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April 24, 2017

Melanie A. Bachman, Esq.  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **PE1133-VER-20160824 – Cellco Partnership d/b/a Verizon Wireless  
99 Meadow Street, Hartford, Connecticut**

Dear Ms. Bachman:

On September 26, 2016, the Siting Council approved of Cellco's Eligible Facilities Request ("EFR") to install antennas and associated equipment at the above referenced facility.

As a condition of the approval, Cellco was required to provide the Council with a copy of the Structural Analysis Report referencing the Rev. G of the Structural Standards. The updated Structural Analysis Report referencing Rev. G is attached.

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

Sincerely,



Kenneth C. Baldwin

Attachment

Copy to:

Elizabeth Jamieson



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 147.9 ft Monopole  
**ATC Site Name** : Petro Lock, CT  
**ATC Site Number** : 302468  
**Engineering Number** : OAA540577\_C3\_12  
**Proposed Carrier** : Verizon  
**Carrier Site Name** : Hartford S 5, CT  
**Carrier Site Number** : NA  
**Site Location** : 99 Meadow St  
Hartford, CT 06114-1598  
41.743200,-72.667500  
**County** : Hartford  
**Date** : April 10, 2017  
**Max Usage** : 61%  
**Result** : Pass

Prepared By:  
Amir H. Tabarestani, E.I.  
Structural Engineer II

Reviewed By:



Apr 10 2017 6:38 PM **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 147.9 ft monopole to reflect the change in loading by Verizon.

## Supporting Documents

<b>Tower Drawings</b>	FWT Job #21719000 Rev. 1, dated July 18, 2000
<b>Foundation Drawing</b>	FWT Job #21719000 Rev. 1, dated July 18, 2000
<b>Geotechnical Report</b>	Osprey Environmental Engineering Job #98083-01, dated August 28, 1998

## 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.

<b>Basic Wind Speed:</b>	97 mph (3-Second Gust, $V_{ASD}$ ), 125 mph (3-Second Gust, $V_{ULT}$ )
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 1" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.18$ , $S_1 = 0.06$
<b>Site Class:</b>	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](mailto: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 <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	149.0	4	Decibel DB844H90E-XY	Platform w/ Handrails	(12) 1 5/8" Coax (1) 1/2" Coax	Sprint Nextel
		8	Andrew 844G65VTZASX			
135.0	137.0	6	Ericsson RRUS 11 (Band 12) (55 lb)	Platform w/ Handrails	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 3" Conduit (1) 0.39" Fiber Trunk	AT&T Mobility
		6	Powerwave 7750.00			
		2	KMW AM-X-CD-16-65-00T-RET			
	1	Andrew SBNH-1D6565C				
	135.0	6	LGP LGP21903			
		6	Powerwave LGP21401			
134.0	1	Raycap DC6-48-60-18-8F				
123.0	123.0	3	Kathrein Smart Bias Tee	T-Arms	(18) 1 5/8" Coax (1) 1 5/8" Fiber	T-Mobile
		3	Ericsson KRY 112 144/1			
		3	Ericsson KRY 112 489/1			
		3	Ericsson AIR 32 B4A-B2P			
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Andrew LNX-6515DS-VTM			
113.0	113.0	3	RFS APXV18-206517	Flush	(6) 1 5/8" Coax	Metro PCS
98.0	98.0	3	RFS IBC1900BB-1	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	RFS IBC1900HG-2A			
		3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter			
		3	Alcatel-Lucent 4x40W RRH (88 lb)			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSP18-C-A20			
89.0	89.0	3	DragonWave Horizon Compact	Side Arms	(6) 5/16" Coax (3) 1/2" Coax (1) 2" Conduit	Clearwire
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		2	DragonWave A-ANT-18G-2-C			
		1	DragonWave A-ANT-11G-2.5-C			
20.0	20.0	1	Lucent KS-24019	Flush	(1) 1/2" Coax	Sprint Nextel

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						



**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
79.0	79.0	3	Alcatel-Lucent RRH2X60-AWS	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH2x60			
		2	RFS DB-T1-6Z-8AB-0Z			
		12	Commscope SBNHH-1D65B			

<sup>1</sup>Mount 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	59%	Pass
Shaft	61%	Pass
Base Plate	30%	Pass

**Foundations**

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,990.6	60%
Shear (Kips)	29.3	61%

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) (°)
89.0	DragonWave A-ANT-18G-2-C	Clearwire	0.507	0.621
	DragonWave A-ANT-11G-2.5-C			
79.0	Alcatel-Lucent RRH2X60-AWS	Verizon	0.403	0.565
	Alcatel-Lucent RRH2x60 700			
	Alcatel-Lucent RRH2x60			
	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:

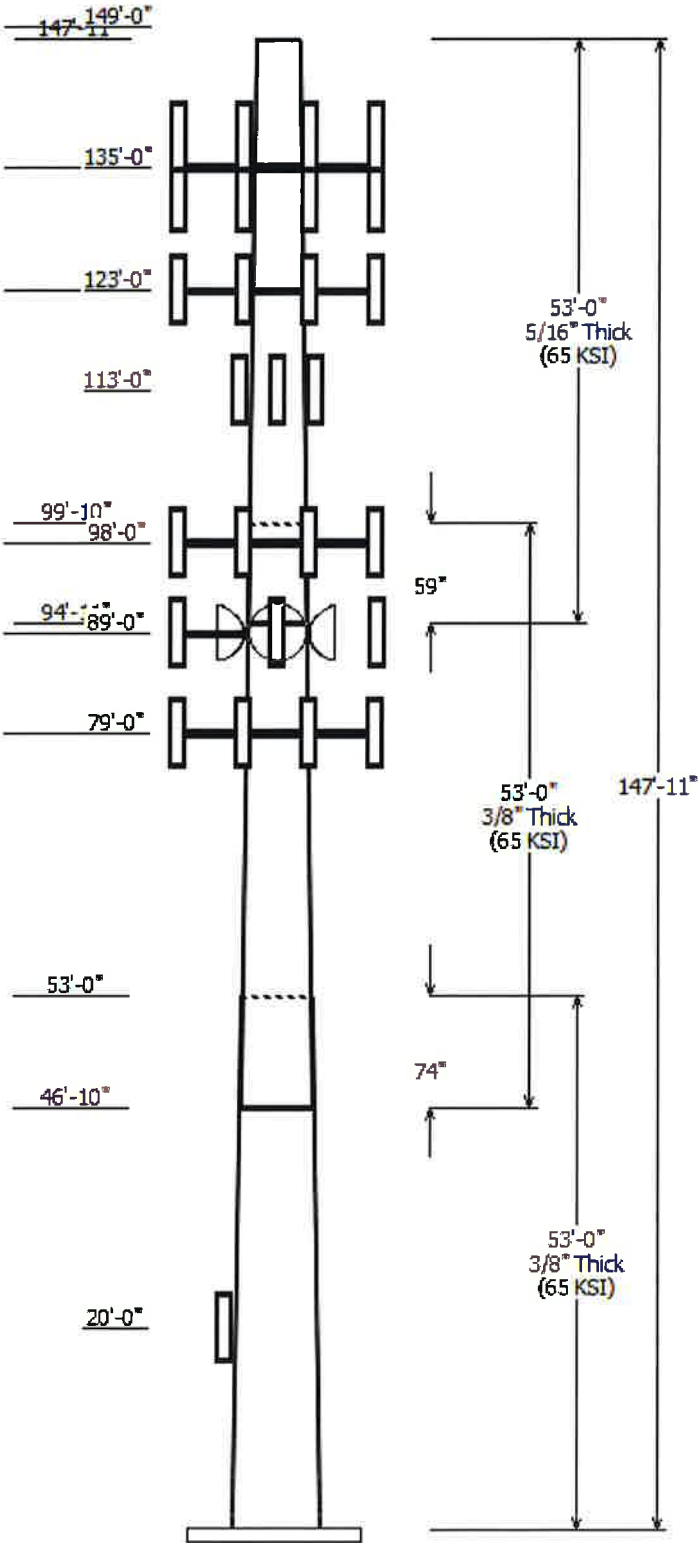
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements 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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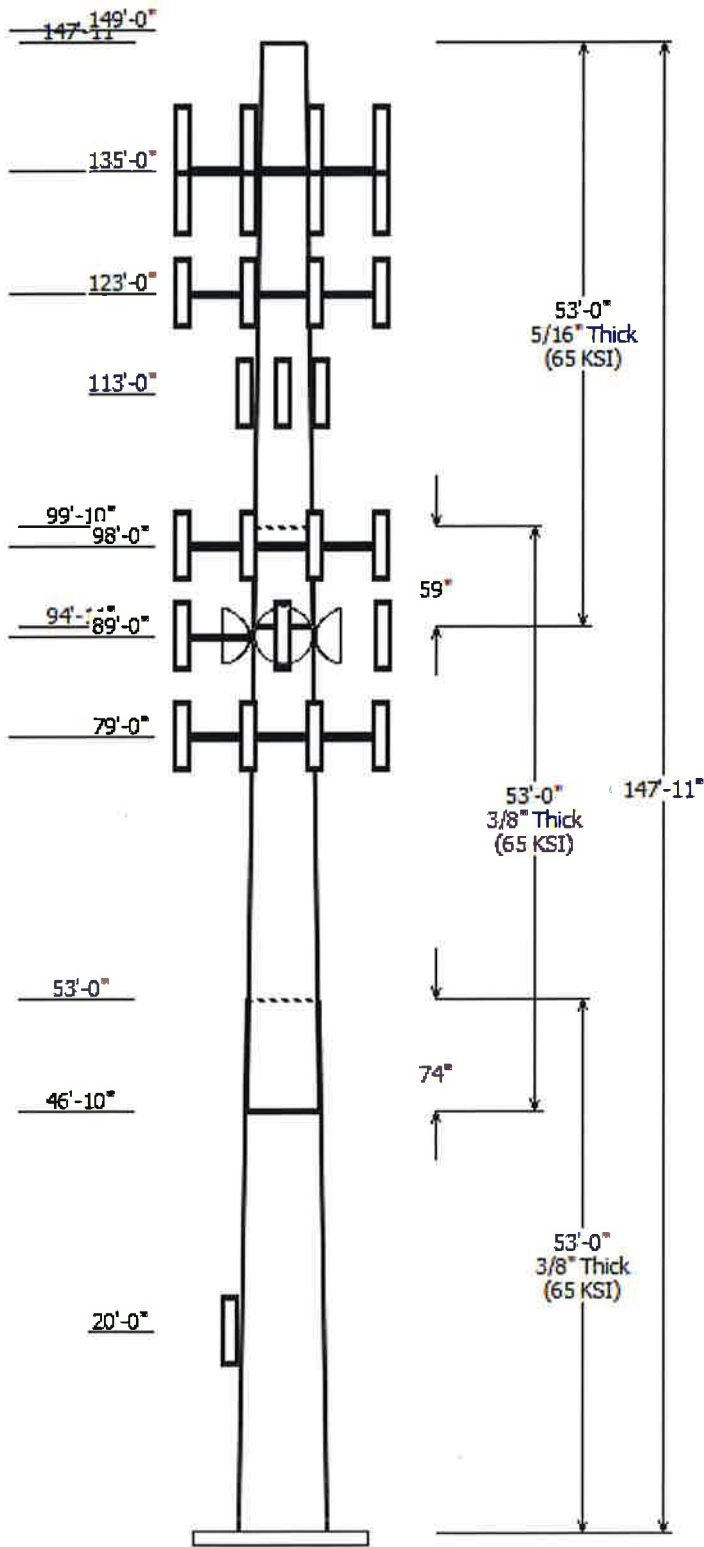
Job Information	
Pole :	302468
Code:	ANSI/TIA-222-G
Description :	148' FWT Monopole
Client :	VERIZON WIRELESS
Struct Class :	II
Location :	Petro Lock, CT
Shape :	18 Sides
Exposure :	B
Height :	147.92 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.21456 in/ft

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Top	Bottom					
1	53.000	45.20	56.58	0.375		0.000	0.214600	65
2	53.000	35.90	47.28	0.375	Slip Joint	74.000	0.214600	65
3	53.000	26.21	37.58	0.313	Slip Joint	59.000	0.214600	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	149.000	1	Flat Platform w/ Handrails
149.000	149.000	8	Andrew 844G65VTZASX
149.000	149.000	4	Decibel DB844H90E-XY
135.000	135.000	1	Flat Platform w/ Handrails
135.000	137.000	1	Andrew SBNH-1D6565C
135.000	137.000	2	KMW AM-X-CD-16-65-00T-RET
135.000	137.000	6	Powerwave Allgon 7750.00
135.000	137.000	6	Ericsson RRUS 11 (Band 12) (55
135.000	134.000	1	Raycap DC6-48-60-18-8F
135.000	135.000	6	Powerwave Allgon LGP21401
135.000	135.000	6	LGP Allgon LGP21903
123.000	123.000	3	Ericsson AIR 32 B4A-B2P
123.000	123.000	3	Andrew LNX-6515DS-VTM
123.000	123.000	3	RFS APX16DWV-16DWVS-E-A20
123.000	123.000	3	Ericsson KRY 112 489/1
123.000	123.000	3	Ericsson KRY 112 144/1
123.000	123.000	3	Kathrein Scala Smart Bias Tee
123.000	123.000	3	Round T-Arms
113.000	113.000	3	RFS APXV18-206517
98.000	98.000	3	RFS APXVTM14-C-I20
98.000	98.000	3	Alcatel-Lucent TD-RRH8x20-25
98.000	98.000	3	RFS IBC1900HG-2A
98.000	98.000	3	RFS IBC1900BB-1
98.000	98.000	3	Alcatel-Lucent 800 MHz 2X50W
98.000	98.000	3	Alcatel-Lucent 4x40W RRR (88 I
98.000	98.000	3	RFS APXVSP18-C-A20
98.000	98.000	1	Round Low Profile Platform
89.000	89.000	1	DragonWave A-ANT-11G-2.5-C
89.000	89.000	1	Side Arms
89.000	89.000	3	NextNet BTS-2500
89.000	89.000	3	Argus LLPX310R
89.000	89.000	3	DragonWave Horizon Compact
89.000	89.000	2	DragonWave A-ANT-18G-2-C
79.000	79.000	1	Flat Low Profile Platform
79.000	79.000	12	Commscope SBNHH-1D65B
79.000	79.000	2	RFS DB-T1-6Z-8AB-0Z
79.000	79.000	3	Alcatel-Lucent RRRH2x60
79.000	79.000	3	Alcatel-Lucent RRRH2X60-AWS
79.000	79.000	3	Alcatel-Lucent RRRH2x60 700
20.000	20.000	1	Lucent KS-24019

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind





5.000	20.000	1/2" Coax	No
5.000	79.000	1 5/8" Hybriflex	Yes
5.000	89.000	1/2" Coax	No
5.000	89.000	2" Conduit	Yes
5.000	89.000	5/16" Coax	No
5.000	98.000	1 1/4" Hybriflex	No
5.000	113.0	1 5/8" Coax	No
5.000	123.0	1 5/8" Coax	No
5.000	123.0	1 5/8" Coax	Yes
5.000	123.0	1 5/8" Fiber	Yes
5.000	135.0	0.39" Fiber Trunk	No
5.000	135.0	0.78" 8 AWG 6	No
5.000	135.0	1 5/8" Coax	No
5.000	135.0	3" Conduit	No
5.000	149.0	1 5/8" Coax	No
5.000	149.0	1/2" Coax	No

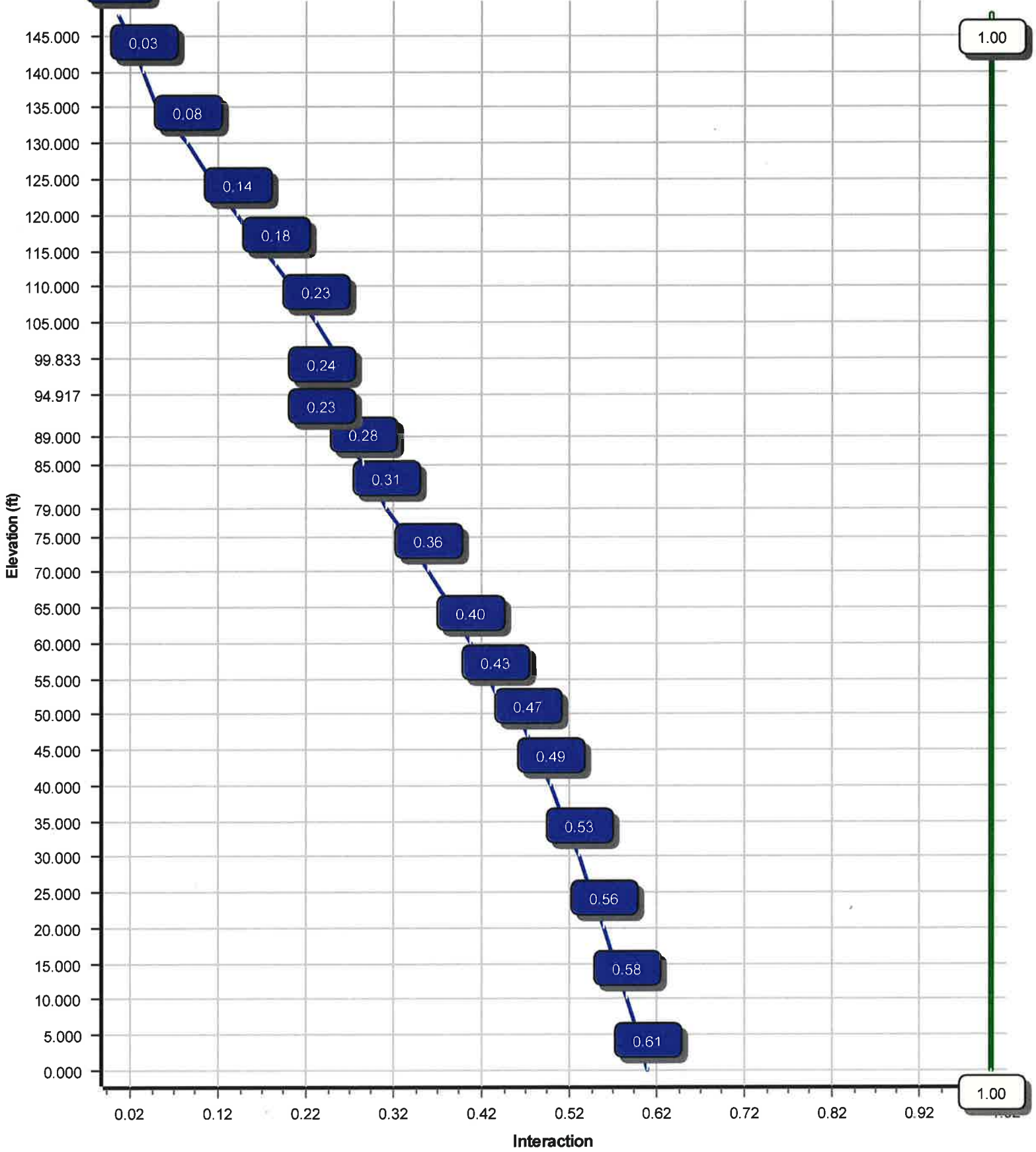
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (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	2990.55	29.30	54.29
0.9D + 1.6W	2958.91	29.25	40.71
1.2D + 1.0Di + 1.0Wi	846.76	8.22	99.49
(1.2 + 0.2Sds) * DL + E ELFM	179.28	1.68	51.98
(1.2 + 0.2Sds) * DL + E EMAM	148.00	1.51	51.98
(0.9 - 0.2Sds) * DL + E ELFM	177.50	1.68	36.15
(0.9 - 0.2Sds) * DL + E EMAM	146.45	1.51	36.15
1.0D + 1.0W	710.17	7.00	45.27

