



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

July 22, 2022

David Hoogasian
Project Manager
Network Building & Consulting
100 Apollo Drive, Suite 303
Chelmsford, MA 01824
dhoogasian@nbcllc.com

RE: TS-DISH-118-220524 – Dish Wireless, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 320 Old Stagecoach Road, Ridgefield, Connecticut.

Dear Mr. Hoogasian:

The Connecticut Siting Council (Council) is in receipt of your correspondence of July 20, 2022 submitted in response to the Council's June 20, 2022 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing 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,

A handwritten signature in dark ink, appearing to read "Melanie A. Bachman".

Melanie A. Bachman
Executive Director

MAB/IN/emr

From: David Hoogasian <dhoogasian@nbcllc.com>
Sent: Wednesday, July 20, 2022 4:31 PM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Incomplete Letter for TS-DISH-118-220524 (320 Old Stagecoach Road, Ridgefield)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good afternoon,

Attached please find the requested supplement. One hard copy will be sent to the CSC office.

Thank you,

David Hoogasian
Project Manager

NETWORK BUILDING + CONSULTING

100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 508.344.3343



From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Monday, June 20, 2022 3:58 PM
To: David Hoogasian <dhoogasian@nbcllc.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for TS-DISH-118-220524 (320 Old Stagecoach Road, Ridgefield)

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

July 20, 2022

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

RE: TS-DISH-118-220524- INCOMPLETE LETTER

Dear Ms. Bachman:

To supplement the above referenced Tower Share Request, enclosed please find:

- Updated Structural Analysis Report for the facility that includes proposed equipment by Verizon and other entities that are located at this facility (54%).

Location:

Site Name	Full Address
209115 RIDGEFIELD	320 Old Stagecoach Rd Ridgefield. CT

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

Sincerely,

David Hoogasian

David Hoogasian
Project Manager
M 508.344.3343
dhoogasian@nbcllc.com



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

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

June 20, 2022

David Hoogasian
Project Manager
Network Building & Consulting
100 Apollo Drive, Suite 303
Chelmsford, MA 01824
dhoogasian@nbcllc.com

RE: TS-DISH-118-220524- Dish Wireless, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 320 Old Stagecoach Road, Ridgefield, Connecticut.

Dear Mr. Hoogasian:

The Connecticut Siting Council (Council) received the tower share request for the above-referenced facility on May 24, 2022.

According to Section 16-50j-90 of the Regulations of Connecticut State Agencies, “no tower share application shall be approved until a complete application containing all information deemed relevant by the Council has been filed. Relevant information shall at a minimum include that listed in Section 16-50j-89 of the Regulations of Connecticut State Agencies...”

Staff has reviewed this tower share request for completeness and has identified a deficiency in the Structural Analysis Report provided with the filing. The Structural Analysis Report provided is dated September 1, 2021 and is prepared by American Tower Corporation. The Council received a request for exempt modification from Verizon for the same facility on April 4, 2022. The above-referenced tower share request does not include Verizon’s approved equipment; however, the structural analysis included in Verizon’s request for exempt modification does appear to include both Verizon’s equipment and the equipment that Dish is now proposing. Please see Verizon’s exempt modification filing for this facility, which may be found on the Council’s website under the Decisions page in Ridgefield under the filing number EM-VER-118-220404.

Therefore, the tower share request is incomplete at this time. The Council recommends that Network Building & Consulting provide an updated Structural Analysis Report for the facility that includes proposed equipment by Verizon and other entities that are located at this facility on or before July 20, 2022. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to July 20, 2022. **Please provide an electronic version and one hard copy of the requested information for the incomplete tower share filing to be rendered complete and processed. Please include the Council’s tower share identification number referenced above with the submittal.**

This notice of incompleteness shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melanie A. Bachman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Melanie A. Bachman
Executive Director

MAB/IN/emr



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

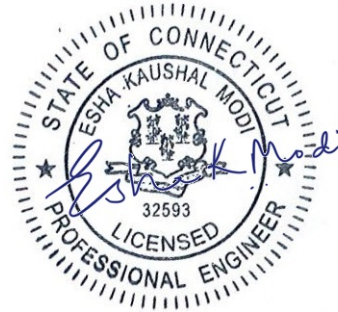
Structure : 149 ft Monopole
ATC Site Name : Ridgefield 2,CT
ATC Site Number : 209115
Engineering Number : 13741746_C3_02
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : RIDGEFIELD 3 CT - Home Land Towers Monop
Carrier Site Number : 470881
Site Location : 320 Old Stagecoach Road
Ridgefield, CT 06877
41.3303, -73.5168
County : Fairfield
Date : December 9, 2021
Max Usage : 54%
Result : Pass

Prepared By:

Sarah Kramer
Structural Engineer

Sarah D. Kramer

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 149 ft Monopole to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawings	Valmont Project #273806, dated November 11, 2014
Foundation Drawing	Valmont Drawing #B-140570, dated November 19, 2014
Geotechnical Report	Terracon Project #J2145173, dated October 7, 2014

