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EM-VER-098-070618

June 18, 2007

Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RECEIVED
JUN 18 2007
CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification**
10 Ashpohtag Road, Norfolk, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install antennas on the existing 150-foot self-supporting monopole tower owned by Sprint Sites USA ("Sprint") at 10 Ashpohtag Road in Norfolk, Connecticut. 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, and pursuant to Siting Council Regulations. A copy of this letter is being sent to Norfolk First Selectwoman, Susan Louis Cammilletti, the owner of the property on which the tower is located.

The Sprint facility consists of a 150-foot self-supporting tower capable of supporting multiple carriers within a fenced compound located at 10 Ashpohtag Road in Norfolk. The Siting Council approved the shared use of the tower at the 147-foot level and by Cingular at the 137-foot level on the tower. Cellco intends to install twelve (12) panel-type antennas (model- LPA-127) at the 127-foot level on the tower and place a 12' x 30' equipment shelter on the tower within the fenced compound. Attached behind Tab 1 are the proposed Cellco facility.

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



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1. The proposed modification will not increase the overall height of the existing tower. Cellco's antennas will be mounted with their centerline at the 127-foot level on the 150-foot tower.
2. The proposed installation of a 12' x 30' equipment shelter will not require an extension of the fenced compound or lease area.
3. The proposed installation will not increase the noise levels at the facility by six decibels or more.
4. The operation of the 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. The cumulative worst-case RF power density calculations for the Sprint, Cingular and Cellco antennas would be 15.01% of the FCC standard. A copy of cumulative power density calculations table is attached behind Tab 2.

Also attached, behind Tab 3, is a Structural Analysis Report confirming that the existing tower can support the existing and proposed antennas and associated equipment.

For the foregoing reasons, Cellco respectfully submits that the proposed antenna installation at the facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Attachments

Copy to:

Susan M. Dyer, Norfolk First Selectwoman
Louis Cammilletti
Sandy M. Carter



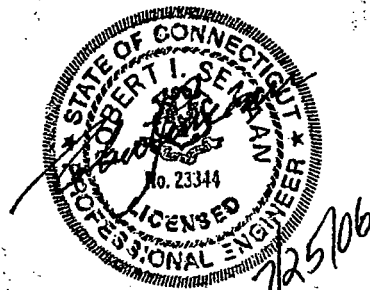
1079 N. 204th Avenue
Elkhorn, NE 68022
Ph: 402-289-1888
Fax: 402-289-1861

SEMAAN ENGINEERING SOLUTIONS

149 ft EEI Monopole Structural Analysis

Prepared for:
Sprint Sites USA
6120 Power Ferry Rd., 2nd Floor
MAILSTOP: GAATLV0204-2078
Atlanta, GA 30339-2923

Site: CT33XC590
For Verizon
Norfolk, CT



July 24, 2006

Ms. Tawana Beverly
Sprint Sites USA
6120 Power Ferry Rd., 2nd Floor
MAILSTOP: GAATLV0204-2078
Atlanta, GA 30339-2923

Re: Site CT33XC590 – Norfolk, CT.

Dear Ms. Beverly:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the TIA/EIA-222 Rev F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

Description of Structure:

The structure is a 149 ft EEI Monopole.

Refer to EEI drawing GS55429 dated August 30, 2004 for a detailed description of the structure.

Method of analysis:

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. It also treats guys as exact cable elements and therefore is ideal for guyed towers. The analysis was performed in conformance with **TIA/EIA-222 Rev F and local building codes for a basic wind speed of 80 mph and 1/2" radial ice with reduced wind speed (fastest mile)**. This wind speed is equivalent to 100 mph 3-second gust per the IBC 2003. This is in conformance with the IBC 2003: Section 1609.1.1, Exception (5) and Section 3108.4. Wind is applied to the structure, accessories and antennas.

Structure loading:

The following loads were used in the tower analysis:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
147.0	9	DB848H90E	low profile platform	(15) 1 5/8	Sprint
	3	DR65-19-XX			
	3	TMA's			
137.0	6	Powerwave 7770	low profile platform	(12) 1 5/8	Cingular
	12	TMA's			

Proposed Loads:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
127.0	12	LPA-185080/12CF	Low Profile Platform	(12) 1 5/8	Verizon

All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.
All transmission lines are assumed running inside of pole shaft.

Results of Analysis:

Refer to the attached Computer Summary sheets for detailed analysis results.

Structure:

The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 99.3%.

Foundation:

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	2,300.40	2,139.00	93.0
Shear (kips)	22.00	19.25	87.5

The analysis reactions are less than the design reactions therefore no foundation modifications are required.

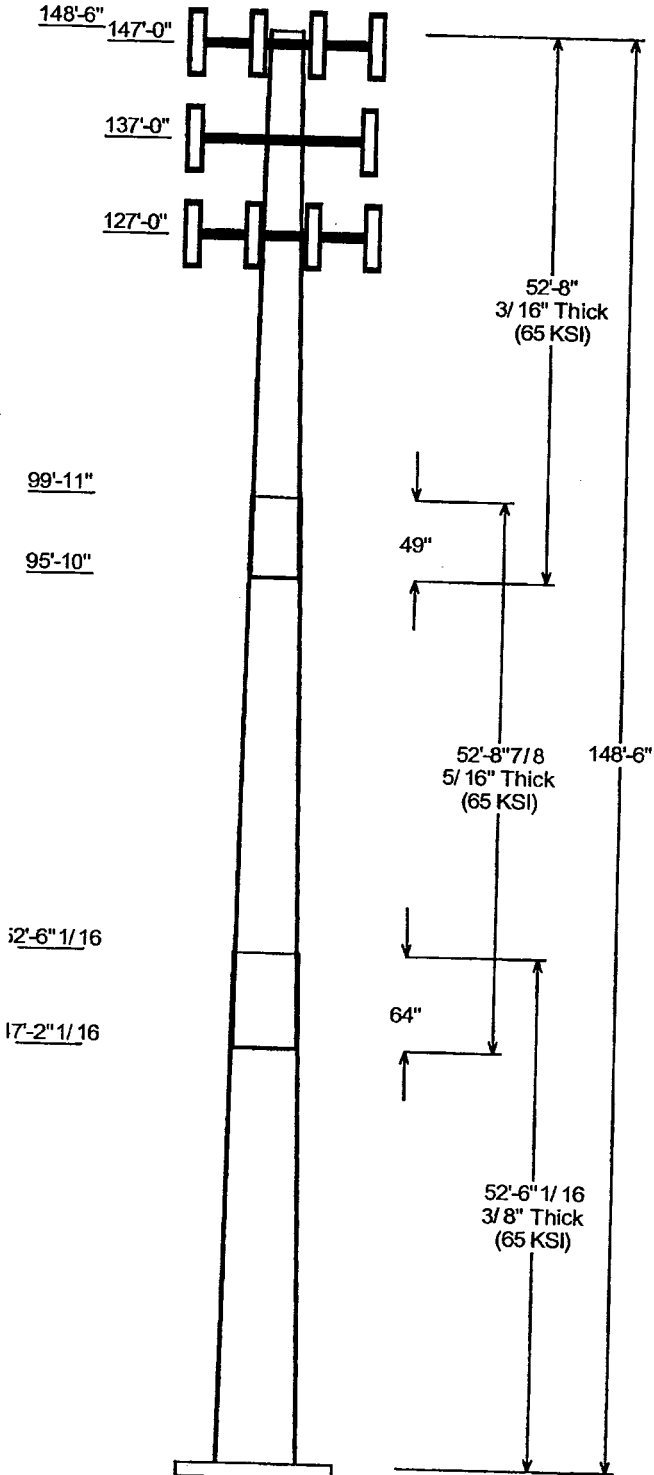
Review and Recommendations:

Based on the analysis results, the existing structure meets the requirements per the TIA/EIA-222 Rev F standards for a basic wind speed of 80 mph and 1/2" radial ice with reduced wind speed. This wind speed is equivalent to 100 mph 3-second gust.

