

July 8, 2015

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

Re: **Notice of Exempt Modification – Facility Modification
299 Sheffield Street, Waterbury, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) wireless telecommunications antennas at the 148-foot level on the existing 158-foot tower at 299 Sheffield Street in Waterbury, Connecticut (the “Property”). The tower is owned by SBA. The Council approved Cellco’s shared use of this tower in 2001. Cellco now intends to modify its facility by replacing three (3) of its existing antennas with two (2) model LNX-6514DS-VTM, 700 MHz antennas and one (1) model LNX-4514DS-VTM, 700 MHz antennas, all at the same 148-foot level on the tower. Included in Attachment 1 are specifications for Cellco’s replacement antennas.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Neil M. O’Leary, Mayor of the City of Waterbury. A copy of this letter is also being sent to John F. Hychko, the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. The replacement antennas and RRHs will be located at the 148-foot level on the 158-foot tower.

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2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table is included in Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support Cellco's proposed modifications. (*See Structural Analysis Report included in Attachment 3*).

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Neil M. O'Leary, Mayor

John F. Hychko

Tim Parks

ATTACHMENT 1



LNX-6514DS-VTM

Andrew® Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

- Great solution to maximize network coverage and capacity
- Excellent gain, VSWR, front-to-back ratio, and PIM specifications for robust network performance
- Ideal choice for site collocations and tough zoning restrictions
- Excellent solution for site sharing and maximizing capacity
- Fully compatible with Andrew remote electrical tilt system for greater OpEx savings
- The RF connectors are designed for IP67 rating and the radome for IP56 rating

Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.8	15.9
Beamwidth, Horizontal, degrees	65	64
Beamwidth, Vertical, degrees	12.4	11.2
Beam Tilt, degrees	0–10	0–10
USLS, dB	17	18
Front-to-Back Ratio at 180°, dB	32	30
CPR at Boresight, dB	23	23
CPR at Sector, dB	12	10
Isolation, dB	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°
Impedance	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896
Gain by all Beam Tilts, average, dBi	15.6	15.7
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.5
Gain by Beam Tilt, average, dBi	0 ° 15.7	0 ° 15.9
	5 ° 15.7	5 ° 15.8
	10 ° 15.3	10 ° 15.3
Beamwidth, Horizontal Tolerance, degrees	±0.9	±1.4
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.6
USLS, dB	18	20
Front-to-Back Total Power at 180° ± 30°, dB	25	23
CPR at Boresight, dB	25	24
CPR at Sector, dB	15	12

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol®
Band	Single band
Brand	DualPol® Teletilt®

Product Specifications

COMMSCOPE®

LNx-6514DS-VTM



Operating Frequency Band 698 – 896 MHz
Performance Note Outdoor usage

Mechanical Specifications

Color Light gray
Lightning Protection dc Ground
Radiator Material Aluminum
Radome Material Fiberglass, UV resistant
RF Connector Interface 7-16 DIN Female
RF Connector Location Bottom
RF Connector Quantity, total 2
Wind Loading, maximum 617.7 N @ 150 km/h
138.9 lbf @ 150 km/h
Wind Speed, maximum 241.0 km/h | 149.8 mph

Dimensions

Depth 180.5 mm | 7.1 in
Length 1851.0 mm | 72.9 in
Width 301.0 mm | 11.9 in
Net Weight 14.2 kg | 31.3 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator LNx-6514DS-A1M
RET System Teletilt®

Regulatory Compliance/Certifications

Agency

RoHS 2011/65/EU
China RoHS SJ/T 11364-2006
ISO 9001:2008

Classification

Compliant by Exemption
Above Maximum Concentration Value (MCV)
Designed, manufactured and/or distributed under this quality management system



Included Products

DB380 — Pipe Mounting Kit for 2.4"-4.5" (60-115mm) OD round members on wide panel antennas. Includes 2 clamp sets and double nuts.

DB5083 — Downtilt Mounting Kit for 2.4"-4.5" (60 - 115 mm) OD round members. Includes a heavy-duty, galvanized steel downtilt mounting bracket assembly and associated hardware. This kit is compatible with the DB380 pipe mount kit for panel antennas that are equipped with two mounting brackets.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance

Product Specifications

COMMScope®

LNX-4514DS-VTM

Andrew® Antenna, 698–896 MHz, 45° horizontal beamwidth, RET compatible

POWERED BY



Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.5	16.4
Beamwidth, Horizontal, degrees	47	45
Beamwidth, Vertical, degrees	17.3	15.8
Beam Tilt, degrees	2–18	2–18
USLS, typical, dB	16	15
Front-to-Back Ratio at 180°, dB	32	28
Isolation, dB	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	500	500
Polarization	±45°	±45°

Mechanical Specifications

Color Radome Material	Light gray Fiberglass, UV resistant
Connector Interface Location Quantity	7-16 DIN Female Bottom 2
Wind Loading, maximum	586.4 N @ 150 km/h 131.8 lbf @ 150 km/h
Wind Speed, maximum	241.4 km/h 150.0 mph
Antenna Dimensions, L x W x D	1308.0 mm x 389.0 mm x 163.0 mm 51.5 in x 15.3 in x 6.4 in
Net Weight	13.3 kg 29.3 lb
Model with factory installed AISG 2.0 RET LNX-4514DS-A1M	

ATTACHMENT 2

		General			Power		Density					
		# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total			
Site Name: Waterbury 3												
Tower Height: 158Ft.												
	CARRIER											
*AT&T	850 MHz/1900 MHz	8	435	140	0.0638	850	0.5667	11.27%				
*AT&T	700 MHz/2300 MHz	4	944	140	0.0693	700	0.4667	14.84%				
*AT&T	700 MHz/1900 MHz	4	955	140	0.0701	700	0.4667	15.02%				
*MetroPCS	CDMA	3	727	158	0.0314	2135	1.0000	3.14%				
*MetroPCS	LTE	1	1200	158	0.0173	2130	1.0000	1.73%				
*Clearwire		2	153	127	0.0068	2496	1.0000	0.68%				
*Clearwire		1	211	127	0.0047	11 GHz	1.0000	0.47%				
*Nextel	iDEN	12	100	127	0.0268	851	0.5673	4.72%				
*Nextel	WiMAX	3	562	127	0.0376	2657	1.0000	3.76%				
*Nextel	Microwave	2	4.42	128	0.0002	22500	1.0000	0.02%				
Verizon PCS		7	358	148	0.0411	1970	1.0000	4.11%				
Verizon Cellular		9	303	148	0.0448	869	0.5793	7.73%				
Verizon AWS		1	2812	148	0.0462	2145	1.0000	4.62%				
Verizon 700		1	672	148	0.0110	746	0.4973	2.22%				
									74.32%			
* Source: Siting Council												

ATTACHMENT 3



Tower Engineering Solutions

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

Structural Analysis Report

Existing 158 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02722-S

Customer Site Name: Waterbury

Carrier Name: Verizon

Carrier Site Number: 117606

Site Location: 299 Sheffield Street

Waterbury, Connecticut

New Haven County

Latitude: 41.594089

Longitude: -73.050567

Analysis Result:

Max Structural Usage: 84.4% [Pass]

Max Foundation Usage: 81.2% [Pass]

Report Prepared By : Esha Goyal





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Report Prepared By : Esha Goyal

Introduction

The purpose of this report is to summarize the analysis results on the 158 ft. 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	Original tower drawings by Summit Manufacturing, LLC, DWG.# 9302-01, dated 08/23/2000
Foundation Drawing	Original foundation drawings by Summit Manufacturing LLC., project # 9302-A530, dated 05/10/2000
Geotechnical Report	Not provided
Previous SA	Previous SA by FDH Engineering, project # 15BAJU1400, dated 01/09/2015
Modification Drawings	N/A

Analysis Criteria

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

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	158.0	3	RFS APXV18-206517S-C	Low Profile Platform	(6) 1 5/8"	Pocket
2	148.0	6	Commscope HBXX-6517DS	Low Profile Platform	(12) 1 5/8" (1) Fiber	Verizon Wireless
3		6	Decibel DB844G65ZAXY			
4		3	Antel BXA-70063/6CF			
5		3	ALU RH_2x60 AWS			
6		3	ALU RH_60W-PCS			
7		6	RFS FD9R6004/2C-3L Diplexers			
8		1	RFS DB-T1-6ZAB-0Z Distribution Box			
9	137.0	3	Kathrein 800 10121 Panels	Platform w/ Hand Rails (Commscope P/N MTC3607)	(6) 1 5/8" (2) 1/2" Fiber (8) 3/4" DC	AT&T
10		3	Raycap DC6-48-60-18-8F			
11		3	CCI DTMAPB7819VG12A			
12		9	CCI HPA-65R-BUU-H8 Panels			
13		6	Ericsson RRUS 11			
14		6	Ericsson RRUS 12			
15		3	Ericsson RRUS 32			
16		6	Ericsson RRUS A2			
17	3	Ericsson RRUS-E2				
18	127.0	2	Dragonwave A-ANT-23G-2.0-C - Dish	Low Profile Platform	(12) 1 1/4" (2) 1/2" (6) 5/16"	Sprint/ Clearwire
19		9	Decibel DB844H90E-XY Panels			
20		3	Argus LLPX310R			
21		3	Samsung U-RAS RRH's			
22	122.0	1	Nokia CS72188.01 Omni	Direct Mount	(1) 1/2"	AT&T

All transmission lines are considered running inside of pole shaft.

Proposed Antennas, Mounts and Transmission Lines (Final Configuration)

Information pertaining to the proposed 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
23	148.0	1	RFS Celwave DB-T1-6Z-8AB-0Z	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
24		6	Andrew DB844G65ZAXY Panels			
25		6	RFS Celwave FD9R6004/2C-3L			
26		6	Commscope HBXX-6517DS-A2M Panels			
27		1	Andrew LNX-4514DS-A1M Panels			
28		2	Andrew LNX-6514DS-A1M Panels			
29		3	ALU RRH 2x60-aws RRU			
30		3	ALU RRH 60 W-PCS RRU			

All transmission lines are considered running inside of pole shaft.

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:	84.4%	78.1%	59.4%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5150.0	44.0
Analysis Reactions	4179.6	35.4
% of Design Reactions	81.2%	80.4%

Geo soil report is not available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural design or drawing. The foundations are assumed to be adequate to resist the reactions from the current analysis.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-F for the installed antennas. Maximum twist/sway at the elevation of the proposed equipment is 1.6923 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for TES. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed or/and ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Stress 84.4% at 83.5ft