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	89.00	6.081	0.621
1.0D + 1.0W	89.00	6.081	0.621

Load Case : 1.2D + 1.6W

Max Ratio 60.70% at 0.0 ft



Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

### Analysis Parameters

Location:	HARTFORD County, CT	Height (ft):	147.
Code:	ANSI/TIA-222-G	Base Diameter (in):	56.58
Shape:	18 Sides	Top Diameter (in):	26.22
Pole Type:	Taper	Taper (in/ft) :	0.215
Pole Manufacturer:	FWT Inc	Rotation (deg) :	0.00

### 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:	1.00 in

### Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.09		
$T_L$ (sec):	6	p:	1.3
$S_S$ :	0.181	$S_1$ :	0.064
$F_a$ :	1.600	$F_v$ :	2.400
$S_{ds}$ :	0.193	$S_{d1}$ :	0.102
		$C_s$ :	0.033
		$C_s$ Max:	0.033
		$C_s$ 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 1.00 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

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.000	0.3750	65		0.00	10,844	56.58	0.00	66.90	26698.9	24.84	150.88	45.20	53.00	53.36	13550.6	19.49	120.55	0.214568
2-18	53.000	0.3750	65	Slip	74.00	8,848	47.28	46.83	55.83	15518.7	20.47	126.08	35.90	99.83	42.29	6746.8	15.12	95.76	0.214568
3-18	53.000	0.3125	65	Slip	59.00	5,651	37.58	94.92	36.97	6490.6	19.45	120.28	26.21	147.92	25.69	2178.2	13.03	83.89	0.214568
Shaft Weight						25,342													

**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			
149.00	Andrew 844G65VTZASX	8	16.00	5.890	0.70	236.95	6.671	0.70	0.000	0.000	
149.00	Decibel DB844H90E-XY	4	14.00	3.733	0.91	173.45	4.838	0.91	0.000	0.000	
149.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,894.24	70.353	1.00	0.000	0.000	
135.00	Andrew SBNH-1D6565C	1	66.10	11.440	1.00	433.54	13.648	1.00	0.000	2.000	
135.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.520	0.67	169.13	3.395	0.67	0.000	2.000	
135.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,875.37	70.075	1.00	0.000	0.000	
135.00	KMW AM-X-CD-16-65-00T-	2	48.50	8.020	0.75	313.27	9.761	0.75	0.000	2.000	
135.00	LGP Allgon LGP21903	6	5.50	0.270	0.50	25.59	0.526	0.50	0.000	0.000	
135.00	Powerwave Allgon 7750.00	6	27.00	5.560	0.65	217.92	6.927	0.65	0.000	2.000	
135.00	Powerwave Allgon LGP21401	6	14.10	1.100	0.50	64.06	1.734	0.50	0.000	0.000	
135.00	Raycap DC6-48-60-18-8F	1	20.00	1.110	1.00	134.43	2.744	1.00	0.000	-1.000	
123.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.70	414.64	13.619	0.70	0.000	0.000	
123.00	Ericsson AIR 32 B4A-B2P	3	105.80	6.520	0.71	359.23	8.027	0.71	0.000	0.000	
123.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	36.15	0.744	0.50	0.000	0.000	
123.00	Ericsson KRY 112 489/1	3	15.40	0.650	0.50	52.35	1.039	0.50	0.000	0.000	
123.00	Kathrein Scala Smart Bias	3	3.30	0.090	0.50	14.27	0.305	0.50	0.000	0.000	
123.00	RFS APX16DWV-16DWVS-E-	3	40.70	6.590	0.66	233.95	8.082	0.66	0.000	0.000	
123.00	Round T-Arms	3	250.00	9.700	0.67	523.41	20.485	0.67	0.000	0.000	
113.00	RFS APXV18-206517	3	26.40	5.050	0.80	189.27	6.650	0.80	0.000	0.000	
98.00	Alcatel-Lucent 4x40W RRH	3	88.00	2.910	0.67	257.14	3.341	0.67	0.000	0.000	
98.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.67	238.43	4.402	0.67	0.000	0.000	
98.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.720	0.67	219.43	5.120	0.67	0.000	0.000	
98.00	RFS APXVSP18-C-A20	3	57.00	8.020	0.69	325.48	9.702	0.69	0.000	0.000	
98.00	RFS APXVTM14-C-I20	3	52.90	6.340	0.66	269.04	7.783	0.66	0.000	0.000	
98.00	RFS IBC1900BB-1	3	22.00	1.130	0.50	72.27	1.534	0.50	0.000	0.000	
98.00	RFS IBC1900HG-2A	3	22.00	1.130	0.50	72.27	1.534	0.50	0.000	0.000	
98.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,328.27	46.244	1.00	0.000	0.000	
89.00	Argus LLPX310R	3	28.60	4.290	0.63	173.43	5.447	0.63	0.000	0.000	
89.00	DragonWave A-ANT-11G-2.5-	1	47.60	8.670	1.00	208.92	10.856	1.00	0.000	0.000	
89.00	DragonWave A-ANT-18G-2-C	2	27.10	4.690	1.00	150.57	6.302	1.00	0.000	0.000	
89.00	DragonWave Horizon	3	10.60	0.430	0.50	52.89	0.759	0.50	0.000	0.000	
89.00	NextNet BTS-2500	3	35.00	1.820	0.67	112.79	2.533	0.67	0.000	0.000	
89.00	Side Arms	1	560.00	8.500	1.00	1,152.32	17.491	1.00	0.000	0.000	
79.00	Alcatel-Lucent RRH2x60	3	60.00	3.960	0.67	158.90	6.036	0.67	0.000	0.000	
79.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.510	0.67	164.35	2.949	0.67	0.000	0.000	
79.00	Alcatel-Lucent RRH2X60-	3	44.00	2.190	0.67	136.09	2.637	0.67	0.000	0.000	
79.00	Commscope SBNHH-1D65B	12	50.70	8.170	0.69	316.58	9.827	0.69	0.000	0.000	
79.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,309.79	49.963	1.00	0.000	0.000	
79.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	5.600	0.67	231.29	5.908	0.67	0.000	0.000	
20.00	Lucent KS-24019	1	4.00	0.910	1.00	42.95	1.430	1.00	0.000	0.000	
Totals		126	12683.00				37,246.02				Number of Loadings : 40

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:27 PM

Customer: VERIZON WIRELESS

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
5.00	149.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
5.00	149.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
5.00	135.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
5.00	135.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
5.00	135.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
5.00	135.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
5.00	123.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
5.00	123.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	T-Mobile
5.00	123.00	1	1 5/8" Fiber	1.63	1.61	N	0.00	Y	T-Mobile
5.00	113.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
5.00	98.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
5.00	89.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
5.00	89.00	1	2" Conduit	2.38	3.65	N	2.38	Y	Clearwire
5.00	89.00	6	5/16" Coax	0.31	0.05	N	0.00	N	Clearwire
5.00	79.00	2	1 5/8" Hybriflex	1.98	1.30	N	0.00	Y	Verizon
5.00	20.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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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 <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3750	56.580	66.895	26,698.9	24.84	150.88	72.2	929.4	0.0	0.0
5.00		0.3750	55.507	65.618	25,199.0	24.34	148.02	72.8	894.2	0.0	1,127.3
10.00		0.3750	54.434	64.341	23,756.4	23.83	145.16	73.4	859.6	0.0	1,105.6
15.00		0.3750	53.361	63.065	22,369.9	23.33	142.30	74.0	825.7	0.0	1,083.8
20.00		0.3750	52.288	61.788	21,038.4	22.82	139.44	74.6	792.5	0.0	1,062.1
25.00		0.3750	51.216	60.511	19,760.8	22.32	136.57	75.2	760.0	0.0	1,040.4
30.00		0.3750	50.143	59.234	18,536.1	21.81	133.71	75.7	728.1	0.0	1,018.7
35.00		0.3750	49.070	57.957	17,363.0	21.31	130.85	76.3	696.9	0.0	996.9
40.00		0.3750	47.997	56.680	16,240.5	20.81	127.99	76.9	666.4	0.0	975.2
45.00		0.3750	46.924	55.403	15,167.4	20.30	125.13	77.5	636.6	0.0	953.5
46.83	Bot - Section 2	0.3750	46.531	54.935	14,786.1	20.12	124.08	77.7	625.9	0.0	344.2
50.00		0.3750	45.851	54.126	14,142.7	19.80	122.27	78.1	607.5	0.0	1,184.8
53.00	Top - Section 1	0.3750	45.958	54.253	14,242.1	19.85	122.55	78.1	610.4	0.0	1,106.4
55.00		0.3750	45.528	53.742	13,843.6	19.64	121.41	78.3	598.9	0.0	367.5
60.00		0.3750	44.456	52.465	12,880.1	19.14	118.55	78.9	570.7	0.0	903.5
65.00		0.3750	43.383	51.188	11,962.4	18.64	115.69	79.5	543.1	0.0	881.8
70.00		0.3750	42.310	49.911	11,089.3	18.13	112.83	80.1	516.2	0.0	860.0
75.00		0.3750	41.237	48.634	10,259.8	17.63	109.97	80.7	490.0	0.0	838.3
79.00		0.3750	40.379	47.613	9,626.8	17.22	107.68	81.1	469.6	0.0	655.0
80.00		0.3750	40.164	47.357	9,472.7	17.12	107.10	81.3	464.5	0.0	161.6
85.00		0.3750	39.091	46.081	8,726.9	16.62	104.24	81.9	439.7	0.0	794.9
89.00		0.3750	38.233	45.059	8,159.3	16.21	101.96	82.3	420.3	0.0	620.3
90.00		0.3750	38.019	44.804	8,021.4	16.11	101.38	82.4	415.6	0.0	152.9
94.92	Bot - Section 3	0.3750	36.964	43.548	7,365.7	15.62	98.57	82.6	392.5	0.0	739.1
95.00		0.3750	36.946	43.527	7,354.9	15.61	98.52	82.6	392.1	0.0	22.8
98.00		0.3750	36.302	42.761	6,973.3	15.31	96.81	82.6	378.3	0.0	814.4
99.83	Top - Section 2	0.3125	36.534	35.926	5,955.0	18.85	116.91	79.2	321.0	0.0	490.6
100.0		0.3125	36.498	35.890	5,937.4	18.83	116.79	79.3	320.4	0.0	20.4
105.0		0.3125	35.425	34.826	5,424.8	18.23	113.36	80.0	301.6	0.0	601.6
110.0		0.3125	34.352	33.762	4,942.6	17.62	109.93	80.7	283.4	0.0	583.5
113.0		0.3125	33.709	33.124	4,667.5	17.26	107.87	81.1	272.7	0.0	341.4
115.0		0.3125	33.279	32.698	4,489.8	17.01	106.49	81.4	265.7	0.0	224.0
120.0		0.3125	32.207	31.634	4,065.6	16.41	103.06	82.1	248.6	0.0	547.3
123.0		0.3125	31.563	30.995	3,824.4	16.05	101.00	82.5	238.7	0.0	319.7
125.0		0.3125	31.134	30.570	3,669.0	15.80	99.63	82.6	232.1	0.0	209.5
130.0		0.3125	30.061	29.506	3,299.0	15.20	96.19	82.6	216.2	0.0	511.1
135.0		0.3125	28.988	28.442	2,954.8	14.59	92.76	82.6	200.8	0.0	493.0
140.0		0.3125	27.915	27.377	2,635.4	13.99	89.33	82.6	185.9	0.0	474.8
145.0		0.3125	26.842	26.313	2,339.9	13.38	85.90	82.6	171.7	0.0	456.7
147.9		0.3125	26.216	25.693	2,178.2	13.03	83.89	82.6	163.6	0.0	258.1
25,342.4											

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:28 PM

Customer: VERIZON WIRELESS

**Load Case:** 1.2D + 1.6W

97 mph with No Ice

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

**Shaft Segment Forces (Factored)**

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	16.018	17.62	388.55	0.650	0.000	0.00	0.000	0.00	217.3	0.0	0.0
5.00		1.00	0.70	16.018	17.62	384.86	0.650	0.000	5.00	23.712	15.41	430.3	0.0	1,352.7
10.00		1.00	0.70	16.018	17.62	377.50	0.650	0.000	5.00	23.258	15.12	422.0	0.0	1,326.7
15.00		1.00	0.70	16.018	17.62	370.13	0.650	0.000	5.00	22.804	14.82	413.7	0.0	1,300.6
20.00	Appertunance(s)	1.00	0.70	16.018	17.62	362.76	0.650	0.000	5.00	22.350	14.53	405.4	0.0	1,274.5
25.00		1.00	0.70	16.018	17.62	355.39	0.650	0.000	5.00	21.896	14.23	397.1	0.0	1,248.5
30.00		1.00	0.70	16.018	17.62	348.03	0.650	0.000	5.00	21.442	13.94	393.4	0.0	1,222.4
35.00		1.00	0.71	16.402	18.04	344.72	0.650	0.000	5.00	20.988	13.64	397.6	0.0	1,196.3
40.00		1.00	0.74	17.087	18.79	344.23	0.650	0.000	5.00	20.534	13.35	404.1	0.0	1,170.3
45.00		1.00	0.77	17.709	19.48	342.70	0.650	0.000	5.00	20.080	13.05	278.5	0.0	1,144.2
46.83	Bot - Section 2	1.00	0.79	18.104	19.91	341.15	0.650	0.000	1.83	7.249	4.71	207.3	0.0	413.0
50.00		1.00	0.80	18.381	20.21	339.80	0.650	0.000	3.17	12.578	8.18	258.0	0.0	1,421.8
53.00	Top - Section 1	1.00	0.81	18.708	20.57	337.90	0.650	0.000	3.00	11.748	7.64	209.7	0.0	1,327.6
55.00		1.00	0.82	18.963	20.85	341.79	0.650	0.000	2.00	7.741	5.03	294.2	0.0	441.0
60.00		1.00	0.84	19.306	21.23	339.21	0.650	0.000	5.00	19.036	12.37	420.4	0.0	1,084.2
65.00		1.00	0.86	19.772	21.74	335.09	0.650	0.000	5.00	18.582	12.08	419.9	0.0	1,058.1
70.00		1.00	0.88	20.211	22.23	330.52	0.650	* 0.000	5.00	18.128	11.79	420.0	0.0	1,032.1
75.00		1.00	0.90	20.628	22.69	325.55	0.655	* 0.000	5.00	17.674	11.58	378.7	0.0	1,006.0
79.00	Appertunance(s)	1.00	0.91	20.986	23.08	320.77	0.660	* 0.000	4.00	13.813	9.12	210.5	0.0	786.0
80.00		1.00	0.92	21.179	23.29	318.00	0.663	* 0.000	1.00	3.408	2.26	252.5	0.0	193.9
85.00		1.00	0.93	21.404	23.54	314.58	0.666	* 0.000	5.00	16.766	11.17	378.5	0.0	953.8
89.00	Appertunance(s)	1.00	0.95	21.731	23.90	309.25	0.672	* 0.000	4.00	13.086	8.79	208.5	0.0	744.3
90.00		1.00	0.95	21.908	24.09	306.20	0.650	0.000	1.00	3.226	2.10	237.7	0.0	183.5
94.92	Bot - Section 3	1.00	0.96	22.112	24.32	302.50	0.650	0.000	4.92	15.598	10.14	200.7	0.0	886.9
95.00		1.00	0.97	22.282	24.51	299.31	0.650	0.000	0.08	0.265	0.17	124.4	0.0	27.4
98.00	Appertunance(s)	1.00	0.97	22.384	24.62	297.31	0.650	0.000	3.00	9.456	6.15	194.5	0.0	977.3
99.83	Top - Section 2	1.00	0.98	22.543	24.79	294.14	0.650	0.000	1.83	5.698	3.70	80.1	0.0	588.8
100.0		1.00	0.98	22.608	24.86	297.91	0.650	0.000	0.17	0.515	0.33	204.9	0.0	24.4
105.0		1.00	0.99	22.773	25.05	294.46	0.650	0.000	5.00	15.215	9.89	393.1	0.0	721.9
110.0		1.00	1.00	23.086	25.39	287.63	0.650	0.000	5.00	14.761	9.59	310.2	0.0	700.2
113.0	Appertunance(s)	1.00	1.01	23.328	25.66	282.02	0.650	0.000	3.00	8.639	5.62	191.4	0.0	409.7
115.0		1.00	1.02	23.476	25.82	278.46	0.650	0.000	2.00	5.668	3.68	263.8	0.0	268.8
120.0		1.00	1.03	23.680	26.04	273.39	0.650	0.000	5.00	13.853	9.00	298.3	0.0	656.7
123.0	Appertunance(s)	1.00	1.04	23.907	26.29	267.50	0.650	0.000	3.00	8.094	5.26	183.7	0.0	383.6
125.0		1.00	1.05	24.047	26.45	263.77	0.650	0.000	2.00	5.305	3.45	252.5	0.0	251.4
130.0		1.00	1.05	24.239	26.66	258.47	0.650	0.000	5.00	12.946	8.41	354.6	0.0	613.3
135.0	Appertunance(s)	1.00	1.07	24.507	26.95	250.79	0.650	0.000	5.00	12.492	8.12	345.6	0.0	591.5
140.0		1.00	1.08	24.767	27.24	242.95	0.650	0.000	5.00	12.038	7.82	336.3	0.0	569.8
145.0		1.00	1.09	25.021	27.52	234.99	0.650	0.000	5.00	11.584	7.53	260.2	0.0	548.1
147.9	Appertunance(s)	1.00	1.10	25.218	27.74	228.59	0.650	0.000	2.92	6.548	4.26	94.5	0.0	309.7
* = Cf Adjusted By Linear Load Ra Effect								Totals:		147.92		11,743.9	0.0	30,410.9