SEMAAN ENGINEERING SOLUTIONS

1079 N.204th Avenue
 Elkhorn, NE 68022
 Phone: 402-289-1888
 Fax: 402-289-1861

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Job Information			
Pole :	CT33XC590	Code:	TIA/EIA-222 Rev F
Description :	Client : Sprint Sites USA - GA		
Location :	Norfolk, CT		
Shape :	18 Sides	Base Elev (ft):	0.00
Height :	148.50 (ft)	Taper:	0.208754(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap		Steel Grade (ksi)
		Across Top	Flats Bottom			Length (in)	Taper (in/ft)	
1	52.508	37.03	48.00	0.375		0.000	0.208754	65
2	52.742	27.76	38.77	0.313	Slip Joint	64.000	0.208754	65
3	52.667	18.00	28.99	0.188	Slip Joint	49.000	0.208754	65

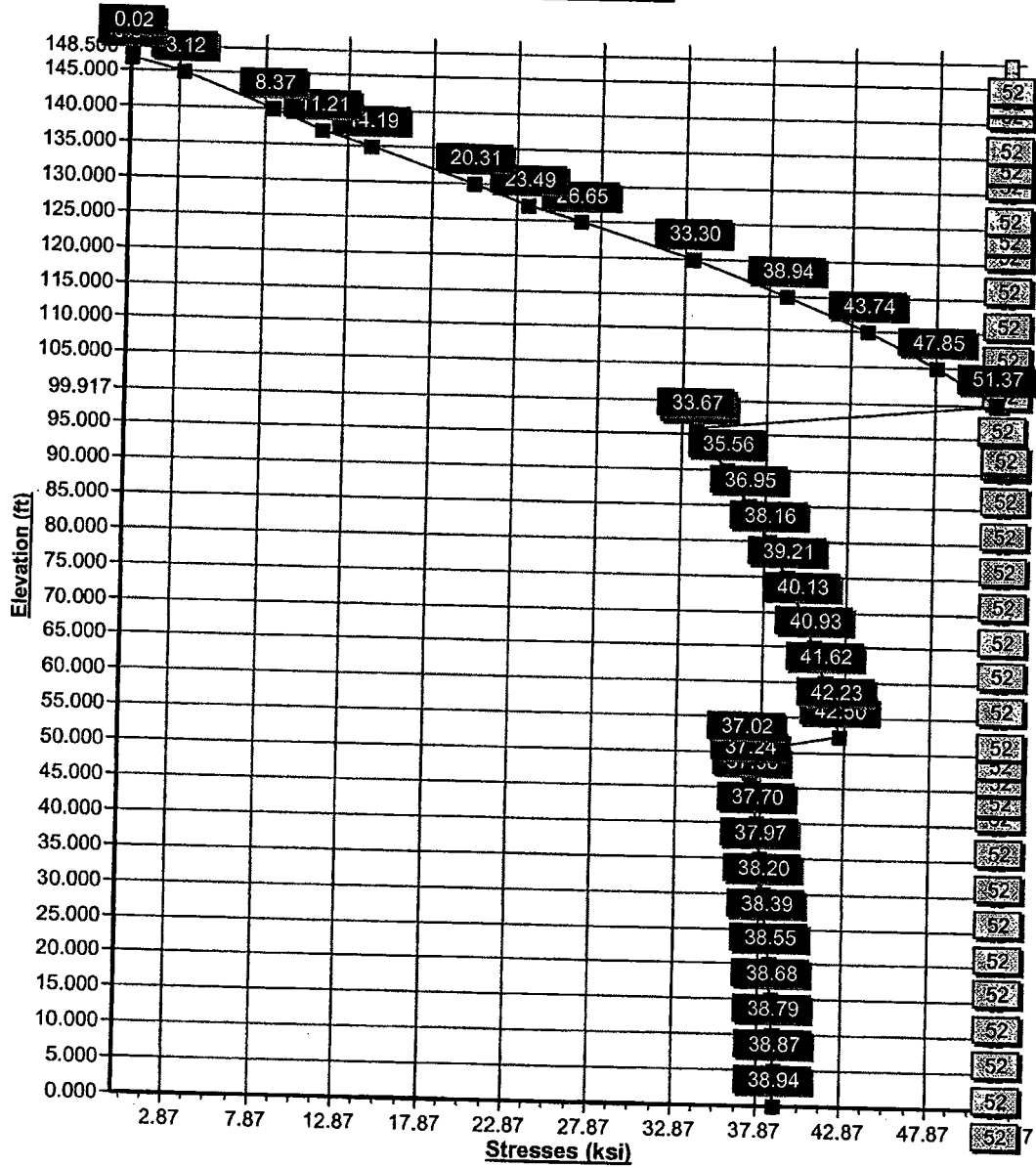
Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
147.000	147.000	3	TMA's
147.000	147.000	3	DR65-19-XX
147.000	147.000	9	DB848H90E
147.000	147.000	1	low profile platform
137.000	137.000	12	TMA's
137.000	137.000	6	Powerwave 7770
137.000	137.000	1	low profile platform
127.000	127.000	12	LPA-185080/12CF
127.000	127.000	1	Low Profile Platform

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	127.0	1 5/8 Coax	No
0.000	137.0	1 5/8 Coax	No
0.000	147.0	1 5/8 Coax	No

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	2139.00	19.25	23.39
Ice	1796.86	15.72	28.90

Load Case : No Ice
Max Stress 99.3% at 99.9ft



Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

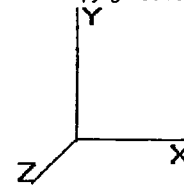
Code: TIA/EIA-222 Rev F

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Base Elev: 0.000 (ft)



Shaft Section Properties

Sect Num	Length (ft)	Thick (in)	Fv (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							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 (in/ft)
1	52.508	0.3750	65		0.00	8,962	48.00	0.000	56.68	16243.5	21.16	128.0	37.03	52.50	43.64	7411.2	16.01	98.77	0.20875
2	52.742	0.3125	65	Slip Joint	64.00	5,867	38.77	47.17	38.15	7131.5	20.47	124.0	27.76	99.91	27.23	2593.2	14.26	88.85	0.20875
3	52.667	0.1875	65	Slip Joint	49.00	2,486	28.99	95.83	17.14	1797.4	25.86	154.6	18.00	148.5	10.60	424.9	15.52	96.00	0.20875
Shaft Weight						17,315													

