



August 12, 2015

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

RE: Notice of Exempt Modification
151 Sand Hill Rd.
South Windsor, CT
N 41° 50' 9.24"
W 72° 33' 7.56"
T-Mobile Site #: CT11497A_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 151 Sand Hill Rd., South Windsor, CT.

The 151 Sand Hill Road facility consists of a 187' Monopole Tower owned and operated by SBA Properties, 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.

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).

The logo for SBA Communications Corporation, featuring the letters "SBA" in a bold, blue, sans-serif font.

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 cabinets.
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 the 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,

A handwritten signature in blue ink, appearing to read "Kri Pelletier".

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@sbsite.com



T-Mobile Equipment Modification

151 Sand Hill Rd., South Windsor, CT
Site number CT11497A_L700

Tower Owner: SBA Properties, LLC

Equipment Configuration: Monopole

Current and/or approved:

- (3) Ericsson - AIR 21 B2A B4P – Panel
- (3) Ericsson - AIR 21 B4A B2P – Panel
- (3) Ericsson - Double TMA 17/21 - TMA/TTA
- (12) 1 5/8" lines
- (1) 1 5/8" Fiber

Planned Modifications:

- (3) Ericsson - AIR 21 B2A B4P – Panel
- (3) Ericsson - AIR 21 B4A B2P – Panel
- (3) Commscope - LNX-6515DS - Panel
- (3) Ericsson - Double TMA 17/21 - TMA/TTA
- (3) Ericsson - S11B12 - RRU
- (12) 1 5/8" lines
- (1) 1 5/8" Fiber

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 5.09% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 64.35% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE%	
Carrier	MPE%
T-Mobile	5.09
Town	6.87%
Sprint	7.60%
AT&T	13.00%
MetroPCS	2.10%
Clearwire	0.83%
Nextel	2.54%
Verizon Wireless	26.32%
Site Total MPE:	64.35%



August 12, 2015

Dr. M. Saud Anwar, Mayor
Town of South Windsor
1540 Sullivan Ave
South Windsor, CT 06074

RE: Telecommunications Facility @ 151 Sand Hill Rd., South Windsor, CT

Dear Mayor Anwar,

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,

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August 12, 2015

Mr. Matthew B. Galligan
Town Manager
Town of South Windsor
1540 Sullivan Ave.
South Windsor, CT 06074

RE: Telecommunications Facility @ 151 Sand Hill Rd., South Windsor, CT

Dear Mr. Galligan:

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: CT11497A

South Windsor
151 Sand Hill Road
South Windsor, CT 06074

August 11, 2015

EBI Project Number: 6215004251

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	64.35 %

August 11, 2015

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

Emissions Analysis for Site: **CT11497A – South Windsor**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **151 Sand Hill Road, South Windsor, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. 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 **151 Sand Hill Road, South Windsor, 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 (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P & B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P & B2A/B4P** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **160 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	160	Height (AGL):	160	Height (AGL):	160
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.71	Antenna B1 MPE%	0.71	Antenna C1 MPE%	0.71
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	160	Height (AGL):	160	Height (AGL):	160
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.71	Antenna B2 MPE%	0.71	Antenna C2 MPE%	0.71
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	160	Height (AGL):	160	Height (AGL):	160
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):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.28	Antenna B3 MPE%	0.28	Antenna C3 MPE%	0.28

Site Composite MPE%	
Carrier	MPE%
T-Mobile	5.09
Town	6.87 %
Sprint	7.60 %
AT&T	13.00 %
MetroPCS	2.10 %
Clearwire	0.83 %
Nextel	2.54 %
Verizon Wireless	26.32 %
Site Total MPE %:	64.35 %

T-Mobile Sector 1 Total:	1.70 %
T-Mobile Sector 2 Total:	1.70 %
T-Mobile Sector 3 Total:	1.70 %
Site Total:	64.35 %

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:	1.70 %
Sector 2:	1.70 %
Sector 3 :	1.70 %
T-Mobile Total:	5.09 %
Site Total:	64.35 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **64.35%** 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 187 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT07824-S

Customer Site Name: South Windsor

Carrier Name: T-Mobile

Carrier Site Number: CT11497A

Carrier Site Name: N/A

Site Location: 151 Sand Hill Road

South Windsor, Connecticut

Hartford County

Latitude: 41.836000

Longitude: -72.552000

Analysis Result:

Max Structural Usage: 70.8% [Pass]

Max Foundation Usage: 84% [Pass]

Report Prepared By : Jarryd Tibbetts



Introduction

The purpose of this report is to summarize the analysis results on the 187 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing prepared by Sabre, Job #02-10062 dated 11/1/01
Foundation Drawing	Foundation Drawing prepared by Sabre, Job #02-10062 dated 10/11/01
Geotechnical Report	Geotechnical Report prepared by Dr. Clarence Welti, dated 9/29/00
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:	80.0 mph (Fastest mile)
Basic Wind Speed with Ice:	69 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	187.0	1	Telewave - ANT450F6 - Whip	Low Profile Platform	(4) 1/2" (3) 7/8"	Town of South Windsor
2		2	Telewave - ANT900D6-9 - Whip			
3		2	Decibel - DB201 - Whip			
4		2	Scala - MF-900B - Dish			
5	170.0	3	Powerwave - 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" (1) 3" Conduit	New Cingular
6		12	Kathrein - 782 10250 - Diplexer			
7		3	Andrew - ABT-DFDM-ADBH - Surge Arrestor			
8		9	KMW - AM-X-CD-16-65-00T-RET - Panel			
9		3	CSS - DBC-750 - Diplexer			
10		1	Raycap - DC6-48-60-18-8F - Surge Suppressor			
11		6	CCI - DTMABP7819VG12A - TMA/TTA			
12	6	Ericsson - RRU5 11 - RRU				
13	160.0	3	Ericsson - AIR 21 B2A B4P - Panel	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
14		3	Ericsson - AIR 21 B4A B2P - Panel			
15		3	Ericsson - Double TMA 17/21 - TMA/TTA			
18	140.0	1	RFS - DB-T1-6Z-8AB-0Z - Surge Suppressor	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid (1) 1/2"	Verizon
19		6	RFS - FD9R6004/2C-3L - Diplexer			
20		6	Commscope - HBXX-6517DS-A2M - Panel			
21		6	Alcatel Lucent - KS24019 - GPS			
22		3	Commscope - LNX-6514DS-A1M - Panel			
23		3	Commscope - LNX-6514DS-VTM - Panel			
24		3	Alcatel Lucent - RRH2x40-07-U - RRU			
25		3	Alcatel Lucent - RRH2x60-1900 - RRU			
26	130.0	3	Alcatel Lucent - 1900MHz - RRH	Low Profile Platform	(1) 0.7" Fiber (3) 1-1/4"	Sprint
27		3	Alcatel Lucent - 800 MHz - RRH			
28		3	Alcatel Lucent - 800MHz - Filter			
29		4	RFS - ACU-A20-N - RET			
30		3	RFS - APXVSP18-C-A20 - Panel			
31		3	RFS - APXVTM14-C-120 - Panel			
32		3	RF Filters			
33		3	Alcatel Lucent - TD-RRH8x20-25 - RRU			
34	92.0	1	Telewave - ANT150D3 - Whip	Low Profile Platform	(6) 1/2"	Town of South Windsor
35		1	Telewave - ANT4506-9 - Whip			
36		1	Telewave - ANT450Y10-WR - Yagi			
37		1	Decibel - DB205 - Whip			
38		2	Scala - MF-900B - Dish			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
13	160.0	3	Ericsson - AIR 21 B2A B4P - Panel	Platform w/ Hand Rail	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
14		3	Ericsson - AIR 21 B4A B2P - Panel			
15		3	Commscope - LNX-6515DS - Panel			
16		3	Ericsson - Double TMA 17/21 - TMA/TTA			
17		3	Ericsson - S11B12 - RRU			

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:	70.8%	64.6%	60.2%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	6540.5	47.9	82.8
Analysis Reactions	4816.1	37.4	66.6
% of Design Reactions	73.6%	78.1%	80.5%

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

Operational Condition (Rigidity):

Maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Dish	Carrier	Twist (deg)	Sway (deg)
187.0	MF-900B - Dish	Town of South	0.000	1.764
92.0	MF-900B - Dish	Windsor	0.000	1.025

It is recommended that the carriers review the twist and sway values of the microwave dishes.

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 70.8% at 53.3ft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

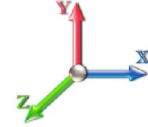
7/28/2015



Page: 1

Dead Load Factor: 1.00
Wind Load Factor: 1.00

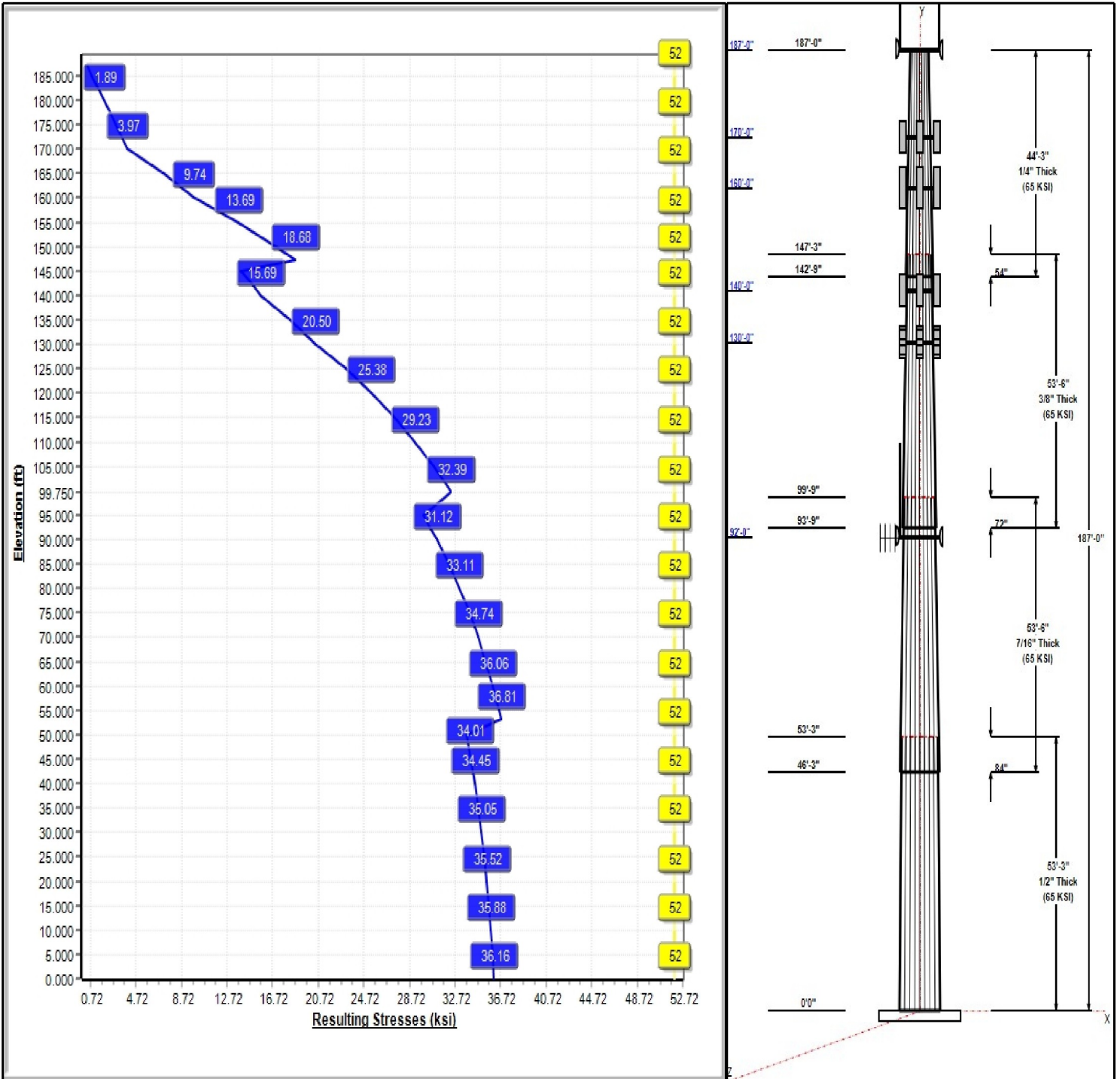
Load Case : 80 mph Wind with 0 in Ice



Iterations: 24

52 Allowable Stress
37 Resulting Stress

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Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

7/28/2015

Page: 2

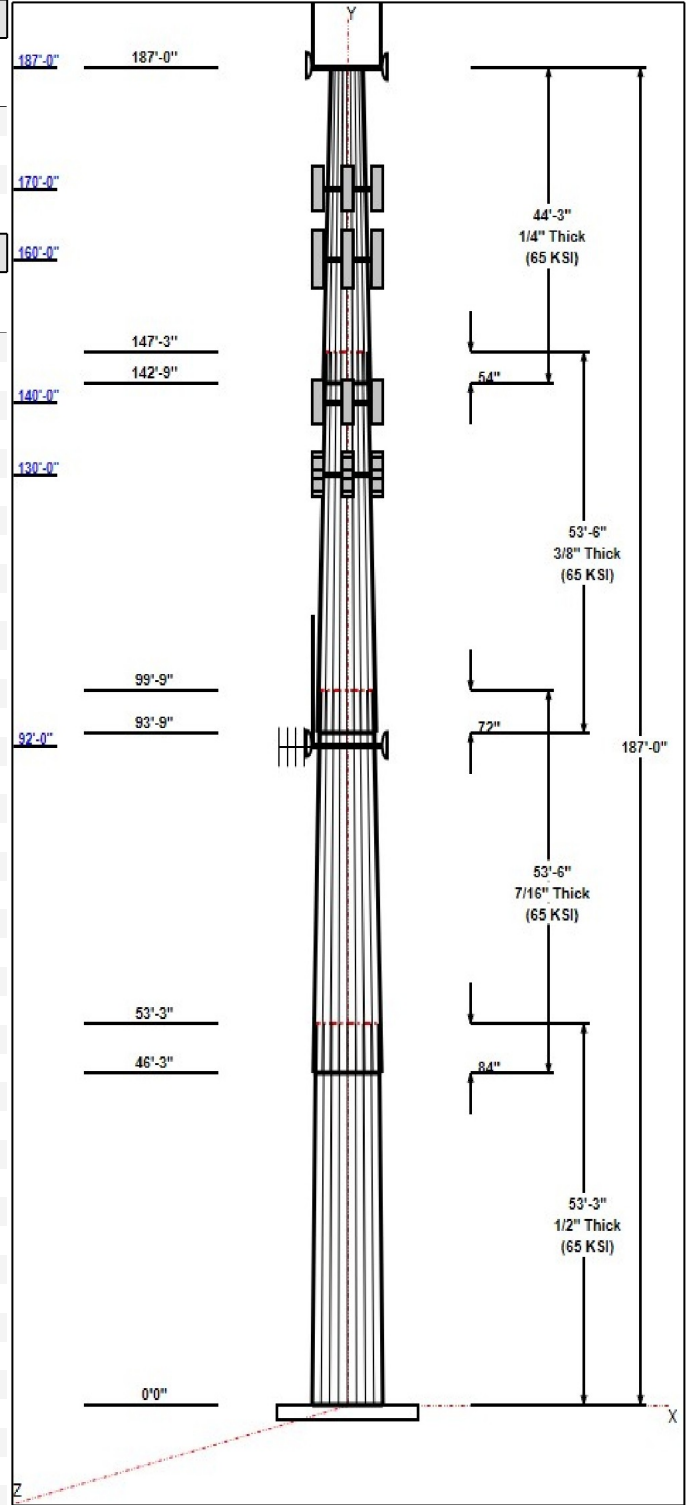


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	52.63	64.88	0.500		0.22997	65
2	53.50	42.82	55.12	0.438	Slip	0.22997	65
3	53.50	32.64	44.95	0.375	Slip	0.22997	65
4	44.25	24.00	34.18	0.250	Slip	0.22997	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
187.00	187.00	1	6' Lightning rod	
187.00	190.92	1	ANT450F6	Town of South
187.00	189.04	2	ANT900D6-9	Town of South
187.00	191.75	2	DB201	Town of South
187.00	187.00	1	Low Profile Platform	Town of South
187.00	187.00	2	MF-900B	Town of South
170.00	170.00	3	7770.00	New Cingular
170.00	170.00	12	782 10250	New Cingular
170.00	170.00	3	ABT-DFDM-ADBH	New Cingular
170.00	170.00	9	AM-X-CD-16-65-00T-RET	New Cingular
170.00	170.00	3	DBC-750	New Cingular
170.00	170.00	1	DC6-48-60-18-8F	New Cingular
170.00	170.00	6	DTMABP7819VG12A	New Cingular
170.00	170.00	1	Low Profile Platform	New Cingular
170.00	170.00	6	RRUS 11	New Cingular
160.00	160.00	3	AIR 21 B2A B4P	T-Mobile
160.00	160.00	3	AIR 21 B4A B2P	T-Mobile
160.00	160.00	3	Double TMA 17/21	T-Mobile
160.00	160.00	3	LNx-6515DS	T-Mobile
160.00	160.00	1	Platform w/ Hand Rail	T-Mobile
160.00	160.00	3	S11B12	T-Mobile
140.00	140.00	1	DB-T1-6Z-8AB-0Z	Verizon
140.00	140.00	6	FD9R6004/2C-3L	Verizon
140.00	140.00	6	HBXX-6517DS-A2M	Verizon
140.00	140.00	6	KS-24019	Verizon
140.00	140.00	3	LNx-6514DS-A1M	Verizon
140.00	140.00	3	LNx-6514DS-VTM	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
140.00	140.00	3	RRH2x40-07-U	Verizon
140.00	140.00	3	RRH2x60-1900	Verizon
130.00	130.00	3	1900MHz RRH	Sprint
130.00	130.00	3	800 MHz RRH	Sprint
130.00	130.00	3	800MHz Filter	Sprint
130.00	130.00	4	ACU-A20-N	Sprint
130.00	130.00	3	APXVSP18-C-A20	Sprint
130.00	130.00	3	APXVTM14-C-120	Sprint
130.00	130.00	1	Low Profile Platform	Sprint
130.00	130.00	3	RF Filters	Sprint
130.00	130.00	3	TD-RRH8x20-25	Sprint
92.00	97.00	1	ANT150D3	Town of South
92.00	95.00	1	ANT4506-9	Town of South
92.00	92.00	1	ANT450Y10-WR	Town of South
92.00	101.00	1	DB205	Town of South
92.00	92.00	1	Low Profile Platform	Town of South
92.00	92.00	2	MF-900B	Town of South



Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

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Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	187.00	Inside	1/2" Coax	Town of South
0.00	187.00	Inside	7/8" Coax	Town of South
0.00	170.00	Inside	1 5/8" Coax	New Cingular
0.00	170.00	Inside	3" Conduit	New Cingular
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	140.00	Inside	1 5/8" Coax	Verizon
0.00	140.00	Inside	1 5/8" Hybrid	Verizon
0.00	140.00	Inside	1/2" Coax	Verizon
0.00	130.00	Inside	0.7" Fiber	Sprint
0.00	130.00	Inside	1-1/4" Hybrid	Sprint
0.00	92.00	Inside	1/2" Coax	Town of South

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
26	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	78.0	60.0	Round

Reactions

Load Case	Moment	Shear	Axial
80 mph Wind with 0" Ice	4816.1	37.4	56.8
69.28 mph Wind with 0.5" Ice	4232.3	31.9	66.6
50 mph Wind with 0" Ice	1882.6	14.6	56.8

Shaft Properties

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.5000	65		0.00	16,752
2	18	53.500	0.4375	65	Slip	84.00	12,268
3	18	53.500	0.3750	65	Slip	72.00	8,324
4	18	44.250	0.2500	65	Slip	54.00	3,445
Total Shaft Weight:							40,789

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	64.88	0.00	102.1	53501.66	21.46	129.7	52.63	53.25	82.73	28410.2	17.15	105.2	0.229973
2	55.12	46.25	75.93	28683.85	20.80	125.9	42.82	99.75	58.84	13351.6	15.84	97.86	0.229973
3	44.95	93.75	53.05	13313.85	19.72	119.8	32.64	147.2	38.40	5051.60	13.93	87.04	0.229973
4	34.18	142.7	26.92	3914.66	22.69	136.7	24.00	187.0	18.84	1343.00	15.51	96	0.229973

Loading Summary

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	187.0	6' Lightning rod	1	6.50	0.38	1.00	11.80	0.980	1.00	0.00	0.00
2	187.0	ANT450F6	1	21.00	1.86	1.00	35.00	2.670	1.00	0.00	3.92
3	187.0	ANT900D6-9	2	11.00	0.98	1.00	21.90	1.670	1.00	0.00	2.04
4	187.0	DB201	2	25.00	3.54	1.00	56.40	6.660	1.00	0.00	4.75
5	187.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
6	187.0	MF-900B	2	13.00	3.45	1.00	45.20	10.43	1.00	0.00	0.00
7	170.0	7770.00	3	35.00	5.88	0.73	0.00	6.530	0.75	0.00	0.00
8	170.0	782 10250	12	6.40	0.52	0.76	10.00	0.690	0.78	0.00	0.00
9	170.0	ABT-DFDM-ADBH	3	1.10	0.05	0.98	1.80	0.110	0.98	0.00	0.00
10	170.0	AM-X-CD-16-65-00T-RET	9	48.50	8.26	0.75	95.00	9.080	0.75	0.00	0.00
11	170.0	DBC-750	3	4.80	0.51	0.75	7.70	0.660	0.77	0.00	0.00
12	170.0	DC6-48-60-18-8F	1	31.80	1.47	1.00	49.50	1.670	1.00	0.00	0.00
13	170.0	DTMABP7819VG12A	6	19.20	1.14	0.67	26.50	1.360	0.69	0.00	0.00
14	170.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
15	170.0	RRUS 11	6	50.70	2.94	0.76	66.00	3.140	0.78	0.00	0.00
16	160.0	AIR 21 B2A B4P	3	91.50	6.52	0.83	128.79	6.900	0.83	0.00	0.00
17	160.0	AIR 21 B4A B2P	3	90.30	6.52	0.83	127.59	6.900	0.83	0.00	0.00
18	160.0	Double TMA 17/21	3	11.00	0.41	0.72	13.14	0.490	0.75	0.00	0.00
19	160.0	LNx-6515DS	3	50.30	11.45	0.84	112.11	11.92	0.84	0.00	0.00
20	160.0	Platform w/ Hand Rail	1	1600.00	32.00	1.00	2200.00	40.00	1.00	0.00	0.00
21	160.0	S11B12	3	51.00	3.31	0.71	67.07	3.520	0.72	0.00	0.00
22	140.0	DB-T1-6Z-8AB-0Z	1	21.40	4.78	1.00	51.10	5.040	1.00	0.00	0.00
23	140.0	FD9R6004/2C-3L	6	3.10	0.36	0.75	5.40	0.500	0.77	0.00	0.00
24	140.0	HBXX-6517DS-A2M	6	40.80	8.73	0.77	91.20	9.590	0.79	0.00	0.00
25	140.0	KS-24019	6	0.50	0.12	1.00	2.30	0.180	1.00	0.00	0.00
26	140.0	LNx-6514DS-A1M	3	38.40	8.41	0.83	88.90	9.240	0.85	0.00	0.00
27	140.0	LNx-6514DS-VTM	3	33.10	8.33	0.80	83.10	9.150	0.82	0.00	0.00
28	140.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
29	140.0	RRH2x40-07-U	3	50.70	2.23	0.78	67.50	2.540	0.80	0.00	0.00
30	140.0	RRH2x60-1900	3	19.50	1.76	0.90	48.40	1.930	0.91	0.00	0.00
31	130.0	1900MHz RRH	3	44.00	3.80	0.88	75.20	4.200	0.89	0.00	0.00
32	130.0	800 MHz RRH	3	53.00	2.49	0.92	74.10	2.820	0.93	0.00	0.00
33	130.0	800MHz Filter	3	8.80	0.78	0.69	13.80	0.960	0.71	0.00	0.00
34	130.0	ACU-A20-N	4	1.00	0.14	0.79	2.30	0.220	0.81	0.00	0.00
35	130.0	APXVSP18-C-A20	3	57.00	8.26	0.83	106.50	9.080	0.85	0.00	0.00
36	130.0	APXVTM14-C-120	3	56.00	6.90	0.79	91.90	7.290	0.81	0.00	0.00
37	130.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
38	130.0	RF Filters	3	15.50	1.09	0.67	22.00	1.270	0.69	0.00	0.00
39	130.0	TD-RRH8x20-25	3	70.00	4.72	0.69	92.00	4.970	0.71	0.00	0.00
40	92.00	ANT150D3	1	18.00	2.18	1.00	38.90	4.620	1.00	0.00	5.00
41	92.00	ANT4506-9	1	18.00	2.77	1.00	41.60	3.630	1.00	0.00	3.00
42	92.00	ANT450Y10-WR	1	5.00	0.49	1.00	10.80	0.820	1.00	0.00	0.00
43	92.00	DB205	1	38.00	1.80	1.00	54.60	3.610	1.00	0.00	9.00
44	92.00	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
45	92.00	MF-900B	2	13.00	3.45	1.00	45.20	10.43	1.00	0.00	0.00
Totals:			134	12,929.80			17,628.10				

Discrete Appurtenances

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

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	No Ice		Ice		Exposed
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	187.0	(4) 1/2" Coax	0.32	0.00	0.00	0.00	Inside
0.00	187.0	(3) 7/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	170.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	170.0	(1) 3" Conduit	4.83	0.00	0.00	0.00	Inside
0.00	160.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	160.0	(1) 1 5/8" Hybrid	3.30	0.00	0.00	0.00	Inside
0.00	140.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	140.0	(1) 1 5/8" Hybrid	3.30	0.00	0.00	0.00	Inside
0.00	140.0	(1) 1/2" Coax	0.48	0.00	0.00	0.00	Inside
0.00	130.0	(1) 0.7" Fiber	0.40	0.00	0.00	0.00	Inside
0.00	130.0	(3) 1-1/4" Hybrid	2.86	0.00	0.00	0.00	Inside
0.00	92.00	(6) 1/2" Coax	0.32	0.00	0.00	0.00	Inside
Totals:			3,074.92		0.00		

Shaft Section Properties

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

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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		0.5000	64.880	102.167	53501.7	21.47	129.76	65	52	0.0
5.00		0.5000	63.730	100.343	50685.8	21.06	127.46	65	52	1722.7
10.00		0.5000	62.580	98.518	47970.6	20.66	125.16	65	52	1691.7
15.00		0.5000	61.430	96.693	45354.1	20.25	122.86	65	52	1660.6
20.00		0.5000	60.281	94.868	42834.5	19.85	120.56	65	52	1629.6
25.00		0.5000	59.131	93.044	40410.0	19.44	118.26	65	52	1598.6
30.00		0.5000	57.981	91.219	38078.8	19.04	115.96	65	52	1567.5
35.00		0.5000	56.831	89.394	35839.0	18.63	113.66	65	52	1536.5
40.00		0.5000	55.681	87.569	33688.7	18.23	111.36	65	52	1505.4
45.00		0.5000	54.531	85.744	31626.3	17.82	109.06	65	52	1474.4
46.25	Bot - Section 2	0.5000	54.244	85.288	31124.2	17.72	108.49	65	52	363.7
50.00		0.5000	53.381	83.920	29649.8	17.41	106.76	65	52	2040.8
53.25	Top - Section 1	0.4375	53.509	73.694	26224.3	20.16	122.31	65	52	1742.2
55.00		0.4375	53.106	73.135	25632.3	19.99	121.39	65	52	437.2
60.00		0.4375	51.957	71.538	23989.8	19.53	118.76	65	52	1230.7
65.00		0.4375	50.807	69.941	22419.1	19.07	116.13	65	52	1203.6
70.00		0.4375	49.657	68.345	20918.5	18.60	113.50	65	52	1176.4
75.00		0.4375	48.507	66.748	19486.4	18.14	110.87	65	52	1149.2
80.00		0.4375	47.357	65.151	18121.2	17.68	108.24	65	52	1122.1
85.00		0.4375	46.207	63.555	16821.3	17.21	105.62	65	52	1094.9
90.00		0.4375	45.057	61.958	15585.1	16.75	102.99	65	52	1067.7
92.00		0.4375	44.597	61.319	15108.1	16.56	101.94	65	52	419.5
93.75	Bot - Section 3	0.4375	44.195	60.761	14698.7	16.40	101.02	65	52	363.5
95.00		0.4375	43.908	60.361	14410.9	16.29	100.36	65	52	482.5
99.75	Top - Section 2	0.3750	43.565	51.405	12115.2	19.07	116.17	65	52	1804.8
100.00		0.3750	43.508	51.337	12066.9	19.05	116.02	65	52	43.7
105.00		0.3750	42.358	49.968	11127.3	18.51	112.95	65	52	861.8
110.00		0.3750	41.208	48.600	10237.8	17.97	109.89	65	52	838.5
115.00		0.3750	40.058	47.231	9397.1	17.42	106.82	65	52	815.2
120.00		0.3750	38.908	45.862	8603.6	16.88	103.76	65	52	791.9
125.00		0.3750	37.758	44.494	7856.2	16.34	100.69	65	52	768.7
130.00		0.3750	36.608	43.125	7153.3	15.80	97.62	65	52	745.4
135.00		0.3750	35.459	41.757	6493.6	15.26	94.56	65	52	722.1
140.00		0.3750	34.309	40.388	5875.9	14.72	91.49	65	52	698.8
142.75	Bot - Section 4	0.3750	33.676	39.635	5553.4	14.42	89.80	65	52	374.4
145.00		0.3750	33.159	39.020	5298.5	14.18	88.42	65	52	505.6
147.25	Top - Section 3	0.2500	33.141	26.098	3567.2	21.96	132.57	65	52	497.8
150.00		0.2500	32.509	25.597	3365.4	21.52	130.04	65	52	241.9
155.00		0.2500	31.359	24.684	3018.2	20.71	125.44	65	52	427.7
160.00		0.2500	30.209	23.772	2695.7	19.90	120.84	65	52	412.2
165.00		0.2500	29.059	22.859	2397.1	19.09	116.24	65	52	396.7
170.00		0.2500	27.910	21.947	2121.4	18.27	111.64	65	52	381.2
175.00		0.2500	26.760	21.035	1867.7	17.46	107.04	65	52	365.6
180.00		0.2500	25.610	20.122	1635.0	16.65	102.44	65	52	350.1
185.00		0.2500	24.460	19.210	1422.5	15.84	97.84	65	52	334.6
187.00		0.2500	24.000	18.845	1343.0	15.52	96.00	65	52	129.5

40789.2

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

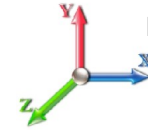
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	16.384	27.69	432.53	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	16.384	27.69	424.87	0.650	0.000	5.00	26.794	17.42	482.2	0.0	1722.7
10.00		0.00	1.00	16.384	27.69	417.20	0.650	0.000	5.00	26.315	17.10	473.6	0.0	1691.7
15.00		0.00	1.00	16.384	27.69	409.54	0.650	0.000	5.00	25.836	16.79	465.0	0.0	1660.6
20.00		0.00	1.00	16.384	27.69	401.87	0.650	0.000	5.00	25.356	16.48	456.4	0.0	1629.6
25.00		0.00	1.00	16.384	27.69	394.20	0.650	0.000	5.00	24.877	16.17	447.7	0.0	1598.6
30.00		0.00	1.00	16.384	27.69	386.54	0.650	0.000	5.00	24.398	15.86	439.1	0.0	1567.5
35.00		0.00	1.03	16.796	28.39	383.61	0.650	0.000	5.00	23.919	15.55	441.3	0.0	1536.5
40.00		0.00	1.06	17.432	29.46	382.90	0.650	0.000	5.00	23.440	15.24	448.9	0.0	1505.4
45.00		0.00	1.10	18.015	30.45	381.21	0.650	0.000	5.00	22.961	14.92	454.4	0.0	1474.4
46.25	Bot - Section 2	0.00	1.11	18.153	30.68	380.65	0.650	0.000	1.25	5.665	3.68	113.0	0.0	363.7
50.00		0.00	1.13	18.554	31.36	378.71	0.650	0.000	3.75	17.090	11.11	348.3	0.0	2040.8
53.25	Top - Section 1	0.00	1.15	18.884	31.91	376.72	0.650	0.000	3.25	14.593	9.49	302.7	0.0	1742.2
55.00		0.00	1.16	19.056	32.21	381.83	0.650	0.000	1.75	7.774	5.05	162.7	0.0	437.2
60.00		0.00	1.19	19.528	33.00	378.15	0.650	0.000	5.00	21.888	14.23	469.5	0.0	1230.7
65.00		0.00	1.22	19.972	33.75	373.97	0.650	0.000	5.00	21.409	13.92	469.7	0.0	1203.6
70.00		0.00	1.24	20.393	34.46	369.34	0.650	0.000	5.00	20.930	13.60	468.9	0.0	1176.4
75.00		0.00	1.27	20.794	35.14	364.31	0.650	0.000	5.00	20.451	13.29	467.1	0.0	1149.2
80.00		0.00	1.29	21.176	35.79	358.93	0.650	0.000	5.00	19.972	12.98	464.6	0.0	1122.1
85.00		0.00	1.31	21.541	36.40	353.22	0.650	0.000	5.00	19.493	12.67	461.3	0.0	1094.9
90.00		0.00	1.34	21.892	37.00	347.22	0.650	0.000	5.00	19.013	12.36	457.2	0.0	1067.7
92.00	Appurtenance(s)	0.00	1.34	22.028	37.23	344.75	0.650	0.000	2.00	7.471	4.86	180.8	0.0	419.5
93.75	Bot - Section 3	0.00	1.35	22.146	37.43	342.55	0.650	0.000	1.75	6.474	4.21	157.5	0.0	363.5
95.00		0.00	1.36	22.229	37.57	340.96	0.650	0.000	1.25	4.667	3.03	114.0	0.0	482.5
99.75	Top - Section 2	0.00	1.38	22.538	38.09	334.78	0.650	0.000	4.75	17.461	11.35	432.3	0.0	1804.8
100.00		0.00	1.38	22.554	38.12	340.31	0.650	0.000	0.25	0.907	0.59	22.5	0.0	43.7
105.00		0.00	1.40	22.867	38.65	333.61	0.650	0.000	5.00	17.889	11.63	449.4	0.0	861.8
110.00		0.00	1.41	23.171	39.16	326.70	0.650	0.000	5.00	17.410	11.32	443.1	0.0	838.5
115.00		0.00	1.43	23.464	39.65	319.59	0.650	0.000	5.00	16.930	11.00	436.4	0.0	815.2
120.00		0.00	1.45	23.749	40.14	312.29	0.650	0.000	5.00	16.451	10.69	429.2	0.0	791.9
125.00		0.00	1.47	24.025	40.60	304.82	0.650	0.000	5.00	15.972	10.38	421.5	0.0	768.7
130.00	Appurtenance(s)	0.00	1.48	24.294	41.06	297.19	0.650	0.000	5.00	15.493	10.07	413.5	0.0	745.4
135.00		0.00	1.50	24.555	41.50	289.40	0.650	0.000	5.00	15.014	9.76	405.0	0.0	722.1
140.00	Appurtenance(s)	0.00	1.51	24.810	41.93	281.46	0.650	0.000	5.00	14.535	9.45	396.1	0.0	698.8
142.75	Bot - Section 4	0.00	1.52	24.947	42.16	277.03	0.650	0.000	2.75	7.790	5.06	213.5	0.0	374.4
145.00		0.00	1.53	25.058	42.35	273.38	0.650	0.000	2.25	6.360	4.13	175.1	0.0	505.6
147.25	Top - Section 3	0.00	1.54	25.168	42.53	269.71	0.650	0.000	2.25	6.263	4.07	173.1	0.0	497.8
150.00		0.00	1.54	25.300	42.76	269.32	0.650	0.000	2.75	7.522	4.89	209.1	0.0	241.9
155.00		0.00	1.56	25.537	43.16	261.00	0.650	0.000	5.00	13.306	8.65	373.3	0.0	427.7
160.00	Appurtenance(s)	0.00	1.57	25.768	43.55	252.57	0.650	0.000	5.00	12.827	8.34	363.1	0.0	412.2
165.00		0.00	1.59	25.994	43.93	244.02	0.650	0.000	5.00	12.348	8.03	352.6	0.0	396.7
170.00	Appurtenance(s)	0.00	1.60	26.215	44.30	235.36	0.650	0.000	5.00	11.869	7.71	341.8	0.0	381.2
175.00		0.00	1.61	26.432	44.67	226.59	0.650	0.000	5.00	11.389	7.40	330.7	0.0	365.6
180.00		0.00	1.63	26.645	45.03	217.73	0.650	0.000	5.00	10.910	7.09	319.3	0.0	350.1
185.00		0.00	1.64	26.853	45.38	208.76	0.650	0.000	5.00	10.431	6.78	307.7	0.0	334.6
187.00	Appurtenance(s)	0.00	1.64	26.935	45.52	205.15	0.650	0.000	2.00	4.038	2.62	119.5	0.0	129.5
Totals:									187.00			15,873.5		40,789.2