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

**Load Case:** 1.2D + 1.6W

97 mph with No Ice

22 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		217.3	0.0					0.0	0.0	217.3	0.0	0.0	0.0
5.00		430.3	1,352.7					0.0	0.0	430.3	1,352.7	0.0	0.0
10.00		422.0	1,326.7					0.0	366.3	422.0	1,693.0	0.0	0.0
15.00		413.7	1,300.6					0.0	366.3	413.7	1,666.9	0.0	0.0
20.00	Appertunance(s)	405.4	1,274.5	25.7	0.0	0.0	4.8	0.0	366.3	431.0	1,645.7	0.0	0.0
25.00		397.1	1,248.5					0.0	365.4	397.1	1,613.9	0.0	0.0
30.00		393.4	1,222.4					0.0	365.4	393.4	1,587.8	0.0	0.0
35.00		397.6	1,196.3					0.0	365.4	397.6	1,561.8	0.0	0.0
40.00		404.1	1,170.3					0.0	365.4	404.1	1,535.7	0.0	0.0
45.00		278.5	1,144.2					0.0	365.4	278.5	1,509.6	0.0	0.0
46.83	Bot - Section 2	207.3	413.0					0.0	134.0	207.3	547.0	0.0	0.0
50.00		258.0	1,421.8					0.0	231.4	258.0	1,653.2	0.0	0.0
53.00	Top - Section 1	209.7	1,327.6					0.0	219.3	209.7	1,546.9	0.0	0.0
55.00		294.2	441.0					0.0	146.2	294.2	587.2	0.0	0.0
60.00		420.4	1,084.2					0.0	365.4	420.4	1,449.6	0.0	0.0
65.00		419.9	1,058.1					0.0	365.4	419.9	1,423.6	0.0	0.0
70.00		420.0	1,032.1					0.0	365.4	420.0	1,397.5	0.0	0.0
75.00		378.7	1,006.0					0.0	365.4	378.7	1,371.4	0.0	0.0
79.00	Appertunance(s)	210.5	786.0	3,726.2	0.0	0.0	3,214.2	0.0	292.3	3,936.7	4,292.6	0.0	0.0
80.00		252.5	193.9					0.0	70.0	252.5	263.9	0.0	0.0
85.00		378.5	953.8					0.0	349.8	378.5	1,303.7	0.0	0.0
89.00	Appertunance(s)	208.5	744.3	1,265.3	0.0	0.0	1,061.3	0.0	279.9	1,473.8	2,085.5	0.0	0.0
90.00		237.7	183.5					0.0	64.7	237.7	248.2	0.0	0.0
94.92	Bot - Section 3	200.7	886.9					0.0	318.2	200.7	1,205.1	0.0	0.0
95.00		124.4	27.4					0.0	5.4	124.4	32.8	0.0	0.0
98.00	Appertunance(s)	194.5	977.3	2,527.1	0.0	0.0	3,153.2	0.0	194.2	2,721.7	4,324.7	0.0	0.0
99.83	Top - Section 2	80.1	588.8					0.0	109.9	80.1	698.6	0.0	0.0
100.00		204.9	24.4					0.0	10.0	204.9	34.4	0.0	0.0
105.00		393.1	721.9					0.0	299.6	393.1	1,021.5	0.0	0.0
110.00		310.2	700.2					0.0	299.6	310.2	999.8	0.0	0.0
113.00	Appertunance(s)	191.4	409.7	499.5	0.0	0.0	95.0	0.0	179.8	690.9	684.5	0.0	0.0
115.00		263.8	268.8					0.0	108.0	263.8	376.8	0.0	0.0
120.00		298.3	656.7					0.0	270.1	298.3	926.8	0.0	0.0
123.00	Appertunance(s)	183.7	383.6	2,396.4	0.0	0.0	1,719.0	0.0	162.1	2,580.1	2,264.7	0.0	0.0
125.00		252.5	251.4					0.0	68.8	252.5	320.1	0.0	0.0
130.00		354.6	613.3					0.0	171.9	354.6	785.2	0.0	0.0
135.00	Appertunance(s)	345.6	591.5	3,813.8	0.0	3,575.0	3,351.2	0.0	171.9	4,159.4	4,114.7	0.0	0.0
140.00		336.3	569.8					0.0	59.9	336.3	629.8	0.0	0.0
145.00		260.2	548.1					0.0	59.9	260.2	608.0	0.0	0.0
147.92		94.5	309.7					0.0	35.0	94.5	344.7	0.0	0.0
<b>Totals:</b>										25,997.9	51,709.3	0.00	0.00



Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:30 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

97 mph with No Ice

22 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	-54.29	-29.30	0.00	-2,990.55	0.00	2,990.55	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.607
5.00	-52.86	-29.02	0.00	-2,844.03	0.00	2,844.03	4,297.95	2,148.97	9,746.71	4,880.60	0.08	-0.16	0.595
10.00	-51.09	-28.73	0.00	-2,698.96	0.00	2,698.96	4,248.67	2,124.33	9,446.20	4,730.12	0.33	-0.31	0.583
15.00	-49.35	-28.44	0.00	-2,555.32	0.00	2,555.32	4,198.03	2,099.01	9,147.09	4,580.35	0.74	-0.47	0.570
20.00	-47.63	-28.12	0.00	-2,413.14	0.00	2,413.14	4,146.02	2,073.01	8,849.58	4,431.37	1.32	-0.63	0.556
25.00	-45.94	-27.83	0.00	-2,272.52	0.00	2,272.52	4,092.65	2,046.32	8,553.84	4,283.28	2.06	-0.79	0.542
30.00	-44.28	-27.54	0.00	-2,133.36	0.00	2,133.36	4,037.92	2,018.96	8,260.05	4,136.16	2.97	-0.94	0.527
35.00	-42.65	-27.23	0.00	-1,995.67	0.00	1,995.67	3,981.82	1,990.91	7,968.40	3,990.12	4.04	-1.10	0.511
40.00	-41.05	-26.91	0.00	-1,859.52	0.00	1,859.52	3,924.36	1,962.18	7,679.06	3,845.24	5.28	-1.26	0.494
45.00	-39.50	-26.67	0.00	-1,724.98	0.00	1,724.98	3,865.53	1,932.77	7,392.22	3,701.60	6.69	-1.42	0.476
46.83	-38.92	-26.50	0.00	-1,676.09	0.00	1,676.09	3,843.62	1,921.81	7,287.71	3,649.27	7.25	-1.48	0.470
50.00	-37.23	-26.26	0.00	-1,592.18	0.00	1,592.18	3,805.35	1,902.67	7,108.06	3,559.31	8.26	-1.58	0.457
53.00	-35.66	-26.06	0.00	-1,513.39	0.00	1,513.39	3,811.37	1,905.68	7,136.09	3,573.35	9.28	-1.67	0.433
55.00	-35.03	-25.81	0.00	-1,461.28	0.00	1,461.28	3,786.97	1,893.48	7,023.10	3,516.77	9.99	-1.73	0.425
60.00	-33.53	-25.43	0.00	-1,332.24	0.00	1,332.24	3,725.00	1,862.50	6,742.70	3,376.36	11.88	-1.88	0.404
65.00	-32.07	-25.04	0.00	-1,205.11	0.00	1,205.11	3,661.68	1,830.84	6,465.40	3,237.50	13.92	-2.02	0.381
70.00	-30.63	-24.64	0.00	-1,079.93	0.00	1,079.93	3,596.99	1,798.49	6,191.38	3,100.29	16.11	-2.15	0.357
75.00	-29.22	-24.26	0.00	-956.75	0.00	956.75	3,530.94	1,765.47	5,920.82	2,964.81	18.43	-2.28	0.331
79.00	-25.07	-20.18	0.00	-859.70	0.00	859.70	3,477.11	1,738.56	5,706.98	2,857.73	20.39	-2.38	0.308
80.00	-24.79	-19.95	0.00	-839.52	0.00	839.52	3,463.52	1,731.76	5,653.90	2,831.15	20.89	-2.41	0.304
85.00	-23.47	-19.56	0.00	-739.77	0.00	739.77	3,394.74	1,697.37	5,390.81	2,699.41	23.48	-2.53	0.281
89.00	-21.44	-18.01	0.00	-661.53	0.00	661.53	3,338.73	1,669.37	5,183.21	2,595.46	25.63	-2.62	0.261
90.00	-21.18	-17.79	0.00	-643.52	0.00	643.52	3,324.59	1,662.30	5,131.72	2,569.67	26.18	-2.64	0.257
94.92	-19.97	-17.55	0.00	-556.05	0.00	556.05	3,235.40	1,617.70	4,852.71	2,429.96	28.96	-2.75	0.235
95.00	-19.93	-17.44	0.00	-554.59	0.00	554.59	3,233.82	1,616.91	4,847.95	2,427.58	29.01	-2.75	0.235
98.00	-15.73	-14.52	0.00	-502.28	0.00	502.28	3,176.90	1,588.45	4,677.94	2,342.44	30.75	-2.81	0.219
99.83	-15.03	-14.41	0.00	-475.66	0.00	475.66	2,561.71	1,280.85	3,809.78	1,907.72	31.84	-2.84	0.255
100.00	-15.00	-14.22	0.00	-473.26	0.00	473.26	2,559.94	1,279.97	3,803.37	1,904.51	31.94	-2.85	0.254
105.00	-13.97	-13.80	0.00	-402.16	0.00	402.16	2,506.36	1,253.18	3,612.41	1,808.89	34.97	-2.95	0.228
110.00	-12.97	-13.46	0.00	-333.16	0.00	333.16	2,451.42	1,225.71	3,424.31	1,714.70	38.12	-3.05	0.200
113.00	-12.32	-12.74	0.00	-292.79	0.00	292.79	2,417.79	1,208.90	3,312.90	1,658.91	40.05	-3.10	0.182
115.00	-11.94	-12.47	0.00	-267.32	0.00	267.32	2,395.11	1,197.55	3,239.25	1,622.03	41.36	-3.14	0.170
120.00	-11.02	-12.13	0.00	-204.99	0.00	204.99	2,337.43	1,168.72	3,057.40	1,530.97	44.69	-3.21	0.139
123.00	-8.90	-9.43	0.00	-168.61	0.00	168.61	2,302.17	1,151.09	2,949.92	1,477.15	46.72	-3.25	0.118
125.00	-8.59	-9.16	0.00	-149.75	0.00	149.75	2,271.18	1,135.59	2,869.84	1,437.05	48.08	-3.28	0.108
130.00	-7.82	-8.77	0.00	-103.93	0.00	103.93	2,192.12	1,096.06	2,672.56	1,338.27	51.54	-3.32	0.081
135.00	-3.95	-4.38	0.00	-56.51	0.00	56.51	2,113.07	1,056.53	2,482.31	1,243.00	55.04	-3.36	0.047
140.00	-3.34	-4.01	0.00	-34.61	0.00	34.61	2,034.01	1,017.00	2,299.08	1,151.25	58.57	-3.38	0.032
145.00	-2.75	-3.71	0.00	-14.57	0.00	14.57	1,954.95	977.48	2,122.87	1,063.01	62.12	-3.39	0.015
147.92	0.00	-3.54	0.00	-3.74	0.00	3.74	1,908.83	954.42	2,023.32	1,013.16	64.19	-3.40	0.004

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:30 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

**Shaft Segment Forces (Factored)**

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	16.018	17.62	388.55	0.650	0.000	0.00	0.000	0.00	217.3	0.0	0.0
5.00		1.00	0.70	16.018	17.62	384.86	0.650	0.000	5.00	23.712	15.41	430.3	0.0	1,014.6
10.00		1.00	0.70	16.018	17.62	377.50	0.650	0.000	5.00	23.258	15.12	422.0	0.0	995.0
15.00		1.00	0.70	16.018	17.62	370.13	0.650	0.000	5.00	22.804	14.82	413.7	0.0	975.5
20.00	Appertunance(s)	1.00	0.70	16.018	17.62	362.76	0.650	0.000	5.00	22.350	14.53	405.4	0.0	955.9
25.00		1.00	0.70	16.018	17.62	355.39	0.650	0.000	5.00	21.896	14.23	397.1	0.0	936.3
30.00		1.00	0.70	16.018	17.62	348.03	0.650	0.000	5.00	21.442	13.94	393.4	0.0	916.8
35.00		1.00	0.71	16.402	18.04	344.72	0.650	0.000	5.00	20.988	13.64	397.6	0.0	897.2
40.00		1.00	0.74	17.087	18.79	344.23	0.650	0.000	5.00	20.534	13.35	404.1	0.0	877.7
45.00		1.00	0.77	17.709	19.48	342.70	0.650	0.000	5.00	20.080	13.05	278.5	0.0	858.1
46.83	Bot - Section 2	1.00	0.79	18.104	19.91	341.15	0.650	0.000	1.83	7.249	4.71	207.3	0.0	309.8
50.00		1.00	0.80	18.381	20.21	339.80	0.650	0.000	3.17	12.578	8.18	258.0	0.0	1,066.3
53.00	Top - Section 1	1.00	0.81	18.708	20.57	337.90	0.650	0.000	3.00	11.748	7.64	209.7	0.0	995.7
55.00		1.00	0.82	18.963	20.85	341.79	0.650	0.000	2.00	7.741	5.03	294.2	0.0	330.7
60.00		1.00	0.84	19.306	21.23	339.21	0.650	0.000	5.00	19.036	12.37	420.4	0.0	813.1
65.00		1.00	0.86	19.772	21.74	335.09	0.650	0.000	5.00	18.582	12.08	419.7	0.0	793.6
70.00		1.00	0.88	20.211	22.23	330.52	0.650	* 0.000	5.00	18.128	11.78	418.1	0.0	774.0
75.00		1.00	0.90	20.628	22.69	325.55	0.650	* 0.000	5.00	17.674	11.49	374.4	0.0	754.5
79.00	Appertunance(s)	1.00	0.91	20.986	23.08	320.77	0.650	* 0.000	4.00	13.813	8.98	207.1	0.0	589.5
80.00		1.00	0.92	21.179	23.29	318.00	0.650	* 0.000	1.00	3.408	2.22	246.6	0.0	145.4
85.00		1.00	0.93	21.404	23.54	314.58	0.650	* 0.000	5.00	16.766	10.90	367.9	0.0	715.4
89.00	Appertunance(s)	1.00	0.95	21.731	23.90	309.25	0.650	* 0.000	4.00	13.086	8.51	203.1	0.0	558.2
90.00		1.00	0.95	21.908	24.09	306.20	0.650	0.000	1.00	3.226	2.10	237.7	0.0	137.6
94.92	Bot - Section 3	1.00	0.96	22.112	24.32	302.50	0.650	0.000	4.92	15.598	10.14	200.7	0.0	665.2
95.00		1.00	0.97	22.282	24.51	299.31	0.650	0.000	0.08	0.265	0.17	124.4	0.0	20.5
98.00	Appertunance(s)	1.00	0.97	22.384	24.62	297.31	0.650	0.000	3.00	9.456	6.15	194.5	0.0	733.0
99.83	Top - Section 2	1.00	0.98	22.543	24.79	294.14	0.650	0.000	1.83	5.698	3.70	80.1	0.0	441.6
100.00		1.00	0.98	22.608	24.86	297.91	0.650	0.000	0.17	0.515	0.33	204.9	0.0	18.3
105.00		1.00	0.99	22.773	25.05	294.46	0.650	0.000	5.00	15.215	9.89	393.1	0.0	541.4
110.00		1.00	1.00	23.086	25.39	287.63	0.650	0.000	5.00	14.761	9.59	310.2	0.0	525.1
113.00	Appertunance(s)	1.00	1.01	23.328	25.66	282.02	0.650	0.000	3.00	8.639	5.62	191.4	0.0	307.3
115.00		1.00	1.02	23.476	25.82	278.46	0.650	0.000	2.00	5.668	3.68	263.8	0.0	201.6
120.00		1.00	1.03	23.680	26.04	273.39	0.650	0.000	5.00	13.853	9.00	298.3	0.0	492.5
123.00	Appertunance(s)	1.00	1.04	23.907	26.29	267.50	0.650	0.000	3.00	8.094	5.26	183.7	0.0	287.7
125.00		1.00	1.05	24.047	26.45	263.77	0.650	0.000	2.00	5.305	3.45	252.5	0.0	188.5
130.00		1.00	1.05	24.239	26.66	258.47	0.650	0.000	5.00	12.946	8.41	354.6	0.0	460.0
135.00	Appertunance(s)	1.00	1.07	24.507	26.95	250.79	0.650	0.000	5.00	12.492	8.12	345.6	0.0	443.7
140.00		1.00	1.08	24.767	27.24	242.95	0.650	0.000	5.00	12.038	7.82	336.3	0.0	427.4
145.00		1.00	1.09	25.021	27.52	234.99	0.650	0.000	5.00	11.584	7.53	260.2	0.0	411.1
147.90	Appertunance(s)	1.00	1.10	25.218	27.74	228.59	0.650	0.000	2.92	6.548	4.26	94.5	0.0	232.3
								Totals:	147.92			11,712.3	0.0	22,808.2

\* = Cf Adjusted By Linear Load Ra Effect

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:33 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

22 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		217.3	0.0					0.0	0.0	217.3	0.0	0.0	0.0
5.00		430.3	1,014.6					0.0	0.0	430.3	1,014.6	0.0	0.0
10.00		422.0	995.0					0.0	274.7	422.0	1,269.8	0.0	0.0
15.00		413.7	975.5					0.0	274.7	413.7	1,250.2	0.0	0.0
20.00	Appertunance(s)	405.4	955.9	25.7	0.0	0.0	3.6	0.0	274.7	431.0	1,234.2	0.0	0.0
25.00		397.1	936.3					0.0	274.1	397.1	1,210.4	0.0	0.0
30.00		393.4	916.8					0.0	274.1	393.4	1,190.9	0.0	0.0
35.00		397.6	897.2					0.0	274.1	397.6	1,171.3	0.0	0.0
40.00		404.1	877.7					0.0	274.1	404.1	1,151.8	0.0	0.0
45.00		278.5	858.1					0.0	274.1	278.5	1,132.2	0.0	0.0
46.83	Bot - Section 2	207.3	309.8					0.0	100.5	207.3	410.2	0.0	0.0
50.00		258.0	1,066.3					0.0	173.6	258.0	1,239.9	0.0	0.0
53.00	Top - Section 1	209.7	995.7					0.0	164.4	209.7	1,160.2	0.0	0.0
55.00		294.2	330.7					0.0	109.6	294.2	440.4	0.0	0.0
60.00		420.4	813.1					0.0	274.1	420.4	1,087.2	0.0	0.0
65.00		419.7	793.6					0.0	274.1	419.7	1,067.7	0.0	0.0
70.00		418.1	774.0					0.0	274.1	418.1	1,048.1	0.0	0.0
75.00		374.4	754.5					0.0	274.1	374.4	1,028.6	0.0	0.0
79.00	Appertunance(s)	207.1	589.5	3,726.2	0.0	0.0	2,410.6	0.0	219.3	3,933.3	3,219.4	0.0	0.0
80.00		246.6	145.4					0.0	52.5	246.6	197.9	0.0	0.0
85.00		367.9	715.4					0.0	262.4	367.9	977.8	0.0	0.0
89.00	Appertunance(s)	203.1	558.2	1,265.3	0.0	0.0	796.0	0.0	209.9	1,468.4	1,564.1	0.0	0.0
90.00		237.7	137.6					0.0	48.5	237.7	186.1	0.0	0.0
94.92	Bot - Section 3	200.7	665.2					0.0	238.7	200.7	903.8	0.0	0.0
95.00		124.4	20.5					0.0	4.0	124.4	24.6	0.0	0.0
98.00	Appertunance(s)	194.5	733.0	2,527.1	0.0	0.0	2,364.9	0.0	145.6	2,721.7	3,243.5	0.0	0.0
99.83	Top - Section 2	80.1	441.6					0.0	82.4	80.1	524.0	0.0	0.0
100.00		204.9	18.3					0.0	7.5	204.9	25.8	0.0	0.0
105.00		393.1	541.4					0.0	224.7	393.1	766.1	0.0	0.0
110.00		310.2	525.1					0.0	224.7	310.2	749.8	0.0	0.0
113.00	Appertunance(s)	191.4	307.3	499.5	0.0	0.0	71.3	0.0	134.8	690.9	513.4	0.0	0.0
115.00		263.8	201.6					0.0	81.0	263.8	282.6	0.0	0.0
120.00		298.3	492.5					0.0	202.6	298.3	695.1	0.0	0.0
123.00	Appertunance(s)	183.7	287.7	2,396.4	0.0	0.0	1,289.2	0.0	121.5	2,580.1	1,698.5	0.0	0.0
125.00		252.5	188.5					0.0	51.6	252.5	240.1	0.0	0.0
130.00		354.6	460.0					0.0	128.9	354.6	588.9	0.0	0.0
135.00	Appertunance(s)	345.6	443.7	3,813.8	0.0	3,575.0	2,513.4	0.0	128.9	4,159.4	3,086.0	0.0	0.0
140.00		336.3	427.4					0.0	44.9	336.3	472.3	0.0	0.0
145.00		260.2	411.1					0.0	44.9	260.2	456.0	0.0	0.0
147.92		94.5	232.3					0.0	26.2	94.5	258.5	0.0	0.0
Totals:										25,966.2	38,782.0	0.00	0.00