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)	Vert Ecc (ft)
147.0	TMA's	3	13.20	2.500	0.67	18.25	2.800	0.67	0.000	0.000
147.0	DR65-19-XX	3	32.00	8.400	0.67	74.00	9.230	0.67	0.000	0.000
147.0	DB848H90E	9	28.00	8.360	0.91	78.00	9.250	0.91	0.000	0.000
147.0	low profile platform	1	1600.00	24.000	1.00	2100.00	27.320	1.00	0.000	0.000
137.0	TMA's	12	13.20	0.690	1.00	18.25	0.870	1.00	0.000	0.000
137.0	Powerwave 7770	6	35.00	5.880	0.73	67.63	6.530	0.73	0.000	0.000
137.0	low profile platform	1	1600.00	24.000	1.00	2100.00	27.320	1.00	0.000	0.000
127.0	LPA-185080/12CF	12	10.50	3.525	1.22	20.00	4.175	1.22	0.000	0.000
127.0	Low Profile Platform	1	1600.00	24.000	1.00	2100.00	27.320	1.00	0.000	0.000
Totals		48	5682.00			8143.53				

Number of Loadings : 9

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	CaAa (sf/ft)	Ice Weight (lb/ft)	CaAa (sf/ft)	Exposed To Wind
0.00	147.00	(15) 1 5/8 Coax	1.04	0.00	0.00	0.00	N
0.00	137.00	(12) 1 5/8 Coax	1.04	0.00	0.00	0.00	N
0.00	127.00	(12) 1 5/8 Coax	1.04	0.00	0.00	0.00	N
Total Weight			427.44 (lb)		0.00 (lb)		

Pole : CT33XC590
 Location : Norfolk, CT
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 Taper : 0.208754 (in/ft)

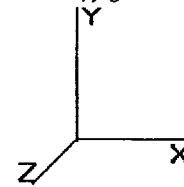
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Base Elev : 0.000 (ft)



Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	Dt Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.3750	48.000	56.684	16,243.5	21.16	128.00	65	52	0.0
5.00		0.3750	46.956	55.441	15,198.8	20.67	125.22	65	52	953.8
10.00		0.3750	45.912	54.199	14,199.8	20.18	122.43	65	52	932.7
15.00		0.3750	44.869	52.957	13,245.6	19.69	119.65	65	52	911.6
20.00		0.3750	43.825	51.714	12,335.1	19.20	116.87	65	52	890.4
25.00		0.3750	42.781	50.472	11,467.3	18.71	114.08	65	52	869.3
30.00		0.3750	41.737	49.230	10,641.2	18.21	111.30	65	52	848.2
35.00		0.3750	40.694	47.987	9,855.8	17.72	108.52	65	52	827.0
40.00		0.3750	39.650	46.745	9,110.0	17.23	105.73	65	52	805.9
45.00		0.3750	38.606	45.503	8,402.8	16.74	102.95	65	52	784.7
47.17	Bot - Section 2	0.3750	38.152	44.963	8,107.0	16.53	101.74	65	52	334.7
50.00		0.3750	37.562	44.261	7,733.2	16.25	100.17	65	52	792.9
52.51	Top - Section 1	0.3125	37.664	37.046	6,530.0	19.84	120.52	65	52	693.4
55.00		0.3125	37.144	36.530	6,260.9	19.55	118.86	65	52	312.0
60.00		0.3125	36.100	35.495	5,743.5	18.96	115.52	65	52	612.7
65.00		0.3125	35.056	34.460	5,255.5	18.37	112.18	65	52	595.1
70.00		0.3125	34.012	33.425	4,795.9	17.78	108.84	65	52	577.5
75.00		0.3125	32.968	32.389	4,364.0	17.19	105.50	65	52	559.9
80.00		0.3125	31.925	31.354	3,958.7	16.60	102.16	65	52	542.3
85.00		0.3125	30.881	30.319	3,579.4	16.01	98.82	65	52	524.6
90.00		0.3125	29.837	29.284	3,225.1	15.42	95.48	65	52	507.0
95.00		0.3125	28.793	28.248	2,895.0	14.84	92.14	65	52	489.4
95.83	Bot - Section 3	0.3125	28.619	28.076	2,842.3	14.74	91.58	65	52	79.8
99.92	Top - Section 2	0.1875	28.142	16.636	1,642.5	25.05	150.09	65	52	618.9
100.0		0.1875	28.125	16.625	1,639.4	25.04	150.00	65	52	4.7
105.0		0.1875	27.081	16.004	1,462.4	24.06	144.43	65	52	277.6
110.0		0.1875	26.037	15.383	1,298.7	23.07	138.86	65	52	267.0
115.0		0.1875	24.993	14.762	1,147.6	22.09	133.30	65	52	256.4
120.0		0.1875	23.949	14.141	1,008.8	21.11	127.73	65	52	245.9
125.0		0.1875	22.906	13.520	881.6	20.13	122.16	65	52	235.3
127.0		0.1875	22.488	13.271	833.9	19.74	119.94	65	52	91.2
130.0		0.1875	21.862	12.899	765.6	19.15	116.60	65	52	133.6
135.0		0.1875	20.818	12.277	660.2	18.17	111.03	65	52	214.2
137.0		0.1875	20.401	12.029	620.9	17.77	108.80	65	52	82.7
140.0		0.1875	19.774	11.656	565.0	17.19	105.46	65	52	120.9
145.0		0.1875	18.731	11.035	479.4	16.20	99.90	65	52	193.0
147.0		0.1875	18.313	10.787	447.7	15.81	97.67	65	52	74.3
148.5		0.1875	18.000	10.600	424.9	15.52	96.00	65	52	54.6
										17,315.3

Pole : CT33XC590
 Location : Norfolk, CT
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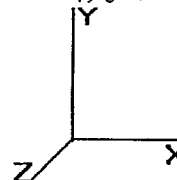
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Base Elev: 0.000 (ft)



