October 23, 2015

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
48 Westchester Road
Colchester, CT 06415
N 41.59013
W -72.40147
T-Mobile Site #: CT11338A_L700

Members of the Siting Council:

On behalf of T-Mobile, SBA Communications is submitting an exempt modification application to the Connecticut Siting council for modification of existing equipment at a tower facility located at 48 Westchester Road , Colchester, CT.

The 48 Westchester Road facility consists of a 180' Monopole Tower owned and operated by SBA Towers, LLC. In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located, First Selectman Stan Soby, as well as the property owner, Margus Properties, LLC.

As part of T-Mobile's L700 project, T-Mobile desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in T-Mobile's operations at the site along with the required fee of $625.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The overall height of the structure will be unaffected.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than the new equipment cabinet.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. The changes in radio frequency power density will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, SBA Communications on behalf of T-Mobile, respectfully submits that he proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at 508.251.0720 x 3804 with any questions you may have concerning this matter.

Thank you,

Kri Pelletier
SBA Communications Corporation
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbasite.com

T-Mobile

Equipment Modification

48 Westchester Road, Colchester, CT
Site number CT11338A_L700

Tower Owner: SBA Towers, LLC

Equipment Configuration: Monopole

Current and/or approved:

- (3) EMS - RR90-17-02DP w/ Mount Pipe - Panel
- (6) 1-5/8" Lines

Final Configuration:

- (3) RFS - APXV18-206516S-C-A20 - Panel
- (3) Commscope - LNX-6515DS-VTM - Panel
- (3) Ericsson - KRY 112 144/1 - TMA
- (3) Kathrein - 782 11056 - Bias T's
- (12) 1-5/8" lines

Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed modifications.

Power Density:

The anticipated Maximum Composite contributions from the T-Mobile facility are 0.96% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 1.48% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	0.96 %
Verizon Wireless	0.28 %
AT&T	0.24 %
Site Total MPE %:	**1.48 %**

October 23, 2015

Mr. Stan Soby
First Selectman
Town of Colchester
127 Norwich Avenue
Colchester, CT 06415

RE: Telecommunications Facility @ 48 Westchester Road, Colchester, CT

Dear Mr. Soby,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes T-Mobile's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at 508.251.0720 x 3804.

Thank you,

Kri Pelletier
SBA Communications Company
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbasite.com

October 23, 2015

Margus Properties, LLC
48 Westchester Road
Colchester CT 06415-2420
Attn: President or Manager

RE: Telecommunications Facility @ 48 Westchester Road, Colchester, CT

To Whom It May Concern:

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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

T-Mobile Existing Facility

Site ID: CT11338A

RT2 / Colchester West / SBA
48 Westchester Road
Colchester, CT 06415

October 21, 2015

EBI Project Number: 6215005335

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	1.48 %

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

EBI Consulting
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October 21, 2015

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

Emissions Analysis for Site: **CT11338A – RT2 / Colchester West / SBA**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **48 Westchester Road, Colchester, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$ and the general population exposure limit for the 1900 MHz (PCS) band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **48 Westchester Road, Colchester, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

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

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

3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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

5) Since the radios are ground mounted there are additional cabling losses accounted for. For each RF path the following losses were calculated. 1.12 dB of additional cable loss for all 700 MHz Channels and 2.06 dB of additional cable loss at 1900 MHz. This is based on manufacturers Specifications for 200 feet of 1-5/8" coax cable on each path.

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

8) The antennas used in this modeling are the **RFS APXV18-206516S-C-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APXV18-206516S-C-A20** has a maximum gain of **16.3 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerline of the proposed antennas is **177 feet** above ground level (AGL).

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.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	177	Height (AGL):	177	Height (AGL):	177
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	6,371.05	ERP (W):	6,371.05	ERP (W):	6,371.05
Antenna A1 MPE%	0.78	Antenna B1 MPE%	0.78	Antenna C1 MPE%	0.78
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	177	Height (AGL):	177	Height (AGL):	177
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	668.53	ERP (W):	668.53	ERP (W):	668.53
Antenna A2 MPE%	0.18	Antenna B2 MPE%	0.18	Antenna C2 MPE%	0.18

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**0.96 %**
Verizon Wireless	0.28 %
AT&T	0.24 %
Site Total MPE %:	**1.48 %**

T-Mobile Sector 1 Total:	0.96 %
T-Mobile Sector 2 Total:	0.96 %
T-Mobile Sector 3 Total:	0.96 %
Site Total:	1.48 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	**2**	**1592.76**	**177**	**3.92**	**2100**	**1000**	**0.39 %**
T-Mobile 1900 MHz (PCS) GSM	**2**	**796.38**	**177**	**1.96**	**1900**	**1000**	**0.20 %**
T-Mobile 1900 MHz (PCS) UMTS	**2**	**796.38**	**177**	**1.96**	**2100**	**1000**	**0.20 %**
T-Mobile 700 MHz LTE	**1**	**668.53**	**177**	**0.82**	**700**	**467**	**0.18 %**
						Total:	**0.96 %**

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Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	0.96 %
Sector 2:	0.96 %
Sector 3 :	0.96 %
T-Mobile Per Sector Maximum:	0.96 %
Site Total:	1.48 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **1.48%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

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

Structural Analysis Report

Existing 180 ft. Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02218-S

Customer Site Name: Colchester

Carrier Name: T-Mobile

Carrier Site Number: CT11338A

Carrier Site Name: N/A

Site Location: 48 Westchester Road

Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

10/15/15

Analysis Result:

Max Structural Usage: 85.5% [Pass]

Max Foundation Usage: 85.4% [Pass]

Report Prepared By : Stacey Hesselbein

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft. Valmont 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	Tower Drawings prepared by Valmont Microflect, Order # 19487-99 Dated 11/03/1999
Foundation Drawing	Foundation Drawing prepared by Towerkraft, Project# 2985 Dated 11/04/1999
Geotechnical Report	N/A
Modification Drawings	N/A

Analysis Criteria

The analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-F**.** 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.

Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	74 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code

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	177.0	3	EMS - RR90-17-02DP w/ Mount Pipe - Panel	(1)Low Profile Platform	(6) 1 5/8"	T-Mobile
6	167.0	3	Antel - BXA-70063/6CF w/ Mount Pipe - Panel	(1)Platform w/ Hand Rails	(18) 1 5/8"	Verizon
7		6	Antel - LPA-80080/4CF w/ Mount Pipe - Panel			
8		6	Antel - LPA-171080/8CF w/ Mount Pipe - Panel			
9	157.0	6	Powerwave - 7770 w/ Mount Pipe - Panel	(1)Low Profile Platform	(12) 1 5/8" (2) DC (1) Fiber	Cingular
10		2	Powerwave - P65-17-XLH-RR - Panel			
11		1	KMW - AM-X-CD-16-65-00T - Panel			
12		6	Powerwave - LGP21401 - TMA			
13		6	Ericsson - RRUS 11 - RRU			
14		6	Powerwave - LGP21903 - Diplexer			
15		1	Raycap - DC6-48-60-18-8F - SP			

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
2	177.0	3	RFS - APXV18-206516S-C-A20 - Panel	(1)Platform w/ Hand Rails & w/ SitePro1 PRK-1245	(12) 1 5/8"	T-Mobile
3		3	Commscope - LNX-6515DS-VTM - Panel			
4		3	Ericsson - KRY 112 144/1 - TMA			
5		3	Kathrein - 782 11056 - Bias T's			

All transmission lines are considered running inside of the pole shafts.

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
Max. Usage:	**85.5%**	**78.7%**	**63.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	5045.0	39.5	56.1
Analysis Reactions	4308.9	33.5	53.9
% of Design Reactions	85.4%	84.9%	96.2%

No geotechnical report is available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural design drawing, the foundations are assumed to be adequate to resist the reactions from the current analysis.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-F for the installed antennas. Maximum twist/sway at the elevation of the proposed equipment is 2.1383 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-F 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 or/and 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 Stress 85.5% at 53.0ft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

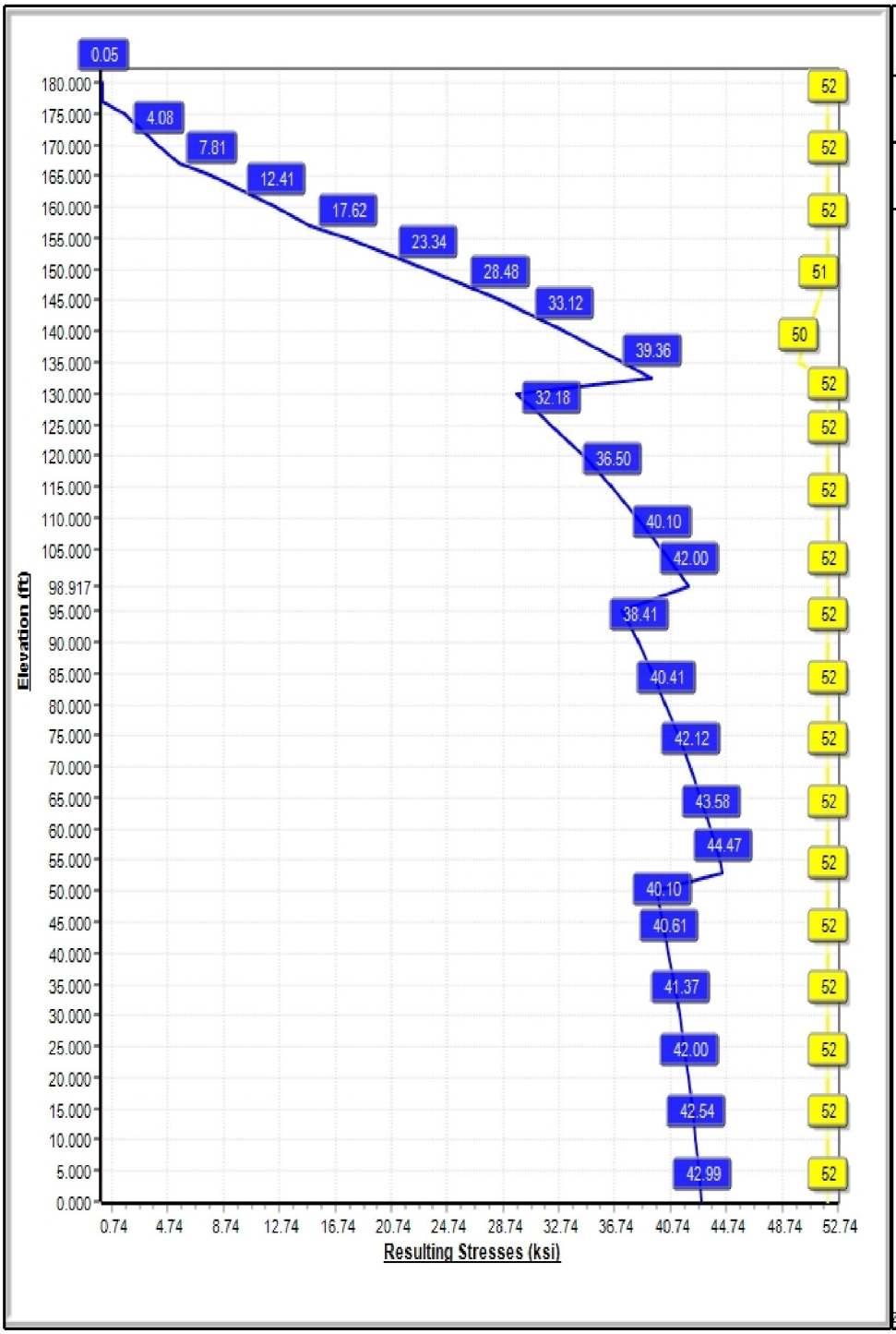
Dead Load Factor:	1.00
Wind Load Factor:	1.00

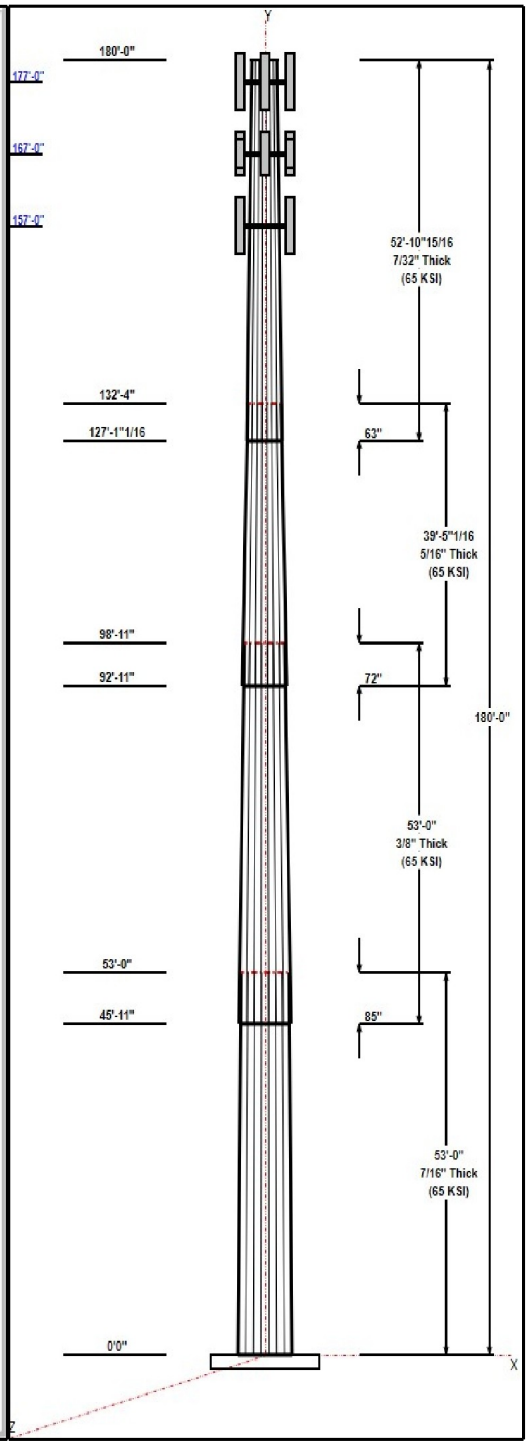
52 Alllowable Stress

44 Resulting Stress

Load Case : 85 mph Wind with 0 in Ice

Iterations: 26





Structure: CT02218-S-SBA

Type: Tapered
Site Name: Colchester
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.20502

10/15/2015

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	49.13	60.00	0.438		0.20502	65
2	53.00	40.47	51.34	0.375	Slip	0.20502	65
3	39.42	34.24	42.33	0.313	Slip	0.20502	65
4	52.91	24.91	35.76	0.219	Slip	0.20502	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
180.00	180.00	1	6' Lightning rod	T-Mobile
177.00	177.00	3	782 11056	T-Mobile
177.00	177.00	3	APXV18-206516S-C-A20	T-Mobile
177.00	177.00	3	KRY 112 144/1	T-Mobile
177.00	177.00	3	LNX-6515DS-VTM	T-Mobile
177.00	177.00	1	Platform w/ Hand Rails	T-Mobile
167.00	167.00	3	BXA-70063/6CF w/ Mount	Verizon
167.00	167.00	6	LPA-171080/8CF w/ Mount	Verizon
167.00	167.00	6	LPA-80080/4CF w/ Mount	Verizon
167.00	167.00	1	Platform w/ Hand Rails	Verizon
157.00	157.00	6	7770 w/ Mount Pipe	Cingular
157.00	157.00	1	AM-X-CD-16-65-00T	Cingular
157.00	157.00	1	DC6-48-60-18-8F	Cingular
157.00	157.00	6	LGP21401	Cingular
157.00	157.00	6	LGP21903	Cingular
157.00	157.00	1	Low Profile Platform-flat	Cingular
157.00	157.00	2	P65-17-XLH-RR	Cingular
157.00	157.00	6	RRUS 11	Cingular

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1 5/8" Coax	T-Mobile
0.00	177.00	Inside	1 5/8" Coax	T-Mobile
0.00	167.00	Inside	1 5/8" Coax	Verizon
0.00	157.00	Inside	1 5/8" Coax	Cingular
0.00	157.00	Inside	DC	Cingular
0.00	157.00	Inside	Fiber	Cingular

