-9.21	0.00	-650.82	0.00	650.82	3875.40	1937.70	7500.75	3755.95	2.50	-0.514	0.000	0.188
50.00	-56.84	-9.12	0.00	-625.50	0.00	625.50	3838.99	1919.49	7324.54	3667.71	2.81	-0.545	0.000	0.185
53.25	-54.85	-9.01	0.00	-595.86	0.00	595.86	2982.57	1491.28	5685.98	2847.22	3.19	-0.583	0.000	0.228
55.00	-54.17	-8.97	0.00	-580.10	0.00	580.10	2966.84	1483.42	5604.01	2806.17	3.41	-0.603	0.000	0.225
60.00	-52.26	-8.82	0.00	-535.23	0.00	535.23	2920.75	1460.37	5370.68	2689.33	4.08	-0.669	0.000	0.217
64.00	-50.67	-8.62	0.00	-499.95	0.00	499.95	2882.62	1441.31	5185.10	2596.40	4.66	-0.721	0.000	0.210
65.00	-50.30	-8.58	0.00	-491.34	0.00	491.34	2872.92	1436.46	5138.87	2573.25	4.82	-0.735	0.000	0.208
65.50	-49.94	-8.56	0.00	-487.05	0.00	487.05	2868.04	1434.02	5115.78	2561.69	4.89	-0.742	0.000	0.208
70.00	-48.30	-8.42	0.00	-448.54	0.00	448.54	2823.36	1411.68	4908.84	2458.07	5.62	-0.800	0.000	0.200
75.00	-46.51	-8.26	0.00	-406.43	0.00	406.43	2772.06	1386.03	4680.84	2343.90	6.49	-0.864	0.000	0.190
80.00	-44.75	-8.11	0.00	-365.12	0.00	365.12	2719.04	1359.52	4455.15	2230.89	7.43	-0.927	0.000	0.180
85.00	-43.03	-7.94	0.00	-324.59	0.00	324.59	2664.28	1332.14	4232.01	2119.15	8.44	-0.989	0.000	0.169
90.00	-41.34	-7.78	0.00	-284.87	0.00	284.87	2607.79	1303.89	4011.70	2008.83	9.51	-1.049	0.000	0.158
95.00	-39.68	-7.60	0.00	-245.97	0.00	245.97	2549.57	1274.78	3794.46	1900.05	10.64	-1.106	0.000	0.145
96.00	-39.35	-7.58	0.00	-238.37	0.00	238.37	2537.71	1268.86	3751.41	1878.49	10.87	-1.118	0.000	0.142
99.00	-32.80	-6.24	0.00	-215.64	0.00	215.64	2501.74	1250.87	3623.07	1814.23	11.58	-1.151	0.000	0.132
100.00	-32.42	-6.20	0.00	-209.40	0.00	209.40	2489.61	1244.80	3580.57	1792.94	11.82	-1.162	0.000	0.130
100.75	-32.13	-6.19	0.00	-204.74	0.00	204.74	1858.32	929.16	2706.71	1355.36	12.01	-1.170	0.000	0.168
105.00	-31.12	-6.05	0.00	-178.45	0.00	178.45	1825.33	912.67	2580.97	1292.40	13.07	-1.214	0.000	0.155
110.00	-29.96	-5.89	0.00	-148.19	0.00	148.19	1784.92	892.46	2434.45	1219.03	14.37	-1.271	0.000	0.138
115.00	-28.84	-5.73	0.00	-118.73	0.00	118.73	1742.78	871.39	2289.70	1146.55	15.73	-1.323	0.000	0.120
120.00	-27.74	-5.56	0.00	-90.08	0.00	90.08	1698.90	849.45	2146.98	1075.09	17.14	-1.368	0.000	0.100
121.00	-21.01	-4.28	0.00	-84.52	0.00	84.52	1689.92	844.96	2118.70	1060.93	17.43	-1.376	0.000	0.092
125.00	-20.23	-4.15	0.00	-67.40	0.00	67.40	1653.30	826.65	2006.56	1004.77	18.60	-1.407	0.000	0.079
128.00	-16.87	-3.63	0.00	-54.95	0.00	54.95	1625.10	812.55	1923.51	963.18	19.49	-1.427	0.000	0.067
129.00	-16.68	-3.60	0.00	-51.32	0.00	51.32	1615.56	807.78	1896.04	949.43	19.79	-1.433	0.000	0.064
129.00	-16.68	-3.60	0.00	-51.32	0.00	51.32	1091.97	545.98	1287.15	644.53	19.79	-1.433	0.000	0.095
130.00	-16.52	-3.57	0.00	-47.73	0.00	47.73	1086.82	543.41	1270.20	636.04	20.09	-1.439	0.000	0.090
135.00	-15.71	-3.41	0.00	-29.88	0.00	29.88	1060.04	530.02	1185.82	593.79	21.61	-1.471	0.000	0.065
139.00	-8.67	-2.04	0.00	-16.23	0.00	16.23	1037.37	518.68	1118.90	560.28	22.85	-1.489	0.000	0.037
140.00	-8.53	-2.01	0.00	-14.20	0.00	14.20	1031.53	515.76	1102.27	551.95	23.17	-1.492	0.000	0.034
145.00	-7.84	-1.85	0.00	-4.17	0.00	4.17	1001.28	500.64	1019.81	510.66	24.74	-1.502	0.000	0.016
147.00	-0.88	-0.19	0.00	-0.47	0.00	0.47	988.70	494.35	987.19	494.33	25.37	-1.503	0.000	0.002
149.00	0.00	-0.17	0.00	-0.09	0.00	0.09	975.84	487.92	954.81	478.11	25.99	-1.503	0.000	0.000

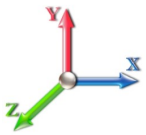
Seismic Segment Forces (Factored)

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Gust Response Factor	1.10			**Sds**	0.22	**Iterations**	21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency**	0.38	**SA**	0.04	**S1**	0.07
						Seismic Importance Factor	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1173.0	0.00	0.03	0.02	24.69	
10.00		1148.6	0.01	0.05	0.03	34.97	
15.00		1124.1	0.02	0.06	0.04	39.40	
20.00		1099.6	0.03	0.07	0.04	41.14	
25.00		1075.1	0.05	0.07	0.04	41.69	
30.00		1050.6	0.08	0.07	0.04	41.83	
35.00		1026.1	0.10	0.07	0.04	41.86	
40.00		1001.6	0.14	0.07	0.03	41.80	
45.00		977.20	0.17	0.07	0.03	41.42	
47.25	Bot - Section 2	431.75	0.19	0.06	0.02	18.34	
50.00		961.48	0.21	0.06	0.02	40.67	
53.25	Top - Section 1	1118.7	0.24	0.06	0.02	46.46	
55.00		272.47	0.26	0.05	0.02	11.11	
60.00		764.72	0.31	0.04	0.01	28.28	
64.00	Appurtenance(s)	637.08	0.35	0.03	0.01	20.20	
65.00		147.23	0.36	0.03	0.01	4.42	
65.50	Appurtenance(s)	123.31	0.37	0.03	0.01	3.59	
70.00		650.60	0.42	0.01	0.01	12.59	
75.00		703.50	0.48	-0.01	0.01	3.76	
80.00		683.09	0.54	-0.03	0.01	-7.02	
85.00		662.69	0.62	-0.06	0.02	-16.45	
90.00		642.28	0.69	-0.08	0.03	-22.96	
95.00		621.88	0.77	-0.11	0.05	-25.76	
96.00	Bot - Section 3	121.93	0.78	-0.11	0.05	-5.10	
99.00	Appurtenance(s)	2695.2	0.83	-0.12	0.06	-112.49	
100.00		215.11	0.85	-0.12	0.07	-8.87	
100.75	Top - Section 2	160.37	0.86	-0.12	0.07	-6.52	
105.00		400.54	0.94	-0.12	0.10	-14.03	
110.00		456.12	1.03	-0.10	0.15	-10.46	
115.00		439.80	1.13	-0.05	0.20	-2.23	
120.00		423.47	1.23	0.03	0.27	7.87	
121.00	Appurtenance(s)	2911.6	1.25	0.05	0.29	69.90	
125.00		324.41	1.33	0.16	0.36	15.58	
128.00	Appurtenance(s)	1736.4	1.39	0.27	0.43	118.99	
129.00	Top - Section 3	77.51	1.42	0.32	0.45	5.88	
130.00		57.77	1.44	0.36	0.47	4.82	
135.00		281.51	1.55	0.64	0.61	35.11	
139.00	Appurtenance(s)	2725.6	1.64	0.92	0.73	442.11	
140.00		52.87	1.67	1.01	0.77	9.10	
145.00		257.02	1.79	1.49	0.96	58.07	
147.00	Appurtenance(s)	2981.6	1.84	1.72	1.05	743.16	
149.00	Appurtenance(s)	461.42	1.89	1.98	1.14	126.23	
	Totals:	**34,877.7**				**1,943.1**	**Total Wind:** **37,140.4**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Gust Response Factor	1.10			**Sds**	0.22			**Iterations**	21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency**	0.38	**SA**	0.04			**S1**	0.07
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.06	-2.18	0.00	-262.15	0.00	262.15	4419.23	2209.62	10644.5	5330.19		0.00	0.00	0.060
5.00	-46.40	-2.16	0.00	-251.26	0.00	251.26	4369.00	2184.50	10304.7	5160.05		0.01	-0.01	0.059
10.00	-44.76	-2.14	0.00	-240.44	0.00	240.44	4317.04	2158.52	9966.05	4990.43		0.03	-0.02	0.059
15.00	-43.15	-2.11	0.00	-229.75	0.00	229.75	4263.35	2131.68	9628.61	4821.46		0.06	-0.04	0.058
20.00	-41.58	-2.07	0.00	-219.21	0.00	219.21	4207.92	2103.96	9292.72	4653.26		0.10	-0.05	0.057
25.00	-40.03	-2.04	0.00	-208.84	0.00	208.84	4150.77	2075.38	8958.64	4485.98		0.16	-0.06	0.056
30.00	-38.51	-2.01	0.00	-198.63	0.00	198.63	4091.88	2045.94	8626.63	4319.73		0.24	-0.08	0.055
35.00	-37.03	-1.97	0.00	-188.61	0.00	188.61	4031.25	2015.63	8296.96	4154.65		0.32	-0.09	0.055
40.00	-35.57	-1.94	0.00	-178.75	0.00	178.75	3968.90	1984.45	7969.88	3990.86		0.42	-0.10	0.054
45.00	-34.14	-1.90	0.00	-169.08	0.00	169.08	3904.81	1952.40	7645.65	3828.51		0.54	-0.12	0.053
47.25	-33.50	-1.88	0.00	-164.81	0.00	164.81	3875.40	1937.70	7500.75	3755.95		0.60	-0.12	0.053
50.00	-32.21	-1.84	0.00	-159.63	0.00	159.63	3838.99	1919.49	7324.54	3667.71		0.67	-0.13	0.052
53.25	-30.70	-1.80	0.00	-153.64	0.00	153.64	2982.57	1491.28	5685.98	2847.22		0.77	-0.14	0.064
55.00	-30.28	-1.79	0.00	-150.50	0.00	150.50	2966.84	1483.42	5604.01	2806.17		0.82	-0.15	0.064
60.00	-29.11	-1.77	0.00	-141.55	0.00	141.55	2920.75	1460.37	5370.68	2689.33		0.98	-0.16	0.063
64.00	-28.14	-1.75	0.00	-134.48	0.00	134.48	2882.62	1441.31	5185.10	2596.40		1.13	-0.18	0.062
65.00	-27.91	-1.74	0.00	-132.73	0.00	132.73	2872.92	1436.46	5138.87	2573.25		1.16	-0.18	0.061
65.50	-27.74	-1.74	0.00	-131.86	0.00	131.86	2868.04	1434.02	5115.78	2561.69		1.18	-0.18	0.061
70.00	-26.73	-1.74	0.00	-124.00	0.00	124.00	2823.36	1411.68	4908.84	2458.07		1.36	-0.20	0.060
75.00	-25.63	-1.74	0.00	-115.32	0.00	115.32	2772.06	1386.03	4680.84	2343.90		1.58	-0.22	0.058
80.00	-24.55	-1.74	0.00	-106.63	0.00	106.63	2719.04	1359.52	4455.15	2230.89		1.82	-0.24	0.057
85.00	-23.50	-1.74	0.00	-97.93	0.00	97.93	2664.28	1332.14	4232.01	2119.15		2.08	-0.25	0.055
90.00	-22.47	-1.75	0.00	-89.21	0.00	89.21	2607.79	1303.89	4011.70	2008.83		2.35	-0.27	0.053
95.00	-21.47	-1.75	0.00	-80.48	0.00	80.48	2549.57	1274.78	3794.46	1900.05		2.65	-0.29	0.051
96.00	-21.27	-1.75	0.00	-78.73	0.00	78.73	2537.71	1268.86	3751.41	1878.49		2.71	-0.29	0.050
99.00	-17.88	-1.73	0.00	-73.49	0.00	73.49	2501.74	1250.87	3623.07	1814.23		2.90	-0.31	0.048
100.00	-17.59	-1.73	0.00	-71.76	0.00	71.76	2489.61	1244.80	3580.57	1792.94		2.97	-0.31	0.047
100.75	-17.37	-1.73	0.00	-70.46	0.00	70.46	1858.32	929.16	2706.71	1355.36		3.01	-0.31	0.061
105.00	-16.74	-1.73	0.00	-63.10	0.00	63.10	1825.33	912.67	2580.97	1292.40		3.30	-0.33	0.058
110.00	-16.02	-1.74	0.00	-54.42	0.00	54.42	1784.92	892.46	2434.45	1219.03		3.65	-0.35	0.054
115.00	-15.32	-1.74	0.00	-45.74	0.00	45.74	1742.78	871.39	2289.70	1146.55		4.03	-0.37	0.049
120.00	-14.64	-1.73	0.00	-37.06	0.00	37.06	1698.90	849.45	2146.98	1075.09		4.42	-0.39	0.043
121.00	-11.11	-1.64	0.00	-35.33	0.00	35.33	1689.92	844.96	2118.70	1060.93		4.51	-0.39	0.040
125.00	-10.65	-1.62	0.00	-28.79	0.00	28.79	1653.30	826.65	2006.56	1004.77		4.84	-0.40	0.035
128.00	-8.51	-1.49	0.00	-23.93	0.00	23.93	1625.10	812.55	1923.51	963.18		5.09	-0.41	0.030
129.00	-8.40	-1.48	0.00	-22.45	0.00	22.45	1615.56	807.78	1896.04	949.43		5.18	-0.41	0.029
129.00	-8.40	-1.48	0.00	-22.45	0.00	22.45	1091.97	545.98	1287.15	644.53		5.18	-0.41	0.043
130.00	-8.31	-1.47	0.00	-20.97	0.00	20.97	1086.82	543.41	1270.20	636.04		5.27	-0.42	0.041
135.00	-7.88	-1.44	0.00	-13.60	0.00	13.60	1060.04	530.02	1185.82	593.79		5.71	-0.43	0.030
139.00	-4.54	-0.97	0.00	-7.84	0.00	7.84	1037.37	518.68	1118.90	560.28		6.07	-0.44	0.018
140.00	-4.47	-0.96	0.00	-6.87	0.00	6.87	1031.53	515.76	1102.27	551.95		6.17	-0.44	0.017
145.00	-4.14	-0.90	0.00	-2.06	0.00	2.06	1001.28	500.64	1019.81	510.66		6.63	-0.44	0.008
147.00	-0.55	-0.13	0.00	-0.26	0.00	0.26	988.70	494.35	987.19	494.33		6.82	-0.45	0.001
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11		7.00	-0.45	0.000

