

December 22, 2016

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

Re: **EM-VER-126-160901 – Cellco Partnership d/b/a Verizon Wireless
Lane Street, Shelton, Connecticut**

Dear Ms. Bachman:

On September 26, 2016, the Siting Council acknowledged receipt of the Cellco Partnership d/b/a Verizon Wireless (“Cellco”) notice of intent to modify its existing telecommunications facility off Lane Street in Shelton, Connecticut. The modifications involved the replacement of certain antennas and the installation of new remote radio heads at the above-referenced facility.

As a condition of the acknowledgement, Cellco was required to provide the Council with a copy of a Structural Analysis Report referencing Rev. G of the structural standards. The updated Structural Analysis Report is attached for your records.

In addition, I can also now report that construction activity associated with the above-referenced telecommunications facility has now been completed.

If you have any questions please do not hesitate to contact me.

Sincerely,



Kenneth C. Baldwin

Attachment
Copy to:
Tim Parks



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 120.6 ft Monopole
ATC Site Name : Brownson Country Club CT,CT
ATC Site Number : 415438
Engineering Number : OAA665125_C3_02
Proposed Carrier : Verizon
Carrier Site Name : Huntington CT
Carrier Site Number : N/A
Site Location : 15 Soundview Avenue
Shelton, CT 06484-2844
41.295000,-73.137222
County : Fairfield
Date : October 21, 2016
Max Usage : 58%
Result : Pass

Prepared By:
Timothy Kassakatis

Reviewed By:

Reviewed by:
Scott Wirgau, PE
Structural Team Leader



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cosign

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 120.6 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EEl Project #16219, dated March 1, 2012
Foundation Drawing	Mapping by TPS Report #TPS-FL-CT-438, dated September 10, 2015
Geotechnical Report	FDH Velocitel Project #15BXNW1600, dated August 21, 2015

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.20$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
118.0	118.0	6	Decibel DB846F65ZAXY	T-Arms	(17) 1 5/8" Coax	Verizon
		3	Antel BXA-70063-6CF-EDIN-2			
		1	VZW Unused Reserve: 16,064 sq in			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
118.0	118.0	6	48" x 12" Panel	-	-	Verizon

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
118.0	118.0	3	Alcatel-Lucent RRH2X60-AWS	T-Arms	(1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		1	RFS DB-T1-6Z-8AB-OZ			
		6	Commscope SBNHH-1D65B			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	51%	Pass
Shaft	50%	Pass
Base Plate	58%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	5,443.4	16%
Axial (Kips)	74.7	2%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
118.0	Alcatel-Lucent RRH2X60-AWS	Verizon	0.646	0.527
	Alcatel-Lucent RRH2x60 700			
	RFS DB-T1-6Z-8AB-0Z			
	Commscope SBNHH-1D65B			

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



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:

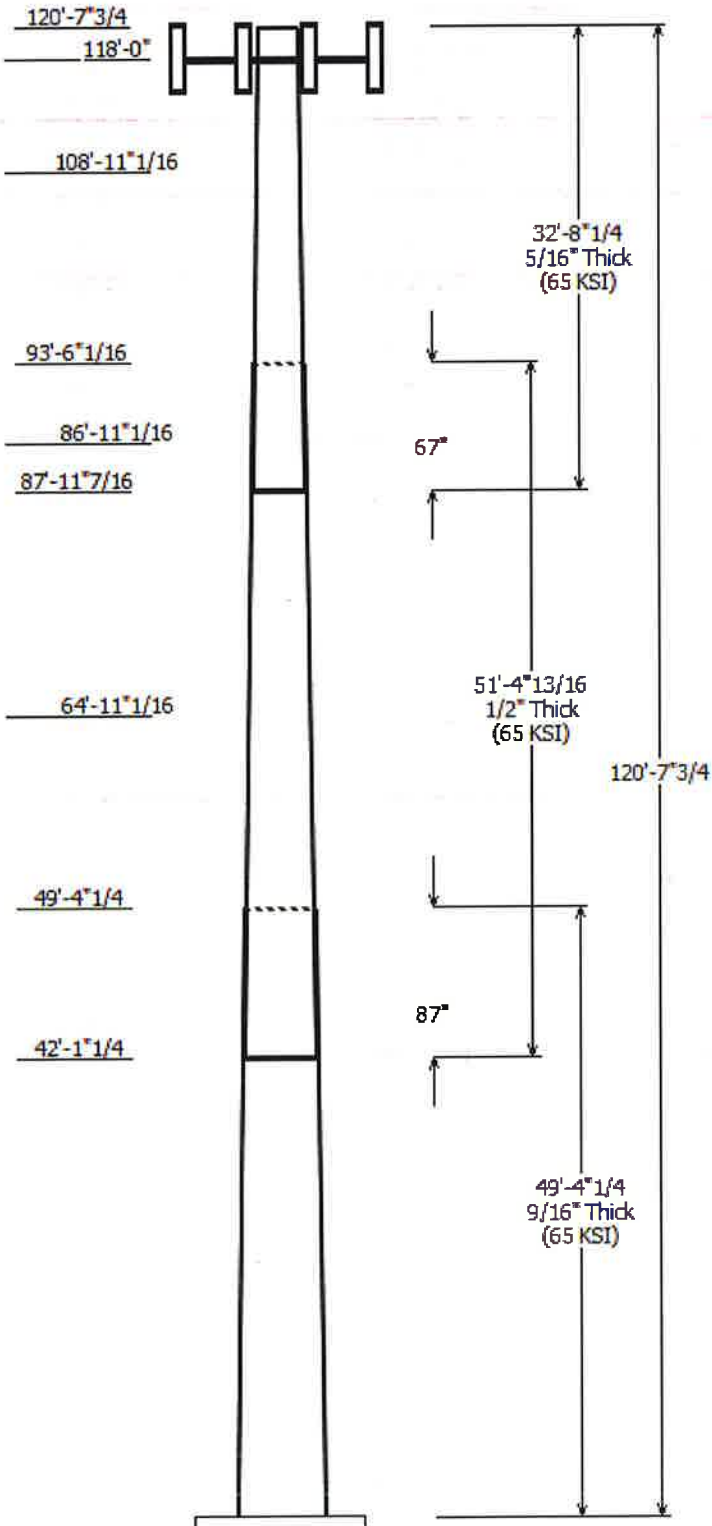
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC 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 that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. 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.

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

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Job Information	
Pole :	415438
Code:	ANSI/TIA-222-G
Description :	
Client :	VERIZON WIRELESS
Struct Class :	II
Location :	Brownson Country Club CT,CT
Shape :	18 Sides
Exposure :	B
Height :	120.65 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.310034in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Steel Taper Grade (ksi)
		Across Top	Flats Bottom				
1	49.354	50.69	66.00	0.563		0.000	0.310000 65
2	51.401	38.01	53.94	0.500	Slip Joint	86.969	0.310000 65
3	32.690	30.22	40.35	0.313	Slip Joint	66.625	0.310000 65

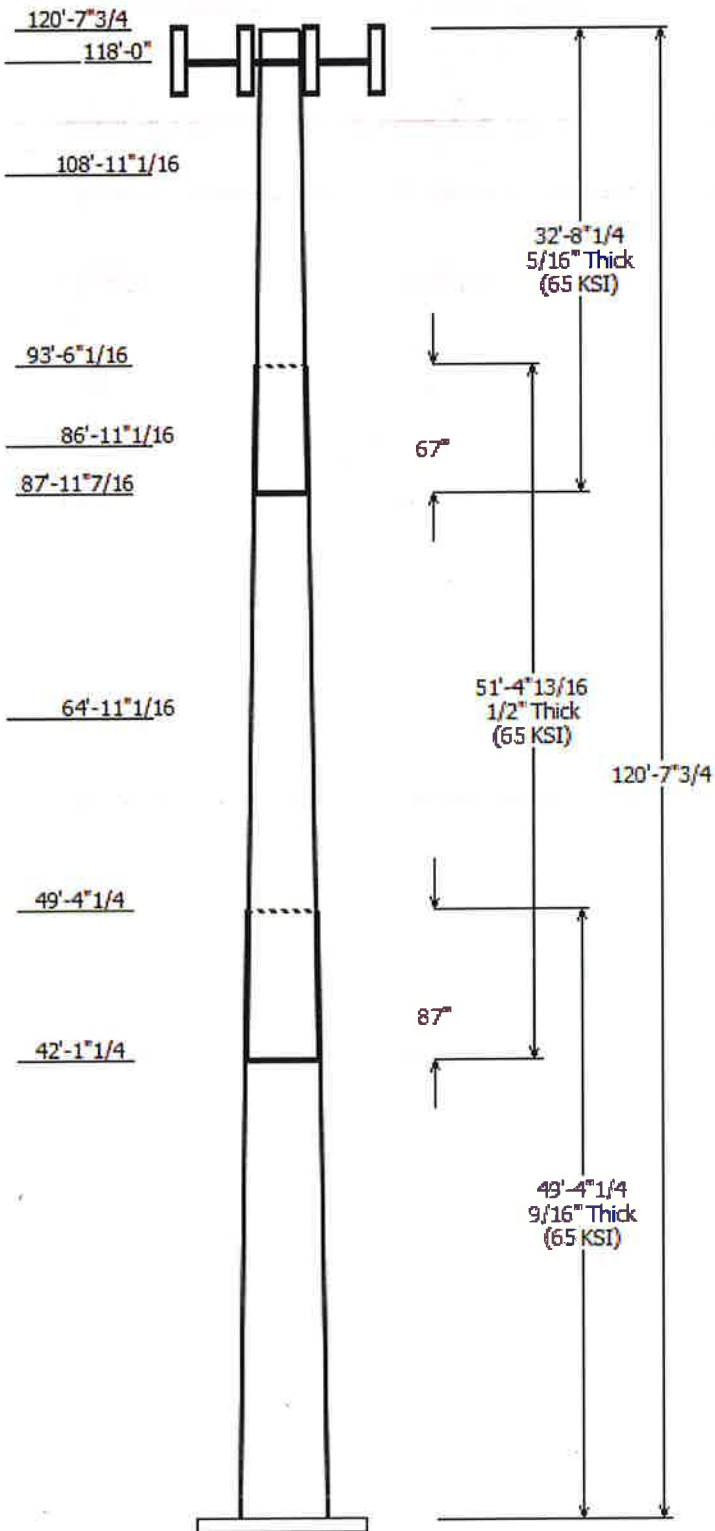
Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
118.000	118.000	1	VZW Unused Reserve: 16,064
118.000	118.000	6	Commscope SBNHH-1D65B
118.000	118.000	1	RFS DB-T1-6Z-8AB-0Z
118.000	118.000	3	Alcatel-Lucent RRH2x60 700
118.000	118.000	3	Alcatel-Lucent RRH2X60-AWS
118.000	118.000	3	Amphenol Antel BX A-70063-
118.000	118.000	6	Decibel DB846F65ZAXY
118.000	118.000	3	Flat T-Arm
108.920	108.920	1	Branch 3
86.920	86.920	1	Branch 2
64.920	64.920	1	Branch 1

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
0.000	118.0	1 5/8" Coax	No
0.000	118.0	1 5/8" Hybriflex	No