Anchor Bolts

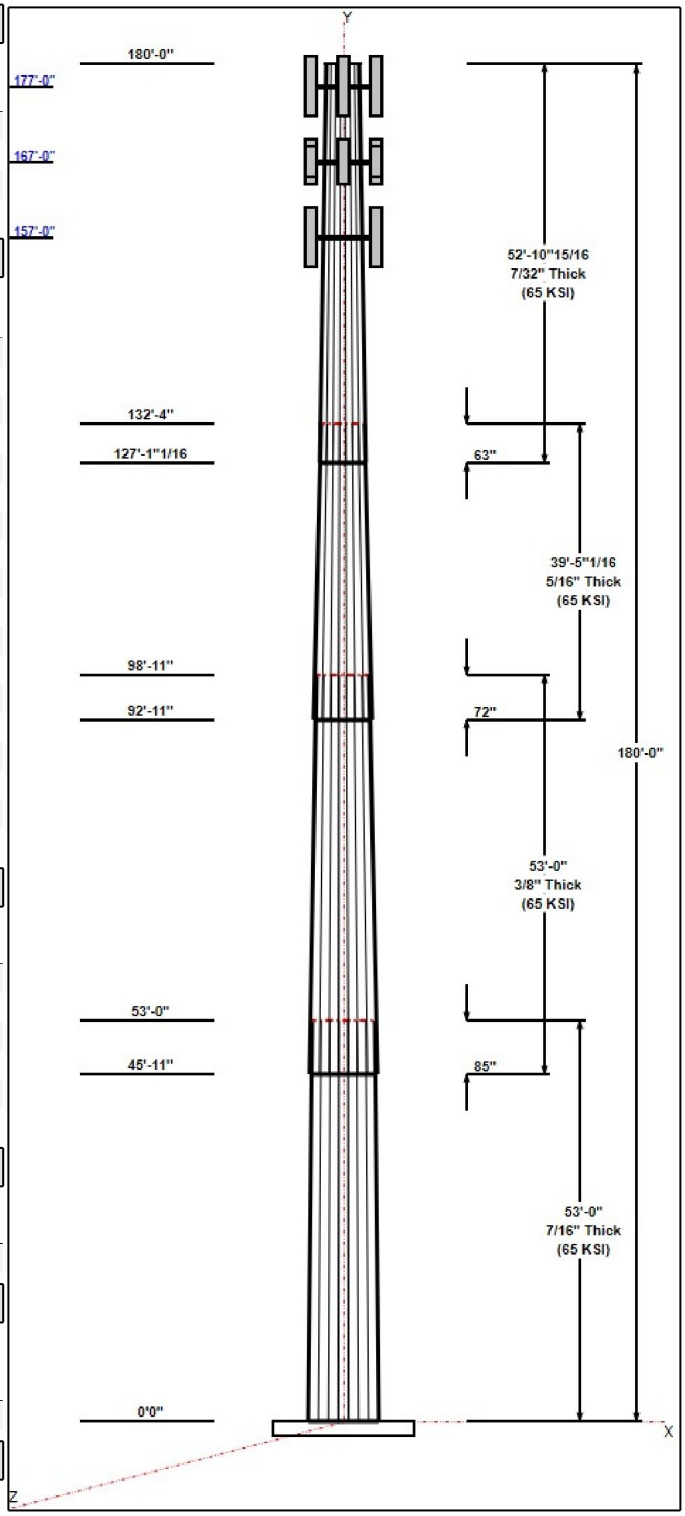
Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	74.6	60.0	Polygon

Reactions

Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	4308.9	33.5	47.1
73.61 mph Wind with 0.5" Ice	3521.1	26.8	53.9
50 mph Wind with 0" Ice	1493.1	11.6	47.1

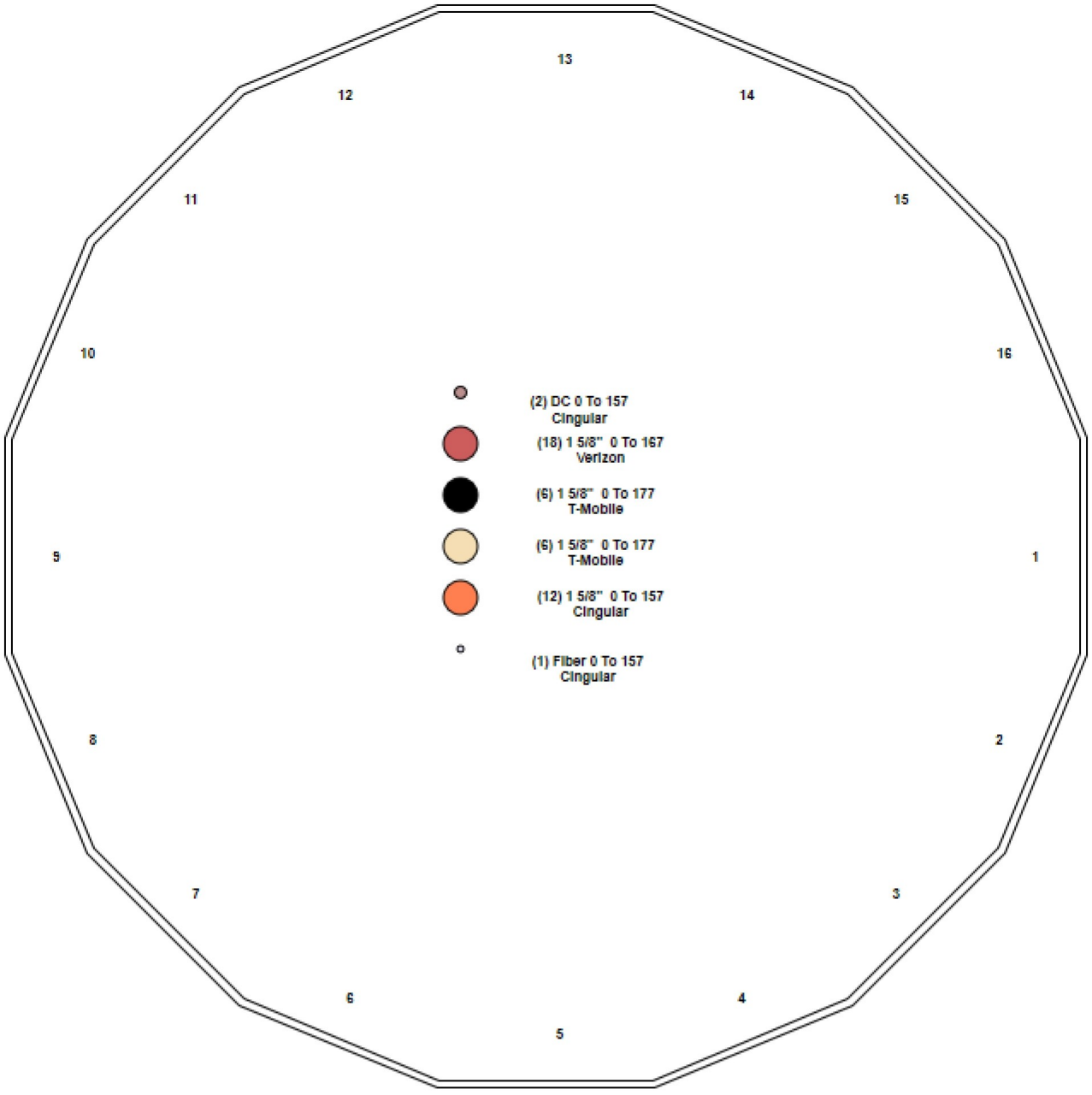


Structure: CT02218-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Colchester
Height: 180.00 (ft)

10/15/2015

Tower Engineering Solutions



Shaft Properties

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 4	

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	53.000	0.4380	65		0.00	13,640
2	16	53.000	0.3750	65	Slip	85.00	9,822
3	16	39.420	0.3130	65	Slip	72.00	5,086
4	16	52.913	0.2190	65	Slip	63.00	3,788
					Total Shaft Weight:		**32,336**

	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	60.00	0.00	83.22	37298.12	25.65	136.9	49.13	53.00	68.04	20382.3	20.72	112.1	0.205022
2	51.34	45.92	60.96	20001.00	25.63	136.8	40.47	98.92	47.96	9740.99	19.87	107.9	0.205022
3	42.33	92.92	41.95	9354.08	25.30	135.2	34.24	132.3	33.88	4927.66	20.17	109.4	0.205022
4	35.76	127.0	24.83	3961.68	30.88	163.2	24.91	180.0	17.25	1328.51	21.03	113.7	0.205022

Loading Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 5	

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	180.0	6' Lightning rod	1	6.50	0.38	0.00	11.80	0.980	0.00	0.00	0.00
2	177.0	782 11056	3	1.80	0.17	0.78	4.50	0.230	0.82	0.00	0.00
3	177.0	APXV18-206516S-C-A20	3	18.70	3.62	0.78	38.70	4.150	0.79	0.00	0.00
4	177.0	KRY 112 144/1	3	11.00	0.41	0.72	14.10	0.490	0.75	0.00	0.00
5	177.0	LNX-6515DS-VTM	3	50.30	11.45	0.84	115.70	11.92	0.84	0.00	0.00
6	177.0	Platform w/ Hand Rails w/PRK	1	2600.00	48.33	1.00	3200.00	56.33	1.00	0.00	0.00
7	167.0	BXA-70063/6CF w/ Mount Pipe	3	17.00	9.73	0.74	57.60	10.19	0.75	0.00	0.00
8	167.0	LPA-171080/8CF w/ Mount Pipe	6	8.50	4.25	1.00	29.10	4.480	1.00	0.00	0.00
9	167.0	LPA-80080/4CF w/ Mount Pipe	6	12.00	4.62	1.00	0.00	4.850	1.00	0.00	0.00
10	167.0	Platform w/ Hand Rails (flat)	1	2000.00	40.00	1.00	2600.00	48.00	1.00	0.00	0.00
11	157.0	7770 w/ Mount Pipe	6	35.00	7.88	0.75	0.00	8.250	0.75	0.00	0.00
12	157.0	AM-X-CD-16-65-00T	1	48.50	8.26	0.78	95.00	8.730	0.78	0.00	0.00
13	157.0	DC6-48-60-18-8F	1	31.80	2.57	1.00	49.50	2.770	1.00	0.00	0.00
14	157.0	LGP21401	6	14.10	1.29	0.64	21.20	1.420	0.66	0.00	0.00
15	157.0	LGP21903	6	5.50	0.27	0.74	7.90	0.330	0.76	0.00	0.00
16	157.0	Low Profile Platform-flat	1	1200.00	25.00	1.00	1500.00	31.00	1.00	0.00	0.00
17	157.0	P65-17-XLH-RR	2	59.00	11.46	0.80	121.00	11.94	0.80	0.00	0.00
18	157.0	RRUS 11	6	50.70	2.94	0.76	66.00	3.140	0.77	0.00	0.00
		Totals:	**59**	**7,056.00**			**9,135.30**				

Linear Appurtenances

			No Ice		Ice		
Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Weight (lb/ft)**	**CaAa (sf/ft)**	**Weight (lb/ft)**	**CaAa (sf/ft)**	**Exposed**
0.00	177.0	(6) 1 5/8" Coax	7.12	0.00	7.12	0.00	Inside
0.00	177.0	(6) 1 5/8" Coax	7.12	0.00	7.12	0.00	Inside
0.00	167.0	(18) 1 5/8" Coax	18.72	0.00	18.72	0.00	Inside
0.00	157.0	(12) 1 5/8" Coax	12.48	0.00	12.48	0.00	Inside
0.00	157.0	(2) DC	0.80	0.00	0.80	0.00	Inside
0.00	157.0	(1) Fiber	0.12	0.00	0.12	0.00	Inside
		Totals:	**7,750.52**		**7,750.52**		

Shaft Section Properties

Structure: CT02218-S-SBA
Site Name: Colchester
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

10/15/2015

Tower Engineering Solutions

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.4380	60.000	83.221	37298.1	25.66	136.99	65	52	0.0
5.00		0.4380	58.975	81.789	35405.3	25.19	134.65	65	52	1403.7
10.00		0.4380	57.950	80.357	33577.6	24.73	132.31	65	52	1379.4
15.00		0.4380	56.925	78.924	31813.9	24.26	129.96	65	52	1355.0
20.00		0.4380	55.900	77.492	30113.1	23.79	127.62	65	52	1330.6
25.00		0.4380	54.874	76.060	28474.0	23.33	125.28	65	52	1306.3
30.00		0.4380	53.849	74.627	26895.5	22.86	122.94	65	52	1281.9
35.00		0.4380	52.824	73.195	25376.4	22.40	120.60	65	52	1257.5
40.00		0.4380	51.799	71.763	23915.7	21.93	118.26	65	52	1233.1
45.00		0.4380	50.774	70.330	22512.1	21.47	115.92	65	52	1208.8
45.92	Bot - Section 2	0.4380	50.586	70.068	22260.8	21.38	115.49	65	52	219.0
50.00		0.4380	49.749	68.898	21164.5	21.00	113.58	65	52	1805.5
53.00	Top - Section 1	0.3750	49.884	59.225	18339.4	24.87	133.02	65	52	1307.3
55.00		0.3750	49.474	58.734	17887.4	24.65	131.93	65	52	401.4
60.00		0.3750	48.449	57.508	16790.3	24.11	129.20	65	52	988.9
65.00		0.3750	47.424	56.282	15738.9	23.56	126.46	65	52	968.0
70.00		0.3750	46.398	55.056	14732.4	23.02	123.73	65	52	947.1
75.00		0.3750	45.373	53.829	13769.7	22.48	121.00	65	52	926.3
80.00		0.3750	44.348	52.603	12849.9	21.93	118.26	65	52	905.4
85.00		0.3750	43.323	51.377	11972.0	21.39	115.53	65	52	884.5
90.00		0.3750	42.298	50.150	11135.1	20.84	112.79	65	52	863.7
92.92	Bot - Section 3	0.3750	41.700	49.435	10665.4	20.53	111.20	65	52	494.2
95.00		0.3750	41.273	48.924	10338.1	20.30	110.06	65	52	644.5
98.92	Top - Section 2	0.3130	41.096	40.720	8556.2	24.53	131.30	65	52	1193.7
100.00		0.3130	40.874	40.499	8417.2	24.38	130.59	65	52	149.7
105.00		0.3130	39.849	39.475	7795.0	23.73	127.31	65	52	680.3
110.00		0.3130	38.824	38.452	7204.2	23.08	124.04	65	52	662.9
115.00		0.3130	37.798	37.428	6644.1	22.43	120.76	65	52	645.5
120.00		0.3130	36.773	36.405	6113.8	21.78	117.49	65	52	628.1
125.00		0.3130	35.748	35.381	5612.5	21.13	114.21	65	52	610.7
127.09	Bot - Section 4	0.3130	35.320	34.954	5411.6	20.85	112.84	65	52	249.7
130.00		0.3130	34.723	34.357	5139.3	20.48	110.94	65	52	587.6
132.34	Top - Section 3	0.2190	34.682	24.076	3612.5	29.91	158.37	65	52	464.0
135.00		0.2190	34.136	23.695	3443.5	29.41	155.87	65	50	216.5
140.00		0.2190	33.111	22.979	3140.6	28.48	151.19	65	51	397.0
145.00		0.2190	32.086	22.262	2856.0	27.55	146.51	65	51	384.9
150.00		0.2190	31.061	21.546	2589.2	26.62	141.83	65	52	372.7
155.00		0.2190	30.036	20.830	2339.5	25.69	137.15	65	52	360.5
157.00		0.2190	29.626	20.544	2244.3	25.32	135.28	65	52	140.8
160.00		0.2190	29.010	20.114	2106.4	24.76	132.47	65	52	207.5
165.00		0.2190	27.985	19.398	1889.3	23.83	127.79	65	52	336.1
167.00		0.2190	27.575	19.111	1806.8	23.45	125.91	65	52	131.0
170.00		0.2190	26.960	18.682	1687.7	22.90	123.11	65	52	192.9
175.00		0.2190	25.935	17.966	1500.9	21.96	118.43	65	52	311.8
177.00		0.2190	25.525	17.679	1430.3	21.59	116.55	65	52	121.3
180.00		0.2190	24.910	17.249	1328.5	21.03	113.74	65	52	178.3
										32335.6