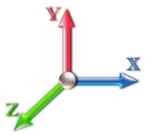
Seismic Segment Forces (Factored)

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.22	**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency**	0.38	**SA**	0.04	**S1**	0.07
						Seismic Importance Factor	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1173.0	0.00	0.03	0.02	24.69	
10.00		1148.6	0.01	0.05	0.03	34.97	
15.00		1124.1	0.02	0.06	0.04	39.40	
20.00		1099.6	0.03	0.07	0.04	41.14	
25.00		1075.1	0.05	0.07	0.04	41.69	
30.00		1050.6	0.08	0.07	0.04	41.83	
35.00		1026.1	0.10	0.07	0.04	41.86	
40.00		1001.6	0.14	0.07	0.03	41.80	
45.00		977.20	0.17	0.07	0.03	41.42	
47.25	Bot - Section 2	431.75	0.19	0.06	0.02	18.34	
50.00		961.48	0.21	0.06	0.02	40.67	
53.25	Top - Section 1	1118.7	0.24	0.06	0.02	46.46	
55.00		272.47	0.26	0.05	0.02	11.11	
60.00		764.72	0.31	0.04	0.01	28.28	
64.00	Appurtenance(s)	637.08	0.35	0.03	0.01	20.20	
65.00		147.23	0.36	0.03	0.01	4.42	
65.50	Appurtenance(s)	123.31	0.37	0.03	0.01	3.59	
70.00		650.60	0.42	0.01	0.01	12.59	
75.00		703.50	0.48	-0.01	0.01	3.76	
80.00		683.09	0.54	-0.03	0.01	-7.02	
85.00		662.69	0.62	-0.06	0.02	-16.45	
90.00		642.28	0.69	-0.08	0.03	-22.96	
95.00		621.88	0.77	-0.11	0.05	-25.76	
96.00	Bot - Section 3	121.93	0.78	-0.11	0.05	-5.10	
99.00	Appurtenance(s)	2695.2	0.83	-0.12	0.06	-112.49	
100.00		215.11	0.85	-0.12	0.07	-8.87	
100.75	Top - Section 2	160.37	0.86	-0.12	0.07	-6.52	
105.00		400.54	0.94	-0.12	0.10	-14.03	
110.00		456.12	1.03	-0.10	0.15	-10.46	
115.00		439.80	1.13	-0.05	0.20	-2.23	
120.00		423.47	1.23	0.03	0.27	7.87	
121.00	Appurtenance(s)	2911.6	1.25	0.05	0.29	69.90	
125.00		324.41	1.33	0.16	0.36	15.58	
128.00	Appurtenance(s)	1736.4	1.39	0.27	0.43	118.99	
129.00	Top - Section 3	77.51	1.42	0.32	0.45	5.88	
130.00		57.77	1.44	0.36	0.47	4.82	
135.00		281.51	1.55	0.64	0.61	35.11	
139.00	Appurtenance(s)	2725.6	1.64	0.92	0.73	442.11	
140.00		52.87	1.67	1.01	0.77	9.10	
145.00		257.02	1.79	1.49	0.96	58.07	
147.00	Appurtenance(s)	2981.6	1.84	1.72	1.05	743.16	
149.00	Appurtenance(s)	461.42	1.89	1.98	1.14	126.23	
	Totals:	**34,877.7**				**1,943.1**	**Total Wind:** **37,140.4**