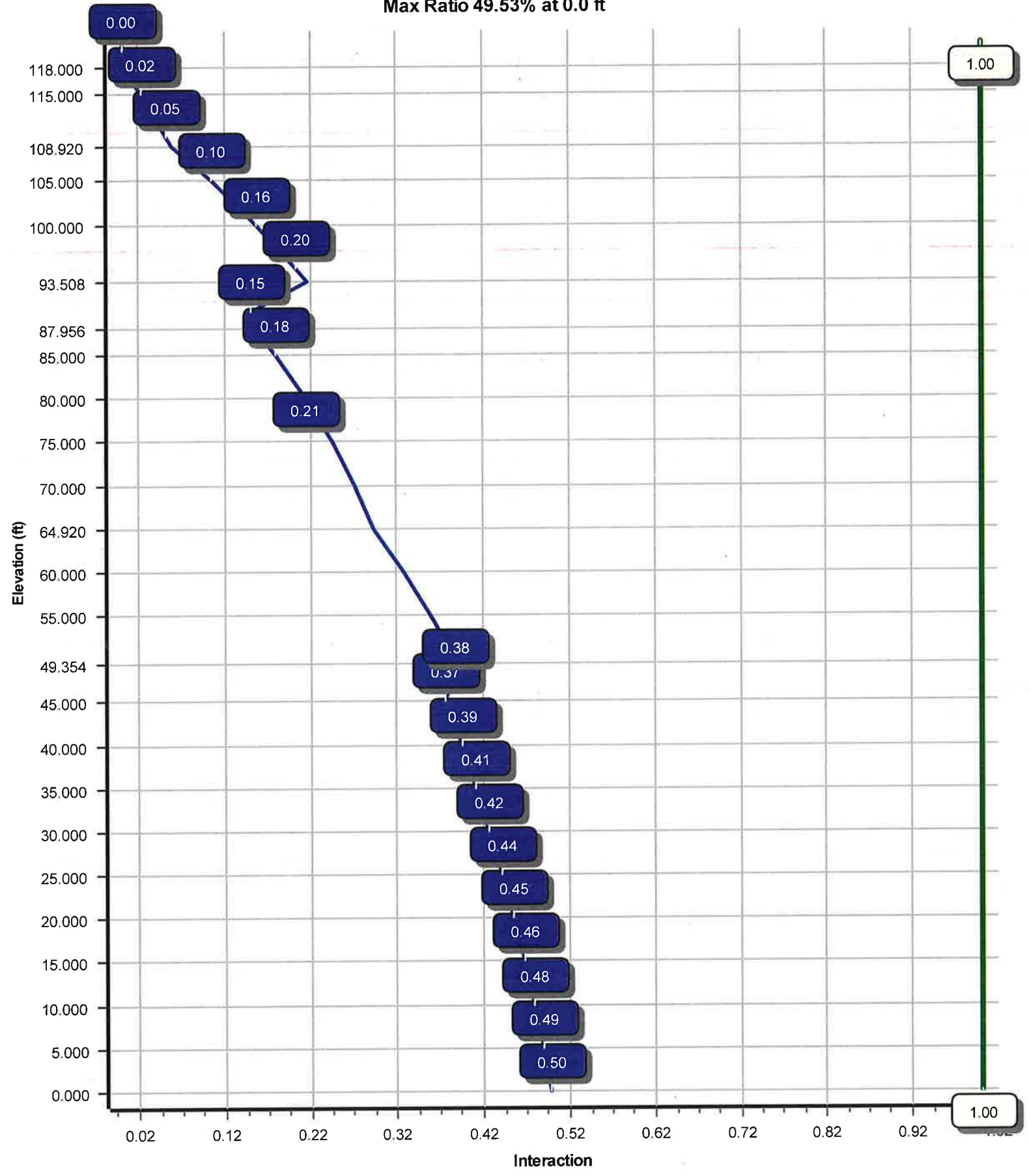
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	5443.44	63.30	51.96
0.9D + 1.6W	5430.73	63.29	38.95
1.2D + 1.0Di + 1.0Wi	1360.25	16.44	74.67
(1.2 + 0.2Sds) * DL + E ELFM	335.94	4.11	51.34
(1.2 + 0.2Sds) * DL + E EMAM	290.98	3.21	51.34
(0.9 - 0.2Sds) * DL + E ELFM	335.02	4.11	35.42
(0.9 - 0.2Sds) * DL + E EMAM	290.11	3.21	35.42
1.0D + 1.0W	1299.91	15.13	43.35

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



Load Case : 1.2D + 1.6W
Max Ratio 49.53% at 0.0 ft



Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	120.
Code:	ANSI/TIA-222-G	Base Diameter (in):	66.00
Shape:	18 Sides	Top Diameter (in):	30.22
Pole Type:	Taper	Taper (in/ft) :	0.310
Pole Manufacturer:	EEl		

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.50 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.94		
T _L (sec):	6	p:	1.3
S _s :	0.200	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.213	S _{d1} :	0.102
		C _s :	0.073
		C _s Max:	0.073
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom				Top				Taper (in/ft)				
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)		Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio
1-18	49.354	0.5625	65		0.00	17,326	66.00	0.00	116.83	63204.4	19.28	117.33	50.69	49.35	89.51	28426.1	14.48	90.13	0.310033
2-18	51.401	0.5000	65	Slip	86.97	12,623	53.94	42.11	84.81	30608.9	17.61	107.89	38.00	93.51	59.53	10581.3	11.99	76.02	0.310033
3-18	32.690	0.3125	65	Slip	66.63	3,859	40.35	87.96	39.72	8046.1	21.36	129.14	30.22	120.65	29.66	3352.5	15.64	96.71	0.310033
Shaft Weight						33,808													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
118.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	135.59	2.758	0.67	0.000	0.000
118.00	Alcatel-Lucent RRH2X60-	3	44.00	1.880	0.67	111.09	2.457	0.67	0.000	0.000
118.00	Amphenol Antel BXA-70063-	3	17.00	7.570	0.77	161.59	10.265	0.77	0.000	0.000
118.00	Commscope SBNHH-1D65B	6	40.60	8.200	0.83	238.61	9.478	0.83	0.000	0.000
118.00	Decibel DB846F65ZAXY	6	21.00	7.030	0.94	212.53	8.248	0.94	0.000	0.000
118.00	Flat T-Arm	3	250.00	12.900	0.67	454.20	20.890	0.67	0.000	0.000
118.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	183.52	5.650	0.67	0.000	0.000
118.00	VZW Unused Reserve:	1	1733.30	111.65	1.00	1,973.43	6.189	1.00	0.000	0.000
108.92	Branch 3	1	1125.00	290.50	1.00	1,884.23	486.551	1.00	0.000	0.000
86.92	Branch 2	1	1575.00	406.70	1.00	2,614.94	675.237	1.00	0.000	0.000
64.92	Branch 1	1	1800.00	464.80	1.00	2,951.15	762.053	1.00	0.000	0.000
Totals		29	7750.00			14,901.52			Number of Loadings : 11	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	118.00	17	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	118.00	1	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT Engineering Number:OAA665125_C3_02

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Customer: VERIZON WIRELESS

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	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5625	66.000	116.826	63,204.4	19.28	117.33	78.7	1886.	0.0	0.0
5.00		0.5625	64.450	114.059	58,818.1	18.79	114.58	79.3	1797.	0.0	1,964.1
10.00		0.5625	62.900	111.291	54,639.7	18.31	111.82	79.9	1711.	0.0	1,917.0
15.00		0.5625	61.350	108.524	50,664.0	17.82	109.07	80.4	1626.	0.0	1,870.0
20.00		0.5625	59.799	105.756	46,885.9	17.33	106.31	81.0	1544.	0.0	1,822.9
25.00		0.5625	58.249	102.989	43,300.5	16.85	103.55	81.6	1464.	0.0	1,775.8
30.00		0.5625	56.699	100.221	39,902.8	16.36	100.80	82.2	1386.	0.0	1,728.7
35.00		0.5625	55.149	97.454	36,687.6	15.88	98.04	82.6	1310.	0.0	1,681.6
40.00		0.5625	53.599	94.686	33,649.9	15.39	95.29	82.6	1236.	0.0	1,634.5
42.11	Bot - Section 2	0.5625	52.946	93.520	32,421.9	15.19	94.13	82.6	1206.	0.0	674.6
45.00		0.5625	52.049	91.919	30,784.7	14.91	92.53	82.6	1165.	0.0	1,740.8
49.35	Top - Section 1	0.5000	51.699	81.249	26,908.4	16.82	103.40	81.6	1025.	0.0	2,563.7
50.00		0.5000	51.498	80.931	26,593.9	16.75	103.00	81.7	1017.	0.0	178.2
55.00		0.5000	49.948	78.471	24,241.8	16.20	99.90	82.3	955.9	0.0	1,356.0
60.00		0.5000	48.398	76.011	22,032.7	15.66	96.80	82.6	896.6	0.0	1,314.2
64.92		0.5000	46.873	73.591	19,994.0	15.12	93.75	82.6	840.2	0.0	1,252.3
65.00		0.5000	46.848	73.551	19,962.0	15.11	93.70	82.6	839.3	0.0	20.0
70.00		0.5000	45.298	71.091	18,025.2	14.56	90.60	82.6	783.8	0.0	1,230.5
75.00		0.5000	43.748	68.631	16,218.0	14.02	87.50	82.6	730.2	0.0	1,188.6
80.00		0.5000	42.197	66.171	14,535.8	13.47	84.39	82.6	678.5	0.0	1,146.8
85.00		0.5000	40.647	63.711	12,974.2	12.92	81.29	82.6	628.7	0.0	1,104.9
86.92		0.5000	40.052	62.767	12,405.6	12.71	80.10	82.6	610.1	0.0	413.2
87.96	Bot - Section 3	0.5000	39.731	62.257	12,105.9	12.60	79.46	82.6	600.1	0.0	220.3
90.00		0.5000	39.097	61.251	11,528.6	12.38	78.19	82.6	580.8	0.0	703.7
93.51	Top - Section 2	0.3125	38.634	38.009	7,052.4	20.39	123.63	77.4	359.5	0.0	1,180.9
95.00		0.3125	38.172	37.550	6,800.1	20.13	122.15	77.7	350.9	0.0	191.8
100.0		0.3125	36.622	36.013	5,998.5	19.25	117.19	78.8	322.6	0.0	625.8
105.0		0.3125	35.072	34.475	5,262.6	18.38	112.23	79.8	295.5	0.0	599.6
108.9		0.3125	33.856	33.270	4,729.6	17.69	108.34	80.6	275.2	0.0	451.8
110.0		0.3125	33.521	32.938	4,589.4	17.50	107.27	80.8	269.7	0.0	121.7
115.0		0.3125	31.971	31.400	3,976.2	16.63	102.31	81.8	245.0	0.0	547.3
118.0		0.3125	31.041	30.478	3,636.0	16.10	99.33	82.5	230.7	0.0	315.8
120.0		0.3125	30.421	29.863	3,420.3	15.75	97.35	82.6	221.4	0.0	205.3
120.6		0.3125	30.221	29.664	3,352.5	15.64	96.71	82.6	218.5	0.0	65.4
											33,807.9

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number:OAA665125_C3_02

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Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

97 mph with No Ice

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		252.8	0.0					0.0	0.0	252.8	0.0	0.0	0.0
5.00		499.7	2,357.0					0.0	91.4	499.7	2,448.4	0.0	0.0
10.00		487.7	2,300.4					0.0	91.4	487.7	2,391.9	0.0	0.0
15.00		475.6	2,243.9					0.0	91.4	475.6	2,335.4	0.0	0.0
20.00		463.6	2,187.4					0.0	91.4	463.6	2,278.9	0.0	0.0
25.00		451.6	2,130.9					0.0	91.4	451.6	2,222.4	0.0	0.0
30.00		444.8	2,074.4					0.0	91.4	444.8	2,165.9	0.0	0.0
35.00		446.8	2,017.9					0.0	91.4	446.8	2,109.4	0.0	0.0
40.00		320.1	1,961.4					0.0	91.4	320.1	2,052.9	0.0	0.0
42.11	Bot - Section 2	228.9	809.5					0.0	38.5	228.9	848.1	0.0	0.0
45.00		335.0	2,089.0					0.0	52.9	335.0	2,141.9	0.0	0.0
49.35	Top - Section 1	231.3	3,076.5					0.0	79.6	231.3	3,156.1	0.0	0.0
50.00		260.8	213.8					0.0	11.8	260.8	225.7	0.0	0.0
55.00		460.7	1,627.2					0.0	91.4	460.7	1,718.7	0.0	0.0
60.00		454.0	1,577.0					0.0	91.4	454.0	1,668.5	0.0	0.0
64.92		227.9	1,502.8					0.0	90.0	227.9	1,592.7	0.0	0.0
65.00		229.0	24.0					0.0	1.5	229.0	25.5	0.0	0.0
70.00		447.6	1,476.6					0.0	91.4	447.6	1,568.0	0.0	0.0
75.00		440.9	1,426.3					0.0	91.4	440.9	1,517.8	0.0	0.0
80.00		433.2	1,376.1					0.0	91.4	433.2	1,467.6	0.0	0.0
85.00		295.8	1,325.9					0.0	91.4	295.8	1,417.3	0.0	0.0
86.92		124.7	495.8					0.0	35.1	124.7	530.9	0.0	0.0
87.96	Bot - Section 3	130.2	264.4					0.0	18.9	130.2	283.3	0.0	0.0
90.00		233.4	844.4					0.0	37.4	233.4	881.8	0.0	0.0
93.51	Top - Section 2	208.4	1,417.1					0.0	64.2	208.4	1,481.3	0.0	0.0
95.00		264.9	230.2					0.0	27.3	264.9	257.5	0.0	0.0
100.00		400.8	751.0					0.0	91.4	400.8	842.4	0.0	0.0
105.00		348.3	719.6					0.0	91.4	348.3	811.0	0.0	0.0
108.92		191.6	542.2					0.0	71.7	191.6	613.9	0.0	0.0
110.00		226.2	146.0					0.0	19.8	226.2	165.7	0.0	0.0
115.00		293.4	656.8					0.0	91.4	293.4	748.2	0.0	0.0
118.00	Appertunance(s)	178.8	379.0	9,145.3	0.0	0.0	3,900.0	0.0	54.9	9,324.1	4,333.9	0.0	0.0
120.00		93.3	246.4					0.0	0.0	93.3	246.4	0.0	0.0
120.65		22.6	78.5					0.0	0.0	22.6	78.5	0.0	0.0
Totals:										19,749.5	46,627.5	0.00	0.00

