



Daniel F. Caruso  
Chairman

# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

Internet: [ct.gov/csc](http://ct.gov/csc)

December 29, 2010

Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597

RE: **EM-VER-053-101210** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 89 Doctor Nott Road, Franklin, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 10, 2010. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case

modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Handwritten signature of Linda Roberts NAB in black ink.

Linda Roberts  
Executive Director

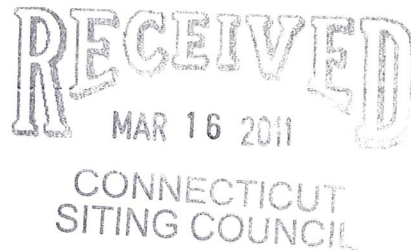
LR/CDM/laf

c: The Honorable Richard L. Matters, First Selectman, Town of Franklin  
John J. McGuire, III, Planning and Zoning Chairman, Town of Franklin  
American Tower Corporation

280 Trumbull Street  
Hartford, CT 06103-3597  
Main (860) 275-8200  
Fax (860) 275-8299  
kbaldwin@rc.com  
Direct (860) 275-8345

March 15, 2011

Linda Roberts  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051



Re: **Notice of Completion of Construction Activity**  
**EM-VER-053-101210 – 89 Doctor Nott Road, Franklin, Connecticut**

Dear Ms. Roberts:

The purpose of this letter is to notify you that construction activity associated with the above-referenced facility modifications has been completed.

If you have any questions or need any additional information regarding any of these facilities, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kenneth C. Baldwin".

Kenneth C. Baldwin



*Law Offices*

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Copy to:  
Sandy M. Carter

280 Trumbull Street  
Hartford, CT 06103-3597  
Main (860) 275-8200  
Fax (860) 275-8299  
kbaldwin@rc.com  
Direct (860) 275-8345

ORIGINAL

October 18, 2011

Linda Roberts  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

RECEIVED  
OCT 19 2011

CONNECTICUT  
SITING COUNCIL

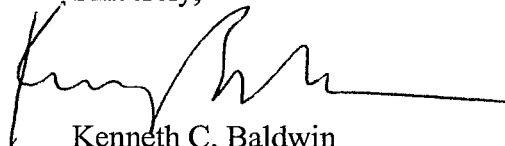
Re: **Notice of Completion of Construction Activity**  
**EM-VER-159-110907 – 23 Kelleher Court, Wethersfield, Connecticut**  
**EM-VER-157-100422 – 56 North Cornfield Road, Weston, Connecticut**  
**EM-VER-053-101210 – 89 Doctor Nott Road, Franklin, Connecticut**

Dear Ms. Roberts:

The purpose of this letter is to notify the Council that construction activity associated with the above-referenced facility modifications have been completed.

If you have any questions or need any additional information regarding any of these facilities, please do not hesitate to contact me.

Sincerely,



Kenneth C. Baldwin



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Sandy M. Carter



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Hartford, CT 06103-3597  
Main (860) 275-8200  
Fax (860) 275-8299  
kbaldwin@rc.com  
Direct (860) 275-8345

ORIGINAL

December 10, 2010

*Via Hand Delivery*

Linda Roberts  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap  
89 Doctor Nott Road, Franklin, Connecticut**

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) wireless telecommunications antennas at the 165-foot level on the existing 300-foot guyed-lattice tower at the above-referenced address. The tower is owned by American Tower Corporation (“ATC”). The Connecticut Siting Council (“Council”) approved Cellco’s use of this structure in 2006.

Cellco intends to modify this facility by removing its six (6) existing cellular antennas, replacing them with six (6) newer model APL868013 cellular antennas at the same 165-foot level on the tower. Attached behind Tab 1 of this filing are specifications for the proposed 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 Richard L. Matters, Franklin’s First Selectman. A copy of this letter is also being sent to Thomas and Dorothy Shakun, the owners of the property on which the tower is located.

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 any increase in the overall height of the existing structure. Cellco’s replacement antennas will be located at the same 165-foot level on the 300-foot tower.



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# ROBINSON & COLE<sub>LLP</sub>

Linda Roberts  
December 10, 2010  
Page 2

2. The proposed modifications will not involve any modifications to ground-mounted equipment and, therefore, will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A Cumulative Power Density table for the modified facility is included behind Tab 2.

Also attached is a Structural Analysis Report confirming that the tower can support Cellco's proposed modifications. (See Tab 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:

Richard L. Matters, Franklin First Selectman  
Thomas and Dorothy Shakun  
Sandy M. Carter





Maximizer® Log Periodic Antenna, 806-894, 80deg, 14.1dBi, 1.2m, FET, 0deg

**Product Description**

The Celwave® Maximizer series is a log periodic dipole array which uses a patented design to achieve a front-to-back ratio of 45 dB, the highest front-to-back ratio in the industry. Maximizers are available to cover ESMR, AMPS, PCS and DCS frequency ranges. They use RFS's patented monolithic CELLite® technology, which eliminates cable and soldered joints to reduce the possibility of inter-modulation products. The CELLite technology assures high reliability and excellent repeatability of electrical characteristics. The cellular Maximizers are available in 65°, 80° and 90° horizontal beamwidths and the PCS/DCS Maximizers are available in 65° and 90° horizontal beamwidths. Patent number 6,133,889.

**Features/Benefits**

- 45 dB front-to-back ratio reduces co-channel interference.
- Monolithic construction reduces IM.
- No solder joints, high reliability.
- Surface treated components prevent galvanic corrosion.
- UV stabilized radome assures long life without radome deterioration due to UV exposure.



**Technical Specifications**

**Electrical Specifications**

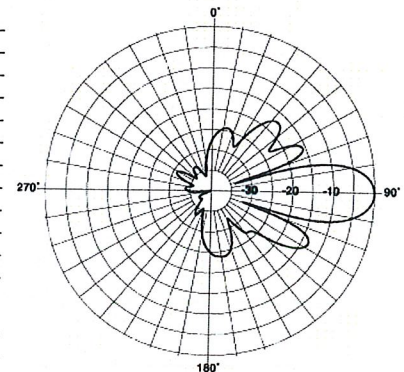
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	80
Vertical Beamwidth, deg	15
Electrical Downtilt, deg	0
Gain, dBi (dBd)	14.1 (12)
Front-To-Back Ratio, dB	45
Polarization	Vertical
VSWR	< 1.5:1
Impedance, Ohms	50
Maximum Power Input, W	500
Lightning Protection	Direct Ground
Connector Type	7-16 DIN Female

**Mechanical Specifications**

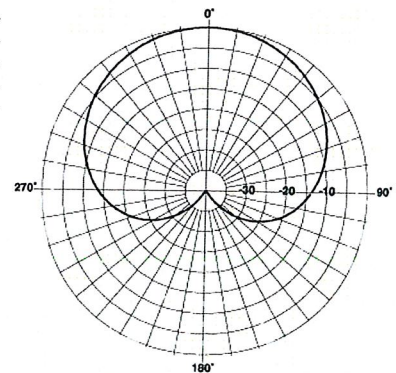
Dimensions - HxWxD, mm (in)	1219 x 152 x 203 (48 x 6 x 8)
Weight w/o Mtg Hardware, kg (lb)	2.8 (6.32)
Survival Wind Speed, km/h (mph)	200 (125)
Rated Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.307 (3.3)
Maximum Thrust @ Rated Wind, N (lbf)	916 (206)
Wind Load - Side @ Rated Wind, N (lbf)	743 (167)
Radome Material	UV Stabilized High Impact ABS
Shipping Weight, kg (lb)	7.9 (17.5)
Packing Dimensions, HxWxD, mm (in)	1270 x 305 x 203 (50 x 12 x 8)

**Ordering Information**

Mounting Hardware	APM21-3
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Vertical Pattern



Horizontal Pattern

**Other Documentation**

All information contained in the present datasheet is subject to confirmation at time of ordering



Site Name: Franklin		General		Power	Density				
Tower Height: Verizon @ 165Ft.									
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total	
*State Police									
*AT&T	19	100	235.5	0.0123	880	0.5867	2.10%		
*AT&T	25	76	235.5	0.0123	1900	1.0000	1.23%		
*Sprint Nextel iDEN	12	100	174	0.0143	851	0.5673	2.51%		
*Sprint Nextel CDMA	11	411	174	0.0537	1962	1.0000	5.37%		
<b>Verizon</b>	<b>3</b>	<b>362</b>	<b>165</b>	<b>0.0143</b>	<b>1970</b>	<b>1.0000</b>	<b>1.43%</b>		
<b>Verizon</b>	<b>9</b>	<b>272</b>	<b>165</b>	<b>0.0323</b>	<b>869</b>	<b>0.5793</b>	<b>5.58%</b>		
* Source: Siting Council									
								<b>18.23%</b>	



**PASSED**

**AMERICAN TOWER®**  
CORPORATION

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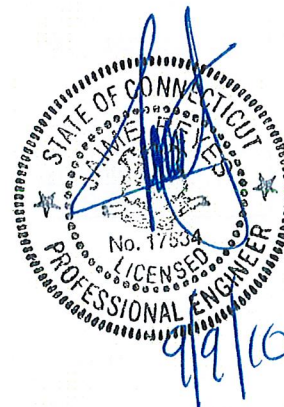
**Structural Analysis Report**

**Structure** : 300 ft FWT Inc Guyed Tower  
**ATC Site Name** : Franklin CT, CT  
**ATC Site Number** : 6310  
**Proposed Carrier** : Verizon Wireless  
**Carrier Site Name** : Franklin, CT  
**Carrier Site Number** : 2001035960  
**County** : New London  
**Eng. Number** : 45528523  
**Date** : September 9, 2010  
**Usage** : 69% Legs, 63% Diagonals, 56%  
Horizontals, and 77% Guys

Submitted by:  
Ram Kodali, P.E  
Project Engineer

*Ram Kodali*

**American Tower Engineering Services**  
8505 Freeport Parkway  
Suite 135  
Irving, TX 75063  
Phone: 972-999-8900



**Introduction**

The purpose of this report is to summarize results of the structural analysis performed on the 300 ft FWT Inc Guyed Tower located at Franklin CT, New London County, CT (ATC site # 6310). The tower was originally designed and manufactured by FWT Inc (Job # 18504 dated January 20, 1999).