Analysis

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

Basic Wind Speed:	115 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	$S_s = 0.24$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
157.4	1	RFI Antennas BA40-41	Stand-Off	(1) 7/8" Coax	TOWN OF RIDGEFIELD, CT
146.0	3	Ericsson RRUS 8843 B2, B66A	Triangular Platform with Handrails	(2) 0.51" (13mm) Hybrid (8) 0.63" (15.9mm) Cable (3) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	3	Ericsson RRUS A2 Module			
	4	Raycap DC6-48-60-18-8F(32.8 lbs)			
	3	Ericsson RRUS E2			
	3	Ericsson RRUS 32 (50.8 lbs)			
	6	Ericsson RRUS-11			
	12	CCI HPA-65R-BUU-H8			
	3	Ericsson RRUS 4478 B5			
	3	Ericsson RRUS 4478 B14			
	3	Kaelus DBCT108F1V92-1			
136.0	3	Samsung B2/B66A RRH-BR049	Triangular Platform with Handrails	(1) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	1	RFS DB-C1-12C-24AB-OZ			
	9	Commscope JAHB-65B-R3B (63.3 lb)			
	3	Commscope CBC78T-DS-43-2X			
126.0	3	RFS APXVAARR24_43-U-NA20	T-Arm	(4) 1 5/8" Hybriflex	T-MOBILE
	3	RFS APX16DWV-16DWVS-E-A20			
	3	Ericsson AIR 6449 B41			
	3	Ericsson RRUS 11 B4			
	3	Ericsson Radio 4415 B2,B66A			
	3	Ericsson Radio 4449 B71+B85			
	3	Commscope SDX1926Q-43			
	3	Ericsson Radio 4424 B25			
113.0	3	JMA Wireless MX08FRO665-21	Triangular Platform with Handrails	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	1	Commscope RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B604			
70.0	1	Commscope VHLP3-11W-6GR	Stand-Off	(1) EW90 (1) 7/8" Coax	TOWN OF RIDGEFIELD, CT
69.6	1	Generic 4' Grid Dish			
66.0	1	Sinclair SD210R-SF2P90LDF(S)			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
136.0	-	-	-	(1) 1 5/8" Hybriflex	VERIZON WIRELESS

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
136.0	3	Samsung MT6407-77A	Triangular Platform with Handrails	-	VERIZON WIRELESS

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

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	54%	Pass
Shaft	54%	Pass
Base Plate	14%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3609.8	46%
Axial (Kips)	54.4	23%
Shear (Kips)	32.8	38%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
136.0	Samsung MT6407-77A	VERIZON WIRELESS	1.328	1.180
70.0	Commscope VHLP3-11W-6GR	TOWN OF RIDGEFIELD, CT	0.318	0.550
69.6	Generic 4' Grid Dish		0.315	0.550

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

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.

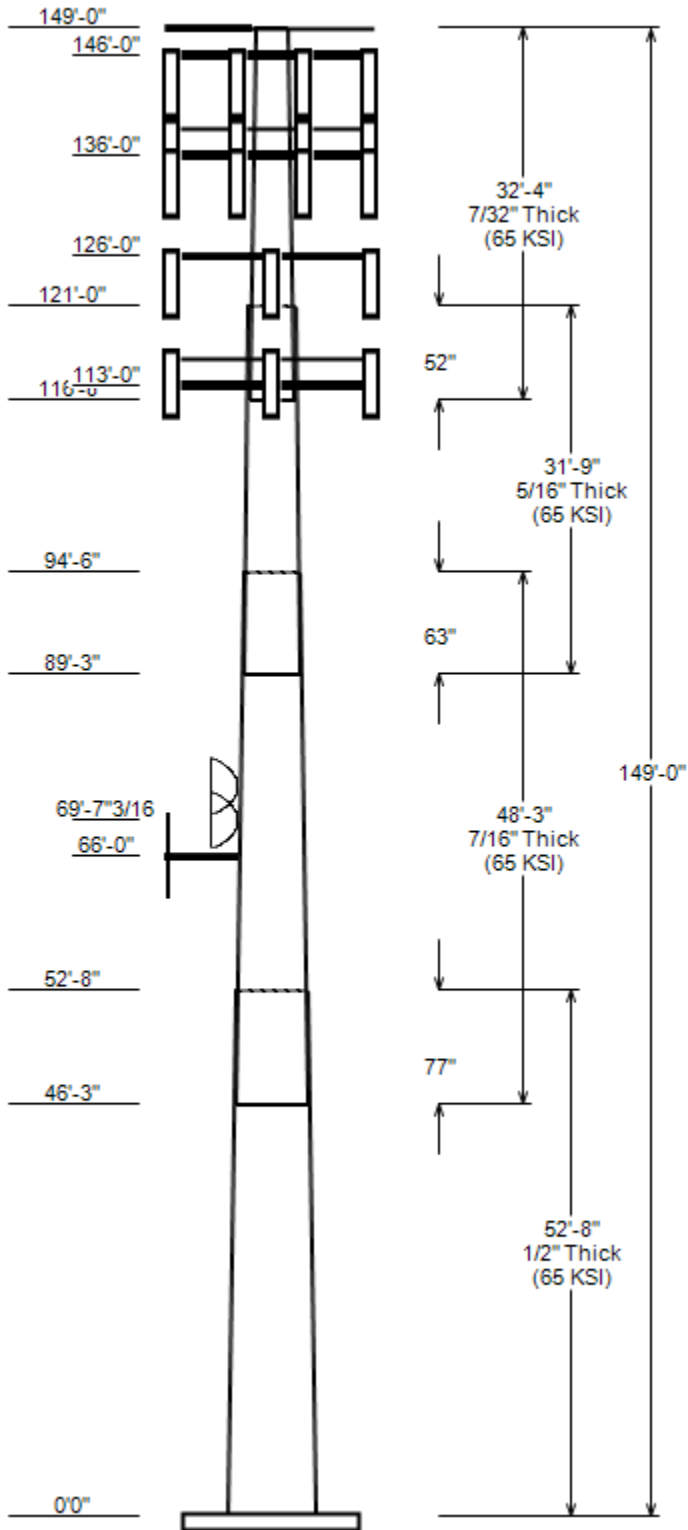
All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset : 209115, Ridgefield 2
 Client : VERIZON WIRELESS
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 56.88
 Shape : 18 Sides