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015



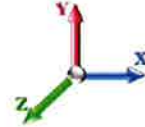
Page: 1

Dead Load Factor: 1.00
Wind Load Factor: 1.00

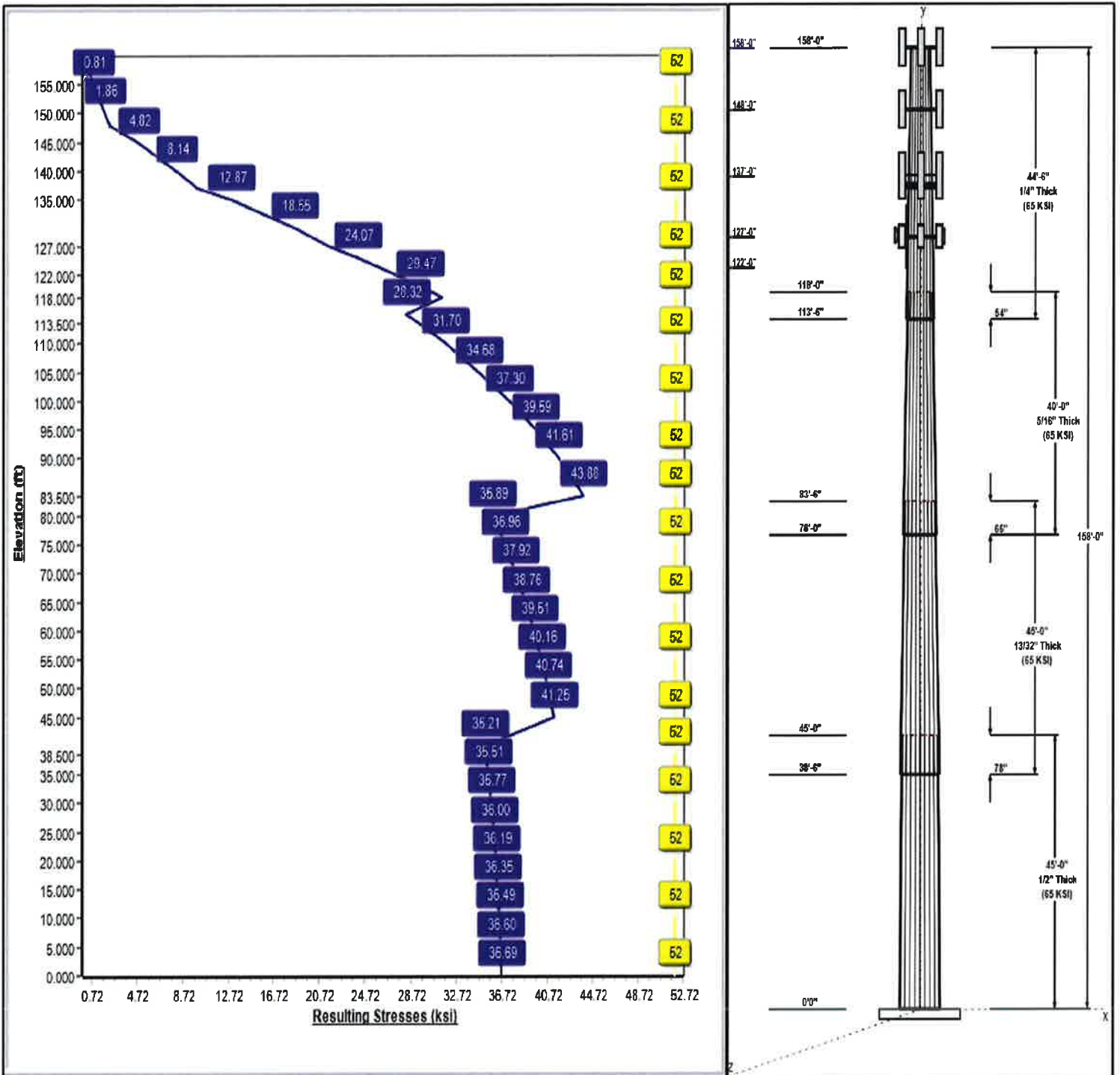
Iterations: 23

- 52 Allowable Stress
- 44 Resulting Stress

Load Case : 85 mph Wind with 0 in Ice



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Structure: CT02722-S-SBA

Type: Tapered
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23998

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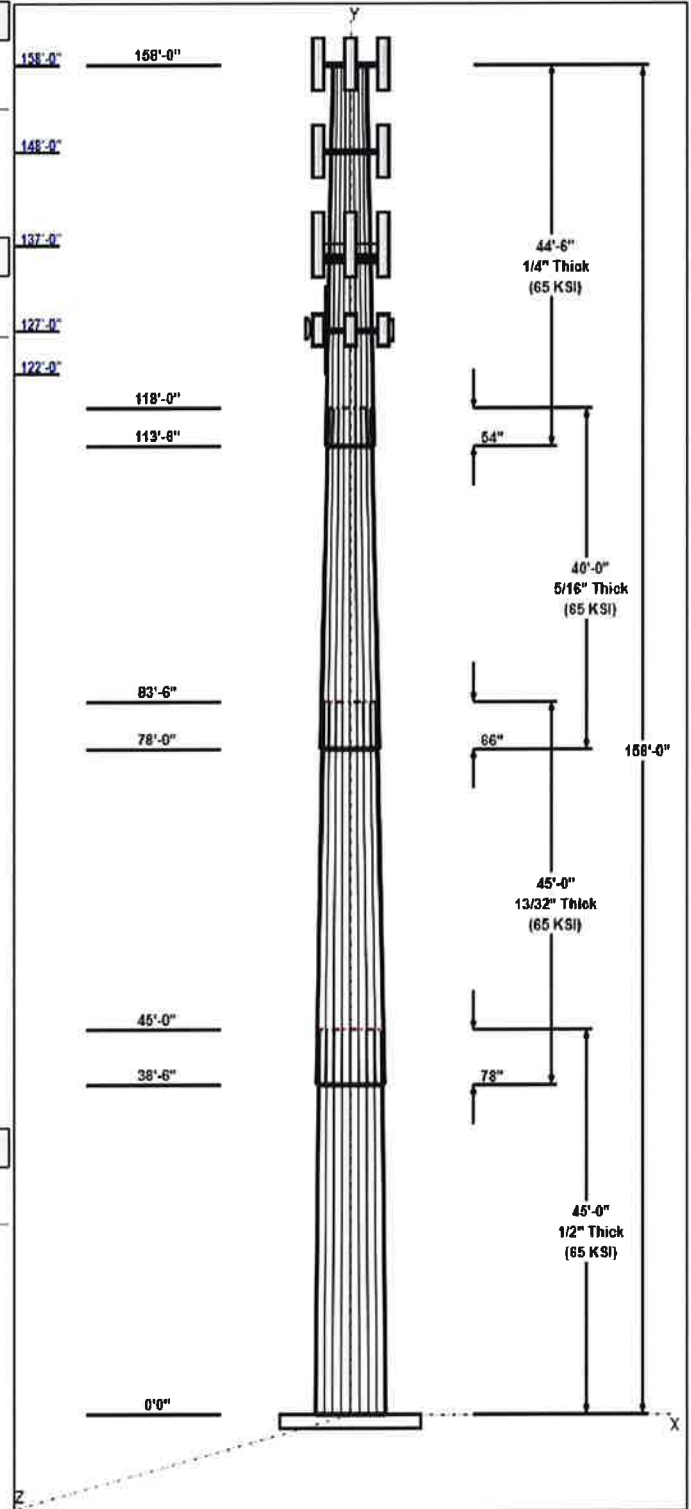


Shaft Properties							
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	49.18	59.98	0.500		0.23998	65
2	45.00	40.75	51.55	0.406	Slip	0.23998	65
3	40.00	33.10	42.70	0.313	Slip	0.23998	65
4	44.50	24.00	34.68	0.250	Slip	0.23998	65

Discrete Appurtenances				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
158.00	158.00	3	APXV18-206517S-C	Pocket
158.00	158.00	1	Low Profile Platform	Pocket
148.00	148.00	1	DB-T1-6Z-8AB-0Z	Verizon
148.00	148.00	6	DB844G65ZAXY	Verizon
148.00	148.00	6	FD9R6004/2C-3L	Verizon
148.00	148.00	6	HBXX-6517DS-R2M	Verizon
148.00	148.00	1	LNx-4514DS-A1M	Verizon
148.00	148.00	2	LNx-6514DS-A1M	Verizon
148.00	148.00	1	Low Profile Platform	Verizon
148.00	148.00	3	RRH 2x60-aws	Verizon
148.00	148.00	3	RRH 60 W-PCS	Verizon
137.00	137.00	3	800 10121	AT&T
137.00	137.00	3	DC6-48-60-18-8F	AT&T
137.00	137.00	3	DTMABP7819VG12A	AT&T
137.00	137.00	9	HPA-65R-BUU-H8	AT&T
137.00	137.00	1	Platform w/ Hand Rails	AT&T
137.00	137.00	6	RRUS 11	AT&T
137.00	137.00	6	RRUS 12	AT&T
137.00	137.00	3	RRUS 32	AT&T
137.00	137.00	6	RRUS A2 Module	AT&T
137.00	137.00	3	RRUS-E2	AT&T
127.00	127.00	2	A-ANT-23G-2.0-C	Sprint/Clearwire
127.00	127.00	9	DB844H90E-XY	Sprint/Clearwire
127.00	127.00	3	LLPX310R	Sprint/Clearwire
127.00	127.00	1	Low Profile Platform	Sprint/Clearwire
127.00	127.00	3	U-RAS RRH's	Sprint/Clearwire
122.00	122.00	1	CS72188.01 Omni	AT&T

Linear Appurtenances				
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	158.00	Inside	1 5/8" Coax	Pocket
0.00	148.00	Inside	1 5/8" Coax	Verizon
0.00	148.00	Inside	1 5/8" Hybrid Cable	Verizon
0.00	137.00	Inside	1 5/8" Coax	AT&T
0.00	137.00	Inside	1/2" Coax	AT&T
0.00	137.00	Inside	3/4" DC	AT&T
0.00	127.00	Inside	1 1/4" Coax	Sprint
0.00	127.00	Inside	1/2" Coax	Sprint
0.00	127.00	Inside	5/16" Coax	Sprint
0.00	122.00	Inside	1/2" Coax	AT&T

Anchor Bolts			
Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Cluster



Type: Tapered
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23998

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Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	66.0	60.0	5

Reactions

Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	4179.6	35.4	44.2
73.61 mph Wind with 0.5" Ice	3488.7	28.9	51.7
50 mph Wind with 0" Ice	1447.6	12.2	44.2

Shaft Properties

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (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	45.000	0.5000	65		0.00	13,142
2	18	45.000	0.4063	65	Slip	78.00	9,033
3	18	40.000	0.3125	65	Slip	66.00	5,074
4	18	44.500	0.2500	65	Slip	54.00	3,495
Total Shaft Weight:							30,744

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	59.98	0.00	94.39	42191.72	19.74	119.9	49.18	45.00	77.25	23130.4	15.93	98.36	0.239985
2	51.55	38.50	65.96	21799.61	20.96	126.8	40.75	83.50	52.03	10701.4	16.27	100.3	0.239985
3	42.70	78.00	42.04	9542.68	22.68	136.6	33.10	118.0	32.52	4416.67	17.26	105.9	0.239985
4	34.68	113.5	27.32	4091.38	23.04	138.7	24.00	158.0	18.84	1343.00	15.51	96	0.239985

Loading Summary

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015
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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	158.0	APXV18-206517S-C	3	26.40	5.16	0.74	53.00	5.840	0.74	0.00	0.00
2	158.0	Low Profile Platform	1	1200.00	25.00	1.00	1500.00	31.00	1.00	0.00	0.00
3	148.0	DB-T1-6Z-8AB-0Z	1	44.00	5.60	0.91	51.10	5.040	0.91	0.00	0.00
4	148.0	DB844G65ZAXY	6	12.00	4.67	0.93	0.00	5.240	0.93	0.00	0.00
5	148.0	FD9R6004/2C-3L	6	3.10	0.37	0.62	4.90	0.500	0.62	0.00	0.00
6	148.0	HBXX-6517DS-R2M	6	40.80	8.73	0.77	91.20	9.590	0.77	0.00	0.00
7	148.0	LNx-4514DS-A1M	1	41.90	7.66	0.71	83.70	8.310	0.71	0.00	0.00
8	148.0	LNx-6514DS-A1M	2	38.40	8.41	0.83	88.90	9.240	0.83	0.00	0.00
9	148.0	Low Profile Platform	1	1200.00	25.00	1.00	1500.00	31.00	1.00	0.00	0.00
10	148.0	RRH 2x60-aws	3	55.00	3.96	0.76	80.10	4.230	0.76	0.00	0.00
11	148.0	RRH 60 W-PCS	3	55.00	2.57	0.76	80.10	4.230	0.76	0.00	0.00
12	137.0	800 10121	3	46.30	5.45	0.79	79.20	6.090	0.79	0.00	0.00
13	137.0	DC6-48-60-18-8F	3	31.80	1.47	0.80	49.50	1.670	0.80	0.00	0.00
14	137.0	DTMABP7819VG12A	3	19.20	1.14	0.67	26.50	1.360	0.67	0.00	0.00
15	137.0	HPA-65R-BUU-H8	9	68.00	13.30	0.79	137.00	13.90	0.79	0.00	0.00
16	137.0	Platform w/ Hand Rails	1	2000.00	40.00	1.00	2600.00	48.00	1.00	0.00	0.00
17	137.0	RRUS 11	6	50.70	2.94	0.76	66.00	3.140	0.76	0.00	0.00
18	137.0	RRUS 12	6	58.00	3.67	0.70	75.70	3.890	0.70	0.00	0.00
19	137.0	RRUS 32	3	77.00	1.93	0.70	86.20	2.100	0.70	0.00	0.00
20	137.0	RRUS A2 Module	6	21.20	1.86	0.62	31.40	2.150	0.62	0.00	0.00
21	137.0	RRUS-E2	3	77.00	3.87	0.87	103.50	4.300	0.87	0.00	0.00
22	127.0	A-ANT-23G-2.0-C	2	47.60	8.43	1.00	97.10	8.920	1.00	0.00	0.00
23	127.0	DB844H90E-XY	9	14.00	3.73	0.75	0.00	4.290	0.75	0.00	0.00
24	127.0	LLPX310R	3	28.60	4.83	0.69	54.50	5.360	0.69	0.00	0.00
25	127.0	Low Profile Platform	1	1200.00	25.00	1.00	1500.00	31.00	1.00	0.00	0.00
26	127.0	U-RAS RRH's	3	33.00	1.82	0.73	45.00	2.100	0.73	0.00	0.00
27	122.0	CS72188.01 Omni	1	25.00	3.00	1.00	46.70	4.030	1.00	0.00	5.00
Totals:			95	9,083.60			12,474.50				