The modifications on the existing structure as recommended in the previous ATC Project # 430070H1 were considered in the current analysis.

**Analysis**

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed: 85 mph (Fastest Mile)  
 Radial Ice: 73.61 mph (Fastest Mile) w/ 1/2" ice Concurrent  
 Standard/Code: TIA/EIA-222-F / 2003 IBC Section 1609.1.1, Exception (4) and Section 3108.4 / 2005 & 2008 CT Supplement

**Antenna Loads**

The following antenna loads were used in the tower analysis.

**Existing Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
295.0	1	7' Omni	(3) Side Arm	(1) 1 1/4	Unknown
	1	20' Dipole (Inverted)		(1) 1 1/4	
295.0	1	ASP-973		(1) 7/8	Laidlaw
295.0	2	20' Dipole		(2) 7/8	Quinnebaug Valley Emergency Communication
270.0	1	8' Omni	(3) Side Arm	(1) 7/8	Brodeurs Oil Service
270.0	2	15' Omni (Inverted)		(2) 1 5/8	AT&T Mobility
270.0	1	10' Dipole		(1) 1 1/4	Unknown
270.0	1	8' Omni		(1) 1 1/4	American Messaging Services
235.0	1	Scala OGT9-840	(3) Side Arm	(1) 1 5/8	AT&T Mobility
235.0	1	11' Omni		(1) 1 1/4	USA Mobility
	1	15' Omni		(1) 1 1/4	
	1	11' Omni (Inverted)		(1) 1 1/4	
235.0	1	Scala OGT9-840 (Inverted)		(1) 1 5/8	AT&T Mobility

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
202.0	1	20' Dipole	Side Arm	(1) 7/8	New England Central Railroad
202.0	1	Decibel DB224	Side Arm	(1) 7/8	Prov & Worcester RR
176.0	9	Decibel 844H90E-XY	(3) Sector Frame	(15) 1 5/8	Sprint Nextel
	3	EMS RR90-17-02DPL2			
	6	14" x 9" TTA			
130.0	2	Scala AP7-850/065	Side Arm	(2) 1 5/8	AT&T Mobility
	1	BTS 24" x 24" TMA	Side Arm	(2) 3/8	
105.0	1	20' Dipole	Side Arm	(1) 1/2	New England Central Railroad
105.0	1	2' x 4' Rectangular Grid Dish	Leg Mount	(1) 7/8	Verizon
	1	3' Yagi	Leg Mount	(1) 1/2	
84.0	-	-	Ice Shield	-	AT&T Mobility
80.0	1	RFS PA6-65AC	Dish Mount	(1) EW52	AT&T Mobility

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
165.0	6	RFS APL868013-42T0	(3) Sector Frame	(12) 1 5/8	Verizon
	6	Antel LPA-185080/12CF2			

The proposed coax lines **must be stacked 6-on-6** and installed on the existing Verizon's coax lines tower face.

**Results**

The existing 300 ft FWT Inc Guyed Tower with the existing and the proposed antennas is structurally acceptable per TIA/EIA-222 Rev F standards. The maximum structure usage is: 69% Legs, 63% Diagonals, 56% Horizontals, and 77% Guys.

Foundation (Location)	Reactions (kips)	Original Design Reaction (kips)	Current Analysis Reactions (kips)	% Of Original Design
Tower Base	Compression	208.2	156.1	75
Anchor	Uplift	73.5	58.3	79.3
	Horizontal	85.9	72.4	84.3

The structure foundation reactions resulting from the current analysis do not exceed the ones shown on the original structural drawings or calculations. Therefore, assuming the original foundations were designed correctly, the existing foundation should be adequate to support the new reactions. Therefore, no modification to the existing foundations will be required.

**Conclusion**

The existing tower and its foundations were found to be adequate to support the existing and proposed antennas with the transmission line distribution as described above while meeting the requirements of the code or standard as specified in this report.

If you have any questions or require additional information, please call (972) 999-8900.

## **Standard Conditions**

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

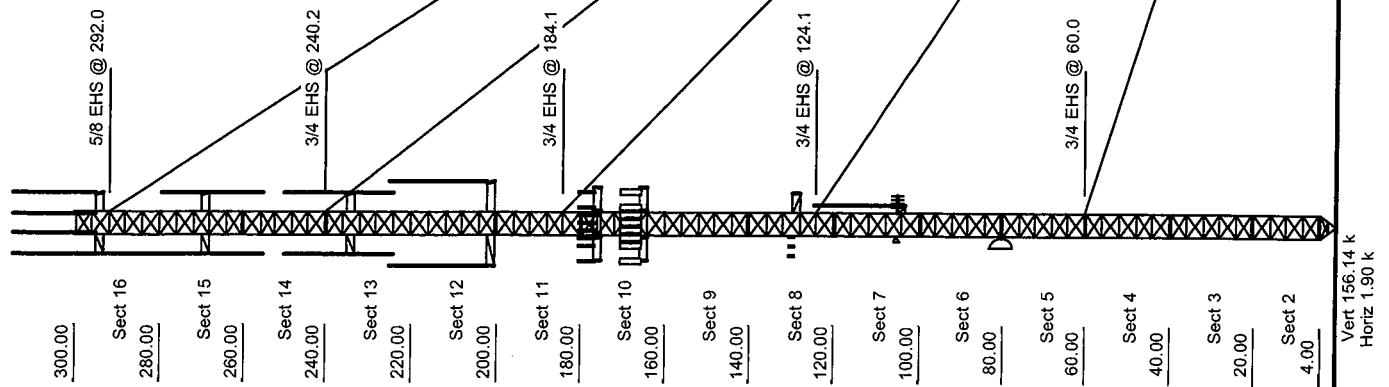
- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Copyright: Semaan Engineering Solutions, Inc  
 Loads: 85 mph no ice  
 74 mph w/ 1/2" radial ice



Job Information		
Tower : 6310	Location : Franklin CT, CT	Base Width : 4.00 ft
Code: TIA/EIA-222 Rev F	Shape : Triangle	
Client: Verizon		

Sections Properties			
Section	Leg Members	Diagonal Members	Horizontal Members
1 - 10	SOL 50ksi 2 1/4" SOLID	SOL 50ksi 5/8" SOLID	SAE 36ksi 2X2X0.1875
11 - 16	SOL 50ksi 2" SOLID	SOL 50ksi 5/8" SOLID	SAE 36ksi 2X2X0.1875

Discrete Appurtenance			
Elev (ft)	Type	Qty	Description
295.00	Whip	2	20' Dipole
295.00	Whip	1	ASP-973
295.00	Whip	1	20' Dipole
295.00	Whip	1	7' Omni
295.00	Straight Arm	3	Side Arm
270.00	Whip	1	8' Omni
270.00	Whip	1	10' Dipole
270.00	Whip	2	15' Omni
270.00	Straight Arm	3	Side Arm
270.00	Whip	1	8' Omni
235.00	Whip	1	Scala OGT9-840 (Inverted)
235.00	Whip	1	11' Omni (Inverted)
235.00	Whip	1	15' Omni
235.00	Straight Arm	3	Side Arm
235.00	Whip	1	11' Omni
235.00	Whip	1	Scala OGT9-840
202.00	Whip	1	Decibel DB224
202.00	Straight Arm	2	Side Arm
202.00	Whip	1	20' Dipole
176.00	Panel	6	14" x 9" TTA
176.00	Panel	3	EMS RR90-17-02DPL2
176.00	Panel	9	Decibel 844H90E-XY
176.00	Mounting Frame	3	Sector Frame
165.00	Panel	6	Antel LPA-185080/12CF2
165.00	Panel	6	RFS APL868013-42T0
165.00	Mounting Frame	3	Sector Frame
130.00	Straight Arm	1	Side Arm
130.00	Panel	1	BTS 24" x 24" TMA
130.00	Panel	2	AP7-850/065
105.00	Yagi	1	3' Yagi
105.00	Dish	1	2' x 4' Rectangular Grid Dish
105.00	Whip	1	20' Dipole
84.00	Other	1	Ice Shield
80.00	Dish	1	RFS PA6-55AC