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

10/21/2016 4:06:16 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

97 mph with No Ice

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-51.96	-63.30	0.00	-5,443.44	0.00	5,443.44	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.495
5.00	-49.38	-62.90	0.00	-5,126.93	0.00	5,126.93	8,140.09	4,070.05	21,348.8	10,690.3	0.07	-0.12	0.486
10.00	-46.86	-62.51	0.00	-4,812.42	0.00	4,812.42	7,999.83	3,999.91	20,467.4	10,248.9	0.26	-0.24	0.476
15.00	-44.39	-62.11	0.00	-4,499.89	0.00	4,499.89	7,856.71	3,928.36	19,596.9	9,813.06	0.57	-0.36	0.464
20.00	-41.99	-61.72	0.00	-4,189.33	0.00	4,189.33	7,710.75	3,855.38	18,737.9	9,382.91	1.02	-0.48	0.452
25.00	-39.64	-61.33	0.00	-3,880.73	0.00	3,880.73	7,561.94	3,780.97	17,890.9	8,958.76	1.59	-0.60	0.439
30.00	-37.35	-60.94	0.00	-3,574.06	0.00	3,574.06	7,410.29	3,705.14	17,056.4	8,540.90	2.29	-0.73	0.424
35.00	-35.12	-60.54	0.00	-3,269.34	0.00	3,269.34	7,240.31	3,620.16	16,200.4	8,112.27	3.12	-0.85	0.408
40.00	-32.98	-60.24	0.00	-2,966.63	0.00	2,966.63	7,034.70	3,517.35	15,288.8	7,655.78	4.08	-0.97	0.392
42.11	-32.07	-60.03	0.00	-2,839.72	0.00	2,839.72	6,948.06	3,474.03	14,912.6	7,467.39	4.52	-1.02	0.385
45.00	-29.84	-59.70	0.00	-2,666.04	0.00	2,666.04	6,829.09	3,414.54	14,403.6	7,212.50	5.16	-1.09	0.374
49.35	-26.63	-59.43	0.00	-2,406.10	0.00	2,406.10	5,968.11	2,984.05	12,531.7	6,275.19	6.20	-1.19	0.388
50.00	-26.34	-59.20	0.00	-2,367.71	0.00	2,367.71	5,950.82	2,975.41	12,446.1	6,232.30	6.37	-1.21	0.385
55.00	-24.52	-58.75	0.00	-2,071.72	0.00	2,071.72	5,815.34	2,907.67	11,789.4	5,903.50	7.70	-1.33	0.356
60.00	-22.75	-58.30	0.00	-1,777.97	0.00	1,777.97	5,647.27	2,823.63	11,086.2	5,551.36	9.15	-1.44	0.325
64.92	-19.39	-41.65	0.00	-1,491.14	0.00	1,491.14	5,467.43	2,733.71	10,387.8	5,201.64	10.70	-1.54	0.290
65.00	-19.34	-41.43	0.00	-1,487.81	0.00	1,487.81	5,464.50	2,732.25	10,376.6	5,196.05	10.72	-1.55	0.290
70.00	-17.71	-40.97	0.00	-1,280.64	0.00	1,280.64	5,281.73	2,640.87	9,690.58	4,852.49	12.40	-1.65	0.268
75.00	-16.15	-40.51	0.00	-1,075.79	0.00	1,075.79	5,098.97	2,549.48	9,027.95	4,520.69	14.17	-1.74	0.241
80.00	-14.64	-40.05	0.00	-873.23	0.00	873.23	4,916.20	2,458.10	8,388.79	4,200.63	16.04	-1.82	0.211
85.00	-13.19	-39.72	0.00	-672.97	0.00	672.97	4,733.43	2,366.72	7,773.10	3,892.33	17.99	-1.90	0.176
86.92	-11.29	-23.98	0.00	-596.70	0.00	596.70	4,663.25	2,331.62	7,542.90	3,777.06	18.76	-1.93	0.161
87.96	-11.00	-23.84	0.00	-571.86	0.00	571.86	4,625.39	2,312.69	7,420.17	3,715.60	19.18	-1.94	0.156
90.00	-10.12	-23.59	0.00	-523.12	0.00	523.12	4,550.66	2,275.33	7,180.87	3,595.77	20.02	-1.97	0.148
93.51	-8.63	-23.33	0.00	-440.39	0.00	440.39	2,648.40	1,324.20	4,169.11	2,087.65	21.48	-2.01	0.215
95.00	-8.36	-23.06	0.00	-405.57	0.00	405.57	2,626.81	1,313.40	4,084.79	2,045.43	22.11	-2.02	0.202
100.00	-7.51	-22.64	0.00	-290.25	0.00	290.25	2,552.59	1,276.30	3,805.53	1,905.59	24.27	-2.10	0.156
105.00	-6.70	-22.27	0.00	-177.05	0.00	177.05	2,475.53	1,237.77	3,531.73	1,768.49	26.50	-2.15	0.103
108.92	-5.19	-10.16	0.00	-89.75	0.00	89.75	2,413.13	1,206.56	3,321.26	1,663.10	28.28	-2.18	0.056
110.00	-5.03	-9.93	0.00	-78.78	0.00	78.78	2,395.63	1,197.81	3,263.95	1,634.40	28.78	-2.19	0.050
115.00	-4.29	-9.61	0.00	-29.11	0.00	29.11	2,312.87	1,156.44	3,002.74	1,503.60	31.08	-2.20	0.021
118.00	-0.32	-0.13	0.00	-0.27	0.00	0.27	2,261.86	1,130.93	2,849.39	1,426.81	32.47	-2.21	0.000
120.00	-0.08	-0.03	0.00	-0.02	0.00	0.02	2,218.66	1,109.33	2,738.00	1,371.04	33.39	-2.21	0.000
120.65	0.00	-0.02	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	33.69	-2.21	0.000

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number:OAA665125_C3_02

10/21/2016 4:06:16 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		252.8	0.0					0.0	0.0	252.8	0.0	0.0	0.0
5.00		499.7	1,767.7					0.0	68.6	499.7	1,836.3	0.0	0.0
10.00		487.7	1,725.3					0.0	68.6	487.7	1,793.9	0.0	0.0
15.00		475.6	1,683.0					0.0	68.6	475.6	1,751.5	0.0	0.0
20.00		463.6	1,640.6					0.0	68.6	463.6	1,709.2	0.0	0.0
25.00		451.6	1,598.2					0.0	68.6	451.6	1,666.8	0.0	0.0
30.00		444.8	1,555.8					0.0	68.6	444.8	1,624.4	0.0	0.0
35.00		446.8	1,513.4					0.0	68.6	446.8	1,582.0	0.0	0.0
40.00		320.1	1,471.1					0.0	68.6	320.1	1,539.6	0.0	0.0
42.11	Bot - Section 2	228.9	607.1					0.0	28.9	228.9	636.0	0.0	0.0
45.00		335.0	1,566.7					0.0	39.7	335.0	1,606.4	0.0	0.0
49.35	Top - Section 1	231.3	2,307.3					0.0	59.7	231.3	2,367.1	0.0	0.0
50.00		260.8	160.4					0.0	8.9	260.8	169.2	0.0	0.0
55.00		460.7	1,220.4					0.0	68.6	460.7	1,289.0	0.0	0.0
60.00		454.0	1,182.8					0.0	68.6	454.0	1,251.3	0.0	0.0
64.92		227.9	1,127.1					0.0	67.5	227.9	1,194.5	0.0	0.0
65.00		229.0	18.0					0.0	1.1	229.0	19.1	0.0	0.0
70.00		447.6	1,107.4					0.0	68.6	447.6	1,176.0	0.0	0.0
75.00		440.9	1,069.8					0.0	68.6	440.9	1,138.3	0.0	0.0
80.00		433.2	1,032.1					0.0	68.6	433.2	1,100.7	0.0	0.0
85.00		295.8	994.4					0.0	68.6	295.8	1,063.0	0.0	0.0
86.92		124.7	371.8					0.0	26.3	124.7	398.2	0.0	0.0
87.96	Bot - Section 3	130.2	198.3					0.0	14.2	130.2	212.5	0.0	0.0
90.00		233.4	633.3					0.0	28.0	233.4	661.3	0.0	0.0
93.51	Top - Section 2	208.4	1,062.8					0.0	48.1	208.4	1,111.0	0.0	0.0
95.00		264.9	172.6					0.0	20.5	264.9	193.1	0.0	0.0
100.00		400.8	563.2					0.0	68.6	400.8	631.8	0.0	0.0
105.00		348.3	539.7					0.0	68.6	348.3	608.3	0.0	0.0
108.92		191.6	406.6					0.0	53.8	191.6	460.4	0.0	0.0
110.00		226.2	109.5					0.0	14.8	226.2	124.3	0.0	0.0
115.00		293.4	492.6					0.0	68.6	293.4	561.2	0.0	0.0
118.00	Appertunance(s)	178.8	284.3	9,145.3	0.0	0.0	2,925.0	0.0	41.1	9,324.1	3,250.4	0.0	0.0
120.00		93.3	184.8					0.0	0.0	93.3	184.8	0.0	0.0
120.65		22.6	58.9					0.0	0.0	22.6	58.9	0.0	0.0
Totals:										19,749.5	34,970.6	0.00	0.00