15'-4" 13/16



SITE PARAMETERS

Base Elev (ft): 0.00 Structure Class: II
 Taper : 0.25700 (In/ft) Exposure : C
 Topographic Category : 1 Topographic Feature:
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
		Top	Bottom					
1	52.667	43.34	56.88	0.500		0.000	18 Sides	65
2	48.250	33.45	45.86	0.438	Slip Joint	77.000	18 Sides	65
3	31.750	27.26	35.43	0.312	Slip Joint	63.000	18 Sides	65
4	32.333	20.50	28.81	0.219	Slip Joint	52.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
157.4	157.4	1	RFI Antennas BA40-41
149.0	149.0	1	Generic Flat Stand-Off
146.0	146.0	3	Kaelus DBCT108F1V92-1
146.0	145.6	4	Raycap DC6-48-60-18-8F(32.8 lb
146.0	146.0	3	Ericsson RRUS A2 Module
146.0	145.1	3	Ericsson RRUS 8843 B2, B66A
146.0	145.3	3	Ericsson RRUS 4478 B5
146.0	145.3	3	Ericsson RRUS 4478 B14
146.0	146.0	3	Ericsson RRUS E2
146.0	145.1	3	Ericsson RRUS 32 (50.8 lbs)
146.0	146.7	6	Ericsson RRUS-11
146.0	146.0	1	Generic Mount Reinforcement
146.0	145.2	12	CCI HPA-65R-BUU-H8
146.0	146.0	1	Generic Round Platform with Ha
136.0	135.3	3	Commscope CBC78T-DS-43-2X
136.0	135.6	3	Samsung B5/B13 RRH-BR04C
136.0	135.6	3	Samsung B2/B66A RRH-BR049
136.0	136.0	1	RFS DB-C1-12C-24AB-0Z
136.0	136.0	3	Samsung MT6407-77A
136.0	136.0	1	Generic Mount Reinforcement
136.0	135.9	9	Commscope JAHH-65B-R3B (63.3 l
136.0	136.0	1	Generic Round Platform with Ha
126.0	123.2	3	Commscope SDX1926Q-43
126.0	125.0	3	Ericsson Radio 4424 B25
126.0	126.0	3	Ericsson Radio 4449 B71+B85
126.0	126.0	3	Ericsson Radio 4415 B2,B66A
126.0	125.1	3	Ericsson RRUS 11 B4
126.0	125.9	3	Ericsson AIR 6449 B41
126.0	124.6	3	RFS APX16DWV-16DWVS-E-A20
126.0	126.0	1	Generic Mount Reinforcement
126.0	126.0	3	Generic Round T-Arm
126.0	123.1	3	RFS APXVAARR24_43-U-NA20
113.0	113.0	1	Commscope RDIDC-9181-PF-48
113.0	113.0	3	Fujitsu TA08025-B605
113.0	113.0	3	Fujitsu TA08025-B604
113.0	113.0	3	JMA Wireless MX08FRO665-21
113.0	113.0	1	Generic Flat Platform with Han
70.0	70.8	1	Commscope VHLP3-11W-6GR
69.6	69.6	1	Generic 4' Grid Dish
66.0	66.0	1	Sinclair SD210R-SF2P90LDF(S)
66.0	66.0	1	Generic Flat Stand-Off

JOB INFORMATION

Asset : 209115, Ridgefield 2
 Client : VERIZON WIRELESS
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 56.88
 Shape : 18 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	157.4	7/8" Coax	No
0.0	146.0	3/8" (0.38"- 9.5mm) RET Control Cable	No
0.0	146.0	0.63" (15.9mm) Cable	No
0.0	146.0	0.51" (13mm) Hybrid	No
0.0	136.0	1 5/8" Hybriflex	No
0.0	126.0	1 5/8" Hybriflex	No
0.0	113.0	1.75" (44.5mm) Hybrid	No
0.0	70.0	EW90	No
0.0	66.0	7/8" Coax	No

LOAD CASES

1.2D + 1.0W Normal	115 mph wind with no ice
0.9D + 1.0W Normal	115 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3609.77	32.76	54.35
0.9D + 1.0W Normal	3572.49	32.74	40.75
1.2D + 1.0Di + 1.0Wi Normal	1017.04	9.47	71.68
1.2D + 1.0Ev + 1.0Eh Normal	170.02	1.36	54.75
0.9D - 1.0Ev + 1.0Eh Normal	167.68	1.36	37.13
1.0D + 1.0W Service Normal	873.87	7.97	45.32

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W Service Normal	69.60	3.776	0.548
1.0D + 1.0W Service Normal	70.00	3.822	0.552