Linear Appurtenance				
Elev (ft)	From	To	Qty	Description
0.000	295.00	295.00	3	7/8" Coax
0.000	295.00	295.00	2	1 1/4" Coax
0.000	270.00	270.00	1	7/8" Coax
0.000	270.00	270.00	2	1 5/8" Coax
0.000	270.00	270.00	1	1 1/4" Coax
0.000	270.00	270.00	1	1 1/4" Coax
0.000	270.00	270.00	1	1 1/4" Coax
0.000	235.00	235.00	2	1 5/8" Coax
0.000	235.00	235.00	3	1 1/4" Coax
0.000	202.00	202.00	2	7/8" Coax
0.000	176.00	176.00	15	1 5/8" Coax
0.000	165.00	165.00	12	1 5/8" Coax
0.000	130.00	130.00	2	3/8" Coax
0.000	130.00	130.00	2	1 5/8" Coax
0.000	105.00	105.00	1	7/8" Coax
0.000	105.00	105.00	2	1 1/2" Coax
0.000	80.000	80.000	1	EW52

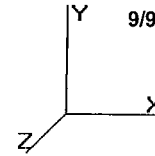
Vert 156.14 k  
 Horiz 1.90 k  
 R: 193.70  
 Uplift 58.29 k  
 Horiz 72.35 k

Site Number: 6310  
 Location: Franklin CT, CT

Copyright Semaan Engineering Solutions, Inc

9/9/2010 3:52:15 PM

Code: TIA/EIA-222 Rev F



Gh : 1.09

### Section Forces

#### LoadCase Normal No Ice

85.00 mph Wind Normal To Face with No Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

Sect Seq	Height (ft)	Wind qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
													Total Weight (lb)	Weight Ice (lb)					
16	290.0	34.42	4.00	13.67	0.00	0.22	2.53	1.00	1.00	0.59	12.13	0.00	0.00	1,035.2	0.0	1,148.05	0.00	1,148.05	2
15	270.0	33.72	4.00	17.33	0.00	0.27	2.39	1.00	1.00	0.61	14.51	0.00	0.00	1,069.8	0.0	1,271.02	0.00	1,271.02	1
14	250.0	32.99	4.00	19.92	0.00	0.30	2.30	1.00	1.00	0.62	16.26	0.00	0.00	1,111.1	0.0	1,341.17	0.00	1,341.17	1
13	230.0	32.21	4.00	25.73	0.00	0.37	2.12	1.00	1.00	0.64	20.48	0.00	0.00	1,155.0	0.0	1,523.10	0.00	1,523.10	1
12	210.0	31.38	4.00	28.03	0.00	0.40	2.06	1.00	1.00	0.65	22.27	0.00	0.00	1,174.0	0.0	1,568.44	0.00	1,568.44	1
11	190.0	30.50	4.00	31.30	0.00	0.44	1.99	1.00	1.00	0.67	24.95	0.00	0.00	1,194.9	0.0	1,645.48	0.00	1,645.48	1
10	170.0	29.55	4.00	38.80	0.00	0.54	1.86	1.00	1.00	0.72	31.78	0.00	0.00	1,602.2	0.0	1,898.42	0.00	1,898.42	2
9	150.0	28.51	4.00	44.08	0.00	0.60	1.80	1.00	1.00	0.75	37.25	0.00	0.00	1,799.0	0.0	2,082.93	0.00	2,082.93	2
8	130.0	27.37	4.00	47.45	0.00	0.64	1.78	1.00	1.00	0.78	41.06	0.00	0.00	1,826.0	0.0	2,179.67	0.00	2,179.67	3
7	110.0	26.09	4.00	52.46	0.00	0.71	1.78	1.00	1.00	0.82	47.23	0.00	0.00	1,838.2	0.0	2,381.11	0.00	2,381.11	3
6	90.00	24.64	4.00	55.40	0.00	0.74	1.78	1.00	1.00	0.85	51.15	0.00	0.00	1,847.6	0.0	2,446.46	0.00	2,446.46	3
5	70.00	22.93	4.00	59.15	0.00	0.79	1.81	1.00	1.00	0.89	56.51	0.00	0.00	1,859.4	0.0	2,549.03	0.00	2,549.03	3
4	50.00	20.83	4.67	59.15	0.00	0.80	1.81	1.00	1.00	0.89	57.58	0.00	0.00	1,897.7	0.0	2,366.62	0.00	2,366.62	3
3	30.00	18.50	4.00	59.15	0.00	0.79	1.81	1.00	1.00	0.89	56.51	0.00	0.00	1,859.4	0.0	2,056.20	0.00	2,056.20	3
2	12.00	18.50	3.33	47.31	0.00	0.79	1.81	1.00	1.00	0.89	45.41	0.00	0.00	1,493.0	0.0	1,653.62	0.00	1,653.62	3
1	2.00	18.50	1.00	11.86	0.00	1.00	2.10	1.00	1.00	1.00	12.86	0.00	0.00	393.6	0.0	543.28	0.00	321.90	3
													23,156.1	0.0	28,433.23				

\*\* = 2QzGhAg Controls

#### LoadCase 60 deg No Ice

85.00 mph Wind at 60 deg From Face with No Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

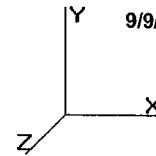
Sect Seq	Height (ft)	Wind qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
													Total Weight (lb)	Weight Ice (lb)					
16	290.0	34.42	4.00	13.67	0.00	0.22	2.53	0.80	1.00	0.59	11.33	0.00	0.00	1,035.2	0.0	1,072.35	0.00	1,072.35	2
15	270.0	33.72	4.00	17.33	0.00	0.27	2.39	0.80	1.00	0.61	13.71	0.00	0.00	1,069.8	0.0	1,200.94	0.00	1,200.94	1
14	250.0	32.99	4.00	19.92	0.00	0.30	2.30	0.80	1.00	0.62	15.46	0.00	0.00	1,111.1	0.0	1,275.19	0.00	1,275.19	1
13	230.0	32.21	4.00	25.73	0.00	0.37	2.12	0.80	1.00	0.64	19.68	0.00	0.00	1,155.0	0.0	1,463.60	0.00	1,463.60	1
12	210.0	31.38	4.00	28.03	0.00	0.40	2.06	0.80	1.00	0.65	21.47	0.00	0.00	1,174.0	0.0	1,512.09	0.00	1,512.09	1
11	190.0	30.50	4.00	31.30	0.00	0.44	1.99	0.80	1.00	0.67	24.15	0.00	0.00	1,194.9	0.0	1,592.71	0.00	1,592.71	1
10	170.0	29.55	4.00	38.80	0.00	0.54	1.86	0.80	1.00	0.72	30.98	0.00	0.00	1,602.2	0.0	1,850.64	0.00	1,850.64	2
9	150.0	28.51	4.00	44.08	0.00	0.60	1.80	0.80	1.00	0.75	36.45	0.00	0.00	1,799.0	0.0	2,038.20	0.00	2,038.20	2
8	130.0	27.37	4.00	47.45	0.00	0.64	1.78	0.80	1.00	0.78	40.26	0.00	0.00	1,826.0	0.0	2,137.20	0.00	2,137.20	3
7	110.0	26.09	4.00	52.46	0.00	0.71	1.78	0.80	1.00	0.82	46.43	0.00	0.00	1,838.2	0.0	2,340.78	0.00	2,340.78	3
6	90.00	24.64	4.00	55.40	0.00	0.74	1.78	0.80	1.00	0.85	50.35	0.00	0.00	1,847.6	0.0	2,408.20	0.00	2,408.20	3
5	70.00	22.93	4.00	59.15	0.00	0.79	1.81	0.80	1.00	0.89	55.71	0.00	0.00	1,859.4	0.0	2,512.95	0.00	2,512.95	3
4	50.00	20.83	4.67	59.15	0.00	0.80	1.81	0.80	1.00	0.89	56.64	0.00	0.00	1,897.7	0.0	2,328.26	0.00	2,328.26	3
3	30.00	18.50	4.00	59.15	0.00	0.79	1.81	0.80	1.00	0.89	55.71	0.00	0.00	1,859.4	0.0	2,027.09	0.00	2,027.09	3
2	12.00	18.50	3.33	47.31	0.00	0.79	1.81	0.80	1.00	0.89	44.75	0.00	0.00	1,493.0	0.0	1,629.34	0.00	1,629.34	3
1	2.00	18.50	1.00	11.86	0.00	1.00	2.10	0.80	1.00	1.00	12.66	0.00	0.00	393.6	0.0	534.83	0.00	321.90	3
													23,156.1	0.0	27,711.43				

\*\* = 2QzGhAg Controls



Site Number: 6310  
 Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F



Gh : 1.09

**Section Forces**

**LoadCase 90 deg No Ice**

85.00 mph Wind at 90 deg From Face with No Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