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

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	-40.71	-29.25	0.00	-2,958.91	0.00	2,958.91	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.598
5.00	-39.62	-28.93	0.00	-2,812.64	0.00	2,812.64	4,297.95	2,148.97	9,746.71	4,880.60	0.08	-0.15	0.586
10.00	-38.27	-28.60	0.00	-2,668.01	0.00	2,668.01	4,248.67	2,124.33	9,446.20	4,730.12	0.33	-0.31	0.573
15.00	-36.95	-28.28	0.00	-2,524.98	0.00	2,524.98	4,198.03	2,099.01	9,147.09	4,580.35	0.73	-0.46	0.560
20.00	-35.64	-27.94	0.00	-2,383.57	0.00	2,383.57	4,146.02	2,073.01	8,849.58	4,431.37	1.30	-0.62	0.547
25.00	-34.36	-27.62	0.00	-2,243.88	0.00	2,243.88	4,092.65	2,046.32	8,553.84	4,283.28	2.04	-0.78	0.532
30.00	-33.10	-27.30	0.00	-2,105.79	0.00	2,105.79	4,037.92	2,018.96	8,260.05	4,136.16	2.94	-0.93	0.517
35.00	-31.86	-26.97	0.00	-1,969.29	0.00	1,969.29	3,981.82	1,990.91	7,968.40	3,990.12	4.00	-1.09	0.502
40.00	-30.65	-26.62	0.00	-1,834.45	0.00	1,834.45	3,924.36	1,962.18	7,679.06	3,845.24	5.22	-1.25	0.485
45.00	-29.47	-26.37	0.00	-1,701.34	0.00	1,701.34	3,865.53	1,932.77	7,392.22	3,701.60	6.61	-1.40	0.467
46.83	-29.03	-26.20	0.00	-1,652.98	0.00	1,652.98	3,843.62	1,921.81	7,287.71	3,649.27	7.16	-1.46	0.461
50.00	-27.76	-25.95	0.00	-1,570.03	0.00	1,570.03	3,805.35	1,902.67	7,108.06	3,559.31	8.16	-1.56	0.449
53.00	-26.57	-25.74	0.00	-1,492.18	0.00	1,492.18	3,811.37	1,905.68	7,136.09	3,573.35	9.17	-1.65	0.425
55.00	-26.09	-25.48	0.00	-1,440.69	0.00	1,440.69	3,786.97	1,893.48	7,023.10	3,516.77	9.87	-1.71	0.417
60.00	-24.96	-25.09	0.00	-1,313.27	0.00	1,313.27	3,725.00	1,862.50	6,742.70	3,376.36	11.74	-1.85	0.396
65.00	-23.84	-24.69	0.00	-1,187.81	0.00	1,187.81	3,661.68	1,830.84	6,465.40	3,237.50	13.75	-1.99	0.374
70.00	-22.76	-24.29	0.00	-1,064.35	0.00	1,064.35	3,596.99	1,798.49	6,191.38	3,100.29	15.91	-2.12	0.350
75.00	-21.70	-23.92	0.00	-942.90	0.00	942.90	3,530.94	1,765.47	5,920.82	2,964.81	18.20	-2.25	0.324
79.00	-18.62	-19.88	0.00	-847.23	0.00	847.23	3,477.11	1,738.56	5,706.98	2,857.73	20.13	-2.35	0.302
80.00	-18.40	-19.65	0.00	-827.35	0.00	827.35	3,463.52	1,731.76	5,653.90	2,831.15	20.63	-2.38	0.298
85.00	-17.41	-19.27	0.00	-729.11	0.00	729.11	3,394.74	1,697.37	5,390.81	2,699.41	23.18	-2.49	0.275
89.00	-15.89	-17.75	0.00	-652.03	0.00	652.03	3,338.73	1,669.37	5,183.21	2,595.46	25.31	-2.58	0.256
90.00	-15.70	-17.52	0.00	-634.28	0.00	634.28	3,324.59	1,662.30	5,131.72	2,569.67	25.85	-2.61	0.252
94.92	-14.79	-17.29	0.00	-548.13	0.00	548.13	3,235.40	1,617.70	4,852.71	2,429.96	28.59	-2.71	0.230
95.00	-14.76	-17.17	0.00	-546.69	0.00	546.69	3,233.82	1,616.91	4,847.95	2,427.58	28.64	-2.71	0.230
98.00	-11.64	-14.31	0.00	-495.17	0.00	495.17	3,176.90	1,588.45	4,677.94	2,342.44	30.36	-2.77	0.215
99.83	-11.12	-14.21	0.00	-468.93	0.00	468.93	2,561.71	1,280.85	3,809.78	1,907.72	31.43	-2.81	0.250
100.00	-11.09	-14.01	0.00	-466.56	0.00	466.56	2,559.94	1,279.97	3,803.37	1,904.51	31.53	-2.81	0.249
105.00	-10.32	-13.60	0.00	-396.49	0.00	396.49	2,506.36	1,253.18	3,612.41	1,808.89	34.53	-2.91	0.223
110.00	-9.57	-13.26	0.00	-328.49	0.00	328.49	2,451.42	1,225.71	3,424.31	1,714.70	37.63	-3.01	0.196
113.00	-9.08	-12.55	0.00	-288.69	0.00	288.69	2,417.79	1,208.90	3,312.90	1,658.91	39.54	-3.06	0.178
115.00	-8.80	-12.28	0.00	-263.59	0.00	263.59	2,395.11	1,197.55	3,239.25	1,622.03	40.83	-3.10	0.166
120.00	-8.11	-11.96	0.00	-202.16	0.00	202.16	2,337.43	1,168.72	3,057.40	1,530.97	44.11	-3.17	0.136
123.00	-6.56	-9.29	0.00	-166.30	0.00	166.30	2,302.17	1,151.09	2,949.92	1,477.15	46.11	-3.21	0.115
125.00	-6.32	-9.03	0.00	-147.72	0.00	147.72	2,271.18	1,135.59	2,869.84	1,437.05	47.46	-3.23	0.106
130.00	-5.75	-8.64	0.00	-102.58	0.00	102.58	2,192.12	1,096.06	2,672.56	1,338.27	50.87	-3.28	0.079
135.00	-2.91	-4.32	0.00	-55.78	0.00	55.78	2,113.07	1,056.53	2,482.31	1,243.00	54.33	-3.31	0.046
140.00	-2.45	-3.95	0.00	-34.20	0.00	34.20	2,034.01	1,017.00	2,299.08	1,151.25	57.81	-3.34	0.031
145.00	-2.01	-3.67	0.00	-14.43	0.00	14.43	1,954.95	977.48	2,122.87	1,063.01	61.31	-3.35	0.015
147.92	0.00	-3.54	0.00	-3.74	0.00	3.74	1,908.83	954.42	2,023.32	1,013.16	63.36	-3.35	0.004

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

**Load Case:** 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 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

**Shaft Segment Forces (Factored)**

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	70.2	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.545	5.00	24.999	30.00	139.6	552.2	1,904.9
10.00		1.00	0.70	4.256	4.682	0.000	1.200	1.725	5.00	24.695	29.63	137.7	606.6	1,933.3
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.815	5.00	24.316	29.18	135.5	627.2	1,927.9
20.00	Appertunance(s)	1.00	0.70	4.256	4.682	0.000	1.200	1.877	5.00	23.914	28.70	133.2	636.8	1,911.3
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.925	5.00	23.500	28.20	130.8	640.6	1,889.1
30.00		1.00	0.70	4.256	4.682	0.000	1.200	1.964	5.00	23.079	27.69	130.0	640.9	1,863.3
35.00		1.00	0.71	4.358	4.794	0.000	1.200	1.997	5.00	22.652	27.18	131.7	638.7	1,835.0
40.00		1.00	0.74	4.540	4.994	0.000	1.200	2.026	5.00	22.222	26.67	134.3	634.6	1,804.9
45.00		1.00	0.77	4.705	5.176	0.000	1.200	2.051	5.00	21.790	26.15	92.7	629.2	1,773.3
46.83	Bot - Section 2	1.00	0.79	4.810	5.291	0.000	1.200	2.067	1.83	7.881	9.46	69.1	230.7	643.7
50.00		1.00	0.80	4.884	5.372	0.000	1.200	2.078	3.17	13.675	16.41	86.1	401.2	1,823.0
53.00	Top - Section 1	1.00	0.81	4.971	5.468	0.000	1.200	2.091	3.00	12.794	15.35	70.0	377.5	1,705.2
55.00		1.00	0.82	5.039	5.542	0.000	1.200	2.101	2.00	8.442	10.13	98.5	250.7	691.6
60.00		1.00	0.84	5.130	5.643	0.000	1.200	2.114	5.00	20.798	24.96	141.0	616.6	1,700.8
65.00		1.00	0.86	5.253	5.779	0.000	1.200	2.132	5.00	20.359	24.43	141.2	607.6	1,665.8
70.00		1.00	0.88	5.370	5.907	0.000	1.200	* 2.148	5.00	19.918	23.90	141.1	598.1	1,630.2
75.00		1.00	0.90	5.481	6.029	0.000	1.200	* 2.164	5.00	19.477	23.37	126.6	588.1	1,594.0
79.00	Appertunance(s)	1.00	0.91	5.576	6.134	0.000	1.200	* 2.177	4.00	15.264	18.32	70.2	464.1	1,250.1
80.00		1.00	0.92	5.627	6.190	0.000	1.200	* 2.184	1.00	3.772	4.53	83.8	115.8	309.7
85.00		1.00	0.93	5.687	6.256	0.000	1.200	* 2.192	5.00	18.593	22.31	125.3	566.6	1,520.5
89.00	Appertunance(s)	1.00	0.95	5.774	6.351	0.000	1.200	* 2.204	4.00	14.555	17.47	69.3	446.3	1,190.7
90.00		1.00	0.95	5.821	6.403	0.000	1.200	2.210	1.00	3.594	4.31	81.3	111.3	294.8
94.92	Bot - Section 3	1.00	0.96	5.875	6.463	0.000	1.200	2.217	4.92	17.415	20.90	68.7	534.8	1,421.7
95.00		1.00	0.97	5.920	6.512	0.000	1.200	2.223	0.08	0.296	0.36	42.6	9.2	36.6
98.00	Appertunance(s)	1.00	0.97	5.948	6.542	0.000	1.200	2.227	3.00	10.569	12.68	66.7	327.5	1,304.8
99.83	Top - Section 2	1.00	0.98	5.990	6.589	0.000	1.200	2.232	1.83	6.380	7.66	27.5	198.6	787.4
100.0		1.00	0.98	6.007	6.608	0.000	1.200	2.234	0.17	0.577	0.69	70.5	18.1	42.5
105.0		1.00	0.99	6.051	6.656	0.000	1.200	2.240	5.00	17.082	20.50	135.6	528.2	1,250.1
110.0		1.00	1.00	6.134	6.747	0.000	1.200	2.251	5.00	16.637	19.96	107.3	515.8	1,216.0
113.0	Appertunance(s)	1.00	1.01	6.198	6.818	0.000	1.200	2.259	3.00	9.768	11.72	66.4	305.2	714.9
115.0		1.00	1.02	6.238	6.861	0.000	1.200	2.264	2.00	6.423	7.71	91.8	201.5	470.3
120.0		1.00	1.03	6.292	6.921	0.000	1.200	2.271	5.00	15.746	18.89	104.1	490.1	1,146.9
123.0	Appertunance(s)	1.00	1.04	6.352	6.987	0.000	1.200	2.278	3.00	9.233	11.08	64.3	289.6	673.2
125.0		1.00	1.05	6.389	7.028	0.000	1.200	2.283	2.00	6.066	7.28	88.7	191.0	442.4
130.0		1.00	1.05	6.440	7.084	0.000	1.200	2.289	5.00	14.853	17.82	125.1	463.6	1,076.9
135.0	Appertunance(s)	1.00	1.07	6.511	7.163	0.000	1.200	2.298	5.00	14.407	17.29	122.5	450.1	1,041.6
140.0		1.00	1.08	6.581	7.239	0.000	1.200	2.307	5.00	13.960	16.75	119.9	436.4	1,006.2
145.0		1.00	1.09	6.648	7.313	0.000	1.200	2.315	5.00	13.513	16.22	93.2	422.5	970.6
147.9	Appertunance(s)	1.00	1.10	6.701	7.371	0.000	1.200	2.321	2.92	7.677	9.21	34.0	241.9	551.6
								Totals:	147.92			3,968.1	16,605.9	47,016.8

\* = Cf Adjusted By Linear Load Ra Effect

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:35 PM

Customer: VERIZON WIRELESS

**Load Case:** 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 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)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		70.2	0.0					0.0	0.0	70.2	0.0	0.0	0.0
5.00		139.6	1,904.9					0.0	0.0	139.6	1,904.9	0.0	0.0
10.00		137.7	1,933.3					0.0	588.7	137.7	2,522.0	0.0	0.0
15.00		135.5	1,927.9					0.0	603.5	135.5	2,531.3	0.0	0.0
20.00	Appertunance(s)	133.2	1,911.3	6.7	0.0	0.0	43.8	0.0	613.9	139.9	2,569.0	0.0	0.0
25.00		130.8	1,889.1					0.0	621.1	130.8	2,510.2	0.0	0.0
30.00		130.0	1,863.3					0.0	627.8	130.0	2,491.1	0.0	0.0
35.00		131.7	1,835.0					0.0	633.6	131.7	2,468.6	0.0	0.0
40.00		134.3	1,804.9					0.0	638.6	134.3	2,443.5	0.0	0.0
45.00		92.7	1,773.3					0.0	643.1	92.7	2,416.5	0.0	0.0
46.83	Bot - Section 2	69.1	643.7					0.0	236.9	69.1	880.5	0.0	0.0
50.00		86.1	1,823.0					0.0	410.4	86.1	2,233.4	0.0	0.0
53.00	Top - Section 1	70.0	1,705.2					0.0	390.1	70.0	2,095.3	0.0	0.0
55.00		98.5	691.6					0.0	260.8	98.5	952.5	0.0	0.0
60.00		141.0	1,700.8					0.0	654.4	141.0	2,355.2	0.0	0.0
65.00		141.2	1,665.8					0.0	657.6	141.2	2,323.4	0.0	0.0
70.00		141.1	1,630.2					0.0	660.6	141.1	2,290.8	0.0	0.0
75.00		126.6	1,594.0					0.0	663.4	126.6	2,257.5	0.0	0.0
79.00	Appertunance(s)	70.2	1,250.1	865.5	0.0	0.0	8,217.0	0.0	532.7	935.7	9,999.7	0.0	0.0
80.00		83.8	309.7					0.0	117.1	83.8	426.8	0.0	0.0
85.00		125.3	1,520.5					0.0	586.6	125.3	2,107.1	0.0	0.0
89.00	Appertunance(s)	69.3	1,190.7	316.3	0.0	0.0	2,611.2	0.0	470.6	385.6	4,272.5	0.0	0.0
90.00		81.3	294.8					0.0	102.1	81.3	396.9	0.0	0.0
94.92	Bot - Section 3	68.7	1,421.7					0.0	502.6	68.7	1,924.3	0.0	0.0
95.00		42.6	36.6					0.0	8.5	42.6	45.1	0.0	0.0
98.00	Appertunance(s)	66.7	1,304.8	650.6	0.0	0.0	7,016.0	0.0	307.2	717.3	8,628.0	0.0	0.0
99.83	Top - Section 2	27.5	787.4					0.0	179.2	27.5	966.6	0.0	0.0
100.00		70.5	42.5					0.0	16.3	70.5	58.8	0.0	0.0
105.00		135.6	1,250.1					0.0	489.5	135.6	1,739.7	0.0	0.0
110.00		107.3	1,216.0					0.0	490.7	107.3	1,706.6	0.0	0.0
113.00	Appertunance(s)	66.4	714.9	109.2	0.0	0.0	583.7	0.0	294.9	175.6	1,593.5	0.0	0.0
115.00		91.8	470.3					0.0	185.0	91.8	655.3	0.0	0.0
120.00		104.1	1,146.9					0.0	463.3	104.1	1,610.2	0.0	0.0
123.00	Appertunance(s)	64.3	673.2	580.2	0.0	0.0	4,996.5	0.0	278.5	644.5	5,948.2	0.0	0.0
125.00		88.7	442.4					0.0	68.8	88.7	511.2	0.0	0.0
130.00		125.1	1,076.9					0.0	171.9	125.1	1,248.8	0.0	0.0
135.00	Appertunance(s)	122.5	1,041.6	930.0	0.0	733.1	8,038.6	0.0	171.9	1,052.5	9,252.2	0.0	0.0
140.00		119.9	1,006.2					0.0	59.9	119.9	1,066.1	0.0	0.0
145.00		93.2	970.6					0.0	59.9	93.2	1,030.5	0.0	0.0
147.92		34.0	551.6					0.0	35.0	34.0	586.6	0.0	0.0
<b>Totals:</b>										7,426.59	93,020.2	0.00	0.00