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

ANALYSIS PARAMETERS

Location:	Fairfield County,CT	Height:	149 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	56.88 in
Manufacturer:	Valmont	Top Diameter:	20.50 in
K_d (non-service):	0.95	Taper:	0.2570 in/ft
K_e:	0.97	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	Design Wind Speed w/o Ice:	115 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	807.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	2.26
T_L (sec):	6	P:	1
S_s:	0.241	S₁:	0.057
F_a:	1.600	F_v:	2.400
S_{ds}:	0.257	S_{d1}:	0.091
		C_s:	0.030
		C_s Max:	0.030
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W Normal	115 mph wind with no ice
0.9D + 1.0W Normal	115 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom						Top						Taper (in/ft)
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	
1-18	52.67	0.5000	65		0.00	14,109	56.88	0.003	89.47	35,932.7	18.30	113.76	43.34	52.67	67.98	15,758.4	13.52	86.67	0.2572
2-18	48.25	0.4375	65	Slip	77.00	8,941	45.86	46.250	63.07	16,441.6	16.72	104.82	33.45	94.50	45.84	6,312.6	11.72	76.46	0.2572
3-18	31.75	0.3125	65	Slip	63.00	3,325	35.43	89.250	34.83	5,425.4	18.23	113.37	27.26	121.00	26.73	2,452.4	13.62	87.24	0.2572
								116.66								731.7			
4-18	32.33	0.2188	65	Slip	52.00	1,867	28.81	7	19.86	2,051.3	21.46	131.69	20.50	149.00	14.08		14.76	93.68	0.2572
Shaft Weight						28,242													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
157.40	RFI Antennas BA40-41	1	1.00	0.000	32.00	4.590	1.00	106.89	7.352	1.00
149.00	Generic Flat Stand-Off	1	1.00	0.000	187.50	6.300	1.00	276.36	8.378	1.00
146.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	328.89	12.487	1.00
146.00	CCI HPA-65R-BUU-H8	12	0.75	-0.800	68.00	12.976	0.67	239.13	15.360	0.67
146.00	Ericsson RRUS-11	6	0.75	0.700	55.00	3.792	0.61	114.79	4.647	0.61
146.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3578.74	43.480	1.00
146.00	Ericsson RRUS 32 (50.8 lbs)	3	0.75	-0.900	50.80	2.692	0.67	98.43	3.461	0.67
146.00	Ericsson RRUS E2	3	0.75	0.000	52.90	2.475	0.67	94.58	3.162	0.67
146.00	Ericsson RRUS 4478 B14	3	0.75	-0.700	59.40	2.021	0.67	100.27	2.649	0.67
146.00	Ericsson RRUS 4478 B5	3	0.75	-0.700	59.90	1.842	0.50	96.72	2.439	0.50
146.00	Ericsson RRUS 8843 B2, B66A	3	0.75	-0.900	72.00	1.639	0.50	112.82	2.202	0.50
146.00	Ericsson RRUS A2 Module	3	0.75	0.000	21.20	1.600	0.50	45.20	2.157	0.50
146.00	Raycap DC6-48-60-18-8F(32.8 lb	4	0.75	-0.400	32.80	1.470	1.00	73.89	1.935	1.00
146.00	Kaelus DBCT108F1V92-1	3	0.75	0.000	13.90	0.633	0.50	30.66	0.996	0.50
136.00	Commscope CBC78T-DS-43-2X	3	0.75	-0.700	20.70	0.552	0.50	35.31	0.888	0.50
136.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3571.09	43.364	1.00
136.00	Commscope JAHH-65B-R3B (63.3 l	9	0.75	-0.100	63.30	9.113	0.69	197.09	10.948	0.69
136.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	327.98	12.451	1.00
136.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	149.00	5.713	0.61
136.00	RFS DB-C1-12C-24AB-0Z	1	0.75	0.000	32.00	4.056	1.00	116.04	4.959	1.00
136.00	Samsung B5/B13 RRH-BR04C	3	0.75	-0.400	70.30	1.875	0.50	108.13	2.472	0.50
136.00	Samsung B2/B66A RRH-BR049	3	0.75	-0.400	84.40	1.875	0.50	126.59	2.472	0.50
126.00	Ericsson Radio 4424 B25	3	0.80	-1.000	46.30	1.639	0.50	78.17	1.977	0.50
126.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	483.94	15.110	0.67
126.00	Ericsson Radio 4449 B71+B85	3	0.80	0.000	75.00	1.650	0.50	114.33	2.206	0.50
126.00	Ericsson Radio 4415 B2,B66A	3	0.80	0.000	47.40	1.856	0.50	80.66	2.447	0.50
126.00	RFS APXVAARR24_43-U-NA20	3	0.80	-2.900	127.90	20.243	0.63	385.53	22.677	0.63
126.00	Ericsson AIR 6449 B41	3	0.80	-0.100	101.60	5.500	0.63	188.50	6.528	0.63
126.00	RFS APX16DWV-16DWVS-E-A20	3	0.80	-1.400	40.70	6.586	0.60	117.36	8.007	0.60
126.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	327.00	12.413	1.00
126.00	Commscope SDX1926Q-43	3	0.80	-2.800	6.20	0.242	0.50	11.84	0.473	0.50
126.00	Ericsson RRUS 11 B4	3	0.80	-0.900	50.70	2.791	0.67	98.22	3.511	0.67
113.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3652.06	56.001	1.00
113.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	231.18	14.311	0.64
113.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.72	2.559	0.50
113.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.81	2.451	1.00
113.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.63	2.559	0.50
70.00	Commscope VHLP3-11W-6GR	1	1.00	0.800	53.00	10.680	1.00	187.33	11.863	1.00
69.60	Generic 4' Grid Dish	1	1.00	0.000	51.00	7.460	1.00	195.50	38.255	1.00
66.00	Sinclair SD210R-SF2P90LDF(S)	1	1.00	0.000	37.00	3.750	1.00	111.80	11.450	1.00
66.00	Generic Flat Stand-Off	1	1.00	0.000	187.50	6.300	1.00	269.43	8.216	1.00
Totals	Num Loadings: 41	114			15,345.20			27,749.96		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	157.40	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	TOWN OF RIDGE
0.00	146.00	8	0.63" (15.9mm) Cable	0.63	0.31	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	146.00	3	3/8" (0.38"- 9.5mm) R	0.38	0.23	N	0	0	0	0	0	N	AT&T MOBILITY

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	146.00	2	0.51" (13mm) Hybrid	0.51	0.14	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	136.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	126.00	4	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	T-MOBILE
0.00	113.00	1	1.75" (44.5mm) Hybrid	1.75	2.72	N	0	0	0	0	0	N	DISH WIRELESS
0.00	70.00	1	EW90	1.32	0.32	N	0	0	0	0	0	N	TOWN OF RIDGE
0.00	66.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	TOWN OF RIDGE