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	158.0	(6) 1 5/8" Coax	6.24	0.00	0.00	0.00	Inside
0.00	148.0	(12) 1 5/8" Coax	12.48	0.00	0.00	0.00	Inside
0.00	148.0	(1) 1 5/8" Hybrid Cable	1.10	0.00	0.00	0.00	Inside
0.00	137.0	(6) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	137.0	(2) 1/2" Coax	0.96	0.00	0.00	0.00	Inside
0.00	137.0	(8) 3/4" DC	0.80	0.00	0.00	0.00	Inside
0.00	127.0	(12) 1 1/4" Coax	5.28	0.00	0.00	0.00	Inside
0.00	127.0	(2) 1/2" Coax	0.96	0.00	0.00	0.00	Inside
0.00	127.0	(6) 5/16" Coax	0.96	0.00	0.00	0.00	Inside
0.00	122.0	(1) 1/2" Coax	0.96	0.00	0.00	0.00	Inside
Totals:			4,410.88		0.00		

Shaft Section Properties

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (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	59.980	94.391	42191.7	19.74	119.96	65	52	0.0
5.00		0.5000	58.780	92.487	39689.4	19.32	117.56	65	52	1589.8
10.00		0.5000	57.580	90.583	37288.1	18.90	115.16	65	52	1557.4
15.00		0.5000	56.380	88.679	34985.6	18.47	112.76	65	52	1525.0
20.00		0.5000	55.180	86.775	32779.9	18.05	110.36	65	52	1492.6
25.00		0.5000	53.980	84.870	30668.9	17.63	107.96	65	52	1460.2
30.00		0.5000	52.780	82.966	28650.5	17.20	105.56	65	52	1427.8
35.00		0.5000	51.581	81.062	26722.7	16.78	103.16	65	52	1395.4
38.50	Bot - Section 2	0.5000	50.741	79.729	25426.0	16.48	101.48	65	52	957.5
40.00		0.5000	50.381	79.158	24883.4	16.36	100.76	65	52	741.0
45.00	Top - Section 1	0.4063	49.993	63.945	19865.3	20.29	123.05	65	52	2431.7
50.00		0.4063	48.793	62.398	18457.8	19.76	120.09	65	52	1074.8
55.00		0.4063	47.593	60.850	17118.4	19.24	117.14	65	52	1048.5
60.00		0.4063	46.394	59.303	15845.4	18.72	114.19	65	52	1022.1
65.00		0.4063	45.194	57.755	14637.1	18.20	111.23	65	52	995.8
70.00		0.4063	43.994	56.208	13491.9	17.68	108.28	65	52	969.5
75.00		0.4063	42.794	54.661	12408.0	17.16	105.33	65	52	943.2
78.00	Bot - Section 3	0.4063	42.074	53.732	11786.5	16.85	103.55	65	52	553.3
80.00		0.4063	41.594	53.113	11383.8	16.64	102.37	65	52	648.1
83.50	Top - Section 2	0.3125	41.379	40.731	8678.7	21.94	132.41	65	52	1116.2
85.00		0.3125	41.019	40.374	8452.4	21.73	131.26	65	52	207.0
90.00		0.3125	39.819	39.184	7726.8	21.06	127.42	65	52	676.8
95.00		0.3125	38.619	37.994	7043.9	20.38	123.58	65	52	656.5
100.00		0.3125	37.419	36.804	6402.5	19.70	119.74	65	52	636.3
105.00		0.3125	36.219	35.614	5801.2	19.03	115.90	65	52	616.1
110.00		0.3125	35.019	34.424	5238.9	18.35	112.06	65	52	595.8
113.50	Bot - Section 4	0.3125	34.179	33.590	4867.6	17.87	109.37	65	52	405.0
115.00		0.3125	33.819	33.233	4714.1	17.67	108.22	65	52	309.3
118.00	Top - Section 3	0.2500	33.599	26.462	3718.3	22.29	134.40	65	52	608.7
120.00		0.2500	33.119	26.081	3560.1	21.95	132.48	65	52	178.8
122.00		0.2500	32.639	25.700	3406.4	21.61	130.56	65	52	176.2
125.00		0.2500	31.919	25.129	3184.3	21.10	127.68	65	52	259.4
127.00		0.2500	31.440	24.748	3041.7	20.76	125.76	65	52	169.7
130.00		0.2500	30.720	24.177	2835.9	20.26	122.88	65	52	249.7
135.00		0.2500	29.520	23.225	2513.8	19.41	118.08	65	52	403.2
137.00		0.2500	29.040	22.844	2392.2	19.07	116.16	65	52	156.8
140.00		0.2500	28.320	22.273	2217.2	18.56	113.28	65	52	230.3
145.00		0.2500	27.120	21.320	1944.8	17.72	108.48	65	52	370.8
148.00		0.2500	26.400	20.749	1792.6	17.21	105.60	65	52	214.7
150.00		0.2500	25.920	20.368	1695.7	16.87	103.68	65	52	139.9
155.00		0.2500	24.720	19.416	1468.9	16.02	98.88	65	52	338.4
158.00		0.2500	24.000	18.845	1343.0	15.52	96.00	65	52	195.3

30744.2

Wind Loading - Shaft

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015

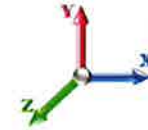
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Load Case: 85 mph Wind with 0" Ice

Iterations: 23

Dead Load Factor 1.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.26	424.86	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.26	416.36	0.650	0.000	5.00	24.742	16.08	502.7	0.0	1589.8
10.00		0.00	1.00	18.496	31.26	407.86	0.650	0.000	5.00	24.242	15.76	492.5	0.0	1557.4
15.00		0.00	1.00	18.496	31.26	399.36	0.650	0.000	5.00	23.742	15.43	482.4	0.0	1525.0
20.00		0.00	1.00	18.496	31.26	390.86	0.650	0.000	5.00	23.242	15.11	472.2	0.0	1492.6
25.00		0.00	1.00	18.496	31.26	382.36	0.650	0.000	5.00	22.742	14.78	462.1	0.0	1460.2
30.00		0.00	1.00	18.496	31.26	373.86	0.650	0.000	5.00	22.242	14.46	451.9	0.0	1427.8
35.00		0.00	1.02	18.810	31.79	368.45	0.650	0.000	5.00	21.742	14.13	449.2	0.0	1395.4
38.50 Bot - Section 2		0.00	1.05	19.329	32.67	367.42	0.650	0.000	3.50	14.922	9.70	316.8	0.0	957.5
40.00		0.00	1.06	19.541	33.02	366.81	0.650	0.000	1.50	6.422	4.17	137.8	0.0	741.0
45.00 Top - Section 1		0.00	1.09	20.210	34.15	364.15	0.650	0.000	5.00	21.081	13.70	468.0	0.0	2431.7
50.00		0.00	1.13	20.827	35.20	366.76	0.650	0.000	5.00	20.581	13.38	470.9	0.0	1074.8
55.00		0.00	1.16	21.402	36.17	362.64	0.650	0.000	5.00	20.081	13.05	472.1	0.0	1048.5
60.00		0.00	1.19	21.941	37.08	357.92	0.650	0.000	5.00	19.581	12.73	471.9	0.0	1022.1
65.00		0.00	1.21	22.449	37.94	352.67	0.650	0.000	5.00	19.081	12.40	470.5	0.0	995.8
70.00		0.00	1.24	22.929	38.75	346.96	0.650	0.000	5.00	18.581	12.08	468.0	0.0	969.5
75.00		0.00	1.26	23.386	39.52	340.84	0.650	0.000	5.00	18.081	11.75	464.5	0.0	943.2
78.00 Bot - Section 3		0.00	1.28	23.649	39.97	336.99	0.650	0.000	3.00	10.608	6.90	275.6	0.0	553.3
80.00		0.00	1.29	23.821	40.26	334.35	0.650	0.000	2.00	7.076	4.60	185.2	0.0	648.1
83.50 Top - Section 2		0.00	1.30	24.114	40.75	329.61	0.650	0.000	3.50	12.191	7.92	322.9	0.0	1116.2
85.00		0.00	1.31	24.237	40.96	332.60	0.650	0.000	1.50	5.150	3.35	137.1	0.0	207.0
90.00		0.00	1.33	24.636	41.63	325.52	0.650	0.000	5.00	16.841	10.95	455.8	0.0	676.8
95.00		0.00	1.35	25.020	42.28	318.16	0.650	0.000	5.00	16.341	10.62	449.1	0.0	656.5
100.00		0.00	1.37	25.389	42.91	310.54	0.650	0.000	5.00	15.841	10.30	441.8	0.0	636.3
105.00		0.00	1.39	25.745	43.51	302.68	0.650	0.000	5.00	15.341	9.97	433.9	0.0	616.1
110.00		0.00	1.41	26.090	44.09	294.61	0.650	0.000	5.00	14.841	9.65	425.3	0.0	595.8
113.50 Bot - Section 4		0.00	1.42	26.324	44.49	288.83	0.650	0.000	3.50	10.091	6.56	291.8	0.0	405.0
115.00		0.00	1.43	26.423	44.66	286.32	0.650	0.000	1.50	4.312	2.80	125.2	0.0	309.3
118.00 Top - Section 3		0.00	1.44	26.618	44.99	281.26	0.650	0.000	3.00	8.490	5.52	248.2	0.0	608.7
120.00		0.00	1.45	26.747	45.20	282.11	0.650	0.000	2.00	5.560	3.61	163.4	0.0	178.8
122.00 Appurtenance(s)		0.00	1.45	26.873	45.42	278.68	0.650	0.000	2.00	5.480	3.56	161.8	0.0	176.2
125.00		0.00	1.46	27.060	45.73	273.48	0.650	0.000	3.00	8.070	5.25	239.9	0.0	259.4
127.00 Appurtenance(s)		0.00	1.47	27.183	45.94	269.98	0.650	0.000	2.00	5.280	3.43	157.7	0.0	169.7
130.00		0.00	1.48	27.365	46.25	264.68	0.650	0.000	3.00	7.770	5.05	233.6	0.0	249.7
135.00		0.00	1.50	27.662	46.75	255.71	0.650	0.000	5.00	12.550	8.16	381.3	0.0	403.2
137.00 Appurtenance(s)		0.00	1.50	27.778	46.95	252.08	0.650	0.000	2.00	4.880	3.17	148.9	0.0	156.8
140.00		0.00	1.51	27.951	47.24	246.60	0.650	0.000	3.00	7.170	4.66	220.1	0.0	230.3
145.00		0.00	1.53	28.233	47.71	237.33	0.650	0.000	5.00	11.550	7.51	358.2	0.0	370.8
148.00 Appurtenance(s)		0.00	1.54	28.398	47.99	231.71	0.650	0.000	3.00	6.690	4.35	208.7	0.0	214.7
150.00		0.00	1.54	28.507	48.18	227.93	0.650	0.000	2.00	4.360	2.83	136.5	0.0	139.9
155.00		0.00	1.56	28.776	48.63	218.40	0.650	0.000	5.00	10.550	6.86	333.5	0.0	338.4
158.00 Appurtenance(s)		0.00	1.56	28.934	48.90	212.62	0.650	0.000	3.00	6.090	3.96	193.6	0.0	195.3
Totals:									158.00			13,782.7		30,744.2