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

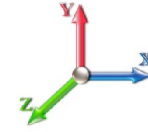
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	187.00	MF-900B	2	26.935	45.520	1.00	6.90	26.00	0.000	0.000	314.09	0.00	0.00
2	187.00	Low Profile Platform	1	26.935	45.520	1.00	22.00	1500.00	0.000	0.000	1001.45	0.00	0.00
3	187.00	DB201	2	27.128	45.846	1.00	7.08	50.00	0.000	4.750	324.59	0.00	1541.80
4	187.00	ANT900D6-9	2	27.018	45.661	1.00	1.96	22.00	0.000	2.042	89.50	0.00	182.72
5	187.00	ANT450F6	1	27.094	45.789	1.00	1.86	21.00	0.000	3.917	85.17	0.00	333.58
6	187.00	6' Lightning rod	1	26.935	45.520	1.00	0.38	6.50	0.000	0.000	17.30	0.00	0.00
7	170.00	7770.00	3	26.215	44.304	0.73	12.88	105.00	0.000	0.000	570.51	0.00	0.00
8	170.00	782 10250	12	26.215	44.304	0.76	4.74	76.80	0.000	0.000	210.11	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	26.215	44.304	0.98	0.15	3.30	0.000	0.000	6.51	0.00	0.00
10	170.00	AM-X-CD-16-65-00T-RET	9	26.215	44.304	0.75	55.76	436.50	0.000	0.000	2470.18	0.00	0.00
11	170.00	DBC-750	3	26.215	44.304	0.75	1.15	14.40	0.000	0.000	50.84	0.00	0.00
12	170.00	DTMABP7819VG12A	6	26.215	44.304	0.67	4.58	115.20	0.000	0.000	203.04	0.00	0.00
13	170.00	Low Profile Platform	1	26.215	44.304	1.00	22.00	1500.00	0.000	0.000	974.69	0.00	0.00
14	170.00	RRUS 11	6	26.215	44.304	0.76	13.41	304.20	0.000	0.000	593.96	0.00	0.00
15	170.00	DC6-48-60-18-8F	1	26.215	44.304	1.00	1.47	31.80	0.000	0.000	65.13	0.00	0.00
16	160.00	Double TMA 17/21	3	25.768	43.548	0.72	0.89	33.00	0.000	0.000	38.62	0.00	0.00
17	160.00	AIR 21 B2A B4P	3	25.768	43.548	0.83	16.16	274.50	0.000	0.000	703.58	0.00	0.00
18	160.00	AIR 21 B4A B2P	3	25.768	43.548	0.83	16.16	270.90	0.000	0.000	703.58	0.00	0.00
19	160.00	Platform w/ Hand Rail	1	25.768	43.548	1.00	32.00	1600.00	0.000	0.000	1393.53	0.00	0.00
20	160.00	LNx-6515DS	3	25.768	43.548	0.84	28.72	150.90	0.000	0.000	1250.55	0.00	0.00
21	160.00	S11B12	3	25.768	43.548	0.71	7.01	153.00	0.000	0.000	305.30	0.00	0.00
22	140.00	RRH2x60-1900	3	24.810	41.928	0.90	4.75	58.50	0.000	0.000	199.24	0.00	0.00
23	140.00	RRH2x40-07-U	3	24.810	41.928	0.78	5.22	152.10	0.000	0.000	218.79	0.00	0.00
24	140.00	HBXX-6517DS-A2M	6	24.810	41.928	0.77	40.33	244.80	0.000	0.000	1691.08	0.00	0.00
25	140.00	DB-T1-6Z-8AB-0Z	1	24.810	41.928	1.00	4.78	21.40	0.000	0.000	200.42	0.00	0.00
26	140.00	FD9R6004/2C-3L	6	24.810	41.928	0.75	1.62	18.60	0.000	0.000	67.92	0.00	0.00
27	140.00	Low Profile Platform	1	24.810	41.928	1.00	22.00	1500.00	0.000	0.000	922.42	0.00	0.00
28	140.00	KS-24019	6	24.810	41.928	1.00	0.72	3.00	0.000	0.000	30.19	0.00	0.00
29	140.00	LNx-6514DS-A1M	3	24.810	41.928	0.83	20.94	115.20	0.000	0.000	878.02	0.00	0.00
30	140.00	LNx-6514DS-VTM	3	24.810	41.928	0.80	19.99	99.30	0.000	0.000	838.23	0.00	0.00
31	130.00	1900MHz RRH	3	24.294	41.056	0.88	10.03	132.00	0.000	0.000	411.88	0.00	0.00
32	130.00	800 MHz RRH	3	24.294	41.056	0.92	6.87	159.00	0.000	0.000	282.16	0.00	0.00
33	130.00	800MHz Filter	3	24.294	41.056	0.69	1.61	26.40	0.000	0.000	66.29	0.00	0.00
34	130.00	ACU-A20-N	4	24.294	41.056	0.79	0.44	4.00	0.000	0.000	18.16	0.00	0.00
35	130.00	APXVTM14-C-120	3	24.294	41.056	0.79	16.35	168.00	0.000	0.000	671.39	0.00	0.00
36	130.00	APXVSP18-C-A20	3	24.294	41.056	0.83	20.57	171.00	0.000	0.000	844.42	0.00	0.00
37	130.00	Low Profile Platform	1	24.294	41.056	1.00	22.00	1500.00	0.000	0.000	903.24	0.00	0.00
38	130.00	RF Filters	3	24.294	41.056	0.67	2.19	46.50	0.000	0.000	89.95	0.00	0.00
39	130.00	TD-RRH8x20-25	3	24.294	41.056	0.69	9.77	210.00	0.000	0.000	401.14	0.00	0.00
40	92.00	MF-900B	2	22.028	37.228	1.00	6.90	26.00	0.000	0.000	256.87	0.00	0.00
41	92.00	Low Profile Platform	1	22.028	37.228	1.00	22.00	1500.00	0.000	0.000	819.02	0.00	0.00
42	92.00	DB205	1	22.617	38.224	1.00	1.80	38.00	0.000	9.000	68.80	0.00	619.22
43	92.00	ANT450Y10-WR	1	22.028	37.228	1.00	0.49	5.00	0.000	0.000	18.24	0.00	0.00
44	92.00	ANT4506-9	1	22.229	37.567	1.00	2.77	18.00	0.000	3.000	104.06	0.00	312.18
45	92.00	ANT150D3	1	22.360	37.789	1.00	2.18	18.00	0.000	5.000	82.38	0.00	411.90

Totals: 12,929.80

21,456.54

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

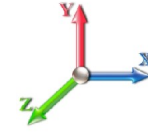
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 10



Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		482.23	1822.60	0.00	0.00
10.00		473.61	1791.55	0.00	0.00
15.00		464.98	1760.51	0.00	0.00
20.00		456.36	1729.46	0.00	0.00
25.00		447.74	1698.42	0.00	0.00
30.00		439.11	1667.37	0.00	0.00
35.00		441.33	1636.32	0.00	0.00
40.00		448.86	1605.28	0.00	0.00
45.00		454.38	1574.23	0.00	0.00
46.25		112.98	388.71	0.00	0.00
50.00		348.32	2115.72	0.00	0.00
53.25		302.73	1807.14	0.00	0.00
55.00		162.74	472.12	0.00	0.00
60.00		469.53	1330.58	0.00	0.00
65.00		469.71	1303.42	0.00	0.00
70.00		468.88	1276.25	0.00	0.00
75.00		467.14	1249.09	0.00	0.00
80.00		464.57	1221.92	0.00	0.00
85.00		461.26	1194.76	0.00	0.00
90.00		457.24	1167.59	0.00	0.00
92.00	(7) appurtenances	1530.16	2064.43	0.00	1343.31
93.75		157.51	397.88	0.00	0.00
95.00		113.96	507.07	0.00	0.00
99.75		432.29	1898.10	0.00	0.00
100.00		22.47	48.61	0.00	0.00
105.00		449.36	960.06	0.00	0.00
110.00		443.12	936.77	0.00	0.00
115.00		436.39	913.49	0.00	0.00
120.00		429.18	890.20	0.00	0.00
125.00		421.53	866.92	0.00	0.00
130.00	(26) appurtenances	4102.09	3260.53	0.00	0.00
135.00		404.98	804.04	0.00	0.00
140.00	(32) appurtenances	5442.45	2993.65	0.00	0.00
142.75		213.48	406.23	0.00	0.00
145.00		175.05	531.67	0.00	0.00
147.25		173.14	523.81	0.00	0.00
150.00		209.07	273.69	0.00	0.00
155.00		373.26	485.59	0.00	0.00
160.00	(16) appurtenances	4758.24	2952.36	0.00	0.00
165.00		352.58	432.84	0.00	0.00
170.00	(44) appurtenances	5486.75	3004.52	0.00	0.00
175.00		330.70	372.44	0.00	0.00
180.00		319.34	356.92	0.00	0.00
185.00		307.70	341.40	0.00	0.00
187.00	(9) appurtenances	1951.57	1757.71	0.00	2058.10
Totals:		37,330.05	56,793.96	0.00	3,401.41

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

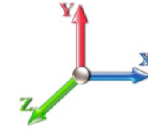
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 11



Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	-37.393	-56.752	0.000	0.000	0.000	-4816.1	0.000	0.000	0.000	0.000	0.000
5.00	-37.030	-54.848	0.000	0.000	0.000	-4629.1	-0.068	0.000	0.068	-0.126	0.000
10.00	-36.669	-52.976	0.000	0.000	0.000	-4444.0	-0.268	0.000	0.268	-0.253	0.000
15.00	-36.311	-51.136	0.000	0.000	0.000	-4260.6	-0.602	0.000	0.602	-0.382	0.000
20.00	-35.954	-49.328	0.000	0.000	0.000	-4079.1	-1.073	0.000	1.073	-0.513	0.000
25.00	-35.600	-47.551	0.000	0.000	0.000	-3899.3	-1.681	0.000	1.681	-0.645	0.000
30.00	-35.248	-45.807	0.000	0.000	0.000	-3721.3	-2.429	0.000	2.429	-0.779	0.000
35.00	-34.888	-44.094	0.000	0.000	0.000	-3545.1	-3.318	0.000	3.318	-0.915	0.000
40.00	-34.514	-42.414	0.000	0.000	0.000	-3370.6	-4.351	0.000	4.351	-1.052	0.000
45.00	-34.090	-40.797	0.000	0.000	0.000	-3198.1	-5.528	0.000	5.528	-1.191	0.000
46.25	-34.019	-40.369	0.000	0.000	0.000	-3155.5	-5.844	0.000	5.844	-1.227	0.000
50.00	-33.690	-38.203	0.000	0.000	0.000	-3027.9	-6.851	0.000	6.851	-1.333	0.000
53.25	-33.389	-36.362	0.000	0.000	0.000	-2918.4	-7.791	0.000	7.791	-1.425	0.000
55.00	-33.279	-35.834	0.000	0.000	0.000	-2860.0	-8.323	0.000	8.323	-1.476	0.000
60.00	-32.867	-34.428	0.000	0.000	0.000	-2693.6	-9.952	0.000	9.952	-1.630	0.000
65.00	-32.448	-33.052	0.000	0.000	0.000	-2529.2	-11.743	0.000	11.743	-1.785	0.000
70.00	-32.024	-31.705	0.000	0.000	0.000	-2367.0	-13.696	0.000	13.696	-1.940	0.000
75.00	-31.596	-30.387	0.000	0.000	0.000	-2206.9	-15.811	0.000	15.811	-2.096	0.000
80.00	-31.164	-29.100	0.000	0.000	0.000	-2048.9	-18.090	0.000	18.090	-2.251	0.000
85.00	-30.729	-27.842	0.000	0.000	0.000	-1893.1	-20.531	0.000	20.531	-2.406	0.000
90.00	-30.272	-26.639	0.000	0.000	0.000	-1739.5	-23.133	0.000	23.133	-2.560	0.000
92.00	-28.675	-24.617	0.000	0.000	0.000	-1677.6	-24.219	0.000	24.219	-2.622	0.000
93.75	-28.519	-24.203	0.000	0.000	0.000	-1627.4	-25.190	0.000	25.190	-2.676	0.000
95.00	-28.419	-23.656	0.000	0.000	0.000	-1591.7	-25.896	0.000	25.896	-2.715	0.000
99.75	-27.923	-21.745	0.000	0.000	0.000	-1456.7	-28.670	0.000	28.670	-2.858	0.000
100.00	-27.931	-21.656	0.000	0.000	0.000	-1449.8	-28.820	0.000	28.820	-2.866	0.000
105.00	-27.491	-20.643	0.000	0.000	0.000	-1310.1	-31.909	0.000	31.909	-3.029	0.000
110.00	-27.052	-19.658	0.000	0.000	0.000	-1172.7	-35.166	0.000	35.166	-3.187	0.000
115.00	-26.613	-18.701	0.000	0.000	0.000	-1037.4	-38.586	0.000	38.586	-3.341	0.000
120.00	-26.176	-17.773	0.000	0.000	0.000	-904.38	-42.164	0.000	42.164	-3.488	0.000
125.00	-25.741	-16.874	0.000	0.000	0.000	-773.51	-45.891	0.000	45.891	-3.627	0.000
130.00	-21.467	-13.838	0.000	0.000	0.000	-644.80	-49.758	0.000	49.758	-3.755	0.000
135.00	-21.035	-13.022	0.000	0.000	0.000	-537.47	-53.752	0.000	53.752	-3.873	0.000
140.00	-15.414	-10.387	0.000	0.000	0.000	-432.30	-57.864	0.000	57.864	-3.979	0.000
142.75	-15.181	-9.984	0.000	0.000	0.000	-389.91	-60.171	0.000	60.171	-4.034	0.000
145.00	-14.976	-9.455	0.000	0.000	0.000	-355.75	-62.081	0.000	62.081	-4.077	0.000
147.25	-14.773	-8.934	0.000	0.000	0.000	-322.05	-64.011	0.000	64.011	-4.118	0.000
150.00	-14.556	-8.656	0.000	0.000	0.000	-281.43	-66.395	0.000	66.395	-4.164	0.000
155.00	-14.162	-8.176	0.000	0.000	0.000	-208.65	-70.811	0.000	70.811	-4.268	0.000
160.00	-9.202	-5.579	0.000	0.000	0.000	-137.84	-75.324	0.000	75.324	-4.349	0.000
165.00	-8.822	-5.166	0.000	0.000	0.000	-91.836	-79.910	0.000	79.910	-4.410	0.000
170.00	-3.121	-2.593	0.000	0.000	0.000	-47.728	-84.549	0.000	84.549	-4.451	0.000
175.00	-2.763	-2.247	0.000	0.000	0.000	-32.125	-89.221	0.000	89.221	-4.478	0.000
180.00	-2.417	-1.915	0.000	0.000	0.000	-18.311	-93.917	0.000	93.917	-4.497	0.000
185.00	-2.084	-1.599	0.000	0.000	0.000	-6.225	-98.629	0.000	98.629	-4.508	0.000
187.00	-1.952	0.000	0.000	0.000	0.000	-2.058	0.000	0.000	100.516	-4.510	0.000

