



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

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**VIA ELECTRONIC MAIL**

April 16, 2020

Alex Murshteyn  
Site Acquisition Consultant  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379

RE: **EM-VER-076-200317** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located off of 8 Old Route 79, Madison, Connecticut.

Dear Mr. Murshteyn:

The Connecticut Siting Council (Council) is in receipt of your correspondence of April 16, 2020 submitted in response to the Council's March 25, 2020 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

*s/Melanie A. Bachman*

Melanie A. Bachman  
Executive Director

MAB/IN/emr

**From:** Alex Murshteyn <amurshteyn@clinellc.com>

**Sent:** Thursday, April 16, 2020 11:31 AM

**To:** Robidoux, Evan <Evan.Robidoux@ct.gov>

**Cc:** CSC-DL Siting Council <Siting.Council@ct.gov>; Peter Fales <pfales@clinellc.com>; Blake Paynter <Blake.Paynter@AmericanTower.com>

**Subject:** RE: Council Incomplete Letter for EM-VER-076-200317 (8 Old Route 79, Madison) // Madison 2 CT aka 302540 / 12995792

All,

In response to the correspondence below and attached, please find additionally attached an updated Structural Analysis in order to complete this filing. This SA remains under capacity and now accounts for the mount modifications proposed in the Mount Analysis as well.

Thanks,

Alex Murshteyn  
508-821-0159



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 148 ft Monopole  
**ATC Site Name** : Madison CT 6, CT  
**ATC Asset Number** : 302540  
**Engineering Number** : 12995792\_C3\_08  
**Proposed Carrier** : Verizon Wireless  
**Carrier Site Name** : MADISON 2 CT  
**Carrier Site Number** : 468845  
**Site Location** : 8 Old 79  
Madison, CT 06443-2685  
41.285500, -72.601300  
**County** : New Haven  
**Date** : April 9, 2020  
**Max Usage** : 51%  
**Result** : Pass

Prepared By:  
Kyle MacPetrie  
Structural Engineer

Reviewed By:



**COA: PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft monopole to reflect the change in loading by Verizon Wireless.

## Supporting Documents

<b>Tower Drawings</b>	Summit, PJF Job #29299-729, dated November 12, 1999
<b>Foundation Drawing</b>	Spectrasite Project #F301896.00, dated January 4, 2000
<b>Geotechnical Report</b>	Dr. Clarence Welti, P.E., P.C., dated November 19, 1999
<b>Modifications</b>	ATC Mount Analysis Project #12995792_C8_01, dated January 22, 2020

## 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>	101 mph (3-Second Gust, Vasd) / 130 mph (3-Second Gust, Vult)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 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>	$S_s = 0.17, S_1 = 0.06$
<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**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
157.0	1	Generic 18' Dipole	Low Profile Platform	(5) 7/8" Coax	OTHER
153.0	1	Generic 8' Omni			
152.0	1	Generic 8' Dipole			
149.0	12	Generic 48" x 8" Panel		(12) 1 1/4" Coax	SPRINT NEXTEL
145.0	2	Andrew LNX-8513DS-A1M	Low Profile Platform w/ Mods	(11) 1 5/8" Coax	VERIZON WIRELESS
	1	Commscope LNX-6514DS-A1M			
140.0	2	RFS DB-T1-6Z-8AB-OZ			
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	3	Samsung Outdoor CBRS 20W RRH			
	6	Commscope JAHH-65B-R3B			
	3	Commscope CBC78T-DS-43-2X			
132.0	3	Ericsson Radio 4449 B13, B5		Low Profile Platform	
	2	Raycap DC6-48-60-18-8F ("Squid")			
	6	Powerwave Allgon TT19-08BP111-001			
	6	Powerwave Allgon LGP13519			
	3	Ericsson RRUS A2 B2			
	3	Kathrein Scala 80010964			
	3	Commscope SBNHH-1D65A			
	3	KMW AM-X-CD-14-65-00T-RET			
	3	Ericsson RRUS-12 B2			
	3	Ericsson RRUS 32 B30 (53 lbs)			
120.0	4	Ericsson AIR 21, 1.3 M, B2A B4P	Low Profile Platform	(1) 1 1/4" Hybriflex Cable (1) 1 5/8" (1.63"-41.3mm) Fiber (16) 1 5/8" Coax	T-MOBILE
	4	Ericsson AIR 21, 1.3M, B4A B2P			
	4	Ericsson KRY 112 144/1			
112.0	6	Generic 6.7" x 10.7" TTA	Flush	-	OTHER
	3	Generic 48" x 12" Panel			
97.5	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	Platform with Handrails	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVSP18-C-A20			
	3	RFS APXV9TM14-ALU-I20			
86.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	METRO PCS INC
73.0	1	Generic GPS	Flush	(1) 1/2" Coax	SPRINT NEXTEL

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					



**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
No loading was considered as proposed as part of this analysis.					

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	47%	Pass
Shaft	51%	Pass
Base Plate	41%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5,050.0	6,817.5	3,421.1	50%
Shear (Kips)	47.0	63.5	31.7	50%

\* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.



## Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

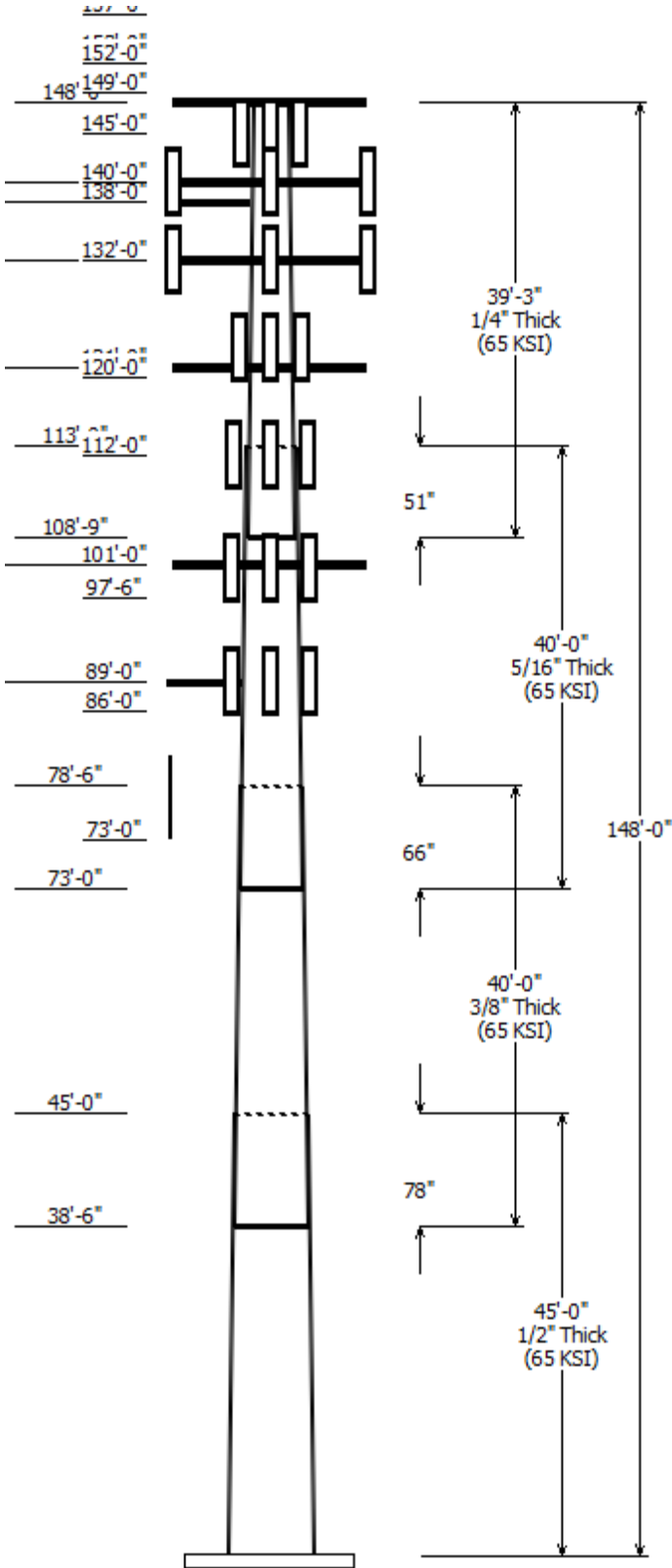
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.



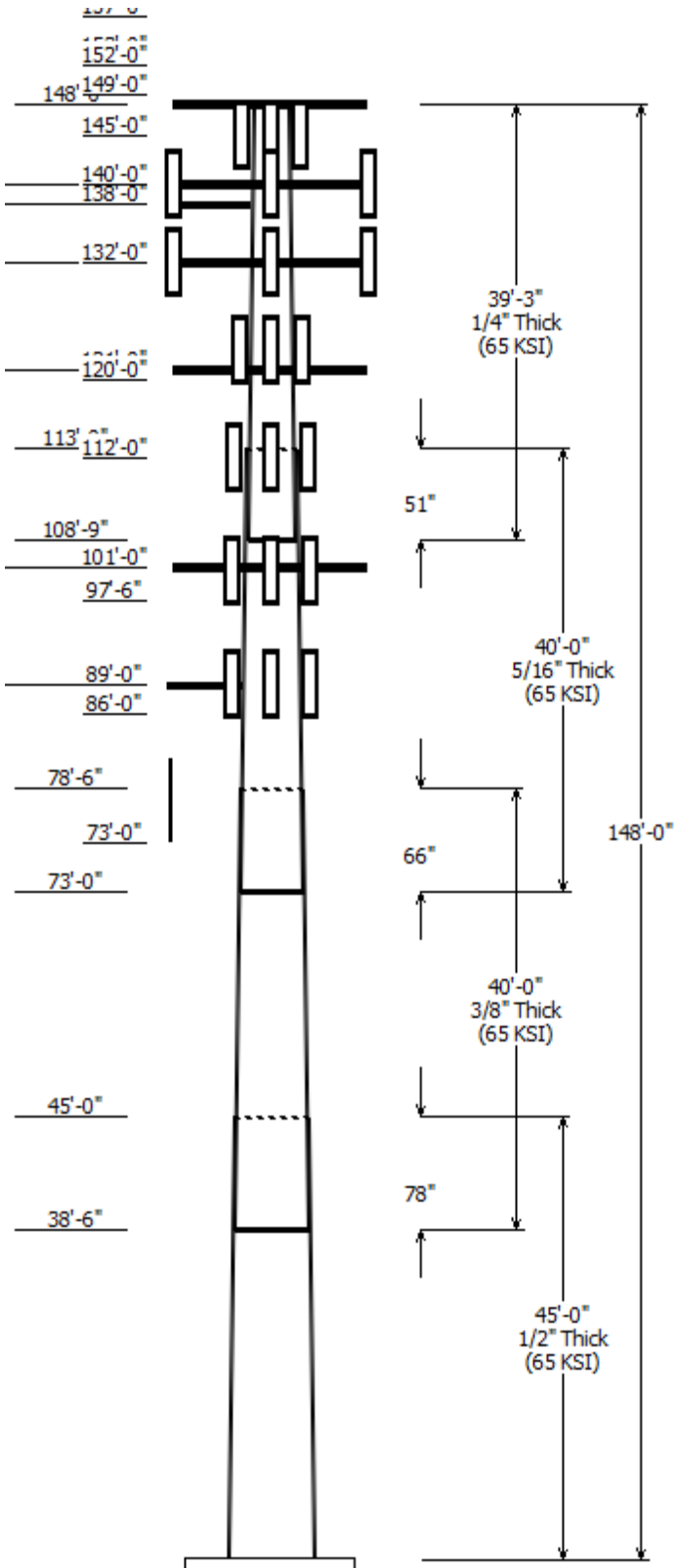
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Job Information	
Client : VERIZON WIRELESS	Code: ANSI/TIA-222-G
Pole : 302540	
Location : Madison CT 6, CT	
Description : 148 ft Summit Monopole	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 148.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.26300(in/ft)	

Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade
		Top	Bottom			
1	45.000	49.21	61.05	0.500	0.000	18 Sides 65
2	40.000	41.15	51.67	0.375 Slip Joint	78.000	18 Sides 65
3	40.000	32.70	43.22	0.313 Slip Joint	66.000	18 Sides 65
4	39.250	24.00	34.32	0.250 Slip Joint	51.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
157.000	157.000	1	Generic 18' Dipole
153.000	153.000	1	Generic 8' Omni
152.000	152.000	1	Generic 8' Dipole
149.000	149.000	12	Generic 48" x 8" Panel
148.000	148.000	1	Flat Low Profile Platform
145.000	145.000	2	Andrew LNX-8513DS-A1M
145.000	145.000	1	Commscope LNX-6514DS-A1M
140.000	140.000	1	Flat Low Profile Platform
140.000	140.000	6	Commscope JAHH-65B-R3B
140.000	140.000	2	RFS DB-T1-6Z-8AB-0Z
140.000	140.000	3	Samsung B5/B13 RRH-BR04C
140.000	140.000	3	Samsung B2/B66A RRH-BR049
140.000	140.000	3	Samsung Outdoor CBRS 20W
140.000	140.000	3	Samsung Outdoor CBRS 20W
140.000	140.000	3	Commscope CBC78T-DS-43-2X
138.000	138.000	1	Collar
132.000	132.000	1	Flat Low Profile Platform w/ K
132.000	132.000	3	Kathrein Scala 80010964
132.000	132.000	3	Commscope SBNHH-1D65A
132.000	132.000	3	KMW AM-X-CD-14-65-00T-RET
132.000	132.000	3	Ericsson RRUS-12 B2
132.000	132.000	3	Ericsson RRUS 32 B30 (53 lbs)
132.000	132.000	3	Ericsson RRUS A2 B2
132.000	132.000	3	Ericsson Radio 4449 B13, B5
132.000	132.000	2	Raycap DC6-48-60-18-8F
132.000	132.000	6	Powerwave Allgon TT19-
132.000	132.000	6	Powerwave Allgon LGP13519
121.000	121.000	1	Round Low Profile Platform
120.000	121.000	4	Ericsson AIR 21, 1.3M, B4A B2P
120.000	121.000	4	Ericsson AIR 21, 1.3 M, B2A B4
120.000	121.000	4	Ericsson KRY 112 144/1
112.000	112.000	3	Generic 48" x 12" Panel
112.000	112.000	6	Generic 6.7" x 10.7" TTA
101.000	101.000	1	Flat Platform w/ Handrails
97.500	101.000	3	RFS APXVSP18-C-A20
97.500	101.000	3	RFS APXV9TM14-ALU-I20
97.500	101.000	3	Alcatel-Lucent TD-RRH8x20-25
97.500	101.000	3	Alcatel-Lucent 1900 MHz 4X45
97.500	101.000	3	Alcatel-Lucent 800 MHz 2X50W
89.000	89.000	1	Collar
86.000	89.000	3	RFS APXV18-206517S-C
73.000	75.000	1	Generic GPS



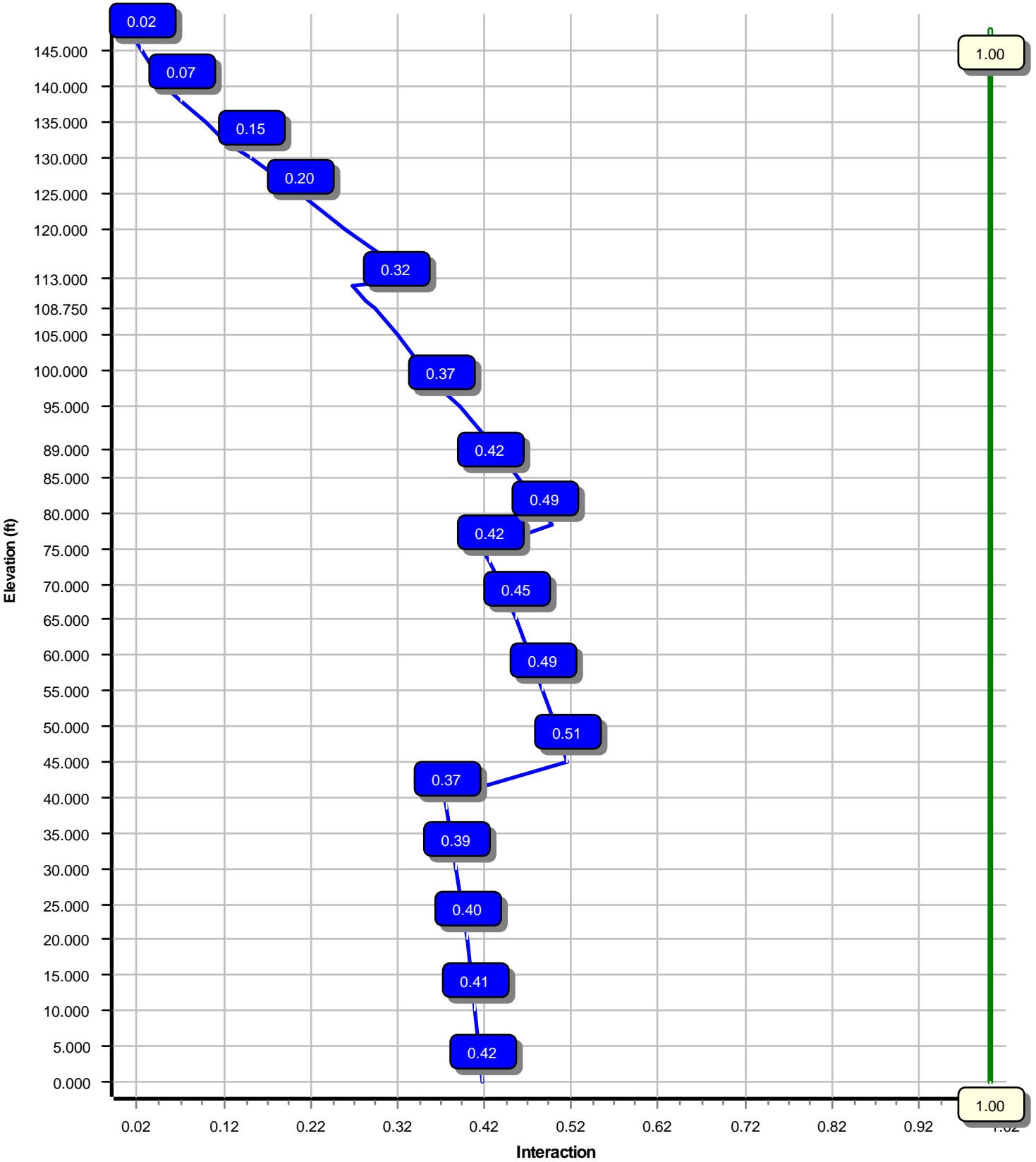
Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	73.000	1/2" Coax	Yes
0.000	86.000	1 5/8" Coax	No
0.000	97.500	1 1/4" Hybriflex	No
0.000	120.0	1 5/8" (1.63"-	No
0.000	120.0	1 5/8" Coax	Yes
0.000	120.0	1 5/8" Coax	No
0.000	121.0	1 1/4" Hybriflex	Yes
0.000	132.0	0.39" (10mm)	No
0.000	132.0	0.78" (19.7mm) 8	No
0.000	132.0	1 5/8" Coax	No
0.000	132.0	3" conduit	No
0.000	140.0	1 5/8" (1.63"-	No
0.000	145.0	1 5/8" Coax	No
0.000	149.0	1 1/4" Coax	No
0.000	152.0	7/8" Coax	No
0.000	153.0	7/8" Coax	No
0.000	157.0	7/8" Coax	No