Discrete Appurtenance Forces

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

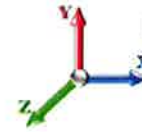
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
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Load Case: 85 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	122.00	CS72188.01 Omni	1	27.183	45.940	1.00	3.00	25.00	0.000	5.000	137.82	0.00	689.10
2	127.00	A-ANT-23G-2.0-C	2	27.183	45.940	1.00	16.86	95.20	0.000	0.000	774.55	0.00	0.00
3	127.00	DB844H90E-XY	9	27.183	45.940	0.75	25.18	126.00	0.000	0.000	1156.65	0.00	0.00
4	127.00	LLPX310R	3	27.183	45.940	0.69	10.00	85.80	0.000	0.000	459.31	0.00	0.00
5	127.00	Low Profile Platform	1	27.183	45.940	1.00	25.00	1200.00	0.000	0.000	1148.50	0.00	0.00
6	127.00	U-RAS RRH's	3	27.183	45.940	0.73	3.99	99.00	0.000	0.000	183.11	0.00	0.00
7	137.00	800 10121	3	27.778	46.946	0.79	12.92	138.90	0.000	0.000	606.37	0.00	0.00
8	137.00	DC6-48-60-18-8F	3	27.778	46.946	0.80	3.53	95.40	0.000	0.000	165.62	0.00	0.00
9	137.00	DTMABP7819VG12A	3	27.778	46.946	0.67	2.29	57.60	0.000	0.000	107.57	0.00	0.00
10	137.00	HPA-65R-BUU-H8	9	27.778	46.946	0.79	94.56	612.00	0.000	0.000	4439.32	0.00	0.00
11	137.00	Platform w/ Hand Rails	1	27.778	46.946	1.00	40.00	2000.00	0.000	0.000	1877.82	0.00	0.00
12	137.00	RRUS 11	6	27.778	46.946	0.76	13.41	304.20	0.000	0.000	629.37	0.00	0.00
13	137.00	RRUS 12	6	27.778	46.946	0.70	15.41	348.00	0.000	0.000	723.62	0.00	0.00
14	137.00	RRUS 32	3	27.778	46.946	0.70	4.05	231.00	0.000	0.000	190.27	0.00	0.00
15	137.00	RRUS A2 Module	6	27.778	46.946	0.62	6.92	127.20	0.000	0.000	324.83	0.00	0.00
16	137.00	RRUS-E2	3	27.778	46.946	0.87	10.10	231.00	0.000	0.000	474.18	0.00	0.00
17	148.00	DB-T1-6Z-8AB-OZ	1	28.398	47.993	0.91	5.10	44.00	0.000	0.000	244.57	0.00	0.00
18	148.00	DB844G65ZAXY	6	28.398	47.993	0.93	26.06	72.00	0.000	0.000	1250.63	0.00	0.00
19	148.00	FD9R6004/2C-3L	6	28.398	47.993	0.62	1.38	18.60	0.000	0.000	66.06	0.00	0.00
20	148.00	HBXX-6517DS-R2M	6	28.398	47.993	0.77	40.33	244.80	0.000	0.000	1935.68	0.00	0.00
21	148.00	LNx-4514DS-VTM	1	28.398	47.993	0.71	5.44	41.90	0.000	0.000	261.01	0.00	0.00
22	148.00	LNx-6514DS-T6M	2	28.398	47.993	0.83	13.96	76.80	0.000	0.000	670.01	0.00	0.00
23	148.00	Low Profile Platform	1	28.398	47.993	1.00	25.00	1200.00	0.000	0.000	1199.83	0.00	0.00
24	148.00	RRH 2x60-aws	3	28.398	47.993	0.76	9.03	165.00	0.000	0.000	433.32	0.00	0.00
25	148.00	RRH 60 W-PCS	3	28.398	47.993	0.76	5.86	165.00	0.000	0.000	281.22	0.00	0.00
26	158.00	APXV18-206517S-C	3	28.934	48.898	0.74	11.46	79.20	0.000	0.000	560.14	0.00	0.00
27	158.00	Low Profile Platform	1	28.934	48.898	1.00	25.00	1200.00	0.000	0.000	1222.45	0.00	0.00

Totals: 9,083.60

21,523.84

Total Applied Force Summary

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

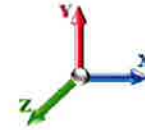
6/10/2015



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Load Case: 85 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		502.70	1743.67	0.00	0.00
10.00		492.54	1711.27	0.00	0.00
15.00		482.38	1678.87	0.00	0.00
20.00		472.22	1646.47	0.00	0.00
25.00		462.06	1614.07	0.00	0.00
30.00		451.91	1581.67	0.00	0.00
35.00		449.24	1549.28	0.00	0.00
38.50		316.83	1065.22	0.00	0.00
40.00		137.85	787.13	0.00	0.00
45.00		468.00	2585.60	0.00	0.00
50.00		470.86	1228.69	0.00	0.00
55.00		472.11	1202.36	0.00	0.00
60.00		471.94	1176.03	0.00	0.00
65.00		470.53	1149.71	0.00	0.00
70.00		468.00	1123.38	0.00	0.00
75.00		464.48	1097.05	0.00	0.00
78.00		275.59	645.60	0.00	0.00
80.00		185.17	709.62	0.00	0.00
83.50		322.94	1223.90	0.00	0.00
85.00		137.11	253.16	0.00	0.00
90.00		455.77	830.70	0.00	0.00
95.00		449.12	810.45	0.00	0.00
100.00		441.81	790.20	0.00	0.00
105.00		433.87	769.95	0.00	0.00
110.00		425.35	749.70	0.00	0.00
113.50		291.82	512.74	0.00	0.00
115.00		125.17	355.42	0.00	0.00
118.00		248.25	701.00	0.00	0.00
120.00		163.36	240.35	0.00	0.00
122.00	(1) appurtenances	299.59	262.76	0.00	689.10
125.00		239.88	348.90	0.00	0.00
127.00	(18) appurtenances	3879.78	1835.36	0.00	0.00
130.00		233.57	317.58	0.00	0.00
135.00		381.35	516.34	0.00	0.00
137.00	(43) appurtenances	9687.89	4347.30	0.00	0.00
140.00		220.15	289.74	0.00	0.00
145.00		358.20	469.94	0.00	0.00
148.00	(29) appurtenances	6551.03	2302.29	0.00	0.00
150.00		136.53	152.39	0.00	0.00
155.00		333.49	369.64	0.00	0.00
158.00	(4) appurtenances	1976.15	1493.21	0.00	0.00
	Totals:	35,306.58	44,238.72	0.00	689.10

Resulting Forces and Deflections

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

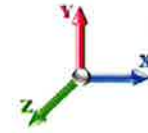
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 85 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	-35.361	-44.195	0.000	0.000	0.000	-4179.6	0.000	0.000	0.000	0.000	0.000
5.00	-34.959	-42.367	0.000	0.000	0.000	-4002.8	-0.074	0.000	0.074	-0.138	0.000
10.00	-34.560	-40.572	0.000	0.000	0.000	-3828.0	-0.294	0.000	0.294	-0.278	0.000
15.00	-34.165	-38.811	0.000	0.000	0.000	-3655.2	-0.663	0.000	0.663	-0.421	0.000
20.00	-33.774	-37.082	0.000	0.000	0.000	-3484.4	-1.182	0.000	1.182	-0.566	0.000
25.00	-33.386	-35.387	0.000	0.000	0.000	-3315.5	-1.854	0.000	1.854	-0.714	0.000
30.00	-33.001	-33.725	0.000	0.000	0.000	-3148.6	-2.682	0.000	2.682	-0.864	0.000
35.00	-32.600	-32.109	0.000	0.000	0.000	-2983.6	-3.669	0.000	3.669	-1.016	0.000
38.50	-32.305	-31.006	0.000	0.000	0.000	-2869.5	-4.455	0.000	4.455	-1.125	0.000
40.00	-32.206	-30.164	0.000	0.000	0.000	-2821.0	-4.816	0.000	4.816	-1.173	0.000
45.00	-31.757	-27.502	0.000	0.000	0.000	-2660.0	-6.128	0.000	6.128	-1.329	0.000
50.00	-31.336	-26.190	0.000	0.000	0.000	-2501.2	-7.606	0.000	7.606	-1.488	0.000
55.00	-30.912	-24.900	0.000	0.000	0.000	-2344.5	-9.265	0.000	9.265	-1.675	0.000
60.00	-30.482	-23.639	0.000	0.000	0.000	-2190.0	-11.120	0.000	11.120	-1.863	0.000
65.00	-30.047	-22.406	0.000	0.000	0.000	-2037.6	-13.174	0.000	13.174	-2.053	0.000
70.00	-29.608	-21.203	0.000	0.000	0.000	-1887.3	-15.426	0.000	15.426	-2.244	0.000
75.00	-29.153	-20.048	0.000	0.000	0.000	-1739.3	-17.879	0.000	17.879	-2.435	0.000
78.00	-28.883	-19.366	0.000	0.000	0.000	-1651.8	-19.446	0.000	19.446	-2.552	0.000
80.00	-28.700	-18.612	0.000	0.000	0.000	-1594.1	-20.532	0.000	20.532	-2.630	0.000
83.50	-28.349	-17.357	0.000	0.000	0.000	-1493.6	-22.511	0.000	22.511	-2.765	0.000
85.00	-28.244	-17.038	0.000	0.000	0.000	-1451.1	-23.389	0.000	23.389	-2.824	0.000
90.00	-27.811	-16.120	0.000	0.000	0.000	-1309.9	-26.471	0.000	26.471	-3.056	0.000
95.00	-27.378	-15.228	0.000	0.000	0.000	-1170.8	-29.794	0.000	29.794	-3.284	0.000
100.00	-26.945	-14.362	0.000	0.000	0.000	-1033.9	-33.354	0.000	33.354	-3.507	0.000
105.00	-26.514	-13.524	0.000	0.000	0.000	-899.26	-37.142	0.000	37.142	-3.722	0.000
110.00	-26.077	-12.727	0.000	0.000	0.000	-766.70	-41.149	0.000	41.149	-3.926	0.000
113.50	-25.771	-12.193	0.000	0.000	0.000	-675.43	-44.078	0.000	44.078	-4.063	0.000
115.00	-25.638	-11.810	0.000	0.000	0.000	-636.77	-45.363	0.000	45.363	-4.121	0.000
118.00	-25.356	-11.090	0.000	0.000	0.000	-559.86	-47.987	0.000	47.987	-4.229	0.000
120.00	-25.189	-10.830	0.000	0.000	0.000	-509.15	-49.772	0.000	49.772	-4.298	0.000
122.00	-24.888	-10.551	0.000	0.000	0.000	-458.08	-51.589	0.000	51.589	-4.375	0.000
125.00	-24.637	-10.185	0.000	0.000	0.000	-383.42	-54.372	0.000	54.372	-4.481	0.000
127.00	-20.636	-8.634	0.000	0.000	0.000	-334.15	-56.262	0.000	56.262	-4.545	0.000
130.00	-20.392	-8.300	0.000	0.000	0.000	-272.24	-59.144	0.000	59.144	-4.630	0.000
135.00	-19.979	-7.793	0.000	0.000	0.000	-170.28	-64.053	0.000	64.053	-4.741	0.000
137.00	-9.966	-4.259	0.000	0.000	0.000	-130.33	-66.045	0.000	66.045	-4.775	0.000
140.00	-9.726	-3.980	0.000	0.000	0.000	-100.43	-69.056	0.000	69.056	-4.816	0.000
145.00	-9.331	-3.537	0.000	0.000	0.000	-51.802	-74.123	0.000	74.123	-4.865	0.000
148.00	-2.609	-1.800	0.000	0.000	0.000	-23.807	-77.183	0.000	77.183	-4.881	0.000
150.00	-2.460	-1.659	0.000	0.000	0.000	-18.590	-79.227	0.000	79.227	-4.888	0.000
155.00	-2.096	-1.319	0.000	0.000	0.000	-6.289	-84.346	0.000	84.346	-4.899	0.000
158.00	-1.976	0.000	0.000	0.000	0.000	0.000	0.000	0.000	87.421	-4.900	0.000

Resulting Stresses

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015



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Load Case: 85 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	0.47	0.76	0.00	0.00	0.00	36.20	36.69	52.0	0.706
5.00	0.46	0.76	0.00	0.00	0.00	36.12	36.60	52.0	0.704
10.00	0.45	0.77	0.00	0.00	0.00	36.01	36.49	52.0	0.702
15.00	0.44	0.78	0.00	0.00	0.00	35.89	36.35	52.0	0.699
20.00	0.43	0.78	0.00	0.00	0.00	35.74	36.19	52.0	0.696
25.00	0.42	0.79	0.00	0.00	0.00	35.55	36.00	52.0	0.693
30.00	0.41	0.80	0.00	0.00	0.00	35.34	35.77	52.0	0.688
35.00	0.40	0.81	0.00	0.00	0.00	35.09	35.51	52.0	0.683
38.50	0.39	0.82	0.00	0.00	0.00	34.89	35.31	52.0	0.679
40.00	0.38	0.82	0.00	0.00	0.00	34.80	35.21	52.0	0.677
45.00	0.43	1.00	0.00	0.00	0.00	40.79	41.25	52.0	0.794
50.00	0.42	1.01	0.00	0.00	0.00	40.28	40.74	52.0	0.784
55.00	0.41	1.02	0.00	0.00	0.00	39.71	40.16	52.0	0.773
60.00	0.40	1.04	0.00	0.00	0.00	39.07	39.51	52.0	0.760
65.00	0.39	1.05	0.00	0.00	0.00	38.33	38.76	52.0	0.746
70.00	0.38	1.06	0.00	0.00	0.00	37.50	37.92	52.0	0.729
75.00	0.37	1.07	0.00	0.00	0.00	36.55	36.96	52.0	0.711
78.00	0.36	1.08	0.00	0.00	0.00	35.93	36.34	52.0	0.699
80.00	0.35	1.09	0.00	0.00	0.00	35.49	35.89	52.0	0.690
83.50	0.43	1.40	0.00	0.00	0.00	43.39	43.88	52.0	0.844
85.00	0.42	1.41	0.00	0.00	0.00	42.91	43.40	52.0	0.835
90.00	0.41	1.43	0.00	0.00	0.00	41.13	41.61	52.0	0.801
95.00	0.40	1.45	0.00	0.00	0.00	39.11	39.59	52.0	0.762
100.00	0.39	1.48	0.00	0.00	0.00	36.82	37.30	52.0	0.718
105.00	0.38	1.50	0.00	0.00	0.00	34.21	34.68	52.0	0.667
110.00	0.37	1.53	0.00	0.00	0.00	31.22	31.70	52.0	0.610
113.50	0.36	1.55	0.00	0.00	0.00	28.90	29.38	52.0	0.565
115.00	0.36	1.55	0.00	0.00	0.00	27.83	28.32	52.0	0.545
118.00	0.42	1.93	0.00	0.00	0.00	30.82	31.42	52.0	0.604
120.00	0.42	1.95	0.00	0.00	0.00	28.86	29.47	52.0	0.567
122.00	0.41	1.95	0.00	0.00	0.00	26.74	27.36	52.0	0.526
125.00	0.41	1.98	0.00	0.00	0.00	23.42	24.07	52.0	0.463
127.00	0.35	1.68	0.00	0.00	0.00	21.04	21.59	52.0	0.415
130.00	0.34	1.70	0.00	0.00	0.00	17.97	18.55	52.0	0.357
135.00	0.34	1.73	0.00	0.00	0.00	12.18	12.87	52.0	0.248
137.00	0.19	0.88	0.00	0.00	0.00	9.64	9.94	52.0	0.191
140.00	0.18	0.88	0.00	0.00	0.00	7.82	8.14	52.0	0.157
145.00	0.17	0.88	0.00	0.00	0.00	4.40	4.82	52.0	0.093
148.00	0.09	0.25	0.00	0.00	0.00	2.14	2.27	52.0	0.044
150.00	0.08	0.24	0.00	0.00	0.00	1.73	1.86	52.0	0.036
155.00	0.07	0.22	0.00	0.00	0.00	0.64	0.81	52.0	0.016
158.00	0.00	0.21	0.00	0.00	0.00	0.00	0.37	52.0	0.007

Wind Loading - Shaft

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

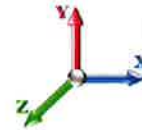
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
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Load Case: 73.61 mph Wind with 0.5" 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	13.871	23.44	367.93	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	360.57	0.650	0.500	5.00	25.158	16.35	383.4	182.9	1772.7
10.00		0.00	1.00	13.871	23.44	353.21	0.650	0.500	5.00	24.658	16.03	375.7	179.2	1736.6
15.00		0.00	1.00	13.871	23.44	345.85	0.650	0.500	5.00	24.158	15.70	368.1	175.5	1700.5
20.00		0.00	1.00	13.871	23.44	338.49	0.650	0.500	5.00	23.658	15.38	360.5	171.8	1664.4
25.00		0.00	1.00	13.871	23.44	331.12	0.650	0.500	5.00	23.158	15.05	352.9	168.1	1628.3
30.00		0.00	1.00	13.871	23.44	323.76	0.650	0.500	5.00	22.659	14.73	345.3	164.4	1592.2
35.00		0.00	1.02	14.106	23.84	319.07	0.650	0.500	5.00	22.159	14.40	343.4	160.7	1556.1
38.50 Bot - Section 2		0.00	1.05	14.496	24.50	318.18	0.650	0.500	3.50	15.213	9.89	242.3	110.7	1068.2
40.00		0.00	1.06	14.655	24.77	317.65	0.650	0.500	1.50	6.547	4.26	105.4	47.9	788.8
45.00 Top - Section 1		0.00	1.09	15.156	25.61	315.35	0.650	0.500	5.00	21.497	13.97	357.9	155.8	2587.5
50.00		0.00	1.13	15.620	26.40	317.61	0.650	0.500	5.00	20.997	13.65	360.3	152.1	1226.9
55.00		0.00	1.16	16.051	27.13	314.05	0.650	0.500	5.00	20.497	13.32	361.4	148.4	1196.9
60.00		0.00	1.19	16.455	27.81	309.96	0.650	0.500	5.00	19.997	13.00	361.5	144.7	1166.8
65.00		0.00	1.21	16.836	28.45	305.41	0.650	0.500	5.00	19.497	12.67	360.6	141.0	1136.8
70.00		0.00	1.24	17.196	29.06	300.47	0.650	0.500	5.00	18.997	12.35	358.9	137.3	1106.8
75.00		0.00	1.26	17.538	29.64	295.17	0.650	0.500	5.00	18.497	12.02	356.4	133.6	1076.7
78.00 Bot - Section 3		0.00	1.28	17.736	29.97	291.83	0.650	0.500	3.00	10.858	7.06	211.6	78.8	632.1
80.00		0.00	1.29	17.865	30.19	289.55	0.650	0.500	2.00	7.243	4.71	142.1	52.7	700.8
83.50 Top - Section 2		0.00	1.30	18.084	30.56	285.44	0.650	0.500	3.50	12.483	8.11	248.0	90.5	1206.6
85.00		0.00	1.31	18.177	30.72	288.03	0.650	0.500	1.50	5.275	3.43	105.3	38.4	245.4
90.00		0.00	1.33	18.476	31.22	281.90	0.650	0.500	5.00	17.258	11.22	350.3	124.4	801.2
95.00		0.00	1.35	18.764	31.71	275.52	0.650	0.500	5.00	16.758	10.89	345.4	120.7	777.3
100.00		0.00	1.37	19.041	32.18	268.93	0.650	0.500	5.00	16.258	10.57	340.1	117.0	753.3
105.00		0.00	1.39	19.308	32.63	262.12	0.650	0.500	5.00	15.758	10.24	334.2	113.3	729.4
110.00		0.00	1.41	19.566	33.07	255.13	0.650	0.500	5.00	15.258	9.92	327.9	109.6	705.4
113.50 Bot - Section 4		0.00	1.42	19.742	33.36	250.13	0.650	0.500	3.50	10.383	6.75	225.2	74.9	479.9
115.00		0.00	1.43	19.816	33.49	247.96	0.650	0.500	1.50	4.437	2.88	96.6	32.2	341.5
118.00 Top - Section 3		0.00	1.44	19.963	33.74	243.57	0.650	0.500	3.00	8.740	5.68	191.7	63.1	671.8
120.00		0.00	1.45	20.059	33.90	244.31	0.650	0.500	2.00	5.727	3.72	126.2	41.5	220.3
122.00 Appurtenance(s)		0.00	1.45	20.154	34.06	241.33	0.650	0.500	2.00	5.647	3.67	125.0	40.9	217.1
125.00		0.00	1.46	20.294	34.30	236.83	0.650	0.500	3.00	8.320	5.41	185.5	60.0	319.5
127.00 Appurtenance(s)		0.00	1.47	20.386	34.45	233.80	0.650	0.500	2.00	5.447	3.54	122.0	39.4	209.1
130.00		0.00	1.48	20.523	34.68	229.21	0.650	0.500	3.00	8.020	5.21	180.8	57.8	307.5
135.00		0.00	1.50	20.745	35.06	221.45	0.650	0.500	5.00	12.967	8.43	295.5	92.6	495.9
137.00 Appurtenance(s)		0.00	1.50	20.833	35.21	218.30	0.650	0.500	2.00	5.047	3.28	115.5	36.5	193.2
140.00		0.00	1.51	20.962	35.43	213.55	0.650	0.500	3.00	7.420	4.82	170.9	53.4	283.6
145.00		0.00	1.53	21.173	35.78	205.53	0.650	0.500	5.00	11.967	7.78	278.3	85.2	456.1
148.00 Appurtenance(s)		0.00	1.54	21.297	35.99	200.66	0.650	0.500	3.00	6.940	4.51	162.4	49.8	264.5
150.00		0.00	1.54	21.379	36.13	197.39	0.650	0.500	2.00	4.527	2.94	106.3	32.6	172.5
155.00		0.00	1.56	21.581	36.47	189.14	0.650	0.500	5.00	10.967	7.13	260.0	77.8	416.3
158.00 Appurtenance(s)		0.00	1.56	21.699	36.67	184.13	0.650	0.500	3.00	6.340	4.12	151.1	45.4	240.7
Totals:									158.00			10,591.4		34,847.1

Discrete Appurtenance Forces

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

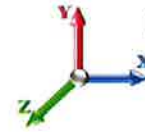
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 73.61 mph Wind with 0.5" 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	122.00	CS72188.01 Omni	1	20.386	34.453	1.00	4.03	46.70	0.000	5.000	138.85	0.00	694.23
2	127.00	A-ANT-23G-2.0-C	2	20.386	34.453	1.00	17.84	194.20	0.000	0.000	614.64	0.00	0.00
3	127.00	DB844H90E-XY	9	20.386	34.453	0.75	28.96	0.00	0.000	0.000	997.67	0.00	0.00
4	127.00	LLPX310R	3	20.386	34.453	0.69	11.10	163.50	0.000	0.000	382.26	0.00	0.00
5	127.00	Low Profile Platform	1	20.386	34.453	1.00	31.00	1500.00	0.000	0.000	1068.04	0.00	0.00
6	127.00	U-RAS RRH's	3	20.386	34.453	0.73	4.60	135.00	0.000	0.000	158.45	0.00	0.00
7	137.00	800 10121	3	20.833	35.207	0.79	14.43	237.60	0.000	0.000	508.16	0.00	0.00
8	137.00	DC6-48-60-18-8F	3	20.833	35.207	0.80	4.01	148.50	0.000	0.000	141.11	0.00	0.00
9	137.00	DTMABP7819VG12A	3	20.833	35.207	0.67	2.73	79.50	0.000	0.000	96.24	0.00	0.00
10	137.00	HPA-65R-BUU-H8	9	20.833	35.207	0.79	98.83	1233.00	0.000	0.000	3479.99	0.00	0.00
11	137.00	Platform w/ Hand Rails	1	20.833	35.207	1.00	48.00	2600.00	0.000	0.000	1689.94	0.00	0.00
12	137.00	RRUS 11	6	20.833	35.207	0.76	14.32	396.00	0.000	0.000	504.11	0.00	0.00
13	137.00	RRUS 12	6	20.833	35.207	0.70	16.34	454.20	0.000	0.000	575.21	0.00	0.00
14	137.00	RRUS 32	3	20.833	35.207	0.70	4.41	258.60	0.000	0.000	155.26	0.00	0.00
15	137.00	RRUS A2 Module	6	20.833	35.207	0.62	8.00	188.40	0.000	0.000	281.59	0.00	0.00
16	137.00	RRUS-E2	3	20.833	35.207	0.87	11.22	310.50	0.000	0.000	395.13	0.00	0.00
17	148.00	DB-T1-6Z-8AB-OZ	1	21.297	35.993	0.91	4.59	51.10	0.000	0.000	165.08	0.00	0.00
18	148.00	DB844G65ZAXY	6	21.297	35.993	0.93	29.24	0.00	0.000	0.000	1052.40	0.00	0.00
19	148.00	FD9R6004/2C-3L	6	21.297	35.993	0.62	1.86	29.40	0.000	0.000	66.95	0.00	0.00
20	148.00	HBXX-6517DS-R2M	6	21.297	35.993	0.77	44.31	547.20	0.000	0.000	1594.68	0.00	0.00
21	148.00	LNx-4514DS-VTM	1	21.297	35.993	0.71	5.90	83.70	0.000	0.000	212.36	0.00	0.00
22	148.00	LNx-6514DS-T6M	2	21.297	35.993	0.83	15.34	177.80	0.000	0.000	552.07	0.00	0.00
23	148.00	Low Profile Platform	1	21.297	35.993	1.00	31.00	1500.00	0.000	0.000	1115.77	0.00	0.00
24	148.00	RRH 2x60-aws	3	21.297	35.993	0.76	9.64	240.30	0.000	0.000	347.13	0.00	0.00
25	148.00	RRH 60 W-PCS	3	21.297	35.993	0.76	9.64	240.30	0.000	0.000	347.13	0.00	0.00
26	158.00	APXV18-206517S-C	3	21.699	36.671	0.74	12.96	159.00	0.000	0.000	475.44	0.00	0.00
27	158.00	Low Profile Platform	1	21.699	36.671	1.00	31.00	1500.00	0.000	0.000	1136.81	0.00	0.00
Totals:							12,474.50				18,251.96		

Total Applied Force Summary

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

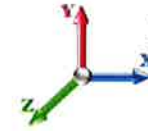
6/10/2015



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Load Case: 73.61 mph Wind with 0.5" 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		383.35	1926.59	0.00	0.00
10.00		375.73	1890.49	0.00	0.00
15.00		368.11	1854.39	0.00	0.00
20.00		360.50	1818.28	0.00	0.00
25.00		352.88	1782.18	0.00	0.00
30.00		345.26	1746.08	0.00	0.00
35.00		343.36	1709.98	0.00	0.00
38.50		242.25	1175.90	0.00	0.00
40.00		105.39	834.98	0.00	0.00
45.00		357.92	2741.40	0.00	0.00
50.00		360.28	1380.79	0.00	0.00
55.00		361.41	1350.76	0.00	0.00
60.00		361.47	1320.73	0.00	0.00
65.00		360.58	1290.71	0.00	0.00
70.00		358.85	1260.68	0.00	0.00
75.00		356.36	1230.65	0.00	0.00
78.00		211.55	724.42	0.00	0.00
80.00		142.14	762.35	0.00	0.00
83.50		247.98	1314.36	0.00	0.00
85.00		105.32	291.59	0.00	0.00
90.00		350.26	955.11	0.00	0.00
95.00		345.41	931.16	0.00	0.00
100.00		340.05	907.21	0.00	0.00
105.00		334.22	883.26	0.00	0.00
110.00		327.95	859.31	0.00	0.00
113.50		225.18	587.65	0.00	0.00
115.00		96.59	387.65	0.00	0.00
118.00		191.66	764.13	0.00	0.00
120.00		126.18	281.85	0.00	0.00
122.00	(1) appurtenances	263.85	325.36	0.00	694.23
125.00		185.48	408.92	0.00	0.00
127.00	(18) appurtenances	3343.03	2261.48	0.00	0.00
130.00		180.80	375.38	0.00	0.00
135.00		295.49	608.97	0.00	0.00
137.00	(43) appurtenances	7941.73	6144.76	0.00	0.00
140.00		170.86	343.10	0.00	0.00
145.00		278.33	555.17	0.00	0.00
148.00	(29) appurtenances	5615.92	3193.79	0.00	0.00
150.00		106.31	185.00	0.00	0.00
155.00		259.98	447.47	0.00	0.00
158.00	(4) appurtenances	1763.37	1918.37	0.00	0.00
	Totals:	28,843.36	51,732.43	0.00	694.23

Resulting Forces and Deflections

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

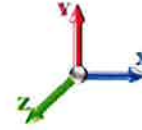
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
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Load Case: 73.61 mph Wind with 0.5" 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	-28.896	-51.703	0.000	0.000	0.000	-3488.7	0.000	0.000	0.000	0.000	0.000
5.00	-28.612	-49.718	0.000	0.000	0.000	-3344.2	-0.062	0.000	0.062	-0.115	0.000
10.00	-28.329	-47.771	0.000	0.000	0.000	-3201.2	-0.246	0.000	0.246	-0.232	0.000
15.00	-28.048	-45.859	0.000	0.000	0.000	-3059.5	-0.554	0.000	0.554	-0.352	0.000
20.00	-27.769	-43.984	0.000	0.000	0.000	-2919.3	-0.987	0.000	0.987	-0.473	0.000
25.00	-27.491	-42.146	0.000	0.000	0.000	-2780.4	-1.550	0.000	1.550	-0.597	0.000
30.00	-27.215	-40.344	0.000	0.000	0.000	-2643.0	-2.243	0.000	2.243	-0.723	0.000
35.00	-26.922	-38.587	0.000	0.000	0.000	-2506.9	-3.069	0.000	3.069	-0.851	0.000
38.50	-26.704	-37.385	0.000	0.000	0.000	-2412.7	-3.727	0.000	3.727	-0.942	0.000
40.00	-26.640	-36.511	0.000	0.000	0.000	-2372.6	-4.030	0.000	4.030	-0.983	0.000
45.00	-26.310	-33.716	0.000	0.000	0.000	-2239.4	-5.130	0.000	5.130	-1.114	0.000
50.00	-26.004	-32.277	0.000	0.000	0.000	-2107.9	-6.369	0.000	6.369	-1.248	0.000
55.00	-25.696	-30.864	0.000	0.000	0.000	-1977.9	-7.761	0.000	7.761	-1.406	0.000
60.00	-25.383	-29.482	0.000	0.000	0.000	-1849.4	-9.318	0.000	9.318	-1.565	0.000
65.00	-25.065	-28.132	0.000	0.000	0.000	-1722.5	-11.043	0.000	11.043	-1.725	0.000
70.00	-24.742	-26.814	0.000	0.000	0.000	-1597.2	-12.937	0.000	12.937	-1.886	0.000
75.00	-24.401	-25.541	0.000	0.000	0.000	-1473.4	-14.999	0.000	14.999	-2.048	0.000
78.00	-24.199	-24.790	0.000	0.000	0.000	-1400.2	-16.318	0.000	16.318	-2.147	0.000
80.00	-24.066	-23.995	0.000	0.000	0.000	-1351.8	-17.232	0.000	17.232	-2.213	0.000
83.50	-23.799	-22.658	0.000	0.000	0.000	-1267.6	-18.898	0.000	18.898	-2.328	0.000
85.00	-23.730	-22.319	0.000	0.000	0.000	-1231.9	-19.637	0.000	19.637	-2.378	0.000
90.00	-23.412	-21.300	0.000	0.000	0.000	-1113.3	-22.234	0.000	22.234	-2.575	0.000
95.00	-23.092	-20.309	0.000	0.000	0.000	-996.26	-25.036	0.000	25.036	-2.769	0.000
100.00	-22.770	-19.346	0.000	0.000	0.000	-880.80	-28.038	0.000	28.038	-2.959	0.000
105.00	-22.447	-18.411	0.000	0.000	0.000	-766.95	-31.236	0.000	31.236	-3.142	0.000
110.00	-22.115	-17.516	0.000	0.000	0.000	-654.72	-34.620	0.000	34.620	-3.316	0.000
113.50	-21.880	-16.912	0.000	0.000	0.000	-577.32	-37.095	0.000	37.095	-3.433	0.000
115.00	-21.781	-16.503	0.000	0.000	0.000	-544.50	-38.182	0.000	38.182	-3.482	0.000
118.00	-21.563	-15.724	0.000	0.000	0.000	-479.16	-40.400	0.000	40.400	-3.575	0.000
120.00	-21.437	-15.427	0.000	0.000	0.000	-436.03	-41.910	0.000	41.910	-3.634	0.000
122.00	-21.173	-15.090	0.000	0.000	0.000	-392.47	-43.447	0.000	43.447	-3.700	0.000
125.00	-20.980	-14.668	0.000	0.000	0.000	-328.95	-45.801	0.000	45.801	-3.791	0.000
127.00	-17.508	-12.614	0.000	0.000	0.000	-286.99	-47.401	0.000	47.401	-3.846	0.000
130.00	-17.321	-12.226	0.000	0.000	0.000	-234.47	-49.841	0.000	49.841	-3.919	0.000
135.00	-16.996	-11.621	0.000	0.000	0.000	-147.86	-53.999	0.000	53.999	-4.015	0.000
137.00	-8.645	-6.045	0.000	0.000	0.000	-113.87	-55.686	0.000	55.686	-4.044	0.000
140.00	-8.454	-5.709	0.000	0.000	0.000	-87.944	-58.238	0.000	58.238	-4.080	0.000
145.00	-8.139	-5.171	0.000	0.000	0.000	-45.673	-62.534	0.000	62.534	-4.123	0.000
148.00	-2.308	-2.390	0.000	0.000	0.000	-21.255	-65.129	0.000	65.129	-4.138	0.000
150.00	-2.189	-2.213	0.000	0.000	0.000	-16.639	-66.862	0.000	66.862	-4.144	0.000
155.00	-1.898	-1.786	0.000	0.000	0.000	-5.693	-71.204	0.000	71.204	-4.153	0.000
158.00	-1.763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	73.812	-4.155	0.000

Resulting Stresses

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

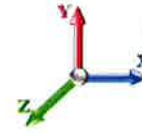
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
 Page: 16



Load Case: 73.61 mph Wind with 0.5" 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)	f Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.55	0.62	0.00	0.00	0.00	30.22	30.78	52.0	0.592
5.00	0.54	0.62	0.00	0.00	0.00	30.18	30.73	52.0	0.591
10.00	0.53	0.63	0.00	0.00	0.00	30.12	30.66	52.0	0.590
15.00	0.52	0.64	0.00	0.00	0.00	30.04	30.58	52.0	0.588
20.00	0.51	0.64	0.00	0.00	0.00	29.94	30.47	52.0	0.586
25.00	0.50	0.65	0.00	0.00	0.00	29.82	30.33	52.0	0.584
30.00	0.49	0.66	0.00	0.00	0.00	29.66	30.17	52.0	0.580
35.00	0.48	0.67	0.00	0.00	0.00	29.48	29.98	52.0	0.577
38.50	0.47	0.68	0.00	0.00	0.00	29.33	29.83	52.0	0.574
40.00	0.46	0.68	0.00	0.00	0.00	29.27	29.75	52.0	0.572
45.00	0.53	0.83	0.00	0.00	0.00	34.34	34.89	52.0	0.671
50.00	0.52	0.84	0.00	0.00	0.00	33.95	34.50	52.0	0.664
55.00	0.51	0.85	0.00	0.00	0.00	33.50	34.04	52.0	0.655
60.00	0.50	0.86	0.00	0.00	0.00	32.99	33.52	52.0	0.645
65.00	0.49	0.87	0.00	0.00	0.00	32.40	32.93	52.0	0.633
70.00	0.48	0.89	0.00	0.00	0.00	31.73	32.24	52.0	0.620
75.00	0.47	0.90	0.00	0.00	0.00	30.96	31.47	52.0	0.605
78.00	0.46	0.91	0.00	0.00	0.00	30.45	30.96	52.0	0.596
80.00	0.45	0.91	0.00	0.00	0.00	30.09	30.59	52.0	0.588
83.50	0.56	1.18	0.00	0.00	0.00	36.82	37.44	52.0	0.720
85.00	0.55	1.18	0.00	0.00	0.00	36.43	37.03	52.0	0.712
90.00	0.54	1.20	0.00	0.00	0.00	34.96	35.56	52.0	0.684
95.00	0.53	1.22	0.00	0.00	0.00	33.28	33.88	52.0	0.652
100.00	0.53	1.25	0.00	0.00	0.00	31.36	31.96	52.0	0.615
105.00	0.52	1.27	0.00	0.00	0.00	29.17	29.77	52.0	0.573
110.00	0.51	1.29	0.00	0.00	0.00	26.66	27.27	52.0	0.525
113.50	0.50	1.31	0.00	0.00	0.00	24.70	25.30	52.0	0.487
115.00	0.50	1.32	0.00	0.00	0.00	23.80	24.40	52.0	0.469
118.00	0.59	1.64	0.00	0.00	0.00	26.38	27.12	52.0	0.522
120.00	0.59	1.66	0.00	0.00	0.00	24.71	25.47	52.0	0.490
122.00	0.59	1.66	0.00	0.00	0.00	22.91	23.67	52.0	0.455
125.00	0.58	1.68	0.00	0.00	0.00	20.09	20.88	52.0	0.402
127.00	0.51	1.43	0.00	0.00	0.00	18.07	18.75	52.0	0.361
130.00	0.51	1.44	0.00	0.00	0.00	15.47	16.17	52.0	0.311
135.00	0.50	1.47	0.00	0.00	0.00	10.58	11.37	52.0	0.219
137.00	0.26	0.76	0.00	0.00	0.00	8.42	8.79	52.0	0.169
140.00	0.26	0.77	0.00	0.00	0.00	6.84	7.22	52.0	0.139
145.00	0.24	0.77	0.00	0.00	0.00	3.88	4.33	52.0	0.083
148.00	0.12	0.22	0.00	0.00	0.00	1.91	2.06	52.0	0.040
150.00	0.11	0.22	0.00	0.00	0.00	1.55	1.70	52.0	0.033
155.00	0.09	0.20	0.00	0.00	0.00	0.58	0.76	52.0	0.015
158.00	0.00	0.19	0.00	0.00	0.00	0.00	0.33	52.0	0.006

Wind Loading - Shaft

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015

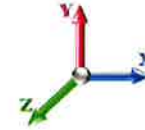


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Load Case: 50 mph Wind with 0" Ice

Iterations: 22

Dead Load Factor 1.00
Wind Load Factor 1.00



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	249.92	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	244.92	0.650	0.000	5.00	24.742	16.08	173.9	0.0	1589.8
10.00		0.00	1.00	6.400	10.82	239.92	0.650	0.000	5.00	24.242	15.76	170.4	0.0	1557.4
15.00		0.00	1.00	6.400	10.82	234.92	0.650	0.000	5.00	23.742	15.43	166.9	0.0	1525.0
20.00		0.00	1.00	6.400	10.82	229.92	0.650	0.000	5.00	23.242	15.11	163.4	0.0	1492.6
25.00		0.00	1.00	6.400	10.82	224.92	0.650	0.000	5.00	22.742	14.78	159.9	0.0	1460.2
30.00		0.00	1.00	6.400	10.82	219.92	0.650	0.000	5.00	22.242	14.46	156.4	0.0	1427.8
35.00		0.00	1.02	6.509	11.00	216.73	0.650	0.000	5.00	21.742	14.13	155.4	0.0	1395.4
38.50 Bot - Section 2		0.00	1.05	6.688	11.30	216.13	0.650	0.000	3.50	14.922	9.70	109.6	0.0	957.5
40.00		0.00	1.06	6.762	11.43	215.77	0.650	0.000	1.50	6.422	4.17	47.7	0.0	741.0
45.00 Top - Section 1		0.00	1.09	6.993	11.82	214.20	0.650	0.000	5.00	21.081	13.70	161.9	0.0	2431.7
50.00		0.00	1.13	7.207	12.18	215.74	0.650	0.000	5.00	20.581	13.38	162.9	0.0	1074.8
55.00		0.00	1.16	7.406	12.52	213.32	0.650	0.000	5.00	20.081	13.05	163.4	0.0	1048.5
60.00		0.00	1.19	7.592	12.83	210.54	0.650	0.000	5.00	19.581	12.73	163.3	0.0	1022.1
65.00		0.00	1.21	7.768	13.13	207.45	0.650	0.000	5.00	19.081	12.40	162.8	0.0	995.8
70.00		0.00	1.24	7.934	13.41	204.10	0.650	0.000	5.00	18.581	12.08	161.9	0.0	969.5
75.00		0.00	1.26	8.092	13.68	200.50	0.650	0.000	5.00	18.081	11.75	160.7	0.0	943.2
78.00 Bot - Section 3		0.00	1.28	8.183	13.83	198.23	0.650	0.000	3.00	10.608	6.90	95.4	0.0	553.3
80.00		0.00	1.29	8.242	13.93	196.68	0.650	0.000	2.00	7.076	4.60	64.1	0.0	648.1
83.50 Top - Section 2		0.00	1.30	8.344	14.10	193.89	0.650	0.000	3.50	12.191	7.92	111.7	0.0	1116.2
85.00		0.00	1.31	8.387	14.17	195.65	0.650	0.000	1.50	5.150	3.35	47.4	0.0	207.0
90.00		0.00	1.33	8.525	14.41	191.48	0.650	0.000	5.00	16.841	10.95	157.7	0.0	676.8
95.00		0.00	1.35	8.657	14.63	187.15	0.650	0.000	5.00	16.341	10.62	155.4	0.0	656.5
100.00		0.00	1.37	8.785	14.85	182.67	0.650	0.000	5.00	15.841	10.30	152.9	0.0	636.3
105.00		0.00	1.39	8.908	15.06	178.05	0.650	0.000	5.00	15.341	9.97	150.1	0.0	616.1
110.00		0.00	1.41	9.028	15.26	173.30	0.650	0.000	5.00	14.841	9.65	147.2	0.0	595.8
113.50 Bot - Section 4		0.00	1.42	9.109	15.39	169.90	0.650	0.000	3.50	10.091	6.56	101.0	0.0	405.0
115.00		0.00	1.43	9.143	15.45	168.43	0.650	0.000	1.50	4.312	2.80	43.3	0.0	309.3
118.00 Top - Section 3		0.00	1.44	9.211	15.57	165.45	0.650	0.000	3.00	8.490	5.52	85.9	0.0	608.7
120.00		0.00	1.45	9.255	15.64	165.95	0.650	0.000	2.00	5.560	3.61	56.5	0.0	178.8
122.00 Appurtenance(s)		0.00	1.45	9.299	15.71	163.93	0.650	0.000	2.00	5.480	3.56	56.0	0.0	176.2
125.00		0.00	1.46	9.363	15.82	160.87	0.650	0.000	3.00	8.070	5.25	83.0	0.0	259.4
127.00 Appurtenance(s)		0.00	1.47	9.406	15.90	158.81	0.650	0.000	2.00	5.280	3.43	54.6	0.0	169.7
130.00		0.00	1.48	9.469	16.00	155.69	0.650	0.000	3.00	7.770	5.05	80.8	0.0	249.7
135.00		0.00	1.50	9.572	16.18	150.42	0.650	0.000	5.00	12.550	8.16	132.0	0.0	403.2
137.00 Appurtenance(s)		0.00	1.50	9.612	16.24	148.28	0.650	0.000	2.00	4.880	3.17	51.5	0.0	156.8
140.00		0.00	1.51	9.672	16.35	145.06	0.650	0.000	3.00	7.170	4.66	76.2	0.0	230.3
145.00		0.00	1.53	9.769	16.51	139.61	0.650	0.000	5.00	11.550	7.51	123.9	0.0	370.8
148.00 Appurtenance(s)		0.00	1.54	9.826	16.61	136.30	0.650	0.000	3.00	6.690	4.35	72.2	0.0	214.7
150.00		0.00	1.54	9.864	16.67	134.08	0.650	0.000	2.00	4.360	2.83	47.2	0.0	139.9
155.00		0.00	1.56	9.957	16.83	128.47	0.650	0.000	5.00	10.550	6.86	115.4	0.0	338.4
158.00 Appurtenance(s)		0.00	1.56	10.012	16.92	125.07	0.650	0.000	3.00	6.090	3.96	67.0	0.0	195.3
Totals:									158.00			4,769.1		30,744.2

Discrete Appurtenance Forces

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

6/10/2015

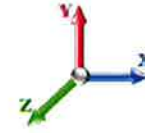


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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 22

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	122.00	CS72188.01 Omni	1	9.406	15.896	1.00	3.00	25.00	0.000	5.000	47.69	0.00	238.44
2	127.00	A-ANT-23G-2.0-C	2	9.406	15.896	1.00	16.86	95.20	0.000	0.000	268.01	0.00	0.00
3	127.00	DB844H90E-XY	9	9.406	15.896	0.75	25.18	126.00	0.000	0.000	400.23	0.00	0.00
4	127.00	LLPX310R	3	9.406	15.896	0.69	10.00	85.80	0.000	0.000	158.93	0.00	0.00
5	127.00	Low Profile Platform	1	9.406	15.896	1.00	25.00	1200.00	0.000	0.000	397.40	0.00	0.00
6	127.00	U-RAS RRH's	3	9.406	15.896	0.73	3.99	99.00	0.000	0.000	63.36	0.00	0.00
7	137.00	800 10121	3	9.612	16.244	0.79	12.92	138.90	0.000	0.000	209.82	0.00	0.00
8	137.00	DC6-48-60-18-8F	3	9.612	16.244	0.80	3.53	95.40	0.000	0.000	57.31	0.00	0.00
9	137.00	DTMABP7819VG12A	3	9.612	16.244	0.67	2.29	57.60	0.000	0.000	37.22	0.00	0.00
10	137.00	HPA-65R-BUU-H8	9	9.612	16.244	0.79	94.56	612.00	0.000	0.000	1536.10	0.00	0.00
11	137.00	Platform w/ Hand Rails	1	9.612	16.244	1.00	40.00	2000.00	0.000	0.000	649.77	0.00	0.00
12	137.00	RRUS 11	6	9.612	16.244	0.76	13.41	304.20	0.000	0.000	217.78	0.00	0.00
13	137.00	RRUS 12	6	9.612	16.244	0.70	15.41	348.00	0.000	0.000	250.39	0.00	0.00
14	137.00	RRUS 32	3	9.612	16.244	0.70	4.05	231.00	0.000	0.000	65.84	0.00	0.00
15	137.00	RRUS A2 Module	6	9.612	16.244	0.62	6.92	127.20	0.000	0.000	112.40	0.00	0.00
16	137.00	RRUS-E2	3	9.612	16.244	0.87	10.10	231.00	0.000	0.000	164.08	0.00	0.00
17	148.00	DB-T1-6Z-8AB-OZ	1	9.826	16.607	0.91	5.10	44.00	0.000	0.000	84.63	0.00	0.00
18	148.00	DB844G65ZAXY	6	9.826	16.607	0.93	26.06	72.00	0.000	0.000	432.74	0.00	0.00
19	148.00	FD9R6004/2C-3L	6	9.826	16.607	0.62	1.38	18.60	0.000	0.000	22.86	0.00	0.00
20	148.00	HBXX-6517DS-R2M	6	9.826	16.607	0.77	40.33	244.80	0.000	0.000	669.79	0.00	0.00
21	148.00	LNx-4514DS-VTM	1	9.826	16.607	0.71	5.44	41.90	0.000	0.000	90.32	0.00	0.00
22	148.00	LNx-6514DS-T6M	2	9.826	16.607	0.83	13.96	76.80	0.000	0.000	231.84	0.00	0.00
23	148.00	Low Profile Platform	1	9.826	16.607	1.00	25.00	1200.00	0.000	0.000	415.16	0.00	0.00
24	148.00	RRH 2x60-aws	3	9.826	16.607	0.76	9.03	165.00	0.000	0.000	149.94	0.00	0.00
25	148.00	RRH 60 W-PCS	3	9.826	16.607	0.76	5.86	165.00	0.000	0.000	97.31	0.00	0.00
26	158.00	APXV18-206517S-C	3	10.012	16.920	0.74	11.46	79.20	0.000	0.000	193.82	0.00	0.00
27	158.00	Low Profile Platform	1	10.012	16.920	1.00	25.00	1200.00	0.000	0.000	422.99	0.00	0.00
Totals:								9,083.60			7,447.70		

Total Applied Force Summary

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

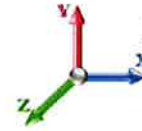
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		173.94	1743.67	0.00	0.00
10.00		170.43	1711.27	0.00	0.00
15.00		166.91	1678.87	0.00	0.00
20.00		163.40	1646.47	0.00	0.00
25.00		159.88	1614.07	0.00	0.00
30.00		156.37	1581.67	0.00	0.00
35.00		155.45	1549.28	0.00	0.00
38.50		109.63	1065.22	0.00	0.00
40.00		47.70	787.13	0.00	0.00
45.00		161.94	2585.60	0.00	0.00
50.00		162.93	1228.69	0.00	0.00
55.00		163.36	1202.36	0.00	0.00
60.00		163.30	1176.03	0.00	0.00
65.00		162.81	1149.71	0.00	0.00
70.00		161.94	1123.38	0.00	0.00
75.00		160.72	1097.05	0.00	0.00
78.00		95.36	645.60	0.00	0.00
80.00		64.07	709.62	0.00	0.00
83.50		111.74	1223.90	0.00	0.00
85.00		47.44	253.16	0.00	0.00
90.00		157.71	830.70	0.00	0.00
95.00		155.41	810.45	0.00	0.00
100.00		152.88	790.20	0.00	0.00
105.00		150.13	769.95	0.00	0.00
110.00		147.18	749.70	0.00	0.00
113.50		100.98	512.74	0.00	0.00
115.00		43.31	355.42	0.00	0.00
118.00		85.90	701.00	0.00	0.00
120.00		56.52	240.35	0.00	0.00
122.00	(1) appurtenances	103.66	262.76	0.00	238.44
125.00		83.00	348.90	0.00	0.00
127.00	(18) appurtenances	1342.48	1835.36	0.00	0.00
130.00		80.82	317.58	0.00	0.00
135.00		131.95	516.34	0.00	0.00
137.00	(43) appurtenances	3352.21	4347.30	0.00	0.00
140.00		76.18	289.74	0.00	0.00
145.00		123.95	469.94	0.00	0.00
148.00	(29) appurtenances	2266.79	2302.29	0.00	0.00
150.00		47.24	152.39	0.00	0.00
155.00		115.39	369.64	0.00	0.00
158.00	(4) appurtenances	683.79	1493.21	0.00	0.00
	Totals:	12,216.81	44,238.72	0.00	238.44

Resulting Forces and Deflections

Structure: CT02722-S-SB
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

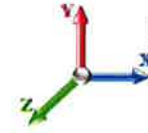
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/10/2015
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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 22

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	-12.235	-44.233	0.000	0.000	0.000	-1447.5	0.000	0.000	0.000	0.000	0.000
5.00	-12.096	-42.480	0.000	0.000	0.000	-1386.3	-0.026	0.000	0.026	-0.048	0.000
10.00	-11.958	-40.758	0.000	0.000	0.000	-1325.9	-0.102	0.000	0.102	-0.096	0.000
15.00	-11.822	-39.070	0.000	0.000	0.000	-1266.1	-0.229	0.000	0.229	-0.146	0.000
20.00	-11.687	-37.413	0.000	0.000	0.000	-1207.0	-0.409	0.000	0.409	-0.196	0.000
25.00	-11.553	-35.790	0.000	0.000	0.000	-1148.5	-0.642	0.000	0.642	-0.247	0.000
30.00	-11.420	-34.198	0.000	0.000	0.000	-1090.8	-0.929	0.000	0.929	-0.299	0.000
35.00	-11.282	-32.641	0.000	0.000	0.000	-1033.7	-1.271	0.000	1.271	-0.352	0.000
38.50	-11.180	-31.571	0.000	0.000	0.000	-994.22	-1.543	0.000	1.543	-0.390	0.000
40.00	-11.146	-30.777	0.000	0.000	0.000	-977.45	-1.668	0.000	1.668	-0.406	0.000
45.00	-10.991	-28.183	0.000	0.000	0.000	-921.72	-2.123	0.000	2.123	-0.461	0.000
50.00	-10.846	-26.944	0.000	0.000	0.000	-866.77	-2.635	0.000	2.635	-0.515	0.000
55.00	-10.700	-25.731	0.000	0.000	0.000	-812.54	-3.210	0.000	3.210	-0.580	0.000
60.00	-10.553	-24.545	0.000	0.000	0.000	-759.04	-3.852	0.000	3.852	-0.646	0.000
65.00	-10.403	-23.385	0.000	0.000	0.000	-706.27	-4.564	0.000	4.564	-0.711	0.000
70.00	-10.252	-22.252	0.000	0.000	0.000	-654.26	-5.345	0.000	5.345	-0.777	0.000
75.00	-10.096	-21.148	0.000	0.000	0.000	-603.00	-6.195	0.000	6.195	-0.844	0.000
78.00	-10.003	-20.498	0.000	0.000	0.000	-572.71	-6.738	0.000	6.738	-0.884	0.000
80.00	-9.940	-19.783	0.000	0.000	0.000	-552.71	-7.114	0.000	7.114	-0.911	0.000
83.50	-9.819	-18.556	0.000	0.000	0.000	-517.91	-7.800	0.000	7.800	-0.958	0.000
85.00	-9.784	-18.295	0.000	0.000	0.000	-503.19	-8.105	0.000	8.105	-0.978	0.000
90.00	-9.636	-17.453	0.000	0.000	0.000	-454.27	-9.173	0.000	9.173	-1.059	0.000
95.00	-9.488	-16.633	0.000	0.000	0.000	-406.09	-10.325	0.000	10.325	-1.138	0.000
100.00	-9.340	-15.834	0.000	0.000	0.000	-358.65	-11.559	0.000	11.559	-1.215	0.000
105.00	-9.192	-15.056	0.000	0.000	0.000	-311.95	-12.873	0.000	12.873	-1.290	0.000
110.00	-9.042	-14.300	0.000	0.000	0.000	-265.99	-14.263	0.000	14.263	-1.361	0.000
113.50	-8.937	-13.785	0.000	0.000	0.000	-234.34	-15.279	0.000	15.279	-1.408	0.000
115.00	-8.892	-13.426	0.000	0.000	0.000	-220.94	-15.725	0.000	15.725	-1.428	0.000
118.00	-8.795	-12.723	0.000	0.000	0.000	-194.26	-16.635	0.000	16.635	-1.466	0.000
120.00	-8.738	-12.480	0.000	0.000	0.000	-176.67	-17.254	0.000	17.254	-1.490	0.000
122.00	-8.634	-12.216	0.000	0.000	0.000	-158.96	-17.884	0.000	17.884	-1.517	0.000
125.00	-8.548	-11.865	0.000	0.000	0.000	-133.06	-18.850	0.000	18.850	-1.553	0.000
127.00	-7.160	-10.063	0.000	0.000	0.000	-115.96	-19.506	0.000	19.506	-1.575	0.000
130.00	-7.077	-9.744	0.000	0.000	0.000	-94.487	-20.506	0.000	20.506	-1.605	0.000
135.00	-6.934	-9.229	0.000	0.000	0.000	-59.105	-22.209	0.000	22.209	-1.644	0.000
137.00	-3.459	-4.979	0.000	0.000	0.000	-45.237	-22.901	0.000	22.901	-1.655	0.000
140.00	-3.376	-4.691	0.000	0.000	0.000	-34.860	-23.946	0.000	23.946	-1.670	0.000
145.00	-3.239	-4.224	0.000	0.000	0.000	-17.981	-25.704	0.000	25.704	-1.687	0.000
148.00	-0.905	-1.989	0.000	0.000	0.000	-8.264	-26.766	0.000	26.766	-1.692	0.000
150.00	-0.854	-1.838	0.000	0.000	0.000	-6.453	-27.476	0.000	27.476	-1.695	0.000
155.00	-0.728	-1.472	0.000	0.000	0.000	-2.183	-29.252	0.000	29.252	-1.698	0.000
158.00	-0.684	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.320	-1.699	0.000

Resulting Stresses

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

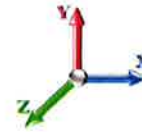
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 22

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	0.47	0.26	0.00	0.00	0.00	12.54	13.01	52.0	0.250
5.00	0.46	0.26	0.00	0.00	0.00	12.51	12.98	52.0	0.250
10.00	0.45	0.27	0.00	0.00	0.00	12.47	12.93	52.0	0.249
15.00	0.44	0.27	0.00	0.00	0.00	12.43	12.88	52.0	0.248
20.00	0.43	0.27	0.00	0.00	0.00	12.38	12.82	52.0	0.247
25.00	0.42	0.27	0.00	0.00	0.00	12.32	12.75	52.0	0.245
30.00	0.41	0.28	0.00	0.00	0.00	12.24	12.66	52.0	0.244
35.00	0.40	0.28	0.00	0.00	0.00	12.16	12.57	52.0	0.242
38.50	0.40	0.28	0.00	0.00	0.00	12.09	12.49	52.0	0.240
40.00	0.39	0.28	0.00	0.00	0.00	12.06	12.46	52.0	0.240
45.00	0.44	0.35	0.00	0.00	0.00	14.13	14.59	52.0	0.281
50.00	0.43	0.35	0.00	0.00	0.00	13.96	14.40	52.0	0.277
55.00	0.42	0.35	0.00	0.00	0.00	13.76	14.20	52.0	0.273
60.00	0.41	0.36	0.00	0.00	0.00	13.54	13.97	52.0	0.269
65.00	0.40	0.36	0.00	0.00	0.00	13.29	13.71	52.0	0.264
70.00	0.40	0.37	0.00	0.00	0.00	13.00	13.41	52.0	0.258
75.00	0.39	0.37	0.00	0.00	0.00	12.67	13.07	52.0	0.252
78.00	0.38	0.38	0.00	0.00	0.00	12.46	12.85	52.0	0.247
80.00	0.37	0.38	0.00	0.00	0.00	12.30	12.69	52.0	0.244
83.50	0.46	0.49	0.00	0.00	0.00	15.04	15.52	52.0	0.299
85.00	0.45	0.49	0.00	0.00	0.00	14.88	15.35	52.0	0.295
90.00	0.45	0.50	0.00	0.00	0.00	14.26	14.73	52.0	0.283
95.00	0.44	0.50	0.00	0.00	0.00	13.56	14.03	52.0	0.270
100.00	0.43	0.51	0.00	0.00	0.00	12.77	13.23	52.0	0.255
105.00	0.42	0.52	0.00	0.00	0.00	11.87	12.32	52.0	0.237
110.00	0.42	0.53	0.00	0.00	0.00	10.83	11.29	52.0	0.217
113.50	0.41	0.54	0.00	0.00	0.00	10.03	10.48	52.0	0.202
115.00	0.40	0.54	0.00	0.00	0.00	9.66	10.10	52.0	0.194
118.00	0.48	0.67	0.00	0.00	0.00	10.70	11.24	52.0	0.216
120.00	0.48	0.68	0.00	0.00	0.00	10.01	10.56	52.0	0.203
122.00	0.48	0.68	0.00	0.00	0.00	9.28	9.83	52.0	0.189
125.00	0.47	0.69	0.00	0.00	0.00	8.13	8.68	52.0	0.167
127.00	0.41	0.58	0.00	0.00	0.00	7.30	7.78	52.0	0.150
130.00	0.40	0.59	0.00	0.00	0.00	6.24	6.72	52.0	0.129
135.00	0.40	0.60	0.00	0.00	0.00	4.23	4.74	52.0	0.091
137.00	0.22	0.31	0.00	0.00	0.00	3.35	3.60	52.0	0.069
140.00	0.21	0.31	0.00	0.00	0.00	2.71	2.97	52.0	0.057
145.00	0.20	0.31	0.00	0.00	0.00	1.53	1.81	52.0	0.035
148.00	0.10	0.09	0.00	0.00	0.00	0.74	0.85	52.0	0.016
150.00	0.09	0.08	0.00	0.00	0.00	0.60	0.71	52.0	0.014
155.00	0.08	0.08	0.00	0.00	0.00	0.22	0.33	52.0	0.006
158.00	0.00	0.07	0.00	0.00	0.00	0.00	0.13	52.0	0.002

Final Analysis Summary

Structure: CT02722-S-SBA
Site Name: Waterbury
Height: 158.00 (ft)
Base Elev: 0.000 (ft)

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

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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)
85 mph Wind with 0" Ice	35.4	0.00	44.19	0.00	0.00	4179.65
73.61 mph Wind with 0.5" Ice	28.9	0.00	51.70	0.00	0.00	3488.74
50 mph Wind with 0" Ice	12.2	0.00	44.23	0.00	0.00	1447.56

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.43	1.40	0.00	0.00	0.00	43.39	43.88	52.0	83.50	0.844
73.61 mph Wind with 0.5" Ice	0.56	1.18	0.00	0.00	0.00	36.82	37.44	52.0	83.50	0.720
50 mph Wind with 0" Ice	0.46	0.49	0.00	0.00	0.00	15.04	15.52	52.0	83.50	0.299