ASSET: 209115, Ridgefield 2
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 ENG NO: 13741746_C3_02

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5000	56.880	89.472	35,932.70	18.30	113.76	79.9	1244.3	0.0	0.0
5.00		0.5000	55.594	87.431	33,529.70	17.84	111.19	80.4	1187.9	0.0	1,504.9
10.00		0.5000	54.308	85.391	31,236.30	17.39	108.62	80.9	1132.9	0.0	1,470.2
15.00		0.5000	53.022	83.350	29,049.90	16.94	106.04	81.5	1079.1	0.0	1,435.5
20.00		0.5000	51.736	81.309	26,968.10	16.48	103.47	82	1026.7	0.0	1,400.7
25.00		0.5000	50.450	79.269	24,988.10	16.03	100.90	82.6	975.5	0.0	1,366.0
30.00		0.5000	49.165	77.228	23,107.50	15.57	98.33	82.6	925.7	0.0	1,331.3
35.00		0.5000	47.879	75.187	21,323.70	15.12	95.76	82.6	877.2	0.0	1,296.6
40.00		0.5000	46.593	73.147	19,634.20	14.67	93.19	82.6	830.0	0.0	1,261.9
45.00		0.5000	45.307	71.106	18,036.30	14.21	90.61	82.6	784.1	0.0	1,227.1
46.25	Bot - Section 2	0.5000	44.985	70.596	17,650.80	14.10	89.97	82.6	772.8	0.0	301.4
50.00		0.5000	44.021	69.065	16,527.60	13.76	88.04	82.6	739.5	0.0	1,687.2
52.67	Top - Section 1	0.4375	44.210	60.781	14,713.90	16.05	101.05	82.5	655.5	0.0	1,177.8
55.00		0.4375	43.610	59.948	14,117.10	15.81	99.68	82.6	637.6	0.0	479.2
60.00		0.4375	42.324	58.163	12,892.80	15.29	96.74	82.6	600.0	0.0	1,004.8
65.00		0.4375	41.038	56.377	11,741.50	14.78	93.80	82.6	563.5	0.0	974.4
66.00		0.4375	40.781	56.020	11,519.80	14.67	93.21	82.6	556.4	0.0	191.2
69.60		0.4375	39.855	54.734	10,744.70	14.30	91.10	82.6	531.0	0.0	678.4
70.00		0.4375	39.752	54.592	10,660.80	14.26	90.86	82.6	528.2	0.0	74.4
75.00		0.4375	38.466	52.806	9,648.60	13.74	87.92	82.6	494.0	0.0	913.6
80.00		0.4375	37.181	51.020	8,702.50	13.22	84.98	82.6	461.0	0.0	883.2
85.00		0.4375	35.895	49.235	7,820.50	12.70	82.04	82.6	429.1	0.0	852.9
89.25	Bot - Section 3	0.4375	34.801	47.717	7,119.20	12.26	79.55	82.6	402.9	0.0	701.1
90.00		0.4375	34.609	47.449	7,000.10	12.19	79.11	82.6	398.4	0.0	210.0
94.50	Top - Section 2	0.3125	34.076	33.488	4,823.30	17.46	109.04	80.9	278.8	0.0	1,235.9
95.00		0.3125	33.948	33.361	4,768.50	17.39	108.63	80.9	276.7	0.0	56.8
100.00		0.3125	32.662	32.085	4,242.20	16.67	104.52	81.8	255.8	0.0	556.7
105.00		0.3125	31.376	30.810	3,756.20	15.94	100.40	82.6	235.8	0.0	535.0
110.00		0.3125	30.090	29.535	3,308.70	15.21	96.29	82.6	216.6	0.0	513.3
113.00		0.3125	29.319	28.769	3,058.20	14.78	93.82	82.6	205.4	0.0	297.6
115.00		0.3125	28.804	28.259	2,898.30	14.49	92.17	82.6	198.2	0.0	194.1
116.67	Bot - Section 4	0.3125	28.375	27.834	2,769.50	14.25	90.80	82.6	192.2	0.0	159.1
120.00		0.3125	27.518	26.984	2,523.30	13.76	88.06	82.6	180.6	0.0	532.7
121.00	Top - Section 3	0.2188	27.699	19.083	1,820.70	20.56	126.59	77.2	129.5	0.0	156.7
125.00		0.2188	26.670	18.369	1,623.80	19.73	121.89	78.2	119.9	0.0	254.9
126.00		0.2188	26.413	18.190	1,576.90	19.52	120.72	78.4	117.6	0.0	62.2
130.00		0.2188	25.384	17.476	1,398.30	18.69	116.01	79.4	108.5	0.0	242.7
135.00		0.2188	24.098	16.583	1,194.70	17.66	110.14	80.6	97.6	0.0	289.7
136.00		0.2188	23.841	16.404	1,156.50	17.45	108.96	80.9	95.5	0.0	56.1
140.00		0.2188	22.812	15.690	1,011.90	16.62	104.26	81.9	87.4	0.0	218.4
145.00		0.2188	21.526	14.797	848.80	15.58	98.38	82.6	77.7	0.0	259.3
146.00		0.2188	21.269	14.618	818.40	15.38	97.21	82.6	75.8	0.0	50.0
149.00		0.2188	20.498	14.083	731.70	14.76	93.68	82.6	70.3	0.0	146.5
Totals:										28,241.5	