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:35 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 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 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	-99.49	-8.22	0.00	-846.76	0.00	846.76	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.191
5.00	-97.58	-8.16	0.00	-805.65	0.00	805.65	4,297.95	2,148.97	9,746.71	4,880.60	0.02	-0.04	0.188
10.00	-95.05	-8.09	0.00	-764.87	0.00	764.87	4,248.67	2,124.33	9,446.20	4,730.12	0.09	-0.09	0.184
15.00	-92.51	-8.02	0.00	-724.42	0.00	724.42	4,198.03	2,099.01	9,147.09	4,580.35	0.21	-0.13	0.180
20.00	-89.94	-7.95	0.00	-684.32	0.00	684.32	4,146.02	2,073.01	8,849.58	4,431.37	0.37	-0.18	0.176
25.00	-87.42	-7.87	0.00	-644.59	0.00	644.59	4,092.65	2,046.32	8,553.84	4,283.28	0.58	-0.22	0.172
30.00	-84.92	-7.80	0.00	-605.22	0.00	605.22	4,037.92	2,018.96	8,260.05	4,136.16	0.84	-0.27	0.167
35.00	-82.45	-7.72	0.00	-566.23	0.00	566.23	3,981.82	1,990.91	7,968.40	3,990.12	1.15	-0.31	0.163
40.00	-80.00	-7.63	0.00	-527.62	0.00	527.62	3,924.36	1,962.18	7,679.06	3,845.24	1.50	-0.36	0.158
45.00	-77.58	-7.57	0.00	-489.45	0.00	489.45	3,865.53	1,932.77	7,392.22	3,701.60	1.90	-0.40	0.152
46.83	-76.70	-7.52	0.00	-475.58	0.00	475.58	3,843.62	1,921.81	7,287.71	3,649.27	2.05	-0.42	0.150
50.00	-74.46	-7.45	0.00	-451.77	0.00	451.77	3,805.35	1,902.67	7,108.06	3,559.31	2.34	-0.45	0.147
53.00	-72.36	-7.40	0.00	-429.40	0.00	429.40	3,811.37	1,905.68	7,136.09	3,573.35	2.63	-0.47	0.139
55.00	-71.41	-7.33	0.00	-414.61	0.00	414.61	3,786.97	1,893.48	7,023.10	3,516.77	2.83	-0.49	0.137
60.00	-69.05	-7.21	0.00	-377.99	0.00	377.99	3,725.00	1,862.50	6,742.70	3,376.36	3.37	-0.53	0.131
65.00	-66.72	-7.09	0.00	-341.93	0.00	341.93	3,661.68	1,830.84	6,465.40	3,237.50	3.95	-0.57	0.124
70.00	-64.43	-6.97	0.00	-306.46	0.00	306.46	3,596.99	1,798.49	6,191.38	3,100.29	4.57	-0.61	0.117
75.00	-62.17	-6.86	0.00	-271.60	0.00	271.60	3,530.94	1,765.47	5,920.82	2,964.81	5.23	-0.65	0.109
79.00	-52.18	-5.82	0.00	-244.18	0.00	244.18	3,477.11	1,738.56	5,706.98	2,857.73	5.78	-0.68	0.100
80.00	-51.75	-5.75	0.00	-238.36	0.00	238.36	3,463.52	1,731.76	5,653.90	2,831.15	5.92	-0.68	0.099
85.00	-49.64	-5.63	0.00	-209.61	0.00	209.61	3,394.74	1,697.37	5,390.81	2,699.41	6.66	-0.72	0.092
89.00	-45.38	-5.20	0.00	-187.11	0.00	187.11	3,338.73	1,669.37	5,183.21	2,595.46	7.27	-0.74	0.086
90.00	-44.98	-5.13	0.00	-181.91	0.00	181.91	3,324.59	1,662.30	5,131.72	2,569.67	7.43	-0.75	0.084
94.92	-43.05	-5.04	0.00	-156.71	0.00	156.71	3,235.40	1,617.70	4,852.71	2,429.96	8.21	-0.78	0.078
95.00	-43.01	-5.01	0.00	-156.29	0.00	156.29	3,233.82	1,616.91	4,847.95	2,427.58	8.23	-0.78	0.078
98.00	-34.39	-4.18	0.00	-141.27	0.00	141.27	3,176.90	1,588.45	4,677.94	2,342.44	8.72	-0.80	0.071
99.83	-33.42	-4.14	0.00	-133.62	0.00	133.62	2,561.71	1,280.85	3,809.78	1,907.72	9.03	-0.81	0.083
100.00	-33.36	-4.08	0.00	-132.93	0.00	132.93	2,559.94	1,279.97	3,803.37	1,904.51	9.06	-0.81	0.083
105.00	-31.62	-3.93	0.00	-112.53	0.00	112.53	2,506.36	1,253.18	3,612.41	1,808.89	9.92	-0.84	0.075
110.00	-29.92	-3.81	0.00	-92.87	0.00	92.87	2,451.42	1,225.71	3,424.31	1,714.70	10.81	-0.86	0.066
113.00	-28.33	-3.62	0.00	-81.44	0.00	81.44	2,417.79	1,208.90	3,312.90	1,658.91	11.36	-0.88	0.061
115.00	-27.67	-3.52	0.00	-74.20	0.00	74.20	2,395.11	1,197.55	3,239.25	1,622.03	11.73	-0.89	0.057
120.00	-26.06	-3.40	0.00	-56.59	0.00	56.59	2,337.43	1,168.72	3,057.40	1,530.97	12.67	-0.91	0.048
123.00	-20.13	-2.66	0.00	-46.38	0.00	46.38	2,302.17	1,151.09	2,949.92	1,477.15	13.25	-0.92	0.040
125.00	-19.62	-2.57	0.00	-41.05	0.00	41.05	2,271.18	1,135.59	2,869.84	1,437.05	13.63	-0.93	0.037
130.00	-18.37	-2.43	0.00	-28.20	0.00	28.20	2,192.12	1,096.06	2,672.56	1,338.27	14.61	-0.94	0.029
135.00	-9.13	-1.23	0.00	-15.32	0.00	15.32	2,113.07	1,056.53	2,482.31	1,243.00	15.60	-0.95	0.017
140.00	-8.07	-1.09	0.00	-9.19	0.00	9.19	2,034.01	1,017.00	2,299.08	1,151.25	16.60	-0.96	0.012
145.00	-7.04	-0.98	0.00	-3.75	0.00	3.75	1,954.95	977.48	2,122.87	1,063.01	17.60	-0.96	0.007
147.92	0.00	-0.86	0.00	-0.90	0.00	0.90	1,908.83	954.42	2,023.32	1,013.16	18.19	-0.96	0.001

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:36 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

**Shaft Segment Forces (Factored)**

Seg Top														
Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	240.34	0.650	0.000	0.00	0.000	0.00	52.0	0.0	0.0
5.00		1.00	0.70	6.129	6.742	238.06	0.650	0.000	5.00	23.712	15.41	102.9	0.0	1,127.3
10.00		1.00	0.70	6.129	6.742	233.50	0.650	0.000	5.00	23.258	15.12	100.9	0.0	1,105.6
15.00		1.00	0.70	6.129	6.742	228.94	0.650	0.000	5.00	22.804	14.82	98.9	0.0	1,083.8
20.00	Appertunance(s)	1.00	0.70	6.129	6.742	224.39	0.650	0.000	5.00	22.350	14.53	96.9	0.0	1,062.1
25.00		1.00	0.70	6.129	6.742	219.83	0.650	0.000	5.00	21.896	14.23	95.0	0.0	1,040.4
30.00		1.00	0.70	6.129	6.742	215.27	0.650	0.000	5.00	21.442	13.94	94.1	0.0	1,018.7
35.00		1.00	0.71	6.276	6.903	213.23	0.650	0.000	5.00	20.988	13.64	95.1	0.0	996.9
40.00		1.00	0.74	6.538	7.191	212.93	0.650	0.000	5.00	20.534	13.35	96.6	0.0	975.2
45.00		1.00	0.77	6.776	7.453	211.97	0.650	0.000	5.00	20.080	13.05	66.6	0.0	953.5
46.83	Bot - Section 2	1.00	0.79	6.927	7.620	211.02	0.650	0.000	1.83	7.249	4.71	49.6	0.0	344.2
50.00		1.00	0.80	7.033	7.736	210.18	0.650	0.000	3.17	12.578	8.18	61.7	0.0	1,184.8
53.00	Top - Section 1	1.00	0.81	7.158	7.874	209.01	0.650	0.000	3.00	11.748	7.64	50.1	0.0	1,106.4
55.00		1.00	0.82	7.255	7.981	211.41	0.650	0.000	2.00	7.741	5.03	70.3	0.0	367.5
60.00		1.00	0.84	7.387	8.126	209.82	0.650	0.000	5.00	19.036	12.37	100.5	0.0	903.5
65.00		1.00	0.86	7.565	8.321	207.27	0.650	0.000	5.00	18.582	12.08	100.4	0.0	881.8
70.00		1.00	0.88	7.733	8.506	204.44	0.650	* 0.000	5.00	18.128	11.78	100.0	0.0	860.0
75.00		1.00	0.90	7.893	8.682	201.37	0.650	* 0.000	5.00	17.674	11.49	89.5	0.0	838.3
79.00	Appertunance(s)	1.00	0.91	8.030	8.833	198.41	0.650	* 0.000	4.00	13.813	8.98	49.5	0.0	655.0
80.00		1.00	0.92	8.103	8.914	196.70	0.650	* 0.000	1.00	3.408	2.22	59.0	0.0	161.6
85.00		1.00	0.93	8.189	9.008	194.58	0.650	* 0.000	5.00	16.766	10.90	88.0	0.0	794.9
89.00	Appertunance(s)	1.00	0.95	8.315	9.146	191.29	0.650	* 0.000	4.00	13.086	8.51	48.6	0.0	620.3
90.00		1.00	0.95	8.382	9.220	189.40	0.650	0.000	1.00	3.226	2.10	56.8	0.0	152.9
94.92	Bot - Section 3	1.00	0.96	8.460	9.307	187.11	0.650	0.000	4.92	15.598	10.14	48.0	0.0	739.1
95.00		1.00	0.97	8.525	9.378	185.14	0.650	0.000	0.08	0.265	0.17	29.8	0.0	22.8
98.00	Appertunance(s)	1.00	0.97	8.565	9.421	183.90	0.650	0.000	3.00	9.456	6.15	46.5	0.0	814.4
99.83	Top - Section 2	1.00	0.98	8.625	9.488	181.94	0.650	0.000	1.83	5.698	3.70	19.2	0.0	490.6
100.0		1.00	0.98	8.650	9.515	184.28	0.650	0.000	0.17	0.515	0.33	49.0	0.0	20.4
105.0		1.00	0.99	8.713	9.585	182.14	0.650	0.000	5.00	15.215	9.89	94.0	0.0	601.6
110.0		1.00	1.00	8.833	9.716	177.91	0.650	0.000	5.00	14.761	9.59	74.2	0.0	583.5
113.0	Appertunance(s)	1.00	1.01	8.925	9.818	174.44	0.650	0.000	3.00	8.639	5.62	45.8	0.0	341.4
115.0		1.00	1.02	8.982	9.880	172.24	0.650	0.000	2.00	5.668	3.68	63.1	0.0	224.0
120.0		1.00	1.03	9.060	9.966	169.11	0.650	0.000	5.00	13.853	9.00	71.3	0.0	547.3
123.0	Appertunance(s)	1.00	1.04	9.147	10.06	165.46	0.650	0.000	3.00	8.094	5.26	43.9	0.0	319.7
125.0		1.00	1.05	9.201	10.12	163.15	0.650	0.000	2.00	5.305	3.45	60.4	0.0	209.5
130.0		1.00	1.05	9.274	10.20	159.88	0.650	0.000	5.00	12.946	8.41	84.8	0.0	511.1
135.0	Appertunance(s)	1.00	1.07	9.377	10.31	155.12	0.650	0.000	5.00	12.038	8.12	82.7	0.0	493.0
140.0		1.00	1.08	9.476	10.42	150.28	0.650	0.000	5.00	12.038	7.82	80.4	0.0	474.8
145.0		1.00	1.09	9.574	10.53	145.35	0.650	0.000	5.00	11.584	7.53	62.2	0.0	456.7
147.9	Appertunance(s)	1.00	1.10	9.649	10.61	141.40	0.650	0.000	2.92	6.548	4.26	22.6	0.0	258.1
* = Cf Adjusted By Linear Load Ra Effect								Totals:	147.92			2,800.8	0.0	25,342.4



Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:38 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 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		52.0	0.0					0.0	0.0	52.0	0.0	0.0	0.0
5.00		102.9	1,127.3					0.0	0.0	102.9	1,127.3	0.0	0.0
10.00		100.9	1,105.6					0.0	305.3	100.9	1,410.8	0.0	0.0
15.00		98.9	1,083.8					0.0	305.3	98.9	1,389.1	0.0	0.0
20.00	Appertunance(s)	96.9	1,062.1	6.1	0.0	0.0	4.0	0.0	305.3	103.1	1,371.4	0.0	0.0
25.00		95.0	1,040.4					0.0	304.5	95.0	1,344.9	0.0	0.0
30.00		94.1	1,018.7					0.0	304.5	94.1	1,323.2	0.0	0.0
35.00		95.1	996.9					0.0	304.5	95.1	1,301.5	0.0	0.0
40.00		96.6	975.2					0.0	304.5	96.6	1,279.7	0.0	0.0
45.00		66.6	953.5					0.0	304.5	66.6	1,258.0	0.0	0.0
46.83	Bot - Section 2	49.6	344.2					0.0	111.7	49.6	455.8	0.0	0.0
50.00		61.7	1,184.8					0.0	192.9	61.7	1,377.7	0.0	0.0
53.00	Top - Section 1	50.1	1,106.4					0.0	182.7	50.1	1,289.1	0.0	0.0
55.00		70.3	367.5					0.0	121.8	70.3	489.3	0.0	0.0
60.00		100.5	903.5					0.0	304.5	100.5	1,208.0	0.0	0.0
65.00		100.4	881.8					0.0	304.5	100.4	1,186.3	0.0	0.0
70.00		100.0	860.0					0.0	304.5	100.0	1,164.6	0.0	0.0
75.00		89.5	838.3					0.0	304.5	89.5	1,142.8	0.0	0.0
79.00	Appertunance(s)	49.5	655.0	891.1	0.0	0.0	2,678.5	0.0	243.6	940.6	3,577.1	0.0	0.0
80.00		59.0	161.6					0.0	58.3	59.0	219.9	0.0	0.0
85.00		88.0	794.9					0.0	291.5	88.0	1,086.4	0.0	0.0
89.00	Appertunance(s)	48.6	620.3	302.6	0.0	0.0	884.4	0.0	233.2	351.1	1,737.9	0.0	0.0
90.00		56.8	152.9					0.0	53.9	56.8	206.8	0.0	0.0
94.92	Bot - Section 3	48.0	739.1					0.0	265.2	48.0	1,004.3	0.0	0.0
95.00		29.8	22.8					0.0	4.5	29.8	27.3	0.0	0.0
98.00	Appertunance(s)	46.5	814.4	604.3	0.0	0.0	2,627.7	0.0	161.8	650.8	3,603.9	0.0	0.0
99.83	Top - Section 2	19.2	490.6					0.0	91.5	19.2	582.2	0.0	0.0
100.00		49.0	20.4					0.0	8.3	49.0	28.7	0.0	0.0
105.00		94.0	601.6					0.0	249.7	94.0	851.3	0.0	0.0
110.00		74.2	583.5					0.0	249.7	74.2	833.2	0.0	0.0
113.00	Appertunance(s)	45.8	341.4	119.4	0.0	0.0	79.2	0.0	149.8	165.2	570.4	0.0	0.0
115.00		63.1	224.0					0.0	90.0	63.1	314.0	0.0	0.0
120.00		71.3	547.3					0.0	225.1	71.3	772.3	0.0	0.0
123.00	Appertunance(s)	43.9	319.7	573.1	0.0	0.0	1,432.5	0.0	135.0	617.0	1,887.2	0.0	0.0
125.00		60.4	209.5					0.0	57.3	60.4	266.8	0.0	0.0
130.00		84.8	511.1					0.0	143.2	84.8	654.3	0.0	0.0
135.00	Appertunance(s)	82.7	493.0	912.0	0.0	854.9	2,792.7	0.0	143.2	994.7	3,428.9	0.0	0.0
140.00		80.4	474.8					0.0	49.9	80.4	524.8	0.0	0.0
145.00		62.2	456.7					0.0	49.9	62.2	506.7	0.0	0.0
147.92		22.6	258.1					0.0	29.1	22.6	287.2	0.0	0.0
<b>Totals:</b>										6,209.39	43,091.1	0.00	0.00

Site Number: 302468

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 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	-45.27	-7.00	0.00	-710.17	0.00	710.17	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.152
5.00	-44.14	-6.92	0.00	-675.19	0.00	675.19	4,297.95	2,148.97	9,746.71	4,880.60	0.02	-0.04	0.149
10.00	-42.73	-6.85	0.00	-640.58	0.00	640.58	4,248.67	2,124.33	9,446.20	4,730.12	0.08	-0.07	0.145
15.00	-41.33	-6.77	0.00	-606.35	0.00	606.35	4,198.03	2,099.01	9,147.09	4,580.35	0.18	-0.11	0.142
20.00	-39.96	-6.69	0.00	-572.49	0.00	572.49	4,146.02	2,073.01	8,849.58	4,431.37	0.31	-0.15	0.139
25.00	-38.61	-6.62	0.00	-539.02	0.00	539.02	4,092.65	2,046.32	8,553.84	4,283.28	0.49	-0.19	0.135
30.00	-37.28	-6.54	0.00	-505.93	0.00	505.93	4,037.92	2,018.96	8,260.05	4,136.16	0.70	-0.22	0.132
35.00	-35.98	-6.47	0.00	-473.20	0.00	473.20	3,981.82	1,990.91	7,968.40	3,990.12	0.96	-0.26	0.128
40.00	-34.69	-6.39	0.00	-440.86	0.00	440.86	3,924.36	1,962.18	7,679.06	3,845.24	1.25	-0.30	0.124
45.00	-33.43	-6.33	0.00	-408.93	0.00	408.93	3,865.53	1,932.77	7,392.22	3,701.60	1.59	-0.34	0.119
46.83	-32.97	-6.29	0.00	-397.32	0.00	397.32	3,843.62	1,921.81	7,287.71	3,649.27	1.72	-0.35	0.117
50.00	-31.59	-6.23	0.00	-377.42	0.00	377.42	3,805.35	1,902.67	7,108.06	3,559.31	1.96	-0.37	0.114
53.00	-30.30	-6.18	0.00	-358.73	0.00	358.73	3,811.37	1,905.68	7,136.09	3,573.35	2.20	-0.40	0.108
55.00	-29.81	-6.12	0.00	-346.37	0.00	346.37	3,786.97	1,893.48	7,023.10	3,516.77	2.37	-0.41	0.106
60.00	-28.60	-6.03	0.00	-315.77	0.00	315.77	3,725.00	1,862.50	6,742.70	3,376.36	2.82	-0.44	0.101
65.00	-27.41	-5.93	0.00	-285.64	0.00	285.64	3,661.68	1,830.84	6,465.40	3,237.50	3.30	-0.48	0.096
70.00	-26.25	-5.84	0.00	-255.97	0.00	255.97	3,596.99	1,798.49	6,191.38	3,100.29	3.82	-0.51	0.090
75.00	-25.10	-5.75	0.00	-226.79	0.00	226.79	3,530.94	1,765.47	5,920.82	2,964.81	4.37	-0.54	0.084
79.00	-21.53	-4.78	0.00	-203.79	0.00	203.79	3,477.11	1,738.56	5,706.98	2,857.73	4.84	-0.57	0.078
80.00	-21.31	-4.72	0.00	-199.01	0.00	199.01	3,463.52	1,731.76	5,653.90	2,831.15	4.96	-0.57	0.076
85.00	-20.22	-4.63	0.00	-175.39	0.00	175.39	3,394.74	1,697.37	5,390.81	2,699.41	5.57	-0.60	0.071
89.00	-18.49	-4.27	0.00	-156.85	0.00	156.85	3,338.73	1,669.37	5,183.21	2,595.46	6.08	-0.62	0.066
90.00	-18.28	-4.21	0.00	-152.59	0.00	152.59	3,324.59	1,662.30	5,131.72	2,569.67	6.21	-0.63	0.065
94.92	-17.28	-4.16	0.00	-131.86	0.00	131.86	3,235.40	1,617.70	4,852.71	2,429.96	6.87	-0.65	0.060
95.00	-17.25	-4.13	0.00	-131.52	0.00	131.52	3,233.82	1,616.91	4,847.95	2,427.58	6.88	-0.65	0.060
98.00	-13.65	-3.44	0.00	-119.12	0.00	119.12	3,176.90	1,588.45	4,677.94	2,342.44	7.30	-0.67	0.055
99.83	-13.07	-3.42	0.00	-112.81	0.00	112.81	2,561.71	1,280.85	3,809.78	1,907.72	7.55	-0.67	0.064
100.00	-13.04	-3.37	0.00	-112.24	0.00	112.24	2,559.94	1,279.97	3,803.37	1,904.51	7.58	-0.68	0.064
105.00	-12.19	-3.27	0.00	-95.39	0.00	95.39	2,506.36	1,253.18	3,612.41	1,808.89	8.30	-0.70	0.058
110.00	-11.36	-3.19	0.00	-79.03	0.00	79.03	2,451.42	1,225.71	3,424.31	1,714.70	9.04	-0.72	0.051
113.00	-10.79	-3.02	0.00	-69.45	0.00	69.45	2,417.79	1,208.90	3,312.90	1,658.91	9.50	-0.74	0.046
115.00	-10.47	-2.96	0.00	-63.41	0.00	63.41	2,395.11	1,197.55	3,239.25	1,622.03	9.81	-0.74	0.043
120.00	-9.70	-2.88	0.00	-48.63	0.00	48.63	2,337.43	1,168.72	3,057.40	1,530.97	10.60	-0.76	0.036
123.00	-7.82	-2.24	0.00	-40.01	0.00	40.01	2,302.17	1,151.09	2,949.92	1,477.15	11.08	-0.77	0.030
125.00	-7.56	-2.17	0.00	-35.53	0.00	35.53	2,271.18	1,135.59	2,869.84	1,437.05	11.41	-0.78	0.028
130.00	-6.90	-2.08	0.00	-24.67	0.00	24.67	2,192.12	1,096.06	2,672.56	1,338.27	12.23	-0.79	0.022
135.00	-3.49	-1.04	0.00	-13.41	0.00	13.41	2,113.07	1,056.53	2,482.31	1,243.00	13.06	-0.80	0.012
140.00	-2.96	-0.95	0.00	-8.22	0.00	8.22	2,034.01	1,017.00	2,299.08	1,151.25	13.90	-0.80	0.009
145.00	-2.46	-0.88	0.00	-3.47	0.00	3.47	1,954.95	977.48	2,122.87	1,063.01	14.74	-0.81	0.005
147.92	0.00	-0.85	0.00	-0.89	0.00	0.89	1,908.83	954.42	2,023.32	1,013.16	15.23	-0.81	0.001