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

10/21/2016 4:06:16 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.95	-63.29	0.00	-5,430.73	0.00	5,430.73	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.493
5.00	-36.99	-62.86	0.00	-5,114.30	0.00	5,114.30	8,140.09	4,070.05	21,348.8	10,690.3	0.06	-0.12	0.483
10.00	-35.06	-62.44	0.00	-4,799.98	0.00	4,799.98	7,999.83	3,999.91	20,467.4	10,248.9	0.25	-0.24	0.473
15.00	-33.18	-62.03	0.00	-4,487.77	0.00	4,487.77	7,856.71	3,928.36	19,596.9	9,813.06	0.57	-0.36	0.462
20.00	-31.34	-61.62	0.00	-4,177.63	0.00	4,177.63	7,710.75	3,855.38	18,737.9	9,382.91	1.01	-0.48	0.450
25.00	-29.55	-61.22	0.00	-3,869.53	0.00	3,869.53	7,561.94	3,780.97	17,890.9	8,958.76	1.59	-0.60	0.436
30.00	-27.80	-60.81	0.00	-3,563.45	0.00	3,563.45	7,410.29	3,705.14	17,056.4	8,540.90	2.28	-0.73	0.421
35.00	-26.10	-60.40	0.00	-3,259.40	0.00	3,259.40	7,240.31	3,620.16	16,200.4	8,112.27	3.11	-0.85	0.406
40.00	-24.48	-60.09	0.00	-2,957.41	0.00	2,957.41	7,034.70	3,517.35	15,288.8	7,655.78	4.06	-0.97	0.390
42.11	-23.78	-59.88	0.00	-2,830.82	0.00	2,830.82	6,948.06	3,474.03	14,912.6	7,467.39	4.50	-1.02	0.383
45.00	-22.09	-59.54	0.00	-2,657.58	0.00	2,657.58	6,829.09	3,414.54	14,403.6	7,212.50	5.14	-1.09	0.372
49.35	-19.67	-59.29	0.00	-2,398.32	0.00	2,398.32	5,968.11	2,984.05	12,531.7	6,275.19	6.19	-1.19	0.386
50.00	-19.44	-59.04	0.00	-2,360.03	0.00	2,360.03	5,950.82	2,975.41	12,446.1	6,232.30	6.35	-1.21	0.382
55.00	-18.04	-58.59	0.00	-2,064.81	0.00	2,064.81	5,815.34	2,907.67	11,789.4	5,903.50	7.68	-1.32	0.353
60.00	-16.69	-58.14	0.00	-1,771.85	0.00	1,771.85	5,647.27	2,823.63	11,086.2	5,551.36	9.13	-1.44	0.323
64.92	-14.27	-41.51	0.00	-1,485.81	0.00	1,485.81	5,467.43	2,733.71	10,387.8	5,201.64	10.67	-1.54	0.288
65.00	-14.22	-41.29	0.00	-1,482.49	0.00	1,482.49	5,464.50	2,732.25	10,376.6	5,196.05	10.69	-1.54	0.288
70.00	-12.99	-40.83	0.00	-1,276.04	0.00	1,276.04	5,281.73	2,640.87	9,690.58	4,852.49	12.36	-1.64	0.266
75.00	-11.80	-40.37	0.00	-1,071.89	0.00	1,071.89	5,098.97	2,549.48	9,027.95	4,520.69	14.13	-1.73	0.240
80.00	-10.66	-39.92	0.00	-870.02	0.00	870.02	4,916.20	2,458.10	8,388.79	4,200.63	15.99	-1.82	0.210
85.00	-9.57	-39.60	0.00	-670.41	0.00	670.41	4,733.43	2,366.72	7,773.10	3,892.33	17.94	-1.89	0.175
86.92	-8.27	-23.88	0.00	-594.37	0.00	594.37	4,663.25	2,331.62	7,542.90	3,777.06	18.71	-1.92	0.159
87.96	-8.06	-23.74	0.00	-569.64	0.00	569.64	4,625.39	2,312.69	7,420.17	3,715.60	19.13	-1.93	0.155
90.00	-7.39	-23.49	0.00	-521.11	0.00	521.11	4,550.66	2,275.33	7,180.87	3,595.77	19.96	-1.96	0.147
93.51	-6.27	-23.25	0.00	-438.71	0.00	438.71	2,648.40	1,324.20	4,169.11	2,087.65	21.42	-2.00	0.213
95.00	-6.07	-22.98	0.00	-404.02	0.00	404.02	2,626.81	1,313.40	4,084.79	2,045.43	22.05	-2.02	0.200
100.00	-5.43	-22.56	0.00	-289.12	0.00	289.12	2,552.59	1,276.30	3,805.53	1,905.59	24.20	-2.09	0.154
105.00	-4.82	-22.20	0.00	-176.30	0.00	176.30	2,475.53	1,237.77	3,531.73	1,768.49	26.42	-2.15	0.102
108.92	-3.80	-10.11	0.00	-89.29	0.00	89.29	2,413.13	1,206.56	3,321.26	1,663.10	28.20	-2.17	0.055
110.00	-3.68	-9.88	0.00	-78.37	0.00	78.37	2,395.63	1,197.81	3,263.95	1,634.40	28.69	-2.18	0.050
115.00	-3.13	-9.57	0.00	-28.97	0.00	28.97	2,312.87	1,156.44	3,002.74	1,503.60	30.99	-2.20	0.021
118.00	-0.24	-0.13	0.00	-0.27	0.00	0.27	2,261.86	1,130.93	2,849.39	1,426.81	32.37	-2.20	0.000
120.00	-0.06	-0.02	0.00	-0.02	0.00	0.02	2,218.66	1,109.33	2,738.00	1,371.04	33.29	-2.20	0.000
120.65	0.00	-0.02	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	33.59	-2.20	0.000

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

10/21/2016 4:06:16 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

16 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)		
0.00		80.2	0.0					0.0	0.0	80.2	0.0	0.0	0.0
5.00		158.9	2,833.3					0.0	91.4	158.9	2,924.7	0.0	0.0
10.00		155.7	2,820.6					0.0	91.4	155.7	2,912.0	0.0	0.0
15.00		152.3	2,778.7					0.0	91.4	152.3	2,870.2	0.0	0.0
20.00		148.8	2,727.2					0.0	91.4	148.8	2,818.7	0.0	0.0
25.00		145.3	2,670.8					0.0	91.4	145.3	2,762.2	0.0	0.0
30.00		143.4	2,611.2					0.0	91.4	143.4	2,702.6	0.0	0.0
35.00		144.4	2,549.4					0.0	91.4	144.4	2,640.8	0.0	0.0
40.00		103.6	2,486.0					0.0	91.4	103.6	2,577.4	0.0	0.0
42.11	Bot - Section 2	74.1	1,030.0					0.0	38.5	74.1	1,068.5	0.0	0.0
45.00		108.6	2,394.1					0.0	52.9	108.6	2,447.1	0.0	0.0
49.35	Top - Section 1	75.1	3,528.0					0.0	79.6	75.1	3,607.7	0.0	0.0
50.00		84.8	280.9					0.0	11.8	84.8	292.7	0.0	0.0
55.00		150.0	2,134.3					0.0	91.4	150.0	2,225.7	0.0	0.0
60.00		148.2	2,073.4					0.0	91.4	148.2	2,164.9	0.0	0.0
64.92		74.5	1,980.4					0.0	90.0	74.5	2,070.4	0.0	0.0
65.00		75.0	31.8					0.0	1.5	75.0	33.3	0.0	0.0
70.00		146.9	1,950.0					0.0	91.4	146.9	2,041.4	0.0	0.0
75.00		145.1	1,887.5					0.0	91.4	145.1	1,978.9	0.0	0.0
80.00		143.0	1,824.6					0.0	91.4	143.0	1,916.0	0.0	0.0
85.00		97.8	1,761.3					0.0	91.4	97.8	1,852.8	0.0	0.0
86.92		41.3	661.3					0.0	35.1	41.3	696.5	0.0	0.0
87.96	Bot - Section 3	43.2	353.1					0.0	18.9	43.2	372.1	0.0	0.0
90.00		77.5	1,019.9					0.0	37.4	77.5	1,057.3	0.0	0.0
93.51	Top - Section 2	69.3	1,711.3					0.0	64.2	69.3	1,775.4	0.0	0.0
95.00		88.3	354.2					0.0	27.3	88.3	381.5	0.0	0.0
100.00		133.9	1,151.8					0.0	91.4	133.9	1,243.3	0.0	0.0
105.00		116.8	1,106.2					0.0	91.4	116.8	1,197.7	0.0	0.0
108.92		64.4	836.6					0.0	71.7	64.4	908.3	0.0	0.0
110.00		76.4	226.5					0.0	19.8	76.4	246.3	0.0	0.0
115.00		99.3	1,014.3					0.0	91.4	99.3	1,105.7	0.0	0.0
118.00	Appertunance(s)	60.7	588.3	996.4	0.0	0.0	7,781.7	0.0	54.9	1,057.1	8,424.9	0.0	0.0
120.00		31.7	383.6					0.0	0.0	31.7	383.6	0.0	0.0
120.65		7.7	122.6					0.0	0.0	7.7	122.6	0.0	0.0
								Totals:		4,462.78	61,823.1	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

16 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total	Rotation	Ratio
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	(deg)	
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)		
0.00	-74.67	-16.44	0.00	-1,360.25	0.00	1,360.25	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.131
5.00	-71.74	-16.31	0.00	-1,278.07	0.00	1,278.07	8,140.09	4,070.05	21,348.8	10,690.3	0.02	-0.03	0.128
10.00	-68.82	-16.19	0.00	-1,196.50	0.00	1,196.50	7,999.83	3,999.91	20,467.4	10,248.9	0.06	-0.06	0.125
15.00	-65.94	-16.07	0.00	-1,115.54	0.00	1,115.54	7,856.71	3,928.36	19,596.9	9,813.06	0.14	-0.09	0.122
20.00	-63.11	-15.95	0.00	-1,035.18	0.00	1,035.18	7,710.75	3,855.38	18,737.9	9,382.91	0.25	-0.12	0.119
25.00	-60.34	-15.83	0.00	-955.43	0.00	955.43	7,561.94	3,780.97	17,890.9	8,958.76	0.40	-0.15	0.115
30.00	-57.63	-15.71	0.00	-876.28	0.00	876.28	7,410.29	3,705.14	17,056.4	8,540.90	0.57	-0.18	0.110
35.00	-54.98	-15.58	0.00	-797.74	0.00	797.74	7,240.31	3,620.16	16,200.4	8,112.27	0.77	-0.21	0.106
40.00	-52.40	-15.49	0.00	-719.82	0.00	719.82	7,034.70	3,517.35	15,288.8	7,655.78	1.01	-0.24	0.101
42.11	-51.33	-15.42	0.00	-687.19	0.00	687.19	6,948.06	3,474.03	14,912.6	7,467.39	1.12	-0.25	0.099
45.00	-48.87	-15.32	0.00	-642.56	0.00	642.56	6,829.09	3,414.54	14,403.6	7,212.50	1.28	-0.27	0.096
49.35	-45.26	-15.24	0.00	-575.85	0.00	575.85	5,968.11	2,984.05	12,531.7	6,275.19	1.53	-0.29	0.099
50.00	-44.97	-15.17	0.00	-566.01	0.00	566.01	5,950.82	2,975.41	12,446.1	6,232.30	1.57	-0.30	0.098
55.00	-42.73	-15.03	0.00	-490.17	0.00	490.17	5,815.34	2,907.67	11,789.4	5,903.50	1.90	-0.33	0.090
60.00	-40.56	-14.88	0.00	-415.05	0.00	415.05	5,647.27	2,823.63	11,086.2	5,551.36	2.26	-0.35	0.082
64.92	-33.41	-10.32	0.00	-341.83	0.00	341.83	5,467.43	2,733.71	10,387.8	5,201.64	2.63	-0.38	0.072
65.00	-33.37	-10.25	0.00	-341.01	0.00	341.01	5,464.50	2,732.25	10,376.6	5,196.05	2.64	-0.38	0.072
70.00	-31.33	-10.10	0.00	-289.76	0.00	289.76	5,281.73	2,640.87	9,690.58	4,852.49	3.05	-0.40	0.066
75.00	-29.35	-9.95	0.00	-239.27	0.00	239.27	5,098.97	2,549.48	9,027.95	4,520.69	3.48	-0.42	0.059
80.00	-27.43	-9.80	0.00	-189.52	0.00	189.52	4,916.20	2,458.10	8,388.79	4,200.63	3.93	-0.44	0.051
85.00	-25.58	-9.69	0.00	-140.51	0.00	140.51	4,733.43	2,366.72	7,773.10	3,892.33	4.40	-0.45	0.042
86.92	-20.41	-5.33	0.00	-121.90	0.00	121.90	4,663.25	2,331.62	7,542.90	3,777.06	4.58	-0.46	0.037
87.96	-20.04	-5.28	0.00	-116.38	0.00	116.38	4,625.39	2,312.69	7,420.17	3,715.60	4.68	-0.46	0.036
90.00	-18.98	-5.20	0.00	-105.59	0.00	105.59	4,550.66	2,275.33	7,180.87	3,595.77	4.88	-0.47	0.034
93.51	-17.21	-5.11	0.00	-87.36	0.00	87.36	2,648.40	1,324.20	4,169.11	2,087.65	5.23	-0.48	0.048
95.00	-16.82	-5.03	0.00	-79.73	0.00	79.73	2,626.81	1,313.40	4,084.79	2,045.43	5.38	-0.48	0.045
100.00	-15.58	-4.88	0.00	-54.60	0.00	54.60	2,552.59	1,276.30	3,805.53	1,905.59	5.89	-0.49	0.035
105.00	-14.38	-4.76	0.00	-30.17	0.00	30.17	2,475.53	1,237.77	3,531.73	1,768.49	6.41	-0.50	0.023
108.92	-10.27	-1.36	0.00	-11.52	0.00	11.52	2,413.13	1,206.56	3,321.26	1,663.10	6.83	-0.51	0.011
110.00	-10.03	-1.29	0.00	-10.05	0.00	10.05	2,395.63	1,197.81	3,263.95	1,634.40	6.94	-0.51	0.010
115.00	-8.92	-1.18	0.00	-3.62	0.00	3.62	2,312.87	1,156.44	3,002.74	1,503.60	7.48	-0.51	0.006
118.00	-0.51	-0.04	0.00	-0.09	0.00	0.09	2,261.86	1,130.93	2,849.39	1,426.81	7.80	-0.51	0.000
120.00	-0.12	-0.01	0.00	-0.01	0.00	0.01	2,218.66	1,109.33	2,738.00	1,371.04	8.01	-0.51	0.000
120.65	0.00	-0.01	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	8.08	-0.51	0.000