Load Cases	
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3421.15	31.67	64.55
0.9D + 1.6W	3357.03	31.32	48.41
1.2D + 1.0Di + 1.0Wi	972.92	9.16	110.71
(1.2 + 0.2Sds) * DL + E ELFM	200.34	1.73	64.04
(1.2 + 0.2Sds) * DL + E EMAM	243.35	2.13	64.04
(0.9 - 0.2Sds) * DL + E ELFM	198.14	1.72	44.73
(0.9 - 0.2Sds) * DL + E EMAM	240.63	2.13	44.73
1.0D + 1.0W	664.57	6.18	53.82

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

Load Case : 1.2D + 1.6W  
Max Ratio 51.27% at 45.0 ft



Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

Analysis Parameters

Location :	New Haven County, CT	Height (ft) :	148
Code :	ANSI/TIA-222-G	Base Diameter (in) :	61.05
Shape :	18 Sides	Top Diameter (in) :	24.00
Pole Type :	Taper	Taper (in/ft) :	0.263
Pole Manufacturer :	Summit Manufacturing	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 2.00

$T_L$ (sec):	6	$p$ :	1	$C_s$ :	0.032
$S_s$ :	0.171	$S_1$ :	0.060	$C_s$ Max:	0.032
$F_a$ :	1.600	$F_v$ :	2.400	$C_s$ Min:	0.030
$S_{ds}$ :	0.182	$S_{d1}$ :	0.096		

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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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	45.000	0.5000	65		0.00	13,276	61.05	0.00	96.09	44509.7	19.77	122.10	49.21	45.00	77.31	23178.9	15.59	98.43	0.263006
2-18	40.000	0.3750	65	Slip	78.00	7,458	51.67	38.50	61.06	20300.5	22.53	137.80	41.15	78.50	48.54	10197.2	17.59	109.74	0.263006
3-18	40.000	0.3125	65	Slip	66.00	5,083	43.22	73.00	42.56	9902.8	22.63	138.32	32.70	113.00	32.13	4259.3	16.69	104.66	0.263006
4-18	39.250	0.2500	65	Slip	51.00	3,064	34.32	108.75	27.04	3965.7	22.45	137.29	24.00	148.00	18.84	1343.0	15.16	96.00	0.263006
Shaft Weight						28,881													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
157.00	Generic 18' Dipole	1	1.00	0.000	55.00	6.770	1.00	254.26	17.454	1.00
153.00	Generic 8' Omni	1	1.00	0.000	25.00	2.400	1.00	85.97	5.146	1.00
152.00	Generic 8' Dipole	1	1.00	0.000	25.00	3.010	1.00	114.34	7.668	1.00
149.00	Generic 48" x 8" Panel	12	0.80	0.000	20.00	3.615	0.73	108.36	5.483	0.73
148.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,147.69	45.186	1.00
145.00	Commscope LNX-6514DS-A1M	1	0.80	0.000	38.80	8.173	1.00	214.20	10.983	1.00
145.00	Andrew LNX-8513DS-A1M	2	0.80	0.000	39.20	8.173	0.77	214.58	10.983	0.77
140.00	Commscope CBC78T-DS-43-2X	3	0.80	0.000	20.70	0.552	0.50	42.67	1.057	0.50
140.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	18.60	0.857	0.50	42.46	1.480	0.50
140.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	4.40	0.892	0.50	22.30	1.527	0.50
140.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	147.84	2.773	0.50
140.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	127.19	2.773	0.50
140.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	0.000	44.00	4.800	0.72	169.16	6.213	0.72
140.00	Commscope JAHH-65B-R3B	6	0.80	0.000	60.60	9.113	0.69	261.78	11.872	0.69
140.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,144.29	45.086	1.00
138.00	Collar	1	1.00	0.000	560.00	8.500	1.00	1,024.71	15.554	1.00
132.00	Powerwave Allgon LGP13519	6	0.80	0.000	5.30	0.290	0.50	14.67	0.672	0.50
132.00	Powerwave Allgon TT19-	6	0.80	0.000	16.00	0.553	0.50	35.97	1.058	0.50
132.00	Raycap DC6-48-60-18-8F	2	0.80	0.000	31.80	1.470	1.00	92.79	2.160	1.00
132.00	Ericsson Radio 4449 B13, B5	3	0.80	0.000	70.60	1.969	0.50	134.25	2.890	0.50
132.00	Ericsson RRUS A2 B2	3	0.80	0.000	22.00	2.064	0.67	65.59	2.996	0.67
132.00	Ericsson RRUS 32 B30 (53 lbs)	3	0.80	0.000	53.00	2.743	0.67	125.71	3.899	0.67
132.00	Ericsson RRUS-12 B2	3	0.80	0.000	58.00	3.145	0.62	137.97	4.291	0.62
132.00	KMW AM-X-CD-14-65-00T-RET	3	0.80	0.000	36.40	4.994	0.66	146.43	6.841	0.66
132.00	Commscope SBNHH-1D65A	3	0.80	0.000	33.50	5.883	0.69	167.31	7.986	0.69
132.00	Kathrein Scala 80010964	3	0.80	0.000	83.80	9.997	0.62	286.03	12.331	0.62
132.00	Flat Low Profile Platform w/	1	1.00	0.000	1,725.00	33.600	1.00	2,461.56	57.897	1.00
121.00	Round Low Profile Platform	1	1.00	0.000	2,000.00	23.500	1.00	2,846.88	43.883	1.00
120.00	Ericsson KRY 112 144/1	4	0.80	1.000	11.00	0.351	0.50	21.52	0.748	0.50
120.00	Ericsson AIR 21, 1.3 M, B2A B4P	4	0.80	1.000	83.00	6.049	0.71	225.72	8.163	0.71
120.00	Ericsson AIR 21, 1.3M, B4A B2P	4	0.80	1.000	81.50	6.092	0.70	223.69	8.209	0.70
112.00	Generic 6.7" x 10.7" TTA	6	1.00	0.000	9.90	0.597	0.50	18.54	1.116	0.50
112.00	Generic 48" x 12" Panel	3	1.00	0.000	30.00	5.067	0.66	140.08	6.886	0.66
101.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,368.19	62.590	1.00
97.50	Alcatel-Lucent 800 MHz 2X50W	3	0.75	3.500	64.00	2.058	0.67	137.85	2.976	0.67
97.50	Alcatel-Lucent 1900 MHz 4X45	3	0.75	3.500	60.00	2.322	0.67	137.25	3.358	0.67
97.50	Alcatel-Lucent TD-RRH8x20-25	3	0.75	3.500	70.00	4.046	0.61	160.59	5.319	0.61
97.50	RFS APXV9TM14-ALU-I20	3	0.75	3.500	55.10	6.381	0.66	187.01	8.482	0.66
97.50	RFS APXVSP18-C-A20	3	0.75	3.500	57.00	8.024	0.69	222.35	10.698	0.69
89.00	Collar	1	1.00	0.000	560.00	8.500	1.00	1,004.50	15.247	1.00
86.00	RFS APXV18-206517S-C	3	1.00	3.000	26.40	5.160	0.68	114.17	7.401	0.68
73.00	Generic GPS	1	1.00	2.000	10.00	0.900	1.00	37.23	1.495	1.00
Totals	Num Loadings:42	123			14,476.20			29,461.86		

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:22 PM

Customer: VERIZON WIRELESS

Linear Appurtenance Properties Load Case Azimuth (deg) : 0

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	157.00	2	7/8" Coax	1.09	0.33	N 0	0.00	0.00	0	0.00	N	Other
0.00	153.00	1	7/8" Coax	1.09	0.33	N 0	0.00	0.00	0	0.00	N	Other
0.00	152.00	2	7/8" Coax	1.09	0.33	N 0	0.00	0.00	0	0.00	N	OTHER
0.00	149.00	12	1 1/4" Coax	1.55	0.63	N 0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	145.00	11	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	140.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	132.00	2	0.39" (10mm) Fiber	0.39	0.06	N 0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	132.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N 0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	132.00	12	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	132.00	3	3" conduit	3.50	7.58	N 0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	121.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N 1	0.00	0.00	75	0.00	Y	T-MOBILE
0.00	120.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	120.00	10	1 5/8" Coax	1.98	0.82	N 5	1.00	1.00	90	0.00	Y	T-MOBILE
0.00	120.00	6	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	97.50	4	1 1/4" Hybriflex Cable	1.54	1.00	N 0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	86.00	6	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N	METRO PCS INC
0.00	73.00	1	1/2" Coax	0.63	0.15	N 1	0.00	0.00	30	0.00	Y	SPRINT NEXTEL

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		0.5000	61.050	96.089	44,509.7	19.77	122.10	78.2	1436.	0.0	0.0
5.00		0.5000	59.735	94.002	41,672.2	19.30	119.47	78.7	1374.	0.0	1,617.1
10.00		0.5000	58.420	91.915	38,958.0	18.84	116.84	79.2	1313.	0.0	1,581.6
15.00		0.5000	57.105	89.829	36,364.2	18.37	114.21	79.8	1254.	0.0	1,546.1
20.00		0.5000	55.790	87.742	33,888.2	17.91	111.58	80.3	1196.	0.0	1,510.6
25.00		0.5000	54.475	85.655	31,527.3	17.45	108.95	80.9	1139.	0.0	1,475.1
30.00		0.5000	53.160	83.568	29,278.6	16.98	106.32	81.4	1084.	0.0	1,439.6
35.00		0.5000	51.845	81.481	27,139.4	16.52	103.69	82.0	1031.	0.0	1,404.1
38.50	Bot - Section 2	0.5000	50.924	80.020	25,705.8	16.20	101.85	82.4	994.2	0.0	961.7
40.00		0.5000	50.530	79.394	25,107.1	16.06	101.06	82.5	978.7	0.0	717.3
45.00	Top - Section 1	0.3750	49.965	59.022	18,337.8	21.73	133.24	75.8	722.9	0.0	2,350.6
50.00		0.3750	48.650	57.457	16,917.3	21.11	129.73	76.6	684.9	0.0	990.9
55.00		0.3750	47.335	55.892	15,572.1	20.49	126.23	77.3	648.0	0.0	964.2
60.00		0.3750	46.020	54.326	14,300.2	19.88	122.72	78.0	612.0	0.0	937.6
65.00		0.3750	44.705	52.761	13,099.5	19.26	119.21	78.8	577.1	0.0	911.0
70.00		0.3750	43.389	51.196	11,967.9	18.64	115.71	79.5	543.3	0.0	884.4
73.00	Bot - Section 3	0.3750	42.600	50.257	11,321.4	18.27	113.60	79.9	523.4	0.0	517.8
75.00		0.3750	42.074	49.631	10,903.5	18.02	112.20	80.2	510.4	0.0	627.8
78.50	Top - Section 2	0.3125	41.779	41.128	8,934.8	21.81	133.69	75.7	421.2	0.0	1,079.8
80.00		0.3125	41.384	40.737	8,682.2	21.59	132.43	76.0	413.2	0.0	208.9
85.00		0.3125	40.069	39.432	7,874.7	20.85	128.22	76.9	387.1	0.0	682.0
86.00		0.3125	39.806	39.172	7,719.4	20.70	127.38	77.1	382.0	0.0	133.7
89.00		0.3125	39.017	38.389	7,265.9	20.25	124.86	77.6	366.8	0.0	395.9
90.00		0.3125	38.754	38.128	7,118.8	20.10	124.01	77.8	361.8	0.0	130.2
95.00		0.3125	37.439	36.824	6,412.9	19.36	119.81	78.6	337.4	0.0	637.6
97.50		0.3125	36.782	36.172	6,078.2	18.99	117.70	79.1	325.5	0.0	310.5
100.0		0.3125	36.124	35.520	5,755.4	18.62	115.60	79.5	313.8	0.0	304.9
101.0		0.3125	35.861	35.259	5,629.5	18.47	114.76	79.7	309.2	0.0	120.4
105.0		0.3125	34.809	34.215	5,144.3	17.88	111.39	80.4	291.1	0.0	472.8
108.7	Bot - Section 4	0.3125	33.823	33.237	4,715.6	17.32	108.23	81.0	274.6	0.0	430.4
110.0		0.3125	33.494	32.911	4,578.2	17.14	107.18	81.2	269.2	0.0	255.1
112.0		0.3125	32.968	32.389	4,363.9	16.84	105.50	81.6	260.7	0.0	403.0
113.0	Top - Section 3	0.2500	33.205	26.149	3,588.0	21.66	132.82	75.9	212.8	0.0	199.1
115.0		0.2500	32.679	25.732	3,419.0	21.29	130.72	76.4	206.1	0.0	176.5
120.0		0.2500	31.364	24.688	3,019.7	20.36	125.46	77.5	189.6	0.0	428.9
121.0		0.2500	31.101	24.480	2,943.7	20.17	124.40	77.7	186.4	0.0	83.7
125.0		0.2500	30.049	23.645	2,652.7	19.43	120.20	78.5	173.9	0.0	327.5
130.0		0.2500	28.734	22.601	2,316.8	18.50	114.94	79.6	158.8	0.0	393.4
132.0		0.2500	28.208	22.184	2,190.8	18.13	112.83	80.1	153.0	0.0	152.4
135.0		0.2500	27.419	21.558	2,010.5	17.58	109.68	80.7	144.4	0.0	223.3
138.0		0.2500	26.630	20.932	1,840.4	17.02	106.52	81.4	136.1	0.0	216.9
140.0		0.2500	26.104	20.514	1,732.5	16.65	104.42	81.8	130.7	0.0	141.0
145.0		0.2500	24.789	19.471	1,481.3	15.72	99.16	82.6	117.7	0.0	340.2
148.0		0.2500	24.000	18.845	1,343.0	15.16	96.00	82.6	110.2	0.0	195.6
28,881.1											