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Site Name: Petro Lock, CT

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Customer: VERIZON WIRELESS

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.18
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	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 ( $S_{ds}$ ):	0.19
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.09
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.80
Total Unfactored Dead Load:	45.28 k
Seismic Base Shear (E):	1.92 k

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

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
39	146.46	287	2,222	0.016	31	356
38	142.50	507	3,731	0.028	53	628
37	137.50	525	3,624	0.027	51	650
36	132.50	636	4,111	0.030	58	788
35	127.50	654	3,946	0.029	56	810
34	124.00	267	1,530	0.011	22	330
33	121.50	455	2,515	0.019	36	563
32	117.50	772	4,022	0.030	57	957
31	114.00	314	1,549	0.011	22	389
30	111.50	491	2,328	0.017	33	608
29	107.50	833	3,699	0.027	52	1,032
28	102.50	851	3,469	0.026	49	1,054
27	99.92	29	112	0.001	2	36
26	98.92	582	2,226	0.016	32	721
25	96.50	976	3,570	0.026	51	1,209
24	94.96	27	97	0.001	1	34
23	92.46	1,004	3,401	0.025	48	1,244
22	89.50	207	661	0.005	9	256
21	87.00	853	2,591	0.019	37	1,057
20	82.50	1,086	2,998	0.022	42	1,346
19	79.50	220	568	0.004	8	272
18	77.00	899	2,191	0.016	31	1,113
17	72.50	1,143	2,501	0.018	35	1,416

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Customer: VERIZON WIRELESS

16	67.50	1,165	2,242	0.017	32	1,442
15	62.50	1,186	1,989	0.015	28	1,469
14	57.50	1,208	1,744	0.013	25	1,496
13	54.00	489	631	0.005	9	606
12	51.50	1,289	1,527	0.011	22	1,597
11	48.42	1,378	1,460	0.011	21	1,706
10	45.92	456	439	0.003	6	565
9	42.50	1,258	1,055	0.008	15	1,558
8	37.50	1,280	857	0.006	12	1,585
7	32.50	1,301	674	0.005	10	1,612
6	27.50	1,323	508	0.004	7	1,639
5	22.50	1,345	360	0.003	5	1,666
4	17.50	1,367	233	0.002	3	1,694
3	12.50	1,389	129	0.001	2	1,721
2	7.50	1,411	53	0.000	1	1,747
1	2.50	1,127	6	0.000	0	1,396
Decibel DB844H90E-XY	149.00	56	447	0.003	6	69
Andrew 844G65VTZASX	149.00	128	1,021	0.008	14	159
Flat Platform w/ Han	149.00	2,000	15,955	0.118	226	2,477
LGP Allgon LGP21903	135.00	33	221	0.002	3	41
Powerwave Allgon LGP	135.00	85	565	0.004	8	105
Raycap DC6-48-60-18-	135.00	20	134	0.001	2	25
Ericsson RRUS 11 (Ba	135.00	330	2,205	0.016	31	409
Powerwave Allgon 775	135.00	162	1,083	0.008	15	201
KMW AM-X-CD-16-65-00	135.00	97	648	0.005	9	120
Andrew SBNH-1D6565C	135.00	66	442	0.003	6	82
Flat Platform w/ Han	135.00	2,000	13,364	0.099	189	2,477
Kathrein Scala Smart	123.00	10	56	0.000	1	12
Ericsson KRY 112 144	123.00	33	187	0.001	3	41
Ericsson KRY 112 489	123.00	46	261	0.002	4	57
Ericsson AIR 32 B4A-	123.00	317	1,794	0.013	25	393
RFS APX16DWV-16DWVS-	123.00	122	690	0.005	10	151
Round T-Arms	123.00	750	4,240	0.031	60	929
Andrew LNX-6515DS-VT	123.00	154	870	0.006	12	191
RFS APXV18-206517	113.00	79	385	0.003	5	98
RFS IBC1900BB-1	98.00	66	248	0.002	4	82
RFS IBC1900HG-2A	98.00	66	248	0.002	4	82
Alcatel-Lucent 800 M	98.00	192	722	0.005	10	238
Alcatel-Lucent 4x40W	98.00	264	993	0.007	14	327
Alcatel-Lucent TD-RR	98.00	210	790	0.006	11	260
RFS APXVTM14-C-I20	98.00	159	597	0.004	8	197
RFS APXVSP18-C-A20	98.00	171	643	0.005	9	212
Round Low Profile PI	98.00	1,500	5,640	0.042	80	1,858
DragonWave Horizon C	89.00	32	101	0.001	1	39
NextNet BTS-2500	89.00	105	332	0.002	5	130
Argus LLPX310R	89.00	86	271	0.002	4	106
DragonWave A-ANT-18G	89.00	54	171	0.001	2	67
Side Arms	89.00	560	1,771	0.013	25	694
DragonWave A-ANT-11G	89.00	48	151	0.001	2	59
Alcatel-Lucent RRH2X	79.00	132	337	0.002	5	163
Alcatel-Lucent RRH2x	79.00	170	434	0.003	6	211
Alcatel-Lucent RRH2x	79.00	180	460	0.003	7	223
RFS DB-T1-6Z-8AB-0Z	79.00	88	225	0.002	3	109
CommScope SBNHH-1D65	79.00	608	1,553	0.011	22	754
Flat Low Profile Pla	79.00	1,500	3,830	0.028	54	1,858
Lucent KS-24019	20.00	4	1	0.000	0	5
		45,275	135,655	1.000	1,922	56,078

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Customer: VERIZON WIRELESS

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
39	146.46	287	2,222	0.016	31	247
38	142.50	507	3,731	0.028	53	436
37	137.50	525	3,624	0.027	51	452
36	132.50	636	4,111	0.030	58	548
35	127.50	654	3,946	0.029	56	564
34	124.00	267	1,530	0.011	22	230
33	121.50	455	2,515	0.019	36	392
32	117.50	772	4,022	0.030	57	665
31	114.00	314	1,549	0.011	22	270
30	111.50	491	2,328	0.017	33	423
29	107.50	833	3,699	0.027	52	718
28	102.50	851	3,469	0.026	49	733
27	99.92	29	112	0.001	2	25
26	98.92	582	2,226	0.016	32	501
25	96.50	976	3,570	0.026	51	841
24	94.96	27	97	0.001	1	24
23	92.46	1,004	3,401	0.025	48	865
22	89.50	207	661	0.005	9	178
21	87.00	853	2,591	0.019	37	735
20	82.50	1,086	2,998	0.022	42	936
19	79.50	220	568	0.004	8	189
18	77.00	899	2,191	0.016	31	774
17	72.50	1,143	2,501	0.018	35	984
16	67.50	1,165	2,242	0.017	32	1,003
15	62.50	1,186	1,989	0.015	28	1,022
14	57.50	1,208	1,744	0.013	25	1,041
13	54.00	489	631	0.005	9	421
12	51.50	1,289	1,527	0.011	22	1,110
11	48.42	1,378	1,460	0.011	21	1,187
10	45.92	456	439	0.003	6	393
9	42.50	1,258	1,055	0.008	15	1,084
8	37.50	1,280	857	0.006	12	1,102
7	32.50	1,301	674	0.005	10	1,121
6	27.50	1,323	508	0.004	7	1,140
5	22.50	1,345	360	0.003	5	1,158
4	17.50	1,367	233	0.002	3	1,178
3	12.50	1,389	129	0.001	2	1,197
2	7.50	1,411	53	0.000	1	1,215
1	2.50	1,127	6	0.000	0	971
Decibel DB844H90E-XY	149.00	56	447	0.003	6	48
Andrew 844G65VTZASX	149.00	128	1,021	0.008	14	110
Flat Platform w/ Han	149.00	2,000	15,955	0.118	226	1,723
LGP Allgon LGP21903	135.00	33	221	0.002	3	28
Powerwave Allgon LGP	135.00	85	565	0.004	8	73
Raycap DC6-48-60-18-	135.00	20	134	0.001	2	17
Ericsson RRUS 11 (Ba	135.00	330	2,205	0.016	31	284
Powerwave Allgon 775	135.00	162	1,083	0.008	15	140
KMW AM-X-CD-16-65-00	135.00	97	648	0.005	9	84
Andrew SBNH-1D6565C	135.00	66	442	0.003	6	57
Flat Platform w/ Han	135.00	2,000	13,364	0.099	189	1,723
Kathrein Scala Smart	123.00	10	56	0.000	1	9
Ericsson KRY 112 144	123.00	33	187	0.001	3	28
Ericsson KRY 112 489	123.00	46	261	0.002	4	40
Ericsson AIR 32 B4A-	123.00	317	1,794	0.013	25	273
RFS APX16DWV-16DWVS-	123.00	122	690	0.005	10	105
Round T-Arms	123.00	750	4,240	0.031	60	646
Andrew LNX-6515DS-VT	123.00	154	870	0.006	12	133

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Customer: VERIZON WIRELESS

RFS APXV18-206517	113.00	79	385	0.003	5	68
RFS IBC1900BB-1	98.00	66	248	0.002	4	57
RFS IBC1900HG-2A	98.00	66	248	0.002	4	57
Alcatel-Lucent 800 M	98.00	192	722	0.005	10	165
Alcatel-Lucent 4x40W	98.00	264	993	0.007	14	227
Alcatel-Lucent TD-RR	98.00	210	790	0.006	11	181
RFS APXVTM14-C-I20	98.00	159	597	0.004	8	137
RFS APXVSPP18-C-A20	98.00	171	643	0.005	9	147
Round Low Profile PI	98.00	1,500	5,640	0.042	80	1,292
DragonWave Horizon C	89.00	32	101	0.001	1	27
NextNet BTS-2500	89.00	105	332	0.002	5	90
Argus LLPX310R	89.00	86	271	0.002	4	74
DragonWave A-ANT-18G	89.00	54	171	0.001	2	47
Side Arms	89.00	560	1,771	0.013	25	482
DragonWave A-ANT-11G	89.00	48	151	0.001	2	41
Alcatel-Lucent RRH2X	79.00	132	337	0.002	5	114
Alcatel-Lucent RRH2x	79.00	170	434	0.003	6	147
Alcatel-Lucent RRH2x	79.00	180	460	0.003	7	155
RFS DB-T1-6Z-8AB-0Z	79.00	88	225	0.002	3	76
Commscope SBNHH-1D65	79.00	608	1,553	0.011	22	524
Flat Low Profile Pla	79.00	1,500	3,830	0.028	54	1,292
Lucent KS-24019	20.00	4	1	0.000	0	3
		45,275	135,655	1.000	1,922	38,999

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

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	-51.98	-1.68	0.00	-179.28	0.00	179.28	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.048
5.00	-50.23	-1.69	0.00	-170.89	0.00	170.89	4,297.95	2,148.97	9,746.71	4,880.60	0.01	-0.01	0.047
10.00	-48.51	-1.69	0.00	-162.47	0.00	162.47	4,248.67	2,124.33	9,446.20	4,730.12	0.02	-0.02	0.046
15.00	-46.81	-1.70	0.00	-154.01	0.00	154.01	4,198.03	2,099.01	9,147.09	4,580.35	0.04	-0.03	0.045
20.00	-45.14	-1.70	0.00	-145.54	0.00	145.54	4,146.02	2,073.01	8,849.58	4,431.37	0.08	-0.04	0.044
25.00	-43.50	-1.70	0.00	-137.05	0.00	137.05	4,092.65	2,046.32	8,553.84	4,283.28	0.12	-0.05	0.043
30.00	-41.89	-1.69	0.00	-128.58	0.00	128.58	4,037.92	2,018.96	8,260.05	4,136.16	0.18	-0.06	0.041
35.00	-40.31	-1.68	0.00	-120.12	0.00	120.12	3,981.82	1,990.91	7,968.40	3,990.12	0.24	-0.07	0.040
40.00	-38.75	-1.67	0.00	-111.70	0.00	111.70	3,924.36	1,962.18	7,679.06	3,845.24	0.32	-0.08	0.039
45.00	-38.18	-1.67	0.00	-103.33	0.00	103.33	3,865.53	1,932.77	7,392.22	3,701.60	0.40	-0.09	0.038
46.83	-36.48	-1.65	0.00	-100.27	0.00	100.27	3,843.62	1,921.81	7,287.71	3,649.27	0.44	-0.09	0.037
50.00	-34.88	-1.63	0.00	-95.04	0.00	95.04	3,805.35	1,902.67	7,108.06	3,559.31	0.50	-0.09	0.036
53.00	-34.27	-1.62	0.00	-90.15	0.00	90.15	3,811.37	1,905.68	7,136.09	3,573.35	0.56	-0.10	0.034
55.00	-32.78	-1.60	0.00	-86.90	0.00	86.90	3,786.97	1,893.48	7,023.10	3,516.77	0.60	-0.10	0.033
60.00	-31.31	-1.57	0.00	-78.91	0.00	78.91	3,725.00	1,862.50	6,742.70	3,376.36	0.71	-0.11	0.032
65.00	-29.87	-1.54	0.00	-71.05	0.00	71.05	3,661.68	1,830.84	6,465.40	3,237.50	0.84	-0.12	0.030
70.00	-28.45	-1.51	0.00	-63.34	0.00	63.34	3,596.99	1,798.49	6,191.38	3,100.29	0.97	-0.13	0.028
75.00	-27.34	-1.48	0.00	-55.80	0.00	55.80	3,530.94	1,765.47	5,920.82	2,964.81	1.11	-0.14	0.027
79.00	-23.75	-1.37	0.00	-49.89	0.00	49.89	3,477.11	1,738.56	5,706.98	2,857.73	1.22	-0.14	0.024
80.00	-22.40	-1.32	0.00	-48.52	0.00	48.52	3,463.52	1,731.76	5,653.90	2,831.15	1.25	-0.14	0.024
85.00	-21.34	-1.28	0.00	-41.92	0.00	41.92	3,394.74	1,697.37	5,390.81	2,699.41	1.41	-0.15	0.022
89.00	-19.99	-1.23	0.00	-36.79	0.00	36.79	3,338.73	1,669.37	5,183.21	2,595.46	1.54	-0.16	0.020
90.00	-18.75	-1.18	0.00	-35.55	0.00	35.55	3,324.59	1,662.30	5,131.72	2,569.67	1.57	-0.16	0.019
94.92	-18.71	-1.18	0.00	-29.74	0.00	29.74	3,235.40	1,617.70	4,852.71	2,429.96	1.73	-0.16	0.018
95.00	-17.51	-1.13	0.00	-29.65	0.00	29.65	3,233.82	1,616.91	4,847.95	2,427.58	1.74	-0.16	0.018
98.00	-13.53	-0.95	0.00	-26.26	0.00	26.26	3,176.90	1,588.45	4,677.94	2,342.44	1.84	-0.17	0.015
99.83	-13.49	-0.94	0.00	-24.53	0.00	24.53	2,561.71	1,280.85	3,809.78	1,907.72	1.91	-0.17	0.018
100.00	-12.44	-0.89	0.00	-24.37	0.00	24.37	2,559.94	1,279.97	3,803.37	1,904.51	1.91	-0.17	0.018
105.00	-11.41	-0.84	0.00	-19.91	0.00	19.91	2,506.36	1,253.18	3,612.41	1,808.89	2.09	-0.17	0.016
110.00	-10.80	-0.80	0.00	-15.72	0.00	15.72	2,451.42	1,225.71	3,424.31	1,714.70	2.27	-0.18	0.014
113.00	-10.31	-0.78	0.00	-13.31	0.00	13.31	2,417.79	1,208.90	3,312.90	1,658.91	2.39	-0.18	0.012
115.00	-9.36	-0.72	0.00	-11.76	0.00	11.76	2,395.11	1,197.55	3,239.25	1,622.03	2.46	-0.18	0.011
120.00	-8.79	-0.68	0.00	-8.18	0.00	8.18	2,337.43	1,168.72	3,057.40	1,530.97	2.66	-0.19	0.009
123.00	-6.69	-0.54	0.00	-6.14	0.00	6.14	2,302.17	1,151.09	2,949.92	1,477.15	2.77	-0.19	0.007
125.00	-5.88	-0.48	0.00	-5.07	0.00	5.07	2,271.18	1,135.59	2,869.84	1,437.05	2.85	-0.19	0.006
130.00	-5.09	-0.42	0.00	-2.68	0.00	2.68	2,192.12	1,096.06	2,672.56	1,338.27	3.05	-0.19	0.004
135.00	-0.98	-0.09	0.00	-0.60	0.00	0.60	2,113.07	1,056.53	2,482.31	1,243.00	3.25	-0.19	0.001
140.00	-0.36	-0.03	0.00	-0.16	0.00	0.16	2,034.01	1,017.00	2,299.08	1,151.25	3.45	-0.19	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,954.95	977.48	2,122.87	1,063.01	3.64	-0.19	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.83	954.42	2,023.32	1,013.16	3.76	-0.19	0.000