Sect Seq	Wind Height		Total Flat Area	Total Round Area	Ice Round Area	Sol Ratio	Cf	Df	Dr	Rr	Eff Area	Linear Area	Linear Area	Total Weight	Ice Weight	Struct Force	Linear Force	Total Force	Eff Face
	(ft)	qz	(sqft)	(sqft)	(sqft)						(sqft)	(sqft)	(sqft)	(lb)	(lb)	(lb)	(lb)	(lb)	
16	290.0	34.42	4.00	13.67	0.00	0.22	2.53	0.85	1.00	0.59	11.53	0.00	0.00	1,035.2	0.0	1,091.28	0.00	1,091.28	2
15	270.0	33.72	4.00	17.33	0.00	0.27	2.39	0.85	1.00	0.61	13.91	0.00	0.00	1,069.8	0.0	1,218.46	0.00	1,218.46	1
14	250.0	32.99	4.00	19.92	0.00	0.30	2.30	0.85	1.00	0.62	15.66	0.00	0.00	1,111.1	0.0	1,291.69	0.00	1,291.69	1
13	230.0	32.21	4.00	25.73	0.00	0.37	2.12	0.85	1.00	0.64	19.88	0.00	0.00	1,155.0	0.0	1,478.48	0.00	1,478.48	1
12	210.0	31.38	4.00	28.03	0.00	0.40	2.06	0.85	1.00	0.65	21.67	0.00	0.00	1,174.0	0.0	1,526.18	0.00	1,526.18	1
11	190.0	30.50	4.00	31.30	0.00	0.44	1.99	0.85	1.00	0.67	24.35	0.00	0.00	1,194.9	0.0	1,605.91	0.00	1,605.91	1
10	170.0	29.55	4.00	38.80	0.00	0.54	1.86	0.85	1.00	0.72	31.18	0.00	0.00	1,602.2	0.0	1,862.58	0.00	1,862.58	2
9	150.0	28.51	4.00	44.08	0.00	0.60	1.80	0.85	1.00	0.75	36.65	0.00	0.00	1,799.0	0.0	2,049.38	0.00	2,049.38	2
8	130.0	27.37	4.00	47.45	0.00	0.64	1.78	0.85	1.00	0.78	40.46	0.00	0.00	1,826.0	0.0	2,147.81	0.00	2,147.81	3
7	110.0	26.09	4.00	52.46	0.00	0.71	1.78	0.85	1.00	0.82	46.63	0.00	0.00	1,838.2	0.0	2,350.86	0.00	2,350.86	3
6	90.00	24.64	4.00	55.40	0.00	0.74	1.78	0.85	1.00	0.85	50.55	0.00	0.00	1,847.6	0.0	2,417.77	0.00	2,417.77	3
5	70.00	22.93	4.00	59.15	0.00	0.79	1.81	0.85	1.00	0.89	55.91	0.00	0.00	1,859.4	0.0	2,521.97	0.00	2,521.97	3
4	50.00	20.83	4.67	59.15	0.00	0.80	1.81	0.85	1.00	0.89	56.88	0.00	0.00	1,897.7	0.0	2,337.85	0.00	2,337.85	3
3	30.00	18.50	4.00	59.15	0.00	0.79	1.81	0.85	1.00	0.89	55.91	0.00	0.00	1,859.4	0.0	2,034.37	0.00	2,034.37	3
2	12.00	18.50	3.33	47.31	0.00	0.79	1.81	0.85	1.00	0.89	44.91	0.00	0.00	1,493.0	0.0	1,635.41	0.00	1,635.41	3
1	2.00	18.50	1.00	11.86	0.00	1.00	2.10	0.85	1.00	1.00	12.71	0.00	0.00	393.6	0.0	536.94	0.00	321.90	3 **
														23,156.1	0.0			27,891.88	

\*\* = 2QzGhAg Controls

**LoadCase Normal Ice**

73.61 mph Wind Normal To Face with Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

Sect Seq	Wind Height		Total Flat Area	Total Round Area	Ice Round Area	Sol Ratio	Cf	Df	Dr	Rr	Eff Area	Linear Area	Linear Area	Total Weight	Ice Weight	Struct Force	Linear Force	Total Force	Eff Face
	(ft)	qz	(sqft)	(sqft)	(sqft)						(sqft)	(sqft)	(sqft)	(lb)	(lb)	(lb)	(lb)	(lb)	
16	290.0	25.81	4.00	27.42	13.75	0.39	2.08	1.00	1.00	0.65	21.79	0.00	0.00	1,449.6	414.4	1,271.37	0.00	1,271.37	2
15	270.0	25.29	4.00	32.33	15.00	0.45	1.97	1.00	1.00	0.68	25.83	0.00	0.00	1,576.3	506.5	1,397.47	0.00	1,397.47	1
14	250.0	24.74	4.00	36.58	16.67	0.51	1.89	1.00	1.00	0.70	29.65	0.00	0.00	1,682.6	571.6	1,508.71	0.00	1,508.71	1
13	230.0	24.16	4.00	46.15	20.42	0.63	1.79	1.00	1.00	0.77	39.55	0.00	0.00	1,828.4	673.4	1,859.96	0.00	1,859.96	1
12	210.0	23.54	4.00	50.03	22.00	0.68	1.78	1.00	1.00	0.80	44.15	0.00	0.00	1,885.2	711.2	2,008.30	0.00	2,008.30	1
11	190.0	22.87	4.00	56.30	25.00	0.75	1.79	1.00	1.00	0.86	52.40	0.00	0.00	1,941.0	746.1	2,332.50	0.00	2,332.50	1
10	170.0	22.16	4.00	66.14	27.33	0.88	1.89	1.00	1.00	0.96	67.62	0.00	0.00	2,812.0	1,209.8	3,084.88	0.00	3,084.88	2
9	150.0	21.38	4.00	74.08	30.00	0.98	2.05	1.00	1.00	1.00	78.08	0.00	0.00	3,372.4	1,573.4	3,725.41	0.00	3,720.77	2 **
8	130.0	20.52	4.00	77.45	30.00	1.00	2.10	1.00	1.00	1.00	81.45	0.00	0.00	3,441.2	1,615.2	3,818.30	0.00	3,571.71	3 **
7	110.0	19.57	4.00	87.05	34.58	1.00	2.10	1.00	1.00	1.00	91.05	0.00	0.00	3,506.9	1,668.7	4,069.20	0.00	3,405.24	3 **
6	90.00	18.48	4.00	93.73	38.33	1.00	2.10	1.00	1.00	1.00	97.73	0.00	0.00	3,551.6	1,704.0	4,124.69	0.00	3,215.49	3 **
5	70.00	17.20	4.00	99.15	40.00	1.00	2.10	1.00	1.00	1.00	103.15	0.00	0.00	3,597.0	1,737.6	4,051.66	0.00	2,992.70	3 **
4	50.00	15.62	4.67	99.48	40.33	1.00	2.10	1.00	1.00	1.00	104.15	0.00	0.00	3,656.3	1,758.6	3,715.97	0.00	2,718.40	3 **
3	30.00	13.87	4.00	99.15	40.00	1.00	2.10	1.00	1.00	1.00	103.15	0.00	0.00	3,597.0	1,737.6	3,268.31	0.00	2,414.09	3 **
2	12.00	13.87	3.33	79.37	32.06	1.00	2.10	1.00	1.00	1.00	82.71	0.00	0.00	2,887.1	1,394.0	2,620.51	0.00	1,931.27	3 **
1	2.00	13.87	1.00	19.74	7.88	1.00	2.10	1.00	1.00	1.00	20.74	0.00	0.00	742.5	348.9	657.06	0.00	241.41	3 **
														41,526.9	18,370.8			37,674.29	

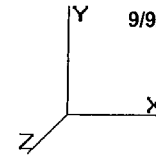
\*\* = 2QzGhAg Controls

Site Number: 6310  
 Location: Franklin CT, CT

Copyright Semaan Engineering Solutions, Inc

9/9/2010 3:52:15 PM

Code: TIA/EIA-222 Rev F



Gh: 1.09

**Section Forces**

**LoadCase 60 deg Ice**

73.61 mph Wind at 60 deg From Face with Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