<b>Load Case: 1.2D + 1.6W</b>	<b>101 mph with No Ice</b>	<b>22 Iterations</b>
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		253.8	0.0					0.0	0.0	253.8	0.0	0.0	0.0
5.00		502.1	1,940.5					0.0	487.9	502.1	2,428.4	0.0	0.0
10.00		491.1	1,897.9					0.0	487.9	491.1	2,385.8	0.0	0.0
15.00		480.0	1,855.3					0.0	487.9	480.0	2,343.2	0.0	0.0
20.00		468.9	1,812.7					0.0	487.9	468.9	2,300.6	0.0	0.0
25.00		457.9	1,770.1					0.0	487.9	457.9	2,257.9	0.0	0.0
30.00		452.1	1,727.5					0.0	487.9	452.1	2,215.3	0.0	0.0
35.00		386.3	1,684.9					0.0	487.9	386.3	2,172.7	0.0	0.0
38.50	Bot - Section 2	230.5	1,154.1					0.0	341.5	230.5	1,495.6	0.0	0.0
40.00		305.4	860.7					0.0	146.4	305.4	1,007.1	0.0	0.0
45.00	Top - Section 1	471.7	2,820.7					0.0	487.9	471.7	3,308.5	0.0	0.0
50.00		473.4	1,189.1					0.0	487.9	473.4	1,676.9	0.0	0.0
55.00		473.3	1,157.1					0.0	487.9	473.3	1,645.0	0.0	0.0
60.00		471.9	1,125.1					0.0	487.9	471.9	1,613.0	0.0	0.0
65.00		471.5	1,093.2					0.0	487.9	471.5	1,581.0	0.0	0.0
70.00		377.8	1,061.2					0.0	487.9	377.8	1,549.1	0.0	0.0
73.00	Bot - Section 3	237.6	621.4	35.8	0.0	71.5	12.0	0.0	292.7	273.4	926.1	0.0	0.0
75.00		263.6	753.3					0.0	194.8	263.6	948.1	0.0	0.0
78.50	Top - Section 2	239.2	1,295.8					0.0	340.9	239.2	1,636.7	0.0	0.0
80.00		309.1	250.7					0.0	146.1	309.1	396.8	0.0	0.0
85.00		285.2	818.4					0.0	487.0	285.2	1,305.4	0.0	0.0
86.00	Appurtenance(s)	189.5	160.5	439.3	0.0	1,318.0	95.0	0.0	97.4	628.9	352.9	0.0	0.0
89.00	Appurtenance(s)	189.4	475.1	354.8	0.0	0.0	672.0	0.0	274.5	544.1	1,421.5	0.0	0.0
90.00		282.9	156.2					0.0	91.5	282.9	247.7	0.0	0.0
95.00		352.9	765.1					0.0	457.4	352.9	1,222.6	0.0	0.0
97.50	Appurtenance(s)	234.1	372.6	1,475.1	0.0	5,162.9	1,102.0	0.0	228.7	1,709.3	1,703.3	0.0	0.0
100.00		163.5	365.9					0.0	216.7	163.5	582.6	0.0	0.0
101.00	Appurtenance(s)	232.4	144.5	1,834.8	0.0	0.0	2,400.0	0.0	86.7	2,067.2	2,631.2	0.0	0.0
105.00		358.9	567.4					0.0	346.8	358.9	914.1	0.0	0.0
108.75	Bot - Section 4	231.3	516.4					0.0	325.1	231.3	841.5	0.0	0.0
110.00		151.3	306.1					0.0	108.4	151.3	414.5	0.0	0.0
112.00	Appurtenance(s)	139.3	483.6	527.0	0.0	0.0	179.3	0.0	173.4	666.3	836.3	0.0	0.0
113.00	Top - Section 3	138.2	238.9					0.0	86.7	138.2	325.6	0.0	0.0
115.00		319.8	211.8					0.0	173.4	319.8	385.2	0.0	0.0
120.00	Appurtenance(s)	267.1	514.7	1,273.6	0.0	1,273.6	842.4	0.0	433.4	1,540.6	1,790.5	0.0	0.0
121.00	Appurtenance(s)	193.1	100.4	1,070.8	0.0	0.0	2,400.0	0.0	69.0	1,263.8	2,569.4	0.0	0.0
125.00		340.9	393.0					0.0	271.2	340.9	664.3	0.0	0.0
130.00		259.9	472.1					0.0	339.1	259.9	811.2	0.0	0.0
132.00	Appurtenance(s)	180.5	182.9	3,983.4	0.0	0.0	3,586.0	0.0	135.6	4,163.9	3,904.5	0.0	0.0
135.00		212.7	267.9					0.0	77.2	212.7	345.1	0.0	0.0
138.00	Appurtenance(s)	173.9	260.2	402.1	0.0	0.0	672.0	0.0	77.2	576.0	1,009.5	0.0	0.0
140.00	Appurtenance(s)	235.8	169.2	3,281.2	0.0	0.0	3,056.2	0.0	51.5	3,517.0	3,276.9	0.0	0.0
145.00	Appurtenance(s)	263.9	408.2	796.9	0.0	0.0	140.6	0.0	109.4	1,060.8	658.2	0.0	0.0
148.00	Appurtenance(s)	96.9	234.7	1,259.7	0.0	0.0	1,800.0	0.0	33.2	1,356.5	2,067.8	0.0	0.0
<b>Totals:</b>									30,045.0	64,169.5	0.00	0.00	



<b>Load Case: 1.2D + 1.6W</b>	<b>101 mph with No Ice</b>	<b>22 Iterations</b>
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	-64.55	-31.67	0.00	-3,421.15	0.00	3,421.15	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.416
5.00	-62.07	-31.29	0.00	-3,262.78	0.00	3,262.78	6,657.97	3,328.99	16,195.9	8,110.02	0.06	-0.11	0.412
10.00	-59.62	-30.90	0.00	-3,106.36	0.00	3,106.36	6,555.28	3,277.64	15,589.2	7,806.19	0.23	-0.22	0.407
15.00	-57.22	-30.52	0.00	-2,951.85	0.00	2,951.85	6,450.55	3,225.27	14,988.8	7,505.57	0.51	-0.33	0.402
20.00	-54.87	-30.15	0.00	-2,799.24	0.00	2,799.24	6,343.76	3,171.88	14,395.2	7,208.34	0.92	-0.44	0.397
25.00	-52.55	-29.78	0.00	-2,648.51	0.00	2,648.51	6,234.93	3,117.46	13,808.7	6,914.66	1.44	-0.55	0.392
30.00	-50.28	-29.40	0.00	-2,499.63	0.00	2,499.63	6,124.04	3,062.02	13,229.7	6,624.69	2.08	-0.67	0.386
35.00	-48.06	-29.07	0.00	-2,352.63	0.00	2,352.63	6,011.11	3,005.56	12,658.4	6,338.62	2.84	-0.79	0.379
38.50	-46.54	-28.87	0.00	-2,250.87	0.00	2,250.87	5,930.84	2,965.42	12,263.3	6,140.77	3.45	-0.87	0.374
40.00	-45.50	-28.61	0.00	-2,207.57	0.00	2,207.57	5,896.13	2,948.06	12,095.2	6,056.60	3.73	-0.91	0.372
45.00	-42.14	-28.17	0.00	-2,064.51	0.00	2,064.51	4,028.70	2,014.35	8,211.50	4,111.85	4.75	-1.03	0.513
50.00	-40.40	-27.77	0.00	-1,923.64	0.00	1,923.64	3,959.47	1,979.74	7,854.78	3,933.23	5.89	-1.15	0.499
55.00	-38.69	-27.36	0.00	-1,784.81	0.00	1,784.81	3,888.20	1,944.10	7,501.64	3,756.40	7.18	-1.31	0.485
60.00	-37.02	-26.96	0.00	-1,647.99	0.00	1,647.99	3,814.87	1,907.44	7,152.43	3,581.53	8.64	-1.46	0.470
65.00	-35.38	-26.54	0.00	-1,513.21	0.00	1,513.21	3,739.50	1,869.75	6,807.48	3,408.80	10.26	-1.62	0.454
70.00	-33.78	-26.19	0.00	-1,380.52	0.00	1,380.52	3,662.08	1,831.04	6,467.12	3,238.36	12.04	-1.78	0.436
73.00	-32.83	-25.93	0.00	-1,301.89	0.00	1,301.89	3,614.64	1,807.32	6,265.24	3,137.28	13.19	-1.87	0.424
75.00	-31.85	-25.69	0.00	-1,250.02	0.00	1,250.02	3,582.60	1,791.30	6,131.68	3,070.40	13.99	-1.94	0.416
78.50	-30.19	-25.43	0.00	-1,160.12	0.00	1,160.12	2,803.82	1,401.91	4,778.86	2,392.98	15.45	-2.05	0.496
80.00	-29.76	-25.17	0.00	-1,121.98	0.00	1,121.98	2,786.75	1,393.37	4,704.23	2,355.61	16.10	-2.10	0.487
85.00	-28.42	-24.88	0.00	-996.15	0.00	996.15	2,728.49	1,364.25	4,457.31	2,231.97	18.39	-2.27	0.457
86.00	-28.06	-24.27	0.00	-969.95	0.00	969.95	2,716.60	1,358.30	4,408.29	2,207.42	18.87	-2.31	0.450
89.00	-26.64	-23.70	0.00	-897.13	0.00	897.13	2,680.41	1,340.21	4,262.00	2,134.17	20.36	-2.41	0.431
90.00	-26.36	-23.46	0.00	-873.42	0.00	873.42	2,668.19	1,334.09	4,213.50	2,109.88	20.87	-2.44	0.424
95.00	-25.10	-23.10	0.00	-756.14	0.00	756.14	2,605.84	1,302.92	3,973.13	1,989.52	23.51	-2.61	0.390
97.50	-23.45	-21.35	0.00	-693.22	0.00	693.22	2,573.89	1,286.95	3,854.35	1,930.04	24.90	-2.69	0.369
100.00	-22.86	-21.18	0.00	-639.85	0.00	639.85	2,541.44	1,270.72	3,736.55	1,871.05	26.33	-2.76	0.351
101.00	-20.31	-19.01	0.00	-618.67	0.00	618.67	2,528.31	1,264.16	3,689.71	1,847.60	26.91	-2.80	0.343
105.00	-19.37	-18.65	0.00	-542.61	0.00	542.61	2,474.99	1,237.49	3,504.07	1,754.64	29.30	-2.91	0.317
108.75	-18.52	-18.40	0.00	-472.68	0.00	472.68	2,423.81	1,211.90	3,332.62	1,668.79	31.64	-3.02	0.291
110.00	-18.10	-18.24	0.00	-449.69	0.00	449.69	2,406.49	1,203.24	3,276.05	1,640.46	32.43	-3.05	0.282
112.00	-17.29	-17.54	0.00	-413.21	0.00	413.21	2,378.52	1,189.26	3,186.16	1,595.45	33.72	-3.11	0.266
113.00	-16.96	-17.39	0.00	-395.68	0.00	395.68	1,786.91	893.46	2,420.38	1,211.99	34.37	-3.13	0.336
115.00	-16.57	-17.08	0.00	-360.89	0.00	360.89	1,768.50	884.25	2,356.91	1,180.21	35.70	-3.18	0.316
120.00	-14.85	-15.46	0.00	-274.21	0.00	274.21	1,721.02	860.51	2,199.92	1,101.60	39.11	-3.32	0.258
121.00	-12.34	-14.06	0.00	-258.75	0.00	258.75	1,711.28	855.64	2,168.83	1,086.03	39.80	-3.34	0.246
125.00	-11.68	-13.70	0.00	-202.50	0.00	202.50	1,671.50	835.75	2,045.59	1,024.32	42.64	-3.43	0.205
130.00	-10.87	-13.40	0.00	-133.99	0.00	133.99	1,619.92	809.96	1,894.26	948.54	46.28	-3.52	0.148
132.00	-7.22	-9.01	0.00	-107.18	0.00	107.18	1,598.72	799.36	1,834.65	918.69	47.77	-3.55	0.121
135.00	-6.89	-8.78	0.00	-80.15	0.00	80.15	1,566.30	783.15	1,746.27	874.43	50.01	-3.59	0.096
138.00	-5.91	-8.15	0.00	-53.81	0.00	53.81	1,533.15	766.57	1,659.21	830.84	52.27	-3.62	0.069
140.00	-2.86	-4.43	0.00	-37.52	0.00	37.52	1,510.63	755.32	1,601.94	802.16	53.79	-3.63	0.049
145.00	-2.27	-3.33	0.00	-15.37	0.00	15.37	1,446.60	723.30	1,455.26	728.71	57.60	-3.65	0.023

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:27 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

101 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

148.00 0.00 -3.18 0.00 -5.39 0.00 5.39 1,400.09 700.04 1,362.73 682.38 59.89 -3.66 0.008

<b>Load Case:</b> 0.9D + 1.6W	101 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		253.8	0.0					0.0	0.0	253.8	0.0	0.0	0.0
5.00		502.1	1,455.4					0.0	365.9	502.1	1,821.3	0.0	0.0
10.00		491.1	1,423.4					0.0	365.9	491.1	1,789.3	0.0	0.0
15.00		480.0	1,391.5					0.0	365.9	480.0	1,757.4	0.0	0.0
20.00		468.9	1,359.5					0.0	365.9	468.9	1,725.4	0.0	0.0
25.00		457.9	1,327.6					0.0	365.9	457.9	1,693.5	0.0	0.0
30.00		452.1	1,295.6					0.0	365.9	452.1	1,661.5	0.0	0.0
35.00		386.3	1,263.7					0.0	365.9	386.3	1,629.6	0.0	0.0
38.50	Bot - Section 2	230.5	865.5					0.0	256.1	230.5	1,121.7	0.0	0.0
40.00		305.4	645.6					0.0	109.8	305.4	755.3	0.0	0.0
45.00	Top - Section 1	471.7	2,115.5					0.0	365.9	471.7	2,481.4	0.0	0.0
50.00		473.4	891.8					0.0	365.9	473.4	1,257.7	0.0	0.0
55.00		473.3	867.8					0.0	365.9	473.3	1,233.7	0.0	0.0
60.00		471.8	843.9					0.0	365.9	471.8	1,209.8	0.0	0.0
65.00		468.9	819.9					0.0	365.9	468.9	1,185.8	0.0	0.0
70.00		372.7	795.9					0.0	365.9	372.7	1,161.8	0.0	0.0
73.00	Bot - Section 3	232.6	466.1	35.8	0.0	71.5	9.0	0.0	219.5	268.4	694.6	0.0	0.0
75.00		256.2	565.0					0.0	146.1	256.2	711.1	0.0	0.0
78.50	Top - Section 2	231.9	971.8					0.0	255.7	231.9	1,227.5	0.0	0.0
80.00		298.0	188.0					0.0	109.6	298.0	297.6	0.0	0.0
85.00		274.0	613.8					0.0	365.2	274.0	979.0	0.0	0.0
86.00	Appurtenance(s)	180.4	120.4	439.3	0.0	1,318.0	71.3	0.0	73.0	619.7	264.7	0.0	0.0
89.00	Appurtenance(s)	179.8	356.3	354.8	0.0	0.0	504.0	0.0	205.8	534.5	1,066.1	0.0	0.0
90.00		265.8	117.2					0.0	68.6	265.8	185.8	0.0	0.0
95.00		330.0	573.9					0.0	343.1	330.0	916.9	0.0	0.0
97.50	Appurtenance(s)	216.7	279.4	1,475.1	0.0	5,162.9	826.5	0.0	171.5	1,691.8	1,277.4	0.0	0.0
100.00		150.5	274.4					0.0	162.5	150.5	437.0	0.0	0.0
101.00	Appurtenance(s)	211.9	108.4	1,834.8	0.0	0.0	1,800.0	0.0	65.0	2,046.7	1,973.4	0.0	0.0
105.00		324.8	425.5					0.0	260.1	324.8	685.6	0.0	0.0
108.75	Bot - Section 4	207.6	387.3					0.0	243.8	207.6	631.1	0.0	0.0
110.00		134.5	229.6					0.0	81.3	134.5	310.9	0.0	0.0
112.00	Appurtenance(s)	123.4	362.7	527.0	0.0	0.0	134.5	0.0	130.0	650.4	627.2	0.0	0.0
113.00	Top - Section 3	122.1	179.2					0.0	65.0	122.1	244.2	0.0	0.0
115.00		280.1	158.9					0.0	130.0	280.1	288.9	0.0	0.0
120.00	Appurtenance(s)	238.0	386.0	1,273.6	0.0	1,273.6	631.8	0.0	325.1	1,511.6	1,342.9	0.0	0.0
121.00	Appurtenance(s)	193.1	75.3	1,070.8	0.0	0.0	1,800.0	0.0	51.8	1,263.8	1,927.0	0.0	0.0
125.00		340.9	294.8					0.0	203.4	340.9	498.2	0.0	0.0
130.00		259.9	354.1					0.0	254.3	259.9	608.4	0.0	0.0
132.00	Appurtenance(s)	180.5	137.2	3,983.4	0.0	0.0	2,689.5	0.0	101.7	4,163.9	2,928.3	0.0	0.0
135.00		212.7	200.9					0.0	57.9	212.7	258.9	0.0	0.0
138.00	Appurtenance(s)	173.9	195.2	402.1	0.0	0.0	504.0	0.0	57.9	576.0	757.1	0.0	0.0
140.00	Appurtenance(s)	235.8	126.9	3,281.2	0.0	0.0	2,292.1	0.0	38.6	3,517.0	2,457.7	0.0	0.0
145.00	Appurtenance(s)	263.9	306.1	796.9	0.0	0.0	105.5	0.0	82.0	1,060.8	493.7	0.0	0.0
148.00	Appurtenance(s)	96.9	176.0	1,259.7	0.0	0.0	1,350.0	0.0	24.9	1,356.5	1,550.9	0.0	0.0
<b>Totals:</b>										29,710.0	48,127.1	0.00	0.00