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

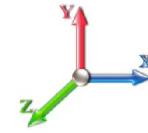
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.56	0.74	0.00	0.00	0.00	35.58	36.16	52.0	0.696
5.00	0.55	0.74	0.00	0.00	0.00	35.46	36.03	52.0	0.693
10.00	0.54	0.75	0.00	0.00	0.00	35.32	35.88	52.0	0.690
15.00	0.53	0.76	0.00	0.00	0.00	35.16	35.71	52.0	0.687
20.00	0.52	0.76	0.00	0.00	0.00	34.97	35.52	52.0	0.683
25.00	0.51	0.77	0.00	0.00	0.00	34.76	35.30	52.0	0.679
30.00	0.50	0.78	0.00	0.00	0.00	34.52	35.05	52.0	0.674
35.00	0.49	0.79	0.00	0.00	0.00	34.25	34.77	52.0	0.669
40.00	0.48	0.79	0.00	0.00	0.00	33.94	34.45	52.0	0.663
45.00	0.48	0.80	0.00	0.00	0.00	33.60	34.10	52.0	0.656
46.25	0.47	0.80	0.00	0.00	0.00	33.51	34.01	52.0	0.654
50.00	0.46	0.81	0.00	0.00	0.00	33.21	33.70	52.0	0.648
53.25	0.49	0.91	0.00	0.00	0.00	36.28	36.81	52.0	0.708
55.00	0.49	0.92	0.00	0.00	0.00	36.10	36.63	52.0	0.705
60.00	0.48	0.93	0.00	0.00	0.00	35.54	36.06	52.0	0.694
65.00	0.47	0.94	0.00	0.00	0.00	34.92	35.43	52.0	0.682
70.00	0.46	0.94	0.00	0.00	0.00	34.23	34.74	52.0	0.668
75.00	0.46	0.95	0.00	0.00	0.00	33.47	33.97	52.0	0.653
80.00	0.45	0.96	0.00	0.00	0.00	32.62	33.11	52.0	0.637
85.00	0.44	0.97	0.00	0.00	0.00	31.68	32.17	52.0	0.619
90.00	0.43	0.98	0.00	0.00	0.00	30.64	31.12	52.0	0.599
92.00	0.40	0.94	0.00	0.00	0.00	30.17	30.62	52.0	0.589
93.75	0.40	0.95	0.00	0.00	0.00	29.81	30.26	52.0	0.582
95.00	0.39	0.95	0.00	0.00	0.00	29.55	29.99	52.0	0.577
99.75	0.42	1.09	0.00	0.00	0.00	31.92	32.39	52.0	0.623
100.00	0.42	1.10	0.00	0.00	0.00	31.85	32.33	52.0	0.622
105.00	0.41	1.11	0.00	0.00	0.00	30.39	30.86	52.0	0.594
110.00	0.40	1.12	0.00	0.00	0.00	28.76	29.23	52.0	0.562
115.00	0.40	1.14	0.00	0.00	0.00	26.94	27.41	52.0	0.527
120.00	0.39	1.15	0.00	0.00	0.00	24.92	25.38	52.0	0.488
125.00	0.38	1.17	0.00	0.00	0.00	22.65	23.12	52.0	0.445
130.00	0.32	1.00	0.00	0.00	0.00	20.11	20.50	52.0	0.394
135.00	0.31	1.02	0.00	0.00	0.00	17.88	18.28	52.0	0.352
140.00	0.26	0.77	0.00	0.00	0.00	15.38	15.69	52.0	0.302
142.75	0.25	0.77	0.00	0.00	0.00	14.41	14.72	52.0	0.283
145.00	0.24	0.77	0.00	0.00	0.00	13.56	13.87	52.0	0.267
147.25	0.34	1.14	0.00	0.00	0.00	18.23	18.68	52.0	0.359
150.00	0.34	1.15	0.00	0.00	0.00	16.56	17.02	52.0	0.327
155.00	0.33	1.16	0.00	0.00	0.00	13.21	13.69	52.0	0.263
160.00	0.23	0.78	0.00	0.00	0.00	9.41	9.74	52.0	0.187
165.00	0.23	0.78	0.00	0.00	0.00	6.78	7.14	52.0	0.137
170.00	0.12	0.29	0.00	0.00	0.00	3.83	3.97	52.0	0.076
175.00	0.11	0.26	0.00	0.00	0.00	2.80	2.95	52.0	0.057
180.00	0.10	0.24	0.00	0.00	0.00	1.75	1.89	52.0	0.036
185.00	0.08	0.22	0.00	0.00	0.00	0.65	0.83	52.0	0.016
187.00	0.00	0.21	0.00	0.00	0.00	0.22	0.43	52.0	0.008

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

7/28/2015
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Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	12.287	20.77	374.57	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	12.287	20.77	367.94	0.650	0.500	5.00	27.210	17.69	367.3	198.2	1920.9
10.00		0.00	1.00	12.287	20.77	361.30	0.650	0.500	5.00	26.731	17.38	360.8	194.6	1886.3
15.00		0.00	1.00	12.287	20.77	354.66	0.650	0.500	5.00	26.252	17.06	354.3	191.1	1851.7
20.00		0.00	1.00	12.287	20.77	348.02	0.650	0.500	5.00	25.773	16.75	347.9	187.6	1817.2
25.00		0.00	1.00	12.287	20.77	341.38	0.650	0.500	5.00	25.294	16.44	341.4	184.0	1782.6
30.00		0.00	1.00	12.287	20.77	334.74	0.650	0.500	5.00	24.815	16.13	334.9	180.5	1748.0
35.00		0.00	1.03	12.597	21.29	332.21	0.650	0.500	5.00	24.336	15.82	336.7	176.9	1713.4
40.00		0.00	1.06	13.073	22.09	331.59	0.650	0.500	5.00	23.857	15.51	342.6	173.4	1678.8
45.00		0.00	1.10	13.510	22.83	330.12	0.650	0.500	5.00	23.378	15.20	347.0	169.8	1644.2
46.25	Bot - Section 2	0.00	1.11	13.614	23.01	329.64	0.650	0.500	1.25	5.770	3.75	86.3	42.2	406.0
50.00		0.00	1.13	13.915	23.52	327.96	0.650	0.500	3.75	17.402	11.31	266.0	126.7	2167.5
53.25	Top - Section 1	0.00	1.15	14.162	23.93	326.24	0.650	0.500	3.25	14.864	9.66	231.2	108.3	1850.6
55.00		0.00	1.16	14.291	24.15	330.66	0.650	0.500	1.75	7.920	5.15	124.3	57.9	495.1
60.00		0.00	1.19	14.645	24.75	327.48	0.650	0.500	5.00	22.305	14.50	358.8	161.9	1392.6
65.00		0.00	1.22	14.978	25.31	323.86	0.650	0.500	5.00	21.826	14.19	359.1	158.3	1361.9
70.00		0.00	1.24	15.294	25.85	319.85	0.650	0.500	5.00	21.347	13.88	358.6	154.8	1331.2
75.00		0.00	1.27	15.594	26.35	315.49	0.650	0.500	5.00	20.867	13.56	357.5	151.2	1300.4
80.00		0.00	1.29	15.881	26.84	310.83	0.650	0.500	5.00	20.388	13.25	355.7	147.7	1269.7
85.00		0.00	1.31	16.155	27.30	305.89	0.650	0.500	5.00	19.909	12.94	353.3	144.1	1239.0
90.00		0.00	1.34	16.418	27.75	300.69	0.650	0.500	5.00	19.430	12.63	350.4	140.6	1208.3
92.00	Appurtenance(s)	0.00	1.34	16.520	27.92	298.55	0.650	0.500	2.00	7.638	4.96	138.6	55.7	475.1
93.75	Bot - Section 3	0.00	1.35	16.609	28.07	296.65	0.650	0.500	1.75	6.620	4.30	120.8	48.3	411.8
95.00		0.00	1.36	16.671	28.17	295.27	0.650	0.500	1.25	4.771	3.10	87.4	34.8	517.3
99.75	Top - Section 2	0.00	1.38	16.902	28.57	289.92	0.650	0.500	4.75	17.857	11.61	331.5	129.2	1933.9
100.00		0.00	1.38	16.914	28.59	294.71	0.650	0.500	0.25	0.928	0.60	17.2	6.8	50.5
105.00		0.00	1.40	17.150	28.98	288.91	0.650	0.500	5.00	18.305	11.90	344.9	132.2	994.0
110.00		0.00	1.41	17.377	29.37	282.92	0.650	0.500	5.00	17.826	11.59	340.3	128.7	967.2
115.00		0.00	1.43	17.597	29.74	276.76	0.650	0.500	5.00	17.347	11.28	335.3	125.2	940.4
120.00		0.00	1.45	17.811	30.10	270.44	0.650	0.500	5.00	16.868	10.96	330.0	121.6	913.5
125.00		0.00	1.47	18.018	30.45	263.97	0.650	0.500	5.00	16.389	10.65	324.4	118.1	886.7
130.00	Appurtenance(s)	0.00	1.48	18.219	30.79	257.36	0.650	0.500	5.00	15.910	10.34	318.4	114.5	859.9
135.00		0.00	1.50	18.415	31.12	250.62	0.650	0.500	5.00	15.431	10.03	312.1	111.0	833.0
140.00	Appurtenance(s)	0.00	1.51	18.606	31.44	243.74	0.650	0.500	5.00	14.952	9.72	305.6	107.4	806.2
142.75	Bot - Section 4	0.00	1.52	18.709	31.62	239.91	0.650	0.500	2.75	8.019	5.21	164.8	58.0	432.4
145.00		0.00	1.53	18.792	31.76	236.75	0.650	0.500	2.25	6.547	4.26	135.2	47.4	553.1
147.25	Top - Section 3	0.00	1.54	18.875	31.90	233.56	0.650	0.500	2.25	6.450	4.19	133.7	46.7	544.5
150.00		0.00	1.54	18.974	32.07	233.23	0.650	0.500	2.75	7.752	5.04	161.6	56.0	297.9
155.00		0.00	1.56	19.151	32.37	226.03	0.650	0.500	5.00	13.723	8.92	288.7	98.3	526.0
160.00	Appurtenance(s)	0.00	1.57	19.325	32.66	218.72	0.650	0.500	5.00	13.243	8.61	281.1	94.8	507.0
165.00		0.00	1.59	19.494	32.95	211.32	0.650	0.500	5.00	12.764	8.30	273.3	91.2	487.9
170.00	Appurtenance(s)	0.00	1.60	19.660	33.23	203.82	0.650	0.500	5.00	12.285	7.99	265.3	87.7	468.8
175.00		0.00	1.61	19.823	33.50	196.23	0.650	0.500	5.00	11.806	7.67	257.1	84.1	449.8
180.00		0.00	1.63	19.982	33.77	188.55	0.650	0.500	5.00	11.327	7.36	248.6	80.6	430.7
185.00		0.00	1.64	20.138	34.03	180.79	0.650	0.500	5.00	10.848	7.05	240.0	77.0	411.6
187.00	Appurtenance(s)	0.00	1.64	20.200	34.14	177.66	0.650	0.500	2.00	4.205	2.73	93.3	30.2	159.7
Totals:									187.00			12,183.6		45,924.4

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

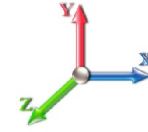
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 14



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	187.00	MF-900B	2	20.200	34.138	1.00	20.86	90.40	0.000	0.000	712.12	0.00	0.00
2	187.00	Low Profile Platform	1	20.200	34.138	1.00	27.00	1800.00	0.000	0.000	921.73	0.00	0.00
3	187.00	DB201	2	20.345	34.382	1.00	13.32	112.80	0.000	4.750	457.97	0.00	2175.38
4	187.00	ANT900D6-9	2	20.263	34.244	1.00	3.34	43.80	0.000	2.042	114.37	0.00	233.52
5	187.00	ANT450F6	1	20.319	34.340	1.00	2.67	35.00	0.000	3.917	91.69	0.00	359.11
6	187.00	6' Lightning rod	1	20.200	34.138	1.00	0.98	11.80	0.000	0.000	33.46	0.00	0.00
7	170.00	7770.00	3	19.660	33.226	0.75	14.69	0.00	0.000	0.000	488.18	0.00	0.00
8	170.00	782 10250	12	19.660	33.226	0.78	6.46	120.00	0.000	0.000	214.59	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	19.660	33.226	0.98	0.32	5.40	0.000	0.000	10.75	0.00	0.00
10	170.00	AM-X-CD-16-65-00T-RET	9	19.660	33.226	0.75	61.29	855.00	0.000	0.000	2036.43	0.00	0.00
11	170.00	DBC-750	3	19.660	33.226	0.77	1.52	23.10	0.000	0.000	50.66	0.00	0.00
12	170.00	DTMABP7819VG12A	6	19.660	33.226	0.69	5.63	159.00	0.000	0.000	187.08	0.00	0.00
13	170.00	Low Profile Platform	1	19.660	33.226	1.00	27.00	1800.00	0.000	0.000	897.11	0.00	0.00
14	170.00	RRUS 11	6	19.660	33.226	0.78	14.70	396.00	0.000	0.000	488.27	0.00	0.00
15	170.00	DC6-48-60-18-8F	1	19.660	33.226	1.00	1.67	49.50	0.000	0.000	55.49	0.00	0.00
16	160.00	Double TMA 17/21	3	19.325	32.659	0.75	1.10	39.42	0.000	0.000	35.81	0.00	0.00
17	160.00	AIR 21 B2A B4P	3	19.325	32.659	0.83	17.24	386.37	0.000	0.000	563.14	0.00	0.00
18	160.00	AIR 21 B4A B2P	3	19.325	32.659	0.83	17.24	382.77	0.000	0.000	563.14	0.00	0.00
19	160.00	Platform w/ Hand Rail	1	19.325	32.659	1.00	40.00	2200.00	0.000	0.000	1306.36	0.00	0.00
20	160.00	LNx-6515DS	3	19.325	32.659	0.84	30.04	336.33	0.000	0.000	981.02	0.00	0.00
21	160.00	S11B12	3	19.325	32.659	0.72	7.56	201.21	0.000	0.000	246.93	0.00	0.00
22	140.00	RRH2x60-1900	3	18.606	31.444	0.91	5.27	145.20	0.000	0.000	165.68	0.00	0.00
23	140.00	RRH2x40-07-U	3	18.606	31.444	0.80	6.10	202.50	0.000	0.000	191.69	0.00	0.00
24	140.00	HBXX-6517DS-A2M	6	18.606	31.444	0.79	45.46	547.20	0.000	0.000	1429.36	0.00	0.00
25	140.00	DB-T1-6Z-8AB-0Z	1	18.606	31.444	1.00	5.04	51.10	0.000	0.000	158.48	0.00	0.00
26	140.00	FD9R6004/2C-3L	6	18.606	31.444	0.77	2.31	32.40	0.000	0.000	72.64	0.00	0.00
27	140.00	Low Profile Platform	1	18.606	31.444	1.00	27.00	1800.00	0.000	0.000	849.00	0.00	0.00
28	140.00	KS-24019	6	18.606	31.444	1.00	1.08	13.80	0.000	0.000	33.96	0.00	0.00
29	140.00	LNx-6514DS-A1M	3	18.606	31.444	0.85	23.56	266.70	0.000	0.000	740.89	0.00	0.00
30	140.00	LNx-6514DS-VTM	3	18.606	31.444	0.82	22.51	249.30	0.000	0.000	707.78	0.00	0.00
31	130.00	1900MHz RRH	3	18.219	30.790	0.89	11.21	225.60	0.000	0.000	345.28	0.00	0.00
32	130.00	800 MHz RRH	3	18.219	30.790	0.93	7.87	222.30	0.000	0.000	242.25	0.00	0.00
33	130.00	800MHz Filter	3	18.219	30.790	0.71	2.04	41.40	0.000	0.000	62.96	0.00	0.00
34	130.00	ACU-A20-N	4	18.219	30.790	0.81	0.71	9.20	0.000	0.000	21.95	0.00	0.00
35	130.00	APXVTM14-C-120	3	18.219	30.790	0.81	17.71	275.70	0.000	0.000	545.44	0.00	0.00
36	130.00	APXVSP18-C-A20	3	18.219	30.790	0.85	23.15	319.50	0.000	0.000	712.92	0.00	0.00
37	130.00	Low Profile Platform	1	18.219	30.790	1.00	27.00	1800.00	0.000	0.000	831.34	0.00	0.00
38	130.00	RF Filters	3	18.219	30.790	0.69	2.63	66.00	0.000	0.000	80.94	0.00	0.00
39	130.00	TD-RRH8x20-25	3	18.219	30.790	0.71	10.59	276.00	0.000	0.000	325.95	0.00	0.00
40	92.00	MF-900B	2	16.520	27.919	1.00	20.86	90.40	0.000	0.000	582.40	0.00	0.00
41	92.00	Low Profile Platform	1	16.520	27.919	1.00	27.00	1800.00	0.000	0.000	753.82	0.00	0.00
42	92.00	DB205	1	16.962	28.666	1.00	3.61	54.60	0.000	9.000	103.48	0.00	931.36
43	92.00	ANT450Y10-WR	1	16.520	27.919	1.00	0.82	10.80	0.000	0.000	22.89	0.00	0.00
44	92.00	ANT4506-9	1	16.671	28.174	1.00	3.63	41.60	0.000	3.000	102.27	0.00	306.81
45	92.00	ANT150D3	1	16.769	28.340	1.00	4.62	38.90	0.000	5.000	130.93	0.00	654.66