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

Load Case: 1.2D + 1.0W Normal	115 mph wind with no ice	23 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.20		
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	-54.35	-32.76	0.00	-3,609.8	0.00	3,609.77	6,432.44	1,570.23	7,996.47	7,454.51	0	0	0.493
5.00	-52.38	-32.38	0.00	-3,446.0	0.00	3,445.99	6,327.70	1,534.42	7,635.91	7,164.41	0.08	-0.14	0.490
10.00	-50.46	-32.01	0.00	-3,284.1	0.00	3,284.09	6,221.00	1,498.60	7,283.67	6,877.72	0.3	-0.28	0.486
15.00	-48.57	-31.64	0.00	-3,124.0	0.00	3,124.03	6,112.34	1,462.79	6,939.75	6,594.61	0.67	-0.43	0.482
20.00	-46.73	-31.25	0.00	-2,965.8	0.00	2,965.83	6,001.72	1,426.98	6,604.15	6,315.24	1.2	-0.58	0.478
25.00	-44.93	-30.85	0.00	-2,809.6	0.00	2,809.57	5,889.26	1,391.16	6,276.86	6,039.87	1.89	-0.73	0.473
30.00	-43.18	-30.43	0.00	-2,655.3	0.00	2,655.32	5,737.65	1,355.35	5,957.89	5,731.40	2.74	-0.89	0.471
35.00	-41.47	-30.01	0.00	-2,503.2	0.00	2,503.17	5,586.03	1,319.54	5,647.24	5,431.01	3.75	-1.04	0.469
40.00	-39.80	-29.57	0.00	-2,353.1	0.00	2,353.14	5,434.42	1,283.72	5,344.90	5,138.71	4.93	-1.21	0.466
45.00	-38.20	-29.28	0.00	-2,205.3	0.00	2,205.28	5,282.81	1,247.91	5,050.88	4,854.49	6.28	-1.37	0.462
46.25	-37.78	-29.07	0.00	-2,168.7	0.00	2,168.67	5,244.90	1,238.95	4,978.66	4,784.68	6.65	-1.41	0.461
50.00	-35.65	-28.75	0.00	-2,059.7	0.00	2,059.66	5,131.20	1,212.09	4,765.18	4,578.36	7.81	-1.54	0.457
52.67	-34.15	-28.50	0.00	-1,983.0	0.00	1,982.98	4,513.96	1,066.71	4,217.69	4,056.89	8.7	-1.63	0.497
55.00	-33.48	-28.19	0.00	-1,916.5	0.00	1,916.49	4,453.86	1,052.09	4,102.87	3,947.47	9.52	-1.72	0.494
60.00	-32.12	-27.74	0.00	-1,775.6	0.00	1,775.55	4,321.20	1,020.76	3,862.14	3,714.67	11.42	-1.9	0.486
65.00	-30.83	-27.46	0.00	-1,636.8	0.00	1,636.84	4,188.54	989.42	3,628.68	3,488.95	13.51	-2.09	0.477
66.00	-30.30	-26.85	0.00	-1,609.4	0.00	1,609.39	4,162.01	983.15	3,582.86	3,444.66	13.95	-2.13	0.475
69.60	-29.35	-26.36	0.00	-1,512.7	0.00	1,512.72	4,066.49	960.59	3,420.33	3,287.54	15.61	-2.27	0.468
70.00	-29.17	-25.71	0.00	-1,501.8	0.00	1,501.83	4,055.88	958.08	3,402.50	3,270.31	15.8	-2.29	0.467
75.00	-27.93	-25.27	0.00	-1,373.3	0.00	1,373.29	3,923.22	926.75	3,183.60	3,058.74	18.3	-2.48	0.457
80.00	-26.73	-24.83	0.00	-1,247.0	0.00	1,246.95	3,790.56	895.41	2,971.98	2,854.24	21	-2.67	0.445
85.00	-25.58	-24.43	0.00	-1,122.8	0.00	1,122.80	3,657.90	864.07	2,767.63	2,656.82	23.9	-2.86	0.430
89.25	-24.64	-24.19	0.00	-1,019.0	0.00	1,018.98	3,545.13	837.43	2,599.65	2,494.57	26.52	-3.03	0.416
90.00	-24.35	-23.98	0.00	-1,000.8	0.00	1,000.85	3,525.24	832.73	2,570.56	2,466.48	27	-3.06	0.414
94.50	-22.77	-23.71	0.00	-892.9	0.00	892.93	2,437.06	587.72	1,792.40	1,690.71	29.97	-3.23	0.539
95.00	-22.65	-23.51	0.00	-881.1	0.00	881.08	2,430.35	585.48	1,778.79	1,679.58	30.31	-3.25	0.536
100.00	-21.84	-23.12	0.00	-763.5	0.00	763.53	2,362.08	563.10	1,645.40	1,569.41	33.85	-3.5	0.497
105.00	-21.05	-22.74	0.00	-647.9	0.00	647.94	2,289.03	540.71	1,517.20	1,459.85	37.64	-3.74	0.455
110.00	-20.31	-22.42	0.00	-534.3	0.00	534.26	2,194.27	518.33	1,394.21	1,340.91	41.67	-3.96	0.410
113.00	-16.35	-19.01	0.00	-467.0	0.00	467.01	2,137.42	504.90	1,322.91	1,271.97	44.2	-4.09	0.376
115.00	-16.08	-18.86	0.00	-429.0	0.00	428.99	2,099.51	495.95	1,276.41	1,227.02	45.93	-4.17	0.359
116.67	-15.85	-18.68	0.00	-397.6	0.00	397.55	2,067.92	488.49	1,238.30	1,190.18	47.4	-4.24	0.343
120.00	-15.16	-18.48	0.00	-335.3	0.00	335.29	2,004.76	473.56	1,163.82	1,118.19	50.4	-4.36	0.309
121.00	-14.95	-18.30	0.00	-316.8	0.00	316.80	1,326.25	334.91	831.27	749.80	51.32	-4.4	0.437
125.00	-14.58	-18.10	0.00	-243.6	0.00	243.63	1,292.72	322.37	770.21	703.28	55.06	-4.53	0.361
126.00	-11.64	-13.98	0.00	-225.5	0.00	225.53	1,284.14	319.24	755.30	691.76	56.01	-4.57	0.337
130.00	-11.32	-13.66	0.00	-169.6	0.00	169.62	1,249.05	306.70	697.15	646.21	59.9	-4.71	0.274
135.00	-10.94	-13.43	0.00	-101.3	0.00	101.32	1,203.41	291.03	627.73	590.51	64.92	-4.85	0.183
136.00	-6.37	-8.62	0.00	-87.9	0.00	87.89	1,194.05	287.90	614.28	579.55	65.94	-4.88	0.158
140.00	-6.10	-8.31	0.00	-53.4	0.00	53.41	1,155.82	275.36	561.95	536.34	70.05	-4.94	0.106
145.00	-5.78	-8.09	0.00	-11.9	0.00	11.87	1,099.34	259.69	499.82	480.82	75.25	-4.99	0.031
146.00	-0.39	-0.64	0.00	-3.8	0.00	3.78	1,086.07	256.55	487.82	469.22	76.3	-4.99	0.008
149.00	0.00	-0.61	0.00	-1.8	0.00	1.84	1,046.26	247.15	452.73	435.29	79.43	-5	0.004