Load Case: No Ice 80.00 mph Wind with No Ice 26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 16.384	27.68 320.00	0.650	0.00	0.00	0.000	0.00	0.00	0.0	0.0	0.0
5.00		0.00	1.00 16.384	27.68 313.04	0.650	0.00	5.00	19.783	12.86	12.86	356.0	0.0	953.8
10.00		0.00	1.00 16.384	27.68 306.08	0.650	0.00	5.00	19.348	12.58	12.58	348.2	0.0	932.7
15.00		0.00	1.00 16.384	27.68 299.12	0.650	0.00	5.00	18.913	12.29	12.29	340.4	0.0	911.6
20.00		0.00	1.00 16.384	27.68 292.16	0.650	0.00	5.00	18.478	12.01	12.01	332.6	0.0	890.4
25.00		0.00	1.00 16.384	27.68 285.20	0.650	0.00	5.00	18.043	11.73	11.73	324.7	0.0	869.3
30.00		0.00	1.00 16.384	27.68 278.24	0.650	0.00	5.00	17.608	11.45	11.45	316.9	0.0	848.2
35.00		0.00	1.01 16.662	28.15 273.58	0.650	0.00	5.00	17.173	11.16	11.16	314.3	0.0	827.0
40.00		0.00	1.05 17.310	29.25 271.69	0.650	0.00	5.00	16.738	10.88	10.88	318.3	0.0	805.9
45.00		0.00	1.09 17.902	30.25 269.03	0.650	0.00	5.00	16.303	10.60	10.60	320.6	0.0	784.7
47.17	Bot - Section 2	0.00	1.10 18.145	30.66 267.66	0.650	0.00	2.17	6.955	4.52	4.52	138.6	0.0	334.7
50.00		0.00	1.12 18.449	31.17 265.73	0.650	0.00	2.83	9.061	5.89	5.89	183.6	0.0	792.9
52.51	Top - Section 1	0.00	1.14 18.709	31.61 263.86	0.650	0.00	2.51	7.926	5.15	5.15	162.9	0.0	693.4
55.00		0.00	1.15 18.959	32.04 266.36	0.650	0.00	2.49	7.768	5.05	5.05	161.8	0.0	312.0
60.00		0.00	1.18 19.436	32.84 262.12	0.650	0.00	5.00	15.259	9.92	9.92	325.8	0.0	612.7
65.00		0.00	1.21 19.885	33.60 257.47	0.650	0.00	5.00	14.824	9.64	9.64	323.8	0.0	595.1
70.00		0.00	1.24 20.311	34.32 252.46	0.650	0.00	5.00	14.389	9.35	9.35	321.0	0.0	577.5
75.00		0.00	1.26 20.715	35.00 247.14	0.650	0.00	5.00	13.954	9.07	9.07	317.5	0.0	559.9
80.00		0.00	1.28 21.101	35.66 241.53	0.650	0.00	5.00	13.519	8.79	8.79	313.4	0.0	542.3
85.00		0.00	1.31 21.469	36.28 235.66	0.650	0.00	5.00	13.084	8.50	8.50	308.6	0.0	524.6
90.00		0.00	1.33 21.823	36.88 229.56	0.650	0.00	5.00	12.650	8.22	8.22	303.2	0.0	507.0
95.00		0.00	1.35 22.163	37.45 223.25	0.650	0.00	5.00	12.215	7.94	7.94	297.4	0.0	489.4
95.83	Bot - Section 3	0.00	1.35 22.218	37.54 222.18	0.650	0.00	0.83	1.993	1.30	1.30	48.6	0.0	79.8
99.92	Top - Section 2	0.00	1.37 22.485	37.99 216.85	0.650	0.00	4.08	9.721	6.32	6.32	240.1	0.0	618.9
100.0		0.00	1.37 22.490	38.00 219.67	0.650	0.00	0.08	0.196	0.13	0.13	4.8	0.0	4.7
105.0		0.00	1.39 22.806	38.54 213.00	0.650	0.00	5.00	11.501	7.48	7.48	288.1	0.0	277.6
110.0		0.00	1.41 23.111	39.05 206.15	0.650	0.00	5.00	11.066	7.19	7.19	280.9	0.0	267.0
115.0		0.00	1.42 23.406	39.55 199.15	0.650	0.00	5.00	10.631	6.91	6.91	273.3	0.0	256.4
120.0		0.00	1.44 23.692	40.04 192.00	0.650	0.00	5.00	10.196	6.63	6.63	265.4	0.0	245.9
125.0		0.00	1.46 23.970	40.51 184.70	0.650	0.00	5.00	9.761	6.34	6.34	257.0	0.0	235.3
127.0	Appertunance(s)	0.00	1.47 24.079	40.69 181.75	0.650	0.00	2.00	3.783	2.46	2.46	100.1	0.0	91.2
130.0		0.00	1.48 24.241	40.96 177.28	0.650	0.00	3.00	5.544	3.60	3.60	147.6	0.0	133.6
135.0		0.00	1.49 24.503	41.41 169.72	0.650	0.00	5.00	8.892	5.78	5.78	239.3	0.0	214.2
137.0	Appertunance(s)	0.00	1.50 24.607	41.58 166.67	0.650	0.00	2.00	3.435	2.23	2.23	92.8	0.0	82.7
140.0		0.00	1.51 24.759	41.84 162.05	0.650	0.00	3.00	5.022	3.26	3.26	136.6	0.0	120.9
145.0		0.00	1.52 25.009	42.26 154.27	0.650	0.00	5.00	8.022	5.21	5.21	220.4	0.0	193.0
147.0	Appertunance(s)	0.00	1.53 25.107	42.43 151.13	0.650	0.00	2.00	3.087	2.01	2.01	85.1	0.0	74.3
148.5		0.00	1.53 25.180	42.55 148.76	0.650	0.00	1.50	2.270	1.48	1.48	62.8	0.0	54.6
Totals:								148.50			8,872.9	0.0	17,315.3

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

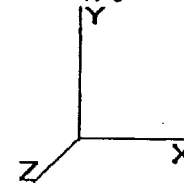
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Base Elev : 0.000 (ft)



Load Case: No Ice

80.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
127.0	LPA-185080/12CF	12	24.079	40.694	1.220	51.61	0.000	0.000	2,100.06	0.00	0.00	126.00
127.0	Low Profile Platform	1	24.079	40.694	1.000	24.00	0.000	0.000	976.66	0.00	0.00	1,600.00
137.0	TMA's	12	24.607	41.585	1.000	8.28	0.000	0.000	344.32	0.00	0.00	158.40
137.0	Powerwave 7770	6	24.607	41.585	0.727	25.65	0.000	0.000	1,066.60	0.00	0.00	210.00
137.0	low profile platform	1	24.607	41.585	1.000	24.00	0.000	0.000	998.04	0.00	0.00	1,600.00
147.0	TMA's	3	25.107	42.431	0.670	5.03	0.000	0.000	213.21	0.00	0.00	39.60
147.0	DR65-19-XX	3	25.107	42.431	0.670	16.88	0.000	0.000	716.40	0.00	0.00	96.00
147.0	DB848H90E	9	25.107	42.431	0.910	68.47	0.000	0.000	2,905.12	0.00	0.00	252.00
147.0	low profile platform	1	25.107	42.431	1.000	24.00	0.000	0.000	1,018.33	0.00	0.00	1,600.00
									10,338.75			5,682.00

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

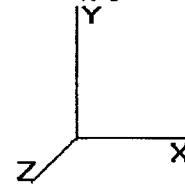
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Page: 5

Base Elev : 0.000 (ft)



Load Case: No Ice

80.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	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	356.04	969.44	0.00	0.00
10.00	348.22	948.30	0.00	0.00
15.00	340.39	927.17	0.00	0.00
20.00	332.56	906.03	0.00	0.00
25.00	324.73	884.89	0.00	0.00
30.00	316.91	863.76	0.00	0.00
35.00	314.32	842.62	0.00	0.00
40.00	318.27	821.49	0.00	0.00
45.00	320.61	800.35	0.00	0.00
47.17	138.62	341.47	0.00	0.00
50.00	183.64	801.74	0.00	0.00
52.51	162.89	701.21	0.00	0.00
55.00	161.78	319.76	0.00	0.00
60.00	325.78	628.32	0.00	0.00
65.00	323.82	610.70	0.00	0.00
70.00	321.05	593.09	0.00	0.00
75.00	317.54	575.48	0.00	0.00
80.00	313.37	557.86	0.00	0.00
85.00	308.59	540.25	0.00	0.00
90.00	303.24	522.64	0.00	0.00
95.00	297.38	505.02	0.00	0.00
95.83	48.65	82.45	0.00	0.00
99.92	240.11	631.65	0.00	0.00
100.0	4.83	4.98	0.00	0.00
105.0	288.13	293.18	0.00	0.00
110.0	280.94	282.61	0.00	0.00
115.0	273.35	272.04	0.00	0.00
120.0	265.37	261.47	0.00	0.00
125.0	257.04	250.91	0.00	0.00
127.0	3,176.78	1,823.40	0.00	0.00
130.0	147.62	139.81	0.00	0.00
135.0	239.34	224.57	0.00	0.00
137.0	2,501.81	2,055.27	0.00	0.00
140.0	136.59	124.01	0.00	0.00
145.0	220.38	198.23	0.00	0.00
147.0	4,938.20	2,063.93	0.00	0.00
148.5	62.78	54.58	0.00	0.00
Totals:	19,211.64	23,424.70	0.00	0.00