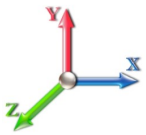
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.22			**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency**	0.38	**SA**	0.04			**S1**	0.07
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.04	-2.18	0.00	-259.42	0.00	259.42	4419.23	2209.62	10644.5	5330.19		0.00	0.00	0.057
5.00	-34.80	-2.16	0.00	-248.53	0.00	248.53	4369.00	2184.50	10304.7	5160.05		0.01	-0.01	0.056
10.00	-33.57	-2.13	0.00	-237.73	0.00	237.73	4317.04	2158.52	9966.05	4990.43		0.03	-0.02	0.055
15.00	-32.37	-2.10	0.00	-227.07	0.00	227.07	4263.35	2131.68	9628.61	4821.46		0.06	-0.04	0.055
20.00	-31.18	-2.06	0.00	-216.58	0.00	216.58	4207.92	2103.96	9292.72	4653.26		0.10	-0.05	0.054
25.00	-30.02	-2.03	0.00	-206.26	0.00	206.26	4150.77	2075.38	8958.64	4485.98		0.16	-0.06	0.053
30.00	-28.88	-1.99	0.00	-196.12	0.00	196.12	4091.88	2045.94	8626.63	4319.73		0.23	-0.08	0.052
35.00	-27.77	-1.95	0.00	-186.16	0.00	186.16	4031.25	2015.63	8296.96	4154.65		0.32	-0.09	0.052
40.00	-26.67	-1.92	0.00	-176.39	0.00	176.39	3968.90	1984.45	7969.88	3990.86		0.42	-0.10	0.051
45.00	-25.60	-1.88	0.00	-166.80	0.00	166.80	3904.81	1952.40	7645.65	3828.51		0.53	-0.12	0.050
47.25	-25.13	-1.86	0.00	-162.57	0.00	162.57	3875.40	1937.70	7500.75	3755.95		0.59	-0.12	0.050
50.00	-24.16	-1.82	0.00	-157.45	0.00	157.45	3838.99	1919.49	7324.54	3667.71		0.66	-0.13	0.049
53.25	-23.02	-1.78	0.00	-151.53	0.00	151.53	2982.57	1491.28	5685.98	2847.22		0.76	-0.14	0.061
55.00	-22.71	-1.77	0.00	-148.42	0.00	148.42	2966.84	1483.42	5604.01	2806.17		0.81	-0.15	0.061
60.00	-21.83	-1.74	0.00	-139.57	0.00	139.57	2920.75	1460.37	5370.68	2689.33		0.97	-0.16	0.059
64.00	-21.10	-1.73	0.00	-132.59	0.00	132.59	2882.62	1441.31	5185.10	2596.40		1.11	-0.18	0.058
65.00	-20.93	-1.72	0.00	-130.87	0.00	130.87	2872.92	1436.46	5138.87	2573.25		1.15	-0.18	0.058
65.50	-20.80	-1.72	0.00	-130.00	0.00	130.00	2868.04	1434.02	5115.78	2561.69		1.17	-0.18	0.058
70.00	-20.04	-1.71	0.00	-122.26	0.00	122.26	2823.36	1411.68	4908.84	2458.07		1.35	-0.20	0.057
75.00	-19.22	-1.71	0.00	-113.70	0.00	113.70	2772.06	1386.03	4680.84	2343.90		1.56	-0.22	0.055
80.00	-18.41	-1.71	0.00	-105.15	0.00	105.15	2719.04	1359.52	4455.15	2230.89		1.80	-0.23	0.054
85.00	-17.62	-1.72	0.00	-96.58	0.00	96.58	2664.28	1332.14	4232.01	2119.15		2.05	-0.25	0.052
90.00	-16.85	-1.72	0.00	-88.00	0.00	88.00	2607.79	1303.89	4011.70	2008.83		2.33	-0.27	0.050
95.00	-16.10	-1.72	0.00	-79.41	0.00	79.41	2549.57	1274.78	3794.46	1900.05		2.62	-0.29	0.048
96.00	-15.95	-1.72	0.00	-77.70	0.00	77.70	2537.71	1268.86	3751.41	1878.49		2.68	-0.29	0.048
99.00	-13.41	-1.71	0.00	-72.54	0.00	72.54	2501.74	1250.87	3623.07	1814.23		2.86	-0.30	0.045
100.00	-13.19	-1.71	0.00	-70.83	0.00	70.83	2489.61	1244.80	3580.57	1792.94		2.93	-0.31	0.045
100.75	-13.03	-1.71	0.00	-69.55	0.00	69.55	1858.32	929.16	2706.71	1355.36		2.98	-0.31	0.058
105.00	-12.56	-1.71	0.00	-62.30	0.00	62.30	1825.33	912.67	2580.97	1292.40		3.26	-0.32	0.055
110.00	-12.01	-1.71	0.00	-53.75	0.00	53.75	1784.92	892.46	2434.45	1219.03		3.61	-0.34	0.051
115.00	-11.49	-1.71	0.00	-45.20	0.00	45.20	1742.78	871.39	2289.70	1146.55		3.98	-0.36	0.046
120.00	-10.98	-1.70	0.00	-36.65	0.00	36.65	1698.90	849.45	2146.98	1075.09		4.37	-0.38	0.041
121.00	-8.33	-1.62	0.00	-34.95	0.00	34.95	1689.92	844.96	2118.70	1060.93		4.45	-0.38	0.038
125.00	-7.98	-1.60	0.00	-28.48	0.00	28.48	1653.30	826.65	2006.56	1004.77		4.78	-0.40	0.033
128.00	-6.38	-1.47	0.00	-23.69	0.00	23.69	1625.10	812.55	1923.51	963.18		5.03	-0.41	0.029
129.00	-6.29	-1.46	0.00	-22.22	0.00	22.22	1615.56	807.78	1896.04	949.43		5.11	-0.41	0.027
129.00	-6.29	-1.46	0.00	-22.22	0.00	22.22	1091.97	545.98	1287.15	644.53		5.11	-0.41	0.040
130.00	-6.23	-1.46	0.00	-20.76	0.00	20.76	1086.82	543.41	1270.20	636.04		5.20	-0.41	0.038
135.00	-5.91	-1.42	0.00	-13.46	0.00	13.46	1060.04	530.02	1185.82	593.79		5.64	-0.42	0.028
139.00	-3.40	-0.96	0.00	-7.77	0.00	7.77	1037.37	518.68	1118.90	560.28		6.00	-0.43	0.017
140.00	-3.35	-0.95	0.00	-6.81	0.00	6.81	1031.53	515.76	1102.27	551.95		6.09	-0.43	0.016
145.00	-3.10	-0.89	0.00	-2.04	0.00	2.04	1001.28	500.64	1019.81	510.66		6.55	-0.44	0.007
147.00	-0.42	-0.13	0.00	-0.26	0.00	0.26	988.70	494.35	987.19	494.33		6.73	-0.44	0.001
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11		6.91	-0.44	0.000

Wind Loading - Shaft

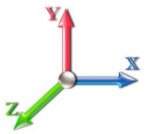
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	275.75	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	270.09	0.650	0.000	5.00	24.669	16.03	131.3	0.0	1173.1
10.00		1.00	0.85	7.442	8.19	264.43	0.650	0.000	5.00	24.157	15.70	128.5	0.0	1148.6
15.00		1.00	0.85	7.442	8.19	258.77	0.650	0.000	5.00	23.645	15.37	125.8	0.0	1124.1
20.00		1.00	0.90	7.896	8.69	260.72	0.650	0.000	5.00	23.134	15.04	130.6	0.0	1099.6
25.00		1.00	0.95	8.276	9.10	260.95	0.650	0.000	5.00	22.622	14.70	133.9	0.0	1075.1
30.00		1.00	0.98	8.600	9.46	259.92	0.650	0.000	5.00	22.111	14.37	136.0	0.0	1050.7
35.00		1.00	1.01	8.883	9.77	257.99	0.650	0.000	5.00	21.599	14.04	137.2	0.0	1026.2
40.00		1.00	1.04	9.137	10.05	255.37	0.650	0.000	5.00	21.087	13.71	137.8	0.0	1001.7
45.00		1.00	1.07	9.366	10.30	252.20	0.650	0.000	5.00	20.576	13.37	137.8	0.0	977.2
47.25	Bot - Section 2	1.00	1.08	9.463	10.41	250.63	0.650	0.000	2.25	9.092	5.91	61.5	0.0	431.8
50.00		1.00	1.09	9.576	10.53	248.60	0.650	0.000	2.75	11.117	7.23	76.1	0.0	961.5
53.25	Top - Section 1	1.00	1.11	9.704	10.67	246.05	0.650	0.000	3.25	12.939	8.41	89.8	0.0	1118.8
55.00		1.00	1.12	9.770	10.75	247.97	0.650	0.000	1.75	6.878	4.47	48.0	0.0	272.5
60.00		1.00	1.14	9.951	10.95	243.70	0.650	0.000	5.00	19.305	12.55	137.4	0.0	764.7
64.00	Appurtenance(s)	1.00	1.15	10.087	11.10	240.09	0.650	0.000	4.00	15.076	9.80	108.7	0.0	597.1
65.00		1.00	1.16	10.120	11.13	239.17	0.650	0.000	1.00	3.718	2.42	26.9	0.0	147.2
65.50	Appurtenance(s)	1.00	1.16	10.136	11.15	238.70	0.650	0.000	0.50	1.851	1.20	13.4	0.0	73.3
70.00		1.00	1.17	10.279	11.31	234.39	0.650	0.000	4.50	16.431	10.68	120.8	0.0	650.6
75.00		1.00	1.19	10.430	11.47	229.39	0.650	0.000	5.00	17.770	11.55	132.5	0.0	703.5
80.00		1.00	1.21	10.572	11.63	224.21	0.650	0.000	5.00	17.259	11.22	130.5	0.0	683.1
85.00		1.00	1.22	10.708	11.78	218.86	0.650	0.000	5.00	16.747	10.89	128.2	0.0	662.7
90.00		1.00	1.24	10.838	11.92	213.35	0.650	0.000	5.00	16.236	10.55	125.8	0.0	642.3
95.00		1.00	1.25	10.962	12.06	207.70	0.650	0.000	5.00	15.724	10.22	123.2	0.0	621.9
96.00	Bot - Section 3	1.00	1.25	10.986	12.08	206.55	0.650	0.000	1.00	3.083	2.00	24.2	0.0	121.9
99.00	Appurtenance(s)	1.00	1.26	11.057	12.16	203.08	0.650	0.000	3.00	9.254	6.02	73.2	0.0	654.1
100.00		1.00	1.27	11.081	12.19	201.91	0.650	0.000	1.00	3.044	1.98	24.1	0.0	215.1
100.75	Top - Section 2	1.00	1.27	11.098	12.21	201.04	0.650	0.000	0.75	2.269	1.48	18.0	0.0	160.4
105.00		1.00	1.28	11.195	12.31	198.88	0.650	0.000	4.25	12.643	8.22	101.2	0.0	400.5
110.00		1.00	1.29	11.305	12.44	192.88	0.650	0.000	5.00	14.401	9.36	116.4	0.0	456.1
115.00		1.00	1.30	11.412	12.55	186.78	0.650	0.000	5.00	13.889	9.03	113.3	0.0	439.8
120.00		1.00	1.32	11.514	12.67	180.57	0.650	0.000	5.00	13.377	8.70	110.1	0.0	423.5
121.00	Appurtenance(s)	1.00	1.32	11.534	12.69	179.32	0.650	0.000	1.00	2.614	1.70	21.6	0.0	82.7
125.00		1.00	1.33	11.614	12.78	174.28	0.650	0.000	4.00	10.252	6.66	85.1	0.0	324.4
128.00	Appurtenance(s)	1.00	1.33	11.672	12.84	170.46	0.650	0.000	3.00	7.474	4.86	62.4	0.0	236.5
129.00	Top - Section 3	1.00	1.34	11.691	12.86	169.18	0.650	0.000	1.00	2.450	1.59	20.5	0.0	77.5
130.00		1.00	1.34	11.710	12.88	167.90	0.650	0.000	1.00	2.430	1.58	20.3	0.0	57.8
135.00		1.00	1.35	11.803	12.98	161.44	0.650	0.000	5.00	11.843	7.70	99.9	0.0	281.5
139.00	Appurtenance(s)	1.00	1.36	11.876	13.06	156.22	0.650	0.000	4.00	9.106	5.92	77.3	0.0	216.4
140.00		1.00	1.36	11.894	13.08	154.90	0.650	0.000	1.00	2.225	1.45	18.9	0.0	52.9
145.00		1.00	1.37	11.982	13.18	148.30	0.650	0.000	5.00	10.819	7.03	92.7	0.0	257.0
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	145.63	0.650	0.000	2.00	4.184	2.72	36.0	0.0	99.4
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	142.96	0.650	0.000	2.00	4.103	2.67	35.4	0.0	97.4
								Totals:	**149.00**			**3,672.3**		**22,662.1**