Load Case: 0.9D + 1.6W

101 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 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	-48.41	-31.32	0.00	-3,357.03	0.00	3,357.03	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.406
5.00	-46.53	-30.90	0.00	-3,200.42	0.00	3,200.42	6,657.97	3,328.99	16,195.9	8,110.02	0.06	-0.10	0.402
10.00	-44.69	-30.49	0.00	-3,045.91	0.00	3,045.91	6,555.28	3,277.64	15,589.2	7,806.19	0.22	-0.21	0.397
15.00	-42.87	-30.09	0.00	-2,893.45	0.00	2,893.45	6,450.55	3,225.27	14,988.8	7,505.57	0.50	-0.32	0.392
20.00	-41.09	-29.69	0.00	-2,743.02	0.00	2,743.02	6,343.76	3,171.88	14,395.2	7,208.34	0.90	-0.43	0.387
25.00	-39.35	-29.29	0.00	-2,594.60	0.00	2,594.60	6,234.93	3,117.46	13,808.7	6,914.66	1.41	-0.54	0.382
30.00	-37.63	-28.90	0.00	-2,448.15	0.00	2,448.15	6,124.04	3,062.02	13,229.7	6,624.69	2.04	-0.66	0.376
35.00	-35.96	-28.55	0.00	-2,303.67	0.00	2,303.67	6,011.11	3,005.56	12,658.4	6,338.62	2.79	-0.77	0.370
38.50	-34.81	-28.34	0.00	-2,203.74	0.00	2,203.74	5,930.84	2,965.42	12,263.3	6,140.77	3.38	-0.85	0.365
40.00	-34.02	-28.07	0.00	-2,161.22	0.00	2,161.22	5,896.13	2,948.06	12,095.2	6,056.60	3.66	-0.89	0.363
45.00	-31.49	-27.62	0.00	-2,020.87	0.00	2,020.87	4,028.70	2,014.35	8,211.50	4,111.85	4.66	-1.01	0.499
50.00	-30.18	-27.20	0.00	-1,882.76	0.00	1,882.76	3,959.47	1,979.74	7,854.78	3,933.23	5.78	-1.13	0.486
55.00	-28.88	-26.78	0.00	-1,746.76	0.00	1,746.76	3,888.20	1,944.10	7,501.64	3,756.40	7.04	-1.28	0.473
60.00	-27.61	-26.35	0.00	-1,612.88	0.00	1,612.88	3,814.87	1,907.44	7,152.43	3,581.53	8.47	-1.43	0.458
65.00	-26.37	-25.92	0.00	-1,481.13	0.00	1,481.13	3,739.50	1,869.75	6,807.48	3,408.80	10.05	-1.59	0.442
70.00	-25.17	-25.57	0.00	-1,351.52	0.00	1,351.52	3,662.08	1,831.04	6,467.12	3,238.36	11.80	-1.74	0.424
73.00	-24.45	-25.31	0.00	-1,274.74	0.00	1,274.74	3,614.64	1,807.32	6,265.24	3,137.28	12.92	-1.84	0.413
75.00	-23.71	-25.07	0.00	-1,224.11	0.00	1,224.11	3,582.60	1,791.30	6,131.68	3,070.40	13.71	-1.90	0.405
78.50	-22.45	-24.83	0.00	-1,136.37	0.00	1,136.37	2,803.82	1,401.91	4,778.86	2,392.98	15.14	-2.01	0.483
80.00	-22.12	-24.56	0.00	-1,099.14	0.00	1,099.14	2,786.75	1,393.37	4,704.23	2,355.61	15.78	-2.05	0.475
85.00	-21.11	-24.29	0.00	-976.34	0.00	976.34	2,728.49	1,364.25	4,457.31	2,231.97	18.02	-2.22	0.445
86.00	-20.84	-23.68	0.00	-950.73	0.00	950.73	2,716.60	1,358.30	4,408.29	2,207.42	18.49	-2.26	0.439
89.00	-19.77	-23.13	0.00	-879.69	0.00	879.69	2,680.41	1,340.21	4,262.00	2,134.17	19.94	-2.36	0.420
90.00	-19.56	-22.89	0.00	-856.56	0.00	856.56	2,668.19	1,334.09	4,213.50	2,109.88	20.44	-2.39	0.414
95.00	-18.61	-22.56	0.00	-742.12	0.00	742.12	2,605.84	1,302.92	3,973.13	1,989.52	23.03	-2.55	0.380
97.50	-17.38	-20.83	0.00	-680.56	0.00	680.56	2,573.89	1,286.95	3,854.35	1,930.04	24.39	-2.63	0.360
100.00	-16.93	-20.68	0.00	-628.48	0.00	628.48	2,541.44	1,270.72	3,736.55	1,871.05	25.79	-2.71	0.343
101.00	-15.03	-18.56	0.00	-607.80	0.00	607.80	2,528.31	1,264.16	3,689.71	1,847.60	26.36	-2.74	0.335
105.00	-14.33	-18.23	0.00	-533.57	0.00	533.57	2,474.99	1,237.49	3,504.07	1,754.64	28.71	-2.85	0.310
108.75	-13.69	-18.01	0.00	-465.21	0.00	465.21	2,423.81	1,211.90	3,332.62	1,668.79	30.99	-2.96	0.285
110.00	-13.37	-17.87	0.00	-442.70	0.00	442.70	2,406.49	1,203.24	3,276.05	1,640.46	31.77	-2.99	0.276
112.00	-12.77	-17.19	0.00	-406.97	0.00	406.97	2,378.52	1,189.26	3,186.16	1,595.45	33.04	-3.05	0.261
113.00	-12.52	-17.07	0.00	-389.78	0.00	389.78	1,786.91	893.46	2,420.38	1,211.99	33.68	-3.07	0.329
115.00	-12.22	-16.79	0.00	-355.65	0.00	355.65	1,768.50	884.25	2,356.91	1,180.21	34.97	-3.12	0.309
120.00	-10.94	-15.22	0.00	-270.42	0.00	270.42	1,721.02	860.51	2,199.92	1,101.60	38.32	-3.25	0.252
121.00	-9.08	-13.86	0.00	-255.20	0.00	255.20	1,711.28	855.64	2,168.83	1,086.03	39.00	-3.28	0.241
125.00	-8.58	-13.50	0.00	-199.77	0.00	199.77	1,671.50	835.75	2,045.59	1,024.32	41.78	-3.36	0.200
130.00	-7.97	-13.21	0.00	-132.26	0.00	132.26	1,619.92	809.96	1,894.26	948.54	45.36	-3.45	0.145
132.00	-5.30	-8.88	0.00	-105.83	0.00	105.83	1,598.72	799.36	1,834.65	918.69	46.81	-3.48	0.119
135.00	-5.05	-8.66	0.00	-79.18	0.00	79.18	1,566.30	783.15	1,746.27	874.43	49.01	-3.52	0.094
138.00	-4.32	-8.04	0.00	-53.21	0.00	53.21	1,533.15	766.57	1,659.21	830.84	51.23	-3.55	0.067
140.00	-2.09	-4.38	0.00	-37.13	0.00	37.13	1,510.63	755.32	1,601.94	802.16	52.72	-3.56	0.048
145.00	-1.66	-3.29	0.00	-15.25	0.00	15.25	1,446.60	723.30	1,455.26	728.71	56.46	-3.58	0.022

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:36 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

101 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

148.00 0.00 -3.18 0.00 -5.39 0.00 5.39 1,400.09 700.04 1,362.73 682.38 58.71 -3.59 0.008

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	21 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		74.5	0.0					0.0	0.0	74.5	0.0	0.0	0.0
5.00		147.7	2,382.6					25.1	632.7	172.8	3,015.3	0.0	0.0
10.00		145.1	2,381.8					26.3	642.1	171.3	3,023.9	0.0	0.0
15.00		142.2	2,353.9					26.9	647.0	169.1	3,000.8	0.0	0.0
20.00		139.3	2,317.1					27.3	650.3	166.6	2,967.5	0.0	0.0
25.00		136.3	2,275.8					27.7	652.9	164.0	2,928.7	0.0	0.0
30.00		134.9	2,231.5					27.9	655.1	162.8	2,886.6	0.0	0.0
35.00		115.5	2,185.3					28.9	656.9	144.3	2,842.2	0.0	0.0
38.50	Bot - Section 2	69.0	1,502.7					21.1	460.8	90.0	1,963.5	0.0	0.0
40.00		91.5	1,012.2					9.2	197.7	100.7	1,209.9	0.0	0.0
45.00	Top - Section 1	141.5	3,317.0					31.7	659.9	173.2	3,976.9	0.0	0.0
50.00		142.3	1,678.3					32.9	661.2	175.2	2,339.5	0.0	0.0
55.00		142.6	1,638.4					34.0	662.4	176.7	2,300.8	0.0	0.0
60.00		142.5	1,597.9					35.1	663.5	177.6	2,261.4	0.0	0.0
65.00		142.0	1,556.9					36.2	664.5	178.2	2,221.4	0.0	0.0
70.00		113.1	1,515.4					37.2	665.4	150.2	2,180.8	0.0	0.0
73.00	Bot - Section 3	70.7	890.7	9.1	0.0	18.2	49.2	22.8	399.6	102.6	1,339.6	0.0	0.0
75.00		77.9	933.9					15.4	263.4	93.3	1,197.3	0.0	0.0
78.50	Top - Section 2	70.6	1,606.4					27.3	461.2	97.9	2,067.6	0.0	0.0
80.00		90.9	383.1					11.8	197.8	102.7	580.8	0.0	0.0
85.00		83.7	1,247.9					39.9	659.7	123.6	1,907.5	0.0	0.0
86.00	Appurtenance(s)	55.2	246.2	96.5	0.0	289.5	437.6	8.1	132.0	159.8	815.7	0.0	0.0
89.00	Appurtenance(s)	55.0	727.8	97.5	0.0	0.0	1,676.5	24.5	378.5	177.0	2,782.8	0.0	0.0
90.00		81.6	240.1					8.2	126.2	89.8	366.3	0.0	0.0
95.00		101.4	1,172.3					41.6	631.4	143.0	1,803.8	0.0	0.0
97.50	Appurtenance(s)	66.7	573.6	305.2	0.0	1,068.3	3,637.1	21.1	315.9	393.1	4,526.7	0.0	0.0
100.00		46.4	564.0					21.3	304.1	67.7	868.1	0.0	0.0
101.00	Appurtenance(s)	65.5	223.3	414.9	0.0	0.0	5,768.2	8.6	121.7	488.9	6,113.2	0.0	0.0
105.00		100.6	874.6					34.6	486.9	135.2	1,361.6	0.0	0.0
108.75	Bot - Section 4	64.4	797.8					32.9	456.8	97.3	1,254.6	0.0	0.0
110.00		41.8	400.6					11.1	152.3	52.8	553.0	0.0	0.0
112.00	Appurtenance(s)	38.4	632.7	115.9	0.0	0.0	710.7	17.8	243.8	172.1	1,587.3	0.0	0.0
113.00	Top - Section 3	38.0	313.0					8.9	121.9	47.0	435.0	0.0	0.0
115.00		87.4	358.1					18.0	243.9	105.4	602.0	0.0	0.0
120.00	Appurtenance(s)	74.4	867.3	266.1	0.0	266.1	2,726.1	45.4	610.2	385.9	4,203.7	0.0	0.0
121.00	Appurtenance(s)	60.6	170.5	306.3	0.0	0.0	5,246.9	1.9	71.5	368.7	5,488.9	0.0	0.0
125.00		107.3	665.2					0.0	271.2	107.3	936.5	0.0	0.0
130.00		82.0	799.5					0.0	339.1	82.0	1,138.5	0.0	0.0
132.00	Appurtenance(s)	57.2	311.9	922.0	0.0	0.0	9,726.8	0.0	135.6	979.2	10,174.3	0.0	0.0
135.00		67.6	456.8					0.0	77.2	67.6	534.0	0.0	0.0
138.00	Appurtenance(s)	55.4	444.4	112.7	0.0	0.0	1,696.7	0.0	77.2	168.1	2,218.4	0.0	0.0
140.00	Appurtenance(s)	75.5	290.0	750.1	0.0	0.0	8,256.9	0.0	51.5	825.7	8,598.3	0.0	0.0
145.00	Appurtenance(s)	84.8	696.5	164.0	0.0	0.0	784.0	0.0	109.4	248.8	1,589.9	0.0	0.0
148.00	Appurtenance(s)	31.2	403.0	334.0	0.0	0.0	3,947.7	0.0	33.2	365.3	4,383.9	0.0	0.0
<b>Totals:</b>									8,695.27	108,548.	0.00	0.00	

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

21 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	-110.71	-9.16	0.00	-972.92	0.00	972.92	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.132
5.00	-107.69	-9.05	0.00	-927.11	0.00	927.11	6,657.97	3,328.99	16,195.9	8,110.02	0.02	-0.03	0.130
10.00	-104.67	-8.93	0.00	-881.89	0.00	881.89	6,555.28	3,277.64	15,589.2	7,806.19	0.06	-0.06	0.129
15.00	-101.66	-8.81	0.00	-837.25	0.00	837.25	6,450.55	3,225.27	14,988.8	7,505.57	0.15	-0.09	0.127
20.00	-98.69	-8.69	0.00	-793.19	0.00	793.19	6,343.76	3,171.88	14,395.2	7,208.34	0.26	-0.12	0.126
25.00	-95.76	-8.58	0.00	-749.72	0.00	749.72	6,234.93	3,117.46	13,808.7	6,914.66	0.41	-0.16	0.124
30.00	-92.86	-8.46	0.00	-706.83	0.00	706.83	6,124.04	3,062.02	13,229.7	6,624.69	0.59	-0.19	0.122
35.00	-90.02	-8.35	0.00	-664.53	0.00	664.53	6,011.11	3,005.56	12,658.4	6,338.62	0.81	-0.22	0.120
38.50	-88.05	-8.28	0.00	-635.31	0.00	635.31	5,930.84	2,965.42	12,263.3	6,140.77	0.98	-0.25	0.118
40.00	-86.84	-8.21	0.00	-622.89	0.00	622.89	5,896.13	2,948.06	12,095.2	6,056.60	1.06	-0.26	0.118
45.00	-82.86	-8.06	0.00	-581.86	0.00	581.86	4,028.70	2,014.35	8,211.50	4,111.85	1.35	-0.29	0.162
50.00	-80.52	-7.93	0.00	-541.54	0.00	541.54	3,959.47	1,979.74	7,854.78	3,933.23	1.67	-0.33	0.158
55.00	-78.21	-7.80	0.00	-501.89	0.00	501.89	3,888.20	1,944.10	7,501.64	3,756.40	2.04	-0.37	0.154
60.00	-75.94	-7.67	0.00	-462.88	0.00	462.88	3,814.87	1,907.44	7,152.43	3,581.53	2.45	-0.41	0.149
65.00	-73.72	-7.53	0.00	-424.56	0.00	424.56	3,739.50	1,869.75	6,807.48	3,408.80	2.90	-0.46	0.144
70.00	-71.53	-7.40	0.00	-386.92	0.00	386.92	3,662.08	1,831.04	6,467.12	3,238.36	3.41	-0.50	0.139
73.00	-70.19	-7.32	0.00	-364.69	0.00	364.69	3,614.64	1,807.32	6,265.24	3,137.28	3.73	-0.53	0.136
75.00	-68.99	-7.24	0.00	-350.06	0.00	350.06	3,582.60	1,791.30	6,131.68	3,070.40	3.96	-0.55	0.133
78.50	-66.92	-7.15	0.00	-324.72	0.00	324.72	2,803.82	1,401.91	4,778.86	2,392.98	4.37	-0.58	0.160
80.00	-66.34	-7.08	0.00	-314.00	0.00	314.00	2,786.75	1,393.37	4,704.23	2,355.61	4.55	-0.59	0.157
85.00	-64.43	-6.96	0.00	-278.62	0.00	278.62	2,728.49	1,364.25	4,457.31	2,231.97	5.20	-0.64	0.148
86.00	-63.61	-6.82	0.00	-271.36	0.00	271.36	2,716.60	1,358.30	4,408.29	2,207.42	5.34	-0.65	0.146
89.00	-60.83	-6.63	0.00	-250.91	0.00	250.91	2,680.41	1,340.21	4,262.00	2,134.17	5.75	-0.68	0.140
90.00	-60.46	-6.56	0.00	-244.29	0.00	244.29	2,668.19	1,334.09	4,213.50	2,109.88	5.90	-0.69	0.138
95.00	-58.66	-6.43	0.00	-211.47	0.00	211.47	2,605.84	1,302.92	3,973.13	1,989.52	6.64	-0.73	0.129
97.50	-54.13	-6.00	0.00	-194.32	0.00	194.32	2,573.89	1,286.95	3,854.35	1,930.04	7.03	-0.76	0.122
100.00	-53.27	-5.94	0.00	-179.31	0.00	179.31	2,541.44	1,270.72	3,736.55	1,871.05	7.43	-0.78	0.117
101.00	-47.16	-5.38	0.00	-173.38	0.00	173.38	2,528.31	1,264.16	3,689.71	1,847.60	7.60	-0.79	0.113
105.00	-45.80	-5.25	0.00	-151.85	0.00	151.85	2,474.99	1,237.49	3,504.07	1,754.64	8.27	-0.82	0.105
108.75	-44.54	-5.15	0.00	-132.16	0.00	132.16	2,423.81	1,211.90	3,332.62	1,668.79	8.93	-0.85	0.098
110.00	-43.99	-5.10	0.00	-125.72	0.00	125.72	2,406.49	1,203.24	3,276.05	1,640.46	9.15	-0.86	0.095
112.00	-42.40	-4.91	0.00	-115.52	0.00	115.52	2,378.52	1,189.26	3,186.16	1,595.45	9.51	-0.87	0.090
113.00	-41.97	-4.87	0.00	-110.61	0.00	110.61	1,786.91	893.46	2,420.38	1,211.99	9.70	-0.88	0.115
115.00	-41.36	-4.77	0.00	-100.87	0.00	100.87	1,768.50	884.25	2,356.91	1,180.21	10.07	-0.90	0.109
120.00	-37.17	-4.33	0.00	-76.75	0.00	76.75	1,721.02	860.51	2,199.92	1,101.60	11.03	-0.93	0.091
121.00	-31.68	-3.88	0.00	-72.42	0.00	72.42	1,711.28	855.64	2,168.83	1,086.03	11.23	-0.94	0.085
125.00	-30.75	-3.77	0.00	-56.89	0.00	56.89	1,671.50	835.75	2,045.59	1,024.32	12.02	-0.96	0.074
130.00	-29.61	-3.68	0.00	-38.03	0.00	38.03	1,619.92	809.96	1,894.26	948.54	13.05	-0.99	0.058
132.00	-19.45	-2.53	0.00	-30.67	0.00	30.67	1,598.72	799.36	1,834.65	918.69	13.47	-1.00	0.046
135.00	-18.92	-2.45	0.00	-23.08	0.00	23.08	1,566.30	783.15	1,746.27	874.43	14.10	-1.01	0.038
138.00	-16.70	-2.25	0.00	-15.72	0.00	15.72	1,533.15	766.57	1,659.21	830.84	14.73	-1.02	0.030
140.00	-8.12	-1.27	0.00	-11.22	0.00	11.22	1,510.63	755.32	1,601.94	802.16	15.16	-1.02	0.019
145.00	-6.54	-0.99	0.00	-4.87	0.00	4.87	1,446.60	723.30	1,455.26	728.71	16.23	-1.03	0.011