Wind Loading - Shaft

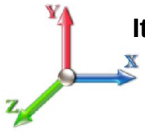
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 26

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		0.00	1.00	18.496	31.26	425.00	0.720	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.26	417.74	0.720	0.000	5.00	24.786	17.85	557.8	0.0	1403.7
10.00		0.00	1.00	18.496	31.26	410.48	0.720	0.000	5.00	24.359	17.54	548.2	0.0	1379.4
15.00		0.00	1.00	18.496	31.26	403.22	0.720	0.000	5.00	23.932	17.23	538.6	0.0	1355.0
20.00		0.00	1.00	18.496	31.26	395.96	0.720	0.000	5.00	23.505	16.92	529.0	0.0	1330.6
25.00		0.00	1.00	18.496	31.26	388.69	0.720	0.000	5.00	23.078	16.62	519.4	0.0	1306.3
30.00		0.00	1.00	18.496	31.26	381.43	0.720	0.000	5.00	22.651	16.31	509.8	0.0	1281.9
35.00		0.00	1.02	18.810	31.79	377.33	0.720	0.000	5.00	22.224	16.00	508.6	0.0	1257.5
40.00		0.00	1.06	19.541	33.02	377.13	0.720	0.000	5.00	21.797	15.69	518.3	0.0	1233.1
45.00		0.00	1.09	20.210	34.15	375.94	0.720	0.000	5.00	21.369	15.39	525.5	0.0	1208.8
45.92	Bot - Section 2	0.00	1.10	20.327	34.35	375.63	0.720	0.000	0.92	3.871	2.79	95.8	0.0	219.0
50.00		0.00	1.13	20.827	35.20	373.94	0.720	0.000	4.08	17.326	12.47	439.1	0.0	1805.5
53.00	Top - Section 1	0.00	1.14	21.177	35.79	372.40	0.720	0.000	3.00	12.548	9.03	323.3	0.0	1307.3
55.00		0.00	1.16	21.402	36.17	376.97	0.720	0.000	2.00	8.280	5.96	215.6	0.0	401.4
60.00		0.00	1.19	21.941	37.08	373.78	0.720	0.000	5.00	20.401	14.69	544.7	0.0	988.9
65.00		0.00	1.21	22.449	37.94	370.07	0.720	0.000	5.00	19.973	14.38	545.6	0.0	968.0
70.00		0.00	1.24	22.929	38.75	365.93	0.720	0.000	5.00	19.546	14.07	545.3	0.0	947.1
75.00		0.00	1.26	23.386	39.52	361.39	0.720	0.000	5.00	19.119	13.77	544.0	0.0	926.3
80.00		0.00	1.29	23.821	40.26	356.49	0.720	0.000	5.00	18.692	13.46	541.8	0.0	905.4
85.00		0.00	1.31	24.237	40.96	351.28	0.720	0.000	5.00	18.265	13.15	538.7	0.0	884.5
90.00		0.00	1.33	24.636	41.63	345.78	0.720	0.000	5.00	17.838	12.84	534.7	0.0	863.7
92.92	Bot - Section 3	0.00	1.34	24.862	42.02	342.45	0.720	0.000	2.92	10.208	7.35	308.8	0.0	494.2
95.00		0.00	1.35	25.020	42.28	340.02	0.720	0.000	2.08	7.311	5.26	222.6	0.0	644.5
98.92	Top - Section 2	0.00	1.37	25.310	42.77	335.33	0.720	0.000	3.92	13.544	9.75	417.1	0.0	1193.7
100.00		0.00	1.37	25.389	42.91	339.21	0.720	0.000	1.08	3.700	2.66	114.3	0.0	149.7
105.00		0.00	1.39	25.745	43.51	333.01	0.720	0.000	5.00	16.817	12.11	526.8	0.0	680.3
110.00		0.00	1.41	26.090	44.09	326.61	0.720	0.000	5.00	16.390	11.80	520.3	0.0	662.9
115.00		0.00	1.43	26.423	44.66	320.01	0.720	0.000	5.00	15.963	11.49	513.2	0.0	645.5
120.00		0.00	1.45	26.747	45.20	313.23	0.720	0.000	5.00	15.536	11.19	505.6	0.0	628.1
125.00		0.00	1.46	27.060	45.73	306.28	0.720	0.000	5.00	15.109	10.88	497.5	0.0	610.7
127.09	Bot - Section 4	0.00	1.47	27.189	45.95	303.33	0.720	0.000	2.09	6.179	4.45	204.4	0.0	249.7
130.00		0.00	1.48	27.365	46.25	299.17	0.720	0.000	2.91	8.609	6.20	286.7	0.0	587.6
132.34	Top - Section 3	0.00	1.49	27.505	46.48	295.79	0.720	0.000	2.34	6.800	4.90	227.6	0.0	464.0
135.00		0.00	1.50	27.662	46.75	295.70	0.720	0.000	2.66	7.637	5.50	257.1	0.0	216.5
140.00		0.00	1.51	27.951	47.24	288.32	0.720	0.000	5.00	14.010	10.09	476.5	0.0	397.0
145.00		0.00	1.53	28.233	47.71	280.79	0.720	0.000	5.00	13.583	9.78	466.6	0.0	384.9
150.00		0.00	1.54	28.507	48.18	273.14	0.720	0.000	5.00	13.156	9.47	456.3	0.0	372.7
155.00		0.00	1.56	28.776	48.63	265.37	0.720	0.000	5.00	12.728	9.16	445.7	0.0	360.5
157.00	Appurtenance(s)	0.00	1.56	28.881	48.81	262.22	0.720	0.000	2.00	4.972	3.58	174.7	0.0	140.8
160.00		0.00	1.57	29.038	49.07	257.48	0.720	0.000	3.00	7.329	5.28	259.0	0.0	207.5
165.00		0.00	1.58	29.294	49.51	249.47	0.720	0.000	5.00	11.874	8.55	423.3	0.0	336.1
167.00	Appurtenance(s)	0.00	1.59	29.395	49.68	246.24	0.720	0.000	2.00	4.630	3.33	165.6	0.0	131.0
170.00		0.00	1.60	29.545	49.93	241.36	0.720	0.000	3.00	6.817	4.91	245.1	0.0	192.9
175.00		0.00	1.61	29.791	50.35	233.15	0.720	0.000	5.00	11.020	7.93	399.5	0.0	311.8
177.00	Appurtenance(s)	0.00	1.62	29.888	50.51	229.83	0.720	0.000	2.00	4.288	3.09	156.0	0.0	121.3
180.00	Appurtenance(s)	0.00	1.62	30.032	50.75	224.83	0.720	0.000	3.00	6.304	4.54	230.4	0.0	178.3
								Totals:	**180.00**			**18,124.5**		**32,335.6**

Discrete Appurtenance Forces

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	30.032	50.754	0.00	0.38	6.50	0.000	0.000	19.29	0.00	0.00
2	177.00	Platform w/ Hand Rails	1	29.888	50.510	1.00	48.33	2600.00	0.000	0.000	2441.17	0.00	0.00
3	177.00	LNX-6515DS-VTM	3	29.888	50.510	0.84	28.85	150.90	0.000	0.000	1457.43	0.00	0.00
4	177.00	KRY 112 144/1	3	29.888	50.510	0.72	0.89	33.00	0.000	0.000	44.73	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	29.888	50.510	0.78	8.47	56.10	0.000	0.000	427.86	0.00	0.00
6	177.00	782 11056	3	29.888	50.510	0.78	0.40	5.40	0.000	0.000	20.09	0.00	0.00
7	167.00	LPA-171080/8CF w/ Mount	6	29.395	49.678	1.00	25.50	51.00	0.000	0.000	1266.79	0.00	0.00
8	167.00	Platform w/ Hand Rails (flat)	1	29.395	49.678	1.00	40.00	2000.00	0.000	0.000	1987.13	0.00	0.00
9	167.00	LPA-80080/4CF w/ Mount	6	29.395	49.678	1.00	27.72	72.00	0.000	0.000	1377.08	0.00	0.00
10	167.00	BXA-70063/6CF w/ Mount	3	29.395	49.678	0.74	21.60	51.00	0.000	0.000	1073.08	0.00	0.00
11	157.00	RRUS 11	6	28.881	48.809	0.76	13.41	304.20	0.000	0.000	654.36	0.00	0.00
12	157.00	P65-17-XLH-RR	2	28.881	48.809	0.80	18.34	118.00	0.000	0.000	894.97	0.00	0.00
13	157.00	Low Profile Platform-flat	1	28.881	48.809	1.00	25.00	1200.00	0.000	0.000	1220.23	0.00	0.00
14	157.00	LGP21903	6	28.881	48.809	0.74	1.20	33.00	0.000	0.000	58.51	0.00	0.00
15	157.00	LGP21401	6	28.881	48.809	0.64	4.95	84.60	0.000	0.000	241.78	0.00	0.00
16	157.00	DC6-48-60-18-8F	1	28.881	48.809	1.00	2.57	31.80	0.000	0.000	125.44	0.00	0.00
17	157.00	AM-X-CD-16-65-00T	1	28.881	48.809	0.78	6.44	48.50	0.000	0.000	314.47	0.00	0.00
18	157.00	7770 w/ Mount Pipe	6	28.881	48.809	0.75	35.46	210.00	0.000	0.000	1730.78	0.00	0.00
						Totals:		**7,056.00**			**15,355.20**		

Total Applied Force Summary

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 26

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		557.84	1635.53	0.00	0.00
10.00		548.23	1611.16	0.00	0.00
15.00		538.62	1586.79	0.00	0.00
20.00		529.00	1562.42	0.00	0.00
25.00		519.39	1538.06	0.00	0.00
30.00		509.78	1513.69	0.00	0.00
35.00		508.64	1489.32	0.00	0.00
40.00		518.27	1464.95	0.00	0.00
45.00		525.50	1440.58	0.00	0.00
45.92		95.75	261.46	0.00	0.00
50.00		439.09	1994.84	0.00	0.00
53.00		323.34	1446.37	0.00	0.00
55.00		215.63	494.11	0.00	0.00
60.00		544.65	1220.67	0.00	0.00
65.00		545.59	1199.80	0.00	0.00
70.00		545.34	1178.94	0.00	0.00
75.00		544.05	1158.08	0.00	0.00
80.00		541.79	1137.21	0.00	0.00
85.00		538.66	1116.35	0.00	0.00
90.00		534.73	1095.49	0.00	0.00
92.92		308.81	629.40	0.00	0.00
95.00		222.58	741.09	0.00	0.00
98.92		417.13	1375.26	0.00	0.00
100.00		114.31	199.92	0.00	0.00
105.00		526.83	912.13	0.00	0.00
110.00		520.32	894.72	0.00	0.00
115.00		513.24	877.30	0.00	0.00
120.00		505.62	859.89	0.00	0.00
125.00		497.48	842.48	0.00	0.00
127.09		204.42	346.44	0.00	0.00
130.00		286.66	722.68	0.00	0.00
132.34		227.58	572.37	0.00	0.00
135.00		257.05	339.94	0.00	0.00
140.00		476.48	628.85	0.00	0.00
145.00		466.61	616.66	0.00	0.00
150.00		456.34	604.48	0.00	0.00
155.00		445.67	592.29	0.00	0.00
157.00	(29) appurtenances	5415.27	2263.61	0.00	0.00
160.00		258.98	306.40	0.00	0.00
165.00		423.26	500.92	0.00	0.00
167.00	(16) appurtenances	5869.68	2370.96	0.00	0.00
170.00		245.07	235.62	0.00	0.00
175.00		399.47	382.96	0.00	0.00
177.00	(13) appurtenances	4547.25	2995.17	0.00	0.00
180.00	(1) appurtenances	249.66	184.78	0.00	0.00
	Totals:	**33,479.65**	**47,142.16**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 10	

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 26

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-33.547	-47.094	0.000	0.000	0.000	-4308.8	0.000	0.000	0.000	0.000	0.000
5.00	-33.115	-45.365	0.000	0.000	0.000	-4141.1	-0.087	0.000	0.087	-0.161	0.000
10.00	-32.686	-43.663	0.000	0.000	0.000	-3975.5	-0.343	0.000	0.343	-0.324	0.000
15.00	-32.257	-41.987	0.000	0.000	0.000	-3812.1	-0.771	0.000	0.771	-0.489	0.000
20.00	-31.831	-40.337	0.000	0.000	0.000	-3650.8	-1.373	0.000	1.373	-0.656	0.000
25.00	-31.406	-38.713	0.000	0.000	0.000	-3491.6	-2.151	0.000	2.151	-0.825	0.000
30.00	-30.984	-37.115	0.000	0.000	0.000	-3334.6	-3.106	0.000	3.106	-0.995	0.000
35.00	-30.555	-35.544	0.000	0.000	0.000	-3179.7	-4.241	0.000	4.241	-1.167	0.000
40.00	-30.108	-33.999	0.000	0.000	0.000	-3026.9	-5.557	0.000	5.557	-1.341	0.000
45.00	-29.606	-32.518	0.000	0.000	0.000	-2876.4	-7.056	0.000	7.056	-1.517	0.000
45.92	-29.554	-32.213	0.000	0.000	0.000	-2849.2	-7.350	0.000	7.350	-1.550	0.000
50.00	-29.125	-30.167	0.000	0.000	0.000	-2728.6	-8.740	0.000	8.740	-1.696	0.000
53.00	-28.803	-28.686	0.000	0.000	0.000	-2641.2	-9.841	0.000	9.841	-1.804	0.000
55.00	-28.639	-28.130	0.000	0.000	0.000	-2583.6	-10.612	0.000	10.612	-1.877	0.000
60.00	-28.147	-26.831	0.000	0.000	0.000	-2440.4	-12.685	0.000	12.685	-2.077	0.000
65.00	-27.646	-25.556	0.000	0.000	0.000	-2299.7	-14.967	0.000	14.967	-2.278	0.000
70.00	-27.138	-24.305	0.000	0.000	0.000	-2161.4	-17.460	0.000	17.460	-2.479	0.000
75.00	-26.624	-23.079	0.000	0.000	0.000	-2025.8	-20.164	0.000	20.164	-2.681	0.000
80.00	-26.105	-21.877	0.000	0.000	0.000	-1892.6	-23.080	0.000	23.080	-2.884	0.000
85.00	-25.582	-20.700	0.000	0.000	0.000	-1762.1	-26.208	0.000	26.208	-3.086	0.000
90.00	-25.041	-19.567	0.000	0.000	0.000	-1634.2	-29.547	0.000	29.547	-3.288	0.000
92.92	-24.730	-18.912	0.000	0.000	0.000	-1561.2	-31.592	0.000	31.592	-3.407	0.000
95.00	-24.502	-18.134	0.000	0.000	0.000	-1509.7	-33.097	0.000	33.097	-3.492	0.000
98.92	-24.029	-16.745	0.000	0.000	0.000	-1413.7	-36.027	0.000	36.027	-3.650	0.000
100.00	-23.942	-16.496	0.000	0.000	0.000	-1387.7	-36.860	0.000	36.860	-3.694	0.000
105.00	-23.416	-15.530	0.000	0.000	0.000	-1268.0	-40.847	0.000	40.847	-3.918	0.000
110.00	-22.890	-14.587	0.000	0.000	0.000	-1150.9	-45.066	0.000	45.066	-4.139	0.000
115.00	-22.364	-13.667	0.000	0.000	0.000	-1036.4	-49.514	0.000	49.514	-4.355	0.000
120.00	-21.839	-12.771	0.000	0.000	0.000	-924.65	-54.185	0.000	54.185	-4.565	0.000
125.00	-21.304	-11.919	0.000	0.000	0.000	-815.46	-59.070	0.000	59.070	-4.768	0.000
127.09	-21.091	-11.554	0.000	0.000	0.000	-771.00	-61.171	0.000	61.171	-4.851	0.000
130.00	-20.763	-10.822	0.000	0.000	0.000	-709.56	-64.164	0.000	64.164	-4.965	0.000
132.34	-20.503	-10.239	0.000	0.000	0.000	-661.04	-66.614	0.000	66.614	-5.053	0.000
135.00	-20.246	-9.864	0.000	0.000	0.000	-606.44	-69.458	0.000	69.458	-5.151	0.000
140.00	-19.749	-9.206	0.000	0.000	0.000	-505.21	-74.971	0.000	74.971	-5.380	0.000
145.00	-19.254	-8.573	0.000	0.000	0.000	-406.47	-80.712	0.000	80.712	-5.587	0.000
150.00	-18.763	-7.963	0.000	0.000	0.000	-310.20	-86.654	0.000	86.654	-5.765	0.000
155.00	-18.271	-7.390	0.000	0.000	0.000	-216.39	-92.765	0.000	92.765	-5.910	0.000
157.00	-12.656	-5.687	0.000	0.000	0.000	-179.85	-95.248	0.000	95.248	-5.958	0.000
160.00	-12.373	-5.394	0.000	0.000	0.000	-141.88	-99.006	0.000	99.006	-6.019	0.000
165.00	-11.903	-4.931	0.000	0.000	0.000	-80.019	-105.34	0.000	105.343	-6.094	0.000
167.00	-5.816	-3.196	0.000	0.000	0.000	-56.213	-107.89	0.000	107.897	-6.115	0.000
170.00	-5.548	-2.986	0.000	0.000	0.000	-38.765	-111.74	0.000	111.740	-6.137	0.000
175.00	-5.110	-2.647	0.000	0.000	0.000	-11.025	-118.16	0.000	118.169	-6.158	0.000
177.00	-0.268	-0.157	0.000	0.000	0.000	-0.804	-120.74	0.000	120.745	-6.161	0.000
180.00	-0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	124.608	-6.161	0.000