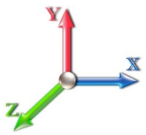
Discrete Appurtenance Forces

Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	149.00	Decibel DB404-B	1	12.093	13.303	1.00	1.00	1.03	14.00	0.000	2.500	13.70	0.00	34.25
2	149.00	Pipe Mount	1	12.051	13.256	1.00	1.00	5.00	350.00	0.000	0.000	66.28	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	12.017	13.219	0.90	0.90	9.34	204.90	0.000	0.000	123.49	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	12.017	13.219	0.71	0.90	13.52	168.00	0.000	0.000	178.76	0.00	0.00
5	147.00	ALU TD-RRH8x20-25	3	12.017	13.219	0.62	0.90	7.55	210.00	0.000	0.000	99.74	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	12.017	13.219	0.79	0.90	9.03	132.00	0.000	0.000	119.35	0.00	0.00
7	147.00	ALU 800MHz RRH	3	12.017	13.219	0.78	0.90	6.20	178.50	0.000	0.000	81.97	0.00	0.00
8	147.00	RFS APXVSPP18-C-A20	3	12.017	13.219	0.75	0.90	17.97	171.00	0.000	0.000	237.58	0.00	0.00
9	147.00	Argus LLPX310R	3	12.017	13.219	0.62	0.90	8.01	85.80	0.000	0.000	105.89	0.00	0.00
10	147.00	Andrew VHLP2-11	1	12.017	13.219	0.90	0.90	4.21	27.00	0.000	0.000	55.68	0.00	0.00
11	147.00	Andrew	1	12.017	13.219	0.90	0.90	6.03	49.00	0.000	0.000	79.71	0.00	0.00
12	147.00	U-RAS Flexible RRH	3	12.017	13.219	0.78	1.00	5.22	152.10	0.000	0.000	68.98	0.00	0.00
13	147.00	12.5' Low Profile Platform	1	12.017	13.219	1.00	1.00	22.00	1500.00	0.000	0.000	290.81	0.00	0.00
14	147.00	RFS ACU-A20-N	4	12.017	13.219	0.71	0.90	0.40	4.00	0.000	0.000	5.26	0.00	0.00
15	139.00	7770	6	11.876	13.064	0.58	0.80	19.27	210.00	0.000	0.000	251.77	0.00	0.00
16	139.00	Powerwave 7020.00 RET	12	11.876	13.064	0.52	0.80	2.50	26.40	0.000	0.000	32.61	0.00	0.00
17	139.00	Ericsson RRUS-32 B2s	3	11.876	13.064	0.65	0.80	5.33	180.00	0.000	0.000	69.59	0.00	0.00
18	139.00	Powerawve LGP21901	6	11.876	13.064	0.60	0.80	0.83	33.00	0.000	0.000	10.82	0.00	0.00
19	139.00	Raycap DC6-48-60-18-8F	1	11.876	13.064	0.80	0.80	1.18	32.80	0.000	0.000	15.36	0.00	0.00
20	139.00	HPA-65R-BUU-H6	3	11.876	13.064	0.68	0.80	19.71	153.00	0.000	0.000	257.44	0.00	0.00
21	139.00	Ericsson RRUS 11 RRUs	3	11.876	13.064	0.57	0.80	5.01	165.00	0.000	0.000	65.45	0.00	0.00
22	139.00	Ericsson RRUS 12 RRUs	3	11.876	13.064	0.56	0.80	5.29	174.00	0.000	0.000	69.13	0.00	0.00
23	139.00	Commscope	3	11.876	13.064	0.78	0.80	0.12	3.30	0.000	0.000	1.54	0.00	0.00
24	139.00	Powerwave LGP13519	6	11.876	13.064	0.80	0.80	1.63	31.80	0.000	0.000	21.32	0.00	0.00
25	139.00	Low Profile Platform	1	11.876	13.064	1.00	1.00	22.00	1500.00	0.000	0.000	287.40	0.00	0.00
26	128.00	Low Profile Platform	1	11.672	12.839	1.00	1.00	22.00	1500.00	0.000	0.000	282.46	0.00	0.00
27	121.00	Ericsson AIR21 B4A/B12P	3	11.534	12.688	0.71	0.80	24.65	369.00	0.000	0.000	312.75	0.00	0.00
28	121.00	Ericsson Air 21 B2A/B4P	3	11.534	12.688	0.69	0.80	12.57	274.50	0.000	0.000	159.48	0.00	0.00
29	121.00	Commscope LNX-6515DS	3	11.534	12.688	0.64	0.80	22.02	149.40	0.000	0.000	279.42	0.00	0.00
30	121.00	Ericsson S11B12	3	11.534	12.688	0.56	0.80	4.75	153.00	0.000	0.000	60.32	0.00	0.00
31	121.00	Ericsson KRY 112 144/1	3	11.534	12.688	0.56	0.80	0.69	33.00	0.000	0.000	8.74	0.00	0.00
32	121.00	Low Profile Platform	1	11.534	12.688	1.00	1.00	22.00	1500.00	0.000	0.000	279.13	0.00	0.00
33	121.00	SitePro PRK1245	1	11.534	12.688	0.80	0.80	4.00	350.00	0.000	0.000	50.75	0.00	0.00
34	99.00	RFS APL866513-42T0	4	11.057	12.163	0.74	0.80	12.05	62.80	0.000	0.000	146.60	0.00	0.00
35	99.00	BXA-171063-12BF	1	11.057	12.163	0.67	0.80	3.19	15.00	0.000	0.000	38.74	0.00	0.00
36	99.00	Antel BXA-70063-6CF	1	11.057	12.163	0.58	0.80	4.42	17.00	0.000	0.000	53.77	0.00	0.00
37	99.00	Antel LPA-80063-6CF	2	11.057	12.163	0.74	0.80	14.52	54.00	0.000	0.000	176.64	0.00	0.00
38	99.00	Antel BXA-171063-8BF	2	11.057	12.163	0.67	0.80	3.95	21.00	0.000	0.000	48.06	0.00	0.00
39	99.00	Antel BXA-70063-4CF	1	11.057	12.163	0.58	0.80	2.76	9.90	0.000	0.000	33.53	0.00	0.00
40	99.00	RFS FD9R6004/2C-3L	6	11.057	12.163	0.80	0.80	1.73	18.60	0.000	0.000	21.02	0.00	0.00
41	99.00	Swedcom SLCP 2x6014F	1	11.057	12.163	0.71	0.80	4.62	20.00	0.000	0.000	56.20	0.00	0.00
42	99.00	Kathrein	3	11.057	12.163	0.62	0.80	19.51	171.90	0.000	0.000	237.36	0.00	0.00
43	99.00	ALU RRH2x40-AWS	3	11.057	12.163	0.66	0.80	4.96	132.00	0.000	0.000	60.32	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	11.057	12.163	0.57	0.80	2.73	18.90	0.000	0.000	33.16	0.00	0.00
45	99.00	12.5' Low Profile Platform	1	11.057	12.163	0.80	0.80	17.60	1500.00	0.000	0.000	214.07	0.00	0.00
46	65.50	Decibel 26OB	1	10.136	11.150	0.80	0.80	1.60	50.00	0.000	0.000	17.84	0.00	0.00
47	64.00	3 ft Standoff	1	10.087	11.096	1.00	1.00	2.63	40.00	0.000	0.000	29.18	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

Tower Engineering Solutions

Totals:	**12,215.60**	**5,209.17**

Total Applied Force Summary

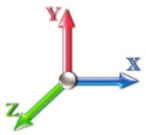
Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		131.26	1386.73	0.00	0.00
10.00		128.54	1362.25	0.00	0.00
15.00		125.82	1337.76	0.00	0.00
20.00		130.61	1313.27	0.00	0.00
25.00		133.86	1288.79	0.00	0.00
30.00		135.96	1264.30	0.00	0.00
35.00		137.19	1239.81	0.00	0.00
40.00		137.76	1215.32	0.00	0.00
45.00		137.79	1190.84	0.00	0.00
47.25		61.52	527.89	0.00	0.00
50.00		76.12	1078.98	0.00	0.00
53.25		89.78	1257.65	0.00	0.00
55.00		48.05	347.25	0.00	0.00
60.00		137.36	978.36	0.00	0.00
64.00	(1) attachments	137.91	807.99	0.00	0.00
65.00		26.90	189.80	0.00	0.00
65.50	(1) attachments	31.26	144.59	0.00	0.00
70.00		120.76	842.15	0.00	0.00
75.00		132.52	916.34	0.00	0.00
80.00		130.46	895.93	0.00	0.00
85.00		128.22	875.53	0.00	0.00
90.00		125.81	855.12	0.00	0.00
95.00		123.24	834.72	0.00	0.00
96.00		24.22	164.49	0.00	0.00
99.00	(26) attachments	1192.64	2822.95	0.00	0.00
100.00		24.12	244.10	0.00	0.00
100.75		18.01	182.11	0.00	0.00
105.00		101.20	523.74	0.00	0.00
110.00		116.41	601.06	0.00	0.00
115.00		113.33	584.74	0.00	0.00
120.00		110.13	568.41	0.00	0.00
121.00	(17) attachments	1172.16	2940.62	0.00	0.00
125.00		85.13	386.04	0.00	0.00
128.00	(1) attachments	344.83	1782.68	0.00	0.00
129.00		20.48	92.92	0.00	0.00
130.00		20.34	73.18	0.00	0.00
135.00		99.94	358.55	0.00	0.00
139.00	(47) attachments	1159.74	2787.32	0.00	0.00
140.00		18.92	56.83	0.00	0.00
145.00		92.69	276.82	0.00	0.00
147.00	(31) attachments	1483.16	2989.60	0.00	0.00
149.00	(2) attachments	115.33	462.46	0.00	34.25
	Totals:	**8,881.48**	**40,049.96**	**0.00**	**34.25**

Linear Appurtenance Segment Forces (Factored)

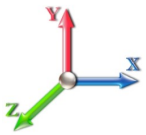
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	13.20
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	62.40
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	0.80
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	13.20
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	62.40
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	0.80
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	13.20
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	62.40
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	0.80
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	13.20
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	62.40
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	0.80
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	13.20
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	62.40
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	0.80
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	13.20
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	62.40
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	0.80
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	5.94
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	28.08
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	0.36
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	7.26
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	34.32
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	0.44
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	8.58
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	40.56
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	0.52
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	4.62
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	21.84
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	0.28
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	13.20
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	62.40
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	0.80
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	10.56
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	49.92
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	0.64
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	2.64
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	12.48

Linear Appurtenance Segment Forces (Factored)

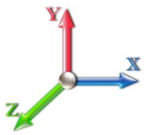
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	1.32
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	6.24
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	11.88
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	56.16
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	13.20
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	62.40
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	13.20
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	62.40
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	13.20
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	62.40
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	13.20
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	62.40
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	13.20
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	62.40
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.986	0.00	2.64
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.986	0.00	12.48
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.057	0.00	7.92
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.057	0.00	37.44
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	2.64
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	11.098	0.00	1.98
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	11.22
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	13.20
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	13.20
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	13.20
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.534	0.00	2.64
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	10.56
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.672	0.00	7.92
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.691	0.00	2.64
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	2.64
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	13.20
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.876	0.00	10.56
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	2.64
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	13.20
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.017	0.00	5.28
									Totals:		**0.0**	**1,633.8**