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

Load Case: 0.9D + 1.0W Normal	115 mph wind with no ice	23 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 0.90		
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	-40.75	-32.74	0.00	-3,572.5	0.00	3,572.49	6,432.44	1,570.23	7,996.47	7,454.51	0	0	0.486
5.00	-39.26	-32.33	0.00	-3,408.8	0.00	3,408.80	6,327.70	1,534.42	7,635.91	7,164.41	0.07	-0.14	0.482
10.00	-37.79	-31.93	0.00	-3,247.2	0.00	3,247.15	6,221.00	1,498.60	7,283.67	6,877.72	0.3	-0.28	0.479
15.00	-36.36	-31.53	0.00	-3,087.5	0.00	3,087.50	6,112.34	1,462.79	6,939.75	6,594.61	0.67	-0.42	0.475
20.00	-34.97	-31.11	0.00	-2,929.8	0.00	2,929.85	6,001.72	1,426.98	6,604.15	6,315.24	1.19	-0.57	0.470
25.00	-33.60	-30.68	0.00	-2,774.3	0.00	2,774.28	5,889.26	1,391.16	6,276.86	6,039.87	1.87	-0.72	0.466
30.00	-32.26	-30.24	0.00	-2,620.9	0.00	2,620.87	5,737.65	1,355.35	5,957.89	5,731.40	2.71	-0.87	0.463
35.00	-30.96	-29.79	0.00	-2,469.7	0.00	2,469.66	5,586.03	1,319.54	5,647.24	5,431.01	3.71	-1.03	0.461
40.00	-29.69	-29.34	0.00	-2,320.7	0.00	2,320.71	5,434.42	1,283.72	5,344.90	5,138.71	4.87	-1.19	0.458
45.00	-28.48	-29.04	0.00	-2,174.0	0.00	2,174.03	5,282.81	1,247.91	5,050.88	4,854.49	6.21	-1.35	0.454
46.25	-28.16	-28.81	0.00	-2,137.7	0.00	2,137.72	5,244.90	1,238.95	4,978.66	4,784.68	6.57	-1.4	0.453
50.00	-26.55	-28.49	0.00	-2,029.7	0.00	2,029.68	5,131.20	1,212.09	4,765.18	4,578.36	7.72	-1.52	0.449
52.67	-25.42	-28.24	0.00	-1,953.7	0.00	1,953.70	4,513.96	1,066.71	4,217.69	4,056.89	8.59	-1.61	0.488
55.00	-24.91	-27.91	0.00	-1,887.8	0.00	1,887.82	4,453.86	1,052.09	4,102.87	3,947.47	9.4	-1.7	0.485
60.00	-23.87	-27.44	0.00	-1,748.3	0.00	1,748.30	4,321.20	1,020.76	3,862.14	3,714.67	11.28	-1.88	0.477
65.00	-22.89	-27.15	0.00	-1,611.1	0.00	1,611.09	4,188.54	989.42	3,628.68	3,488.95	13.34	-2.06	0.468
66.00	-22.49	-26.54	0.00	-1,583.9	0.00	1,583.94	4,162.01	983.15	3,582.86	3,444.66	13.78	-2.1	0.466
69.60	-21.77	-26.04	0.00	-1,488.4	0.00	1,488.39	4,066.49	960.59	3,420.33	3,287.54	15.42	-2.24	0.459
70.00	-21.64	-25.38	0.00	-1,477.6	0.00	1,477.63	4,055.88	958.08	3,402.50	3,270.31	15.61	-2.25	0.458
75.00	-20.69	-24.93	0.00	-1,350.7	0.00	1,350.72	3,923.22	926.75	3,183.60	3,058.74	18.07	-2.44	0.448
80.00	-19.78	-24.48	0.00	-1,226.1	0.00	1,226.08	3,790.56	895.41	2,971.98	2,854.24	20.73	-2.63	0.436
85.00	-18.90	-24.07	0.00	-1,103.7	0.00	1,103.68	3,657.90	864.07	2,767.63	2,656.82	23.59	-2.82	0.421
89.25	-18.20	-23.83	0.00	-1,001.4	0.00	1,001.38	3,545.13	837.43	2,599.65	2,494.57	26.18	-2.99	0.407
90.00	-17.97	-23.61	0.00	-983.5	0.00	983.51	3,525.24	832.73	2,570.56	2,466.48	26.65	-3.02	0.405
94.50	-16.78	-23.35	0.00	-877.2	0.00	877.24	2,437.06	587.72	1,792.40	1,690.71	29.57	-3.19	0.527
95.00	-16.68	-23.14	0.00	-865.6	0.00	865.58	2,430.35	585.48	1,778.79	1,679.58	29.91	-3.21	0.524
100.00	-16.06	-22.74	0.00	-749.9	0.00	749.87	2,362.08	563.10	1,645.40	1,569.41	33.4	-3.45	0.486
105.00	-15.45	-22.34	0.00	-636.2	0.00	636.18	2,289.03	540.71	1,517.20	1,459.85	37.13	-3.68	0.444
110.00	-14.89	-22.02	0.00	-524.5	0.00	524.48	2,194.27	518.33	1,394.21	1,340.91	41.1	-3.9	0.400
113.00	-11.96	-18.68	0.00	-458.4	0.00	458.42	2,137.42	504.90	1,322.91	1,271.97	43.59	-4.03	0.367
115.00	-11.76	-18.53	0.00	-421.1	0.00	421.07	2,099.51	495.95	1,276.41	1,227.02	45.3	-4.11	0.350
116.67	-11.58	-18.34	0.00	-390.2	0.00	390.17	2,067.92	488.49	1,238.30	1,190.18	46.74	-4.17	0.335
120.00	-11.06	-18.15	0.00	-329.0	0.00	329.04	2,004.76	473.56	1,163.82	1,118.19	49.7	-4.3	0.301
121.00	-10.90	-17.96	0.00	-310.9	0.00	310.88	1,326.25	334.91	831.27	749.80	50.6	-4.33	0.426
125.00	-10.62	-17.77	0.00	-239.0	0.00	239.03	1,292.72	322.37	770.21	703.28	54.29	-4.46	0.351
126.00	-8.48	-13.71	0.00	-221.3	0.00	221.26	1,284.14	319.24	755.30	691.76	55.22	-4.5	0.328
130.00	-8.24	-13.39	0.00	-166.4	0.00	166.43	1,249.05	306.70	697.15	646.21	59.05	-4.64	0.266
135.00	-7.96	-13.17	0.00	-99.5	0.00	99.48	1,203.41	291.03	627.73	590.51	63.99	-4.78	0.177
136.00	-4.61	-8.46	0.00	-86.3	0.00	86.32	1,194.05	287.90	614.28	579.55	64.99	-4.8	0.154
140.00	-4.42	-8.16	0.00	-52.5	0.00	52.47	1,155.82	275.36	561.95	536.34	69.04	-4.87	0.103
145.00	-4.18	-7.94	0.00	-11.7	0.00	11.69	1,099.34	259.69	499.82	480.82	74.16	-4.91	0.029
146.00	-0.28	-0.63	0.00	-3.8	0.00	3.75	1,086.07	256.55	487.82	469.22	75.19	-4.91	0.008
149.00	0.00	-0.61	0.00	-1.8	0.00	1.84	1,046.26	247.15	452.73	435.29	78.27	-4.92	0.004