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

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	-36.15	-1.68	0.00	-177.50	0.00	177.50	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.044
5.00	-34.93	-1.68	0.00	-169.12	0.00	169.12	4,297.95	2,148.97	9,746.71	4,880.60	0.00	-0.01	0.043
10.00	-33.73	-1.69	0.00	-160.71	0.00	160.71	4,248.67	2,124.33	9,446.20	4,730.12	0.02	-0.02	0.042
15.00	-32.56	-1.69	0.00	-152.29	0.00	152.29	4,198.03	2,099.01	9,147.09	4,580.35	0.04	-0.03	0.041
20.00	-31.39	-1.69	0.00	-143.85	0.00	143.85	4,146.02	2,073.01	8,849.58	4,431.37	0.08	-0.04	0.040
25.00	-30.25	-1.68	0.00	-135.42	0.00	135.42	4,092.65	2,046.32	8,553.84	4,283.28	0.12	-0.05	0.039
30.00	-29.13	-1.68	0.00	-127.01	0.00	127.01	4,037.92	2,018.96	8,260.05	4,136.16	0.18	-0.06	0.038
35.00	-28.03	-1.67	0.00	-118.62	0.00	118.62	3,981.82	1,990.91	7,968.40	3,990.12	0.24	-0.07	0.037
40.00	-26.95	-1.66	0.00	-110.28	0.00	110.28	3,924.36	1,962.18	7,679.06	3,845.24	0.31	-0.08	0.036
45.00	-26.55	-1.65	0.00	-102.00	0.00	102.00	3,865.53	1,932.77	7,392.22	3,701.60	0.40	-0.08	0.034
46.83	-25.37	-1.63	0.00	-98.97	0.00	98.97	3,843.62	1,921.81	7,287.71	3,649.27	0.43	-0.09	0.034
50.00	-24.26	-1.61	0.00	-93.80	0.00	93.80	3,805.35	1,902.67	7,108.06	3,559.31	0.49	-0.09	0.033
53.00	-23.83	-1.60	0.00	-88.96	0.00	88.96	3,811.37	1,905.68	7,136.09	3,573.35	0.55	-0.10	0.031
55.00	-22.79	-1.58	0.00	-85.75	0.00	85.75	3,786.97	1,893.48	7,023.10	3,516.77	0.59	-0.10	0.030
60.00	-21.77	-1.55	0.00	-77.86	0.00	77.86	3,725.00	1,862.50	6,742.70	3,376.36	0.71	-0.11	0.029
65.00	-20.77	-1.52	0.00	-70.09	0.00	70.09	3,661.68	1,830.84	6,465.40	3,237.50	0.83	-0.12	0.027
70.00	-19.78	-1.49	0.00	-62.48	0.00	62.48	3,596.99	1,798.49	6,191.38	3,100.29	0.96	-0.13	0.026
75.00	-19.01	-1.46	0.00	-55.05	0.00	55.05	3,530.94	1,765.47	5,920.82	2,964.81	1.09	-0.13	0.024
79.00	-16.51	-1.35	0.00	-49.22	0.00	49.22	3,477.11	1,738.56	5,706.98	2,857.73	1.21	-0.14	0.022
80.00	-15.58	-1.30	0.00	-47.88	0.00	47.88	3,463.52	1,731.76	5,653.90	2,831.15	1.24	-0.14	0.021
85.00	-14.84	-1.27	0.00	-41.36	0.00	41.36	3,394.74	1,697.37	5,390.81	2,699.41	1.39	-0.15	0.020
89.00	-13.90	-1.22	0.00	-36.30	0.00	36.30	3,338.73	1,669.37	5,183.21	2,595.46	1.52	-0.15	0.018
90.00	-13.04	-1.17	0.00	-35.09	0.00	35.09	3,324.59	1,662.30	5,131.72	2,569.67	1.55	-0.16	0.018
94.92	-13.01	-1.16	0.00	-29.36	0.00	29.36	3,235.40	1,617.70	4,852.71	2,429.96	1.71	-0.16	0.016
95.00	-12.17	-1.11	0.00	-29.26	0.00	29.26	3,233.82	1,616.91	4,847.95	2,427.58	1.72	-0.16	0.016
98.00	-9.41	-0.93	0.00	-25.92	0.00	25.92	3,176.90	1,588.45	4,677.94	2,342.44	1.82	-0.16	0.014
99.83	-9.38	-0.93	0.00	-24.21	0.00	24.21	2,561.71	1,280.85	3,809.78	1,907.72	1.88	-0.17	0.016
100.00	-8.65	-0.88	0.00	-24.06	0.00	24.06	2,559.94	1,279.97	3,803.37	1,904.51	1.89	-0.17	0.016
105.00	-7.93	-0.83	0.00	-19.65	0.00	19.65	2,506.36	1,253.18	3,612.41	1,808.89	2.06	-0.17	0.014
110.00	-7.51	-0.79	0.00	-15.52	0.00	15.52	2,451.42	1,225.71	3,424.31	1,714.70	2.25	-0.18	0.012
113.00	-7.17	-0.77	0.00	-13.14	0.00	13.14	2,417.79	1,208.90	3,312.90	1,658.91	2.36	-0.18	0.011
115.00	-6.51	-0.71	0.00	-11.61	0.00	11.61	2,395.11	1,197.55	3,239.25	1,622.03	2.43	-0.18	0.010
120.00	-6.11	-0.67	0.00	-8.07	0.00	8.07	2,337.43	1,168.72	3,057.40	1,530.97	2.62	-0.18	0.008
123.00	-4.65	-0.53	0.00	-6.06	0.00	6.06	2,302.17	1,151.09	2,949.92	1,477.15	2.74	-0.18	0.006
125.00	-4.09	-0.47	0.00	-5.01	0.00	5.01	2,271.18	1,135.59	2,869.84	1,437.05	2.82	-0.19	0.005
130.00	-3.54	-0.41	0.00	-2.65	0.00	2.65	2,192.12	1,096.06	2,672.56	1,338.27	3.01	-0.19	0.004
135.00	-0.68	-0.09	0.00	-0.59	0.00	0.59	2,113.07	1,056.53	2,482.31	1,243.00	3.21	-0.19	0.001
140.00	-0.25	-0.03	0.00	-0.16	0.00	0.16	2,034.01	1,017.00	2,299.08	1,151.25	3.40	-0.19	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,954.95	977.48	2,122.87	1,063.01	3.60	-0.19	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.83	954.42	2,023.32	1,013.16	3.72	-0.19	0.000



Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

### 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 ( $S_s$ ):	0.18
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 ( $S_{ds}$ ):	0.19
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.09
Redundancy Factor ( $\rho$ ):	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)
39	146.46	287	1.853	1.790	1.071	0.346	86	356
38	142.50	507	1.754	1.338	0.900	0.285	125	628
37	137.50	525	1.633	0.885	0.716	0.216	98	650
36	132.50	636	1.517	0.543	0.563	0.156	86	788
35	127.50	654	1.404	0.292	0.436	0.104	59	810
34	124.00	267	1.328	0.162	0.362	0.073	17	330
33	121.50	455	1.275	0.088	0.315	0.053	21	563
32	117.50	772	1.193	-0.002	0.249	0.026	17	957
31	114.00	314	1.123	-0.056	0.201	0.006	2	389
30	111.50	491	1.074	-0.083	0.171	-0.006	-2	608
29	107.50	833	0.998	-0.110	0.130	-0.020	-15	1,032
28	102.50	851	0.908	-0.122	0.090	-0.031	-23	1,054
27	99.92	29	0.862	-0.120	0.074	-0.034	-1	36
26	98.92	582	0.845	-0.119	0.068	-0.034	-17	721
25	96.50	976	0.804	-0.113	0.055	-0.034	-29	1,209
24	94.96	27	0.779	-0.108	0.048	-0.033	-1	34
23	92.46	1,004	0.738	-0.098	0.038	-0.030	-26	1,244
22	89.50	207	0.692	-0.084	0.028	-0.025	-5	256
21	87.00	853	0.654	-0.072	0.022	-0.020	-15	1,057
20	82.50	1,086	0.588	-0.049	0.013	-0.007	-7	1,346
19	79.50	220	0.546	-0.033	0.010	0.001	0	272
18	77.00	899	0.512	-0.021	0.008	0.009	7	1,113
17	72.50	1,143	0.454	0.000	0.006	0.021	21	1,416
16	67.50	1,165	0.394	0.020	0.007	0.033	33	1,442
15	62.50	1,186	0.337	0.036	0.009	0.041	42	1,469
14	57.50	1,208	0.286	0.048	0.014	0.046	48	1,496
13	54.00	489	0.252	0.055	0.017	0.048	20	606
12	51.50	1,289	0.229	0.059	0.020	0.049	55	1,597
11	48.42	1,378	0.202	0.062	0.023	0.049	59	1,706
10	45.92	456	0.182	0.065	0.026	0.049	19	565
9	42.50	1,258	0.156	0.067	0.029	0.049	53	1,558
8	37.50	1,280	0.121	0.070	0.034	0.048	53	1,585
7	32.50	1,301	0.091	0.071	0.038	0.047	52	1,612
6	27.50	1,323	0.065	0.072	0.041	0.045	52	1,639

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

5	22.50	1,345	0.044	0.071	0.042	0.044	51	1,666
4	17.50	1,367	0.026	0.067	0.040	0.041	49	1,694
3	12.50	1,389	0.013	0.059	0.035	0.037	44	1,721
2	7.50	1,411	0.005	0.044	0.025	0.029	35	1,747
1	2.50	1,127	0.001	0.018	0.010	0.013	13	1,396
Decibel DB844H90E-XY	149.00	56	1.918	2.130	1.193	0.388	19	69
Andrew 844G65VTZASX	149.00	128	1.918	2.130	1.193	0.388	43	159
Flat Platform w/ Han	149.00	2,000	1.918	2.130	1.193	0.388	672	2,477
LGP Allgon LGP21903	135.00	33	1.574	0.701	0.636	0.185	5	41
Powerwave Allgon LGP	135.00	85	1.574	0.701	0.636	0.185	14	105
Raycap DC6-48-60-18-	135.00	20	1.574	0.701	0.636	0.185	3	25
Ericsson RRUS 11 (Ba	135.00	330	1.574	0.701	0.636	0.185	53	409
Powerwave Allgon 775	135.00	162	1.574	0.701	0.636	0.185	26	201
KMW AM-X-CD-16-65-00	135.00	97	1.574	0.701	0.636	0.185	16	120
Andrew SBNH-1D6565C	135.00	66	1.574	0.701	0.636	0.185	11	82
Flat Platform w/ Han	135.00	2,000	1.574	0.701	0.636	0.185	321	2,477
Kathrein Scala Smart	123.00	10	1.307	0.130	0.342	0.065	1	12
Ericsson KRY 112 144	123.00	33	1.307	0.130	0.342	0.065	2	41
Ericsson KRY 112 489	123.00	46	1.307	0.130	0.342	0.065	3	57
Ericsson AIR 32 B4A-	123.00	317	1.307	0.130	0.342	0.065	18	393
RFS APX16DWV-	123.00	122	1.307	0.130	0.342	0.065	7	151
Round T-Arms	123.00	750	1.307	0.130	0.342	0.065	42	929
Andrew LNX-6515DS-VT	123.00	154	1.307	0.130	0.342	0.065	9	191
RFS APXV18-206517	113.00	79	1.103	-0.068	0.189	0.001	0	98
RFS IBC1900BB-1	98.00	66	0.830	-0.117	0.063	-0.034	-2	82
RFS IBC1900HG-2A	98.00	66	0.830	-0.117	0.063	-0.034	-2	82
Alcatel-Lucent 800 M	98.00	192	0.830	-0.117	0.063	-0.034	-6	238
Alcatel-Lucent 4x40W	98.00	264	0.830	-0.117	0.063	-0.034	-8	327
Alcatel-Lucent TD-RR	98.00	210	0.830	-0.117	0.063	-0.034	-6	260
RFS APXVTM14-C-I20	98.00	159	0.830	-0.117	0.063	-0.034	-5	197
RFS APXVSP18-C-A20	98.00	171	0.830	-0.117	0.063	-0.034	-5	212
Round Low Profile PI	98.00	1,500	0.830	-0.117	0.063	-0.034	-45	1,858
DragonWave Horizon C	89.00	32	0.684	-0.082	0.027	-0.024	-1	39
NextNet BTS-2500	89.00	105	0.684	-0.082	0.027	-0.024	-2	130
Argus LLPX310R	89.00	86	0.684	-0.082	0.027	-0.024	-2	106
DragonWave A-ANT-18G	89.00	54	0.684	-0.082	0.027	-0.024	-1	67
Side Arms	89.00	560	0.684	-0.082	0.027	-0.024	-12	694
DragonWave A-ANT-11G	89.00	48	0.684	-0.082	0.027	-0.024	-1	59
Alcatel-Lucent RRH2X	79.00	132	0.539	-0.031	0.009	0.003	0	163
Alcatel-Lucent RRH2x	79.00	170	0.539	-0.031	0.009	0.003	0	211
Alcatel-Lucent RRH2x	79.00	180	0.539	-0.031	0.009	0.003	0	223
RFS DB-T1-6Z-8AB-0Z	79.00	88	0.539	-0.031	0.009	0.003	0	109
Commscope SBNHH-	79.00	608	0.539	-0.031	0.009	0.003	2	754
Flat Low Profile Pla	79.00	1,500	0.539	-0.031	0.009	0.003	4	1,858
Lucent KS-24019	20.00	4	0.035	0.069	0.041	0.042	0	5
		45,275	68.551	16.095	17.991	4.431	2,253	56,078

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)
39	146.46	287	1.853	1.790	1.071	0.346	86	247
38	142.50	507	1.754	1.338	0.900	0.285	125	436
37	137.50	525	1.633	0.885	0.716	0.216	98	452
36	132.50	636	1.517	0.543	0.563	0.156	86	548
35	127.50	654	1.404	0.292	0.436	0.104	59	564
34	124.00	267	1.328	0.162	0.362	0.073	17	230
33	121.50	455	1.275	0.088	0.315	0.053	21	392
32	117.50	772	1.193	-0.002	0.249	0.026	17	665

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

31	114.00	314	1.123	-0.056	0.201	0.006	2	270
30	111.50	491	1.074	-0.083	0.171	-0.006	-2	423
29	107.50	833	0.998	-0.110	0.130	-0.020	-15	718
28	102.50	851	0.908	-0.122	0.090	-0.031	-23	733
27	99.92	29	0.862	-0.120	0.074	-0.034	-1	25
26	98.92	582	0.845	-0.119	0.068	-0.034	-17	501
25	96.50	976	0.804	-0.113	0.055	-0.034	-29	841
24	94.96	27	0.779	-0.108	0.048	-0.033	-1	24
23	92.46	1,004	0.738	-0.098	0.038	-0.030	-26	865
22	89.50	207	0.692	-0.084	0.028	-0.025	-5	178
21	87.00	853	0.654	-0.072	0.022	-0.020	-15	735
20	82.50	1,086	0.588	-0.049	0.013	-0.007	-7	936
19	79.50	220	0.546	-0.033	0.010	0.001	0	189
18	77.00	899	0.512	-0.021	0.008	0.009	7	774
17	72.50	1,143	0.454	0.000	0.006	0.021	21	984
16	67.50	1,165	0.394	0.020	0.007	0.033	33	1,003
15	62.50	1,186	0.337	0.036	0.009	0.041	42	1,022
14	57.50	1,208	0.286	0.048	0.014	0.046	48	1,041
13	54.00	489	0.252	0.055	0.017	0.048	20	421
12	51.50	1,289	0.229	0.059	0.020	0.049	55	1,110
11	48.42	1,378	0.202	0.062	0.023	0.049	59	1,187
10	45.92	456	0.182	0.065	0.026	0.049	19	393
9	42.50	1,258	0.156	0.067	0.029	0.049	53	1,084
8	37.50	1,280	0.121	0.070	0.034	0.048	53	1,102
7	32.50	1,301	0.091	0.071	0.038	0.047	52	1,121
6	27.50	1,323	0.065	0.072	0.041	0.045	52	1,140
5	22.50	1,345	0.044	0.071	0.042	0.044	51	1,158
4	17.50	1,367	0.026	0.067	0.040	0.041	49	1,178
3	12.50	1,389	0.013	0.059	0.035	0.037	44	1,197
2	7.50	1,411	0.005	0.044	0.025	0.029	35	1,215
1	2.50	1,127	0.001	0.018	0.010	0.013	13	971
Decibel DB844H90E-XY	149.00	56	1.918	2.130	1.193	0.388	19	48
Andrew 844G65VTZASX	149.00	128	1.918	2.130	1.193	0.388	43	110
Flat Platform w/ Han	149.00	2,000	1.918	2.130	1.193	0.388	672	1,723
LGP Allgon LGP21903	135.00	33	1.574	0.701	0.636	0.185	5	28
Powerwave Allgon LGP	135.00	85	1.574	0.701	0.636	0.185	14	73
Raycap DC6-48-60-18-	135.00	20	1.574	0.701	0.636	0.185	3	17
Ericsson RRUS 11 (Ba	135.00	330	1.574	0.701	0.636	0.185	53	284
Powerwave Allgon 775	135.00	162	1.574	0.701	0.636	0.185	26	140
KMW AM-X-CD-16-65-00	135.00	97	1.574	0.701	0.636	0.185	16	84
Andrew SBNH-1D6565C	135.00	66	1.574	0.701	0.636	0.185	11	57
Flat Platform w/ Han	135.00	2,000	1.574	0.701	0.636	0.185	321	1,723
Kathrein Scala Smart	123.00	10	1.307	0.130	0.342	0.065	1	9
Ericsson KRY 112 144	123.00	33	1.307	0.130	0.342	0.065	2	28
Ericsson KRY 112 489	123.00	46	1.307	0.130	0.342	0.065	3	40
Ericsson AIR 32 B4A-	123.00	317	1.307	0.130	0.342	0.065	18	273
RFS APX16DWW-	123.00	122	1.307	0.130	0.342	0.065	7	105
Round T-Arms	123.00	750	1.307	0.130	0.342	0.065	42	646
Andrew LNX-6515DS-VT	123.00	154	1.307	0.130	0.342	0.065	9	133
RFS APXV18-206517	113.00	79	1.103	-0.068	0.189	0.001	0	68
RFS IBC1900BB-1	98.00	66	0.830	-0.117	0.063	-0.034	-2	57
RFS IBC1900HG-2A	98.00	66	0.830	-0.117	0.063	-0.034	-2	57
Alcatel-Lucent 800 M	98.00	192	0.830	-0.117	0.063	-0.034	-6	165
Alcatel-Lucent 4x40W	98.00	264	0.830	-0.117	0.063	-0.034	-8	227
Alcatel-Lucent TD-RR	98.00	210	0.830	-0.117	0.063	-0.034	-6	181
RFS APXVTM14-C-I20	98.00	159	0.830	-0.117	0.063	-0.034	-5	137
RFS APXVSP18-C-A20	98.00	171	0.830	-0.117	0.063	-0.034	-5	147
Round Low Profile PI	98.00	1,500	0.830	-0.117	0.063	-0.034	-45	1,292
DragonWave Horizon C	89.00	32	0.684	-0.082	0.027	-0.024	-1	27
NextNet BTS-2500	89.00	105	0.684	-0.082	0.027	-0.024	-2	90
Argus LLPX310R	89.00	86	0.684	-0.082	0.027	-0.024	-2	74
DragonWave A-ANT-18G	89.00	54	0.684	-0.082	0.027	-0.024	-1	47
Side Arms	89.00	560	0.684	-0.082	0.027	-0.024	-12	482
DragonWave A-ANT-11G	89.00	48	0.684	-0.082	0.027	-0.024	-1	41

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

Alcatel-Lucent RRH2X	79.00	132	0.539	-0.031	0.009	0.003	0	114
Alcatel-Lucent RRH2x	79.00	170	0.539	-0.031	0.009	0.003	0	147
Alcatel-Lucent RRH2x	79.00	180	0.539	-0.031	0.009	0.003	0	155
RFS DB-T1-6Z-8AB-0Z	79.00	88	0.539	-0.031	0.009	0.003	0	76
Commscope SBNHH-	79.00	608	0.539	-0.031	0.009	0.003	2	524
Flat Low Profile Pla	79.00	1,500	0.539	-0.031	0.009	0.003	4	1,292
Lucent KS-24019	20.00	4	0.035	0.069	0.041	0.042	0	3
		45,275	68.551	16.095	17.991	4.431	2,253	38,999

Site Number: 302468

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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Customer: VERIZON WIRELESS