Calculated Forces

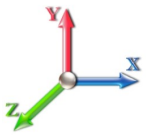
Structure:	CT13056-A-SBA	**Code:**	EIA/TIA-222-G	11/7/2016	
Site Name:	Moosehill	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.05	-8.90	0.00	-959.41	0.00	959.41	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.189
5.00	-38.65	-8.79	0.00	-914.93	0.00	914.93	4369.00	2184.50	10304.7	5160.05	0.02	-0.044	0.000	0.186
10.00	-37.28	-8.69	0.00	-870.96	0.00	870.96	4317.04	2158.52	9966.05	4990.43	0.09	-0.089	0.000	0.183
15.00	-35.94	-8.59	0.00	-827.49	0.00	827.49	4263.35	2131.68	9628.61	4821.46	0.21	-0.135	0.000	0.180
20.00	-34.62	-8.49	0.00	-784.53	0.00	784.53	4207.92	2103.96	9292.72	4653.26	0.38	-0.181	0.000	0.177
25.00	-33.32	-8.38	0.00	-742.09	0.00	742.09	4150.77	2075.38	8958.64	4485.98	0.59	-0.227	0.000	0.173
30.00	-32.05	-8.26	0.00	-700.21	0.00	700.21	4091.88	2045.94	8626.63	4319.73	0.86	-0.274	0.000	0.170
35.00	-30.81	-8.14	0.00	-658.90	0.00	658.90	4031.25	2015.63	8296.96	4154.65	1.17	-0.322	0.000	0.166
40.00	-29.59	-8.02	0.00	-618.18	0.00	618.18	3968.90	1984.45	7969.88	3990.86	1.53	-0.370	0.000	0.162
45.00	-28.39	-7.89	0.00	-578.07	0.00	578.07	3904.81	1952.40	7645.65	3828.51	1.95	-0.419	0.000	0.158
47.25	-27.86	-7.84	0.00	-560.31	0.00	560.31	3875.40	1937.70	7500.75	3755.95	2.15	-0.441	0.000	0.156
50.00	-26.78	-7.77	0.00	-538.74	0.00	538.74	3838.99	1919.49	7324.54	3667.71	2.41	-0.468	0.000	0.154
53.25	-25.52	-7.68	0.00	-513.49	0.00	513.49	2982.57	1491.28	5685.98	2847.22	2.74	-0.501	0.000	0.189
55.00	-25.17	-7.65	0.00	-500.04	0.00	500.04	2966.84	1483.42	5604.01	2806.17	2.93	-0.518	0.000	0.187
60.00	-24.18	-7.52	0.00	-461.81	0.00	461.81	2920.75	1460.37	5370.68	2689.33	3.50	-0.575	0.000	0.180
64.00	-23.37	-7.39	0.00	-431.73	0.00	431.73	2882.62	1441.31	5185.10	2596.40	4.00	-0.620	0.000	0.174
65.00	-23.18	-7.36	0.00	-424.34	0.00	424.34	2872.92	1436.46	5138.87	2573.25	4.13	-0.632	0.000	0.173
65.50	-23.03	-7.34	0.00	-420.66	0.00	420.66	2868.04	1434.02	5115.78	2561.69	4.20	-0.638	0.000	0.172
70.00	-22.19	-7.23	0.00	-387.63	0.00	387.63	2823.36	1411.68	4908.84	2458.07	4.83	-0.688	0.000	0.166
75.00	-21.27	-7.11	0.00	-351.48	0.00	351.48	2772.06	1386.03	4680.84	2343.90	5.58	-0.744	0.000	0.158
80.00	-20.37	-6.98	0.00	-315.95	0.00	315.95	2719.04	1359.52	4455.15	2230.89	6.39	-0.798	0.000	0.149
85.00	-19.49	-6.86	0.00	-281.03	0.00	281.03	2664.28	1332.14	4232.01	2119.15	7.25	-0.852	0.000	0.140
90.00	-18.63	-6.74	0.00	-246.73	0.00	246.73	2607.79	1303.89	4011.70	2008.83	8.17	-0.903	0.000	0.130
95.00	-17.79	-6.61	0.00	-213.04	0.00	213.04	2549.57	1274.78	3794.46	1900.05	9.14	-0.953	0.000	0.119
96.00	-17.62	-6.59	0.00	-206.43	0.00	206.43	2537.71	1268.86	3751.41	1878.49	9.34	-0.963	0.000	0.117
99.00	-14.82	-5.35	0.00	-186.66	0.00	186.66	2501.74	1250.87	3623.07	1814.23	9.96	-0.992	0.000	0.109
100.00	-14.58	-5.33	0.00	-181.31	0.00	181.31	2489.61	1244.80	3580.57	1792.94	10.17	-1.001	0.000	0.107
100.75	-14.39	-5.31	0.00	-177.32	0.00	177.32	1858.32	929.16	2706.71	1355.36	10.33	-1.008	0.000	0.139
105.00	-13.87	-5.21	0.00	-154.74	0.00	154.74	1825.33	912.67	2580.97	1292.40	11.24	-1.046	0.000	0.127
110.00	-13.26	-5.10	0.00	-128.68	0.00	128.68	1784.92	892.46	2434.45	1219.03	12.36	-1.096	0.000	0.113
115.00	-12.68	-4.98	0.00	-103.20	0.00	103.20	1742.78	871.39	2289.70	1146.55	13.54	-1.141	0.000	0.097
120.00	-12.11	-4.86	0.00	-78.30	0.00	78.30	1698.90	849.45	2146.98	1075.09	14.75	-1.180	0.000	0.080
121.00	-9.19	-3.63	0.00	-73.44	0.00	73.44	1689.92	844.96	2118.70	1060.93	15.00	-1.187	0.000	0.075
125.00	-8.81	-3.54	0.00	-58.91	0.00	58.91	1653.30	826.65	2006.56	1004.77	16.01	-1.214	0.000	0.064
128.00	-7.03	-3.16	0.00	-48.27	0.00	48.27	1625.10	812.55	1923.51	963.18	16.78	-1.232	0.000	0.054
129.00	-6.94	-3.14	0.00	-45.11	0.00	45.11	1615.56	807.78	1896.04	949.43	17.04	-1.237	0.000	0.052
129.00	-6.94	-3.14	0.00	-45.11	0.00	45.11	1091.97	545.98	1287.15	644.53	17.04	-1.237	0.000	0.076
130.00	-6.86	-3.12	0.00	-41.97	0.00	41.97	1086.82	543.41	1270.20	636.04	17.30	-1.242	0.000	0.072
135.00	-6.51	-3.02	0.00	-26.37	0.00	26.37	1060.04	530.02	1185.82	593.79	18.61	-1.271	0.000	0.051
139.00	-3.75	-1.79	0.00	-14.31	0.00	14.31	1037.37	518.68	1118.90	560.28	19.69	-1.286	0.000	0.029
140.00	-3.69	-1.77	0.00	-12.51	0.00	12.51	1031.53	515.76	1102.27	551.95	19.96	-1.289	0.000	0.026
145.00	-3.41	-1.68	0.00	-3.64	0.00	3.64	1001.28	500.64	1019.81	510.66	21.31	-1.297	0.000	0.011
147.00	-0.46	-0.13	0.00	-0.29	0.00	0.29	988.70	494.35	987.19	494.33	21.85	-1.298	0.000	0.001
149.00	0.00	-0.12	0.00	-0.03	0.00	0.03	975.84	487.92	954.81	478.11	22.40	-1.298	0.000	0.000

Final Analysis Summary

Structure:	CT13056-A-SBA		**Code:**	EIA/TIA-222-G	11/7/2016
Site Name:	Moosehill		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	37.2	0.00	48.00	0.00	0.00	4033.20
0.9D + 1.6W 97 mph Wind	37.2	0.00	35.98	0.00	0.00	3994.88
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.4	0.00	79.97	0.00	0.00	1119.18
1.2D + 1.0E	2.2	0.00	48.06	0.00	0.00	262.15
0.9D + 1.0E	2.2	0.00	36.04	0.00	0.00	259.42
1.0D + 1.0W 60 mph Wind	8.9	0.00	40.05	0.00	0.00	959.41

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-29.51	-32.30	0.00	-2162.3	0.00	-2162.3	2982.57	1491.2	5685.98	2847.22	53.25	0.770
0.9D + 1.6W 97 mph Wind	-35.98	-37.20	0.00	-3994.8	0.00	-3994.8	4419.23	2209.6	10644.5	5330.19	0.00	0.758
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-79.97	-10.40	0.00	-1119.1	0.00	-1119.1	4419.23	2209.6	10644.5	5330.19	0.00	0.228
1.2D + 1.0E	-30.70	-1.80	0.00	-153.64	0.00	-153.64	2982.57	1491.2	5685.98	2847.22	53.25	0.064
0.9D + 1.0E	-23.02	-1.78	0.00	-151.53	0.00	-151.53	2982.57	1491.2	5685.98	2847.22	53.25	0.061
1.0D + 1.0W 60 mph Wind	-40.05	-8.90	0.00	-959.41	0.00	-959.41	4419.23	2209.6	10644.5	5330.19	0.00	0.189

Monopole Mat Foundation Design

			Date: 11/7/2016
Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
Site Name:	Moosehill	**Structure Height (Ft.):**	149
Site Number:	CT13056-A-SBA	**Engineer Name:**	T. Alajaj
Engr. Number:	27539	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

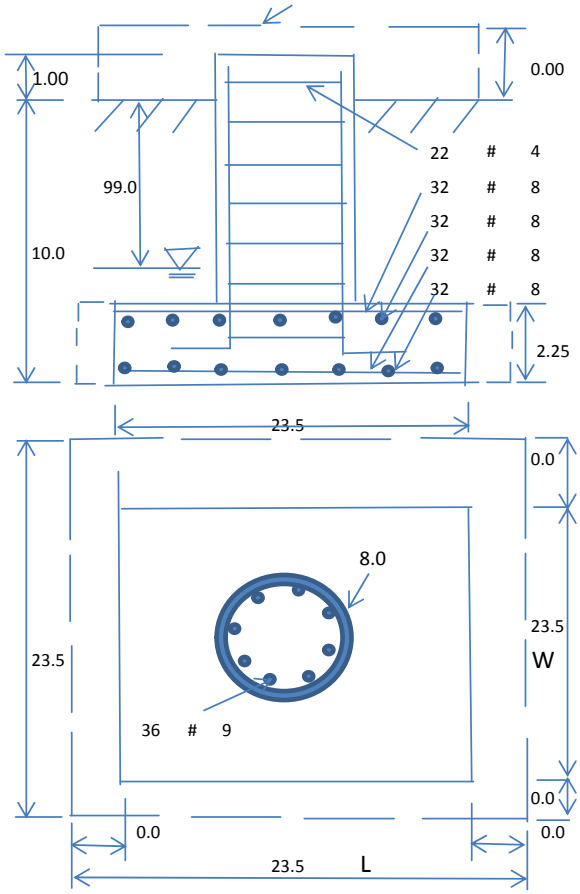
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	48.0	Shear Force (Kips):	37.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4033.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	10.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.25
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5
Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	3890.38	Total Dry Soil Weight (Kips):	389.04
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	389.04	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1682.39	Total Dry Concrete Weight (Kips):	252.36
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	252.36	Total Vertical Load on Base (Kips):	689.40

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3719	<	Allowable Factored Soil Bearing (psf):	6000	0.62	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7346.8	>	Design Factored Momont (kips-ft):	4442	0.60	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.65	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	7016.1 >	Design Factored Moment (Mu, Kips-F	4358.7	0.62	OK!
Calculated Shear Capacity (Kips):	993.9 >	Design Factored Shear (Kips):	37.2	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0 >	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12733.5 >	Design Factored Axial Load (Pu Kips):	48.0	0.00	OK!
Moment & Axial Strength Combination:	0.62 OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	628.7 >	One-Way Factored Shear (L-D. Kips):	279.4	0.44	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	628.7 >	One-Way Factored Shear (W-D., Kips)	279.4	0.44	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	675.1 >	One-Way Factored Shear (C-C, Kips):	430.9	0.64	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0038 OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0038		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2583.4 >	Moment at Bottom (L-Direct. K-Ft):	809.0	0.31	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2583.4 >	Moment at Bottom (W-Direct. K-Ft):	809.0	0.31	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3613.1 >	Moment at Bottom (C-C Dir. K-Ft):	1144.1	0.32	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0038 OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0038		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	2583.4 >	Moment at the top (L-Dir Kips-Ft):	486.6	0.19	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	2583.4 >	Moment at the top (W-Dir Kips-Ft):	486.6	0.19	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3613.1 >	Moment at the top (C-C Direc. K-Ft):	450.4	0.12	OK!