Resulting Stresses

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 26

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.57	0.82	0.00	0.00	0.00	42.40	42.99	52.0	0.827
5.00	0.55	0.82	0.00	0.00	0.00	42.20	42.78	52.0	0.823
10.00	0.54	0.82	0.00	0.00	0.00	41.97	42.54	52.0	0.818
15.00	0.53	0.83	0.00	0.00	0.00	41.73	42.28	52.0	0.813
20.00	0.52	0.83	0.00	0.00	0.00	41.46	42.00	52.0	0.808
25.00	0.51	0.84	0.00	0.00	0.00	41.17	41.70	52.0	0.802
30.00	0.50	0.84	0.00	0.00	0.00	40.84	41.37	52.0	0.796
35.00	0.49	0.84	0.00	0.00	0.00	40.49	41.00	52.0	0.789
40.00	0.47	0.85	0.00	0.00	0.00	40.11	40.61	52.0	0.781
45.00	0.46	0.85	0.00	0.00	0.00	39.69	40.18	52.0	0.773
45.92	0.46	0.85	0.00	0.00	0.00	39.61	40.10	52.0	0.771
50.00	0.44	0.85	0.00	0.00	0.00	39.24	39.70	52.0	0.764
53.00	0.48	0.98	0.00	0.00	0.00	43.95	44.47	52.0	0.855
55.00	0.48	0.99	0.00	0.00	0.00	43.72	44.23	52.0	0.851
60.00	0.47	0.99	0.00	0.00	0.00	43.08	43.58	52.0	0.838
65.00	0.45	0.99	0.00	0.00	0.00	42.39	42.88	52.0	0.825
70.00	0.44	1.00	0.00	0.00	0.00	41.64	42.12	52.0	0.810
75.00	0.43	1.00	0.00	0.00	0.00	40.84	41.30	52.0	0.794
80.00	0.42	1.00	0.00	0.00	0.00	39.96	40.41	52.0	0.777
85.00	0.40	1.01	0.00	0.00	0.00	39.01	39.45	52.0	0.759
90.00	0.39	1.01	0.00	0.00	0.00	37.98	38.41	52.0	0.739
92.92	0.38	1.01	0.00	0.00	0.00	37.34	37.77	52.0	0.726
95.00	0.37	1.01	0.00	0.00	0.00	36.87	37.28	52.0	0.717
98.92	0.41	1.19	0.00	0.00	0.00	41.54	42.00	52.0	0.808
100.00	0.41	1.20	0.00	0.00	0.00	41.22	41.68	52.0	0.802
105.00	0.39	1.20	0.00	0.00	0.00	39.65	40.10	52.0	0.771
110.00	0.38	1.20	0.00	0.00	0.00	37.94	38.38	52.0	0.738
115.00	0.37	1.21	0.00	0.00	0.00	36.07	36.50	52.0	0.702
120.00	0.35	1.21	0.00	0.00	0.00	34.02	34.44	52.0	0.662
125.00	0.34	1.22	0.00	0.00	0.00	31.77	32.18	52.0	0.619
127.09	0.33	1.22	0.00	0.00	0.00	30.78	31.19	52.0	0.600
130.00	0.31	1.22	0.00	0.00	0.00	29.33	29.72	52.0	0.572
132.34	0.43	1.72	0.00	0.00	0.00	38.82	39.36	52.0	0.757
135.00	0.42	1.73	0.00	0.00	0.00	36.78	37.31	49.8	0.749
140.00	0.40	1.74	0.00	0.00	0.00	32.58	33.12	50.6	0.654
145.00	0.39	1.75	0.00	0.00	0.00	27.94	28.48	51.4	0.554
150.00	0.37	1.76	0.00	0.00	0.00	22.77	23.34	52.0	0.449
155.00	0.35	1.77	0.00	0.00	0.00	17.00	17.62	52.0	0.339
157.00	0.28	1.25	0.00	0.00	0.00	14.52	14.96	52.0	0.288
160.00	0.27	1.24	0.00	0.00	0.00	11.95	12.41	52.0	0.239
165.00	0.25	1.24	0.00	0.00	0.00	7.25	7.81	52.0	0.150
167.00	0.17	0.62	0.00	0.00	0.00	5.25	5.52	52.0	0.106
170.00	0.16	0.60	0.00	0.00	0.00	3.79	4.08	52.0	0.079
175.00	0.15	0.58	0.00	0.00	0.00	1.17	1.65	52.0	0.032
177.00	0.01	0.03	0.00	0.00	0.00	0.09	0.11	52.0	0.002
180.00	0.00	0.03	0.00	0.00	0.00	0.00	0.05	52.0	0.001

Wind Loading - Shaft

Structure: CT02218-S-SBA
Site Name: Colchester
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

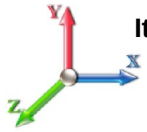
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

10/15/2015

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

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		0.00	1.00	13.871	23.44	368.05	0.720	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	361.76	0.720	0.500	5.00	25.203	18.15	425.4	184.5	1588.2
10.00		0.00	1.00	13.871	23.44	355.47	0.720	0.500	5.00	24.776	17.84	418.2	181.3	1560.6
15.00		0.00	1.00	13.871	23.44	349.19	0.720	0.500	5.00	24.349	17.53	411.0	178.1	1533.1
20.00		0.00	1.00	13.871	23.44	342.90	0.720	0.500	5.00	23.922	17.22	403.8	174.9	1505.5
25.00		0.00	1.00	13.871	23.44	336.61	0.720	0.500	5.00	23.495	16.92	396.6	171.7	1478.0
30.00		0.00	1.00	13.871	23.44	330.32	0.720	0.500	5.00	23.067	16.61	389.3	168.6	1450.4
35.00		0.00	1.02	14.106	23.84	326.77	0.720	0.500	5.00	22.640	16.30	388.6	165.4	1422.9
40.00		0.00	1.06	14.655	24.77	326.60	0.720	0.500	5.00	22.213	15.99	396.1	162.2	1395.3
45.00		0.00	1.09	15.156	25.61	325.57	0.720	0.500	5.00	21.786	15.69	401.8	159.0	1367.8
45.92	Bot - Section 2	0.00	1.10	15.244	25.76	325.30	0.720	0.500	0.92	3.948	2.84	73.2	29.0	248.0
50.00		0.00	1.13	15.620	26.40	323.83	0.720	0.500	4.08	17.666	12.72	335.8	129.2	1934.7
53.00	Top - Section 1	0.00	1.14	15.882	26.84	322.50	0.720	0.500	3.00	12.798	9.21	247.3	93.8	1401.0
55.00		0.00	1.16	16.051	27.13	326.45	0.720	0.500	2.00	8.446	6.08	165.0	62.0	463.4
60.00		0.00	1.19	16.455	27.81	323.69	0.720	0.500	5.00	20.817	14.99	416.8	151.8	1140.7
65.00		0.00	1.21	16.836	28.45	320.48	0.720	0.500	5.00	20.390	14.68	417.7	148.6	1116.6
70.00		0.00	1.24	17.196	29.06	316.89	0.720	0.500	5.00	19.963	14.37	417.7	145.5	1092.6
75.00		0.00	1.26	17.538	29.64	312.96	0.720	0.500	5.00	19.536	14.07	416.9	142.3	1068.5
80.00		0.00	1.29	17.865	30.19	308.72	0.720	0.500	5.00	19.109	13.76	415.4	139.1	1044.5
85.00		0.00	1.31	18.177	30.72	304.21	0.720	0.500	5.00	18.682	13.45	413.2	135.9	1020.5
90.00		0.00	1.33	18.476	31.22	299.45	0.720	0.500	5.00	18.254	13.14	410.4	132.7	996.4
92.92	Bot - Section 3	0.00	1.34	18.645	31.51	296.56	0.720	0.500	2.92	10.451	7.52	237.1	76.3	570.5
95.00		0.00	1.35	18.764	31.71	294.46	0.720	0.500	2.08	7.485	5.39	170.9	54.8	699.3
98.92	Top - Section 2	0.00	1.37	18.981	32.08	290.40	0.720	0.500	3.92	13.871	9.99	320.4	101.1	1294.7
100.00		0.00	1.37	19.041	32.18	293.75	0.720	0.500	1.08	3.790	2.73	87.8	27.8	177.5
105.00		0.00	1.39	19.308	32.63	288.39	0.720	0.500	5.00	17.234	12.41	404.9	125.1	805.5
110.00		0.00	1.41	19.566	33.07	282.84	0.720	0.500	5.00	16.807	12.10	400.1	122.0	784.9
115.00		0.00	1.43	19.816	33.49	277.13	0.720	0.500	5.00	16.380	11.79	395.0	118.8	764.3
120.00		0.00	1.45	20.059	33.90	271.26	0.720	0.500	5.00	15.952	11.49	389.4	115.6	743.7
125.00		0.00	1.46	20.294	34.30	265.24	0.720	0.500	5.00	15.525	11.18	383.4	112.4	723.1
127.09	Bot - Section 4	0.00	1.47	20.390	34.46	262.69	0.720	0.500	2.09	6.353	4.57	157.6	46.4	296.1
130.00		0.00	1.48	20.523	34.68	259.08	0.720	0.500	2.91	8.852	6.37	221.0	64.4	652.1
132.34	Top - Section 3	0.00	1.49	20.628	34.86	256.16	0.720	0.500	2.34	6.995	5.04	175.6	51.0	515.0
135.00		0.00	1.50	20.745	35.06	256.08	0.720	0.500	2.66	7.859	5.66	198.4	57.2	273.7
140.00		0.00	1.51	20.962	35.43	249.68	0.720	0.500	5.00	14.426	10.39	368.0	104.2	501.3
145.00		0.00	1.53	21.173	35.78	243.17	0.720	0.500	5.00	13.999	10.08	360.7	101.1	485.9
150.00		0.00	1.54	21.379	36.13	236.54	0.720	0.500	5.00	13.572	9.77	353.1	97.9	470.6
155.00		0.00	1.56	21.581	36.47	229.81	0.720	0.500	5.00	13.145	9.46	345.2	94.7	455.2
157.00	Appurtenance(s)	0.00	1.56	21.660	36.60	227.09	0.720	0.500	2.00	5.138	3.70	135.4	37.4	178.2
160.00		0.00	1.57	21.777	36.80	222.97	0.720	0.500	3.00	7.579	5.46	200.8	54.9	262.4
165.00		0.00	1.58	21.969	37.13	216.04	0.720	0.500	5.00	12.291	8.85	328.6	88.3	424.5
167.00	Appurtenance(s)	0.00	1.59	22.045	37.26	213.24	0.720	0.500	2.00	4.797	3.45	128.7	34.8	165.9
170.00		0.00	1.60	22.158	37.45	209.02	0.720	0.500	3.00	7.067	5.09	190.5	51.1	244.0
175.00		0.00	1.61	22.342	37.76	201.91	0.720	0.500	5.00	11.437	8.23	310.9	82.0	393.7
177.00	Appurtenance(s)	0.00	1.62	22.415	37.88	199.04	0.720	0.500	2.00	4.455	3.21	121.5	32.3	153.6
180.00	Appurtenance(s)	0.00	1.62	22.522	38.06	194.71	0.720	0.500	3.00	6.554	4.72	179.6	47.3	225.6
								Totals:	**180.00**			**13,924.5**		**37,090.0**

Discrete Appurtenance Forces

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	22.522	38.063	0.00	0.98	11.80	0.000	0.000	37.30	0.00	0.00
2	177.00	Platform w/ Hand Rails	1	22.415	37.881	1.00	56.33	3200.00	0.000	0.000	2133.82	0.00	0.00
3	177.00	LNX-6515DS-VTM	3	22.415	37.881	0.84	30.04	347.10	0.000	0.000	1137.87	0.00	0.00
4	177.00	KRY 112 144/1	3	22.415	37.881	0.75	1.10	42.30	0.000	0.000	41.76	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	22.415	37.881	0.79	9.84	116.10	0.000	0.000	372.57	0.00	0.00
6	177.00	782 11056	3	22.415	37.881	0.82	0.57	13.50	0.000	0.000	21.43	0.00	0.00
7	167.00	LPA-171080/8CF w/ Mount	6	22.045	37.256	1.00	26.88	174.60	0.000	0.000	1001.45	0.00	0.00
8	167.00	Platform w/ Hand Rails (flat)	1	22.045	37.256	1.00	48.00	2600.00	0.000	0.000	1788.31	0.00	0.00
9	167.00	LPA-80080/4CF w/ Mount	6	22.045	37.256	1.00	29.10	0.00	0.000	0.000	1084.16	0.00	0.00
10	167.00	BXA-70063/6CF w/ Mount	3	22.045	37.256	0.75	22.93	172.80	0.000	0.000	854.20	0.00	0.00
11	157.00	RRUS 11	6	21.660	36.605	0.77	14.51	396.00	0.000	0.000	531.02	0.00	0.00
12	157.00	P65-17-XLH-RR	2	21.660	36.605	0.80	19.10	242.00	0.000	0.000	699.30	0.00	0.00
13	157.00	Low Profile Platform-flat	1	21.660	36.605	1.00	31.00	1500.00	0.000	0.000	1134.75	0.00	0.00
14	157.00	LGP21903	6	21.660	36.605	0.76	1.50	47.40	0.000	0.000	55.08	0.00	0.00
15	157.00	LGP21401	6	21.660	36.605	0.66	5.62	127.20	0.000	0.000	205.84	0.00	0.00
16	157.00	DC6-48-60-18-8F	1	21.660	36.605	1.00	2.77	49.50	0.000	0.000	101.40	0.00	0.00
17	157.00	AM-X-CD-16-65-00T	1	21.660	36.605	0.78	6.81	95.00	0.000	0.000	249.26	0.00	0.00
18	157.00	7770 w/ Mount Pipe	6	21.660	36.605	0.75	37.13	0.00	0.000	0.000	1358.96	0.00	0.00
						Totals:		**9,135.30**			**12,808.48**		