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

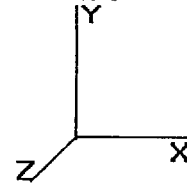
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Base Elev : 0.000 (ft)



Load Case: No Ice

80.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-19.249	-23.393	0.000	0.000	0.000	-2,138.998	0.000	0.000	0.000	0.000
5.00	-18.964	-22.363	0.000	0.000	0.000	-2,042.754	-0.098	0.000	0.098	-0.183
10.00	-18.681	-21.355	0.000	0.000	0.000	-1,947.937	-0.390	0.000	0.390	-0.370
15.00	-18.402	-20.369	0.000	0.000	0.000	-1,854.531	-0.879	0.000	0.879	-0.560
20.00	-18.125	-19.405	0.000	0.000	0.000	-1,762.523	-1.570	0.000	1.570	-0.755
25.00	-17.852	-18.463	0.000	0.000	0.000	-1,671.897	-2.466	0.000	2.466	-0.953
30.00	-17.582	-17.543	0.000	0.000	0.000	-1,582.638	-3.572	0.000	3.572	-1.154
35.00	-17.310	-16.645	0.000	0.000	0.000	-1,494.730	-4.891	0.000	4.891	-1.360
40.00	-17.029	-15.769	0.000	0.000	0.000	-1,408.183	-6.427	0.000	6.427	-1.570
45.00	-16.725	-14.933	0.000	0.000	0.000	-1,323.041	-8.185	0.000	8.185	-1.783
47.17	-16.604	-14.564	0.000	0.000	0.000	-1,286.674	-9.019	0.000	9.019	-1.879
50.00	-16.421	-13.735	0.000	0.000	0.000	-1,239.760	-10.169	0.000	10.169	-2.004
52.51	-16.259	-13.009	0.000	0.000	0.000	-1,198.579	-11.252	0.000	11.252	-2.117
55.00	-16.126	-12.643	0.000	0.000	0.000	-1,158.059	-12.387	0.000	12.387	-2.229
60.00	-15.828	-11.958	0.000	0.000	0.000	-1,077.429	-14.857	0.000	14.857	-2.483
65.00	-15.528	-11.293	0.000	0.000	0.000	-998.289	-17.595	0.000	17.595	-2.740
70.00	-15.226	-10.648	0.000	0.000	0.000	-920.650	-20.603	0.000	20.603	-3.000
75.00	-14.924	-10.022	0.000	0.000	0.000	-844.520	-23.884	0.000	23.884	-3.262
80.00	-14.621	-9.417	0.000	0.000	0.000	-769.901	-27.439	0.000	27.439	-3.525
85.00	-14.320	-8.832	0.000	0.000	0.000	-696.795	-31.270	0.000	31.270	-3.789
90.00	-14.019	-8.267	0.000	0.000	0.000	-625.197	-35.376	0.000	35.376	-4.051
95.00	-13.706	-7.749	0.000	0.000	0.000	-555.101	-39.756	0.000	39.756	-4.312
95.83	-13.669	-7.640	0.000	0.000	0.000	-543.680	-40.512	0.000	40.512	-4.357
99.92	-13.393	-7.004	0.000	0.000	0.000	-487.866	-44.327	0.000	44.327	-4.567
100.0	-13.413	-6.951	0.000	0.000	0.000	-486.749	-44.407	0.000	44.407	-4.572
105.0	-13.146	-6.595	0.000	0.000	0.000	-419.684	-49.403	0.000	49.403	-4.965
110.0	-12.881	-6.257	0.000	0.000	0.000	-353.954	-54.801	0.000	54.801	-5.341
115.0	-12.618	-5.938	0.000	0.000	0.000	-289.549	-60.579	0.000	60.579	-5.694
120.0	-12.357	-5.641	0.000	0.000	0.000	-226.460	-66.709	0.000	66.709	-6.014
125.0	-12.092	-5.381	0.000	0.000	0.000	-164.676	-73.149	0.000	73.149	-6.289
127.0	-8.741	-3.902	0.000	0.000	0.000	-140.493	-75.801	0.000	75.801	-6.388
130.0	-8.589	-3.756	0.000	0.000	0.000	-114.271	-79.850	0.000	79.850	-6.518
135.0	-8.332	-3.545	0.000	0.000	0.000	-71.329	-86.760	0.000	86.760	-6.691
137.0	-5.608	-1.791	0.000	0.000	0.000	-54.666	-89.569	0.000	89.569	-6.745
140.0	-5.460	-1.678	0.000	0.000	0.000	-37.841	-93.820	0.000	93.820	-6.808
145.0	-5.219	-1.505	0.000	0.000	0.000	-10.540	-100.972	0.000	100.972	-6.869
147.0	-0.069	-0.047	0.000	0.000	0.000	-0.103	-103.845	0.000	103.845	-6.876
148.5	-0.063	0.000	0.000	0.000	0.000	0.000	-106.000	0.000	106.000	-6.876

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

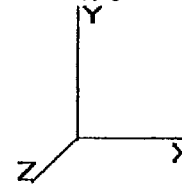
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Base Elev: 0.000 (ft)