PROJECT TEAM

SITE ACQUISITION & ZONING:

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
125 WESTBOROUGH, MA 01581

ENGINEERING:

TRYLON TSF
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038
KATYA SERAVALLE
PHONE: 519-465-4125

RF ENGINEER:

AT&T MOBILITY – NEW ENGLAND
550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CAMERON SYME
508-596-7146
cs6970@att.com

CONSTRUCTION MANAGEMENT:

EMPIRE TELECOM
16 ESQUIRE ROAD
BILLERICA, MA 01821
GRZEGORZ "GREG" DORMAN
484-683-1750
gdorman@empiretelecomm.com

TOWER OWNER:

SBA INFRASTRUCTURE LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

SBA SITE ID: CT13056-A
SBA SITE NAME: MOOSEHILL

SBA REGIONAL SITE MANAGER: STEPHEN ROTH
(860) 539-4920
sroth@sbasite.com

GENERAL NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

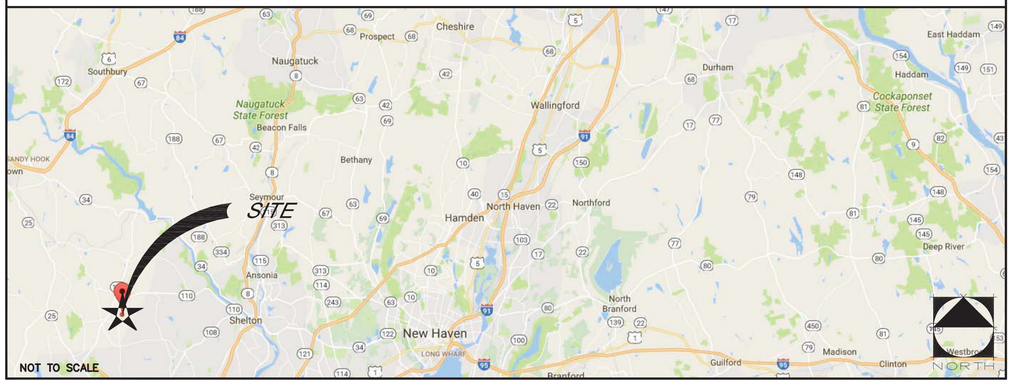
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SITE INFORMATION

LATITUDE:	41° 19' 15.44" N
LONGITUDE:	-73° 12' 05.12"W
LAT./LONG. TYPE:	NAD 83
GROUND ELEVATION:	N/A
APN/UPC:	N/A
AREA OF CONSTRUCTION:	EXISTING
ZONING/JURISDICTION:	FAIRFIELD
CURRENT ZONING:	UNKNOWN
EXISTING USE:	UNMANNED TELECOMMUNICATIONS FACILITY
COUNTY:	FAIRFIELD
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

LTE MULTI CARRIER RRU ADD
CT2203
MONROE-CENTER
500 MOOSE HILL ROAD
MONROE, CT 06468
FA CODE: 10035397

VICINITY MAP



DRIVING DIRECTIONS

FROM ROCKY HILL, HEAD SOUTHWEST ON CONCRIB LN. TURN LEFT ONTO SOLO DR. TURN RIGHT ONTO GILBERT AVE. TURN RIGHT ONTO STATE HWY 411. TURN LEFT TO MERGE ONTO I-91 S. TAKE EXIT 17 TO MERGE ONTO CT-25 N. TAKE EXIT FOR DANIELS FARM RD. TURN RIGHT ONTO DANIELS FARM RD. LIGHT LEFT ONTO MOOSE HILL RD. FOLLOW FOR 2.4 MILES TO SITE ENTRANCE ON RIGHT.

CODE COMPLIANCE

BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE WITH CONNECTICUT STATE AMENDMENTS

ELECTRICAL CODE: 2014 NATIONAL ELECTRICAL CODE WITH CONNECTICUT STATE AMENDMENTS

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.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS 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.

IF YOU DIG IN ANY STATE DIAL 811
FOR THE LOCAL "ONE CALL CENTER"
IT'S THE LAW

APPROVALS

AT&T (RF): _____ DATE: _____

AT&T (CONST.): _____ DATE: _____

AT&T (OPS): _____ DATE: _____

TOWER OWNER: _____ DATE: _____

JURISDICTIONAL APPROVAL

BASED ON INFORMATION PROVIDED BY AT&T REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).

PROJECT DESCRIPTION

THIS PROJECT WILL BE COMPRISED OF:
CHANGES ON THE EXISTING MONOPOLE TOWER:

- REMOVE (3) EXISTING RRU RRUS-12+RRUS-A2, (1) PER SECTOR FOR (3) SECTORS.
- INSTALL (3) NEW RRUS-32 B2, (1) PER SECTOR FOR (3) SECTORS.
- REUSE (1) EXISTING RET CABLE.
- REUSE (1) EXISTING DC/FIBER SQUID.
- REUSE (12) EXISTING RF CABLES.
- REUSE (1) EXISTING DC6 SQUID.

Michael Plahovinsak
Digitally signed by Michael Plahovinsak
Date: 2016.11.03 19:49:21 -04'00'

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GROUNDING & GENERAL NOTES
A-1	SITE PLAN
A-2	EQUIPMENT LAYOUT
A-3	ANTENNA LAYOUTS & TOWER ELEVATION
A-4	DETAILS
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS

at&t Mobility
550 COCHITUATE ROAD
FRAMINGHAM,MA 01701

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
125 WESTBOROUGH, MA 01581

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/1/16	FOR REVIEW	OS
B	11/3/16	PER 11/2 REDLINES	AB

SITE INFORMATION:
CT2203
MONROE-CENTER
FA CODE: 10035397
500 MOOSE HILL ROAD
MONROE, CT 06468

SEAL:
STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
REGISTERED PROFESSIONAL ENGINEER
11-3-2016
MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

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

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

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. 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.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCR1 'AP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. 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). ALL STEEL EXPOSED TO WEATHER 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.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. 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.

17. 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 MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE ACTIVE, ALL 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 REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. 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.

    - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
    - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
    - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

20. 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, THIRTEENTH EDITION
    - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
    - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
    - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
    - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
    - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
    - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS 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.

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 TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'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 AND 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. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG0-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

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 BTS; 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 WITH STAINLESS STEEL HARDWARE 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 AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

at&t Mobility
550 COCHITUATE ROAD
FRAMINGHAM,MA 01701

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
125 WESTBOROUGH, MA 01581

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/1/16	FOR REVIEW	OS
B	11/3/16	PER 11/2 REDLINES	AB

SITE INFORMATION:

CT2203
MONROE-CENTER
FA CODE: 10035397

500 MOOSE HILL ROAD
MONROE, CT 06468

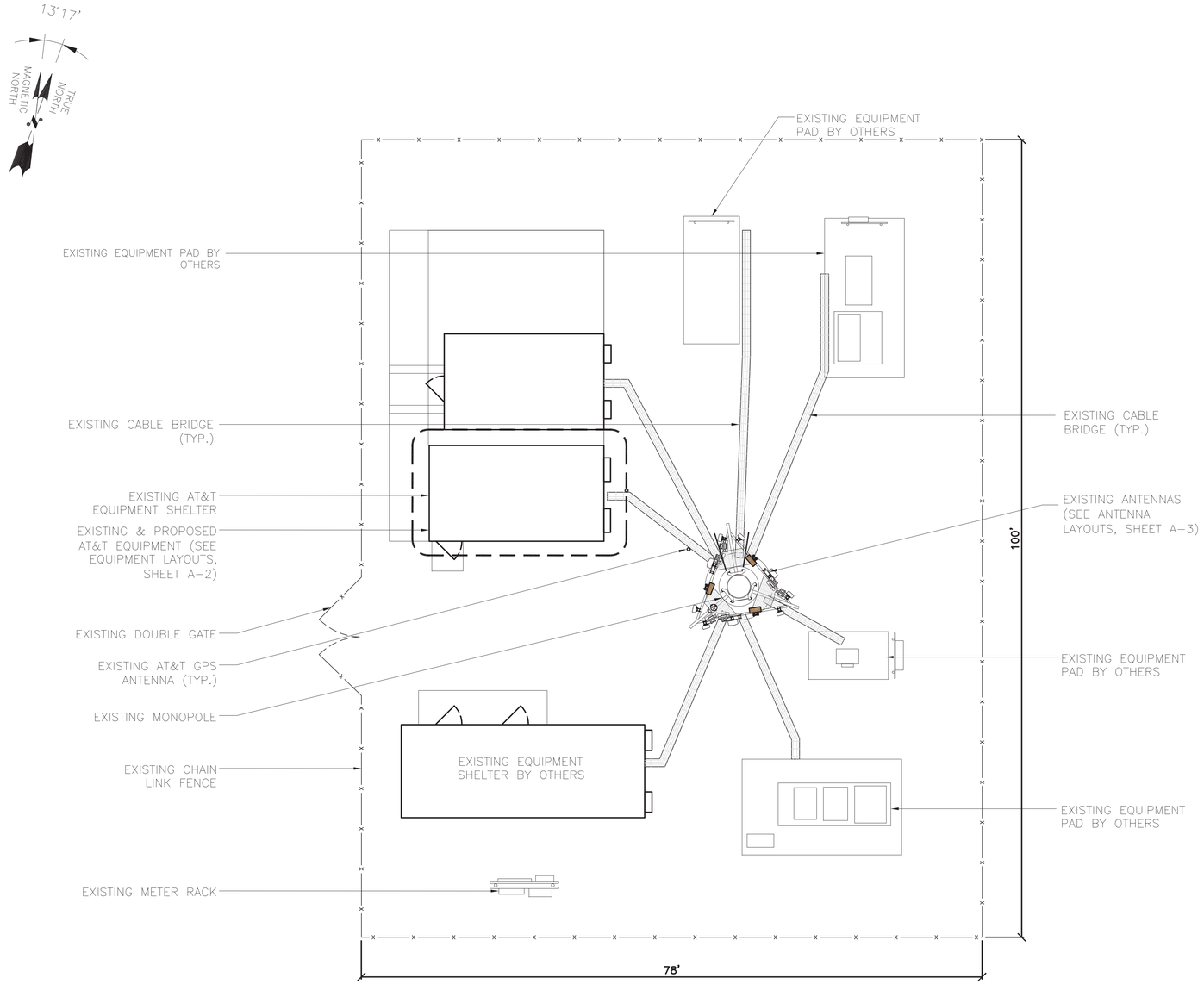
SEAL:

SHEET TITLE:

GENERAL NOTES &
GROUNDING NOTES

SHEET NUMBER:

GN-1



SITE PLAN

22"x34" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

8' 6' 4' 2' 0" 8'

at&t Mobility
550 COCHITUATE ROAD
FRAMINGHAM,MA 01701

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
125 WESTBOROUGH, MA 01581

PLANS PREPARED BY:
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1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

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SITE INFORMATION:

CT2203
MONROE-CENTER
FA CODE: 10035397

500 MOOSE HILL ROAD
MONROE, CT 06468

SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
11-3-2016

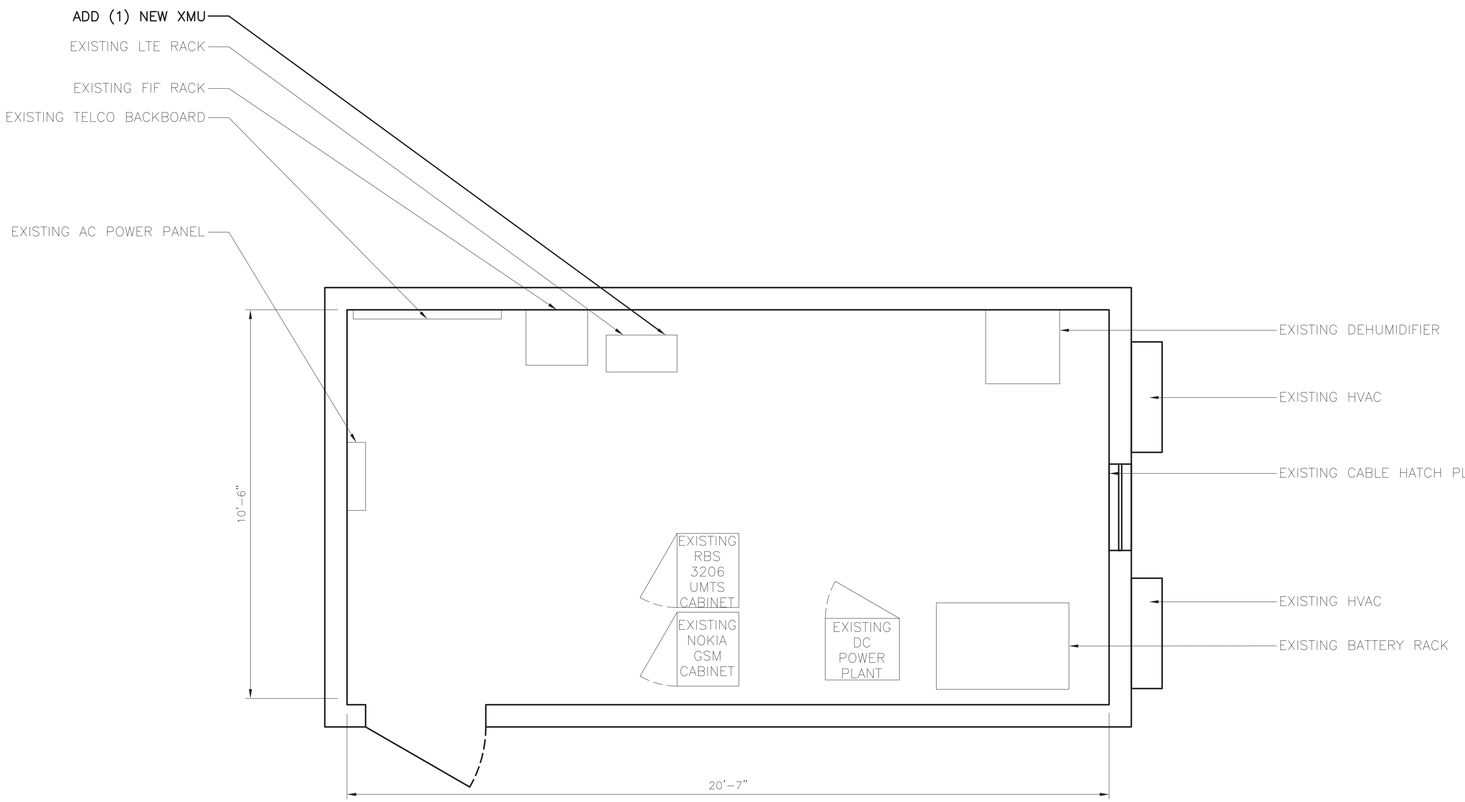
MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

A-1



EQUIPMENT LAYOUT

22"x34" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"

2' 1' 0" 2'

1

at&t Mobility
550 COCHITUATE ROAD
FRAMINGHAM,MA 01701

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
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PLANS PREPARED BY:
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IRVING, TX 75038

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SITE INFORMATION:

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MONROE-CENTER
FA CODE: 10035397

500 MOOSE HILL ROAD
MONROE, CT 06468

SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
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11-3-2016

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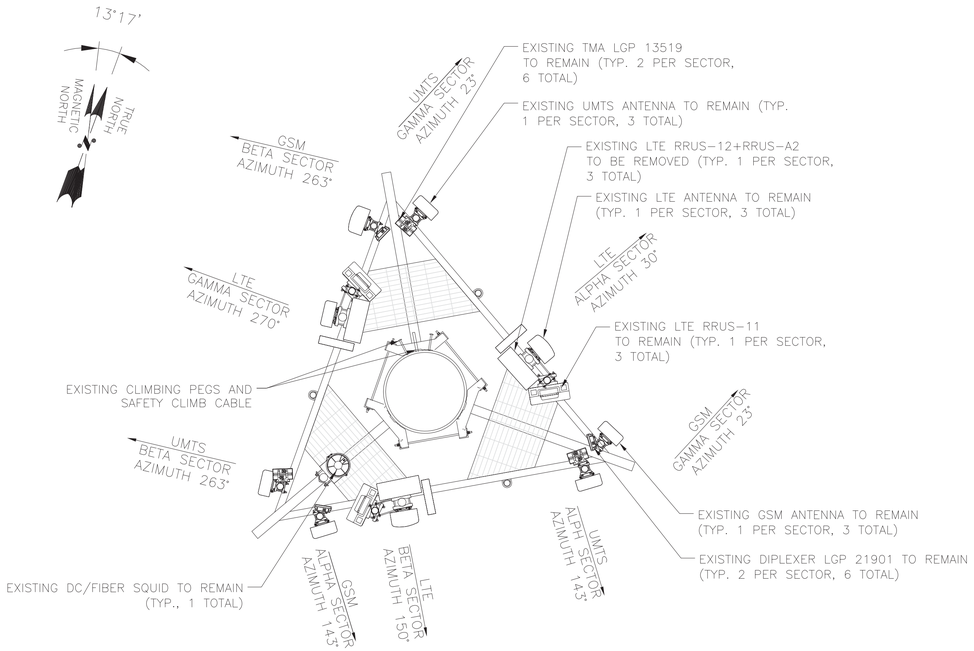
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

EQUIPMENT LAYOUTS

SHEET NUMBER:

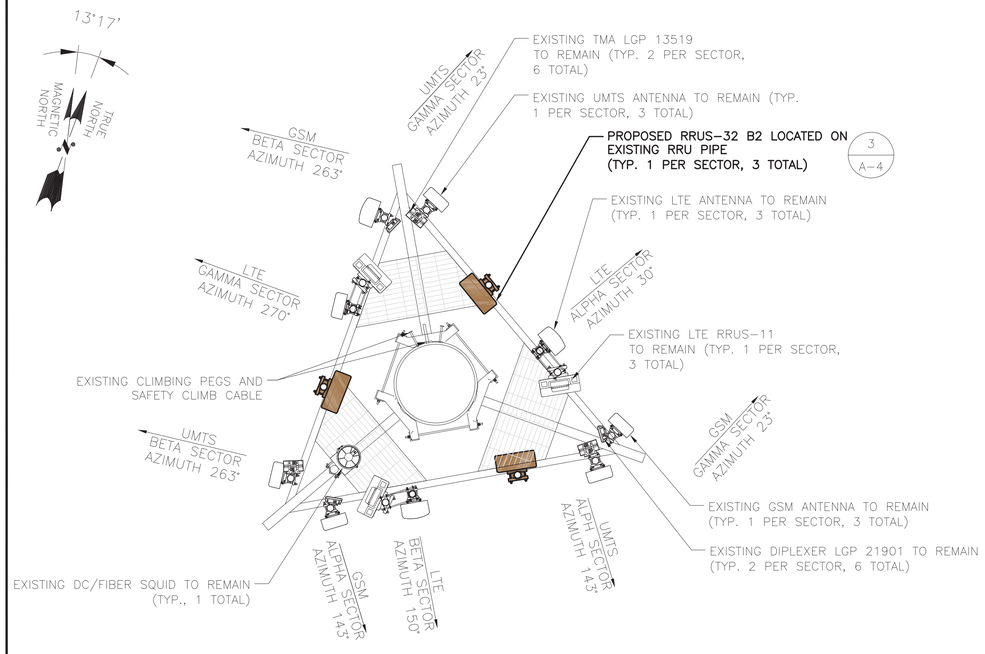
A-2



EXISTING ANTENNA LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

1



PROPOSED ANTENNA LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

2

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS): GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

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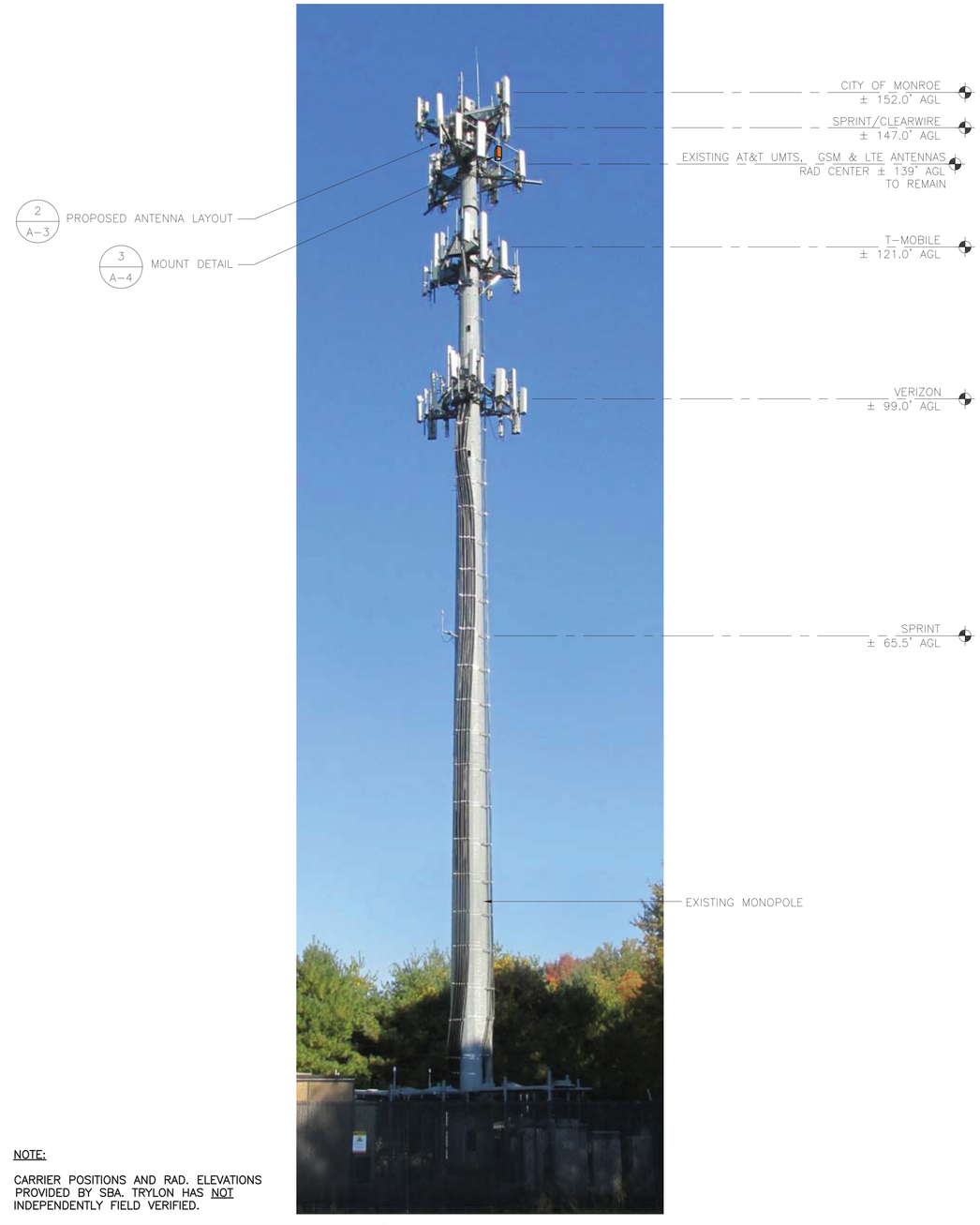


NOTE:

CARRIER POSITIONS AND RAD. ELEVATIONS PROVIDED BY SBA. TRYLON HAS NOT INDEPENDENTLY FIELD VERIFIED.