Total Applied Force Summary

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 14	

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

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		425.39	1819.99	0.00	0.00
10.00		418.18	1792.44	0.00	0.00
15.00		410.97	1764.89	0.00	0.00
20.00		403.76	1737.34	0.00	0.00
25.00		396.55	1709.79	0.00	0.00
30.00		389.34	1682.24	0.00	0.00
35.00		388.61	1654.70	0.00	0.00
40.00		396.11	1627.15	0.00	0.00
45.00		401.79	1599.60	0.00	0.00
45.92		73.23	290.51	0.00	0.00
50.00		335.77	2124.01	0.00	0.00
53.00		247.32	1540.13	0.00	0.00
55.00		164.97	556.10	0.00	0.00
60.00		416.81	1372.48	0.00	0.00
65.00		417.70	1348.43	0.00	0.00
70.00		417.70	1324.39	0.00	0.00
75.00		416.90	1300.35	0.00	0.00
80.00		415.38	1276.30	0.00	0.00
85.00		413.19	1252.26	0.00	0.00
90.00		410.39	1228.22	0.00	0.00
92.92		237.11	705.74	0.00	0.00
95.00		170.89	795.88	0.00	0.00
98.92		320.37	1476.31	0.00	0.00
100.00		87.82	227.73	0.00	0.00
105.00		404.89	1037.27	0.00	0.00
110.00		400.14	1016.68	0.00	0.00
115.00		394.95	996.08	0.00	0.00
120.00		389.36	975.49	0.00	0.00
125.00		383.38	954.90	0.00	0.00
127.09		157.62	392.81	0.00	0.00
130.00		221.04	787.12	0.00	0.00
132.34		175.56	623.36	0.00	0.00
135.00		198.38	397.16	0.00	0.00
140.00		367.97	733.09	0.00	0.00
145.00		360.67	717.72	0.00	0.00
150.00		353.07	702.36	0.00	0.00
155.00		345.18	687.00	0.00	0.00
157.00	(29) appurtenances	4471.03	2727.98	0.00	0.00
160.00		200.84	361.32	0.00	0.00
165.00		328.56	589.27	0.00	0.00
167.00	(16) appurtenances	4856.79	3179.19	0.00	0.00
170.00		190.53	286.72	0.00	0.00
175.00		310.91	464.94	0.00	0.00
177.00	(13) appurtenances	3828.97	3901.06	0.00	0.00
180.00	(1) appurtenances	216.93	237.36	0.00	0.00
	Totals:	**26,733.01**	**53,975.87**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-26.795	-53.944	0.000	0.000	0.000	-3521.0	0.000	0.000	0.000	0.000	0.000
5.00	-26.488	-52.064	0.000	0.000	0.000	-3387.0	-0.071	0.000	0.071	-0.132	0.000
10.00	-26.182	-50.211	0.000	0.000	0.000	-3254.6	-0.280	0.000	0.280	-0.265	0.000
15.00	-25.875	-48.388	0.000	0.000	0.000	-3123.7	-0.631	0.000	0.631	-0.400	0.000
20.00	-25.569	-46.592	0.000	0.000	0.000	-2994.3	-1.123	0.000	1.123	-0.537	0.000
25.00	-25.264	-44.826	0.000	0.000	0.000	-2866.5	-1.760	0.000	1.760	-0.675	0.000
30.00	-24.958	-43.087	0.000	0.000	0.000	-2740.2	-2.543	0.000	2.543	-0.816	0.000
35.00	-24.647	-41.378	0.000	0.000	0.000	-2615.4	-3.473	0.000	3.473	-0.957	0.000
40.00	-24.322	-39.697	0.000	0.000	0.000	-2492.1	-4.552	0.000	4.552	-1.100	0.000
45.00	-23.944	-38.070	0.000	0.000	0.000	-2370.5	-5.782	0.000	5.782	-1.245	0.000
45.92	-23.913	-37.751	0.000	0.000	0.000	-2348.6	-6.024	0.000	6.024	-1.272	0.000
50.00	-23.593	-35.592	0.000	0.000	0.000	-2250.9	-7.164	0.000	7.164	-1.392	0.000
53.00	-23.351	-34.028	0.000	0.000	0.000	-2180.2	-8.068	0.000	8.068	-1.482	0.000
55.00	-23.238	-33.431	0.000	0.000	0.000	-2133.5	-8.702	0.000	8.702	-1.542	0.000
60.00	-22.875	-32.005	0.000	0.000	0.000	-2017.3	-10.405	0.000	10.405	-1.707	0.000
65.00	-22.504	-30.605	0.000	0.000	0.000	-1902.9	-12.282	0.000	12.282	-1.873	0.000
70.00	-22.127	-29.231	0.000	0.000	0.000	-1790.4	-14.333	0.000	14.333	-2.040	0.000
75.00	-21.744	-27.883	0.000	0.000	0.000	-1679.7	-16.559	0.000	16.559	-2.207	0.000
80.00	-21.356	-26.562	0.000	0.000	0.000	-1571.0	-18.960	0.000	18.960	-2.375	0.000
85.00	-20.964	-25.268	0.000	0.000	0.000	-1464.3	-21.537	0.000	21.537	-2.543	0.000
90.00	-20.553	-24.012	0.000	0.000	0.000	-1359.4	-24.290	0.000	24.290	-2.711	0.000
92.92	-20.317	-23.288	0.000	0.000	0.000	-1299.5	-25.977	0.000	25.977	-2.810	0.000
95.00	-20.146	-22.466	0.000	0.000	0.000	-1257.2	-27.219	0.000	27.219	-2.881	0.000
98.92	-19.781	-20.980	0.000	0.000	0.000	-1178.3	-29.637	0.000	29.637	-3.012	0.000
100.00	-19.722	-20.718	0.000	0.000	0.000	-1156.8	-30.325	0.000	30.325	-3.049	0.000
105.00	-19.325	-19.642	0.000	0.000	0.000	-1058.2	-33.618	0.000	33.618	-3.237	0.000
110.00	-18.926	-18.590	0.000	0.000	0.000	-961.64	-37.106	0.000	37.106	-3.421	0.000
115.00	-18.525	-17.562	0.000	0.000	0.000	-867.02	-40.784	0.000	40.784	-3.601	0.000
120.00	-18.124	-16.559	0.000	0.000	0.000	-774.39	-44.648	0.000	44.648	-3.777	0.000
125.00	-17.710	-15.596	0.000	0.000	0.000	-683.77	-48.693	0.000	48.693	-3.947	0.000
127.09	-17.547	-15.189	0.000	0.000	0.000	-646.82	-50.433	0.000	50.433	-4.017	0.000
130.00	-17.292	-14.394	0.000	0.000	0.000	-595.70	-52.913	0.000	52.913	-4.112	0.000
132.34	-17.091	-13.762	0.000	0.000	0.000	-555.30	-54.943	0.000	54.943	-4.187	0.000
135.00	-16.896	-13.339	0.000	0.000	0.000	-509.78	-57.301	0.000	57.301	-4.269	0.000
140.00	-16.514	-12.583	0.000	0.000	0.000	-425.30	-61.873	0.000	61.873	-4.462	0.000
145.00	-16.131	-11.851	0.000	0.000	0.000	-342.73	-66.638	0.000	66.638	-4.636	0.000
150.00	-15.748	-11.142	0.000	0.000	0.000	-262.07	-71.572	0.000	71.572	-4.786	0.000
155.00	-15.361	-10.466	0.000	0.000	0.000	-183.33	-76.649	0.000	76.649	-4.909	0.000
157.00	-10.678	-8.124	0.000	0.000	0.000	-152.61	-78.713	0.000	78.713	-4.950	0.000
160.00	-10.455	-7.770	0.000	0.000	0.000	-120.58	-81.837	0.000	81.837	-5.002	0.000
165.00	-10.081	-7.206	0.000	0.000	0.000	-68.308	-87.106	0.000	87.106	-5.065	0.000
167.00	-4.963	-4.467	0.000	0.000	0.000	-48.147	-89.230	0.000	89.230	-5.083	0.000
170.00	-4.750	-4.197	0.000	0.000	0.000	-33.257	-92.427	0.000	92.427	-5.102	0.000
175.00	-4.399	-3.761	0.000	0.000	0.000	-9.510	-97.775	0.000	97.775	-5.120	0.000
177.00	-0.237	-0.217	0.000	0.000	0.000	-0.711	-99.917	0.000	99.917	-5.122	0.000
180.00	-0.217	0.000	0.000	0.000	0.000	0.000	0.000	0.000	103.131	-5.122	0.000

Resulting Stresses

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.65	0.65	0.00	0.00	0.00	34.65	35.32	52.0	0.679
5.00	0.64	0.65	0.00	0.00	0.00	34.51	35.17	52.0	0.676
10.00	0.62	0.66	0.00	0.00	0.00	34.36	35.01	52.0	0.673
15.00	0.61	0.66	0.00	0.00	0.00	34.19	34.82	52.0	0.670
20.00	0.60	0.67	0.00	0.00	0.00	34.00	34.62	52.0	0.666
25.00	0.59	0.67	0.00	0.00	0.00	33.80	34.40	52.0	0.662
30.00	0.58	0.68	0.00	0.00	0.00	33.56	34.16	52.0	0.657
35.00	0.57	0.68	0.00	0.00	0.00	33.31	33.89	52.0	0.652
40.00	0.55	0.69	0.00	0.00	0.00	33.02	33.60	52.0	0.646
45.00	0.54	0.69	0.00	0.00	0.00	32.71	33.27	52.0	0.640
45.92	0.54	0.69	0.00	0.00	0.00	32.65	33.21	52.0	0.639
50.00	0.52	0.69	0.00	0.00	0.00	32.37	32.91	52.0	0.633
53.00	0.57	0.80	0.00	0.00	0.00	36.28	36.88	52.0	0.709
55.00	0.57	0.80	0.00	0.00	0.00	36.10	36.69	52.0	0.706
60.00	0.56	0.80	0.00	0.00	0.00	35.61	36.19	52.0	0.696
65.00	0.54	0.81	0.00	0.00	0.00	35.08	35.65	52.0	0.686
70.00	0.53	0.81	0.00	0.00	0.00	34.50	35.05	52.0	0.674
75.00	0.52	0.82	0.00	0.00	0.00	33.86	34.41	52.0	0.662
80.00	0.50	0.82	0.00	0.00	0.00	33.17	33.71	52.0	0.648
85.00	0.49	0.83	0.00	0.00	0.00	32.42	32.94	52.0	0.633
90.00	0.48	0.83	0.00	0.00	0.00	31.59	32.10	52.0	0.617
92.92	0.47	0.83	0.00	0.00	0.00	31.08	31.59	52.0	0.607
95.00	0.46	0.83	0.00	0.00	0.00	30.71	31.20	52.0	0.600
98.92	0.52	0.98	0.00	0.00	0.00	34.62	35.18	52.0	0.677
100.00	0.51	0.98	0.00	0.00	0.00	34.37	34.92	52.0	0.672
105.00	0.50	0.99	0.00	0.00	0.00	33.10	33.64	52.0	0.647
110.00	0.48	1.00	0.00	0.00	0.00	31.70	32.23	52.0	0.620
115.00	0.47	1.00	0.00	0.00	0.00	30.17	30.69	52.0	0.590
120.00	0.45	1.01	0.00	0.00	0.00	28.49	29.00	52.0	0.558
125.00	0.44	1.01	0.00	0.00	0.00	26.64	27.14	52.0	0.522
127.09	0.43	1.02	0.00	0.00	0.00	25.83	26.32	52.0	0.506
130.00	0.42	1.02	0.00	0.00	0.00	24.62	25.10	52.0	0.483
132.34	0.57	1.44	0.00	0.00	0.00	32.61	33.28	52.0	0.640
135.00	0.56	1.44	0.00	0.00	0.00	30.92	31.58	49.8	0.633
140.00	0.55	1.45	0.00	0.00	0.00	27.43	28.09	50.6	0.555
145.00	0.53	1.47	0.00	0.00	0.00	23.55	24.22	51.4	0.472
150.00	0.52	1.48	0.00	0.00	0.00	19.23	19.92	52.0	0.383
155.00	0.50	1.49	0.00	0.00	0.00	14.40	15.12	52.0	0.291
157.00	0.40	1.05	0.00	0.00	0.00	12.32	12.85	52.0	0.247
160.00	0.39	1.05	0.00	0.00	0.00	10.16	10.70	52.0	0.206
165.00	0.37	1.05	0.00	0.00	0.00	6.19	6.81	52.0	0.131
167.00	0.23	0.53	0.00	0.00	0.00	4.50	4.82	52.0	0.093
170.00	0.22	0.51	0.00	0.00	0.00	3.25	3.59	52.0	0.069
175.00	0.21	0.50	0.00	0.00	0.00	1.01	1.49	52.0	0.029
177.00	0.01	0.03	0.00	0.00	0.00	0.08	0.10	52.0	0.002
180.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	52.0	0.001

Wind Loading - Shaft

Structure: CT02218-S-SBA
Site Name: Colchester
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

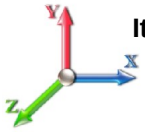
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