Totals: 17,628.10

19,670.62

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

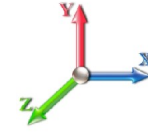
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 15



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		367.28	2020.80	0.00	0.00
10.00		360.81	1986.20	0.00	0.00
15.00		354.34	1951.61	0.00	0.00
20.00		347.87	1917.01	0.00	0.00
25.00		341.41	1882.42	0.00	0.00
30.00		334.94	1847.82	0.00	0.00
35.00		336.74	1813.23	0.00	0.00
40.00		342.61	1778.64	0.00	0.00
45.00		346.95	1744.04	0.00	0.00
46.25		86.29	430.94	0.00	0.00
50.00		266.00	2242.44	0.00	0.00
53.25		231.25	1915.47	0.00	0.00
55.00		124.34	530.02	0.00	0.00
60.00		358.83	1492.45	0.00	0.00
65.00		359.11	1461.74	0.00	0.00
70.00		358.64	1431.02	0.00	0.00
75.00		357.47	1400.31	0.00	0.00
80.00		355.68	1369.60	0.00	0.00
85.00		353.32	1338.88	0.00	0.00
90.00		350.43	1308.17	0.00	0.00
92.00	(7) appurtenances	1834.41	2551.39	0.00	1892.83
93.75		120.78	446.15	0.00	0.00
95.00		87.37	541.90	0.00	0.00
99.75		331.55	2027.28	0.00	0.00
100.00		17.24	55.40	0.00	0.00
105.00		344.85	1092.30	0.00	0.00
110.00		340.28	1065.47	0.00	0.00
115.00		335.33	1038.64	0.00	0.00
120.00		330.02	1011.80	0.00	0.00
125.00		324.38	984.97	0.00	0.00
130.00	(26) appurtenances	3487.46	4193.84	0.00	0.00
135.00		312.15	915.00	0.00	0.00
140.00	(32) appurtenances	4655.07	4196.36	0.00	0.00
142.75		164.81	464.24	0.00	0.00
145.00		135.15	579.10	0.00	0.00
147.25		133.73	570.52	0.00	0.00
150.00		161.57	329.71	0.00	0.00
155.00		288.69	583.89	0.00	0.00
160.00	(16) appurtenances	3977.55	4110.92	0.00	0.00
165.00		273.34	524.05	0.00	0.00
170.00	(44) appurtenances	4693.86	3912.98	0.00	0.00
175.00		257.08	456.56	0.00	0.00
180.00		248.63	437.49	0.00	0.00
185.00		239.98	418.42	0.00	0.00
187.00	(9) appurtenances	2424.65	2256.25	0.00	2768.01
	Totals:	31,854.22	66,627.44	0.00	4,660.84

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

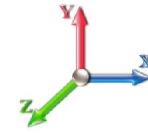
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 16



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	-31.920	-66.596	0.000	0.000	0.000	-4232.3	0.000	0.000	0.000	0.000	0.000
5.00	-31.676	-64.514	0.000	0.000	0.000	-4072.7	-0.059	0.000	0.059	-0.110	0.000
10.00	-31.432	-62.467	0.000	0.000	0.000	-3914.3	-0.235	0.000	0.235	-0.222	0.000
15.00	-31.189	-60.455	0.000	0.000	0.000	-3757.2	-0.530	0.000	0.530	-0.336	0.000
20.00	-30.947	-58.478	0.000	0.000	0.000	-3601.2	-0.944	0.000	0.944	-0.452	0.000
25.00	-30.705	-56.535	0.000	0.000	0.000	-3446.5	-1.480	0.000	1.480	-0.569	0.000
30.00	-30.464	-54.628	0.000	0.000	0.000	-3293.0	-2.139	0.000	2.139	-0.687	0.000
35.00	-30.215	-52.756	0.000	0.000	0.000	-3140.7	-2.924	0.000	2.924	-0.807	0.000
40.00	-29.954	-50.918	0.000	0.000	0.000	-2989.6	-3.835	0.000	3.835	-0.929	0.000
45.00	-29.643	-49.141	0.000	0.000	0.000	-2839.8	-4.874	0.000	4.874	-1.052	0.000
46.25	-29.602	-48.679	0.000	0.000	0.000	-2802.8	-5.154	0.000	5.154	-1.084	0.000
50.00	-29.364	-46.397	0.000	0.000	0.000	-2691.8	-6.044	0.000	6.044	-1.178	0.000
53.25	-29.141	-44.455	0.000	0.000	0.000	-2596.3	-6.875	0.000	6.875	-1.261	0.000
55.00	-29.075	-43.881	0.000	0.000	0.000	-2545.3	-7.346	0.000	7.346	-1.306	0.000
60.00	-28.783	-42.329	0.000	0.000	0.000	-2400.0	-8.787	0.000	8.787	-1.443	0.000
65.00	-28.484	-40.808	0.000	0.000	0.000	-2256.0	-10.372	0.000	10.372	-1.581	0.000
70.00	-28.179	-39.320	0.000	0.000	0.000	-2113.6	-12.103	0.000	12.103	-1.720	0.000
75.00	-27.870	-37.864	0.000	0.000	0.000	-1972.7	-13.978	0.000	13.978	-1.858	0.000
80.00	-27.557	-36.440	0.000	0.000	0.000	-1833.4	-15.999	0.000	15.999	-1.997	0.000
85.00	-27.240	-35.050	0.000	0.000	0.000	-1695.6	-18.166	0.000	18.166	-2.136	0.000
90.00	-26.896	-33.711	0.000	0.000	0.000	-1559.4	-20.477	0.000	20.477	-2.274	0.000
92.00	-24.989	-31.213	0.000	0.000	0.000	-1503.7	-21.441	0.000	21.441	-2.329	0.000
93.75	-24.872	-30.754	0.000	0.000	0.000	-1460.0	-22.304	0.000	22.304	-2.378	0.000
95.00	-24.806	-30.180	0.000	0.000	0.000	-1428.9	-22.932	0.000	22.932	-2.413	0.000
99.75	-24.420	-28.141	0.000	0.000	0.000	-1311.1	-25.398	0.000	25.398	-2.542	0.000
100.00	-24.439	-28.053	0.000	0.000	0.000	-1305.0	-25.532	0.000	25.532	-2.549	0.000
105.00	-24.112	-26.916	0.000	0.000	0.000	-1182.8	-28.280	0.000	28.280	-2.695	0.000
110.00	-23.785	-25.810	0.000	0.000	0.000	-1062.2	-31.179	0.000	31.179	-2.839	0.000
115.00	-23.456	-24.734	0.000	0.000	0.000	-943.35	-34.227	0.000	34.227	-2.978	0.000
120.00	-23.127	-23.688	0.000	0.000	0.000	-826.07	-37.418	0.000	37.418	-3.112	0.000
125.00	-22.797	-22.674	0.000	0.000	0.000	-710.44	-40.746	0.000	40.746	-3.239	0.000
130.00	-19.111	-18.650	0.000	0.000	0.000	-596.46	-44.202	0.000	44.202	-3.357	0.000
135.00	-18.777	-17.721	0.000	0.000	0.000	-500.90	-47.776	0.000	47.776	-3.467	0.000
140.00	-13.891	-13.801	0.000	0.000	0.000	-407.02	-51.460	0.000	51.460	-3.566	0.000
142.75	-13.708	-13.337	0.000	0.000	0.000	-368.82	-53.528	0.000	53.528	-3.618	0.000
145.00	-13.545	-12.758	0.000	0.000	0.000	-337.98	-55.242	0.000	55.242	-3.658	0.000
147.25	-13.384	-12.187	0.000	0.000	0.000	-307.50	-56.975	0.000	56.975	-3.697	0.000
150.00	-13.217	-11.851	0.000	0.000	0.000	-270.69	-59.117	0.000	59.117	-3.742	0.000
155.00	-12.909	-11.267	0.000	0.000	0.000	-204.61	-63.090	0.000	63.090	-3.843	0.000
160.00	-8.671	-7.425	0.000	0.000	0.000	-140.07	-67.158	0.000	67.158	-3.924	0.000
165.00	-8.368	-6.913	0.000	0.000	0.000	-96.717	-71.300	0.000	71.300	-3.986	0.000
170.00	-3.414	-3.336	0.000	0.000	0.000	-54.877	-75.498	0.000	75.498	-4.031	0.000
175.00	-3.127	-2.897	0.000	0.000	0.000	-37.805	-79.734	0.000	79.734	-4.062	0.000
180.00	-2.849	-2.478	0.000	0.000	0.000	-22.171	-83.998	0.000	83.998	-4.085	0.000
185.00	-2.580	-2.077	0.000	0.000	0.000	-7.927	-88.281	0.000	88.281	-4.098	0.000
187.00	-2.425	0.000	0.000	0.000	0.000	-2.768	0.000	0.000	89.997	-4.100	0.000

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

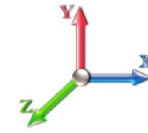
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 17



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.65	0.63	0.00	0.00	0.00	31.27	31.94	52.0	0.614
5.00	0.64	0.64	0.00	0.00	0.00	31.20	31.86	52.0	0.613
10.00	0.63	0.64	0.00	0.00	0.00	31.11	31.77	52.0	0.611
15.00	0.63	0.65	0.00	0.00	0.00	31.01	31.65	52.0	0.609
20.00	0.62	0.66	0.00	0.00	0.00	30.88	31.51	52.0	0.606
25.00	0.61	0.67	0.00	0.00	0.00	30.73	31.35	52.0	0.603
30.00	0.60	0.67	0.00	0.00	0.00	30.55	31.17	52.0	0.600
35.00	0.59	0.68	0.00	0.00	0.00	30.34	30.96	52.0	0.596
40.00	0.58	0.69	0.00	0.00	0.00	30.11	30.71	52.0	0.591
45.00	0.57	0.70	0.00	0.00	0.00	29.83	30.43	52.0	0.585
46.25	0.57	0.70	0.00	0.00	0.00	29.76	30.36	52.0	0.584
50.00	0.55	0.71	0.00	0.00	0.00	29.53	30.10	52.0	0.579
53.25	0.60	0.80	0.00	0.00	0.00	32.28	32.91	52.0	0.633
55.00	0.60	0.80	0.00	0.00	0.00	32.13	32.76	52.0	0.630
60.00	0.59	0.81	0.00	0.00	0.00	31.67	32.29	52.0	0.621
65.00	0.58	0.82	0.00	0.00	0.00	31.15	31.77	52.0	0.611
70.00	0.58	0.83	0.00	0.00	0.00	30.57	31.18	52.0	0.600
75.00	0.57	0.84	0.00	0.00	0.00	29.92	30.52	52.0	0.587
80.00	0.56	0.85	0.00	0.00	0.00	29.19	29.79	52.0	0.573
85.00	0.55	0.86	0.00	0.00	0.00	28.38	28.97	52.0	0.557
90.00	0.54	0.87	0.00	0.00	0.00	27.47	28.05	52.0	0.540
92.00	0.51	0.82	0.00	0.00	0.00	27.04	27.59	52.0	0.531
93.75	0.51	0.83	0.00	0.00	0.00	26.75	27.29	52.0	0.525
95.00	0.50	0.83	0.00	0.00	0.00	26.53	27.06	52.0	0.521
99.75	0.55	0.96	0.00	0.00	0.00	28.72	29.32	52.0	0.564
100.00	0.55	0.96	0.00	0.00	0.00	28.67	29.26	52.0	0.563
105.00	0.54	0.97	0.00	0.00	0.00	27.43	28.02	52.0	0.539
110.00	0.53	0.99	0.00	0.00	0.00	26.05	26.64	52.0	0.512
115.00	0.52	1.00	0.00	0.00	0.00	24.50	25.08	52.0	0.483
120.00	0.52	1.02	0.00	0.00	0.00	22.76	23.34	52.0	0.449
125.00	0.51	1.03	0.00	0.00	0.00	20.80	21.39	52.0	0.411
130.00	0.43	0.89	0.00	0.00	0.00	18.60	19.09	52.0	0.367
135.00	0.42	0.91	0.00	0.00	0.00	16.66	17.16	52.0	0.330
140.00	0.34	0.69	0.00	0.00	0.00	14.48	14.87	52.0	0.286
142.75	0.34	0.70	0.00	0.00	0.00	13.63	14.02	52.0	0.270
145.00	0.33	0.70	0.00	0.00	0.00	12.89	13.27	52.0	0.255
147.25	0.47	1.03	0.00	0.00	0.00	17.41	17.96	52.0	0.346
150.00	0.46	1.04	0.00	0.00	0.00	15.93	16.49	52.0	0.317
155.00	0.46	1.05	0.00	0.00	0.00	12.95	13.53	52.0	0.260
160.00	0.31	0.74	0.00	0.00	0.00	9.56	9.96	52.0	0.192
165.00	0.30	0.74	0.00	0.00	0.00	7.14	7.55	52.0	0.145
170.00	0.15	0.31	0.00	0.00	0.00	4.40	4.58	52.0	0.088
175.00	0.14	0.30	0.00	0.00	0.00	3.30	3.48	52.0	0.067
180.00	0.12	0.29	0.00	0.00	0.00	2.12	2.29	52.0	0.044
185.00	0.11	0.27	0.00	0.00	0.00	0.83	1.05	52.0	0.020
187.00	0.00	0.26	0.00	0.00	0.00	0.30	0.54	52.0	0.010

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

7/28/2015
 Page: 18



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.82	270.33	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.82	265.54	0.650	0.000	5.00	26.794	17.42	188.4	0.0	1722.7
10.00		0.00	1.00	6.400	10.82	260.75	0.650	0.000	5.00	26.315	17.10	185.0	0.0	1691.7
15.00		0.00	1.00	6.400	10.82	255.96	0.650	0.000	5.00	25.836	16.79	181.6	0.0	1660.6
20.00		0.00	1.00	6.400	10.82	251.17	0.650	0.000	5.00	25.356	16.48	178.3	0.0	1629.6
25.00		0.00	1.00	6.400	10.82	246.38	0.650	0.000	5.00	24.877	16.17	174.9	0.0	1598.6
30.00		0.00	1.00	6.400	10.82	241.59	0.650	0.000	5.00	24.398	15.86	171.5	0.0	1567.5
35.00		0.00	1.03	6.561	11.09	239.76	0.650	0.000	5.00	23.919	15.55	172.4	0.0	1536.5
40.00		0.00	1.06	6.809	11.51	239.31	0.650	0.000	5.00	23.440	15.24	175.3	0.0	1505.4
45.00		0.00	1.10	7.037	11.89	238.25	0.650	0.000	5.00	22.961	14.92	177.5	0.0	1474.4
46.25	Bot - Section 2	0.00	1.11	7.091	11.98	237.91	0.650	0.000	1.25	5.665	3.68	44.1	0.0	363.7
50.00		0.00	1.13	7.248	12.25	236.69	0.650	0.000	3.75	17.090	11.11	136.1	0.0	2040.8
53.25	Top - Section 1	0.00	1.15	7.377	12.47	235.45	0.650	0.000	3.25	14.593	9.49	118.3	0.0	1742.2
55.00		0.00	1.16	7.444	12.58	238.64	0.650	0.000	1.75	7.774	5.05	63.6	0.0	437.2
60.00		0.00	1.19	7.628	12.89	236.34	0.650	0.000	5.00	21.888	14.23	183.4	0.0	1230.7
65.00		0.00	1.22	7.802	13.18	233.73	0.650	0.000	5.00	21.409	13.92	183.5	0.0	1203.6
70.00		0.00	1.24	7.966	13.46	230.84	0.650	0.000	5.00	20.930	13.60	183.2	0.0	1176.4
75.00		0.00	1.27	8.123	13.73	227.69	0.650	0.000	5.00	20.451	13.29	182.5	0.0	1149.2
80.00		0.00	1.29	8.272	13.98	224.33	0.650	0.000	5.00	19.972	12.98	181.5	0.0	1122.1
85.00		0.00	1.31	8.415	14.22	220.76	0.650	0.000	5.00	19.493	12.67	180.2	0.0	1094.9
90.00		0.00	1.34	8.552	14.45	217.01	0.650	0.000	5.00	19.013	12.36	178.6	0.0	1067.7
92.00	Appurtenance(s)	0.00	1.34	8.605	14.54	215.47	0.650	0.000	2.00	7.471	4.86	70.6	0.0	419.5
93.75	Bot - Section 3	0.00	1.35	8.651	14.62	214.09	0.650	0.000	1.75	6.474	4.21	61.5	0.0	363.5
95.00		0.00	1.36	8.683	14.67	213.10	0.650	0.000	1.25	4.667	3.03	44.5	0.0	482.5
99.75	Top - Section 2	0.00	1.38	8.804	14.88	209.23	0.650	0.000	4.75	17.461	11.35	168.9	0.0	1804.8
100.00		0.00	1.38	8.810	14.89	212.69	0.650	0.000	0.25	0.907	0.59	8.8	0.0	43.7
105.00		0.00	1.40	8.933	15.10	208.51	0.650	0.000	5.00	17.889	11.63	175.5	0.0	861.8
110.00		0.00	1.41	9.051	15.30	204.19	0.650	0.000	5.00	17.410	11.32	173.1	0.0	838.5
115.00		0.00	1.43	9.166	15.49	199.74	0.650	0.000	5.00	16.930	11.00	170.5	0.0	815.2
120.00		0.00	1.45	9.277	15.68	195.18	0.650	0.000	5.00	16.451	10.69	167.6	0.0	791.9
125.00		0.00	1.47	9.385	15.86	190.51	0.650	0.000	5.00	15.972	10.38	164.7	0.0	768.7
130.00	Appurtenance(s)	0.00	1.48	9.490	16.04	185.74	0.650	0.000	5.00	15.493	10.07	161.5	0.0	745.4
135.00		0.00	1.50	9.592	16.21	180.87	0.650	0.000	5.00	15.014	9.76	158.2	0.0	722.1
140.00	Appurtenance(s)	0.00	1.51	9.691	16.38	175.91	0.650	0.000	5.00	14.535	9.45	154.7	0.0	698.8
142.75	Bot - Section 4	0.00	1.52	9.745	16.47	173.15	0.650	0.000	2.75	7.790	5.06	83.4	0.0	374.4
145.00		0.00	1.53	9.788	16.54	170.86	0.650	0.000	2.25	6.360	4.13	68.4	0.0	505.6
147.25	Top - Section 3	0.00	1.54	9.831	16.61	168.57	0.650	0.000	2.25	6.263	4.07	67.6	0.0	497.8
150.00		0.00	1.54	9.883	16.70	168.32	0.650	0.000	2.75	7.522	4.89	81.7	0.0	241.9
155.00		0.00	1.56	9.975	16.86	163.13	0.650	0.000	5.00	13.306	8.65	145.8	0.0	427.7
160.00	Appurtenance(s)	0.00	1.57	10.066	17.01	157.86	0.650	0.000	5.00	12.827	8.34	141.8	0.0	412.2
165.00		0.00	1.59	10.154	17.16	152.51	0.650	0.000	5.00	12.348	8.03	137.7	0.0	396.7
170.00	Appurtenance(s)	0.00	1.60	10.240	17.31	147.10	0.650	0.000	5.00	11.869	7.71	133.5	0.0	381.2
175.00		0.00	1.61	10.325	17.45	141.62	0.650	0.000	5.00	11.389	7.40	129.2	0.0	365.6
180.00		0.00	1.63	10.408	17.59	136.08	0.650	0.000	5.00	10.910	7.09	124.7	0.0	350.1
185.00		0.00	1.64	10.489	17.73	130.48	0.650	0.000	5.00	10.431	6.78	120.2	0.0	334.6
187.00	Appurtenance(s)	0.00	1.64	10.522	17.78	128.22	0.650	0.000	2.00	4.038	2.62	46.7	0.0	129.5
Totals:									187.00			6,200.6		40,789.2