ELEVATION

22"x34" SCALE: 1" = 10'-0"
11"x17" SCALE: 1" = 20'-0"
10' 5' 0" 10'

3

at&t Mobility
550 COCHITUATE ROAD
FRAMINGHAM,MA 01701

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE
125 WESTBOROUGH, MA 01581

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/1/16	FOR REVIEW	OS
B	11/3/16	PER 11/2 REDLINES	AB

SITE INFORMATION:

CT2203
MONROE-CENTER
FA CODE: 10035397

500 MOOSE HILL ROAD
MONROE, CT 06468

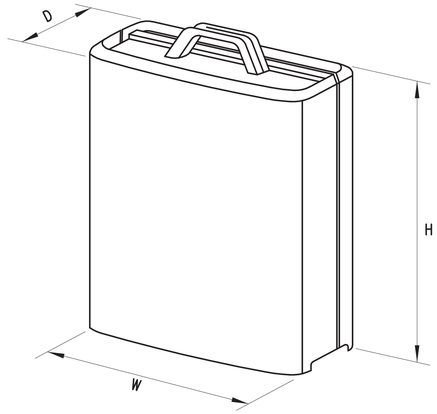
SEAL:

SHEET TITLE:

ANTENNA LAYOUTS, TOWER ELEVATION & MOUNTING DETAILS

SHEET NUMBER:

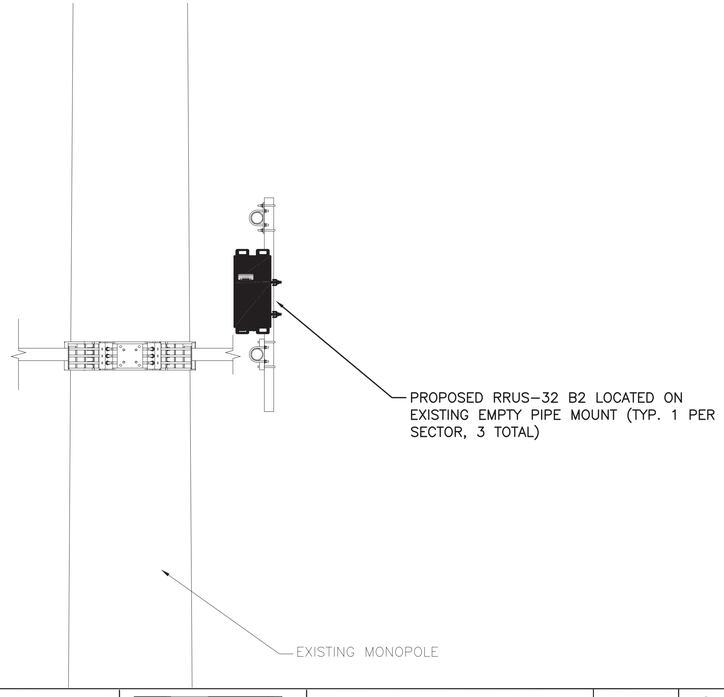
A-3



MODEL	L x W x H	WEIGHT
RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
RRUS-32	29.9" x 13.3" x 9.5"	77 LBS
RRUS-32 B2	20.9" x 9.5" x 3.3"	77 LBS
RRUS-E2	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

RRUS DETAILS | N.T.S | 1

EQUIPMENT MOUNTING DETAILS | N.T.S | 2



MOUNTING DETAIL | 22"x34" SCALE: 1/2" = 1'-0" | 11"x17" SCALE: 1/4" = 1'-0" | 2' 1' 0" 2' | N.T.S | 3

NOT USED | N.T.S | 4

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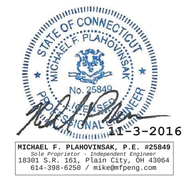


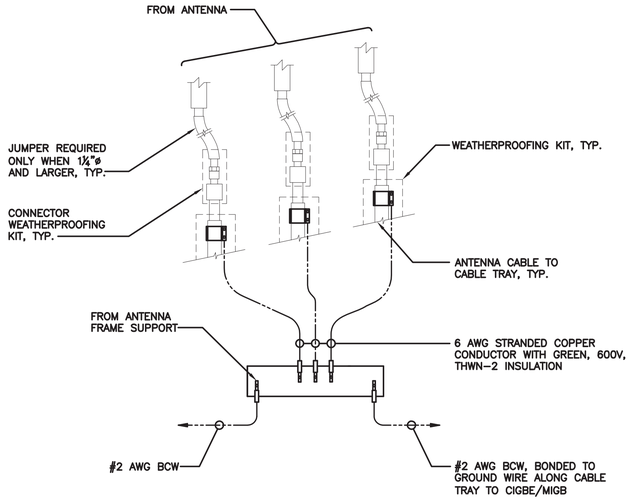
MICHAEL F. PLANOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

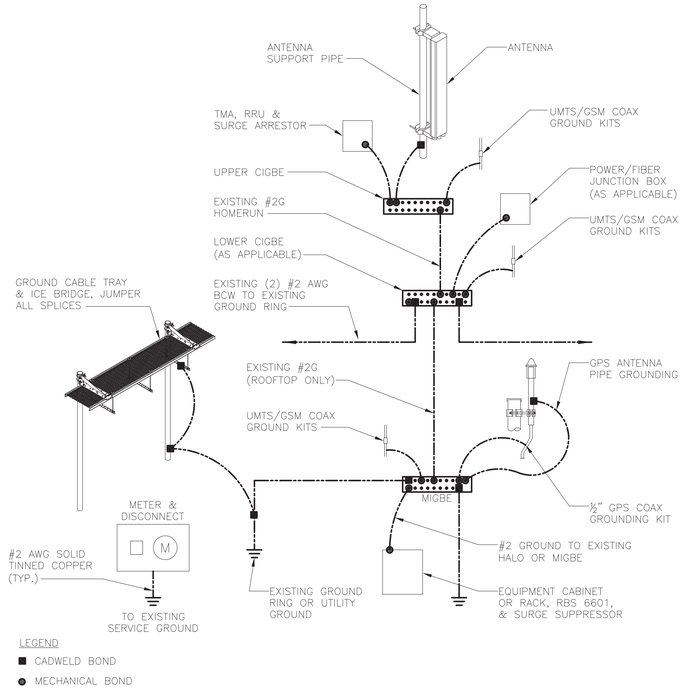
DETAILS

SHEET NUMBER:

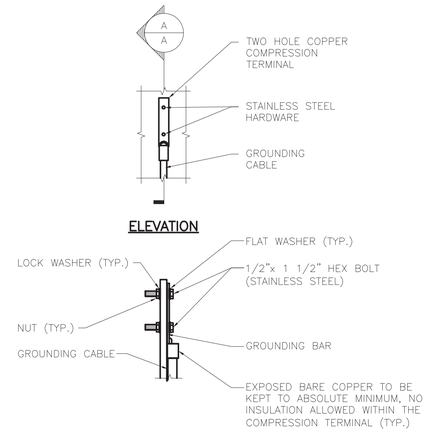
A-4



GROUND WIRE TO GROUND BAR CONNECTION DETAILS | N.T.S | 1



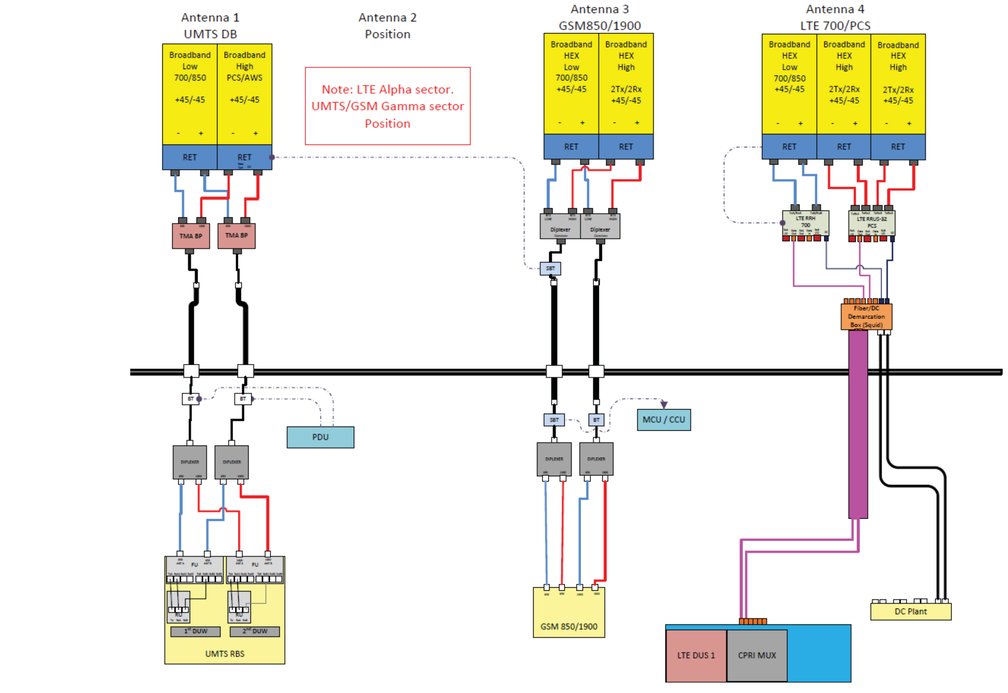
GROUND RISER DIAGRAM | N.T.S | 2



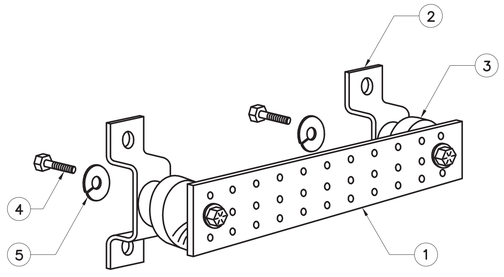
NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAILS | N.T.S | 3



RAN WIRING DIAGRAM | N.T.S | 4



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅜"-11x1" H.H.C.S.
5	4	⅜" LOCK WASHER

NOTES:

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" – SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- –48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAILS | N.T.S | 5

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SHEET TITLE:

GROUNDING, ONE-LINE DIAGRAM & DETAILS

SHEET NUMBER:

G-1