Load Case: 1.0D + 1.0W

Serviceability 60 mph

16 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		60.5	0.0					0.0	0.0	60.5	0.0	0.0	0.0
5.00		119.5	1,964.1					0.0	76.2	119.5	2,040.3	0.0	0.0
10.00		116.6	1,917.0					0.0	76.2	116.6	1,993.2	0.0	0.0
15.00		113.7	1,870.0					0.0	76.2	113.7	1,946.2	0.0	0.0
20.00		110.9	1,822.9					0.0	76.2	110.9	1,899.1	0.0	0.0
25.00		108.0	1,775.8					0.0	76.2	108.0	1,852.0	0.0	0.0
30.00		106.4	1,728.7					0.0	76.2	106.4	1,804.9	0.0	0.0
35.00		106.9	1,681.6					0.0	76.2	106.9	1,757.8	0.0	0.0
40.00		76.5	1,634.5					0.0	76.2	76.5	1,710.7	0.0	0.0
42.11	Bot - Section 2	54.7	674.6					0.0	32.1	54.7	706.7	0.0	0.0
45.00		80.1	1,740.8					0.0	44.1	80.1	1,784.9	0.0	0.0
49.35	Top - Section 1	55.3	2,563.7					0.0	66.4	55.3	2,630.1	0.0	0.0
50.00		62.4	178.2					0.0	9.8	62.4	188.1	0.0	0.0
55.00		110.2	1,356.0					0.0	76.2	110.2	1,432.2	0.0	0.0
60.00		108.6	1,314.2					0.0	76.2	108.6	1,390.4	0.0	0.0
64.92		54.5	1,252.3					0.0	75.0	54.5	1,327.3	0.0	0.0
65.00		54.8	20.0					0.0	1.2	54.8	21.2	0.0	0.0
70.00		107.0	1,230.5					0.0	76.2	107.0	1,306.7	0.0	0.0
75.00		105.4	1,188.6					0.0	76.2	105.4	1,264.8	0.0	0.0
80.00		103.6	1,146.8					0.0	76.2	103.6	1,223.0	0.0	0.0
85.00		70.7	1,104.9					0.0	76.2	70.7	1,181.1	0.0	0.0
86.92		29.8	413.2					0.0	29.3	29.8	442.4	0.0	0.0
87.96	Bot - Section 3	31.1	220.3					0.0	15.8	31.1	236.1	0.0	0.0
90.00		55.8	703.7					0.0	31.2	55.8	734.8	0.0	0.0
93.51	Top - Section 2	49.8	1,180.9					0.0	53.5	49.8	1,234.4	0.0	0.0
95.00		63.3	191.8					0.0	22.7	63.3	214.6	0.0	0.0
100.00		95.8	625.8					0.0	76.2	95.8	702.0	0.0	0.0
105.00		83.3	599.6					0.0	76.2	83.3	675.8	0.0	0.0
108.92		45.8	451.8					0.0	59.7	45.8	511.6	0.0	0.0
110.00		54.1	121.7					0.0	16.5	54.1	138.1	0.0	0.0
115.00		70.2	547.3					0.0	76.2	70.2	623.5	0.0	0.0
118.00	Appertunance(s)	42.7	315.8	2,186.9	0.0	0.0	3,250.0	0.0	45.7	2,229.7	3,611.6	0.0	0.0
120.00		22.3	205.3					0.0	0.0	22.3	205.3	0.0	0.0
120.65		5.4	65.4					0.0	0.0	5.4	65.4	0.0	0.0
Totals:										4,722.77	38,856.2	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

16 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.35	-15.13	0.00	-1,299.91	0.00	1,299.91	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.122
5.00	-41.30	-15.04	0.00	-1,224.24	0.00	1,224.24	8,140.09	4,070.05	21,348.8	10,690.3	0.02	-0.03	0.120
10.00	-39.30	-14.94	0.00	-1,149.07	0.00	1,149.07	7,999.83	3,999.91	20,467.4	10,248.9	0.06	-0.06	0.117
15.00	-37.35	-14.84	0.00	-1,074.38	0.00	1,074.38	7,856.71	3,928.36	19,596.9	9,813.06	0.14	-0.09	0.114
20.00	-35.44	-14.74	0.00	-1,000.18	0.00	1,000.18	7,710.75	3,855.38	18,737.9	9,382.91	0.24	-0.12	0.111
25.00	-33.58	-14.65	0.00	-926.47	0.00	926.47	7,561.94	3,780.97	17,890.9	8,958.76	0.38	-0.14	0.108
30.00	-31.77	-14.55	0.00	-853.22	0.00	853.22	7,410.29	3,705.14	17,056.4	8,540.90	0.55	-0.17	0.104
35.00	-30.01	-14.46	0.00	-780.46	0.00	780.46	7,240.31	3,620.16	16,200.4	8,112.27	0.74	-0.20	0.100
40.00	-28.29	-14.38	0.00	-708.18	0.00	708.18	7,034.70	3,517.35	15,288.8	7,655.78	0.97	-0.23	0.097
42.11	-27.58	-14.33	0.00	-677.88	0.00	677.88	6,948.06	3,474.03	14,912.6	7,467.39	1.08	-0.24	0.095
45.00	-25.79	-14.25	0.00	-636.41	0.00	636.41	6,829.09	3,414.54	14,403.6	7,212.50	1.23	-0.26	0.092
49.35	-23.16	-14.19	0.00	-574.35	0.00	574.35	5,968.11	2,984.05	12,531.7	6,275.19	1.48	-0.29	0.095
50.00	-22.97	-14.13	0.00	-565.19	0.00	565.19	5,950.82	2,975.41	12,446.1	6,232.30	1.52	-0.29	0.095
55.00	-21.53	-14.03	0.00	-494.51	0.00	494.51	5,815.34	2,907.67	11,789.4	5,903.50	1.84	-0.32	0.087
60.00	-20.13	-13.92	0.00	-424.38	0.00	424.38	5,647.27	2,823.63	11,086.2	5,551.36	2.19	-0.34	0.080
64.92	-17.03	-9.94	0.00	-355.89	0.00	355.89	5,467.43	2,733.71	10,387.8	5,201.64	2.55	-0.37	0.072
65.00	-17.01	-9.89	0.00	-355.10	0.00	355.10	5,464.50	2,732.25	10,376.6	5,196.05	2.56	-0.37	0.071
70.00	-15.70	-9.78	0.00	-305.66	0.00	305.66	5,281.73	2,640.87	9,690.58	4,852.49	2.96	-0.39	0.066
75.00	-14.43	-9.67	0.00	-256.76	0.00	256.76	5,098.97	2,549.48	9,027.95	4,520.69	3.38	-0.41	0.060
80.00	-13.20	-9.56	0.00	-208.42	0.00	208.42	4,916.20	2,458.10	8,388.79	4,200.63	3.83	-0.44	0.052
85.00	-12.02	-9.48	0.00	-160.61	0.00	160.61	4,733.43	2,366.72	7,773.10	3,892.33	4.30	-0.45	0.044
86.92	-10.03	-5.72	0.00	-142.40	0.00	142.40	4,663.25	2,331.62	7,542.90	3,777.06	4.48	-0.46	0.040
87.96	-9.80	-5.69	0.00	-136.47	0.00	136.47	4,625.39	2,312.69	7,420.17	3,715.60	4.58	-0.46	0.039
90.00	-9.06	-5.63	0.00	-124.85	0.00	124.85	4,550.66	2,275.33	7,180.87	3,595.77	4.78	-0.47	0.037
93.51	-7.83	-5.57	0.00	-105.10	0.00	105.10	2,648.40	1,324.20	4,169.11	2,087.65	5.13	-0.48	0.053
95.00	-7.61	-5.51	0.00	-96.80	0.00	96.80	2,626.81	1,313.40	4,084.79	2,045.43	5.28	-0.48	0.050
100.00	-6.91	-5.41	0.00	-69.27	0.00	69.27	2,552.59	1,276.30	3,805.53	1,905.59	5.80	-0.50	0.039
105.00	-6.23	-5.32	0.00	-42.24	0.00	42.24	2,475.53	1,237.77	3,531.73	1,768.49	6.33	-0.51	0.026
108.92	-4.62	-2.42	0.00	-21.40	0.00	21.40	2,413.13	1,206.56	3,321.26	1,663.10	6.75	-0.52	0.015
110.00	-4.48	-2.37	0.00	-18.79	0.00	18.79	2,395.63	1,197.81	3,263.95	1,634.40	6.87	-0.52	0.013
115.00	-3.86	-2.29	0.00	-6.94	0.00	6.94	2,312.87	1,156.44	3,002.74	1,503.60	7.42	-0.53	0.006
118.00	-0.27	-0.03	0.00	-0.06	0.00	0.06	2,261.86	1,130.93	2,849.39	1,426.81	7.75	-0.53	0.000
120.00	-0.07	-0.01	0.00	0.00	0.00	0.00	2,218.66	1,109.33	2,738.00	1,371.04	7.97	-0.53	0.000
120.65	0.00	-0.01	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	8.04	-0.53	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_g):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.07
Upper Limit C_s	0.07
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	0.94
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.22
Total Unfactored Dead Load:	43.36 k
Seismic Base Shear (E):	4.11 k

Load Case (1.2 + 0.2Sds) * DL + E ELM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.32	65	22	0.003	14	81
32	119.00	205	69	0.011	44	255
31	116.50	362	119	0.019	76	449
30	112.50	624	197	0.031	126	775
29	109.46	138	42	0.007	27	172
28	106.96	512	152	0.024	97	636
27	102.50	676	190	0.030	122	840
26	97.50	702	186	0.029	119	872
25	94.25	215	55	0.009	35	267
24	91.75	1,234	304	0.047	194	1,534
23	88.98	735	174	0.027	112	913
22	87.44	236	55	0.009	35	293
21	85.96	442	101	0.016	64	550
20	82.50	1,181	255	0.040	163	1,468
19	77.50	1,223	245	0.038	157	1,520
18	72.50	1,265	234	0.036	150	1,572
17	67.50	1,307	221	0.034	142	1,624
16	64.96	21	3	0.001	2	26
15	62.46	1,327	204	0.032	131	1,649
14	57.50	1,390	194	0.030	124	1,728
13	52.50	1,432	179	0.028	114	1,780
12	49.68	188	22	0.003	14	234
11	47.18	2,630	288	0.045	184	3,268

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

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Customer: VERIZON WIRELESS

10	43.55	1,785	177	0.028	113	2,218
9	41.05	707	65	0.010	42	878
8	37.50	1,711	142	0.022	91	2,126
7	32.50	1,758	122	0.019	78	2,184
6	27.50	1,805	102	0.016	66	2,243
5	22.50	1,852	82	0.013	53	2,301
4	17.50	1,899	62	0.010	40	2,360
3	12.50	1,946	42	0.007	27	2,418
2	7.50	1,993	23	0.004	15	2,477
1	2.50	2,040	6	0.001	4	2,535
Alcatel-Lucent RRH2X	118.00	132	44	0.007	28	164
Alcatel-Lucent RRH2x	118.00	170	57	0.009	36	211
RFS DB-T1-6Z-8AB-0Z	118.00	44	15	0.002	9	55
Decibel DB846F65ZAXY	118.00	126	42	0.007	27	157
Amphenol Antel BXA-7	118.00	51	17	0.003	11	63
Commscope SBNHH-1D65	118.00	244	81	0.013	52	303
Flat T-Arm	118.00	750	251	0.039	161	932
VZW Unused Reserve:	118.00	1,733	580	0.090	371	2,154
Branch 3	108.92	1,125	341	0.053	218	1,398
Branch 2	86.92	1,575	363	0.057	232	1,957
Branch 1	64.92	1,800	291	0.045	186	2,237
		43,356	6,418	1.000	4,108	53,877