Sect Seq	Wind		Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
	(ft)	qz											Weight (lb)	Weight Ice (lb)					
16	290.0	25.81	4.00	27.42	13.75	0.39	2.08	0.80	1.00	0.65	20.99	0.00	0.00	1,449.6	414.4	1,224.69	0.00	1,224.69	2
15	270.0	25.29	4.00	32.33	15.00	0.45	1.97	0.80	1.00	0.68	25.03	0.00	0.00	1,576.3	506.5	1,354.19	0.00	1,354.19	1
14	250.0	24.74	4.00	36.58	16.67	0.51	1.89	0.80	1.00	0.70	28.85	0.00	0.00	1,682.6	571.6	1,468.00	0.00	1,468.00	1
13	230.0	24.16	4.00	46.15	20.42	0.63	1.79	0.80	1.00	0.77	38.75	0.00	0.00	1,828.4	673.4	1,822.34	0.00	1,822.34	1
12	210.0	23.54	4.00	50.03	22.00	0.68	1.78	0.80	1.00	0.80	43.35	0.00	0.00	1,885.2	711.2	1,971.92	0.00	1,971.92	1
11	190.0	22.87	4.00	56.30	25.00	0.75	1.79	0.80	1.00	0.86	51.60	0.00	0.00	1,941.0	746.1	2,296.89	0.00	2,296.89	1
10	170.0	22.16	4.00	66.14	27.33	0.88	1.89	0.80	1.00	0.96	66.82	0.00	0.00	2,812.0	1,209.8	3,048.39	0.00	3,048.39	2
9	150.0	21.38	4.00	74.08	30.00	0.98	2.05	0.80	1.00	1.00	77.28	0.00	0.00	3,372.4	1,573.4	3,687.24	0.00	3,687.24	2
8	130.0	20.52	4.00	77.45	30.00	1.00	2.10	0.80	1.00	1.00	80.65	0.00	0.00	3,441.2	1,615.2	3,780.80	0.00	3,571.71	3 **
7	110.0	19.57	4.00	87.05	34.58	1.00	2.10	0.80	1.00	1.00	90.25	0.00	0.00	3,506.9	1,668.7	4,033.45	0.00	3,405.24	3 **
6	90.00	18.48	4.00	93.73	38.33	1.00	2.10	0.80	1.00	1.00	96.93	0.00	0.00	3,551.6	1,704.0	4,090.92	0.00	3,215.49	3 **
5	70.00	17.20	4.00	99.15	40.00	1.00	2.10	0.80	1.00	1.00	102.35	0.00	0.00	3,597.0	1,737.6	4,020.24	0.00	2,992.70	3 **
4	50.00	15.62	4.67	99.48	40.33	1.00	2.10	0.80	1.00	1.00	103.22	0.00	0.00	3,656.3	1,758.6	3,682.67	0.00	2,718.40	3 **
3	30.00	13.87	4.00	99.15	40.00	1.00	2.10	0.80	1.00	1.00	102.35	0.00	0.00	3,597.0	1,737.6	3,242.96	0.00	2,414.09	3 **
2	12.00	13.87	3.33	79.37	32.06	1.00	2.10	0.80	1.00	1.00	82.04	0.00	0.00	2,887.1	1,394.0	2,599.38	0.00	1,931.27	3 **
1	2.00	13.87	1.00	19.74	7.88	1.00	2.10	0.80	1.00	1.00	20.54	0.00	0.00	742.5	348.9	650.73	0.00	241.41	3 **
													41,526.9	18,370.8			37,363.98		

\*\* = 2QzGhAg Controls

**LoadCase 90 deg Ice**

73.61 mph Wind at 90 deg From Face with Ice

Allow Stress Inc: 1.333  
 Dead LF: 1.000  
 Wind LF: 1.000

Sect Seq	Wind		Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
	(ft)	qz											Weight (lb)	Weight Ice (lb)					
16	290.0	25.81	4.00	27.42	13.75	0.39	2.08	0.85	1.00	0.65	21.19	0.00	0.00	1,449.6	414.4	1,236.36	0.00	1,236.36	2
15	270.0	25.29	4.00	32.33	15.00	0.45	1.97	0.85	1.00	0.68	25.23	0.00	0.00	1,576.3	506.5	1,365.01	0.00	1,365.01	1
14	250.0	24.74	4.00	36.58	16.67	0.51	1.89	0.85	1.00	0.70	29.05	0.00	0.00	1,682.6	571.6	1,478.18	0.00	1,478.18	1
13	230.0	24.16	4.00	46.15	20.42	0.63	1.79	0.85	1.00	0.77	38.95	0.00	0.00	1,828.4	673.4	1,831.74	0.00	1,831.74	1
12	210.0	23.54	4.00	50.03	22.00	0.68	1.78	0.85	1.00	0.80	43.55	0.00	0.00	1,885.2	711.2	1,981.01	0.00	1,981.01	1
11	190.0	22.87	4.00	56.30	25.00	0.75	1.79	0.85	1.00	0.86	51.80	0.00	0.00	1,941.0	746.1	2,305.80	0.00	2,305.80	1
10	170.0	22.16	4.00	66.14	27.33	0.88	1.89	0.85	1.00	0.96	67.02	0.00	0.00	2,812.0	1,209.8	3,057.51	0.00	3,057.51	2
9	150.0	21.38	4.00	74.08	30.00	0.98	2.05	0.85	1.00	1.00	77.48	0.00	0.00	3,372.4	1,573.4	3,696.78	0.00	3,696.78	2
8	130.0	20.52	4.00	77.45	30.00	1.00	2.10	0.85	1.00	1.00	80.85	0.00	0.00	3,441.2	1,615.2	3,790.17	0.00	3,571.71	3 **
7	110.0	19.57	4.00	87.05	34.58	1.00	2.10	0.85	1.00	1.00	90.45	0.00	0.00	3,506.9	1,668.7	4,042.38	0.00	3,405.24	3 **
6	90.00	18.48	4.00	93.73	38.33	1.00	2.10	0.85	1.00	1.00	97.13	0.00	0.00	3,551.6	1,704.0	4,099.37	0.00	3,215.49	3 **
5	70.00	17.20	4.00	99.15	40.00	1.00	2.10	0.85	1.00	1.00	102.55	0.00	0.00	3,597.0	1,737.6	4,028.10	0.00	2,992.70	3 **
4	50.00	15.62	4.67	99.48	40.33	1.00	2.10	0.85	1.00	1.00	103.45	0.00	0.00	3,656.3	1,758.6	3,691.00	0.00	2,718.40	3 **
3	30.00	13.87	4.00	99.15	40.00	1.00	2.10	0.85	1.00	1.00	102.55	0.00	0.00	3,597.0	1,737.6	3,249.30	0.00	2,414.09	3 **
2	12.00	13.87	3.33	79.37	32.06	1.00	2.10	0.85	1.00	1.00	82.21	0.00	0.00	2,887.1	1,394.0	2,604.66	0.00	1,931.27	3 **
1	2.00	13.87	1.00	19.74	7.88	1.00	2.10	0.85	1.00	1.00	20.59	0.00	0.00	742.5	348.9	652.31	0.00	241.41	3 **
													41,526.9	18,370.8			37,442.71		

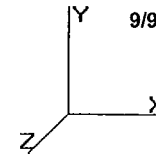
\*\* = 2QzGhAg Controls

Site Number: 6310  
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## Tower Loading

### Discrete Appurtenance Properties

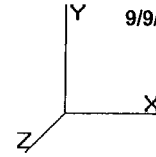
Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
295.0	20' Dipole	2	60.00	7.520	1.00	123.50	10.920	1.00	0.000	0.00	10.000
295.0	ASP-973	1	27.00	2.540	1.00	56.00	5.450	1.00	0.000	0.00	7.000
295.0	20' Dipole	1	60.00	7.520	1.00	123.50	10.920	1.00	0.000	0.00	-10.000
295.0	7' Omni	1	35.00	2.100	1.00	55.00	2.830	1.00	0.000	0.00	3.500
295.0	Side Arm	3	150.00	5.200	0.75	175.00	5.900	0.75	0.000	0.00	0.000
270.0	8' Omni	1	40.00	2.400	1.00	62.00	3.230	1.00	0.000	0.00	4.000
270.0	10' Dipole	1	30.00	3.760	1.00	62.00	5.480	1.00	0.000	0.00	5.000
270.0	15' Omni	2	16.00	4.500	1.00	40.00	6.000	1.00	0.000	0.00	-7.500
270.0	Side Arm	3	150.00	5.200	0.75	175.00	5.900	0.75	0.000	0.00	0.000
270.0	8' Omni	1	40.00	2.400	1.00	62.00	3.230	1.00	0.000	0.00	4.000
235.0	Scala OGT9-840 (Inverted)	1	18.50	2.283	1.00	40.89	3.444	1.00	0.000	0.00	-5.680
235.0	11' Omni (Inverted)	1	11.00	3.300	1.00	34.93	4.430	1.00	0.000	0.00	-5.500
235.0	15' Omni	1	16.00	4.500	1.00	40.00	6.000	1.00	0.000	0.00	7.500
235.0	Side Arm	3	150.00	5.200	0.75	175.00	5.900	0.75	0.000	0.00	0.000
235.0	11' Omni	1	11.00	3.300	1.00	34.93	4.430	1.00	0.000	0.00	5.500
235.0	Scala OGT9-840	1	18.50	2.283	1.00	40.89	3.444	1.00	0.000	0.00	5.683
202.0	Decibel DB224	1	38.00	6.050	1.00	91.30	11.300	1.00	0.000	0.00	11.500
202.0	Side Arm	2	150.00	4.000	1.00	300.00	6.000	1.00	0.000	0.00	0.000
202.0	20' Dipole	1	40.00	6.000	1.00	70.00	8.030	1.00	0.000	0.00	0.000
176.0	14" x 9" TTA	6	10.00	1.230	0.67	18.00	1.460	0.67	0.000	0.00	0.000
176.0	EMS RR90-17-02DPL2	3	18.00	4.360	0.73	40.42	4.990	0.73	0.000	0.00	2.000
176.0	Decibel 844H90E-XY	9	11.50	3.730	0.95	38.00	4.290	0.95	0.000	0.00	3.000
176.0	Sector Frame	3	300.00	14.400	0.75	415.00	19.200	0.75	0.000	0.00	0.000
165.0	Antel LPA-185080/12CF2	6	40.50	4.569	1.00	66.99	5.418	1.00	0.000	0.00	4.000
165.0	RFS APL868013-42T0	6	6.30	3.730	0.95	32.00	4.290	0.95	0.000	0.00	4.000
165.0	Sector Frame	3	400.00	17.900	0.75	510.00	22.200	0.75	0.000	0.00	0.000
130.0	Side Arm	1	150.00	5.200	1.00	175.00	5.900	1.00	0.000	0.00	0.000
130.0	BTS 24" x 24" TMA	1	6.08	5.600	1.00	63.43	40.000	1.00	0.000	0.00	0.000
130.0	AP7-850/065	2	3.00	1.280	1.00	10.00	1.480	1.00	0.000	0.00	0.000
105.0	3' Yagi	1	10.00	2.980	1.00	35.70	4.770	1.00	0.000	0.00	0.000
105.0	2' x 4' Rectangular Grid Dish	1	40.00	4.750	1.00	83.20	14.020	1.00	0.000	0.00	0.000
105.0	20' Dipole	1	60.00	7.520	1.00	123.50	10.920	1.00	0.000	0.00	10.000
84.00	Ice Shield	1	150.00	6.000	1.00	350.00	7.500	1.00	0.000	0.00	0.000
80.00	RFS PA6-65AC	1	278.00	47.050	1.00	413.60	48.370	1.00	0.000	0.00	0.000
<b>Totals</b>		<b>73</b>	<b>5485.38</b>			<b>8480.05</b>			<b>Number of Appurtenances : 34</b>		

### Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Faces	Bundling Arrangement
0.00	295.0	1 1/4" Coax	2	1.55	0.63	100.00	1	Separate
0.00	295.0	7/8" Coax	3	1.09	0.33	100.00	2	Separate
0.00	270.0	1 1/4" Coax	1	1.55	0.63	100.00	1	Separate
0.00	270.0	1 1/4" Coax	1	1.55	0.63	100.00	1	Separate
0.00	270.0	1 5/8" Coax	2	1.98	0.82	100.00	3	Separate
0.00	270.0	7/8" Coax	1	1.09	0.33	100.00	2	Separate
0.00	235.0	1 1/4" Coax	3	1.55	0.63	100.00	1	Separate

Site Number: 6310  
Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F

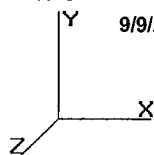


**Tower Loading**

0.00	235.0	1 5/8" Coax	2	1.98	0.82	100.00	3	Separate
0.00	202.0	7/8" Coax	2	1.09	0.33	100.00	1	Separate
0.00	176.0	1 5/8" Coax	15	1.98	0.82	50.00	2	Separate
0.00	165.0	1 5/8" Coax	12	1.98	0.82	50.00	3	Separate
0.00	130.0	1 5/8" Coax	2	1.98	0.82	100.00	3	Separate
0.00	130.0	3/8" Coax	2	0.44	0.08	100.00	3	Separate
0.00	105.0	1/2" Coax	2	0.63	0.15	100.00	3	Separate
0.00	105.0	7/8" Coax	1	1.09	0.33	100.00	3	Separate
0.00	80.00	EW52	1	2.25	0.59	100.00	3	Separate

Site Number: 6310  
 Location: Franklin CT, CT  
 Code: TIA/EIA-222 Rev F

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### Force/Stress Summary

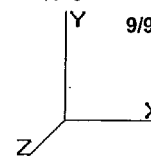
Section: 1		Base	Bot Elev (ft): 0.00					Height (ft): 4.000							
		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
Max Compression Member					X	Y	Z	KL/R	(kip)	Bolts	Holes				
LEG	SOL - 2 1/4" SOLID	-61.84	Normal Ice	2.31	100	100	100	49.3	32.6	129.68	0	0	0.00	0.00	47 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SOL - 5/8" SOLID	-0.32	Normal Ice	3.651	100	100	100	196.6	5.1	1.58	0	0	0.00	0.00	20 Member X
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	11.63	Normal Ice	36	20.59	0	0	0.00	0.00	56	Member				
DIAG		0.00		0	0.00	0	0	0.00	0.00	0					
Section: 2		16'-4 Bays	Bot Elev (ft): 4.00					Height (ft): 16.000							
		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
Max Compression Member					X	Y	Z	KL/R	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2 1/4" SOLID	-57.94	60 deg Ice	3.90	100	100	100	83.2	24.5	97.35	0	0	0.00	0.00	59 Member X
HORIZ	SAE - 2X2X0.1875	-1.17	Normal No Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	8 Member Z
DIAG	SOL - 5/8" SOLID	-0.85	Normal No Ice	5.587	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00	
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	5.94	Normal Ice	36	20.59	0	0	0.00	0.00	28	Member				
DIAG	SOL - 5/8" SOLID	1.65	90 deg No Ice	50	12.27	0	0	0.00	0.00	13	Member				
Section: 3		20'-5 Bays	Bot Elev (ft): 20.00					Height (ft): 20.000							
		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
Max Compression Member					X	Y	Z	KL/R	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2 1/4" SOLID	-57.45	60 deg Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	59 Member X
HORIZ	SAE - 2X2X0.1875	-1.15	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	8 Member Z
DIAG	SOL - 5/8" SOLID	-0.18	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00	
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	1.13	60 deg No Ice	36	20.59	0	0	0.00	0.00	5	Member				
DIAG	SOL - 5/8" SOLID	1.89	90 deg Ice	50	12.27	0	0	0.00	0.00	15	Member				

Site Number: 6310  
 Location: Franklin CT, CT

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### Force/Stress Summary

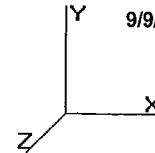
Section: 4		20'-5 Bays		Bot Elev (ft): 40.00		Height (ft): 20.000						Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-67.07	Normal Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	69	Member X
HORIZ	SAE - 2X2X0.1875	-2.82	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	20	Member Z
DIAG	SOL - 5/8" SOLID	-0.03	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	2.46	Normal Ice	36	20.59	0	0	0.00	0.00	11	Member					
DIAG	SOL - 5/8" SOLID	3.94	90 deg Ice	50	12.27	0	0	0.00	0.00	32	Member					
Section: 5		20'-5 Bays		Bot Elev (ft): 60.00		Height (ft): 20.000						Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-65.82	Normal Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	67	Member X
HORIZ	SAE - 2X2X0.1875	-3.82	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	27	Member Z
DIAG	SOL - 5/8" SOLID	-0.97	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	2.10	Normal Ice	36	20.59	0	0	0.00	0.00	10	Member					
DIAG	SOL - 5/8" SOLID	5.42	90 deg Ice	50	12.27	0	0	0.00	0.00	44	Member					
Section: 6		20'-5 Bays		Bot Elev (ft): 80.00		Height (ft): 20.000						Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-53.33	60 deg Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	55	Member X
HORIZ	SAE - 2X2X0.1875	-1.36	Normal Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	9	Member Z
DIAG	SOL - 5/8" SOLID	-0.51	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	1.20	Normal No Ice	36	20.59	0	0	0.00	0.00	5	Member					
DIAG	SOL - 5/8" SOLID	2.25	90 deg Ice	50	12.27	0	0	0.00	0.00	18	Member					

Site Number: 6310  
 Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F

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### Force/Stress Summary

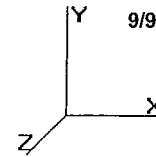
Section: 7		20'-5 Bays		Bot Elev (ft): 100.0				Height (ft): 20.000							
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap Num	Num	Cap	Cap	%	Controls
										(kip)	Bolts	Holes	(kip)	(kip)	
LEG	SOL - 2 1/4" SOLID	-53.34	90 deg Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	55 Member X
HORIZ	SAE - 2X2X0.1875	-2.77	60 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	19 Member Z
DIAG	SOL - 5/8" SOLID	-0.89	60 deg No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00	
Max Tension Member		Force		Fy	Cap Num			Num	Shear	Bear	Use				
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	1.16	60 deg No Ice	36	20.59	0	0	0.00	0.00	5	Member				
DIAG	SOL - 5/8" SOLID	4.51	60 deg Ice	50	12.27	0	0	0.00	0.00	36	Member				
Section: 8		20'-5 Bays		Bot Elev (ft): 120.0				Height (ft): 20.000							
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap Num	Num	Cap	Cap	%	Controls
										(kip)	Bolts	Holes	(kip)	(kip)	
LEG	SOL - 2 1/4" SOLID	-49.58	Normal Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	51 Member X
HORIZ	SAE - 2X2X0.1875	-5.14	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	36 Member Z
DIAG	SOL - 5/8" SOLID	-0.17	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00	
Max Tension Member		Force		Fy	Cap Num			Num	Shear	Bear	Use				
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	1.03	Normal No Ice	36	20.59	0	0	0.00	0.00	5	Member				
DIAG	SOL - 5/8" SOLID	7.80	90 deg Ice	50	12.27	0	0	0.00	0.00	63	Member				
Section: 9		20'-5 Bays		Bot Elev (ft): 140.0				Height (ft): 20.000							
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap Num	Num	Cap	Cap	%	Controls
										(kip)	Bolts	Holes	(kip)	(kip)	
LEG	SOL - 2 1/4" SOLID	-55.28	60 deg Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	57 Member X
HORIZ	SAE - 2X2X0.1875	-2.81	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	19 Member Z
DIAG	SOL - 5/8" SOLID	-0.82	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00	
Max Tension Member		Force		Fy	Cap Num			Num	Shear	Bear	Use				
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ	SAE - 2X2X0.1875	1.32	Normal No Ice	36	20.59	0	0	0.00	0.00	6	Member				
DIAG	SOL - 5/8" SOLID	4.42	90 deg Ice	50	12.27	0	0	0.00	0.00	36	Member				