Load Case: No Ice 80.00 mph Wind with No Ice 26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.41	0.68	0.00	0.00	0.00	38.51	38.94	52.0	0.0	0.749
5.00	0.40	0.69	0.00	0.00	0.00	38.45	38.87	52.0	0.0	0.748
10.00	0.39	0.69	0.00	0.00	0.00	38.37	38.79	52.0	0.0	0.746
15.00	0.38	0.70	0.00	0.00	0.00	38.27	38.68	52.0	0.0	0.744
20.00	0.38	0.71	0.00	0.00	0.00	38.15	38.55	52.0	0.0	0.742
25.00	0.37	0.71	0.00	0.00	0.00	38.00	38.39	52.0	0.0	0.739
30.00	0.36	0.72	0.00	0.00	0.00	37.82	38.20	52.0	0.0	0.735
35.00	0.35	0.73	0.00	0.00	0.00	37.60	37.97	52.0	0.0	0.730
40.00	0.34	0.73	0.00	0.00	0.00	37.34	37.70	52.0	0.0	0.725
45.00	0.33	0.74	0.00	0.00	0.00	37.03	37.38	52.0	0.0	0.719
47.17	0.32	0.74	0.00	0.00	0.00	36.89	37.24	52.0	0.0	0.716
50.00	0.31	0.75	0.00	0.00	0.00	36.69	37.02	52.0	0.0	0.712
52.51	0.35	0.88	0.00	0.00	0.00	42.12	42.50	52.0	0.0	0.818
55.00	0.35	0.89	0.00	0.00	0.00	41.86	42.23	52.0	0.0	0.813
60.00	0.34	0.90	0.00	0.00	0.00	41.26	41.62	52.0	0.0	0.801
65.00	0.33	0.91	0.00	0.00	0.00	40.57	40.93	52.0	0.0	0.787
70.00	0.32	0.92	0.00	0.00	0.00	39.78	40.13	52.0	0.0	0.772
75.00	0.31	0.93	0.00	0.00	0.00	38.87	39.21	52.0	0.0	0.754
80.00	0.30	0.94	0.00	0.00	0.00	37.83	38.16	52.0	0.0	0.734
85.00	0.29	0.95	0.00	0.00	0.00	36.63	36.95	52.0	0.0	0.711
90.00	0.28	0.96	0.00	0.00	0.00	35.24	35.56	52.0	0.0	0.684
95.00	0.27	0.98	0.00	0.00	0.00	33.64	33.95	52.0	0.0	0.653
95.83	0.27	0.98	0.00	0.00	0.00	33.35	33.67	52.0	0.0	0.648
99.92	0.42	1.62	0.00	0.00	0.00	50.93	51.43	51.8	0.0	0.993
100.00	0.42	1.63	0.00	0.00	0.00	50.87	51.37	51.8	0.0	0.992
105.00	0.41	1.66	0.00	0.00	0.00	47.35	47.85	52.0	0.0	0.921
110.00	0.41	1.69	0.00	0.00	0.00	43.23	43.74	52.0	0.0	0.842
115.00	0.40	1.72	0.00	0.00	0.00	38.42	38.94	52.0	0.0	0.749
120.00	0.40	1.76	0.00	0.00	0.00	32.76	33.30	52.0	0.0	0.641
125.00	0.40	1.80	0.00	0.00	0.00	26.07	26.65	52.0	0.0	0.513
127.00	0.29	1.33	0.00	0.00	0.00	23.08	23.49	52.0	0.0	0.452
130.00	0.29	1.34	0.00	0.00	0.00	19.88	20.31	52.0	0.0	0.391
135.00	0.29	1.37	0.00	0.00	0.00	13.70	14.19	52.0	0.0	0.273
137.00	0.15	0.94	0.00	0.00	0.00	10.94	11.21	52.0	0.0	0.216
140.00	0.14	0.94	0.00	0.00	0.00	8.07	8.37	52.0	0.0	0.161
145.00	0.14	0.95	0.00	0.00	0.00	2.51	3.12	52.0	0.0	0.060
147.00	0.00	0.01	0.00	0.00	0.00	0.03	0.04	52.0	0.0	0.001
148.50	0.00	0.01	0.00	0.00	0.00	0.00	0.02	52.0	0.0	0.000

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

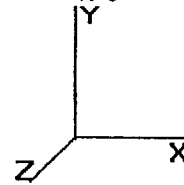
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Base Elev: 0.000 (ft)



Load Case: Ice

69.28 mph Wind with Ice

26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	12.287	20.76	277.12	0.650	0.50	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	12.287	20.76	271.09	0.650	0.50	5.00	20.199	13.13	272.6	146.4	1,100.3
10.00		0.00	1.00	12.287	20.76	265.06	0.650	0.50	5.00	19.764	12.85	266.8	143.2	1,075.9
15.00		0.00	1.00	12.287	20.76	259.04	0.650	0.50	5.00	19.329	12.56	260.9	140.0	1,051.6
20.00		0.00	1.00	12.287	20.76	253.01	0.650	0.50	5.00	18.894	12.28	255.0	136.8	1,027.2
25.00		0.00	1.00	12.287	20.76	246.99	0.650	0.50	5.00	18.460	12.00	249.2	133.6	1,002.8
30.00		0.00	1.00	12.287	20.76	240.96	0.650	0.50	5.00	18.025	11.72	243.3	130.3	978.5
35.00		0.00	1.01	12.496	21.11	236.92	0.650	0.50	5.00	17.590	11.43	241.4	127.1	954.1
40.00		0.00	1.05	12.982	21.93	235.29	0.650	0.50	5.00	17.155	11.15	244.6	123.9	929.8
45.00		0.00	1.09	13.426	22.69	232.98	0.650	0.50	5.00	16.720	10.87	246.6	120.7	905.4
47.17	Bot - Section 2	0.00	1.10	13.608	22.99	231.80	0.650	0.50	2.17	7.136	4.64	106.7	51.9	386.6
50.00		0.00	1.12	13.836	23.38	230.12	0.650	0.50	2.83	9.297	6.04	141.3	67.5	860.4
52.51	Top - Section 1	0.00	1.14	14.031	23.71	228.50	0.650	0.50	2.51	8.135	5.29	125.4	59.1	752.5
55.00		0.00	1.15	14.218	24.02	230.67	0.650	0.50	2.49	7.976	5.18	124.6	57.9	369.9
60.00		0.00	1.18	14.576	24.63	226.99	0.650	0.50	5.00	15.676	10.19	251.0	112.9	725.7
65.00		0.00	1.21	14.913	25.20	222.97	0.650	0.50	5.00	15.241	9.91	249.7	109.7	704.8
70.00		0.00	1.24	15.232	25.74	218.63	0.650	0.50	5.00	14.806	9.62	247.7	106.5	684.0
75.00		0.00	1.26	15.536	26.25	214.02	0.650	0.50	5.00	14.371	9.34	245.3	103.3	663.2
80.00		0.00	1.28	15.825	26.74	209.16	0.650	0.50	5.00	13.936	9.06	242.3	100.1	642.3
85.00		0.00	1.31	16.101	27.21	204.08	0.650	0.50	5.00	13.501	8.78	238.8	96.8	621.5
90.00		0.00	1.33	16.366	27.65	198.80	0.650	0.50	5.00	13.066	8.49	234.9	93.6	600.6
95.00		0.00	1.35	16.621	28.09	193.33	0.650	0.50	5.00	12.631	8.21	230.6	90.4	579.8
95.83	Bot - Section 3	0.00	1.35	16.663	28.16	192.41	0.650	0.50	0.83	2.063	1.34	37.8	15.0	94.8
99.92	Top - Section 2	0.00	1.37	16.862	28.49	187.79	0.650	0.50	4.08	10.061	6.54	186.4	72.2	691.1
100.00		0.00	1.37	16.866	28.50	190.23	0.650	0.50	0.08	0.203	0.13	3.8	1.5	6.2
105.00		0.00	1.39	17.103	28.90	184.45	0.650	0.50	5.00	11.918	7.75	223.9	85.1	362.7
110.00		0.00	1.41	17.332	29.29	178.53	0.650	0.50	5.00	11.483	7.46	218.6	81.9	348.9
115.00		0.00	1.42	17.554	29.66	172.46	0.650	0.50	5.00	11.048	7.18	213.0	78.7	335.1
120.00		0.00	1.44	17.768	30.02	166.27	0.650	0.50	5.00	10.613	6.90	207.2	75.4	321.3
125.00		0.00	1.46	17.977	30.38	159.95	0.650	0.50	5.00	10.178	6.62	201.0	72.2	307.5
127.00	Appertunance(s)	0.00	1.47	18.058	30.51	157.39	0.650	0.50	2.00	3.949	2.57	78.3	28.4	119.5
130.00		0.00	1.48	18.179	30.72	153.52	0.650	0.50	3.00	5.794	3.77	115.7	41.4	175.0
135.00		0.00	1.49	18.376	31.05	146.98	0.650	0.50	5.00	9.308	6.05	187.9	65.8	280.0
137.00	Appertunance(s)	0.00	1.50	18.454	31.18	144.34	0.650	0.50	2.00	3.602	2.34	73.0	25.8	108.5
140.00		0.00	1.51	18.568	31.38	140.34	0.650	0.50	3.00	5.272	3.43	107.5	37.5	158.4
145.00		0.00	1.52	18.755	31.69	133.60	0.650	0.50	5.00	8.439	5.49	173.9	59.3	252.4
147.00	Appertunance(s)	0.00	1.53	18.829	31.82	130.88	0.650	0.50	2.00	3.254	2.11	67.3	23.2	97.5
148.50		0.00	1.53	18.884	31.91	128.82	0.650	0.50	1.50	2.395	1.56	49.7	17.1	71.7
Totals:								148.50				6,863.5	3,032.1	20,347.4