Load Case (0.9 - 0.2Sds) * DL + E ELFM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.32	65	22	0.003	14	56
32	119.00	205	69	0.011	44	176
31	116.50	362	119	0.019	76	310
30	112.50	624	197	0.031	126	535
29	109.46	138	42	0.007	27	118
28	106.96	512	152	0.024	97	439
27	102.50	676	190	0.030	122	579
26	97.50	702	186	0.029	119	602
25	94.25	215	55	0.009	35	184
24	91.75	1,234	304	0.047	194	1,058
23	88.98	735	174	0.027	112	630
22	87.44	236	55	0.009	35	202
21	85.96	442	101	0.016	64	379
20	82.50	1,181	255	0.040	163	1,013
19	77.50	1,223	245	0.038	157	1,048
18	72.50	1,265	234	0.036	150	1,084
17	67.50	1,307	221	0.034	142	1,120
16	64.96	21	3	0.001	2	18
15	62.46	1,327	204	0.032	131	1,138
14	57.50	1,390	194	0.030	124	1,192
13	52.50	1,432	179	0.028	114	1,228
12	49.68	188	22	0.003	14	161
11	47.18	2,630	288	0.045	184	2,255
10	43.55	1,785	177	0.028	113	1,530
9	41.05	707	65	0.010	42	606
8	37.50	1,711	142	0.022	91	1,467
7	32.50	1,758	122	0.019	78	1,507
6	27.50	1,805	102	0.016	66	1,547
5	22.50	1,852	82	0.013	53	1,588
4	17.50	1,899	62	0.010	40	1,628
3	12.50	1,946	42	0.007	27	1,669
2	7.50	1,993	23	0.004	15	1,709
1	2.50	2,040	6	0.001	4	1,749

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT Engineering Number:OAA665125_C3_02

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Customer: VERIZON WIRELESS

Alcatel-Lucent RRH2X	118.00	132	44	0.007	28	113
Alcatel-Lucent RRH2x	118.00	170	57	0.009	36	146
RFS DB-T1-6Z-8AB-0Z	118.00	44	15	0.002	9	38
Decibel DB846F65ZAXY	118.00	126	42	0.007	27	108
Amphenol Antel BXA-7	118.00	51	17	0.003	11	44
Commscope SBNHH-1D65	118.00	244	81	0.013	52	209
Flat T-Arm	118.00	750	251	0.039	161	643
VZW Unused Reserve:	118.00	1,733	580	0.090	371	1,486
Branch 3	108.92	1,125	341	0.053	218	964
Branch 2	86.92	1,575	363	0.057	232	1,350
Branch 1	64.92	1,800	291	0.045	186	1,543
		43,356	6,418	1.000	4,108	37,171

Load Case (1.2 + 0.2Sds) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-51.34	-4.11	0.00	-335.94	0.00	335.94	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.036
5.00	-48.86	-4.10	0.00	-315.41	0.00	315.41	8,140.09	4,070.05	21,348.8	10,690.3	0.00	-0.01	0.036
10.00	-46.45	-4.08	0.00	-294.92	0.00	294.92	7,999.83	3,999.91	20,467.4	10,248.9	0.02	-0.01	0.035
15.00	-44.08	-4.04	0.00	-274.54	0.00	274.54	7,856.71	3,928.36	19,596.9	9,813.06	0.04	-0.02	0.034
20.00	-41.78	-3.99	0.00	-254.34	0.00	254.34	7,710.75	3,855.38	18,737.9	9,382.91	0.06	-0.03	0.033
25.00	-39.54	-3.93	0.00	-234.38	0.00	234.38	7,561.94	3,780.97	17,890.9	8,958.76	0.10	-0.04	0.031
30.00	-37.35	-3.86	0.00	-214.72	0.00	214.72	7,410.29	3,705.14	17,056.4	8,540.90	0.14	-0.04	0.030
35.00	-35.23	-3.77	0.00	-195.44	0.00	195.44	7,240.31	3,620.16	16,200.4	8,112.27	0.19	-0.05	0.029
40.00	-34.35	-3.73	0.00	-176.60	0.00	176.60	7,034.70	3,517.35	15,288.8	7,655.78	0.25	-0.06	0.028
42.11	-32.13	-3.61	0.00	-168.74	0.00	168.74	6,948.06	3,474.03	14,912.6	7,467.39	0.28	-0.06	0.027
45.00	-28.86	-3.43	0.00	-158.29	0.00	158.29	6,829.09	3,414.54	14,403.6	7,212.50	0.31	-0.07	0.026
49.35	-28.63	-3.42	0.00	-143.35	0.00	143.35	5,968.11	2,984.05	12,531.7	6,275.19	0.38	-0.07	0.028
50.00	-26.85	-3.30	0.00	-141.15	0.00	141.15	5,950.82	2,975.41	12,446.1	6,232.30	0.39	-0.07	0.027
55.00	-25.12	-3.18	0.00	-124.64	0.00	124.64	5,815.34	2,907.67	11,789.4	5,903.50	0.47	-0.08	0.025
60.00	-23.47	-3.05	0.00	-108.74	0.00	108.74	5,647.27	2,823.63	11,086.2	5,551.36	0.56	-0.09	0.024
64.92	-21.21	-2.86	0.00	-93.74	0.00	93.74	5,467.43	2,733.71	10,387.8	5,201.64	0.65	-0.09	0.022
65.00	-19.59	-2.71	0.00	-93.51	0.00	93.51	5,464.50	2,732.25	10,376.6	5,196.05	0.65	-0.09	0.022
70.00	-18.01	-2.56	0.00	-79.94	0.00	79.94	5,281.73	2,640.87	9,690.58	4,852.49	0.75	-0.10	0.020
75.00	-16.49	-2.41	0.00	-67.12	0.00	67.12	5,098.97	2,549.48	9,027.95	4,520.69	0.86	-0.11	0.018
80.00	-15.03	-2.24	0.00	-55.08	0.00	55.08	4,916.20	2,458.10	8,388.79	4,200.63	0.97	-0.11	0.016
85.00	-14.48	-2.18	0.00	-43.87	0.00	43.87	4,733.43	2,366.72	7,773.10	3,892.33	1.09	-0.12	0.014
86.92	-12.23	-1.91	0.00	-39.69	0.00	39.69	4,663.25	2,331.62	7,542.90	3,777.06	1.14	-0.12	0.013
87.96	-11.31	-1.79	0.00	-37.72	0.00	37.72	4,625.39	2,312.69	7,420.17	3,715.60	1.16	-0.12	0.013
90.00	-9.78	-1.60	0.00	-34.06	0.00	34.06	4,550.66	2,275.33	7,180.87	3,595.77	1.22	-0.12	0.012
93.51	-9.51	-1.56	0.00	-28.46	0.00	28.46	2,648.40	1,324.20	4,169.11	2,087.65	1.31	-0.12	0.017
95.00	-8.64	-1.44	0.00	-26.13	0.00	26.13	2,626.81	1,313.40	4,084.79	2,045.43	1.34	-0.12	0.016
100.00	-7.80	-1.32	0.00	-18.94	0.00	18.94	2,552.59	1,276.30	3,805.53	1,905.59	1.48	-0.13	0.013
105.00	-7.17	-1.22	0.00	-12.35	0.00	12.35	2,475.53	1,237.77	3,531.73	1,768.49	1.61	-0.13	0.010
108.92	-5.60	-0.97	0.00	-7.58	0.00	7.58	2,413.13	1,206.56	3,321.26	1,663.10	1.72	-0.13	0.007
110.00	-4.82	-0.84	0.00	-6.53	0.00	6.53	2,395.63	1,197.81	3,263.95	1,634.40	1.75	-0.13	0.006
115.00	-4.37	-0.76	0.00	-2.32	0.00	2.32	2,312.87	1,156.44	3,002.74	1,503.60	1.90	-0.14	0.003
118.00	-0.08	-0.01	0.00	-0.03	0.00	0.03	2,261.86	1,130.93	2,849.39	1,426.81	1.98	-0.14	0.000
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.66	1,109.33	2,738.00	1,371.04	2.04	-0.14	0.000
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	2.06	-0.14	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-35.42	-4.11	0.00	-335.02	0.00	335.02	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.034
5.00	-33.71	-4.09	0.00	-314.49	0.00	314.49	8,140.09	4,070.05	21,348.8	10,690.3	0.00	-0.01	0.034
10.00	-32.04	-4.07	0.00	-294.02	0.00	294.02	7,999.83	3,999.91	20,467.4	10,248.9	0.02	-0.01	0.033
15.00	-30.41	-4.03	0.00	-273.67	0.00	273.67	7,856.71	3,928.36	19,596.9	9,813.06	0.04	-0.02	0.032
20.00	-28.83	-3.99	0.00	-253.49	0.00	253.49	7,710.75	3,855.38	18,737.9	9,382.91	0.06	-0.03	0.031
25.00	-27.28	-3.92	0.00	-233.57	0.00	233.57	7,561.94	3,780.97	17,890.9	8,958.76	0.10	-0.04	0.030
30.00	-25.77	-3.85	0.00	-213.96	0.00	213.96	7,410.29	3,705.14	17,056.4	8,540.90	0.14	-0.04	0.029
35.00	-24.30	-3.76	0.00	-194.72	0.00	194.72	7,240.31	3,620.16	16,200.4	8,112.27	0.19	-0.05	0.027
40.00	-23.70	-3.72	0.00	-175.94	0.00	175.94	7,034.70	3,517.35	15,288.8	7,655.78	0.25	-0.06	0.026
42.11	-22.17	-3.60	0.00	-168.11	0.00	168.11	6,948.06	3,474.03	14,912.6	7,467.39	0.27	-0.06	0.026
45.00	-19.91	-3.42	0.00	-157.68	0.00	157.68	6,829.09	3,414.54	14,403.6	7,212.50	0.31	-0.07	0.025
49.35	-19.75	-3.41	0.00	-142.79	0.00	142.79	5,968.11	2,984.05	12,531.7	6,275.19	0.38	-0.07	0.026
50.00	-18.52	-3.29	0.00	-140.59	0.00	140.59	5,950.82	2,975.41	12,446.1	6,232.30	0.39	-0.07	0.026
55.00	-17.33	-3.17	0.00	-124.14	0.00	124.14	5,815.34	2,907.67	11,789.4	5,903.50	0.47	-0.08	0.024
60.00	-16.19	-3.04	0.00	-108.30	0.00	108.30	5,647.27	2,823.63	11,086.2	5,551.36	0.55	-0.09	0.022
64.92	-14.63	-2.85	0.00	-93.36	0.00	93.36	5,467.43	2,733.71	10,387.8	5,201.64	0.65	-0.09	0.021
65.00	-13.51	-2.70	0.00	-93.13	0.00	93.13	5,464.50	2,732.25	10,376.6	5,196.05	0.65	-0.09	0.020
70.00	-12.43	-2.55	0.00	-79.61	0.00	79.61	5,281.73	2,640.87	9,690.58	4,852.49	0.75	-0.10	0.019
75.00	-11.38	-2.40	0.00	-66.84	0.00	66.84	5,098.97	2,549.48	9,027.95	4,520.69	0.86	-0.11	0.017
80.00	-10.37	-2.23	0.00	-54.85	0.00	54.85	4,916.20	2,458.10	8,388.79	4,200.63	0.97	-0.11	0.015
85.00	-9.99	-2.17	0.00	-43.69	0.00	43.69	4,733.43	2,366.72	7,773.10	3,892.33	1.09	-0.12	0.013
86.92	-8.43	-1.90	0.00	-39.53	0.00	39.53	4,663.25	2,331.62	7,542.90	3,777.06	1.14	-0.12	0.012
87.96	-7.80	-1.79	0.00	-37.56	0.00	37.56	4,625.39	2,312.69	7,420.17	3,715.60	1.16	-0.12	0.012
90.00	-6.75	-1.59	0.00	-33.91	0.00	33.91	4,550.66	2,275.33	7,180.87	3,595.77	1.21	-0.12	0.011
93.51	-6.56	-1.55	0.00	-28.34	0.00	28.34	2,648.40	1,324.20	4,169.11	2,087.65	1.30	-0.12	0.016
95.00	-5.96	-1.43	0.00	-26.02	0.00	26.02	2,626.81	1,313.40	4,084.79	2,045.43	1.34	-0.12	0.015
100.00	-5.38	-1.31	0.00	-18.86	0.00	18.86	2,552.59	1,276.30	3,805.53	1,905.59	1.47	-0.13	0.012
105.00	-4.94	-1.21	0.00	-12.30	0.00	12.30	2,475.53	1,237.77	3,531.73	1,768.49	1.61	-0.13	0.009
108.92	-3.86	-0.97	0.00	-7.55	0.00	7.55	2,413.13	1,206.56	3,321.26	1,663.10	1.72	-0.13	0.006
110.00	-3.33	-0.84	0.00	-6.50	0.00	6.50	2,395.63	1,197.81	3,263.95	1,634.40	1.75	-0.13	0.005
115.00	-3.02	-0.76	0.00	-2.31	0.00	2.31	2,312.87	1,156.44	3,002.74	1,503.60	1.89	-0.14	0.003
118.00	-0.06	-0.01	0.00	-0.03	0.00	0.03	2,261.86	1,130.93	2,849.39	1,426.81	1.97	-0.14	0.000
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.66	1,109.33	2,738.00	1,371.04	2.03	-0.14	0.000
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	2.05	-0.14	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	0.94
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
33	120.32	65	1.880	1.927	1.121	0.439	25	81
32	119.00	205	1.839	1.721	1.045	0.411	73	255
31	116.50	362	1.762	1.373	0.914	0.361	113	449
30	112.50	624	1.643	0.919	0.731	0.289	156	775
29	109.46	138	1.556	0.648	0.612	0.241	29	172
28	106.96	512	1.486	0.466	0.526	0.206	91	636
27	102.50	676	1.364	0.220	0.396	0.152	89	840
26	97.50	702	1.234	0.040	0.281	0.105	64	872
25	94.25	215	1.154	-0.035	0.222	0.082	15	267
24	91.75	1,234	1.093	-0.074	0.183	0.068	73	1,534
23	88.98	735	1.028	-0.102	0.146	0.056	36	913
22	87.44	236	0.993	-0.112	0.128	0.051	10	293
21	85.96	442	0.959	-0.118	0.112	0.047	18	550
20	82.50	1,181	0.884	-0.121	0.081	0.040	41	1,468
19	77.50	1,223	0.780	-0.108	0.048	0.037	39	1,520
18	72.50	1,265	0.683	-0.081	0.027	0.039	43	1,572
17	67.50	1,307	0.592	-0.050	0.014	0.043	48	1,624
16	64.96	21	0.548	-0.034	0.010	0.045	1	26
15	62.46	1,327	0.507	-0.019	0.007	0.047	54	1,649
14	57.50	1,390	0.429	0.009	0.006	0.050	60	1,728
13	52.50	1,432	0.358	0.031	0.008	0.051	63	1,780
12	49.68	188	0.320	0.040	0.011	0.051	8	234
11	47.18	2,630	0.289	0.048	0.013	0.050	114	3,268
10	43.55	1,785	0.246	0.056	0.018	0.049	75	2,218
9	41.05	707	0.219	0.060	0.021	0.047	29	878
8	37.50	1,711	0.183	0.065	0.026	0.045	66	2,126
7	32.50	1,758	0.137	0.069	0.032	0.041	63	2,184
6	27.50	1,805	0.098	0.071	0.037	0.038	59	2,243
5	22.50	1,852	0.066	0.072	0.041	0.034	55	2,301
4	17.50	1,899	0.040	0.070	0.042	0.031	51	2,360
3	12.50	1,946	0.020	0.064	0.038	0.027	46	2,418
2	7.50	1,993	0.007	0.050	0.029	0.021	36	2,477
1	2.50	2,040	0.001	0.022	0.012	0.009	16	2,535
Alcatel-Lucent RRH2X	118.00	132	1.808	1.575	0.991	0.391	45	164