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 Location: Franklin CT, CT

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9/9/2010 3:52:15 PM

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### Force/Stress Summary

Section: 10		20'-5 Bays		Bot Elev (ft): 160.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
					X	Y	Z	KL/R	(kip)	Bolts	Holes	(kip)	(kip)	%		
LEG	SOL - 2 1/4" SOLID	-54.50	60 deg Ice	3.92	100	100	100	83.6	24.4	96.89	0	0	0.00	0.00	56 Member X	
HORIZ	SAE - 2X2X0.1875	-3.86	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	27 Member Z	
DIAG	SOL - 5/8" SOLID	-0.81	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	1.90	Normal No Ice	36	20.59	0	0	0.00	0.00	9	Member					
DIAG	SOL - 5/8" SOLID	7.00	90 deg Ice	50	12.27	0	0	0.00	0.00	57	Member					

Section: 11		20'-5 Bays		Bot Elev (ft): 180.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
					X	Y	Z	KL/R	(kip)	Bolts	Holes	(kip)	(kip)	%		
LEG	SOL - 2" SOLID	-37.45	90 deg Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	55 Member X	
HORIZ	SAE - 2X2X0.1875	-2.94	Normal Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	20 Member Z	
DIAG	SOL - 5/8" SOLID	-0.49	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	1.61	Normal Ice	36	20.59	0	0	0.00	0.00	7	Member					
DIAG	SOL - 5/8" SOLID	7.29	90 deg Ice	50	12.27	0	0	0.00	0.00	59	Member					

Section: 12		20'-5 Bays		Bot Elev (ft): 200.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
					X	Y	Z	KL/R	(kip)	Bolts	Holes	(kip)	(kip)	%		
LEG	SOL - 2" SOLID	-24.80	90 deg Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	36 Member X	
HORIZ	SAE - 2X2X0.1875	-0.48	Normal Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	3 Member Z	
DIAG	SOL - 5/8" SOLID	-0.89	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ	SAE - 2X2X0.1875	1.45	Normal Ice	36	20.59	0	0	0.00	0.00	7	Member					
DIAG	SOL - 5/8" SOLID	0.93	Normal Ice	50	12.27	0	0	0.00	0.00	7	Member					

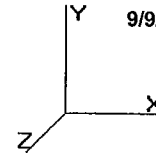


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### Force/Stress Summary

Section: 13		20'-5 Bays		Bot Elev (ft): 220.0				Height (ft): 20.000								
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls
LEG	SOL - 2" SOLID	-26.76	Normal Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	39	Member X
HORIZ	SAE - 2X2X0.1875	-1.98	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	14	Member Z
DIAG	SOL - 5/8" SOLID	-0.57	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force		Fy	Cap	Num	Num	Shear	Bear	Use						
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0	Member					
HORIZ	SAE - 2X2X0.1875	1.17	Normal Ice	36	20.59	0	0	0.00	0.00	5	Member					
DIAG	SOL - 5/8" SOLID	3.37	90 deg Ice	50	12.27	0	0	0.00	0.00	27	Member					

Section: 14		20'-5 Bays		Bot Elev (ft): 240.0				Height (ft): 20.000								
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls
LEG	SOL - 2" SOLID	-25.13	Normal Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	37	Member X
HORIZ	SAE - 2X2X0.1875	-2.10	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	14	Member Z
DIAG	SOL - 5/8" SOLID	-0.14	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force		Fy	Cap	Num	Num	Shear	Bear	Use						
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls					
LEG	SOL - 2" SOLID	5.80	60 deg Ice	50	125.65	0	0	0.00	0.00	4	Member					
HORIZ	SAE - 2X2X0.1875	0.94	60 deg Ice	36	20.59	0	0	0.00	0.00	4	Member					
DIAG	SOL - 5/8" SOLID	3.06	90 deg Ice	50	12.27	0	0	0.00	0.00	24	Member					

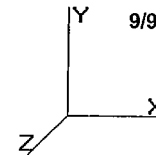
  

Section: 15		20'-5 Bays		Bot Elev (ft): 260.0				Height (ft): 20.000								
		Force		Len	Bracing %			Fa	Member		Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls
LEG	SOL - 2" SOLID	-12.22	60 deg Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	18	Member X
HORIZ	SAE - 2X2X0.1875	-1.31	90 deg Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	9	Member Z
DIAG	SOL - 5/8" SOLID	-0.92	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		Force		Fy	Cap	Num	Num	Shear	Bear	Use						
		(kip)	Load Case	(ksi)	(kip)	Bolts	Holes	Cap (kip)	Cap (kip)	%	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0	Member					
HORIZ	SAE - 2X2X0.1875	0.63	Normal No Ice	36	20.59	0	0	0.00	0.00	3	Member					
DIAG	SOL - 5/8" SOLID	1.94	90 deg Ice	50	12.27	0	0	0.00	0.00	15	Member					

Site Number: 6310  
 Location: Franklin CT, CT  
 Code: TIA/EIA-222 Rev F

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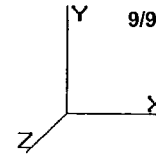


### Force/Stress Summary

Section: 16		20'-5 Bays		Bot Elev (ft): 280.0		Height (ft): 20.000						Shear Bear				
		Force		Len		Bracing %		Member		Num		Cap		Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	Fa (ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID	-12.25	60 deg Ice	3.92	100	100	100	94.1	21.4	67.21	0	0	0.00	0.00	18	Member X
HORIZ	SAE - 2X2X0.1875	-0.90	Normal Ice	4.000	100	100	100	85.3	19.7	14.07	0	0	0.00	0.00	6	Member Z
DIAG	SOL - 5/8" SOLID	-0.27	Normal No Ice	5.601	50	50	50	0.0	0.0	1.29	0	0	0.00	0.00		
Max Tension Member		(kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG	SOL - 2" SOLID	0.18	Normal No Ice	50	125.65	0	0	0.00	0.00	0	Member					
HORIZ	SAE - 2X2X0.1875	0.45	90 deg No Ice	36	20.59	0	0	0.00	0.00	2	Member					
DIAG	SOL - 5/8" SOLID	2.26	Normal Ice	50	12.27	0	0	0.00	0.00	18	Member					

Site Number: 6310  
 Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F



**Support Forces Summary**

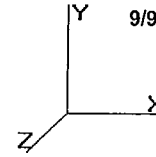
Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
90 deg Ice	A1b	6.21	-7.74	-4.63	
	A1a	-61.17	-56.04	-34.09	
	A1	-2.47	-31.89	38.99	
	1	-1.37	152.91	-0.27	
60 deg Ice	A1b	15.11	-16.55	-10.95	
	A1a	-62.65	-58.29	-36.18	
	A1	-1.93	-16.45	18.58	
	1	-1.42	148.05	-0.84	
Normal Ice	A1b	49.74	-46.91	-31.13	
	A1a	-49.78	-46.92	-31.15	
	A1	0.00	-4.58	4.50	
	1	0.04	156.14	-1.28	
90 deg No Ice	A1b	4.35	-5.11	-3.09	
	A1a	-46.02	-43.01	-25.89	
	A1	-1.37	-24.06	29.09	
	1	-1.79	105.10	-0.11	
60 deg No Ice	A1b	11.03	-11.80	-7.60	
	A1a	-47.01	-44.47	-27.15	
	A1	-1.07	-11.70	13.38	
	1	-1.64	100.60	-0.97	
Normal No Ice	A1b	38.00	-36.37	-23.29	
	A1a	-38.05	-36.37	-23.31	
	A1	0.00	-2.83	3.03	
	1	0.05	108.75	-1.81	