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	-51.98	-1.51	0.00	-148.00	0.00	148.00	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.041
5.00	-50.23	-1.48	0.00	-140.45	0.00	140.45	4,297.95	2,148.97	9,746.71	4,880.60	0.00	-0.01	0.040
10.00	-48.51	-1.44	0.00	-133.05	0.00	133.05	4,248.67	2,124.33	9,446.20	4,730.12	0.02	-0.02	0.040
15.00	-46.81	-1.40	0.00	-125.84	0.00	125.84	4,198.03	2,099.01	9,147.09	4,580.35	0.04	-0.02	0.039
20.00	-45.14	-1.35	0.00	-118.84	0.00	118.84	4,146.02	2,073.01	8,849.58	4,431.37	0.07	-0.03	0.038
25.00	-43.50	-1.31	0.00	-112.07	0.00	112.07	4,092.65	2,046.32	8,553.84	4,283.28	0.10	-0.04	0.037
30.00	-41.89	-1.26	0.00	-105.54	0.00	105.54	4,037.92	2,018.96	8,260.05	4,136.16	0.15	-0.05	0.036
35.00	-40.31	-1.21	0.00	-99.24	0.00	99.24	3,981.82	1,990.91	7,968.40	3,990.12	0.20	-0.05	0.035
40.00	-38.75	-1.16	0.00	-93.19	0.00	93.19	3,924.36	1,962.18	7,679.06	3,845.24	0.26	-0.06	0.034
45.00	-38.18	-1.14	0.00	-87.39	0.00	87.39	3,865.53	1,932.77	7,392.22	3,701.60	0.33	-0.07	0.033
46.83	-36.48	-1.09	0.00	-85.29	0.00	85.29	3,843.62	1,921.81	7,287.71	3,649.27	0.36	-0.07	0.033
50.00	-34.88	-1.03	0.00	-81.86	0.00	81.86	3,805.35	1,902.67	7,108.06	3,559.31	0.41	-0.08	0.032
53.00	-34.28	-1.01	0.00	-78.76	0.00	78.76	3,811.37	1,905.68	7,136.09	3,573.35	0.46	-0.08	0.031
55.00	-32.78	-0.97	0.00	-76.73	0.00	76.73	3,786.97	1,893.48	7,023.10	3,516.77	0.49	-0.09	0.030
60.00	-31.31	-0.93	0.00	-71.91	0.00	71.91	3,725.00	1,862.50	6,742.70	3,376.36	0.59	-0.09	0.030
65.00	-29.87	-0.89	0.00	-67.28	0.00	67.28	3,661.68	1,830.84	6,465.40	3,237.50	0.69	-0.10	0.029
70.00	-28.45	-0.87	0.00	-62.81	0.00	62.81	3,596.99	1,798.49	6,191.38	3,100.29	0.80	-0.11	0.028
75.00	-27.34	-0.87	0.00	-58.45	0.00	58.45	3,530.94	1,765.47	5,920.82	2,964.81	0.92	-0.12	0.027
79.00	-23.75	-0.85	0.00	-54.98	0.00	54.98	3,477.11	1,738.56	5,706.98	2,857.73	1.02	-0.12	0.026
80.00	-22.40	-0.86	0.00	-54.12	0.00	54.12	3,463.52	1,731.76	5,653.90	2,831.15	1.05	-0.13	0.026
85.00	-21.35	-0.88	0.00	-49.82	0.00	49.82	3,394.74	1,697.37	5,390.81	2,699.41	1.18	-0.13	0.025
89.00	-19.99	-0.90	0.00	-46.32	0.00	46.32	3,338.73	1,669.37	5,183.21	2,595.46	1.30	-0.14	0.024
90.00	-18.75	-0.92	0.00	-45.42	0.00	45.42	3,324.59	1,662.30	5,131.72	2,569.67	1.33	-0.14	0.023
94.92	-18.72	-0.92	0.00	-40.89	0.00	40.89	3,235.40	1,617.70	4,852.71	2,429.96	1.48	-0.15	0.023
95.00	-17.51	-0.95	0.00	-40.81	0.00	40.81	3,233.82	1,616.91	4,847.95	2,427.58	1.48	-0.15	0.022
98.00	-13.53	-1.04	0.00	-37.96	0.00	37.96	3,176.90	1,588.45	4,677.94	2,342.44	1.57	-0.15	0.020
99.83	-13.49	-1.04	0.00	-36.06	0.00	36.06	2,561.71	1,280.85	3,809.78	1,907.72	1.63	-0.16	0.024
100.00	-12.44	-1.06	0.00	-35.89	0.00	35.89	2,559.94	1,279.97	3,803.37	1,904.51	1.64	-0.16	0.024
105.00	-11.41	-1.07	0.00	-30.60	0.00	30.60	2,506.36	1,253.18	3,612.41	1,808.89	1.81	-0.16	0.021
110.00	-10.80	-1.07	0.00	-25.25	0.00	25.25	2,451.42	1,225.71	3,424.31	1,714.70	1.98	-0.17	0.019
113.00	-10.31	-1.07	0.00	-22.03	0.00	22.03	2,417.79	1,208.90	3,312.90	1,658.91	2.09	-0.18	0.018
115.00	-9.36	-1.05	0.00	-19.89	0.00	19.89	2,395.11	1,197.55	3,239.25	1,622.03	2.16	-0.18	0.016
120.00	-8.79	-1.03	0.00	-14.63	0.00	14.63	2,337.43	1,168.72	3,057.40	1,530.97	2.35	-0.18	0.013
123.00	-6.69	-0.92	0.00	-11.55	0.00	11.55	2,302.17	1,151.09	2,949.92	1,477.15	2.47	-0.19	0.011
125.00	-5.88	-0.86	0.00	-9.70	0.00	9.70	2,271.18	1,135.59	2,869.84	1,437.05	2.55	-0.19	0.009
130.00	-5.09	-0.77	0.00	-5.38	0.00	5.38	2,192.12	1,096.06	2,672.56	1,338.27	2.75	-0.19	0.006
135.00	-0.98	-0.21	0.00	-1.51	0.00	1.51	2,113.07	1,056.53	2,482.31	1,243.00	2.95	-0.19	0.002
140.00	-0.36	-0.09	0.00	-0.44	0.00	0.44	2,034.01	1,017.00	2,299.08	1,151.25	3.15	-0.19	0.001
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,954.95	977.48	2,122.87	1,063.01	3.35	-0.19	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.83	954.42	2,023.32	1,013.16	3.47	-0.19	0.000

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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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	-36.15	-1.51	0.00	-146.45	0.00	146.45	4,345.86	2,172.93	10,048.4	5,031.69	0.00	0.00	0.037
5.00	-34.93	-1.48	0.00	-138.91	0.00	138.91	4,297.95	2,148.97	9,746.71	4,880.60	0.00	-0.01	0.037
10.00	-33.73	-1.44	0.00	-131.52	0.00	131.52	4,248.67	2,124.33	9,446.20	4,730.12	0.02	-0.02	0.036
15.00	-32.56	-1.39	0.00	-124.34	0.00	124.34	4,198.03	2,099.01	9,147.09	4,580.35	0.04	-0.02	0.035
20.00	-31.39	-1.35	0.00	-117.37	0.00	117.37	4,146.02	2,073.01	8,849.58	4,431.37	0.06	-0.03	0.034
25.00	-30.25	-1.30	0.00	-110.65	0.00	110.65	4,092.65	2,046.32	8,553.84	4,283.28	0.10	-0.04	0.033
30.00	-29.13	-1.25	0.00	-104.16	0.00	104.16	4,037.92	2,018.96	8,260.05	4,136.16	0.14	-0.05	0.032
35.00	-28.03	-1.20	0.00	-97.93	0.00	97.93	3,981.82	1,990.91	7,968.40	3,990.12	0.20	-0.05	0.032
40.00	-26.95	-1.15	0.00	-91.94	0.00	91.94	3,924.36	1,962.18	7,679.06	3,845.24	0.26	-0.06	0.031
45.00	-26.55	-1.13	0.00	-86.21	0.00	86.21	3,865.53	1,932.77	7,392.22	3,701.60	0.33	-0.07	0.030
46.83	-25.37	-1.07	0.00	-84.14	0.00	84.14	3,843.62	1,921.81	7,287.71	3,649.27	0.35	-0.07	0.030
50.00	-24.26	-1.02	0.00	-80.75	0.00	80.75	3,805.35	1,902.67	7,108.06	3,559.31	0.40	-0.08	0.029
53.00	-23.84	-1.00	0.00	-77.70	0.00	77.70	3,811.37	1,905.68	7,136.09	3,573.35	0.45	-0.08	0.028
55.00	-22.80	-0.95	0.00	-75.70	0.00	75.70	3,786.97	1,893.48	7,023.10	3,516.77	0.49	-0.09	0.028
60.00	-21.77	-0.91	0.00	-70.96	0.00	70.96	3,725.00	1,862.50	6,742.70	3,376.36	0.58	-0.09	0.027
65.00	-20.77	-0.88	0.00	-66.41	0.00	66.41	3,661.68	1,830.84	6,465.40	3,237.50	0.68	-0.10	0.026
70.00	-19.79	-0.86	0.00	-62.03	0.00	62.03	3,596.99	1,798.49	6,191.38	3,100.29	0.79	-0.11	0.026
75.00	-19.01	-0.85	0.00	-57.75	0.00	57.75	3,530.94	1,765.47	5,920.82	2,964.81	0.91	-0.12	0.025
79.00	-16.51	-0.84	0.00	-54.36	0.00	54.36	3,477.11	1,738.56	5,706.98	2,857.73	1.01	-0.12	0.024
80.00	-15.58	-0.84	0.00	-53.52	0.00	53.52	3,463.52	1,731.76	5,653.90	2,831.15	1.04	-0.12	0.023
85.00	-14.84	-0.86	0.00	-49.29	0.00	49.29	3,394.74	1,697.37	5,390.81	2,699.41	1.17	-0.13	0.023
89.00	-13.90	-0.88	0.00	-45.86	0.00	45.86	3,338.73	1,669.37	5,183.21	2,595.46	1.28	-0.14	0.022
90.00	-13.04	-0.91	0.00	-44.97	0.00	44.97	3,324.59	1,662.30	5,131.72	2,569.67	1.31	-0.14	0.021
94.92	-13.01	-0.91	0.00	-40.52	0.00	40.52	3,235.40	1,617.70	4,852.71	2,429.96	1.46	-0.15	0.021
95.00	-12.17	-0.94	0.00	-40.44	0.00	40.44	3,233.82	1,616.91	4,847.95	2,427.58	1.46	-0.15	0.020
98.00	-9.41	-1.02	0.00	-37.63	0.00	37.63	3,176.90	1,588.45	4,677.94	2,342.44	1.55	-0.15	0.019
99.83	-9.38	-1.03	0.00	-35.76	0.00	35.76	2,561.71	1,280.85	3,809.78	1,907.72	1.61	-0.15	0.022
100.00	-8.65	-1.05	0.00	-35.58	0.00	35.58	2,559.94	1,279.97	3,803.37	1,904.51	1.62	-0.15	0.022
105.00	-7.93	-1.06	0.00	-30.35	0.00	30.35	2,506.36	1,253.18	3,612.41	1,808.89	1.78	-0.16	0.020
110.00	-7.51	-1.06	0.00	-25.05	0.00	25.05	2,451.42	1,225.71	3,424.31	1,714.70	1.96	-0.17	0.018
113.00	-7.17	-1.06	0.00	-21.86	0.00	21.86	2,417.79	1,208.90	3,312.90	1,658.91	2.07	-0.17	0.016
115.00	-6.51	-1.04	0.00	-19.74	0.00	19.74	2,395.11	1,197.55	3,239.25	1,622.03	2.14	-0.18	0.015
120.00	-6.11	-1.02	0.00	-14.53	0.00	14.53	2,337.43	1,168.72	3,057.40	1,530.97	2.33	-0.18	0.012
123.00	-4.65	-0.92	0.00	-11.47	0.00	11.47	2,302.17	1,151.09	2,949.92	1,477.15	2.44	-0.18	0.010
125.00	-4.09	-0.86	0.00	-9.63	0.00	9.63	2,271.18	1,135.59	2,869.84	1,437.05	2.52	-0.19	0.009
130.00	-3.54	-0.77	0.00	-5.35	0.00	5.35	2,192.12	1,096.06	2,672.56	1,338.27	2.71	-0.19	0.006
135.00	-0.68	-0.21	0.00	-1.50	0.00	1.50	2,113.07	1,056.53	2,482.31	1,243.00	2.91	-0.19	0.002
140.00	-0.25	-0.09	0.00	-0.43	0.00	0.43	2,034.01	1,017.00	2,299.08	1,151.25	3.11	-0.19	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,954.95	977.48	2,122.87	1,063.01	3.31	-0.19	0.000
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.83	954.42	2,023.32	1,013.16	3.43	-0.19	0.000

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

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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	29.30	0.00	54.29	0.00	0.00	2990.55	0.00	0.61
0.9D + 1.6W	29.25	0.00	40.71	0.00	0.00	2958.91	0.00	0.60
1.2D + 1.0Di + 1.0Wi	8.22	0.00	99.49	0.00	0.00	846.76	0.00	0.19
(1.2 + 0.2Sds) * DL + E ELFM	1.68	0.00	51.98	0.00	0.00	179.28	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	1.51	0.00	51.98	0.00	0.00	148.00	0.00	0.04
(0.9 - 0.2Sds) * DL + E ELFM	1.68	0.00	36.15	0.00	0.00	177.50	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	1.51	0.00	36.15	0.00	0.00	146.45	0.00	0.04
1.0D + 1.0W	7.00	0.00	45.27	0.00	0.00	710.17	0.00	0.15

Site Number: 302468

Code: ANSI/TIA-222-G

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Site Name: Petro Lock, CT

Engineering Number: OAA540577\_C3\_12

4/10/2017 12:16:39 PM

Customer: VERIZON WIRELESS

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
2,489.00	36.10	23.90	2,990.55	99.49	29.30	89.00

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
60.0	2.500	69.000	Round	0	0.00	11.224	286.27	946.99	0.30

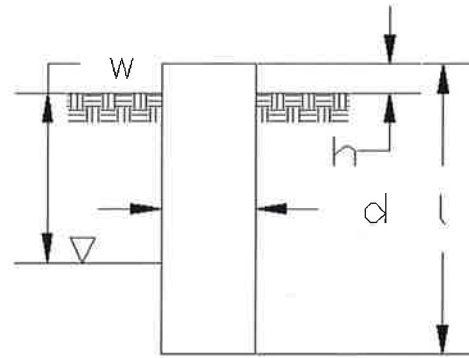
Anchor Bolts

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
63.00	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	148.63	260.00	0.59	136.19	260.00	0.54



Site Name: Petro Lock, CT  
 Site Number: 302468  
 Engineer: AT  
 Engineering Number: OAA540577  
 Date: 04/10/17

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: N  
 Moment (M): 2990.6 k-ft  
 Shear/Leg (V): 29.3 k  
 Axial Load (P): 54.3 k  
 Uplift/Leg (U): 0.0 k  
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d): 7.0 ft  
 Caisson Embedment (L-h): 33.5 ft  
 Caisson Height Above Ground (h): 0.5 ft  
 Depth Below Ground Surface to Water Table (w): 4.0 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**

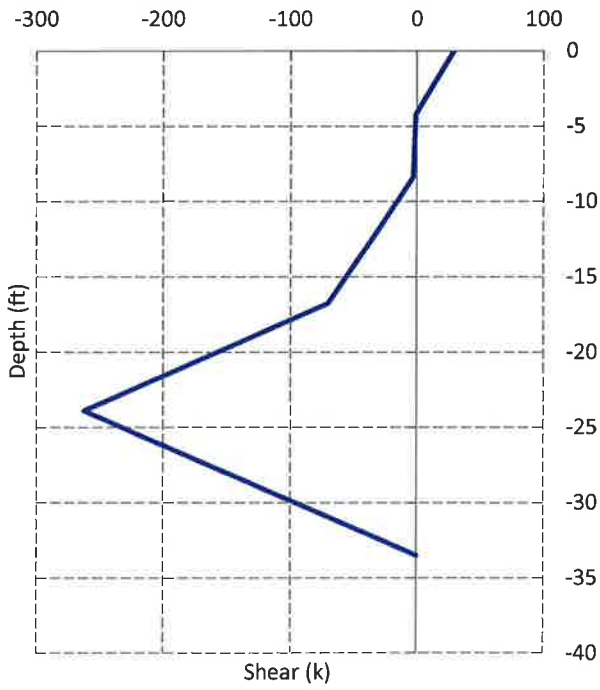
Depth (ft)		$\gamma_{\text{Soil}}$	Cohesion	$\phi$	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	5.0	100	0	0	0	0
5.0	15.0	110	2880		1140	
15.0	34.5	120	10080		5040	40000

Required Embedment: 17.8 ft - OK, Caisson Embedment Satisfactory  
 Volume of Concrete: 1308.5 ft<sup>3</sup> = 48.5 yd<sup>3</sup>  
 Weight of Concrete (Buoyancy Effect Considered): 125.4 k  
 Average Soil Unit Weight: 59.1 pcf  
 Skin Friction Resistance: 2301.2 k  
 Compressive Bearing Resistance: 1539.4 k  
 Pullout Weight (Minus Concrete Weight): 1196.2 k  
 Nominal Uplift Capacity per Leg ( $\phi_s T_n$ ): 897.2 k  
 Nominal Compressive Capacity per Leg ( $\phi_s P_n$ ): 2880.4 k  
 $P_u$ : 109.9 k  
 $T_u / \phi_s T_n$ : 0.00 Result: OK  
 $P_u / \phi_s P_n$ : 0.04 Result: OK  
 Total Lateral Resistance: 9827.4 k  
 Inflection Point (Below Ground Surface): 23.9 ft  
 Design Overturning Moment At Inflection Point ( $M_D$ ): 3705.2 k-ft  
 Nominal Moment Capacity ( $\phi_s M_n$ ): 38866.1 k-ft  
 $M_D / \phi_s M_n$ : 0.10 Result: OK  
 $\phi_s$ : 0.75

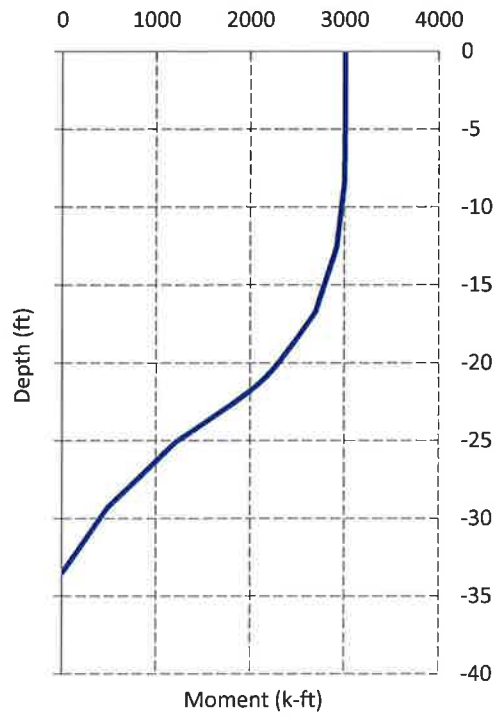
## Caisson Strength Capacity

Concrete Compressive Strength ( $f'_c$ ):	3000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in <sup>2</sup>
# of Vertical Steel Rebars:	21
Vertical Steel Rebar Yield Strength ( $F_y$ ):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in <sup>2</sup>
Design Horizontal Tie / Stirrup Spacing:	18.0 in
Horizontal Tie / Stirrup Steel Yield Strength ( $F_y$ ):	60 ksi
Rebar Cage Diameter:	76.0 in
Strength Bending/Tension Reduction Factor ( $\phi_B$ ):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor ( $\phi_V$ ):	0.75 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor ( $\phi_P$ ):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment ( $M_u$ ):	3006.7 k-ft
Nominal Moment Capacity ( $\phi_B M_n$ ):	4963.4 k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$ :	0.61 Result: OK
Design Shear ( $V_u$ ):	262.4 k
Nominal Shear Capacity ( $\phi_V V_n$ ):	457.5 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$ :	0.57 Result: OK
Design Tension ( $T_u$ ):	0.0 k
Nominal Tension Capacity ( $\phi_T T_n$ ):	1769.0 k - ACI318-05 - 10.2
$T_u/\phi_T T_n$ :	0.00 Result: OK
Design Compression ( $P_u$ ):	109.9 k
Nominal Compression Capacity ( $\phi_P P_n$ ):	7304.9 k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$ :	0.02 Result: OK
Bending Reinforcement Ratio:	0.006 ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$ :	0.61 Result: OK

Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads