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

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Customer: VERIZON WIRELESS

Alcatel-Lucent RRH2x	118.00	170	1.808	1.575	0.991	0.391	58	211
RFS DB-T1-6Z-8AB-0Z	118.00	44	1.808	1.575	0.991	0.391	15	55
Decibel DB846F65ZAXY	118.00	126	1.808	1.575	0.991	0.391	43	157
Amphenol Antel BXA-7	118.00	51	1.808	1.575	0.991	0.391	17	63
Commscope SBNHH-	118.00	244	1.808	1.575	0.991	0.391	82	303
Flat T-Arm	118.00	750	1.808	1.575	0.991	0.391	254	932
VZW Unused Reserve:	118.00	1,733	1.808	1.575	0.991	0.391	587	2,154
Branch 3	108.92	1,125	1.540	0.606	0.592	0.233	227	1,398
Branch 2	86.92	1,575	0.981	-0.114	0.122	0.049	67	1,957
Branch 1	64.92	1,800	0.547	-0.034	0.010	0.045	70	2,237
		43,356	41.930	20.246	15.587	6.755	3,227	53,877

Load Case (0.9 - 0.2Sds) * DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
33	120.32	65	1.880	1.927	1.121	0.439	25	56
32	119.00	205	1.839	1.721	1.045	0.411	73	176
31	116.50	362	1.762	1.373	0.914	0.361	113	310
30	112.50	624	1.643	0.919	0.731	0.289	156	535
29	109.46	138	1.556	0.648	0.612	0.241	29	118
28	106.96	512	1.486	0.466	0.526	0.206	91	439
27	102.50	676	1.364	0.220	0.396	0.152	89	579
26	97.50	702	1.234	0.040	0.281	0.105	64	602
25	94.25	215	1.154	-0.035	0.222	0.082	15	184
24	91.75	1,234	1.093	-0.074	0.183	0.068	73	1,058
23	88.98	735	1.028	-0.102	0.146	0.056	36	630
22	87.44	236	0.993	-0.112	0.128	0.051	10	202
21	85.96	442	0.959	-0.118	0.112	0.047	18	379
20	82.50	1,181	0.884	-0.121	0.081	0.040	41	1,013
19	77.50	1,223	0.780	-0.108	0.048	0.037	39	1,048
18	72.50	1,265	0.683	-0.081	0.027	0.039	43	1,084
17	67.50	1,307	0.592	-0.050	0.014	0.043	48	1,120
16	64.96	21	0.548	-0.034	0.010	0.045	1	18
15	62.46	1,327	0.507	-0.019	0.007	0.047	54	1,138
14	57.50	1,390	0.429	0.009	0.006	0.050	60	1,192
13	52.50	1,432	0.358	0.031	0.008	0.051	63	1,228
12	49.68	188	0.320	0.040	0.011	0.051	8	161
11	47.18	2,630	0.289	0.048	0.013	0.050	114	2,255
10	43.55	1,785	0.246	0.056	0.018	0.049	75	1,530
9	41.05	707	0.219	0.060	0.021	0.047	29	606
8	37.50	1,711	0.183	0.065	0.026	0.045	66	1,467
7	32.50	1,758	0.137	0.069	0.032	0.041	63	1,507
6	27.50	1,805	0.098	0.071	0.037	0.038	59	1,547
5	22.50	1,852	0.066	0.072	0.041	0.034	55	1,588
4	17.50	1,899	0.040	0.070	0.042	0.031	51	1,628
3	12.50	1,946	0.020	0.064	0.038	0.027	46	1,669
2	7.50	1,993	0.007	0.050	0.029	0.021	36	1,709
1	2.50	2,040	0.001	0.022	0.012	0.009	16	1,749
Alcatel-Lucent RRH2X	118.00	132	1.808	1.575	0.991	0.391	45	113
Alcatel-Lucent RRH2x	118.00	170	1.808	1.575	0.991	0.391	58	146
RFS DB-T1-6Z-8AB-0Z	118.00	44	1.808	1.575	0.991	0.391	15	38
Decibel DB846F65ZAXY	118.00	126	1.808	1.575	0.991	0.391	43	108
Amphenol Antel BXA-7	118.00	51	1.808	1.575	0.991	0.391	17	44
Commscope SBNHH-	118.00	244	1.808	1.575	0.991	0.391	82	209
Flat T-Arm	118.00	750	1.808	1.575	0.991	0.391	254	643
VZW Unused Reserve:	118.00	1,733	1.808	1.575	0.991	0.391	587	1,486
Branch 3	108.92	1,125	1.540	0.606	0.592	0.233	227	964
Branch 2	86.92	1,575	0.981	-0.114	0.122	0.049	67	1,350

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT

Engineering Number: OAA665125_C3_02

10/21/2016 4:06:17 PM

Customer: VERIZON WIRELESS

Branch 1	64.92	1,800	0.547	-0.034	0.010	0.045	70	1,543
		43,356	41.930	20.246	15.587	6.755	3,227	37,171

Load Case (1.2 + 0.2Sds) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-51.34	-3.21	0.00	-290.98	0.00	290.98	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.032
5.00	-48.86	-3.18	0.00	-274.92	0.00	274.92	8,140.09	4,070.05	21,348.8	10,690.3	0.00	-0.01	0.032
10.00	-46.45	-3.14	0.00	-259.01	0.00	259.01	7,999.83	3,999.91	20,467.4	10,248.9	0.01	-0.01	0.031
15.00	-44.09	-3.09	0.00	-243.30	0.00	243.30	7,856.71	3,928.36	19,596.9	9,813.06	0.03	-0.02	0.030
20.00	-41.78	-3.04	0.00	-227.83	0.00	227.83	7,710.75	3,855.38	18,737.9	9,382.91	0.05	-0.03	0.030
25.00	-39.54	-2.99	0.00	-212.61	0.00	212.61	7,561.94	3,780.97	17,890.9	8,958.76	0.09	-0.03	0.029
30.00	-37.36	-2.93	0.00	-197.67	0.00	197.67	7,410.29	3,705.14	17,056.4	8,540.90	0.12	-0.04	0.028
35.00	-35.23	-2.86	0.00	-183.03	0.00	183.03	7,240.31	3,620.16	16,200.4	8,112.27	0.17	-0.05	0.027
40.00	-34.35	-2.84	0.00	-168.71	0.00	168.71	7,034.70	3,517.35	15,288.8	7,655.78	0.22	-0.05	0.027
42.11	-32.13	-2.76	0.00	-162.73	0.00	162.73	6,948.06	3,474.03	14,912.6	7,467.39	0.24	-0.06	0.026
45.00	-28.86	-2.65	0.00	-154.74	0.00	154.74	6,829.09	3,414.54	14,403.6	7,212.50	0.28	-0.06	0.026
49.35	-28.63	-2.64	0.00	-143.21	0.00	143.21	5,968.11	2,984.05	12,531.7	6,275.19	0.34	-0.07	0.028
50.00	-26.85	-2.58	0.00	-141.51	0.00	141.51	5,950.82	2,975.41	12,446.1	6,232.30	0.35	-0.07	0.027
55.00	-25.12	-2.52	0.00	-128.62	0.00	128.62	5,815.34	2,907.67	11,789.4	5,903.50	0.42	-0.07	0.026
60.00	-23.47	-2.46	0.00	-116.04	0.00	116.04	5,647.27	2,823.63	11,086.2	5,551.36	0.50	-0.08	0.025
64.92	-21.21	-2.39	0.00	-103.91	0.00	103.91	5,467.43	2,733.71	10,387.8	5,201.64	0.59	-0.09	0.024
65.00	-19.59	-2.34	0.00	-103.72	0.00	103.72	5,464.50	2,732.25	10,376.6	5,196.05	0.59	-0.09	0.024
70.00	-18.01	-2.30	0.00	-92.02	0.00	92.02	5,281.73	2,640.87	9,690.58	4,852.49	0.69	-0.10	0.022
75.00	-16.49	-2.26	0.00	-80.53	0.00	80.53	5,098.97	2,549.48	9,027.95	4,520.69	0.79	-0.10	0.021
80.00	-15.03	-2.22	0.00	-69.23	0.00	69.23	4,916.20	2,458.10	8,388.79	4,200.63	0.90	-0.11	0.020
85.00	-14.48	-2.20	0.00	-58.15	0.00	58.15	4,733.43	2,366.72	7,773.10	3,892.33	1.02	-0.11	0.018
86.92	-12.23	-2.12	0.00	-53.93	0.00	53.93	4,663.25	2,331.62	7,542.90	3,777.06	1.07	-0.12	0.017
87.96	-11.31	-2.08	0.00	-51.74	0.00	51.74	4,625.39	2,312.69	7,420.17	3,715.60	1.09	-0.12	0.016
90.00	-9.78	-2.00	0.00	-47.49	0.00	47.49	4,550.66	2,275.33	7,180.87	3,595.77	1.14	-0.12	0.015
93.51	-9.51	-1.99	0.00	-40.46	0.00	40.46	2,648.40	1,324.20	4,169.11	2,087.65	1.23	-0.12	0.023
95.00	-8.64	-1.92	0.00	-37.50	0.00	37.50	2,626.81	1,313.40	4,084.79	2,045.43	1.27	-0.13	0.022
100.00	-7.80	-1.83	0.00	-27.88	0.00	27.88	2,552.59	1,276.30	3,805.53	1,905.59	1.41	-0.13	0.018
105.00	-7.16	-1.74	0.00	-18.72	0.00	18.72	2,475.53	1,237.77	3,531.73	1,768.49	1.55	-0.14	0.013
108.92	-5.60	-1.48	0.00	-11.89	0.00	11.89	2,413.13	1,206.56	3,321.26	1,663.10	1.67	-0.14	0.009
110.00	-4.82	-1.32	0.00	-10.29	0.00	10.29	2,395.63	1,197.81	3,263.95	1,634.40	1.70	-0.14	0.008
115.00	-4.37	-1.21	0.00	-3.68	0.00	3.68	2,312.87	1,156.44	3,002.74	1,503.60	1.85	-0.14	0.004
118.00	-0.08	-0.02	0.00	-0.05	0.00	0.05	2,261.86	1,130.93	2,849.39	1,426.81	1.94	-0.15	0.000
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.66	1,109.33	2,738.00	1,371.04	2.00	-0.15	0.000
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	2.02	-0.15	0.000