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
 Top Dia : 18.00 (in)
 Taper : 0.208754 (in/ft)

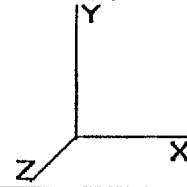
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Base Elev : 0.000 (ft)



Load Case: Ice

69.28 mph Wind with Ice

26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
127.0	LPA-185080/12CF	12	18.058	30.519	1.220	61.12	0.000	0.000	1,865.37	0.00	0.00	240.00
127.0	Low Profile Platform	1	18.058	30.519	1.000	27.32	0.000	0.000	833.77	0.00	0.00	2,100.00
137.0	TMA's	12	18.454	31.187	1.000	10.44	0.000	0.000	325.59	0.00	0.00	219.00
137.0	Powerwave 7770	6	18.454	31.187	0.727	28.48	0.000	0.000	888.32	0.00	0.00	405.78
137.0	low profile platform	1	18.454	31.187	1.000	27.32	0.000	0.000	852.03	0.00	0.00	2,100.00
147.0	TMA's	3	18.829	31.821	0.670	5.63	0.000	0.000	179.09	0.00	0.00	54.75
147.0	DR65-19-XX	3	18.829	31.821	0.670	18.55	0.000	0.000	590.35	0.00	0.00	222.00
147.0	DB848H90E	9	18.829	31.821	0.910	75.76	0.000	0.000	2,410.69	0.00	0.00	702.00
147.0	low profile platform	1	18.829	31.821	1.000	27.32	0.000	0.000	869.35	0.00	0.00	2,100.00
									8,814.57			8,143.53

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
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 Taper : 0.208754 (in/ft)

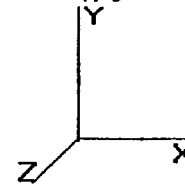
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Page: 10

Base Elev : 0.000 (ft)



Load Case: Ice

69.28 mph Wind with Ice

26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	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	272.64	1,115.88	0.00	0.00
10.00	266.77	1,091.52	0.00	0.00
15.00	260.90	1,067.16	0.00	0.00
20.00	255.03	1,042.81	0.00	0.00
25.00	249.16	1,018.45	0.00	0.00
30.00	243.29	994.09	0.00	0.00
35.00	241.44	969.73	0.00	0.00
40.00	244.63	945.38	0.00	0.00
45.00	246.59	921.02	0.00	0.00
47.17	106.67	393.34	0.00	0.00
50.00	141.30	869.20	0.00	0.00
52.51	125.38	760.28	0.00	0.00
55.00	124.57	377.65	0.00	0.00
60.00	250.99	741.25	0.00	0.00
65.00	249.68	720.42	0.00	0.00
70.00	247.74	699.59	0.00	0.00
75.00	245.25	678.75	0.00	0.00
80.00	242.26	657.92	0.00	0.00
85.00	238.80	637.08	0.00	0.00
90.00	234.91	616.25	0.00	0.00
95.00	230.63	595.41	0.00	0.00
95.83	37.75	97.42	0.00	0.00
99.92	186.37	703.83	0.00	0.00
100.0	3.75	6.46	0.00	0.00
105.0	223.91	378.29	0.00	0.00
110.0	218.63	364.50	0.00	0.00
115.0	213.03	350.71	0.00	0.00
120.0	207.15	336.92	0.00	0.00
125.0	200.99	323.13	0.00	0.00
127.0	2,777.49	2,465.78	0.00	0.00
130.0	115.70	181.22	0.00	0.00
135.0	187.90	290.35	0.00	0.00
137.0	2,138.95	2,837.45	0.00	0.00
140.0	107.53	161.55	0.00	0.00
145.0	173.86	257.57	0.00	0.00
147.0	4,116.78	3,178.31	0.00	0.00
148.5	49.67	71.71	0.00	0.00
Totals:	15,678.11	28,918.35	0.00	0.00

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
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 Taper : 0.208754 (in/ft)

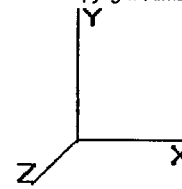
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Base Elev: 0.000 (ft)



Load Case: Ice

69.28 mph Wind with Ice

26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-15.717	-28.897	0.000	0.000	0.000	-1,796.857	0.000	0.000	0.000	0.000
5.00	-15.518	-27.739	0.000	0.000	0.000	-1,718.274	-0.082	0.000	0.082	-0.154
10.00	-15.321	-26.606	0.000	0.000	0.000	-1,640.684	-0.328	0.000	0.328	-0.311
15.00	-15.125	-25.498	0.000	0.000	0.000	-1,564.082	-0.739	0.000	0.739	-0.472
20.00	-14.930	-24.415	0.000	0.000	0.000	-1,488.459	-1.321	0.000	1.321	-0.636
25.00	-14.737	-23.356	0.000	0.000	0.000	-1,413.808	-2.076	0.000	2.076	-0.803
30.00	-14.546	-22.322	0.000	0.000	0.000	-1,340.122	-3.008	0.000	3.008	-0.974
35.00	-14.352	-21.313	0.000	0.000	0.000	-1,267.393	-4.121	0.000	4.121	-1.148
40.00	-14.151	-20.329	0.000	0.000	0.000	-1,195.633	-5.418	0.000	5.418	-1.326
45.00	-13.926	-19.383	0.000	0.000	0.000	-1,124.879	-6.904	0.000	6.904	-1.507
47.17	-13.840	-18.970	0.000	0.000	0.000	-1,094.598	-7.609	0.000	7.609	-1.589
50.00	-13.706	-18.081	0.000	0.000	0.000	-1,055.493	-8.581	0.000	8.581	-1.695
52.51	-13.586	-17.302	0.000	0.000	0.000	-1,021.123	-9.498	0.000	9.498	-1.791
55.00	-13.496	-16.892	0.000	0.000	0.000	-987.264	-10.458	0.000	10.458	-1.887
60.00	-13.281	-16.109	0.000	0.000	0.000	-919.784	-12.550	0.000	12.550	-2.104
65.00	-13.063	-15.349	0.000	0.000	0.000	-853.381	-14.870	0.000	14.870	-2.323
70.00	-12.843	-14.610	0.000	0.000	0.000	-788.068	-17.422	0.000	17.422	-2.545
75.00	-12.621	-13.894	0.000	0.000	0.000	-723.856	-20.207	0.000	20.207	-2.770
80.00	-12.398	-13.200	0.000	0.000	0.000	-660.752	-23.228	0.000	23.228	-2.995
85.00	-12.175	-12.529	0.000	0.000	0.000	-598.763	-26.485	0.000	26.485	-3.222
90.00	-11.951	-11.881	0.000	0.000	0.000	-537.892	-29.979	0.000	29.979	-3.448
95.00	-11.709	-11.275	0.000	0.000	0.000	-478.138	-33.708	0.000	33.708	-3.672
95.83	-11.687	-11.157	0.000	0.000	0.000	-468.382	-34.352	0.000	34.352	-3.710
99.92	-11.471	-10.449	0.000	0.000	0.000	-420.660	-37.603	0.000	37.603	-3.892
100.0	-11.499	-10.407	0.000	0.000	0.000	-419.703	-37.671	0.000	37.671	-3.896
105.0	-11.307	-9.980	0.000	0.000	0.000	-362.208	-41.932	0.000	41.932	-4.235
110.0	-11.114	-9.573	0.000	0.000	0.000	-305.674	-46.540	0.000	46.540	-4.560
115.0	-10.920	-9.185	0.000	0.000	0.000	-250.106	-51.477	0.000	51.477	-4.864
120.0	-10.724	-8.820	0.000	0.000	0.000	-195.509	-56.718	0.000	56.718	-5.140
125.0	-10.517	-8.488	0.000	0.000	0.000	-141.893	-62.227	0.000	62.227	-5.378
127.0	-7.530	-6.283	0.000	0.000	0.000	-120.859	-64.496	0.000	64.496	-5.463
130.0	-7.411	-6.096	0.000	0.000	0.000	-98.270	-67.961	0.000	67.961	-5.575
135.0	-7.205	-5.814	0.000	0.000	0.000	-61.214	-73.876	0.000	73.876	-5.723
137.0	-4.796	-3.201	0.000	0.000	0.000	-46.804	-76.281	0.000	76.281	-5.770
140.0	-4.675	-3.046	0.000	0.000	0.000	-32.417	-79.919	0.000	79.919	-5.824
145.0	-4.477	-2.806	0.000	0.000	0.000	-9.040	-86.042	0.000	86.042	-5.877
147.0	-0.057	-0.066	0.000	0.000	0.000	-0.085	-88.501	0.000	88.501	-5.882
148.5	-0.050	0.000	0.000	0.000	0.000	0.000	-90.346	0.000	90.346	-5.882