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

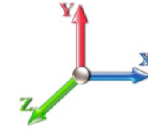
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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	187.00	MF-900B	2	10.522	17.781	1.00	6.90	26.00	0.000	0.000	122.69	0.00	0.00
2	187.00	Low Profile Platform	1	10.522	17.781	1.00	22.00	1500.00	0.000	0.000	391.19	0.00	0.00
3	187.00	DB201	2	10.597	17.909	1.00	7.08	50.00	0.000	4.750	126.79	0.00	602.27
4	187.00	ANT900D6-9	2	10.554	17.836	1.00	1.96	22.00	0.000	2.042	34.96	0.00	71.38
5	187.00	ANT450F6	1	10.584	17.886	1.00	1.86	21.00	0.000	3.917	33.27	0.00	130.30
6	187.00	6' Lightning rod	1	10.522	17.781	1.00	0.38	6.50	0.000	0.000	6.76	0.00	0.00
7	170.00	7770.00	3	10.240	17.306	0.73	12.88	105.00	0.000	0.000	222.86	0.00	0.00
8	170.00	782 10250	12	10.240	17.306	0.76	4.74	76.80	0.000	0.000	82.07	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	10.240	17.306	0.98	0.15	3.30	0.000	0.000	2.54	0.00	0.00
10	170.00	AM-X-CD-16-65-00T-RET	9	10.240	17.306	0.75	55.76	436.50	0.000	0.000	964.91	0.00	0.00
11	170.00	DBC-750	3	10.240	17.306	0.75	1.15	14.40	0.000	0.000	19.86	0.00	0.00
12	170.00	DTMABP7819VG12A	6	10.240	17.306	0.67	4.58	115.20	0.000	0.000	79.31	0.00	0.00
13	170.00	Low Profile Platform	1	10.240	17.306	1.00	22.00	1500.00	0.000	0.000	380.74	0.00	0.00
14	170.00	RRUS 11	6	10.240	17.306	0.76	13.41	304.20	0.000	0.000	232.02	0.00	0.00
15	170.00	DC6-48-60-18-8F	1	10.240	17.306	1.00	1.47	31.80	0.000	0.000	25.44	0.00	0.00
16	160.00	Double TMA 17/21	3	10.066	17.011	0.72	0.89	33.00	0.000	0.000	15.09	0.00	0.00
17	160.00	AIR 21 B2A B4P	3	10.066	17.011	0.83	16.16	274.50	0.000	0.000	274.84	0.00	0.00
18	160.00	AIR 21 B4A B2P	3	10.066	17.011	0.83	16.16	270.90	0.000	0.000	274.84	0.00	0.00
19	160.00	Platform w/ Hand Rail	1	10.066	17.011	1.00	32.00	1600.00	0.000	0.000	544.35	0.00	0.00
20	160.00	LNx-6515DS	3	10.066	17.011	0.84	28.72	150.90	0.000	0.000	488.50	0.00	0.00
21	160.00	S11B12	3	10.066	17.011	0.71	7.01	153.00	0.000	0.000	119.26	0.00	0.00
22	140.00	RRH2x60-1900	3	9.691	16.378	0.90	4.75	58.50	0.000	0.000	77.83	0.00	0.00
23	140.00	RRH2x40-07-U	3	9.691	16.378	0.78	5.22	152.10	0.000	0.000	85.47	0.00	0.00
24	140.00	HBXX-6517DS-A2M	6	9.691	16.378	0.77	40.33	244.80	0.000	0.000	660.58	0.00	0.00
25	140.00	DB-T1-6Z-8AB-0Z	1	9.691	16.378	1.00	4.78	21.40	0.000	0.000	78.29	0.00	0.00
26	140.00	FD9R6004/2C-3L	6	9.691	16.378	0.75	1.62	18.60	0.000	0.000	26.53	0.00	0.00
27	140.00	Low Profile Platform	1	9.691	16.378	1.00	22.00	1500.00	0.000	0.000	360.32	0.00	0.00
28	140.00	KS-24019	6	9.691	16.378	1.00	0.72	3.00	0.000	0.000	11.79	0.00	0.00
29	140.00	LNx-6514DS-A1M	3	9.691	16.378	0.83	20.94	115.20	0.000	0.000	342.98	0.00	0.00
30	140.00	LNx-6514DS-VTM	3	9.691	16.378	0.80	19.99	99.30	0.000	0.000	327.43	0.00	0.00
31	130.00	1900MHz RRH	3	9.490	16.038	0.88	10.03	132.00	0.000	0.000	160.89	0.00	0.00
32	130.00	800 MHz RRH	3	9.490	16.038	0.92	6.87	159.00	0.000	0.000	110.22	0.00	0.00
33	130.00	800MHz Filter	3	9.490	16.038	0.69	1.61	26.40	0.000	0.000	25.89	0.00	0.00
34	130.00	ACU-A20-N	4	9.490	16.038	0.79	0.44	4.00	0.000	0.000	7.10	0.00	0.00
35	130.00	APXVTM14-C-120	3	9.490	16.038	0.79	16.35	168.00	0.000	0.000	262.26	0.00	0.00
36	130.00	APXVSP18-C-A20	3	9.490	16.038	0.83	20.57	171.00	0.000	0.000	329.85	0.00	0.00
37	130.00	Low Profile Platform	1	9.490	16.038	1.00	22.00	1500.00	0.000	0.000	352.83	0.00	0.00
38	130.00	RF Filters	3	9.490	16.038	0.67	2.19	46.50	0.000	0.000	35.14	0.00	0.00
39	130.00	TD-RRH8x20-25	3	9.490	16.038	0.69	9.77	210.00	0.000	0.000	156.69	0.00	0.00
40	92.00	MF-900B	2	8.605	14.542	1.00	6.90	26.00	0.000	0.000	100.34	0.00	0.00
41	92.00	Low Profile Platform	1	8.605	14.542	1.00	22.00	1500.00	0.000	0.000	319.93	0.00	0.00
42	92.00	DB205	1	8.835	14.931	1.00	1.80	38.00	0.000	9.000	26.88	0.00	241.88
43	92.00	ANT450Y10-WR	1	8.605	14.542	1.00	0.49	5.00	0.000	0.000	7.13	0.00	0.00
44	92.00	ANT4506-9	1	8.683	14.675	1.00	2.77	18.00	0.000	3.000	40.65	0.00	121.95
45	92.00	ANT150D3	1	8.735	14.761	1.00	2.18	18.00	0.000	5.000	32.18	0.00	160.90

Totals: 12,929.80

8,381.46

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

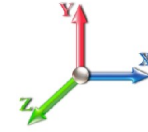
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		188.37	1822.60	0.00	0.00
10.00		185.00	1791.55	0.00	0.00
15.00		181.63	1760.51	0.00	0.00
20.00		178.27	1729.46	0.00	0.00
25.00		174.90	1698.42	0.00	0.00
30.00		171.53	1667.37	0.00	0.00
35.00		172.39	1636.32	0.00	0.00
40.00		175.34	1605.28	0.00	0.00
45.00		177.49	1574.23	0.00	0.00
46.25		44.13	388.71	0.00	0.00
50.00		136.06	2115.72	0.00	0.00
53.25		118.25	1807.14	0.00	0.00
55.00		63.57	472.12	0.00	0.00
60.00		183.41	1330.58	0.00	0.00
65.00		183.48	1303.42	0.00	0.00
70.00		183.15	1276.25	0.00	0.00
75.00		182.48	1249.09	0.00	0.00
80.00		181.47	1221.92	0.00	0.00
85.00		180.18	1194.76	0.00	0.00
90.00		178.61	1167.59	0.00	0.00
92.00	(7) appurtenances	597.72	2064.43	0.00	524.73
93.75		61.53	397.88	0.00	0.00
95.00		44.51	507.07	0.00	0.00
99.75		168.86	1898.10	0.00	0.00
100.00		8.78	48.61	0.00	0.00
105.00		175.53	960.06	0.00	0.00
110.00		173.09	936.77	0.00	0.00
115.00		170.46	913.49	0.00	0.00
120.00		167.65	890.20	0.00	0.00
125.00		164.66	866.92	0.00	0.00
130.00	(26) appurtenances	1602.38	3260.53	0.00	0.00
135.00		158.20	804.04	0.00	0.00
140.00	(32) appurtenances	2125.96	2993.65	0.00	0.00
142.75		83.39	406.23	0.00	0.00
145.00		68.38	531.67	0.00	0.00
147.25		67.63	523.81	0.00	0.00
150.00		81.67	273.69	0.00	0.00
155.00		145.80	485.59	0.00	0.00
160.00	(16) appurtenances	1858.69	2952.36	0.00	0.00
165.00		137.73	432.84	0.00	0.00
170.00	(44) appurtenances	2143.26	3004.52	0.00	0.00
175.00		129.18	372.44	0.00	0.00
180.00		124.74	356.92	0.00	0.00
185.00		120.19	341.40	0.00	0.00
187.00	(9) appurtenances	762.33	1757.71	0.00	803.95
Totals:		14,582.05	56,793.96	0.00	1,328.67

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

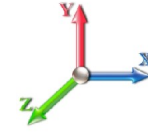
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 21



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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	-14.606	-56.787	0.000	0.000	0.000	-1882.6	0.000	0.000	0.000	0.000	0.000
5.00	-14.464	-54.953	0.000	0.000	0.000	-1809.6	-0.026	0.000	0.026	-0.049	0.000
10.00	-14.324	-53.149	0.000	0.000	0.000	-1737.2	-0.105	0.000	0.105	-0.099	0.000
15.00	-14.184	-51.376	0.000	0.000	0.000	-1665.6	-0.235	0.000	0.235	-0.149	0.000
20.00	-14.045	-49.635	0.000	0.000	0.000	-1594.7	-0.419	0.000	0.419	-0.200	0.000
25.00	-13.907	-47.924	0.000	0.000	0.000	-1524.5	-0.657	0.000	0.657	-0.252	0.000
30.00	-13.770	-46.245	0.000	0.000	0.000	-1455.0	-0.950	0.000	0.950	-0.305	0.000
35.00	-13.629	-44.597	0.000	0.000	0.000	-1386.1	-1.297	0.000	1.297	-0.358	0.000
40.00	-13.484	-42.980	0.000	0.000	0.000	-1318.0	-1.701	0.000	1.701	-0.411	0.000
45.00	-13.319	-41.400	0.000	0.000	0.000	-1250.5	-2.161	0.000	2.161	-0.466	0.000
46.25	-13.291	-41.005	0.000	0.000	0.000	-1233.9	-2.285	0.000	2.285	-0.480	0.000
50.00	-13.163	-38.881	0.000	0.000	0.000	-1184.1	-2.678	0.000	2.678	-0.521	0.000
53.25	-13.046	-37.069	0.000	0.000	0.000	-1141.3	-3.046	0.000	3.046	-0.557	0.000
55.00	-13.003	-36.589	0.000	0.000	0.000	-1118.4	-3.254	0.000	3.254	-0.577	0.000
60.00	-12.843	-35.246	0.000	0.000	0.000	-1053.4	-3.891	0.000	3.891	-0.637	0.000
65.00	-12.680	-33.932	0.000	0.000	0.000	-989.27	-4.591	0.000	4.591	-0.698	0.000
70.00	-12.516	-32.645	0.000	0.000	0.000	-925.86	-5.355	0.000	5.355	-0.759	0.000
75.00	-12.349	-31.385	0.000	0.000	0.000	-863.29	-6.183	0.000	6.183	-0.820	0.000
80.00	-12.182	-30.153	0.000	0.000	0.000	-801.54	-7.074	0.000	7.074	-0.880	0.000
85.00	-12.013	-28.949	0.000	0.000	0.000	-740.64	-8.028	0.000	8.028	-0.941	0.000
90.00	-11.835	-27.776	0.000	0.000	0.000	-680.57	-9.046	0.000	9.046	-1.001	0.000
92.00	-11.211	-25.718	0.000	0.000	0.000	-656.38	-9.471	0.000	9.471	-1.025	0.000
93.75	-11.150	-25.318	0.000	0.000	0.000	-636.76	-9.851	0.000	9.851	-1.047	0.000
95.00	-11.112	-24.804	0.000	0.000	0.000	-622.82	-10.127	0.000	10.127	-1.062	0.000
99.75	-10.919	-22.904	0.000	0.000	0.000	-570.04	-11.212	0.000	11.212	-1.118	0.000
100.00	-10.923	-22.849	0.000	0.000	0.000	-567.31	-11.271	0.000	11.271	-1.121	0.000
105.00	-10.752	-21.881	0.000	0.000	0.000	-512.70	-12.480	0.000	12.480	-1.185	0.000
110.00	-10.581	-20.937	0.000	0.000	0.000	-458.94	-13.754	0.000	13.754	-1.247	0.000
115.00	-10.411	-20.017	0.000	0.000	0.000	-406.03	-15.092	0.000	15.092	-1.307	0.000
120.00	-10.241	-19.121	0.000	0.000	0.000	-353.98	-16.492	0.000	16.492	-1.364	0.000
125.00	-10.072	-18.249	0.000	0.000	0.000	-302.77	-17.951	0.000	17.951	-1.419	0.000
130.00	-8.401	-15.023	0.000	0.000	0.000	-252.41	-19.464	0.000	19.464	-1.469	0.000
135.00	-8.233	-14.217	0.000	0.000	0.000	-210.41	-21.028	0.000	21.028	-1.515	0.000
140.00	-6.033	-11.278	0.000	0.000	0.000	-169.24	-22.637	0.000	22.637	-1.556	0.000
142.75	-5.943	-10.873	0.000	0.000	0.000	-152.65	-23.540	0.000	23.540	-1.578	0.000
145.00	-5.862	-10.341	0.000	0.000	0.000	-139.28	-24.288	0.000	24.288	-1.595	0.000
147.25	-5.783	-9.818	0.000	0.000	0.000	-126.09	-25.043	0.000	25.043	-1.611	0.000
150.00	-5.699	-9.544	0.000	0.000	0.000	-110.19	-25.977	0.000	25.977	-1.629	0.000
155.00	-5.545	-9.059	0.000	0.000	0.000	-81.700	-27.705	0.000	27.705	-1.670	0.000
160.00	-3.603	-6.161	0.000	0.000	0.000	-53.975	-29.472	0.000	29.472	-1.702	0.000
165.00	-3.455	-5.731	0.000	0.000	0.000	-35.960	-31.268	0.000	31.268	-1.725	0.000
170.00	-1.222	-2.793	0.000	0.000	0.000	-18.688	-33.084	0.000	33.084	-1.741	0.000
175.00	-1.082	-2.424	0.000	0.000	0.000	-12.578	-34.914	0.000	34.914	-1.752	0.000
180.00	-0.947	-2.071	0.000	0.000	0.000	-7.169	-36.752	0.000	36.752	-1.759	0.000
185.00	-0.816	-1.733	0.000	0.000	0.000	-2.436	-38.597	0.000	38.597	-1.764	0.000
187.00	-0.762	0.000	0.000	0.000	0.000	-0.804	0.000	0.000	39.336	-1.764	0.000