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:45 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

21 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

148.00 0.00 -0.88 0.00 -1.89 0.00 1.89 1,400.09 700.04 1,362.73 682.38 16.88 -1.03 0.003



<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>20 Iterations</b>
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		50.1	0.0					0.0	0.0	50.1	0.0	0.0	0.0
5.00		99.1	1,617.1					0.0	406.5	99.1	2,023.6	0.0	0.0
10.00		96.9	1,581.6					0.0	406.5	96.9	1,988.1	0.0	0.0
15.00		94.7	1,546.1					0.0	406.5	94.7	1,952.6	0.0	0.0
20.00		92.5	1,510.6					0.0	406.5	92.5	1,917.1	0.0	0.0
25.00		90.4	1,475.1					0.0	406.5	90.4	1,881.6	0.0	0.0
30.00		89.2	1,439.6					0.0	406.5	89.2	1,846.1	0.0	0.0
35.00		76.2	1,404.1					0.0	406.5	76.2	1,810.6	0.0	0.0
38.50	Bot - Section 2	45.5	961.7					0.0	284.6	45.5	1,246.3	0.0	0.0
40.00		60.3	717.3					0.0	122.0	60.3	839.2	0.0	0.0
45.00	Top - Section 1	93.1	2,350.6					0.0	406.5	93.1	2,757.1	0.0	0.0
50.00		93.4	990.9					0.0	406.5	93.4	1,397.4	0.0	0.0
55.00		93.4	964.2					0.0	406.5	93.4	1,370.8	0.0	0.0
60.00		93.1	937.6					0.0	406.5	93.1	1,344.2	0.0	0.0
65.00		92.5	911.0					0.0	406.5	92.5	1,317.5	0.0	0.0
70.00		73.5	884.4					0.0	406.5	73.5	1,290.9	0.0	0.0
73.00	Bot - Section 3	45.9	517.8	7.1	0.0	14.1	10.0	0.0	243.9	53.0	771.8	0.0	0.0
75.00		50.6	627.8					0.0	162.3	50.6	790.1	0.0	0.0
78.50	Top - Section 2	45.8	1,079.8					0.0	284.1	45.8	1,363.9	0.0	0.0
80.00		58.8	208.9					0.0	121.7	58.8	330.7	0.0	0.0
85.00		54.1	682.0					0.0	405.8	54.1	1,087.8	0.0	0.0
86.00	Appurtenance(s)	35.6	133.7	86.7	0.0	260.1	79.2	0.0	81.2	122.3	294.1	0.0	0.0
89.00	Appurtenance(s)	35.5	395.9	70.0	0.0	0.0	560.0	0.0	228.7	105.5	1,184.6	0.0	0.0
90.00		52.4	130.2					0.0	76.2	52.4	206.4	0.0	0.0
95.00		65.1	637.6					0.0	381.2	65.1	1,018.8	0.0	0.0
97.50	Appurtenance(s)	42.8	310.5	291.1	0.0	1,018.9	918.3	0.0	190.6	333.9	1,419.4	0.0	0.0
100.00		29.7	304.9					0.0	180.6	29.7	485.5	0.0	0.0
101.00	Appurtenance(s)	41.8	120.4	362.1	0.0	0.0	2,000.0	0.0	72.2	403.9	2,192.7	0.0	0.0
105.00		64.1	472.8					0.0	289.0	64.1	761.8	0.0	0.0
108.75	Bot - Section 4	41.0	430.4					0.0	270.9	41.0	701.3	0.0	0.0
110.00		26.5	255.1					0.0	90.3	26.5	345.4	0.0	0.0
112.00	Appurtenance(s)	24.4	403.0	104.0	0.0	0.0	149.4	0.0	144.5	128.3	696.9	0.0	0.0
113.00	Top - Section 3	24.1	199.1					0.0	72.2	24.1	271.3	0.0	0.0
115.00		55.3	176.5					0.0	144.5	55.3	321.0	0.0	0.0
120.00	Appurtenance(s)	47.0	428.9	251.3	0.0	251.3	702.0	0.0	361.2	298.3	1,492.1	0.0	0.0
121.00	Appurtenance(s)	38.1	83.7	211.3	0.0	0.0	2,000.0	0.0	57.5	249.4	2,141.2	0.0	0.0
125.00		67.3	327.5					0.0	226.0	67.3	553.6	0.0	0.0
130.00		51.3	393.4					0.0	282.5	51.3	676.0	0.0	0.0
132.00	Appurtenance(s)	35.6	152.4	786.1	0.0	0.0	2,988.3	0.0	113.0	821.7	3,253.7	0.0	0.0
135.00		42.0	223.3					0.0	64.3	42.0	287.6	0.0	0.0
138.00	Appurtenance(s)	34.3	216.9	79.4	0.0	0.0	560.0	0.0	64.3	113.7	841.2	0.0	0.0
140.00	Appurtenance(s)	46.5	141.0	647.5	0.0	0.0	2,546.8	0.0	42.9	694.1	2,730.7	0.0	0.0
145.00	Appurtenance(s)	52.1	340.2	157.3	0.0	0.0	117.2	0.0	91.1	209.3	548.5	0.0	0.0
148.00	Appurtenance(s)	19.1	195.6	248.6	0.0	0.0	1,500.0	0.0	27.6	267.7	1,723.2	0.0	0.0
<b>Totals:</b>									5,863.24	53,474.6	0.00	0.00	

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:51 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

20 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	-53.82	-6.18	0.00	-664.57	0.00	664.57	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.087
5.00	-51.79	-6.10	0.00	-633.67	0.00	633.67	6,657.97	3,328.99	16,195.9	8,110.02	0.01	-0.02	0.086
10.00	-49.80	-6.02	0.00	-603.17	0.00	603.17	6,555.28	3,277.64	15,589.2	7,806.19	0.04	-0.04	0.085
15.00	-47.85	-5.94	0.00	-573.07	0.00	573.07	6,450.55	3,225.27	14,988.8	7,505.57	0.10	-0.06	0.084
20.00	-45.93	-5.86	0.00	-543.35	0.00	543.35	6,343.76	3,171.88	14,395.2	7,208.34	0.18	-0.09	0.083
25.00	-44.04	-5.79	0.00	-514.03	0.00	514.03	6,234.93	3,117.46	13,808.7	6,914.66	0.28	-0.11	0.081
30.00	-42.20	-5.71	0.00	-485.09	0.00	485.09	6,124.04	3,062.02	13,229.7	6,624.69	0.40	-0.13	0.080
35.00	-40.38	-5.65	0.00	-456.53	0.00	456.53	6,011.11	3,005.56	12,658.4	6,338.62	0.55	-0.15	0.079
38.50	-39.14	-5.60	0.00	-436.77	0.00	436.77	5,930.84	2,965.42	12,263.3	6,140.77	0.67	-0.17	0.078
40.00	-38.30	-5.55	0.00	-428.36	0.00	428.36	5,896.13	2,948.06	12,095.2	6,056.60	0.72	-0.18	0.077
45.00	-35.54	-5.46	0.00	-400.60	0.00	400.60	4,028.70	2,014.35	8,211.50	4,111.85	0.92	-0.20	0.106
50.00	-34.14	-5.38	0.00	-373.28	0.00	373.28	3,959.47	1,979.74	7,854.78	3,933.23	1.14	-0.22	0.104
55.00	-32.76	-5.30	0.00	-346.37	0.00	346.37	3,888.20	1,944.10	7,501.64	3,756.40	1.39	-0.25	0.101
60.00	-31.42	-5.22	0.00	-319.87	0.00	319.87	3,814.87	1,907.44	7,152.43	3,581.53	1.68	-0.28	0.098
65.00	-30.10	-5.13	0.00	-293.78	0.00	293.78	3,739.50	1,869.75	6,807.48	3,408.80	1.99	-0.31	0.094
70.00	-28.81	-5.07	0.00	-268.11	0.00	268.11	3,662.08	1,831.04	6,467.12	3,238.36	2.34	-0.35	0.091
73.00	-28.03	-5.02	0.00	-252.90	0.00	252.90	3,614.64	1,807.32	6,265.24	3,137.28	2.56	-0.36	0.088
75.00	-27.24	-4.97	0.00	-242.87	0.00	242.87	3,582.60	1,791.30	6,131.68	3,070.40	2.72	-0.38	0.087
78.50	-25.88	-4.92	0.00	-225.48	0.00	225.48	2,803.82	1,401.91	4,778.86	2,392.98	3.00	-0.40	0.103
80.00	-25.54	-4.87	0.00	-218.10	0.00	218.10	2,786.75	1,393.37	4,704.23	2,355.61	3.13	-0.41	0.102
85.00	-24.46	-4.81	0.00	-193.76	0.00	193.76	2,728.49	1,364.25	4,457.31	2,231.97	3.57	-0.44	0.096
86.00	-24.16	-4.70	0.00	-188.69	0.00	188.69	2,716.60	1,358.30	4,408.29	2,207.42	3.66	-0.45	0.094
89.00	-22.98	-4.59	0.00	-174.60	0.00	174.60	2,680.41	1,340.21	4,262.00	2,134.17	3.95	-0.47	0.090
90.00	-22.77	-4.54	0.00	-170.01	0.00	170.01	2,668.19	1,334.09	4,213.50	2,109.88	4.05	-0.47	0.089
95.00	-21.75	-4.48	0.00	-147.31	0.00	147.31	2,605.84	1,302.92	3,973.13	1,989.52	4.57	-0.51	0.082
97.50	-20.33	-4.13	0.00	-135.11	0.00	135.11	2,573.89	1,286.95	3,854.35	1,930.04	4.83	-0.52	0.078
100.00	-19.85	-4.10	0.00	-124.77	0.00	124.77	2,541.44	1,270.72	3,736.55	1,871.05	5.11	-0.54	0.075
101.00	-17.66	-3.68	0.00	-120.67	0.00	120.67	2,528.31	1,264.16	3,689.71	1,847.60	5.23	-0.54	0.072
105.00	-16.89	-3.62	0.00	-105.93	0.00	105.93	2,474.99	1,237.49	3,504.07	1,754.64	5.69	-0.57	0.067
108.75	-16.19	-3.57	0.00	-92.36	0.00	92.36	2,423.81	1,211.90	3,332.62	1,668.79	6.14	-0.59	0.062
110.00	-15.85	-3.55	0.00	-87.89	0.00	87.89	2,406.49	1,203.24	3,276.05	1,640.46	6.30	-0.59	0.060
112.00	-15.15	-3.41	0.00	-80.80	0.00	80.80	2,378.52	1,189.26	3,186.16	1,595.45	6.55	-0.60	0.057
113.00	-14.88	-3.39	0.00	-77.39	0.00	77.39	1,786.91	893.46	2,420.38	1,211.99	6.68	-0.61	0.072
115.00	-14.56	-3.33	0.00	-70.61	0.00	70.61	1,768.50	884.25	2,356.91	1,180.21	6.93	-0.62	0.068
120.00	-13.07	-3.02	0.00	-53.69	0.00	53.69	1,721.02	860.51	2,199.92	1,101.60	7.60	-0.64	0.056
121.00	-10.93	-2.75	0.00	-50.67	0.00	50.67	1,711.28	855.64	2,168.83	1,086.03	7.73	-0.65	0.053
125.00	-10.37	-2.68	0.00	-39.66	0.00	39.66	1,671.50	835.75	2,045.59	1,024.32	8.28	-0.67	0.045
130.00	-9.70	-2.62	0.00	-26.25	0.00	26.25	1,619.92	809.96	1,894.26	948.54	8.99	-0.68	0.034
132.00	-6.46	-1.76	0.00	-21.00	0.00	21.00	1,598.72	799.36	1,834.65	918.69	9.28	-0.69	0.027
135.00	-6.17	-1.72	0.00	-15.71	0.00	15.71	1,566.30	783.15	1,746.27	874.43	9.72	-0.70	0.022
138.00	-5.33	-1.60	0.00	-10.55	0.00	10.55	1,533.15	766.57	1,659.21	830.84	10.16	-0.70	0.016
140.00	-2.61	-0.87	0.00	-7.36	0.00	7.36	1,510.63	755.32	1,601.94	802.16	10.45	-0.71	0.011
145.00	-2.06	-0.65	0.00	-3.02	0.00	3.02	1,446.60	723.30	1,455.26	728.71	11.20	-0.71	0.006

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

20 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

148.00 0.00 -0.63 0.00 -1.06 0.00 1.06 1,400.09 700.04 1,362.73 682.38 11.64 -0.71 0.002

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
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 ( $S_{ds}$ ):	0.18
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):	2.00
Redundancy Factor ( $\rho$ ):	1.00
Seismic Force Distribution Exponent (k):	1.75
Total Unfactored Dead Load:	53.82 k
Seismic Base Shear (E):	1.72 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)
43	146.50	223	1,372	0.011	18	276
42	142.50	431	2,527	0.020	34	533
41	139.00	184	1,032	0.008	14	227
40	136.50	281	1,528	0.012	20	348
39	133.50	288	1,503	0.012	20	356
38	131.00	265	1,342	0.010	18	328
37	127.50	676	3,260	0.025	43	836
36	123.00	554	2,507	0.019	33	684
35	120.50	141	617	0.005	8	175
34	117.50	790	3,303	0.026	44	977
33	114.00	321	1,273	0.010	17	397
32	112.50	271	1,051	0.008	14	336
31	111.00	547	2,072	0.016	28	677
30	109.38	345	1,274	0.010	17	427
29	106.88	701	2,484	0.019	33	867
28	103.00	762	2,529	0.020	34	942
27	100.50	193	613	0.005	8	238
26	98.75	486	1,498	0.012	20	600
25	96.25	501	1,478	0.011	20	620
24	92.50	1,019	2,803	0.022	37	1,260
23	89.50	206	536	0.004	7	255
22	87.50	625	1,559	0.012	21	772
21	85.50	215	515	0.004	7	266

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

20	82.50	1,088	2,450	0.019	33	1,345
19	79.25	331	694	0.005	9	409
18	76.75	1,364	2,707	0.021	36	1,686
17	74.00	790	1,471	0.011	20	977
16	71.50	762	1,336	0.010	18	942
15	67.50	1,291	2,046	0.016	27	1,596
14	62.50	1,318	1,826	0.014	24	1,629
13	57.50	1,344	1,610	0.012	21	1,662
12	52.50	1,371	1,400	0.011	19	1,695
11	47.50	1,397	1,198	0.009	16	1,728
10	42.50	2,757	1,946	0.015	26	3,409
9	39.25	839	515	0.004	7	1,038
8	36.75	1,246	682	0.005	9	1,541
7	32.50	1,811	799	0.006	11	2,239
6	27.50	1,846	608	0.005	8	2,283
5	22.50	1,882	436	0.003	6	2,327
4	17.50	1,917	287	0.002	4	2,370
3	12.50	1,953	162	0.001	2	2,414
2	7.50	1,988	67	0.001	1	2,458
1	2.50	2,024	10	0.000	0	2,502
Generic 18' Dipole	148.00	55	344	0.003	5	68
Generic 8' Omni	148.00	25	156	0.001	2	31
Generic 8' Dipole	148.00	25	156	0.001	2	31
Generic 48" x 8" Pan	148.00	240	1,502	0.012	20	297
Flat Low Profile Pla	148.00	1,500	9,390	0.073	125	1,855
Commscope LNX-6514DS	145.00	39	234	0.002	3	48
Andrew LNX-8513DS-A1	145.00	78	473	0.004	6	97
Commscope CBC78T-DS-	140.00	62	353	0.003	5	77
Samsung Outdoor CBRS	140.00	56	317	0.002	4	69
Samsung Outdoor CBRS	140.00	13	75	0.001	1	16
Samsung B2/B66A RRH-	140.00	253	1,438	0.011	19	313
Samsung B5/B13 RRH-B	140.00	211	1,198	0.009	16	261
RFS DB-T1-6Z-8AB-0Z	140.00	88	500	0.004	7	109
Commscope JAHH-65B-R	140.00	364	2,065	0.016	28	450
Flat Low Profile Pla	140.00	1,500	8,520	0.066	114	1,855
Collar	138.00	560	3,102	0.024	41	692
Powerwave Allgon LGP	132.00	32	163	0.001	2	39
Powerwave Allgon TT1	132.00	96	492	0.004	7	119
Raycap DC6-48-60-18-	132.00	64	326	0.003	4	79
Ericsson Radio 4449	132.00	212	1,085	0.008	14	262
Ericsson RRUS A2 B2	132.00	66	338	0.003	5	82
Ericsson RRUS 32 B30	132.00	159	815	0.006	11	197
Ericsson RRUS-12 B2	132.00	174	892	0.007	12	215
KMW AM-X-CD-14-65-00	132.00	109	560	0.004	7	135
Commscope SBNHH-1D65	132.00	101	515	0.004	7	124
Kathrein Scala 80010	132.00	251	1,288	0.010	17	311
Flat Low Profile Pla	132.00	1,725	8,839	0.068	118	2,133
Round Low Profile PI	121.00	2,000	8,801	0.068	117	2,473
Ericsson KRY 112 144	120.00	44	191	0.001	3	54
Ericsson AIR 21, 1.3	120.00	332	1,440	0.011	19	411
Ericsson AIR 21, 1.3	120.00	326	1,414	0.011	19	403
Generic 6.7" x 10.7"	112.00	59	228	0.002	3	73
Generic 48" x 12" Pa	112.00	90	346	0.003	5	111
Flat Platform w/ Han	101.00	2,000	6,416	0.050	86	2,473
Alcatel-Lucent 800 M	97.50	192	579	0.004	8	237
Alcatel-Lucent 1900	97.50	180	543	0.004	7	223
Alcatel-Lucent TD-RR	97.50	210	633	0.005	8	260
RFS APXV9TM14-ALU-I2	97.50	165	499	0.004	7	204
RFS APXVSP18-C-A20	97.50	171	516	0.004	7	211
Collar	89.00	560	1,440	0.011	19	692
RFS APXV18-206517S-C	86.00	79	192	0.001	3	98
Generic GPS	73.00	10	18	0.000	0	12
		53,820	129,318	1.000	1,723	66,547