Pole : CT33XC590
 Location : Norfolk, CT
 Height : 148.5 (ft)
 Shape : 18 Sides
 Base Dia : 48.00 (in)
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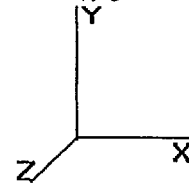
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Base Elev: 0.000 (ft)



Load Case: Ice

69.28 mph Wind with Ice

26 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.51	0.56	0.00	0.00	0.00	32.35	32.87	52.0	0.0	0.632
5.00	0.50	0.56	0.00	0.00	0.00	32.34	32.86	52.0	0.0	0.632
10.00	0.49	0.57	0.00	0.00	0.00	32.32	32.83	52.0	0.0	0.632
15.00	0.48	0.58	0.00	0.00	0.00	32.28	32.78	52.0	0.0	0.631
20.00	0.47	0.58	0.00	0.00	0.00	32.22	32.71	52.0	0.0	0.629
25.00	0.46	0.59	0.00	0.00	0.00	32.14	32.61	52.0	0.0	0.627
30.00	0.45	0.60	0.00	0.00	0.00	32.02	32.49	52.0	0.0	0.625
35.00	0.44	0.60	0.00	0.00	0.00	31.88	32.34	52.0	0.0	0.622
40.00	0.43	0.61	0.00	0.00	0.00	31.70	32.16	52.0	0.0	0.619
45.00	0.43	0.62	0.00	0.00	0.00	31.49	31.93	52.0	0.0	0.614
47.17	0.42	0.62	0.00	0.00	0.00	31.38	31.82	52.0	0.0	0.612
50.00	0.41	0.62	0.00	0.00	0.00	31.24	31.66	52.0	0.0	0.609
52.51	0.47	0.74	0.00	0.00	0.00	35.88	36.37	52.0	0.0	0.700
55.00	0.46	0.74	0.00	0.00	0.00	35.68	36.17	52.0	0.0	0.696
60.00	0.45	0.75	0.00	0.00	0.00	35.22	35.70	52.0	0.0	0.687
65.00	0.45	0.76	0.00	0.00	0.00	34.68	35.15	52.0	0.0	0.676
70.00	0.44	0.77	0.00	0.00	0.00	34.05	34.51	52.0	0.0	0.664
75.00	0.43	0.79	0.00	0.00	0.00	33.32	33.77	52.0	0.0	0.650
80.00	0.42	0.80	0.00	0.00	0.00	32.46	32.91	52.0	0.0	0.633
85.00	0.41	0.81	0.00	0.00	0.00	31.47	31.92	52.0	0.0	0.614
90.00	0.41	0.82	0.00	0.00	0.00	30.32	30.76	52.0	0.0	0.592
95.00	0.40	0.84	0.00	0.00	0.00	28.97	29.41	52.0	0.0	0.566
95.83	0.40	0.84	0.00	0.00	0.00	28.73	29.17	52.0	0.0	0.561
99.92	0.63	1.39	0.00	0.00	0.00	43.91	44.61	51.8	0.0	0.862
100.00	0.63	1.39	0.00	0.00	0.00	43.87	44.56	51.8	0.0	0.861
105.00	0.62	1.42	0.00	0.00	0.00	40.86	41.56	52.0	0.0	0.800
110.00	0.62	1.46	0.00	0.00	0.00	37.34	38.04	52.0	0.0	0.732
115.00	0.62	1.49	0.00	0.00	0.00	33.19	33.91	52.0	0.0	0.652
120.00	0.62	1.53	0.00	0.00	0.00	28.28	29.02	52.0	0.0	0.558
125.00	0.63	1.57	0.00	0.00	0.00	22.46	23.25	52.0	0.0	0.447
127.00	0.47	1.14	0.00	0.00	0.00	19.86	20.43	52.0	0.0	0.393
130.00	0.47	1.16	0.00	0.00	0.00	17.10	17.68	52.0	0.0	0.340
135.00	0.47	1.18	0.00	0.00	0.00	11.76	12.40	52.0	0.0	0.239
137.00	0.27	0.80	0.00	0.00	0.00	9.37	9.73	52.0	0.0	0.187
140.00	0.26	0.81	0.00	0.00	0.00	6.91	7.31	52.0	0.0	0.141
145.00	0.25	0.82	0.00	0.00	0.00	2.15	2.79	52.0	0.0	0.054
147.00	0.01	0.01	0.00	0.00	0.00	0.02	0.03	52.0	0.0	0.001
148.50	0.00	0.01	0.00	0.00	0.00	0.00	0.02	52.0	0.0	0.000

Pole : CT33XC590
Location : Norfolk, CT
Height : 148.5 (ft)
Shape : 18 Sides
Base Dia : 48.00 (in)
Top Dia : 18.00 (in)
Taper : 0.208754 (in/ft)

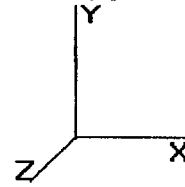
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Base Elev: 0.000 (ft)



Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	19.2	0.00	23.39	0.00	0.00	2139.00	51.43	51.8	99.92	0.993
Ice	15.7	0.00	28.90	0.00	0.00	1796.86	44.61	51.8	99.92	0.862