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT Engineering Number: OAA665125_C3_02

10/21/2016 4:06:17 PM

Customer: VERIZON WIRELESS

Load Case (0.9 - 0.2Sds) * DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-35.42	-3.21	0.00	-290.11	0.00	290.11	8,277.51	4,138.76	22,240.6	11,136.8	0.00	0.00	0.030
5.00	-33.71	-3.18	0.00	-274.05	0.00	274.05	8,140.09	4,070.05	21,348.8	10,690.3	0.00	-0.01	0.030
10.00	-32.04	-3.14	0.00	-258.16	0.00	258.16	7,999.83	3,999.91	20,467.4	10,248.9	0.01	-0.01	0.029
15.00	-30.41	-3.09	0.00	-242.47	0.00	242.47	7,856.71	3,928.36	19,596.9	9,813.06	0.03	-0.02	0.029
20.00	-28.83	-3.04	0.00	-227.02	0.00	227.02	7,710.75	3,855.38	18,737.9	9,382.91	0.05	-0.03	0.028
25.00	-27.28	-2.98	0.00	-211.84	0.00	211.84	7,561.94	3,780.97	17,890.9	8,958.76	0.09	-0.03	0.027
30.00	-25.77	-2.92	0.00	-196.94	0.00	196.94	7,410.29	3,705.14	17,056.4	8,540.90	0.12	-0.04	0.027
35.00	-24.30	-2.85	0.00	-182.34	0.00	182.34	7,240.31	3,620.16	16,200.4	8,112.27	0.17	-0.05	0.026
40.00	-23.70	-2.83	0.00	-168.07	0.00	168.07	7,034.70	3,517.35	15,288.8	7,655.78	0.22	-0.05	0.025
42.11	-22.17	-2.75	0.00	-162.11	0.00	162.11	6,948.06	3,474.03	14,912.6	7,467.39	0.24	-0.06	0.025
45.00	-19.91	-2.64	0.00	-154.15	0.00	154.15	6,829.09	3,414.54	14,403.6	7,212.50	0.28	-0.06	0.024
49.35	-19.75	-2.63	0.00	-142.67	0.00	142.67	5,968.11	2,984.05	12,531.7	6,275.19	0.34	-0.07	0.026
50.00	-18.52	-2.57	0.00	-140.97	0.00	140.97	5,950.82	2,975.41	12,446.1	6,232.30	0.35	-0.07	0.026
55.00	-17.33	-2.51	0.00	-128.14	0.00	128.14	5,815.34	2,907.67	11,789.4	5,903.50	0.42	-0.07	0.025
60.00	-16.19	-2.45	0.00	-115.60	0.00	115.60	5,647.27	2,823.63	11,086.2	5,551.36	0.50	-0.08	0.024
64.92	-14.63	-2.38	0.00	-103.53	0.00	103.53	5,467.43	2,733.71	10,387.8	5,201.64	0.59	-0.09	0.023
65.00	-13.51	-2.33	0.00	-103.34	0.00	103.34	5,464.50	2,732.25	10,376.6	5,196.05	0.59	-0.09	0.022
70.00	-12.43	-2.29	0.00	-91.69	0.00	91.69	5,281.73	2,640.87	9,690.58	4,852.49	0.68	-0.10	0.021
75.00	-11.38	-2.25	0.00	-80.24	0.00	80.24	5,098.97	2,549.48	9,027.95	4,520.69	0.79	-0.10	0.020
80.00	-10.37	-2.21	0.00	-69.00	0.00	69.00	4,916.20	2,458.10	8,388.79	4,200.63	0.90	-0.11	0.019
85.00	-9.99	-2.19	0.00	-57.96	0.00	57.96	4,733.43	2,366.72	7,773.10	3,892.33	1.02	-0.11	0.017
86.92	-8.43	-2.11	0.00	-53.76	0.00	53.76	4,663.25	2,331.62	7,542.90	3,777.06	1.06	-0.12	0.016
87.96	-7.80	-2.07	0.00	-51.58	0.00	51.58	4,625.39	2,312.69	7,420.17	3,715.60	1.09	-0.12	0.016
90.00	-6.75	-2.00	0.00	-47.34	0.00	47.34	4,550.66	2,275.33	7,180.87	3,595.77	1.14	-0.12	0.015
93.51	-6.56	-1.98	0.00	-40.34	0.00	40.34	2,648.40	1,324.20	4,169.11	2,087.65	1.23	-0.12	0.022
95.00	-5.96	-1.92	0.00	-37.38	0.00	37.38	2,626.81	1,313.40	4,084.79	2,045.43	1.27	-0.13	0.021
100.00	-5.38	-1.83	0.00	-27.80	0.00	27.80	2,552.59	1,276.30	3,805.53	1,905.59	1.40	-0.13	0.017
105.00	-4.94	-1.74	0.00	-18.66	0.00	18.66	2,475.53	1,237.77	3,531.73	1,768.49	1.55	-0.14	0.013
108.92	-3.86	-1.48	0.00	-11.86	0.00	11.86	2,413.13	1,206.56	3,321.26	1,663.10	1.66	-0.14	0.009
110.00	-3.33	-1.32	0.00	-10.26	0.00	10.26	2,395.63	1,197.81	3,263.95	1,634.40	1.69	-0.14	0.008
115.00	-3.02	-1.21	0.00	-3.67	0.00	3.67	2,312.87	1,156.44	3,002.74	1,503.60	1.84	-0.14	0.004
118.00	-0.06	-0.02	0.00	-0.05	0.00	0.05	2,261.86	1,130.93	2,849.39	1,426.81	1.93	-0.14	0.000
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.66	1,109.33	2,738.00	1,371.04	2.00	-0.14	0.000
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.90	1,101.95	2,701.52	1,352.77	2.01	-0.14	0.000

Site Number: 415438

Code: ANSI/TIA-222-G

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Site Name: Brownson Country Club CT,CT Engineering Number:OAA665125_C3_02

10/21/2016 4:06:17 PM

Customer: VERIZON WIRELESS

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	63.30	0.00	51.96	0.00	0.00	5443.44	0.00	0.50
0.9D + 1.6W	63.29	0.00	38.95	0.00	0.00	5430.73	0.00	0.49
1.2D + 1.0Di + 1.0Wi	16.44	0.00	74.67	0.00	0.00	1360.25	0.00	0.13
(1.2 + 0.2Sds) * DL + E ELFM	4.11	0.00	51.34	0.00	0.00	335.94	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	3.21	0.00	51.34	0.00	0.00	290.98	0.00	0.03
(0.9 - 0.2Sds) * DL + E ELFM	4.11	0.00	35.42	0.00	0.00	335.02	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	3.21	0.00	35.42	0.00	0.00	290.11	0.00	0.03
1.0D + 1.0W	15.13	0.00	43.35	0.00	0.00	1299.91	0.00	0.12

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
			5,443.44	74.67	63.30	

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	3.250	80.000	Round	0	0.00	7.481	515.08	888.99	0.58

Anchor Bolts

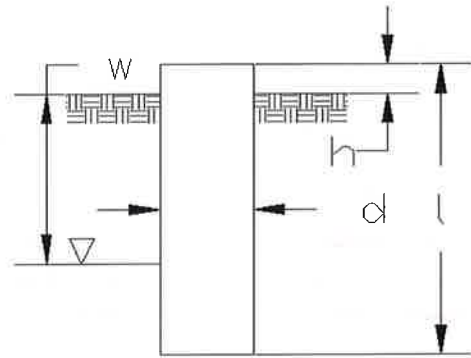
Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
74.00	28	2.25" A615-	2.25	75.00	100.00	Radial	0.00	0.0	128.77	260.00	0.51	123.44	260.00	0.49

Site Name: Brownson Country Club CT, CT
 Site Number: 415438
 Engineer: T. Kassakatis
 Engineering Number: OAA665125_C3_02
 Date: 10/21/16

Program Last Updated: 5/13/2014
 American Tower Corporation

Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Analyze or Design a Foundation? Analyze
 Foundation Mapped: Y
 Moment (M): 5443.4 k-ft
 Shear/Leg (V): 63.3 k
 Axial Load (P): 74.7 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP



Diameter of Caisson (d): 8.0 ft
 Caisson Embedment (L-h): 24.0 ft
 Caisson Height Above Ground (h): 0.5 ft
 Depth Below Ground Surface to Water Table (w): 99.0 ft
 Unit Weight of Concrete: 150.0 pcf
 Unit Weight of Water: 62.4 pcf
 Tension Skin Friction/Compression Skin Friction: 1.00
 Pullout Angle: 30.0 degrees

Engineer Notes

Soil Mechanical Properties

Depth (ft)		γ_{soil}	Cohesion	ϕ	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	2.0	130	0	0	0	0
2.0	4.0	115	0	30	152	0
4.0	6.0	135	0	36	318	0
6.0	9.0	150	15000	0	7500	0
9.0	25.0	140	10000	0	5000	60000

Required Embedment: 13.2 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 1231.5 ft³ = 45.6 yd³
 Weight of Concrete (Buoyancy Effect Considered): 184.7 k
 Average Soil Unit Weight: 137.9 pcf
 Skin Friction Resistance: 2474.1 k
 Compressive Bearing Resistance: 3015.9 k
 Pullout Weight (Minus Concrete Weight): 1241.9 k
 Nominal Uplift Capacity per Leg ($\phi_s T_n$): 931.4 k
 Nominal Compressive Capacity per Leg ($\phi_s P_n$): 4117.5 k
 P_u : 92.2 k
 $T_u / \phi_s T_n$: 0.00 Result: OK
 $P_u / \phi_s P_n$: 0.02 Result: OK
 Total Lateral Resistance: 11510.4 k
 Inflection Point (Below Ground Surface): 14.4 ft
 Design Overturning Moment At Inflection Point (M_D): 6386.5 k-ft
 Nominal Moment Capacity ($\phi_s M_n$): 41079.4 k-ft
 $M_D / \phi_s M_n$: 0.16 Result: OK
 ϕ_s : 0.75