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

**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)
43	146.50	223	1,372	0.011	18	193
42	142.50	431	2,527	0.020	34	372
41	139.00	184	1,032	0.008	14	159
40	136.50	281	1,528	0.012	20	243
39	133.50	288	1,503	0.012	20	248
38	131.00	265	1,342	0.010	18	229
37	127.50	676	3,260	0.025	43	584
36	123.00	554	2,507	0.019	33	478
35	120.50	141	617	0.005	8	122
34	117.50	790	3,303	0.026	44	682
33	114.00	321	1,273	0.010	17	277
32	112.50	271	1,051	0.008	14	234
31	111.00	547	2,072	0.016	28	473
30	109.38	345	1,274	0.010	17	298
29	106.88	701	2,484	0.019	33	606
28	103.00	762	2,529	0.020	34	658
27	100.50	193	613	0.005	8	166
26	98.75	486	1,498	0.012	20	419
25	96.25	501	1,478	0.011	20	433
24	92.50	1,019	2,803	0.022	37	880
23	89.50	206	536	0.004	7	178
22	87.50	625	1,559	0.012	21	539
21	85.50	215	515	0.004	7	186
20	82.50	1,088	2,450	0.019	33	939
19	79.25	331	694	0.005	9	286
18	76.75	1,364	2,707	0.021	36	1,178
17	74.00	790	1,471	0.011	20	682
16	71.50	762	1,336	0.010	18	658
15	67.50	1,291	2,046	0.016	27	1,115
14	62.50	1,318	1,826	0.014	24	1,138
13	57.50	1,344	1,610	0.012	21	1,161
12	52.50	1,371	1,400	0.011	19	1,184
11	47.50	1,397	1,198	0.009	16	1,207
10	42.50	2,757	1,946	0.015	26	2,381
9	39.25	839	515	0.004	7	725
8	36.75	1,246	682	0.005	9	1,076
7	32.50	1,811	799	0.006	11	1,564
6	27.50	1,846	608	0.005	8	1,594
5	22.50	1,882	436	0.003	6	1,625
4	17.50	1,917	287	0.002	4	1,655
3	12.50	1,953	162	0.001	2	1,686
2	7.50	1,988	67	0.001	1	1,717
1	2.50	2,024	10	0.000	0	1,747
Generic 18' Dipole	148.00	55	344	0.003	5	47
Generic 8' Omni	148.00	25	156	0.001	2	22
Generic 8' Dipole	148.00	25	156	0.001	2	22
Generic 48" x 8" Pan	148.00	240	1,502	0.012	20	207
Flat Low Profile Pla	148.00	1,500	9,390	0.073	125	1,295
Commscope LNX-6514DS	145.00	39	234	0.002	3	34
Andrew LNX-8513DS-A1	145.00	78	473	0.004	6	68
Commscope CBC78T-DS-	140.00	62	353	0.003	5	54
Samsung Outdoor CBRS	140.00	56	317	0.002	4	48
Samsung Outdoor CBRS	140.00	13	75	0.001	1	11
Samsung B2/B66A RRH-	140.00	253	1,438	0.011	19	219
Samsung B5/B13 RRH-B	140.00	211	1,198	0.009	16	182
RFS DB-T1-6Z-8AB-0Z	140.00	88	500	0.004	7	76
Commscope JAHH-65B-R	140.00	364	2,065	0.016	28	314

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

Flat Low Profile Pla	140.00	1,500	8,520	0.066	114	1,295
Collar	138.00	560	3,102	0.024	41	484
Powerwave Allgon LGP	132.00	32	163	0.001	2	27
Powerwave Allgon TT1	132.00	96	492	0.004	7	83
Raycap DC6-48-60-18-	132.00	64	326	0.003	4	55
Ericsson Radio 4449	132.00	212	1,085	0.008	14	183
Ericsson RRUS A2 B2	132.00	66	338	0.003	5	57
Ericsson RRUS 32 B30	132.00	159	815	0.006	11	137
Ericsson RRUS-12 B2	132.00	174	892	0.007	12	150
KMW AM-X-CD-14-65-00	132.00	109	560	0.004	7	94
Commscope SBNHH-1D65	132.00	101	515	0.004	7	87
Kathrein Scala 80010	132.00	251	1,288	0.010	17	217
Flat Low Profile Pla	132.00	1,725	8,839	0.068	118	1,490
Round Low Profile PI	121.00	2,000	8,801	0.068	117	1,727
Ericsson KRY 112 144	120.00	44	191	0.001	3	38
Ericsson AIR 21, 1.3	120.00	332	1,440	0.011	19	287
Ericsson AIR 21, 1.3	120.00	326	1,414	0.011	19	282
Generic 6.7" x 10.7"	112.00	59	228	0.002	3	51
Generic 48" x 12" Pa	112.00	90	346	0.003	5	78
Flat Platform w/ Han	101.00	2,000	6,416	0.050	86	1,727
Alcatel-Lucent 800 M	97.50	192	579	0.004	8	166
Alcatel-Lucent 1900	97.50	180	543	0.004	7	155
Alcatel-Lucent TD-RR	97.50	210	633	0.005	8	181
RFS APXV9TM14-ALU-I2	97.50	165	499	0.004	7	143
RFS APXVSP18-C-A20	97.50	171	516	0.004	7	148
Collar	89.00	560	1,440	0.011	19	484
RFS APXV18-206517S-C	86.00	79	192	0.001	3	68
Generic GPS	73.00	10	18	0.000	0	9
		53,820	129,318	1.000	1,723	46,474

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	-64.04	-1.73	0.00	-200.34	0.00	200.34	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.033
5.00	-61.59	-1.73	0.00	-191.71	0.00	191.71	6,657.97	3,328.99	16,195.9	8,110.02	0.00	-0.01	0.033
10.00	-59.17	-1.74	0.00	-183.05	0.00	183.05	6,555.28	3,277.64	15,589.2	7,806.19	0.01	-0.01	0.032
15.00	-56.80	-1.74	0.00	-174.37	0.00	174.37	6,450.55	3,225.27	14,988.8	7,505.57	0.03	-0.02	0.032
20.00	-54.47	-1.74	0.00	-165.68	0.00	165.68	6,343.76	3,171.88	14,395.2	7,208.34	0.05	-0.03	0.032
25.00	-52.19	-1.73	0.00	-156.99	0.00	156.99	6,234.93	3,117.46	13,808.7	6,914.66	0.08	-0.03	0.031
30.00	-49.95	-1.73	0.00	-148.31	0.00	148.31	6,124.04	3,062.02	13,229.7	6,624.69	0.12	-0.04	0.031
35.00	-48.41	-1.72	0.00	-139.67	0.00	139.67	6,011.11	3,005.56	12,658.4	6,338.62	0.17	-0.05	0.030
38.50	-47.37	-1.72	0.00	-133.64	0.00	133.64	5,930.84	2,965.42	12,263.3	6,140.77	0.20	-0.05	0.030
40.00	-43.96	-1.69	0.00	-131.06	0.00	131.06	5,896.13	2,948.06	12,095.2	6,056.60	0.22	-0.05	0.029
45.00	-42.24	-1.68	0.00	-122.59	0.00	122.59	4,028.70	2,014.35	8,211.50	4,111.85	0.28	-0.06	0.040
50.00	-40.54	-1.67	0.00	-114.19	0.00	114.19	3,959.47	1,979.74	7,854.78	3,933.23	0.35	-0.07	0.039
55.00	-38.88	-1.65	0.00	-105.85	0.00	105.85	3,888.20	1,944.10	7,501.64	3,756.40	0.42	-0.08	0.038
60.00	-37.25	-1.63	0.00	-97.61	0.00	97.61	3,814.87	1,907.44	7,152.43	3,581.53	0.51	-0.09	0.037
65.00	-35.65	-1.60	0.00	-89.47	0.00	89.47	3,739.50	1,869.75	6,807.48	3,408.80	0.61	-0.10	0.036
70.00	-34.71	-1.59	0.00	-81.45	0.00	81.45	3,662.08	1,831.04	6,467.12	3,238.36	0.71	-0.11	0.035
73.00	-33.72	-1.57	0.00	-76.68	0.00	76.68	3,614.64	1,807.32	6,265.24	3,137.28	0.78	-0.11	0.034
75.00	-32.03	-1.53	0.00	-73.54	0.00	73.54	3,582.60	1,791.30	6,131.68	3,070.40	0.83	-0.11	0.033
78.50	-31.63	-1.53	0.00	-68.17	0.00	68.17	2,803.82	1,401.91	4,778.86	2,392.98	0.91	-0.12	0.040
80.00	-30.28	-1.49	0.00	-65.88	0.00	65.88	2,786.75	1,393.37	4,704.23	2,355.61	0.95	-0.12	0.039
85.00	-30.01	-1.49	0.00	-58.41	0.00	58.41	2,728.49	1,364.25	4,457.31	2,231.97	1.09	-0.13	0.037
86.00	-29.14	-1.47	0.00	-56.92	0.00	56.92	2,716.60	1,358.30	4,408.29	2,207.42	1.12	-0.14	0.037
89.00	-28.20	-1.44	0.00	-52.51	0.00	52.51	2,680.41	1,340.21	4,262.00	2,134.17	1.20	-0.14	0.035
90.00	-26.94	-1.40	0.00	-51.07	0.00	51.07	2,668.19	1,334.09	4,213.50	2,109.88	1.23	-0.14	0.034
95.00	-26.32	-1.38	0.00	-44.06	0.00	44.06	2,605.84	1,302.92	3,973.13	1,989.52	1.39	-0.15	0.032
97.50	-24.58	-1.32	0.00	-40.60	0.00	40.60	2,573.89	1,286.95	3,854.35	1,930.04	1.47	-0.16	0.031
100.00	-24.34	-1.32	0.00	-37.29	0.00	37.29	2,541.44	1,270.72	3,736.55	1,871.05	1.56	-0.16	0.030
101.00	-20.93	-1.19	0.00	-35.97	0.00	35.97	2,528.31	1,264.16	3,689.71	1,847.60	1.59	-0.16	0.028
105.00	-20.06	-1.16	0.00	-31.21	0.00	31.21	2,474.99	1,237.49	3,504.07	1,754.64	1.73	-0.17	0.026
108.75	-19.63	-1.14	0.00	-26.88	0.00	26.88	2,423.81	1,211.90	3,332.62	1,668.79	1.87	-0.18	0.024
110.00	-18.96	-1.11	0.00	-25.45	0.00	25.45	2,406.49	1,203.24	3,276.05	1,640.46	1.92	-0.18	0.023
112.00	-18.44	-1.09	0.00	-23.23	0.00	23.23	2,378.52	1,189.26	3,186.16	1,595.45	1.99	-0.18	0.022
113.00	-18.04	-1.07	0.00	-22.14	0.00	22.14	1,786.91	893.46	2,420.38	1,211.99	2.03	-0.18	0.028
115.00	-17.06	-1.03	0.00	-20.00	0.00	20.00	1,768.50	884.25	2,356.91	1,180.21	2.11	-0.19	0.027
120.00	-16.02	-0.97	0.00	-14.87	0.00	14.87	1,721.02	860.51	2,199.92	1,101.60	2.31	-0.19	0.023
121.00	-12.86	-0.81	0.00	-13.90	0.00	13.90	1,711.28	855.64	2,168.83	1,086.03	2.35	-0.20	0.020
125.00	-12.03	-0.77	0.00	-10.65	0.00	10.65	1,671.50	835.75	2,045.59	1,024.32	2.52	-0.20	0.018
130.00	-11.70	-0.75	0.00	-6.81	0.00	6.81	1,619.92	809.96	1,894.26	948.54	2.73	-0.21	0.014
132.00	-7.65	-0.51	0.00	-5.31	0.00	5.31	1,598.72	799.36	1,834.65	918.69	2.81	-0.21	0.011
135.00	-7.30	-0.49	0.00	-3.78	0.00	3.78	1,566.30	783.15	1,746.27	874.43	2.94	-0.21	0.009
138.00	-6.38	-0.43	0.00	-2.31	0.00	2.31	1,533.15	766.57	1,659.21	830.84	3.08	-0.21	0.007
140.00	-2.70	-0.19	0.00	-1.44	0.00	1.44	1,510.63	755.32	1,601.94	802.16	3.16	-0.21	0.004
145.00	-2.28	-0.16	0.00	-0.49	0.00	0.49	1,446.60	723.30	1,455.26	728.71	3.38	-0.21	0.002
148.00	0.00	-0.15	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	3.52	-0.21	0.000



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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.73	-1.72	0.00	-198.14	0.00	198.14	6,758.61	3,379.30	16,808.8	8,416.91	0.00	0.00	0.030
5.00	-43.01	-1.73	0.00	-189.52	0.00	189.52	6,657.97	3,328.99	16,195.9	8,110.02	0.00	-0.01	0.030
10.00	-41.32	-1.73	0.00	-180.88	0.00	180.88	6,555.28	3,277.64	15,589.2	7,806.19	0.01	-0.01	0.029
15.00	-39.67	-1.73	0.00	-172.23	0.00	172.23	6,450.55	3,225.27	14,988.8	7,505.57	0.03	-0.02	0.029
20.00	-38.04	-1.73	0.00	-163.58	0.00	163.58	6,343.76	3,171.88	14,395.2	7,208.34	0.05	-0.03	0.029
25.00	-36.45	-1.72	0.00	-154.94	0.00	154.94	6,234.93	3,117.46	13,808.7	6,914.66	0.08	-0.03	0.028
30.00	-34.88	-1.72	0.00	-146.32	0.00	146.32	6,124.04	3,062.02	13,229.7	6,624.69	0.12	-0.04	0.028
35.00	-33.81	-1.71	0.00	-137.74	0.00	137.74	6,011.11	3,005.56	12,658.4	6,338.62	0.17	-0.05	0.027
38.50	-33.08	-1.70	0.00	-131.76	0.00	131.76	5,930.84	2,965.42	12,263.3	6,140.77	0.20	-0.05	0.027
40.00	-30.70	-1.68	0.00	-129.20	0.00	129.20	5,896.13	2,948.06	12,095.2	6,056.60	0.22	-0.05	0.027
45.00	-29.50	-1.67	0.00	-120.81	0.00	120.81	4,028.70	2,014.35	8,211.50	4,111.85	0.28	-0.06	0.037
50.00	-28.31	-1.65	0.00	-112.48	0.00	112.48	3,959.47	1,979.74	7,854.78	3,933.23	0.34	-0.07	0.036
55.00	-27.15	-1.63	0.00	-104.24	0.00	104.24	3,888.20	1,944.10	7,501.64	3,756.40	0.42	-0.08	0.035
60.00	-26.01	-1.61	0.00	-96.08	0.00	96.08	3,814.87	1,907.44	7,152.43	3,581.53	0.50	-0.09	0.034
65.00	-24.90	-1.58	0.00	-88.04	0.00	88.04	3,739.50	1,869.75	6,807.48	3,408.80	0.60	-0.09	0.032
70.00	-24.24	-1.57	0.00	-80.12	0.00	80.12	3,662.08	1,831.04	6,467.12	3,238.36	0.70	-0.10	0.031
73.00	-23.55	-1.55	0.00	-75.42	0.00	75.42	3,614.64	1,807.32	6,265.24	3,137.28	0.77	-0.11	0.031
75.00	-22.37	-1.51	0.00	-72.32	0.00	72.32	3,582.60	1,791.30	6,131.68	3,070.40	0.82	-0.11	0.030
78.50	-22.09	-1.50	0.00	-67.03	0.00	67.03	2,803.82	1,401.91	4,778.86	2,392.98	0.90	-0.12	0.036
80.00	-21.15	-1.47	0.00	-64.77	0.00	64.77	2,786.75	1,393.37	4,704.23	2,355.61	0.94	-0.12	0.035
85.00	-20.96	-1.47	0.00	-57.41	0.00	57.41	2,728.49	1,364.25	4,457.31	2,231.97	1.07	-0.13	0.033
86.00	-20.35	-1.44	0.00	-55.94	0.00	55.94	2,716.60	1,358.30	4,408.29	2,207.42	1.10	-0.13	0.033
89.00	-19.69	-1.42	0.00	-51.61	0.00	51.61	2,680.41	1,340.21	4,262.00	2,134.17	1.19	-0.14	0.032
90.00	-18.81	-1.38	0.00	-50.19	0.00	50.19	2,668.19	1,334.09	4,213.50	2,109.88	1.22	-0.14	0.031
95.00	-18.38	-1.36	0.00	-43.30	0.00	43.30	2,605.84	1,302.92	3,973.13	1,989.52	1.37	-0.15	0.029
97.50	-17.17	-1.30	0.00	-39.89	0.00	39.89	2,573.89	1,286.95	3,854.35	1,930.04	1.45	-0.16	0.027
100.00	-17.00	-1.29	0.00	-36.64	0.00	36.64	2,541.44	1,270.72	3,736.55	1,871.05	1.53	-0.16	0.026
101.00	-14.61	-1.17	0.00	-35.34	0.00	35.34	2,528.31	1,264.16	3,689.71	1,847.60	1.57	-0.16	0.025
105.00	-14.01	-1.14	0.00	-30.66	0.00	30.66	2,474.99	1,237.49	3,504.07	1,754.64	1.71	-0.17	0.023
108.75	-13.71	-1.12	0.00	-26.40	0.00	26.40	2,423.81	1,211.90	3,332.62	1,668.79	1.84	-0.17	0.021
110.00	-13.24	-1.09	0.00	-25.00	0.00	25.00	2,406.49	1,203.24	3,276.05	1,640.46	1.89	-0.18	0.021
112.00	-12.88	-1.07	0.00	-22.82	0.00	22.82	2,378.52	1,189.26	3,186.16	1,595.45	1.96	-0.18	0.020
113.00	-12.60	-1.05	0.00	-21.75	0.00	21.75	1,786.91	893.46	2,420.38	1,211.99	2.00	-0.18	0.025
115.00	-11.92	-1.01	0.00	-19.65	0.00	19.65	1,768.50	884.25	2,356.91	1,180.21	2.08	-0.18	0.023
120.00	-11.19	-0.96	0.00	-14.61	0.00	14.61	1,721.02	860.51	2,199.92	1,101.60	2.28	-0.19	0.020
121.00	-8.98	-0.80	0.00	-13.66	0.00	13.66	1,711.28	855.64	2,168.83	1,086.03	2.32	-0.19	0.018
125.00	-8.40	-0.75	0.00	-10.46	0.00	10.46	1,671.50	835.75	2,045.59	1,024.32	2.48	-0.20	0.015
130.00	-8.17	-0.74	0.00	-6.69	0.00	6.69	1,619.92	809.96	1,894.26	948.54	2.69	-0.20	0.012
132.00	-5.34	-0.50	0.00	-5.22	0.00	5.22	1,598.72	799.36	1,834.65	918.69	2.77	-0.20	0.009
135.00	-5.10	-0.48	0.00	-3.71	0.00	3.71	1,566.30	783.15	1,746.27	874.43	2.90	-0.21	0.008
138.00	-4.46	-0.42	0.00	-2.27	0.00	2.27	1,533.15	766.57	1,659.21	830.84	3.03	-0.21	0.006
140.00	-1.89	-0.19	0.00	-1.42	0.00	1.42	1,510.63	755.32	1,601.94	802.16	3.12	-0.21	0.003
145.00	-1.59	-0.16	0.00	-0.48	0.00	0.48	1,446.60	723.30	1,455.26	728.71	3.33	-0.21	0.002
148.00	0.00	-0.15	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	3.46	-0.21	0.000

### Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
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 ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.00
Redundancy Factor ( $p$ ):	1.00

### 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)
43	146.50	223	1.852	1.785	1.069	0.327	49	276
42	142.50	431	1.752	1.330	0.897	0.269	77	533
41	139.00	184	1.667	1.002	0.765	0.223	27	227
40	136.50	281	1.608	0.803	0.681	0.193	36	348
39	133.50	288	1.538	0.599	0.589	0.159	30	356
38	131.00	265	1.481	0.455	0.520	0.132	23	328
37	127.50	676	1.403	0.289	0.435	0.099	45	836
36	123.00	554	1.305	0.128	0.341	0.062	23	684
35	120.50	141	1.253	0.060	0.296	0.044	4	175
34	117.50	790	1.191	-0.003	0.248	0.026	14	977
33	114.00	321	1.121	-0.057	0.200	0.007	2	397
32	112.50	271	1.092	-0.074	0.182	0.001	0	336
31	111.00	547	1.063	-0.088	0.165	-0.006	-2	677
30	109.38	345	1.032	-0.100	0.148	-0.011	-3	427
29	106.88	701	0.986	-0.113	0.124	-0.019	-9	867
28	103.00	762	0.915	-0.121	0.093	-0.026	-13	942
27	100.50	193	0.872	-0.121	0.077	-0.029	-4	238
26	98.75	486	0.841	-0.118	0.066	-0.030	-10	600
25	96.25	501	0.799	-0.112	0.054	-0.029	-10	620
24	92.50	1,019	0.738	-0.098	0.038	-0.026	-18	1,260
23	89.50	206	0.691	-0.084	0.028	-0.021	-3	255
22	87.50	625	0.661	-0.074	0.023	-0.017	-7	772
21	85.50	215	0.631	-0.064	0.018	-0.012	-2	266
20	82.50	1,088	0.587	-0.048	0.013	-0.005	-3	1,345
19	79.25	331	0.542	-0.032	0.009	0.004	1	409
18	76.75	1,364	0.508	-0.019	0.007	0.011	10	1,686
17	74.00	790	0.472	-0.006	0.006	0.018	9	977
16	71.50	762	0.441	0.005	0.006	0.023	12	942
15	67.50	1,291	0.393	0.020	0.007	0.031	27	1,596
14	62.50	1,318	0.337	0.036	0.009	0.039	34	1,629
13	57.50	1,344	0.285	0.048	0.014	0.043	39	1,662
12	52.50	1,371	0.238	0.057	0.018	0.045	42	1,695
11	47.50	1,397	0.195	0.063	0.024	0.046	43	1,728
10	42.50	2,757	0.156	0.067	0.029	0.045	84	3,409

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

9	39.25	839	0.133	0.069	0.033	0.045	25	1,038
8	36.75	1,246	0.117	0.070	0.035	0.044	37	1,541
7	32.50	1,811	0.091	0.071	0.038	0.043	52	2,239
6	27.50	1,846	0.065	0.072	0.041	0.042	51	2,283
5	22.50	1,882	0.044	0.071	0.042	0.040	51	2,327
4	17.50	1,917	0.026	0.067	0.040	0.038	49	2,370
3	12.50	1,953	0.013	0.059	0.035	0.034	44	2,414
2	7.50	1,988	0.005	0.044	0.025	0.026	35	2,458
1	2.50	2,024	0.001	0.018	0.010	0.012	16	2,502
Generic 18' Dipole	148.00	55	1.890	1.980	1.140	0.350	13	68
Generic 8' Omni	148.00	25	1.890	1.980	1.140	0.350	6	31
Generic 8' Dipole	148.00	25	1.890	1.980	1.140	0.350	6	31
Generic 48" x 8" Pan	148.00	240	1.890	1.980	1.140	0.350	56	297
Flat Low Profile Pla	148.00	1,500	1.890	1.980	1.140	0.350	350	1,855
Commscope LNX-	145.00	39	1.814	1.604	1.002	0.305	8	48
Andrew LNX-8513DS-A1	145.00	78	1.814	1.604	1.002	0.305	16	97
Commscope CBC78T-	140.00	62	1.691	1.089	0.801	0.236	10	77
Samsung Outdoor	140.00	56	1.691	1.089	0.801	0.236	9	69
Samsung Outdoor	140.00	13	1.691	1.089	0.801	0.236	2	16
Samsung B2/B66A RRH-	140.00	253	1.691	1.089	0.801	0.236	40	313
Samsung B5/B13 RRH-B	140.00	211	1.691	1.089	0.801	0.236	33	261
RFS DB-T1-6Z-8AB-QZ	140.00	88	1.691	1.089	0.801	0.236	14	109
Commscope JAHH-65B-	140.00	364	1.691	1.089	0.801	0.236	57	450
Flat Low Profile Pla	140.00	1,500	1.691	1.089	0.801	0.236	236	1,855
Collar	138.00	560	1.643	0.919	0.730	0.211	79	692
Powerwave Allgon LGP	132.00	32	1.503	0.510	0.547	0.143	3	39
Powerwave Allgon TT1	132.00	96	1.503	0.510	0.547	0.143	9	119
Raycap DC6-48-60-18-	132.00	64	1.503	0.510	0.547	0.143	6	79
Ericsson Radio 4449	132.00	212	1.503	0.510	0.547	0.143	20	262
Ericsson RRUS A2 B2	132.00	66	1.503	0.510	0.547	0.143	6	82
Ericsson RRUS 32 B30	132.00	159	1.503	0.510	0.547	0.143	15	197
Ericsson RRUS-12 B2	132.00	174	1.503	0.510	0.547	0.143	17	215
KMW AM-X-CD-14-65-00	132.00	109	1.503	0.510	0.547	0.143	10	135
Commscope SBNHH-	132.00	101	1.503	0.510	0.547	0.143	10	124
Kathrein Scala 80010	132.00	251	1.503	0.510	0.547	0.143	24	311
Flat Low Profile Pla	132.00	1,725	1.503	0.510	0.547	0.143	164	2,133
Round Low Profile PI	121.00	2,000	1.263	0.073	0.305	0.048	64	2,473
Ericsson KRY 112 144	120.00	44	1.243	0.049	0.288	0.041	1	54
Ericsson AIR 21, 1.3	120.00	332	1.243	0.049	0.288	0.041	9	411
Ericsson AIR 21, 1.3	120.00	326	1.243	0.049	0.288	0.041	9	403
Generic 6.7" x 10.7"	112.00	59	1.082	-0.079	0.176	-0.002	0	73
Generic 48" x 12" Pa	112.00	90	1.082	-0.079	0.176	-0.002	0	111
Flat Platform w/ Han	101.00	2,000	0.880	-0.121	0.080	-0.028	-38	2,473
Alcatel-Lucent 800 M	97.50	192	0.820	-0.115	0.060	-0.030	-4	237
Alcatel-Lucent 1900	97.50	180	0.820	-0.115	0.060	-0.030	-4	223
Alcatel-Lucent TD-RR	97.50	210	0.820	-0.115	0.060	-0.030	-4	260
RFS APXV9TM14-ALU-12	97.50	165	0.820	-0.115	0.060	-0.030	-3	204
RFS APXVSP18-C-A20	97.50	171	0.820	-0.115	0.060	-0.030	-3	211
Collar	89.00	560	0.683	-0.082	0.027	-0.020	-8	692
RFS APXV18-206517S-C	86.00	79	0.638	-0.067	0.019	-0.014	-1	98
Generic GPS	73.00	10	0.460	-0.002	0.006	0.020	0	12
		53,820	89.850	33.511	30.308	7.946	2,143	66,547

**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)
43	146.50	223	1.852	1.785	1.069	0.327	49	193
42	142.50	431	1.752	1.330	0.897	0.269	77	372

41	139.00	184	1.667	1.002	0.765	0.223	27	159
40	136.50	281	1.608	0.803	0.681	0.193	36	243
39	133.50	288	1.538	0.599	0.589	0.159	30	248
38	131.00	265	1.481	0.455	0.520	0.132	23	229
37	127.50	676	1.403	0.289	0.435	0.099	45	584
36	123.00	554	1.305	0.128	0.341	0.062	23	478
35	120.50	141	1.253	0.060	0.296	0.044	4	122
34	117.50	790	1.191	-0.003	0.248	0.026	14	682
33	114.00	321	1.121	-0.057	0.200	0.007	2	277
32	112.50	271	1.092	-0.074	0.182	0.001	0	234
31	111.00	547	1.063	-0.088	0.165	-0.006	-2	473
30	109.38	345	1.032	-0.100	0.148	-0.011	-3	298
29	106.88	701	0.986	-0.113	0.124	-0.019	-9	606
28	103.00	762	0.915	-0.121	0.093	-0.026	-13	658
27	100.50	193	0.872	-0.121	0.077	-0.029	-4	166
26	98.75	486	0.841	-0.118	0.066	-0.030	-10	419
25	96.25	501	0.799	-0.112	0.054	-0.029	-10	433
24	92.50	1,019	0.738	-0.098	0.038	-0.026	-18	880
23	89.50	206	0.691	-0.084	0.028	-0.021	-3	178
22	87.50	625	0.661	-0.074	0.023	-0.017	-7	539
21	85.50	215	0.631	-0.064	0.018	-0.012	-2	186
20	82.50	1,088	0.587	-0.048	0.013	-0.005	-3	939
19	79.25	331	0.542	-0.032	0.009	0.004	1	286
18	76.75	1,364	0.508	-0.019	0.007	0.011	10	1,178
17	74.00	790	0.472	-0.006	0.006	0.018	9	682
16	71.50	762	0.441	0.005	0.006	0.023	12	658
15	67.50	1,291	0.393	0.020	0.007	0.031	27	1,115
14	62.50	1,318	0.337	0.036	0.009	0.039	34	1,138
13	57.50	1,344	0.285	0.048	0.014	0.043	39	1,161
12	52.50	1,371	0.238	0.057	0.018	0.045	42	1,184
11	47.50	1,397	0.195	0.063	0.024	0.046	43	1,207
10	42.50	2,757	0.156	0.067	0.029	0.045	84	2,381
9	39.25	839	0.133	0.069	0.033	0.045	25	725
8	36.75	1,246	0.117	0.070	0.035	0.044	37	1,076
7	32.50	1,811	0.091	0.071	0.038	0.043	52	1,564
6	27.50	1,846	0.065	0.072	0.041	0.042	51	1,594
5	22.50	1,882	0.044	0.071	0.042	0.040	51	1,625
4	17.50	1,917	0.026	0.067	0.040	0.038	49	1,655
3	12.50	1,953	0.013	0.059	0.035	0.034	44	1,686
2	7.50	1,988	0.005	0.044	0.025	0.026	35	1,717
1	2.50	2,024	0.001	0.018	0.010	0.012	16	1,747
Generic 18' Dipole	148.00	55	1.890	1.980	1.140	0.350	13	47
Generic 8' Omni	148.00	25	1.890	1.980	1.140	0.350	6	22
Generic 8' Dipole	148.00	25	1.890	1.980	1.140	0.350	6	22
Generic 48" x 8" Pan	148.00	240	1.890	1.980	1.140	0.350	56	207
Flat Low Profile Pla	148.00	1,500	1.890	1.980	1.140	0.350	350	1,295
Commscope LNX-	145.00	39	1.814	1.604	1.002	0.305	8	34
Andrew LNX-8513DS-A1	145.00	78	1.814	1.604	1.002	0.305	16	68
Commscope CBC78T-	140.00	62	1.691	1.089	0.801	0.236	10	54
Samsung Outdoor	140.00	56	1.691	1.089	0.801	0.236	9	48
Samsung Outdoor	140.00	13	1.691	1.089	0.801	0.236	2	11
Samsung B2/B66A RRH-	140.00	253	1.691	1.089	0.801	0.236	40	219
Samsung B5/B13 RRH-B	140.00	211	1.691	1.089	0.801	0.236	33	182
RFS DB-T1-6Z-8AB-OZ	140.00	88	1.691	1.089	0.801	0.236	14	76
Commscope JAHH-65B-	140.00	364	1.691	1.089	0.801	0.236	57	314
Flat Low Profile Pla	140.00	1,500	1.691	1.089	0.801	0.236	236	1,295
Collar	138.00	560	1.643	0.919	0.730	0.211	79	484
Powerwave Allgon LGP	132.00	32	1.503	0.510	0.547	0.143	3	27
Powerwave Allgon TT1	132.00	96	1.503	0.510	0.547	0.143	9	83
Raycap DC6-48-60-18-	132.00	64	1.503	0.510	0.547	0.143	6	55
Ericsson Radio 4449	132.00	212	1.503	0.510	0.547	0.143	20	183
Ericsson RRUS A2 B2	132.00	66	1.503	0.510	0.547	0.143	6	57
Ericsson RRUS 32 B30	132.00	159	1.503	0.510	0.547	0.143	15	137
Ericsson RRUS-12 B2	132.00	174	1.503	0.510	0.547	0.143	17	150

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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Customer: VERIZON WIRELESS

KMW AM-X-CD-14-65-00	132.00	109	1.503	0.510	0.547	0.143	10	94
Commscope SBNHH-	132.00	101	1.503	0.510	0.547	0.143	10	87
Kathrein Scala 80010	132.00	251	1.503	0.510	0.547	0.143	24	217
Flat Low Profile Pla	132.00	1,725	1.503	0.510	0.547	0.143	164	1,490
Round Low Profile PI	121.00	2,000	1.263	0.073	0.305	0.048	64	1,727
Ericsson KRY 112 144	120.00	44	1.243	0.049	0.288	0.041	1	38
Ericsson AIR 21, 1.3	120.00	332	1.243	0.049	0.288	0.041	9	287
Ericsson AIR 21, 1.3	120.00	326	1.243	0.049	0.288	0.041	9	282
Generic 6.7" x 10.7"	112.00	59	1.082	-0.079	0.176	-0.002	0	51
Generic 48" x 12" Pa	112.00	90	1.082	-0.079	0.176	-0.002	0	78
Flat Platform w/ Han	101.00	2,000	0.880	-0.121	0.080	-0.028	-38	1,727
Alcatel-Lucent 800 M	97.50	192	0.820	-0.115	0.060	-0.030	-4	166
Alcatel-Lucent 1900	97.50	180	0.820	-0.115	0.060	-0.030	-4	155
Alcatel-Lucent TD-RR	97.50	210	0.820	-0.115	0.060	-0.030	-4	181
RFS APXV9TM14-ALU-I2	97.50	165	0.820	-0.115	0.060	-0.030	-3	143
RFS APXVSP18-C-A20	97.50	171	0.820	-0.115	0.060	-0.030	-3	148
Collar	89.00	560	0.683	-0.082	0.027	-0.020	-8	484
RFS APXV18-206517S-C	86.00	79	0.638	-0.067	0.019	-0.014	-1	68
Generic GPS	73.00	10	0.460	-0.002	0.006	0.020	0	9
		53,820	89.850	33.511	30.308	7.946	2,143	46,474