10/15/2015

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

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		0.00	1.00	6.400	10.82	250.00	0.720	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.82	245.73	0.720	0.000	5.00	24.786	17.85	193.0	0.0	1403.7
10.00		0.00	1.00	6.400	10.82	241.46	0.720	0.000	5.00	24.359	17.54	189.7	0.0	1379.4
15.00		0.00	1.00	6.400	10.82	237.19	0.720	0.000	5.00	23.932	17.23	186.4	0.0	1355.0
20.00		0.00	1.00	6.400	10.82	232.91	0.720	0.000	5.00	23.505	16.92	183.0	0.0	1330.6
25.00		0.00	1.00	6.400	10.82	228.64	0.720	0.000	5.00	23.078	16.62	179.7	0.0	1306.3
30.00		0.00	1.00	6.400	10.82	224.37	0.720	0.000	5.00	22.651	16.31	176.4	0.0	1281.9
35.00		0.00	1.02	6.509	11.00	221.96	0.720	0.000	5.00	22.224	16.00	176.0	0.0	1257.5
40.00		0.00	1.06	6.762	11.43	221.84	0.720	0.000	5.00	21.797	15.69	179.3	0.0	1233.1
45.00		0.00	1.09	6.993	11.82	221.14	0.720	0.000	5.00	21.369	15.39	181.8	0.0	1208.8
45.92	Bot - Section 2	0.00	1.10	7.033	11.89	220.96	0.720	0.000	0.92	3.871	2.79	33.1	0.0	219.0
50.00		0.00	1.13	7.207	12.18	219.96	0.720	0.000	4.08	17.326	12.47	151.9	0.0	1805.5
53.00	Top - Section 1	0.00	1.14	7.328	12.38	219.06	0.720	0.000	3.00	12.548	9.03	111.9	0.0	1307.3
55.00		0.00	1.16	7.406	12.52	221.75	0.720	0.000	2.00	8.280	5.96	74.6	0.0	401.4
60.00		0.00	1.19	7.592	12.83	219.87	0.720	0.000	5.00	20.401	14.69	188.5	0.0	988.9
65.00		0.00	1.21	7.768	13.13	217.69	0.720	0.000	5.00	19.973	14.38	188.8	0.0	968.0
70.00		0.00	1.24	7.934	13.41	215.25	0.720	0.000	5.00	19.546	14.07	188.7	0.0	947.1
75.00		0.00	1.26	8.092	13.68	212.58	0.720	0.000	5.00	19.119	13.77	188.3	0.0	926.3
80.00		0.00	1.29	8.242	13.93	209.70	0.720	0.000	5.00	18.692	13.46	187.5	0.0	905.4
85.00		0.00	1.31	8.387	14.17	206.64	0.720	0.000	5.00	18.265	13.15	186.4	0.0	884.5
90.00		0.00	1.33	8.525	14.41	203.40	0.720	0.000	5.00	17.838	12.84	185.0	0.0	863.7
92.92	Bot - Section 3	0.00	1.34	8.603	14.54	201.44	0.720	0.000	2.92	10.208	7.35	106.9	0.0	494.2
95.00		0.00	1.35	8.657	14.63	200.01	0.720	0.000	2.08	7.311	5.26	77.0	0.0	644.5
98.92	Top - Section 2	0.00	1.37	8.758	14.80	197.26	0.720	0.000	3.92	13.544	9.75	144.3	0.0	1193.7
100.00		0.00	1.37	8.785	14.85	199.53	0.720	0.000	1.08	3.700	2.66	39.6	0.0	149.7
105.00		0.00	1.39	8.908	15.06	195.89	0.720	0.000	5.00	16.817	12.11	182.3	0.0	680.3
110.00		0.00	1.41	9.028	15.26	192.12	0.720	0.000	5.00	16.390	11.80	180.0	0.0	662.9
115.00		0.00	1.43	9.143	15.45	188.24	0.720	0.000	5.00	15.963	11.49	177.6	0.0	645.5
120.00		0.00	1.45	9.255	15.64	184.25	0.720	0.000	5.00	15.536	11.19	175.0	0.0	628.1
125.00		0.00	1.46	9.363	15.82	180.17	0.720	0.000	5.00	15.109	10.88	172.1	0.0	610.7
127.09	Bot - Section 4	0.00	1.47	9.408	15.90	178.43	0.720	0.000	2.09	6.179	4.45	70.7	0.0	249.7
130.00		0.00	1.48	9.469	16.00	175.98	0.720	0.000	2.91	8.609	6.20	99.2	0.0	587.6
132.34	Top - Section 3	0.00	1.49	9.517	16.08	174.00	0.720	0.000	2.34	6.800	4.90	78.7	0.0	464.0
135.00		0.00	1.50	9.572	16.18	173.94	0.720	0.000	2.66	7.637	5.50	88.9	0.0	216.5
140.00		0.00	1.51	9.672	16.35	169.60	0.720	0.000	5.00	14.010	10.09	164.9	0.0	397.0
145.00		0.00	1.53	9.769	16.51	165.17	0.720	0.000	5.00	13.583	9.78	161.5	0.0	384.9
150.00		0.00	1.54	9.864	16.67	160.67	0.720	0.000	5.00	13.156	9.47	157.9	0.0	372.7
155.00		0.00	1.56	9.957	16.83	156.10	0.720	0.000	5.00	12.728	9.16	154.2	0.0	360.5
157.00	Appurtenance(s)	0.00	1.56	9.994	16.89	154.25	0.720	0.000	2.00	4.972	3.58	60.5	0.0	140.8
160.00		0.00	1.57	10.048	16.98	151.46	0.720	0.000	3.00	7.329	5.28	89.6	0.0	207.5
165.00		0.00	1.58	10.136	17.13	146.75	0.720	0.000	5.00	11.874	8.55	146.5	0.0	336.1
167.00	Appurtenance(s)	0.00	1.59	10.171	17.19	144.85	0.720	0.000	2.00	4.630	3.33	57.3	0.0	131.0
170.00		0.00	1.60	10.223	17.28	141.98	0.720	0.000	3.00	6.817	4.91	84.8	0.0	192.9
175.00		0.00	1.61	10.308	17.42	137.15	0.720	0.000	5.00	11.020	7.93	138.2	0.0	311.8
177.00	Appurtenance(s)	0.00	1.62	10.342	17.48	135.20	0.720	0.000	2.00	4.288	3.09	54.0	0.0	121.3
180.00	Appurtenance(s)	0.00	1.62	10.392	17.56	132.26	0.720	0.000	3.00	6.304	4.54	79.7	0.0	178.3
								Totals:	**180.00**			**6,271.4**		**32,335.6**

Discrete Appurtenance Forces

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	180.00	6' Lightning rod	1	10.392	17.562	0.00	0.38	6.50	0.000	0.000	6.67	0.00	0.00
2	177.00	Platform w/ Hand Rails	1	10.342	17.478	1.00	48.33	2600.00	0.000	0.000	844.70	0.00	0.00
3	177.00	LNX-6515DS-VTM	3	10.342	17.478	0.84	28.85	150.90	0.000	0.000	504.30	0.00	0.00
4	177.00	KRY 112 144/1	3	10.342	17.478	0.72	0.89	33.00	0.000	0.000	15.48	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	10.342	17.478	0.78	8.47	56.10	0.000	0.000	148.05	0.00	0.00
6	177.00	782 11056	3	10.342	17.478	0.78	0.40	5.40	0.000	0.000	6.95	0.00	0.00
7	167.00	LPA-171080/8CF w/ Mount	6	10.171	17.190	1.00	25.50	51.00	0.000	0.000	438.34	0.00	0.00
8	167.00	Platform w/ Hand Rails (flat)	1	10.171	17.190	1.00	40.00	2000.00	0.000	0.000	687.59	0.00	0.00
9	167.00	LPA-80080/4CF w/ Mount	6	10.171	17.190	1.00	27.72	72.00	0.000	0.000	476.50	0.00	0.00
10	167.00	BXA-70063/6CF w/ Mount	3	10.171	17.190	0.74	21.60	51.00	0.000	0.000	371.31	0.00	0.00
11	157.00	RRUS 11	6	9.994	16.889	0.76	13.41	304.20	0.000	0.000	226.42	0.00	0.00
12	157.00	P65-17-XLH-RR	2	9.994	16.889	0.80	18.34	118.00	0.000	0.000	309.68	0.00	0.00
13	157.00	Low Profile Platform-flat	1	9.994	16.889	1.00	25.00	1200.00	0.000	0.000	422.23	0.00	0.00
14	157.00	LGP21903	6	9.994	16.889	0.74	1.20	33.00	0.000	0.000	20.25	0.00	0.00
15	157.00	LGP21401	6	9.994	16.889	0.64	4.95	84.60	0.000	0.000	83.66	0.00	0.00
16	157.00	DC6-48-60-18-8F	1	9.994	16.889	1.00	2.57	31.80	0.000	0.000	43.40	0.00	0.00
17	157.00	AM-X-CD-16-65-00T	1	9.994	16.889	0.78	6.44	48.50	0.000	0.000	108.81	0.00	0.00
18	157.00	7770 w/ Mount Pipe	6	9.994	16.889	0.75	35.46	210.00	0.000	0.000	598.89	0.00	0.00
						Totals:		**7,056.00**			**5,313.22**		

Total Applied Force Summary

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

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		193.02	1635.53	0.00	0.00
10.00		189.70	1611.16	0.00	0.00
15.00		186.37	1586.79	0.00	0.00
20.00		183.05	1562.42	0.00	0.00
25.00		179.72	1538.06	0.00	0.00
30.00		176.39	1513.69	0.00	0.00
35.00		176.00	1489.32	0.00	0.00
40.00		179.33	1464.95	0.00	0.00
45.00		181.83	1440.58	0.00	0.00
45.92		33.13	261.46	0.00	0.00
50.00		151.94	1994.84	0.00	0.00
53.00		111.88	1446.37	0.00	0.00
55.00		74.61	494.11	0.00	0.00
60.00		188.46	1220.67	0.00	0.00
65.00		188.78	1199.80	0.00	0.00
70.00		188.70	1178.94	0.00	0.00
75.00		188.25	1158.08	0.00	0.00
80.00		187.47	1137.21	0.00	0.00
85.00		186.39	1116.35	0.00	0.00
90.00		185.03	1095.49	0.00	0.00
92.92		106.86	629.40	0.00	0.00
95.00		77.02	741.09	0.00	0.00
98.92		144.33	1375.26	0.00	0.00
100.00		39.55	199.92	0.00	0.00
105.00		182.29	912.13	0.00	0.00
110.00		180.04	894.72	0.00	0.00
115.00		177.59	877.30	0.00	0.00
120.00		174.95	859.89	0.00	0.00
125.00		172.14	842.48	0.00	0.00
127.09		70.73	346.44	0.00	0.00
130.00		99.19	722.68	0.00	0.00
132.34		78.75	572.37	0.00	0.00
135.00		88.94	339.94	0.00	0.00
140.00		164.87	628.85	0.00	0.00
145.00		161.46	616.66	0.00	0.00
150.00		157.90	604.48	0.00	0.00
155.00		154.21	592.29	0.00	0.00
157.00	(29) appurtenances	1873.79	2263.61	0.00	0.00
160.00		89.61	306.40	0.00	0.00
165.00		146.46	500.92	0.00	0.00
167.00	(16) appurtenances	2031.03	2370.96	0.00	0.00
170.00		84.80	235.62	0.00	0.00
175.00		138.22	382.96	0.00	0.00
177.00	(13) appurtenances	1573.44	2995.17	0.00	0.00
180.00	(1) appurtenances	86.39	184.78	0.00	0.00
	Totals:	**11,584.65**	**47,142.16**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT02218-S-SB	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 20	

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-11.608	-47.136	0.000	0.000	0.000	-1493.1	0.000	0.000	0.000	0.000	0.000
5.00	-11.458	-45.490	0.000	0.000	0.000	-1435.0	-0.030	0.000	0.030	-0.056	0.000
10.00	-11.310	-43.868	0.000	0.000	0.000	-1377.7	-0.119	0.000	0.119	-0.112	0.000
15.00	-11.162	-42.270	0.000	0.000	0.000	-1321.2	-0.267	0.000	0.267	-0.170	0.000
20.00	-11.015	-40.697	0.000	0.000	0.000	-1265.4	-0.476	0.000	0.476	-0.227	0.000
25.00	-10.868	-39.149	0.000	0.000	0.000	-1210.3	-0.745	0.000	0.745	-0.286	0.000
30.00	-10.723	-37.625	0.000	0.000	0.000	-1156.0	-1.076	0.000	1.076	-0.345	0.000
35.00	-10.575	-36.126	0.000	0.000	0.000	-1102.4	-1.470	0.000	1.470	-0.405	0.000
40.00	-10.421	-34.651	0.000	0.000	0.000	-1049.5	-1.926	0.000	1.926	-0.465	0.000
45.00	-10.248	-33.206	0.000	0.000	0.000	-997.43	-2.446	0.000	2.446	-0.526	0.000
45.92	-10.230	-32.939	0.000	0.000	0.000	-988.04	-2.548	0.000	2.548	-0.537	0.000
50.00	-10.082	-30.938	0.000	0.000	0.000	-946.26	-3.030	0.000	3.030	-0.588	0.000
53.00	-9.971	-29.488	0.000	0.000	0.000	-916.02	-3.411	0.000	3.411	-0.625	0.000
55.00	-9.915	-28.986	0.000	0.000	0.000	-896.08	-3.679	0.000	3.679	-0.651	0.000
60.00	-9.746	-27.756	0.000	0.000	0.000	-846.50	-4.397	0.000	4.397	-0.720	0.000
65.00	-9.573	-26.547	0.000	0.000	0.000	-797.78	-5.189	0.000	5.189	-0.790	0.000
70.00	-9.399	-25.360	0.000	0.000	0.000	-749.91	-6.053	0.000	6.053	-0.860	0.000
75.00	-9.222	-24.193	0.000	0.000	0.000	-702.92	-6.991	0.000	6.991	-0.930	0.000
80.00	-9.044	-23.048	0.000	0.000	0.000	-656.81	-8.003	0.000	8.003	-1.000	0.000
85.00	-8.864	-21.925	0.000	0.000	0.000	-611.59	-9.088	0.000	9.088	-1.070	0.000
90.00	-8.678	-20.825	0.000	0.000	0.000	-567.27	-10.246	0.000	10.246	-1.140	0.000
92.92	-8.571	-20.192	0.000	0.000	0.000	-541.96	-10.956	0.000	10.956	-1.182	0.000
95.00	-8.493	-19.447	0.000	0.000	0.000	-524.10	-11.478	0.000	11.478	-1.211	0.000
98.92	-8.330	-18.070	0.000	0.000	0.000	-490.84	-12.494	0.000	12.494	-1.266	0.000
100.00	-8.301	-17.864	0.000	0.000	0.000	-481.82	-12.784	0.000	12.784	-1.281	0.000
105.00	-8.120	-16.945	0.000	0.000	0.000	-440.31	-14.167	0.000	14.167	-1.359	0.000
110.00	-7.940	-16.045	0.000	0.000	0.000	-399.71	-15.632	0.000	15.632	-1.436	0.000
115.00	-7.759	-15.162	0.000	0.000	0.000	-360.02	-17.176	0.000	17.176	-1.511	0.000
120.00	-7.579	-14.298	0.000	0.000	0.000	-321.22	-18.798	0.000	18.798	-1.584	0.000
125.00	-7.395	-13.454	0.000	0.000	0.000	-283.33	-20.495	0.000	20.495	-1.654	0.000
127.09	-7.322	-13.106	0.000	0.000	0.000	-267.90	-21.224	0.000	21.224	-1.683	0.000
130.00	-7.209	-12.382	0.000	0.000	0.000	-246.57	-22.264	0.000	22.264	-1.723	0.000
132.34	-7.119	-11.808	0.000	0.000	0.000	-229.72	-23.115	0.000	23.115	-1.753	0.000
135.00	-7.031	-11.464	0.000	0.000	0.000	-210.76	-24.103	0.000	24.103	-1.787	0.000
140.00	-6.861	-10.832	0.000	0.000	0.000	-175.61	-26.018	0.000	26.018	-1.867	0.000
145.00	-6.691	-10.213	0.000	0.000	0.000	-141.30	-28.013	0.000	28.013	-1.939	0.000
150.00	-6.522	-9.608	0.000	0.000	0.000	-107.85	-30.078	0.000	30.078	-2.001	0.000
155.00	-6.352	-9.018	0.000	0.000	0.000	-75.242	-32.202	0.000	32.202	-2.051	0.000
157.00	-4.400	-6.822	0.000	0.000	0.000	-62.539	-33.065	0.000	33.065	-2.068	0.000
160.00	-4.302	-6.517	0.000	0.000	0.000	-49.338	-34.372	0.000	34.372	-2.089	0.000
165.00	-4.139	-6.021	0.000	0.000	0.000	-27.827	-36.575	0.000	36.575	-2.115	0.000
167.00	-2.022	-3.726	0.000	0.000	0.000	-19.548	-37.463	0.000	37.463	-2.122	0.000
170.00	-1.929	-3.493	0.000	0.000	0.000	-13.481	-38.799	0.000	38.799	-2.130	0.000
175.00	-1.777	-3.116	0.000	0.000	0.000	-3.834	-41.034	0.000	41.034	-2.138	0.000
177.00	-0.093	-0.181	0.000	0.000	0.000	-0.280	-41.930	0.000	41.930	-2.138	0.000
180.00	-0.086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.273	-2.138	0.000

Resulting Stresses

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.57	0.28	0.00	0.00	0.00	14.69	15.27	52.0	0.294
5.00	0.56	0.28	0.00	0.00	0.00	14.62	15.19	52.0	0.292
10.00	0.55	0.28	0.00	0.00	0.00	14.55	15.10	52.0	0.290
15.00	0.54	0.29	0.00	0.00	0.00	14.46	15.01	52.0	0.289
20.00	0.53	0.29	0.00	0.00	0.00	14.37	14.90	52.0	0.287
25.00	0.51	0.29	0.00	0.00	0.00	14.27	14.79	52.0	0.284
30.00	0.50	0.29	0.00	0.00	0.00	14.16	14.67	52.0	0.282
35.00	0.49	0.29	0.00	0.00	0.00	14.04	14.54	52.0	0.280
40.00	0.48	0.29	0.00	0.00	0.00	13.91	14.40	52.0	0.277
45.00	0.47	0.29	0.00	0.00	0.00	13.76	14.24	52.0	0.274
45.92	0.47	0.30	0.00	0.00	0.00	13.74	14.21	52.0	0.273
50.00	0.45	0.30	0.00	0.00	0.00	13.61	14.07	52.0	0.270
53.00	0.50	0.34	0.00	0.00	0.00	15.24	15.75	52.0	0.303
55.00	0.49	0.34	0.00	0.00	0.00	15.16	15.67	52.0	0.301
60.00	0.48	0.34	0.00	0.00	0.00	14.94	15.44	52.0	0.297
65.00	0.47	0.34	0.00	0.00	0.00	14.71	15.19	52.0	0.292
70.00	0.46	0.35	0.00	0.00	0.00	14.45	14.92	52.0	0.287
75.00	0.45	0.35	0.00	0.00	0.00	14.17	14.63	52.0	0.281
80.00	0.44	0.35	0.00	0.00	0.00	13.87	14.32	52.0	0.275
85.00	0.43	0.35	0.00	0.00	0.00	13.54	13.98	52.0	0.269
90.00	0.42	0.35	0.00	0.00	0.00	13.18	13.61	52.0	0.262
92.92	0.41	0.35	0.00	0.00	0.00	12.96	13.39	52.0	0.257
95.00	0.40	0.35	0.00	0.00	0.00	12.80	13.21	52.0	0.254
98.92	0.44	0.41	0.00	0.00	0.00	14.42	14.88	52.0	0.286
100.00	0.44	0.41	0.00	0.00	0.00	14.31	14.77	52.0	0.284
105.00	0.43	0.42	0.00	0.00	0.00	13.77	14.22	52.0	0.273
110.00	0.42	0.42	0.00	0.00	0.00	13.18	13.61	52.0	0.262
115.00	0.41	0.42	0.00	0.00	0.00	12.53	12.96	52.0	0.249
120.00	0.39	0.42	0.00	0.00	0.00	11.82	12.23	52.0	0.235
125.00	0.38	0.42	0.00	0.00	0.00	11.04	11.44	52.0	0.220
127.09	0.37	0.42	0.00	0.00	0.00	10.70	11.10	52.0	0.213
130.00	0.36	0.42	0.00	0.00	0.00	10.19	10.58	52.0	0.203
132.34	0.49	0.60	0.00	0.00	0.00	13.49	14.02	52.0	0.270
135.00	0.48	0.60	0.00	0.00	0.00	12.78	13.31	49.8	0.267
140.00	0.47	0.60	0.00	0.00	0.00	11.33	11.84	50.6	0.234
145.00	0.46	0.61	0.00	0.00	0.00	9.71	10.22	51.4	0.199
150.00	0.45	0.61	0.00	0.00	0.00	7.92	8.43	52.0	0.162
155.00	0.43	0.62	0.00	0.00	0.00	5.91	6.43	52.0	0.124
157.00	0.33	0.43	0.00	0.00	0.00	5.05	5.43	52.0	0.105
160.00	0.32	0.43	0.00	0.00	0.00	4.16	4.54	52.0	0.087
165.00	0.31	0.43	0.00	0.00	0.00	2.52	2.93	52.0	0.056
167.00	0.19	0.21	0.00	0.00	0.00	1.83	2.05	52.0	0.039
170.00	0.19	0.21	0.00	0.00	0.00	1.32	1.55	52.0	0.030
175.00	0.17	0.20	0.00	0.00	0.00	0.41	0.67	52.0	0.013
177.00	0.01	0.01	0.00	0.00	0.00	0.03	0.04	52.0	0.001
180.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	52.0	0.000

Final Analysis Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-F	10/15/2015	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 22	

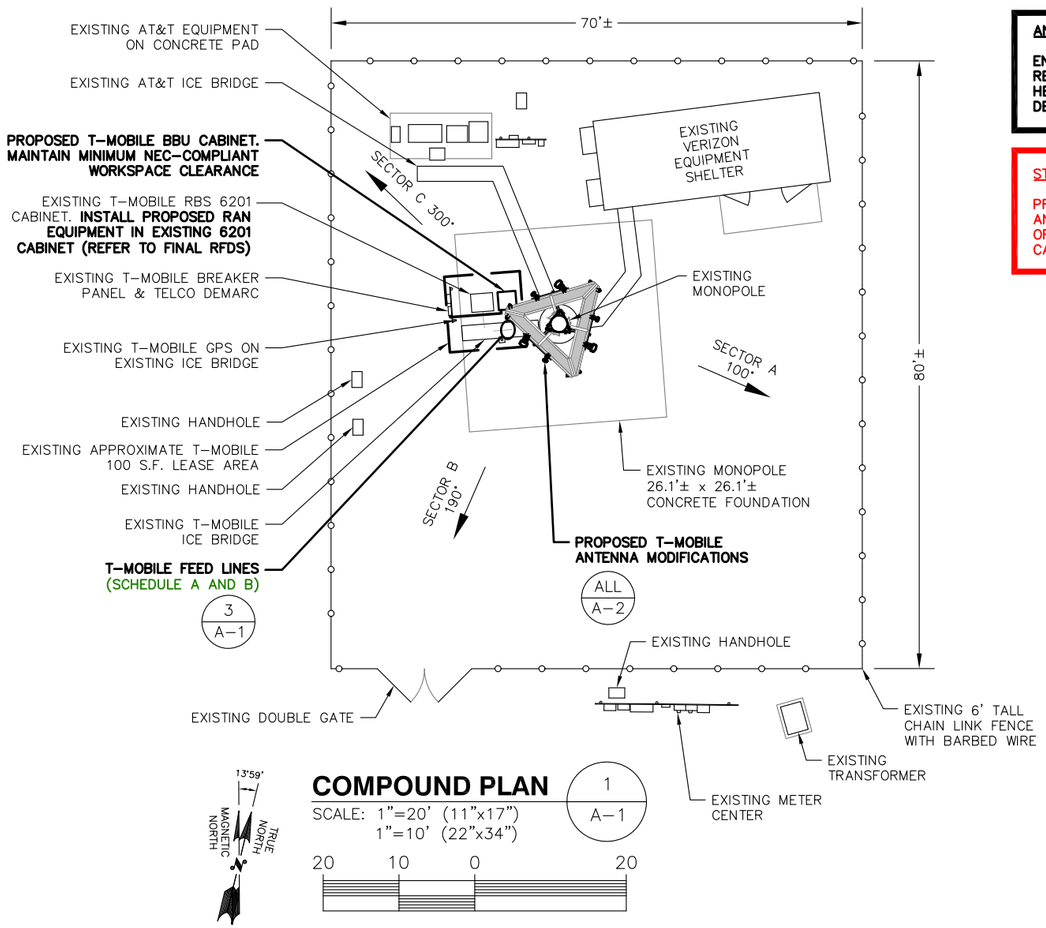
Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
85 mph Wind with 0" Ice	33.5	0.00	47.09	0.00	0.00	4308.85
73.61 mph Wind with 0.5" Ice	26.8	0.00	53.94	0.00	0.00	3521.06
50 mph Wind with 0" Ice	11.6	0.00	47.14	0.00	0.00	1493.12

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.48	0.98	0.00	0.00	0.00	43.95	44.47	52.0	53.00	0.855
73.61 mph Wind with 0.5" Ice	0.57	0.80	0.00	0.00	0.00	36.28	36.88	52.0	53.00	0.709
50 mph Wind with 0" Ice	0.50	0.34	0.00	0.00	0.00	15.24	15.75	52.0	53.00	0.303



COMPOUND PLAN

1 / A-1

SCALE: 1"=20' (11"x17")
1"=10' (22"x34")

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

STRUCTURAL NOTES:

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

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING: TO REMAIN (6) 1-5/8" COAX TO 177' RAD	INSIDE MONOPOLE TO RAD
B	PROPOSED: (6) 1-5/8" COAX TO 175' RAD	INSIDE MONOPOLE TO RAD

NOTE: EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER

SPECIAL WORK NOTE: DO NOT BLOCK CABINET DOOR SWING WITH PROPOSED BBU CABINET.

IMAGE SOURCE: PROTERRA 09/01/15

EQUIPMENT PHOTO DETAIL

2 / A-1

SCALE: N.T.S.

℄ OF T-MOBILE ANTENNAS
EXISTING ELEV.= 177'± AGL (SBA DATABASE)
PROPOSED ELEV.= 175'± AGL

ALL A-2 | 1,2 A-3 | 1,2 A-4

EXISTING (6) 1-5/8" COAX ACROSS EXISTING ICE BRIDGE & UP INSIDE MONOPOLE, **ALL TO REMAIN (REFER TO SBA-PROVIDED STRUCTURAL ANALYSIS FOR SPECIAL FEEDLINE INSTALLATION REQUIREMENTS, STACKING, BUNDLING, SHIELDING, MOUNTING AND RELOCATION OF EXISTING OR PROPOSED FEEDLINES)**

PROPOSED (6) 1-5/8" COAX ACROSS EXISTING ICE BRIDGE & UP INSIDE MONOPOLE

IMAGE SOURCE: PROTERRA 09/01/15

FEEDLINE PHOTO DETAIL AT TOWER BASE

3 / A-1

SCALE: N.T.S.

EXISTING 180'± MONOPOLE
3 A-1 T-MOBILE FEED LINES

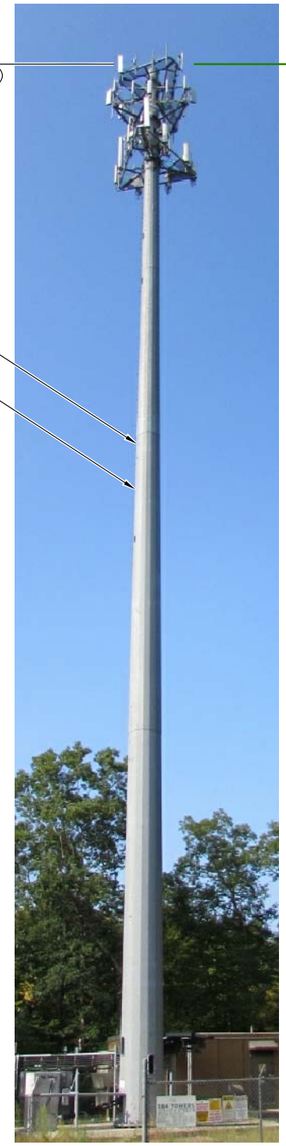


IMAGE SOURCE: PROTERRA 09/01/15

PARTIAL ELEVATION PHOTO DETAIL

4 / A-1

SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
TEL: (860) 648-1116

SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

ProTerra DESIGN GROUP, LLC
4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918

STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
LICENSED
PROFESSIONAL ENGINEER
10-13-15

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

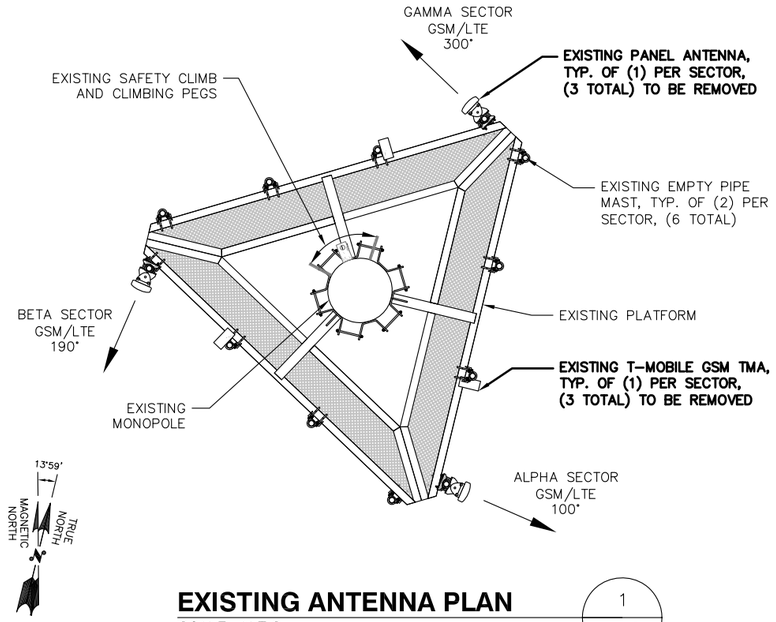
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	10/13/15	CONSTRUCTION REVISED	JEB
1	09/28/15	CONSTRUCTION REVISED	JEB
0	09/10/15	ISSUED FOR CONSTRUCTION	BLM

SITE NUMBER:
CT11338A
SITE NAME:
RT 2 / COLCHESTER WEST / SBA
SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SHEET TITLE
EXISTING & PROPOSED EQUIPMENT PLANS

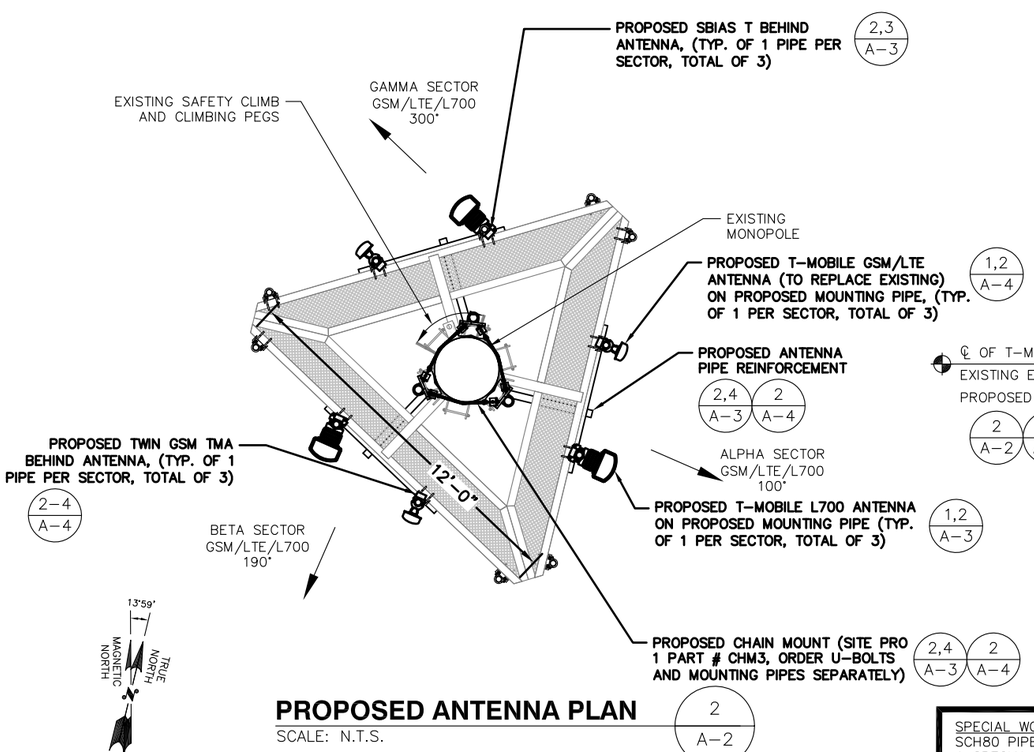
SHEET NUMBER
A-1



EXISTING ANTENNA PLAN

SCALE: N.T.S.

1 / A-2



PROPOSED ANTENNA PLAN

SCALE: N.T.S.

2 / A-2

SPECIAL WORK NOTE:
SCH80 PIPE WILL REQUIRE A SPECIAL ORDER.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

STRUCTURAL NOTES:

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

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

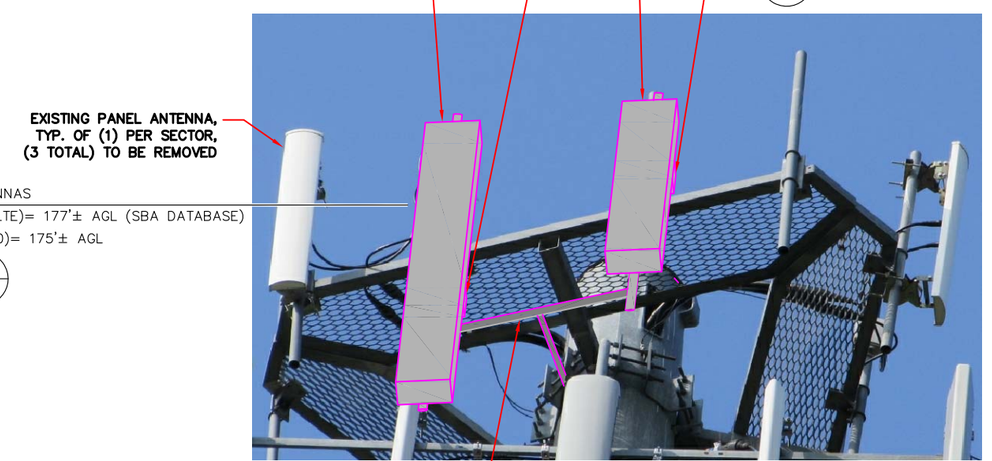


IMAGE SOURCE: PROTERRA 09/01/15
NOTE: ONE SECTOR SHOWN FOR CLARITY

ANTENNA PHOTO DETAIL

SCALE: N.T.S.