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

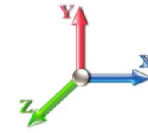
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/28/2015
 Page: 22



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.56	0.29	0.00	0.00	0.00	13.91	14.47	52.0	0.278
5.00	0.55	0.29	0.00	0.00	0.00	13.86	14.42	52.0	0.277
10.00	0.54	0.29	0.00	0.00	0.00	13.81	14.36	52.0	0.276
15.00	0.53	0.30	0.00	0.00	0.00	13.75	14.29	52.0	0.275
20.00	0.52	0.30	0.00	0.00	0.00	13.67	14.21	52.0	0.273
25.00	0.52	0.30	0.00	0.00	0.00	13.59	14.12	52.0	0.272
30.00	0.51	0.30	0.00	0.00	0.00	13.50	14.01	52.0	0.270
35.00	0.50	0.31	0.00	0.00	0.00	13.39	13.90	52.0	0.267
40.00	0.49	0.31	0.00	0.00	0.00	13.27	13.77	52.0	0.265
45.00	0.48	0.31	0.00	0.00	0.00	13.14	13.63	52.0	0.262
46.25	0.48	0.31	0.00	0.00	0.00	13.10	13.59	52.0	0.262
50.00	0.46	0.32	0.00	0.00	0.00	12.99	13.46	52.0	0.259
53.25	0.50	0.36	0.00	0.00	0.00	14.19	14.70	52.0	0.283
55.00	0.50	0.36	0.00	0.00	0.00	14.12	14.63	52.0	0.281
60.00	0.49	0.36	0.00	0.00	0.00	13.90	14.41	52.0	0.277
65.00	0.49	0.37	0.00	0.00	0.00	13.66	14.16	52.0	0.272
70.00	0.48	0.37	0.00	0.00	0.00	13.39	13.88	52.0	0.267
75.00	0.47	0.37	0.00	0.00	0.00	13.09	13.58	52.0	0.261
80.00	0.46	0.38	0.00	0.00	0.00	12.76	13.24	52.0	0.255
85.00	0.46	0.38	0.00	0.00	0.00	12.40	12.87	52.0	0.248
90.00	0.45	0.38	0.00	0.00	0.00	11.99	12.45	52.0	0.240
92.00	0.42	0.37	0.00	0.00	0.00	11.80	12.24	52.0	0.235
93.75	0.42	0.37	0.00	0.00	0.00	11.66	12.10	52.0	0.233
95.00	0.41	0.37	0.00	0.00	0.00	11.56	11.99	52.0	0.231
99.75	0.45	0.43	0.00	0.00	0.00	12.49	12.96	52.0	0.249
100.00	0.45	0.43	0.00	0.00	0.00	12.46	12.93	52.0	0.249
105.00	0.44	0.43	0.00	0.00	0.00	11.89	12.35	52.0	0.238
110.00	0.43	0.44	0.00	0.00	0.00	11.25	11.71	52.0	0.225
115.00	0.42	0.44	0.00	0.00	0.00	10.55	11.00	52.0	0.212
120.00	0.42	0.45	0.00	0.00	0.00	9.75	10.20	52.0	0.196
125.00	0.41	0.46	0.00	0.00	0.00	8.87	9.31	52.0	0.179
130.00	0.35	0.39	0.00	0.00	0.00	7.87	8.25	52.0	0.159
135.00	0.34	0.40	0.00	0.00	0.00	7.00	7.37	52.0	0.142
140.00	0.28	0.30	0.00	0.00	0.00	6.02	6.32	52.0	0.122
142.75	0.27	0.30	0.00	0.00	0.00	5.64	5.94	52.0	0.114
145.00	0.27	0.30	0.00	0.00	0.00	5.31	5.60	52.0	0.108
147.25	0.38	0.45	0.00	0.00	0.00	7.14	7.55	52.0	0.145
150.00	0.37	0.45	0.00	0.00	0.00	6.49	6.90	52.0	0.133
155.00	0.37	0.45	0.00	0.00	0.00	5.17	5.59	52.0	0.108
160.00	0.26	0.31	0.00	0.00	0.00	3.69	3.98	52.0	0.077
165.00	0.25	0.30	0.00	0.00	0.00	2.66	2.95	52.0	0.057
170.00	0.13	0.11	0.00	0.00	0.00	1.50	1.64	52.0	0.031
175.00	0.12	0.10	0.00	0.00	0.00	1.10	1.23	52.0	0.024
180.00	0.10	0.09	0.00	0.00	0.00	0.68	0.80	52.0	0.015
185.00	0.09	0.09	0.00	0.00	0.00	0.26	0.38	52.0	0.007
187.00	0.00	0.08	0.00	0.00	0.00	0.09	0.17	52.0	0.003

Final Analysis Summary

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

7/28/2015
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Reactions

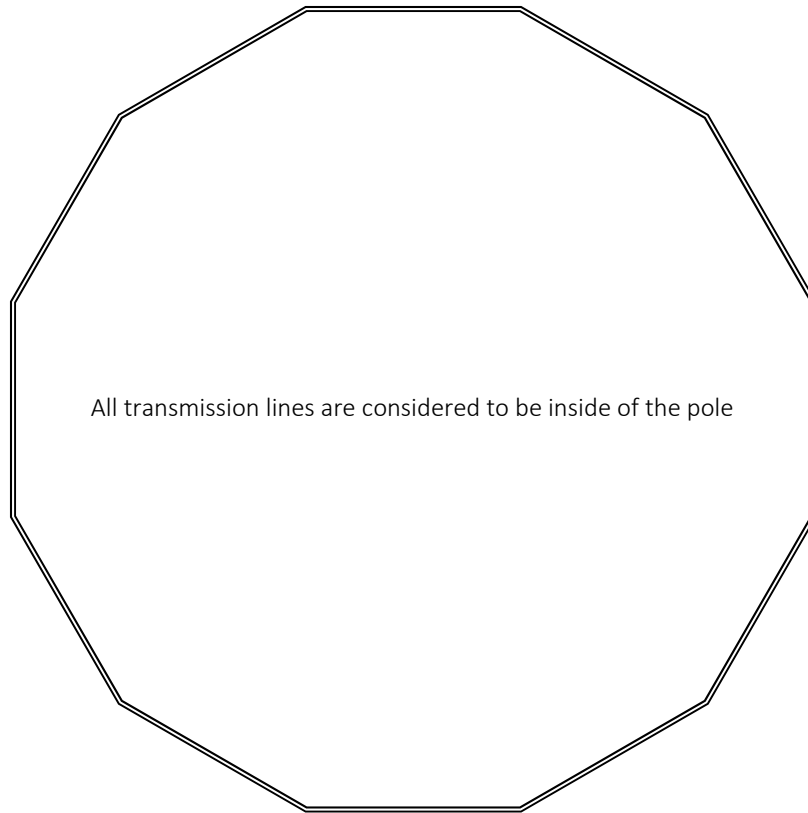
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
80 mph Wind with 0" Ice	37.4	0.00	56.75	0.00	0.00	4816.13
69.28 mph Wind with 0.5" Ice	31.9	0.00	66.60	0.00	0.00	4232.35
50 mph Wind with 0" Ice	14.6	0.00	56.79	0.00	0.00	1882.65

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
80 mph Wind with 0" Ice	0.49	0.91	0.00	0.00	0.00	36.28	36.81	52.0	53.25	0.708
69.28 mph Wind with 0.5" Ice	0.60	0.80	0.00	0.00	0.00	32.28	32.91	52.0	53.25	0.633
50 mph Wind with 0" Ice	0.50	0.36	0.00	0.00	0.00	14.19	14.70	52.0	53.25	0.283

Coax Layout

CT07824-S





Monopole Mat Foundation Design

Date
7/28/2015

Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-F
Site Name:	South Windsor	Structure Height (Ft.):	187
Site Number:	CT07824-S-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	16674	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Unfactored)

Axial Load (Kips):	66.6	Shear Force (Kips):	37.4
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4816.1

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	12.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5

Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

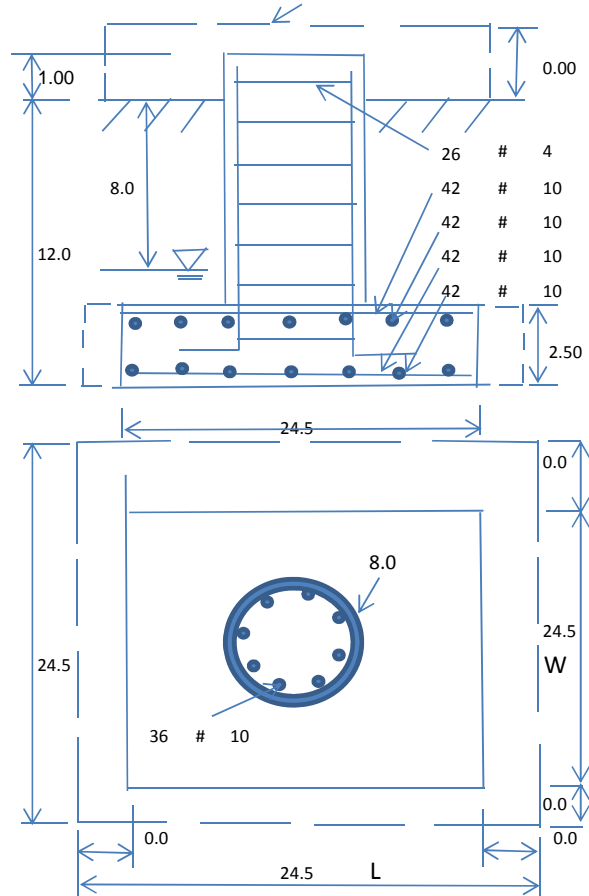
Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	8.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Allowable Net Soil Bearing (psf):	8000	Allowable Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	4399.88	Total Dry Soil Weight (Kips):	527.99
Total Buoyant Soil Volume (cu. Ft.):	889.38	Total Buoyant Soil Weight (Kips):	44.47
Total Effective Soil Weight (Kips):	572.45	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	452.39	Total Dry Concrete Weight (Kips):	67.86
Total Buoyant Concrete Volume (cu. Ft.):	1576.02	Total Buoyant Concrete Weight (Kips):	138.06
Total Effective Concrete Weight (Kips):	205.92	Total Vertical Load on Base (Kips):	844.97

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	4182	<	Allowable Soil Bearing (psf):	8000	0.52	OK!
Allowable Foundation Overturning Resistance (SF=1.5, kips-ft.):	6874.3	>	Applied Momont (kips-ft):	5302	0.77	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.94					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75	
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.30	

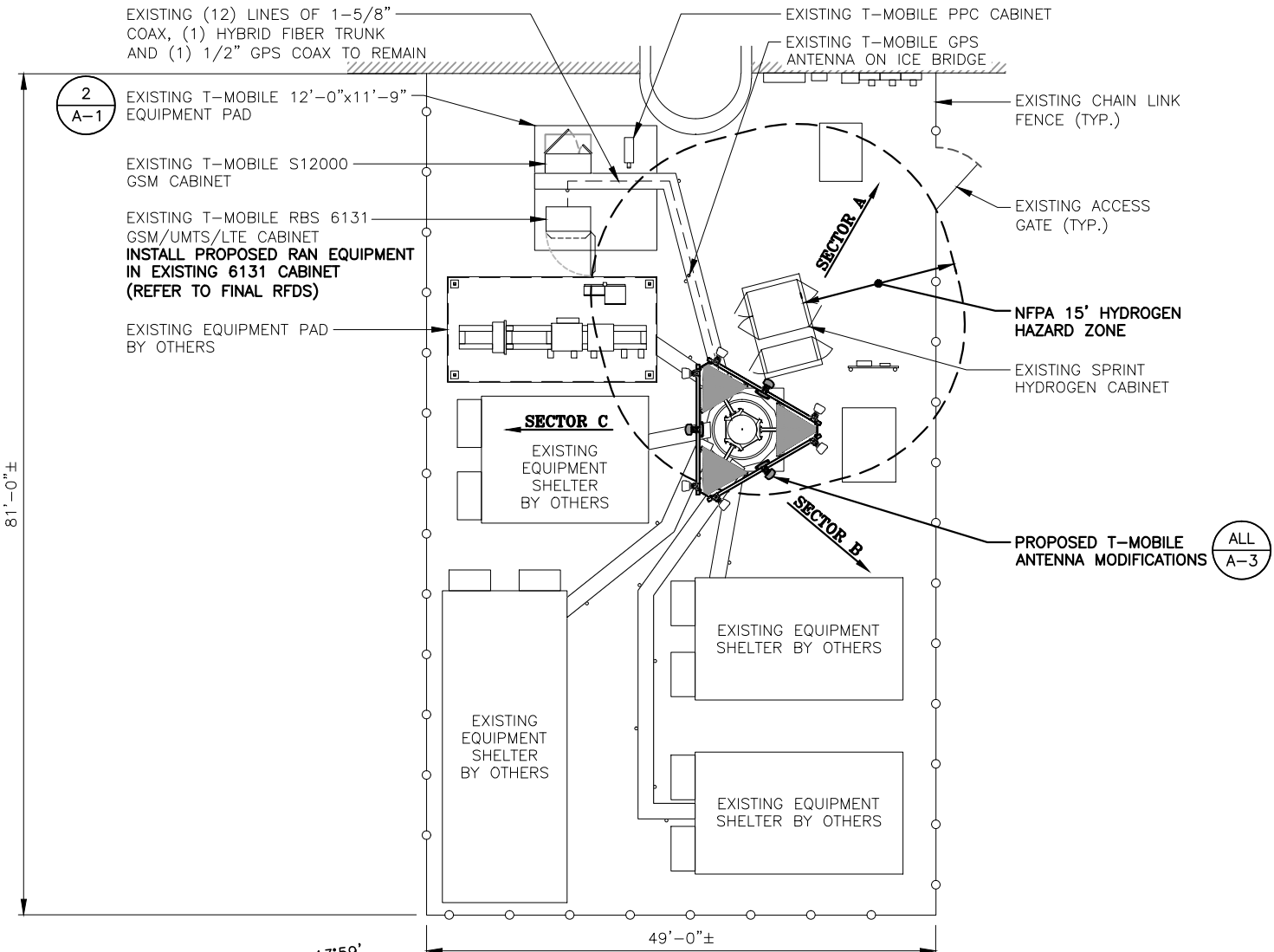
Load/
Capacity
Ratio

(1) Concrete Pier:

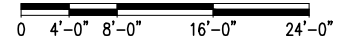
Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8929.3	> Design Factored Moment (Mu, Kips-Ft):	6771.4	0.76	OK!
Calculated Shear Capacity (Kips):	993.9	> Design Factored Shear (Kips):	48.6	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	> Design Factored Axial Load (Pu Kips):	86.6	0.01	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.77	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	735.6	> One-Way Factored Shear (L-D. Kips):	443.2	0.60	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	735.6	> One-Way Factored Shear (W-D., Kips)	443.2	0.60	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	800.1	> One-Way Factored Shear (C-C, Kips):	671.1	0.84	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0069		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5946.5	> Moment at Bottom (L-Direct. K-Ft):	1031.6	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5946.5	> Moment at Bottom (W-Direct. K-Ft):	1031.6	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8246.5	> Moment at Bottom (C-C Dir. K-Ft):	1459.0	0.18	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0069		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	5946.5	> Moment at the top (L-Dir Kips-Ft):	642.6	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	5946.5	> Moment at the top (W-Dir Kips-Ft):	642.6	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8246.5	> Moment at the top (C-C Direc. K-Ft):	896.6	0.11	OK!



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



2 A-2 ALL A-3 T-MOBILE PLATFORM
 ELEV. = 160.0'± A.G.L (SBA*)

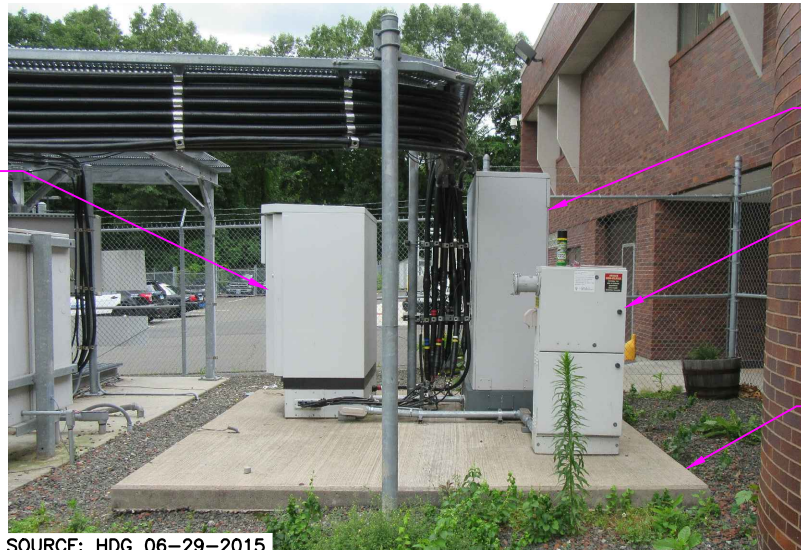
EXISTING (12) LINES OF 1-5/8" COAX AND (1) HYBRID FIBER TRUNK TO REMAIN

EXISTING MONOPOLE



SOURCE: HDG 06-29-2015

ELEVATION PHOTO DETAIL 3 A-1
 SCALE: N.T.S.



SOURCE: HDG 06-29-2015

EQUIPMENT PHOTO DETAIL 2 A-1
 SCALE: N.T.S.

SPECIAL WORK NOTE:
 CONTRACTOR TO VERIFY EXISTING ANTENNA PIPE MUST TO HAVE (2) POINTS OF CONNECTION. IF THERE IS ONLY (1) POINT OF CONNECTION THE CONTRACTOR WILL ADD A SECOND TO EACH EXISTING ANTENNAS OR CENTER ANTENNAS VERTICALLY ON THE ANTENNA MAST SUPPORT ASSEMBLY.

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

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:
 ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND 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.

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

SBA
 SBA COMMUNICATIONS CORP.
 33 BOSTON POST ROAD WEST, SUITE 320 TEL: (508) 251-0720
 MARLBOROUGH, MA 01752 FAX: (508) 251-1755

Hudson Design Group
 1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553
 N. ANDOVER, MA 01845 FAX: (978) 336-5586

STATE OF CONNECTICUT
 DANIEL P. HAMM
 No. 24178
 LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	07/20/15	ISSUED FOR CONSTRUCTION	JA

SITE NUMBER:
 CT11497A
 SITE NAME:
 CT497/SBA SOUTH WINDSOR
 SITE ADDRESS:
 151 SAND HILL RD
 SOUTH WINDSOR, CT 06074
 HARTFORD COUNTY

SHEET TITLE
 COMPOUND & ELEVATION PLAN

SHEET NUMBER
A-1

**T-MOBILE
NORTHEAST LLC**

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HARTFORD COUNTY

SHEET TITLE

EXISTING &
PROPOSED ANTENNA
PLANS

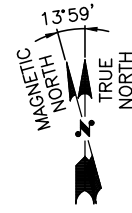
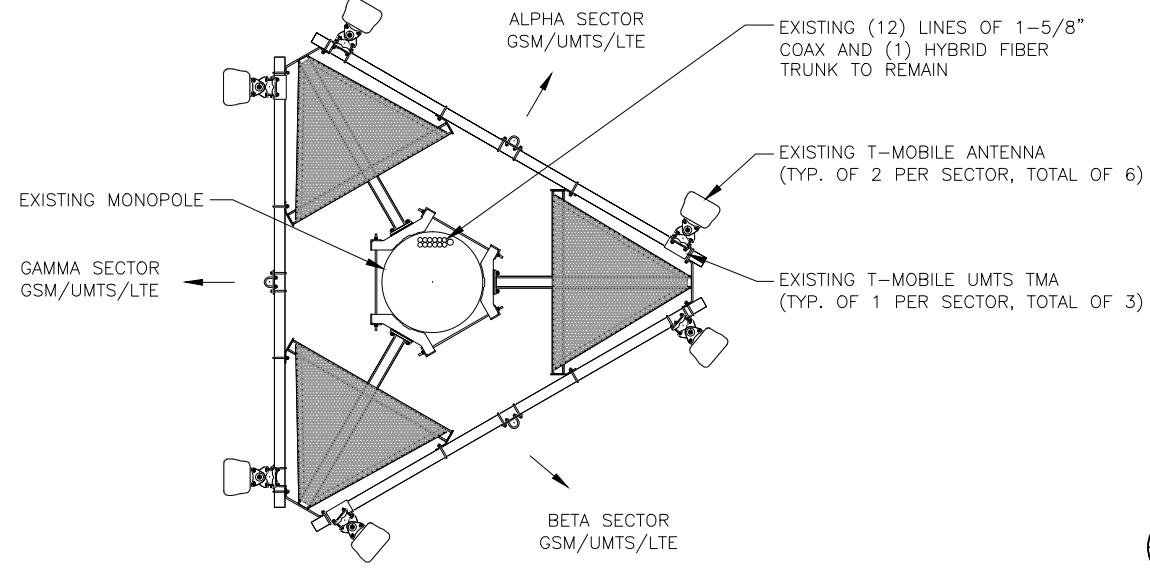
SHEET NUMBER

A-2

SPECIAL WORK NOTE:
CONTRACTOR TO VERIFY EXISTING ANTENNA PIPE MUST TO HAVE (2) POINTS OF CONNECTION. IF THERE IS ONLY (1) POINT OF CONNECTION THE CONTRACTOR WILL ADD A SECOND TO EACH EXISTING ANTENNAS OR CENTER ANTENNAS VERTICALLY ON THE ANTENNA MAST SUPPORT ASSEMBLY.

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

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND 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.



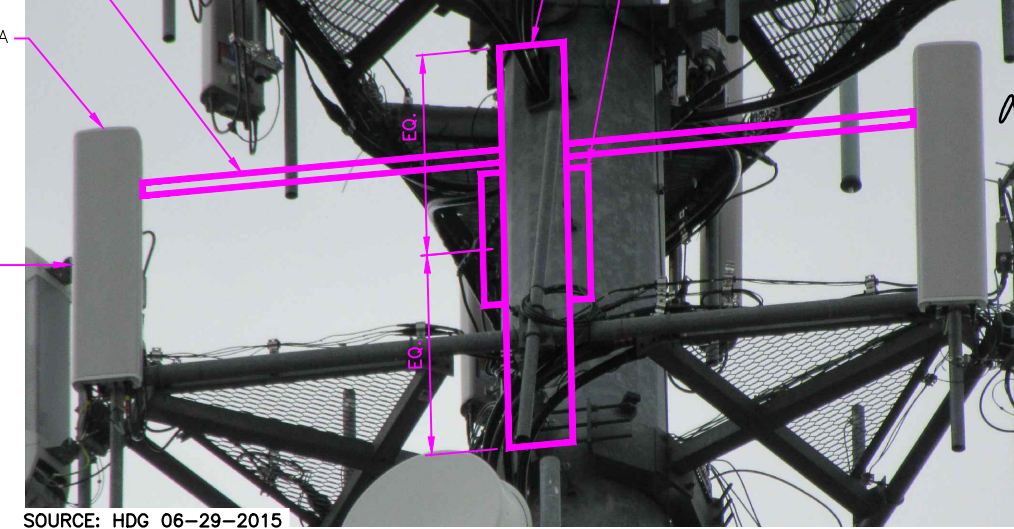
EXISTING ANTENNA PLAN 1
SCALE: N.T.S. A-2

6
A-3

PROPOSED T-MOBILE HANDRAIL KIT

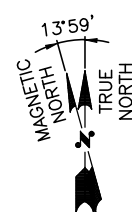
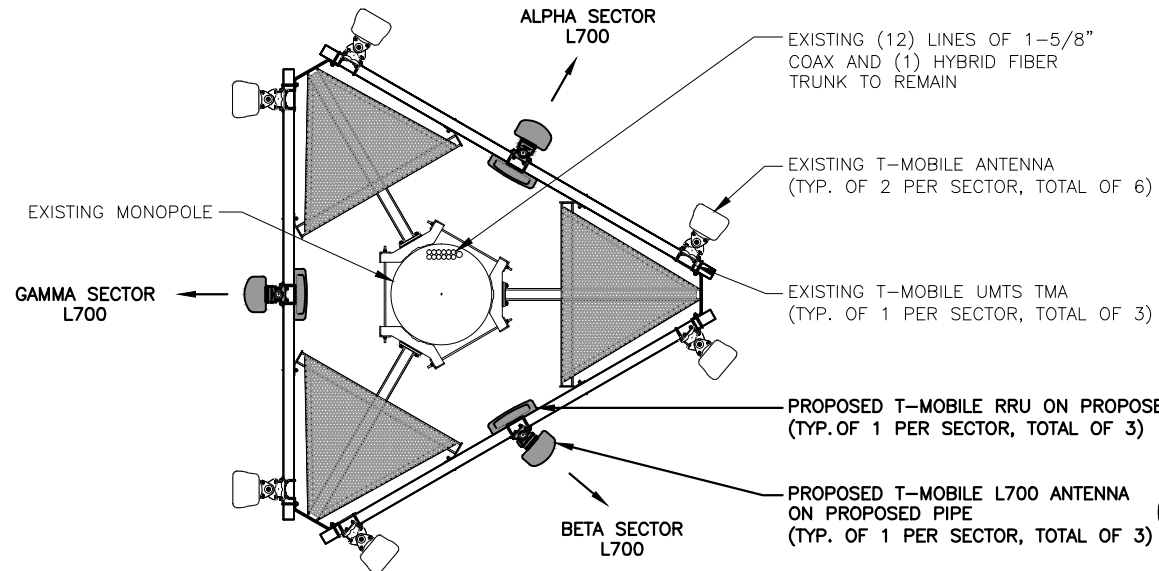
EXISTING T-MOBILE ANTENNA (TYP. OF 2 PER SECTOR, TOTAL OF 6)

ANTENNA INSTALLATION SPECIAL WORK NOTE:
ANTENNA INSTALLATION WORKING POINT IS THE VERTICAL CENTERLINE OF THE EXISTING PLATFORM AND THE PROPOSED HANDRAIL SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE, VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.



SOURCE: HDG 06-29-2015

PROPOSED ANTENNA PHOTO DETAIL 3
SCALE: N.T.S. A-2



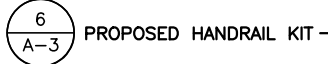
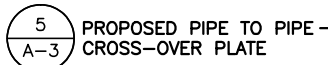
PROPOSED ANTENNA PLAN 2
SCALE: N.T.S. A-2

4
A-3

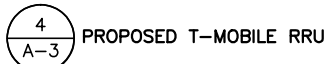
PROPOSED T-MOBILE RRU ON PROPOSED PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3)

1,2
A-3

PROPOSED T-MOBILE L700 ANTENNA ON PROPOSED PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3)



ANTENNA INSTALLATION SPECIAL WORK NOTE:
 ANTENNA INSTALLATION WORKING POINT IS THE VERTICAL CENTERLINE OF THE EXISTING PLATFORM AND THE PROPOSED HANDRAIL SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE, VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.



EXISTING PLATFORM MOUNT

PROPOSED 2.5" STD (2.88" O.D.) MOUNTING PIPE (8'-0" LONG) (TYP.)

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 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.

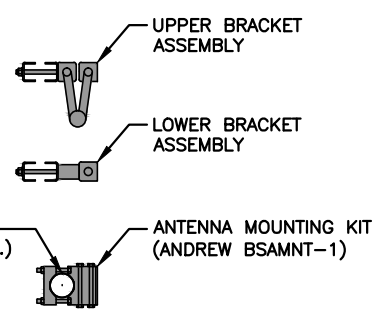
STRUCTURAL NOTES:
 PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING, OR RELOCATION ARRANGEMENTS.

SPECIAL WORK NOTE:
 CONTRACTOR TO VERIFY EXISTING ANTENNA PIPE MAST TO HAVE (2) POINTS OF CONNECTION. IF THERE IS ONLY (1) POINT OF CONNECTION THE CONTRACTOR WILL ADD A SECOND TO EACH EXISTING ANTENNAS OR CENTER ANTENNAS VERTICALLY ON THE ANTENNA MAST SUPPORT ASSEMBLY.

L700 ANTENNA DIMENSIONS	
MODEL #	LNx-6515DS-VTM
MANUF.	ANDREW
WIDTH	11.9"
DEPTH	7.1"
HEIGHT	96.4"
WEIGHT	50.3 LBS

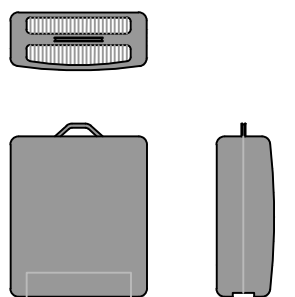
L700 ANTENNA DETAIL (1/A-3)
 SCALE: N.T.S

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

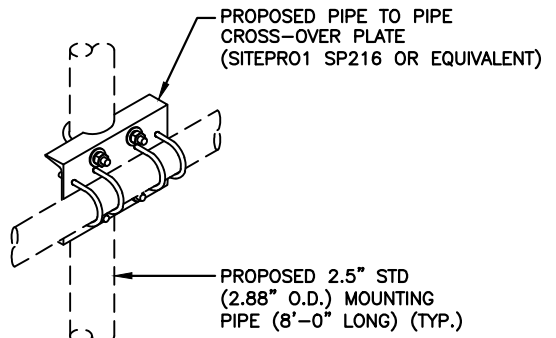


ANTENNA MOUNTING BRACKET (3/A-3)
 SCALE: N.T.S

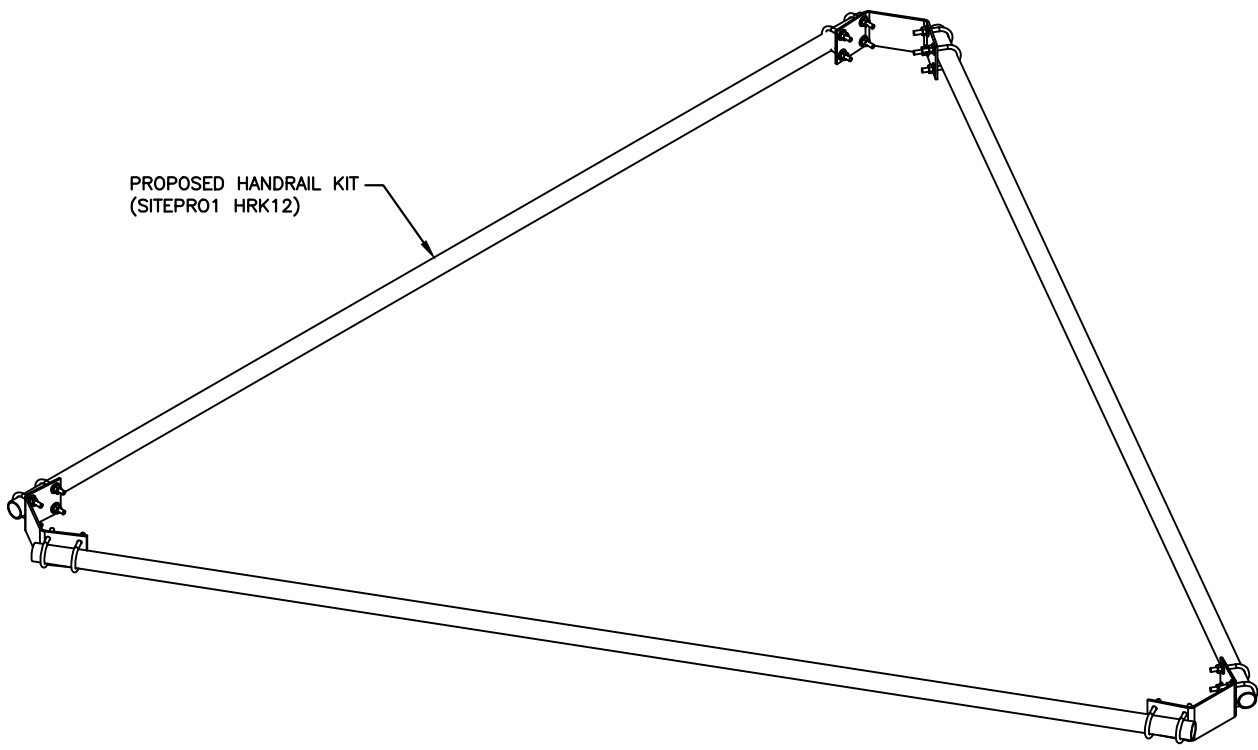
RRU DIMENSIONS	
MODEL #	RRU11 B12
MANUF.	ERICSSON
WIDTH	17"
DEPTH	7"
HEIGHT	20"
WEIGHT	50.6 LBS



PROPOSED RRU DETAIL (4/A-3)
 SCALE: N.T.S



PROPOSED PIPE TO PIPE CROSS-OVER PLATE (5/A-3)
 SCALE: N.T.S



PROPOSED HANDRAIL KIT (6/A-3)
 SCALE: N.T.S

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

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 SBA COMMUNICATIONS CORP.
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 MARLBOROUGH, MA 01752 FAX: (508) 251-1755

Hudson Design Group
 1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553
 N. ANDOVER, MA 01845 FAX: (978) 336-5586

STATE OF CONNECTICUT
 DANIEL P. HAMM
 No. 24178
 LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: BB

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	07/20/15	ISSUED FOR CONSTRUCTION	JA

SITE NUMBER:
 CT11497A
 SITE NAME:
 CT497/SBA SOUTH WINDSOR
 SITE ADDRESS:
 151 SAND HILL RD
 SOUTH WINDSOR, CT 06074
 HARTFORD COUNTY

SHEET TITLE
 EQUIPMENT DETAILS

SHEET NUMBER
A-3