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	-64.04	-2.13	0.00	-243.35	0.00	243.35	6,758.61	3,379.30	16,808.83	8,416.91	0.00	0.00	0.038
5.00	-61.59	-2.10	0.00	-232.70	0.00	232.70	6,657.97	3,328.99	16,195.98	8,110.02	0.00	-0.01	0.038
10.00	-59.17	-2.07	0.00	-222.18	0.00	222.18	6,555.28	3,277.64	15,589.21	7,806.19	0.02	-0.02	0.037
15.00	-56.80	-2.03	0.00	-211.84	0.00	211.84	6,450.55	3,225.27	14,988.86	7,505.57	0.04	-0.02	0.037
20.00	-54.47	-1.98	0.00	-201.71	0.00	201.71	6,343.76	3,171.88	14,395.28	7,208.34	0.07	-0.03	0.037
25.00	-52.19	-1.94	0.00	-191.80	0.00	191.80	6,234.93	3,117.46	13,808.79	6,914.66	0.10	-0.04	0.036
30.00	-49.95	-1.89	0.00	-182.12	0.00	182.12	6,124.04	3,062.02	13,229.73	6,624.69	0.15	-0.05	0.036
35.00	-48.41	-1.86	0.00	-172.67	0.00	172.67	6,011.11	3,005.56	12,658.42	6,338.62	0.20	-0.06	0.035
38.50	-47.37	-1.84	0.00	-166.16	0.00	166.16	5,930.84	2,965.42	12,263.31	6,140.77	0.25	-0.06	0.035
40.00	-43.96	-1.75	0.00	-163.41	0.00	163.41	5,896.13	2,948.06	12,095.22	6,056.60	0.27	-0.07	0.034
45.00	-42.24	-1.72	0.00	-154.64	0.00	154.64	4,028.70	2,014.35	8,211.50	4,111.85	0.34	-0.07	0.048
50.00	-40.54	-1.68	0.00	-146.07	0.00	146.07	3,959.47	1,979.74	7,854.78	3,933.23	0.42	-0.08	0.047
55.00	-38.88	-1.65	0.00	-137.68	0.00	137.68	3,888.20	1,944.10	7,501.64	3,756.40	0.52	-0.10	0.047
60.00	-37.25	-1.62	0.00	-129.45	0.00	129.45	3,814.87	1,907.44	7,152.43	3,581.53	0.63	-0.11	0.046
65.00	-35.65	-1.59	0.00	-121.37	0.00	121.37	3,739.50	1,869.75	6,807.48	3,408.80	0.75	-0.12	0.045
70.00	-34.71	-1.59	0.00	-113.40	0.00	113.40	3,662.08	1,831.04	6,467.12	3,238.36	0.88	-0.13	0.044
73.00	-33.72	-1.58	0.00	-108.64	0.00	108.64	3,614.64	1,807.32	6,265.24	3,137.28	0.97	-0.14	0.044
75.00	-32.03	-1.57	0.00	-105.48	0.00	105.48	3,582.60	1,791.30	6,131.68	3,070.40	1.03	-0.15	0.043
78.50	-31.62	-1.57	0.00	-99.99	0.00	99.99	2,803.82	1,401.91	4,778.86	2,392.98	1.14	-0.16	0.053
80.00	-30.28	-1.58	0.00	-97.63	0.00	97.63	2,786.75	1,393.37	4,704.23	2,355.61	1.19	-0.16	0.052
85.00	-30.01	-1.58	0.00	-89.75	0.00	89.75	2,728.49	1,364.25	4,457.31	2,231.97	1.36	-0.18	0.051
86.00	-29.14	-1.59	0.00	-88.17	0.00	88.17	2,716.60	1,358.30	4,408.29	2,207.42	1.40	-0.18	0.051
89.00	-28.20	-1.60	0.00	-83.40	0.00	83.40	2,680.41	1,340.21	4,262.00	2,134.17	1.51	-0.19	0.050
90.00	-26.94	-1.62	0.00	-81.80	0.00	81.80	2,668.19	1,334.09	4,213.50	2,109.88	1.55	-0.19	0.049
95.00	-26.32	-1.63	0.00	-73.71	0.00	73.71	2,605.84	1,302.92	3,973.13	1,989.52	1.76	-0.21	0.047
97.50	-24.58	-1.66	0.00	-69.63	0.00	69.63	2,573.89	1,286.95	3,854.35	1,930.04	1.87	-0.21	0.046
100.00	-24.34	-1.66	0.00	-65.49	0.00	65.49	2,541.44	1,270.72	3,736.55	1,871.05	1.99	-0.22	0.045
101.00	-20.93	-1.70	0.00	-63.83	0.00	63.83	2,528.31	1,264.16	3,689.71	1,847.60	2.04	-0.23	0.043
105.00	-20.06	-1.71	0.00	-57.02	0.00	57.02	2,474.99	1,237.49	3,504.07	1,754.64	2.23	-0.24	0.041
108.75	-19.63	-1.71	0.00	-50.61	0.00	50.61	2,423.81	1,211.90	3,332.62	1,668.79	2.42	-0.25	0.038
110.00	-18.95	-1.72	0.00	-48.46	0.00	48.46	2,406.49	1,203.24	3,276.05	1,640.46	2.49	-0.25	0.037
112.00	-18.43	-1.71	0.00	-45.03	0.00	45.03	2,378.52	1,189.26	3,186.16	1,595.45	2.59	-0.26	0.036
113.00	-18.04	-1.71	0.00	-43.32	0.00	43.32	1,786.91	893.46	2,420.38	1,211.99	2.65	-0.26	0.046
115.00	-17.06	-1.70	0.00	-39.89	0.00	39.89	1,768.50	884.25	2,356.91	1,180.21	2.76	-0.27	0.043
120.00	-16.02	-1.67	0.00	-31.40	0.00	31.40	1,721.02	860.51	2,199.92	1,101.60	3.05	-0.28	0.038
121.00	-12.86	-1.57	0.00	-29.73	0.00	29.73	1,711.28	855.64	2,168.83	1,086.03	3.11	-0.29	0.035
125.00	-12.02	-1.52	0.00	-23.45	0.00	23.45	1,671.50	835.75	2,045.59	1,024.32	3.35	-0.30	0.030
130.00	-11.69	-1.50	0.00	-15.83	0.00	15.83	1,619.92	809.96	1,894.26	948.54	3.67	-0.31	0.024
132.00	-7.65	-1.16	0.00	-12.83	0.00	12.83	1,598.72	799.36	1,834.65	918.69	3.80	-0.31	0.019
135.00	-7.30	-1.13	0.00	-9.33	0.00	9.33	1,566.30	783.15	1,746.27	874.43	3.99	-0.31	0.015
138.00	-6.38	-1.02	0.00	-5.95	0.00	5.95	1,533.15	766.57	1,659.21	830.84	4.19	-0.32	0.011
140.00	-2.70	-0.52	0.00	-3.92	0.00	3.92	1,510.63	755.32	1,601.94	802.16	4.32	-0.32	0.007
145.00	-2.28	-0.44	0.00	-1.33	0.00	1.33	1,446.60	723.30	1,455.26	728.71	4.66	-0.32	0.003
148.00	0.00	-0.43	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	4.86	-0.32	0.000

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

4/9/2020 2:27:52 PM

Customer: VERIZON WIRELESS

Load Case (0.9 - 0.2Sds) \* DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.73	-2.13	0.00	-240.63	0.00	240.63	6,758.61	3,379.30	16,808.83	8,416.91	0.00	0.00	0.035
5.00	-43.01	-2.10	0.00	-229.98	0.00	229.98	6,657.97	3,328.99	16,195.98	8,110.02	0.00	-0.01	0.035
10.00	-41.32	-2.06	0.00	-219.48	0.00	219.48	6,555.28	3,277.64	15,589.21	7,806.19	0.02	-0.02	0.034
15.00	-39.67	-2.02	0.00	-209.17	0.00	209.17	6,450.55	3,225.27	14,988.86	7,505.57	0.04	-0.02	0.034
20.00	-38.04	-1.97	0.00	-199.09	0.00	199.09	6,343.76	3,171.88	14,395.28	7,208.34	0.06	-0.03	0.034
25.00	-36.45	-1.92	0.00	-189.23	0.00	189.23	6,234.93	3,117.46	13,808.79	6,914.66	0.10	-0.04	0.033
30.00	-34.88	-1.88	0.00	-179.61	0.00	179.61	6,124.04	3,062.02	13,229.73	6,624.69	0.15	-0.05	0.033
35.00	-33.81	-1.84	0.00	-170.23	0.00	170.23	6,011.11	3,005.56	12,658.42	6,338.62	0.20	-0.06	0.032
38.50	-33.08	-1.82	0.00	-163.78	0.00	163.78	5,930.84	2,965.42	12,263.31	6,140.77	0.24	-0.06	0.032
40.00	-30.70	-1.74	0.00	-161.05	0.00	161.05	5,896.13	2,948.06	12,095.22	6,056.60	0.26	-0.06	0.032
45.00	-29.50	-1.70	0.00	-152.37	0.00	152.37	4,028.70	2,014.35	8,211.50	4,111.85	0.34	-0.07	0.044
50.00	-28.31	-1.66	0.00	-143.88	0.00	143.88	3,959.47	1,979.74	7,854.78	3,933.23	0.42	-0.08	0.044
55.00	-27.15	-1.62	0.00	-135.59	0.00	135.59	3,888.20	1,944.10	7,501.64	3,756.40	0.51	-0.09	0.043
60.00	-26.01	-1.59	0.00	-127.47	0.00	127.47	3,814.87	1,907.44	7,152.43	3,581.53	0.62	-0.11	0.042
65.00	-24.90	-1.57	0.00	-119.50	0.00	119.50	3,739.50	1,869.75	6,807.48	3,408.80	0.74	-0.12	0.042
70.00	-24.24	-1.56	0.00	-111.65	0.00	111.65	3,662.08	1,831.04	6,467.12	3,238.36	0.87	-0.13	0.041
73.00	-23.55	-1.55	0.00	-106.97	0.00	106.97	3,614.64	1,807.32	6,265.24	3,137.28	0.95	-0.14	0.041
75.00	-22.37	-1.54	0.00	-103.87	0.00	103.87	3,582.60	1,791.30	6,131.68	3,070.40	1.01	-0.14	0.040
78.50	-22.08	-1.54	0.00	-98.47	0.00	98.47	2,803.82	1,401.91	4,778.86	2,392.98	1.12	-0.15	0.049
80.00	-21.14	-1.55	0.00	-96.15	0.00	96.15	2,786.75	1,393.37	4,704.23	2,355.61	1.17	-0.16	0.048
85.00	-20.96	-1.55	0.00	-88.41	0.00	88.41	2,728.49	1,364.25	4,457.31	2,231.97	1.34	-0.17	0.047
86.00	-20.35	-1.56	0.00	-86.86	0.00	86.86	2,716.60	1,358.30	4,408.29	2,207.42	1.38	-0.18	0.047
89.00	-19.69	-1.57	0.00	-82.18	0.00	82.18	2,680.41	1,340.21	4,262.00	2,134.17	1.49	-0.19	0.046
90.00	-18.81	-1.59	0.00	-80.61	0.00	80.61	2,668.19	1,334.09	4,213.50	2,109.88	1.53	-0.19	0.045
95.00	-18.38	-1.60	0.00	-72.66	0.00	72.66	2,605.84	1,302.92	3,973.13	1,989.52	1.74	-0.20	0.044
97.50	-17.16	-1.63	0.00	-68.66	0.00	68.66	2,573.89	1,286.95	3,854.35	1,930.04	1.85	-0.21	0.042
100.00	-17.00	-1.63	0.00	-64.59	0.00	64.59	2,541.44	1,270.72	3,736.55	1,871.05	1.96	-0.22	0.041
101.00	-14.61	-1.68	0.00	-62.96	0.00	62.96	2,528.31	1,264.16	3,689.71	1,847.60	2.01	-0.22	0.040
105.00	-14.01	-1.68	0.00	-56.25	0.00	56.25	2,474.99	1,237.49	3,504.07	1,754.64	2.20	-0.23	0.038
108.75	-13.71	-1.69	0.00	-49.94	0.00	49.94	2,423.81	1,211.90	3,332.62	1,668.79	2.39	-0.25	0.036
110.00	-13.23	-1.69	0.00	-47.83	0.00	47.83	2,406.49	1,203.24	3,276.05	1,640.46	2.45	-0.25	0.035
112.00	-12.87	-1.69	0.00	-44.45	0.00	44.45	2,378.52	1,189.26	3,186.16	1,595.45	2.56	-0.26	0.033
113.00	-12.59	-1.69	0.00	-42.76	0.00	42.76	1,786.91	893.46	2,420.38	1,211.99	2.61	-0.26	0.042
115.00	-11.91	-1.67	0.00	-39.39	0.00	39.39	1,768.50	884.25	2,356.91	1,180.21	2.72	-0.26	0.040
120.00	-11.18	-1.65	0.00	-31.03	0.00	31.03	1,721.02	860.51	2,199.92	1,101.60	3.01	-0.28	0.035
121.00	-8.98	-1.55	0.00	-29.38	0.00	29.38	1,711.28	855.64	2,168.83	1,086.03	3.06	-0.28	0.032
125.00	-8.39	-1.50	0.00	-23.18	0.00	23.18	1,671.50	835.75	2,045.59	1,024.32	3.30	-0.29	0.028
130.00	-8.17	-1.48	0.00	-15.66	0.00	15.66	1,619.92	809.96	1,894.26	948.54	3.62	-0.30	0.022
132.00	-5.34	-1.15	0.00	-12.69	0.00	12.69	1,598.72	799.36	1,834.65	918.69	3.74	-0.31	0.017
135.00	-5.10	-1.11	0.00	-9.24	0.00	9.24	1,566.30	783.15	1,746.27	874.43	3.94	-0.31	0.014
138.00	-4.45	-1.01	0.00	-5.90	0.00	5.90	1,533.15	766.57	1,659.21	830.84	4.13	-0.31	0.010
140.00	-1.88	-0.51	0.00	-3.89	0.00	3.89	1,510.63	755.32	1,601.94	802.16	4.26	-0.31	0.006
145.00	-1.59	-0.44	0.00	-1.32	0.00	1.32	1,446.60	723.30	1,455.26	728.71	4.59	-0.32	0.003
148.00	0.00	-0.43	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	4.79	-0.32	0.000

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: 12995792\_C3\_08

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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	31.67	0.00	64.55	0.00	0.00	3421.15	45.00	0.51
0.9D + 1.6W	31.32	0.00	48.41	0.00	0.00	3357.03	45.00	0.50
1.2D + 1.0Di + 1.0Wi	9.16	0.00	110.71	0.00	0.00	972.92	45.00	0.16
(1.2 + 0.2Sds) * DL + E ELFM	1.73	0.00	64.04	0.00	0.00	200.34	45.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.13	0.00	64.04	0.00	0.00	243.35	78.50	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.72	0.00	44.73	0.00	0.00	198.14	45.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.13	0.00	44.73	0.00	0.00	240.63	78.50	0.05
1.0D + 1.0W	6.18	0.00	53.82	0.00	0.00	664.57	45.00	0.11





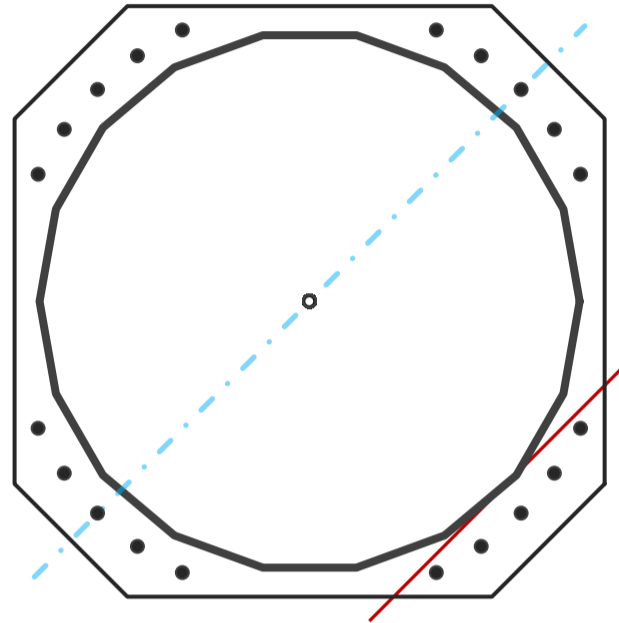
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	61.05	in
Thickness	0.5	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3421.2	k-ft
Axial, Pu	64.6	k
Shear, Vu	31.7	k
Neutral Axis	225	°

Report Capacities		
Component	Capacity	Result
Base Plate	41%	Pass
Anchor Rods	47%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	68	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	13	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1682.5	k
Bending Stress, φMn	4143.1	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	20	-
Diameter, φ	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	122.2	k
Anchor Rods, φPn	259.8	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	31.7	3421.2	1.00
Anchor Rod Forces	31.7	3421.2	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	94.6296	5.2572	0.4399		43375.50
Bolt	3.9761	3.2477	0.8393	4.5	38672.41
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

### Base Plate

Shape	Square	-
Width, W	68	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	29.948	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

### Anchor Rods

Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	69	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	122.2	k
Applied Shear, Vu	0.5	k
Compressive Capacity, $\phi P_n$	259.8	k
Tensile Capacity, $\phi R_n$	0.470	OK
Interaction Capacity	0.474	OK

### External Base Plate

Chord Length AA	34.867	in
Additional AA	0.000	in
Section Modulus, Z	92.069	in <sup>3</sup>
Applied Moment, Mu	1682.5	k-ft
Bending Capacity, $\phi M_n$	4143.1	k-ft
Capacity, Mu/ $\phi M_n$	0.406	OK

Chord Length AB	33.921	in
Additional AB	0.000	in
Section Modulus, Z	89.572	in <sup>3</sup>
Applied Moment, Mu	1402.1	k-ft
Bending Capacity, $\phi M_n$	4030.8	k-ft
Capacity, Mu/ $\phi M_n$	0.348	OK

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		

### Internal Base Plate

Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		