3 / A-2

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
TEL: (860) 648-1116

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33 BOSTON POST ROAD WEST, SUITE 320
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STATE OF CONNECTICUT
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10-13-15

CHECKED BY: JMM/TEJ

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1	09/28/15	CONSTRUCTION REVISED	JEB
0	09/10/15	ISSUED FOR CONSTRUCTION	BLM

SITE NUMBER:
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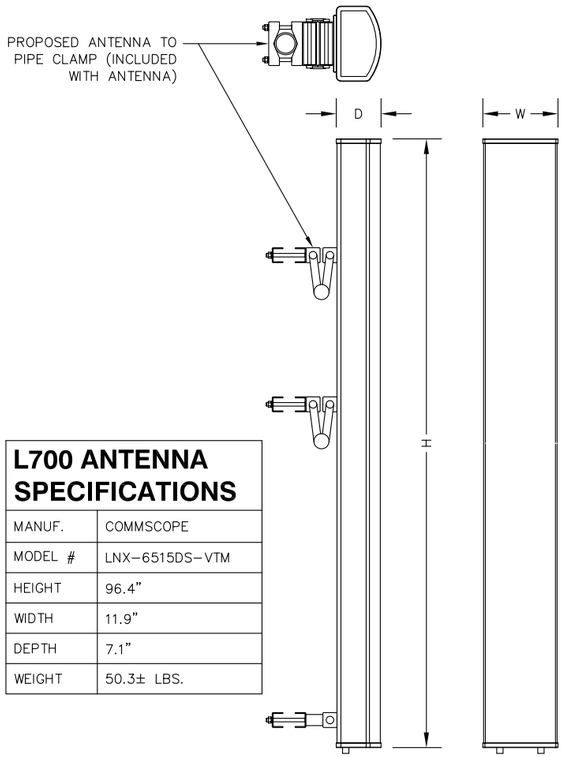
SITE NAME:
RT 2 / COLCHESTER WEST / SBA
SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

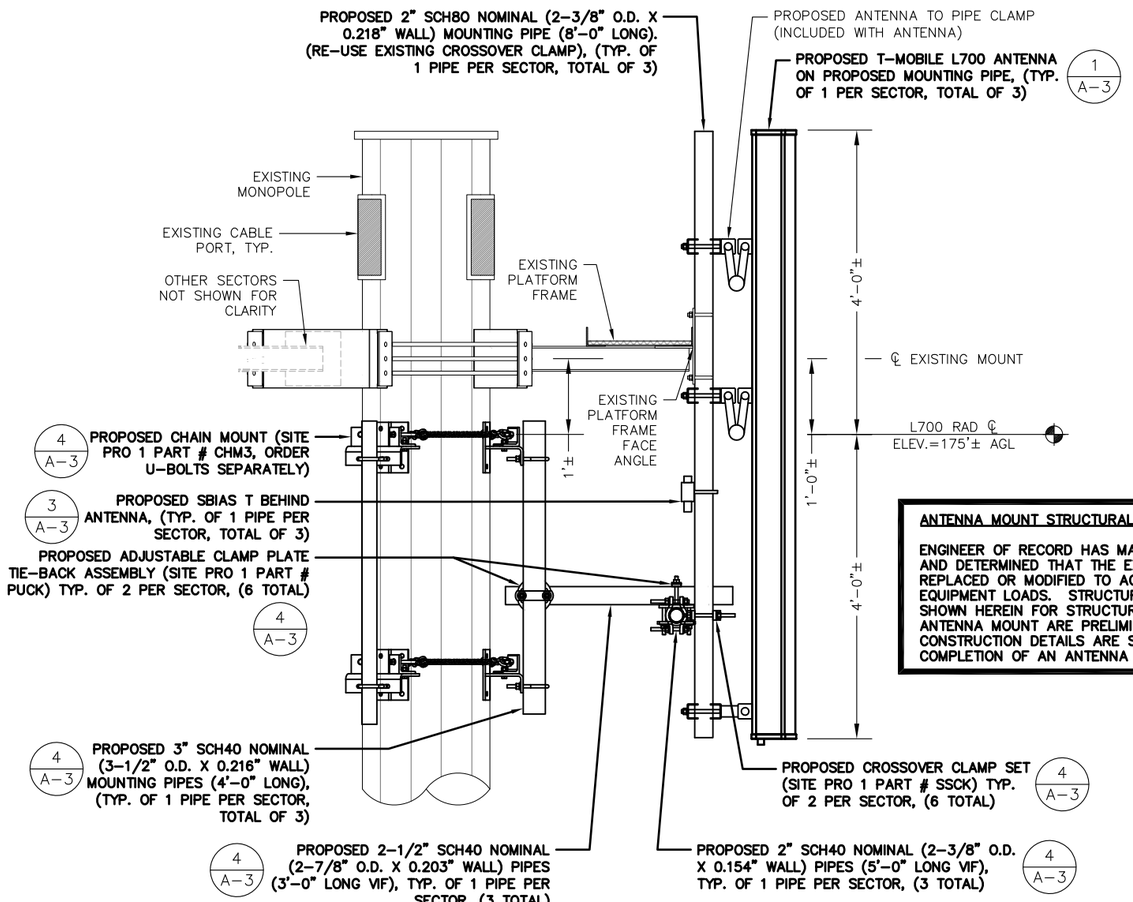
SHEET TITLE
EXISTING & PROPOSED ANTENNA PLAN

SHEET NUMBER
A-2



L700 ANTENNA SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	LNX-6515DS-VTM
HEIGHT	96.4"
WIDTH	11.9"
DEPTH	7.1"
WEIGHT	50.3± LBS.

L700 ANTENNA DETAIL (1/A-3)
SCALE: N.T.S.

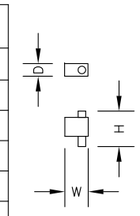


ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

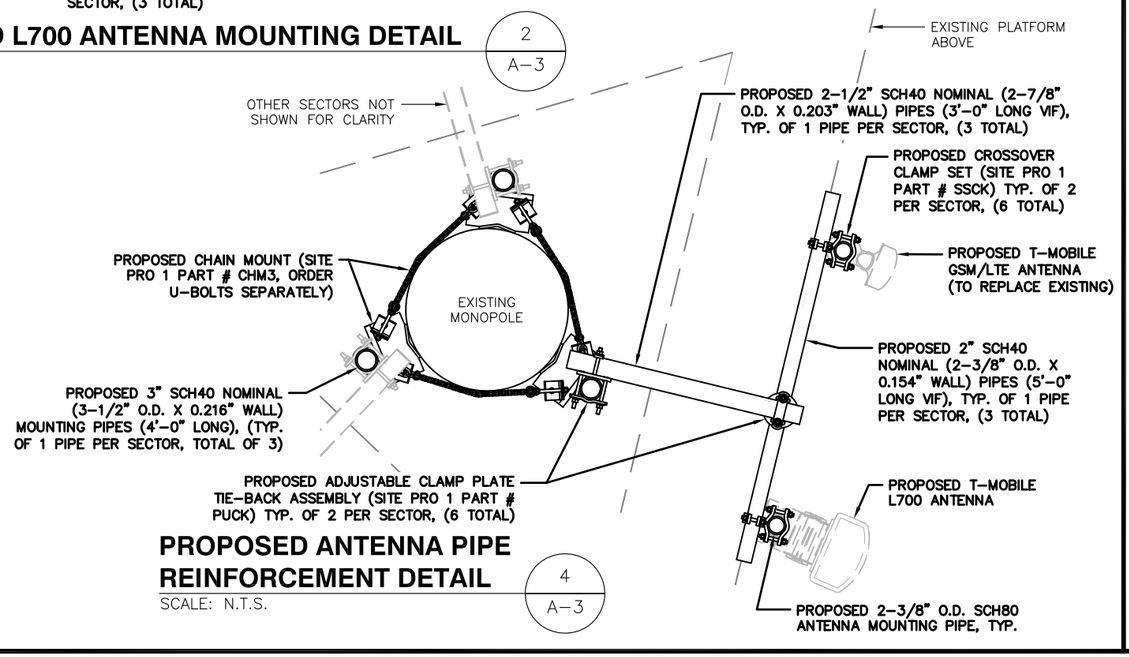
SPECIAL WORK NOTE:
SCH80 PIPE WILL REQUIRE A SPECIAL ORDER.

SBT SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	ATSBT-TOP-FM-4G
HEIGHT	5.63"
WIDTH	3.7"
DEPTH	2.0"
WEIGHT	1.8 LBS.



SMART BIAS TEE (SBT) (3/A-3)
SCALE: N.T.S.

PROPOSED L700 ANTENNA MOUNTING DETAIL (2/A-3)
SCALE: N.T.S.



PROPOSED ANTENNA PIPE REINFORCEMENT DETAIL (4/A-3)
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
TEL: (860) 648-1116

SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

ProTerra DESIGN GROUP, LLC
4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918

STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
LICENSED PROFESSIONAL ENGINEER
10-13-15

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

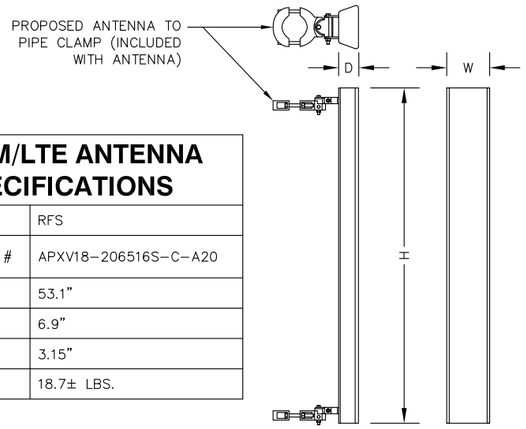
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	10/13/15	CONSTRUCTION REVISED	JEB
1	09/28/15	CONSTRUCTION REVISED	JEB
0	09/10/15	ISSUED FOR CONSTRUCTION	BLM

SITE NUMBER:
CT11338A
SITE NAME:
RT 2 / COLCHESTER WEST / SBA
SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SHEET TITLE
DETAILS

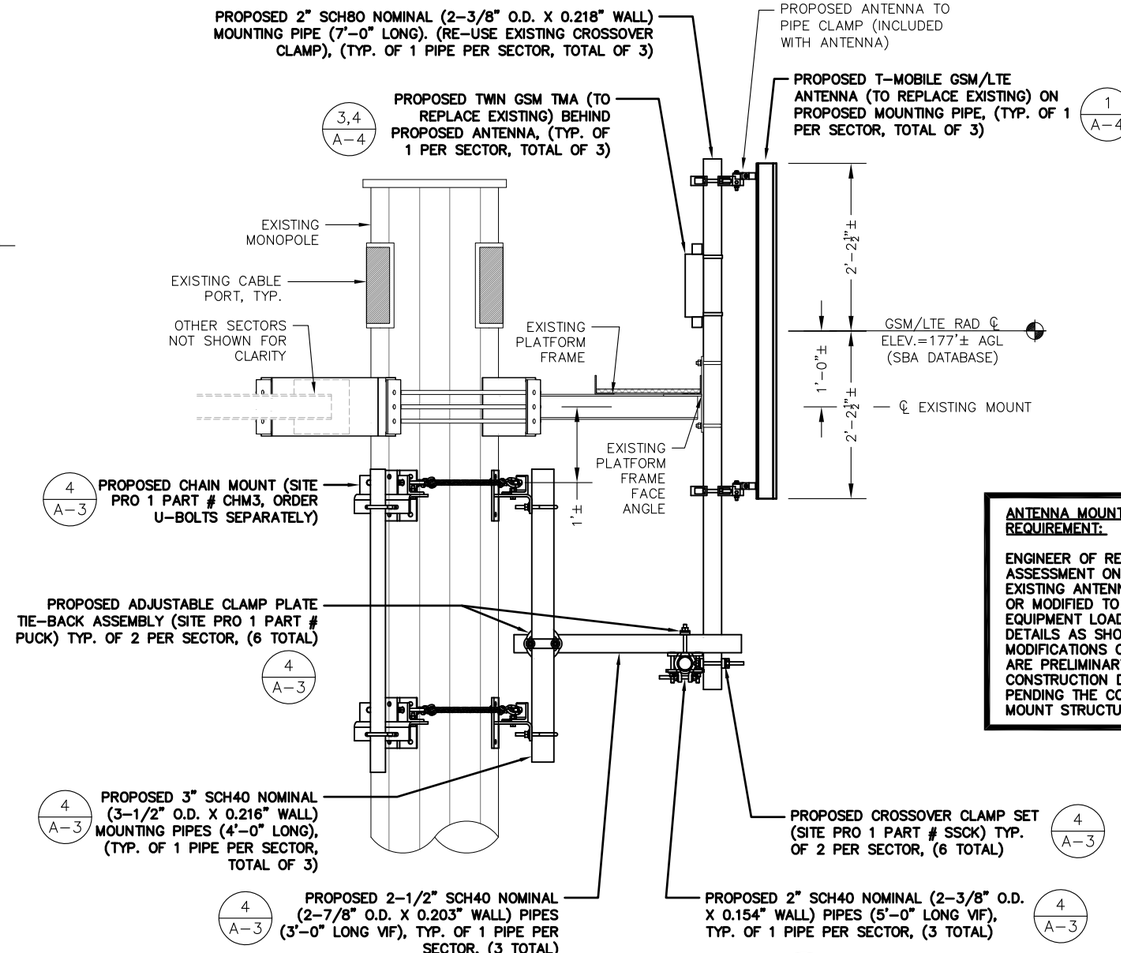
SHEET NUMBER
A-3



GSM/LTE ANTENNA SPECIFICATIONS	
MANUF.	RFS
MODEL #	APXV18–206516S–C–A20
HEIGHT	53.1"
WIDTH	6.9"
DEPTH	3.15"
WEIGHT	18.7± LBS.

GSM/LTE ANTENNA DETAIL (1/A–4)

SCALE: N.T.S.



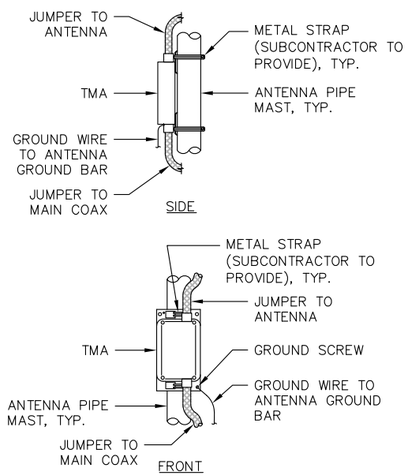
PROPOSED GSM/LTE ANTENNA MOUNTING DETAIL (2/A–4)

SCALE: N.T.S.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

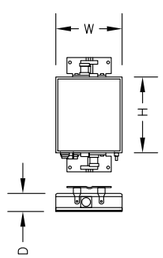
SPECIAL WORK NOTE:
SCH80 PIPE WILL REQUIRE A SPECIAL ORDER.



TMA MOUNTING DETAIL (3/A–4)

SCALE: N.T.S.

TWIN GSM TMA SPECIFICATIONS	
MANUF.	RFS
MODEL #	ATMAA1412D–1A20
HEIGHT	12"
WIDTH	10"
DEPTH	4"
WEIGHT	13 LBS.



TWIN GSM TMA (4/A–4)

SCALE: N.T.S.

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10-13-15

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SHEET TITLE
DETAILS

SHEET NUMBER
A–4