**Max Reactions (kip)**

	<u>Base</u>	<u>Anch1</u>
Vertical	156.14	-58.29
Horizonal	1.90	72.35

Site Number: 6310  
 Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F

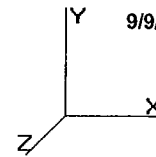


**Cable Forces Summary**

Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kip)	Applied Tension (kip)	Use %
Normal No Ice	60.00	3/4 EHS	A1	23	29.15	1.39	4
		3/4 EHS	A1b	23a	29.15	10.97	37
		3/4 EHS	A1a	23b	29.15	11.06	37
	124.12	3/4 EHS	A1	46	29.15	0.60	2
		3/4 EHS	A1b	46a	29.15	13.38	45
		3/4 EHS	A1a	46b	29.15	13.35	45
	184.12	3/4 EHS	A1	67	29.15	0.33	1
		3/4 EHS	A1b	67a	29.15	13.65	46
		3/4 EHS	A1a	67b	29.15	13.61	46
	240.20	3/4 EHS	A1	87	29.15	1.19	4
		3/4 EHS	A1b	87a	29.15	12.78	43
		3/4 EHS	A1a	87b	29.15	12.79	43
291.96	5/8 EHS	A1	104	21.20	1.88	8	
	5/8 EHS	A1b	104a	21.20	9.23	43	
	5/8 EHS	A1a	104b	21.20	9.24	43	
60 deg No Ice	60.00	3/4 EHS	A1	23	29.15	3.68	12
		3/4 EHS	A1b	23a	29.15	3.58	12
		3/4 EHS	A1a	23b	29.15	13.04	44
	124.12	3/4 EHS	A1	46	29.15	3.28	11
		3/4 EHS	A1b	46a	29.15	3.23	11
		3/4 EHS	A1a	46b	29.15	16.20	55
	184.12	3/4 EHS	A1	67	29.15	3.67	12
		3/4 EHS	A1b	67a	29.15	3.69	12
		3/4 EHS	A1a	67b	29.15	16.85	57
	240.20	3/4 EHS	A1	87	29.15	4.49	15
		3/4 EHS	A1b	87a	29.15	4.57	15
		3/4 EHS	A1a	87b	29.15	15.70	53
291.96	5/8 EHS	A1	104	21.20	4.25	20	
	5/8 EHS	A1b	104a	21.20	4.34	20	
	5/8 EHS	A1a	104b	21.20	11.14	52	
90 deg No Ice	60.00	3/4 EHS	A1	23	29.15	7.40	25
		3/4 EHS	A1b	23a	29.15	1.64	5
		3/4 EHS	A1a	23b	29.15	12.81	43
	124.12	3/4 EHS	A1	46	29.15	8.46	29
		3/4 EHS	A1b	46a	29.15	1.07	3
		3/4 EHS	A1a	46b	29.15	15.96	54
	184.12	3/4 EHS	A1	67	29.15	8.64	29
		3/4 EHS	A1b	67a	29.15	1.31	4
		3/4 EHS	A1a	67b	29.15	16.37	56
	240.20	3/4 EHS	A1	87	29.15	8.58	29
		3/4 EHS	A1b	87a	29.15	2.10	7
		3/4 EHS	A1a	87b	29.15	15.08	51
291.96	5/8 EHS	A1	104	21.20	6.72	31	
	5/8 EHS	A1b	104a	21.20	2.57	12	
	5/8 EHS	A1a	104b	21.20	10.62	50	
Normal Ice	60.00	3/4 EHS	A1	23	29.15	1.99	6
		3/4 EHS	A1b	23a	29.15	14.41	49
		3/4 EHS	A1a	23b	29.15	14.47	49
	124.12	3/4 EHS	A1	46	29.15	0.79	2

Site Number: 6310  
 Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F



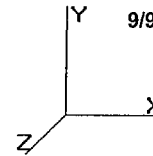
		3/4 EHS	A1b	46a	29.15	18.33	62
		3/4 EHS	A1a	46b	29.15	18.33	62
	184.12	3/4 EHS	A1	67	29.15	0.59	2
		3/4 EHS	A1b	67a	29.15	17.84	61
	240.20	3/4 EHS	A1a	67b	29.15	17.80	61
		3/4 EHS	A1	87	29.15	1.91	6
		3/4 EHS	A1b	87a	29.15	16.07	55
		3/4 EHS	A1a	87b	29.15	16.08	55
	291.96	5/8 EHS	A1	104	21.20	3.25	15
		5/8 EHS	A1b	104a	21.20	12.05	56
		5/8 EHS	A1a	104b	21.20	12.06	56
60 deg Ice	60.00	3/4 EHS	A1	23	29.15	5.13	17
		3/4 EHS	A1b	23a	29.15	5.04	17
		3/4 EHS	A1a	23b	29.15	17.01	58
	124.12	3/4 EHS	A1	46	29.15	4.45	15
		3/4 EHS	A1b	46a	29.15	4.36	14
		3/4 EHS	A1a	46b	29.15	22.50	77
	184.12	3/4 EHS	A1	67	29.15	5.09	17
		3/4 EHS	A1b	67a	29.15	5.12	17
		3/4 EHS	A1a	67b	29.15	22.41	76
	240.20	3/4 EHS	A1	87	29.15	6.29	21
		3/4 EHS	A1b	87a	29.15	6.37	21
		3/4 EHS	A1a	87b	29.15	20.26	69
	291.96	5/8 EHS	A1	104	21.20	6.45	30
		5/8 EHS	A1b	104a	21.20	6.55	30
		5/8 EHS	A1a	104b	21.20	14.65	69
90 deg Ice	60.00	3/4 EHS	A1	23	29.15	10.00	34
		3/4 EHS	A1b	23a	29.15	2.33	8
		3/4 EHS	A1a	23b	29.15	16.67	57
	124.12	3/4 EHS	A1	46	29.15	11.53	39
		3/4 EHS	A1b	46a	29.15	1.46	5
		3/4 EHS	A1a	46b	29.15	22.09	75
	184.12	3/4 EHS	A1	67	29.15	11.51	39
		3/4 EHS	A1b	67a	29.15	1.92	6
		3/4 EHS	A1a	67b	29.15	21.67	74
	240.20	3/4 EHS	A1	87	29.15	11.17	38
		3/4 EHS	A1b	87a	29.15	3.16	10
		3/4 EHS	A1a	87b	29.15	19.24	65
	291.96	5/8 EHS	A1	104	21.20	9.29	43
		5/8 EHS	A1b	104a	21.20	4.23	19
		5/8 EHS	A1a	104b	21.20	13.88	65

Site Number: 6310  
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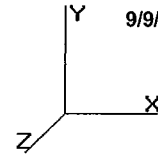


### Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
73.61 mph Wind Normal To Face with Ice	80.00	0.5356	-0.1915	0.5519
	84.12	0.5663	-0.1932	0.4382
	104.12	0.6799	-0.1923	0.3983
	128.04	0.7841	-0.1890	0.4589
	164.12	0.9899	-0.1842	0.4128
	175.88	1.0028	-0.1832	0.2168
	200.20	1.0397	-0.1816	0.4598
	235.88	1.0616	-0.1805	0.0962
	268.04	1.1203	-0.1801	0.0324
	295.88	1.1598	-0.1798	0.4313
73.61 mph Wind at 60 deg From Face with Ice	80.00	0.3805	0.4432	0.4112
	84.12	0.4047	0.4599	0.3124
	104.12	0.4840	0.5410	0.1760
	128.04	0.5455	0.6235	0.3726
	164.12	0.7204	0.7465	0.2444
	175.88	0.7275	0.7743	0.1702
	200.20	0.7654	0.8489	0.2819
	235.88	0.8206	0.9072	0.1088
	268.04	0.9313	0.9524	0.2464
	295.88	1.0147	1.0042	0.3164
73.61 mph Wind at 90 deg From Face with Ice	80.00	0.4866	0.6124	0.5040
	84.12	0.5173	0.6139	0.4019
	104.12	0.6305	0.6216	0.1595
	128.04	0.7154	0.6360	0.4383
	164.12	0.9205	0.6582	0.1327
	175.88	0.9271	0.6666	0.1322
	200.20	0.9558	0.6946	0.1405
	235.88	0.9744	0.7292	0.0991
	268.04	1.0396	0.7533	0.2185
	295.88	1.0818	0.7798	0.2652
85.00 mph Wind Normal To Face with No Ice	80.00	0.4092	-0.3398	0.3485
	84.12	0.4258	-0.3402	0.2808
	104.12	0.4872	-0.3361	0.2708
	128.04	0.5469	-0.3320	0.3243
	164.12	0.7136	-0.3260	0.4503
	175.88	0.7336	-0.3248	0.2693
	200.20	0.7822	-0.3230	0.3990
	235.88	0.8398	-0.3217	0.1614
	268.04	0.9237	-0.3211	0.0735
	295.88	0.9845	-0.3208	0.4259
85.00 mph Wind at 60 deg From Face with No Ice	80.00	0.2818	0.3186	0.2633
	84.12	0.2963	0.3294	0.1617
	104.12	0.3375	0.3816	0.0945
	128.04	0.3719	0.4416	0.2577
	164.12	0.5095	0.5336	0.2580
	175.88	0.5198	0.5520	0.1635
	200.20	0.5534	0.5972	0.1953
235.88	0.6077	0.6362	0.0974	

Site Number: 6310  
Location: Franklin CT, CT

Code: TIA/EIA-222 Rev F



85.00 mph Wind at 90 deg From Face with No Ice

268.04	0.6960	0.6636	0.2045
295.88	0.7572	0.6970	0.2666
80.00	0.3677	0.6968	0.3284
84.12	0.3847	0.6957	0.2255
104.12	0.4421	0.6904	0.0661
128.04	0.4920	0.6867	0.3060
164.12	0.6531	0.6816	0.1700
175.88	0.6640	0.6814	0.1326
200.20	0.6986	0.6850	0.0393
235.88	0.7471	0.6923	0.0472
268.04	0.8158	0.6969	0.2148
295.88	0.8635	0.7031	0.1919
	0.0000	0.0000	0.0000