ASSET: 209115, Ridgefield 2
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 ENG NO: 13741746_C3_02

Load Case: 1.2D + 1.0Di + 1.0Wi Normal				50 mph wind with 1" radial ice				22 Iterations			
Gust Response Factor: 1.10		Ice Dead Load 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	-71.68	-9.47	0.00	-1,017.0	0.00	1,017.04	6,432.44	1,570.23	7,996.47	7,454.51	0	0	0.148
5.00	-69.51	-9.35	0.00	-969.7	0.00	969.71	6,327.70	1,534.42	7,635.91	7,164.41	0.02	-0.04	0.146
10.00	-67.36	-9.24	0.00	-922.9	0.00	922.94	6,221.00	1,498.60	7,283.67	6,877.72	0.08	-0.08	0.145
15.00	-65.24	-9.13	0.00	-876.7	0.00	876.74	6,112.34	1,462.79	6,939.75	6,594.61	0.19	-0.12	0.144
20.00	-63.16	-9.01	0.00	-831.1	0.00	831.09	6,001.72	1,426.98	6,604.15	6,315.24	0.34	-0.16	0.142
25.00	-61.13	-8.89	0.00	-786.0	0.00	786.03	5,889.26	1,391.16	6,276.86	6,039.87	0.53	-0.2	0.141
30.00	-59.13	-8.76	0.00	-741.6	0.00	741.59	5,737.65	1,355.35	5,957.89	5,731.40	0.77	-0.25	0.140
35.00	-57.18	-8.63	0.00	-697.8	0.00	697.79	5,586.03	1,319.54	5,647.24	5,431.01	1.05	-0.29	0.139
40.00	-55.28	-8.50	0.00	-654.6	0.00	654.65	5,434.42	1,283.72	5,344.90	5,138.71	1.38	-0.34	0.138
45.00	-53.42	-8.41	0.00	-612.2	0.00	612.18	5,282.81	1,247.91	5,050.88	4,854.49	1.76	-0.38	0.136
46.25	-52.96	-8.34	0.00	-601.7	0.00	601.67	5,244.90	1,238.95	4,978.66	4,784.68	1.86	-0.4	0.136
50.00	-50.65	-8.24	0.00	-570.4	0.00	570.39	5,131.20	1,212.09	4,765.18	4,578.36	2.19	-0.43	0.135
52.67	-49.03	-8.17	0.00	-548.4	0.00	548.41	4,513.96	1,066.71	4,217.69	4,056.89	2.44	-0.46	0.146
55.00	-48.28	-8.07	0.00	-529.4	0.00	529.36	4,453.86	1,052.09	4,102.87	3,947.47	2.67	-0.48	0.145
60.00	-46.70	-7.93	0.00	-489.0	0.00	489.03	4,321.20	1,020.76	3,862.14	3,714.67	3.2	-0.53	0.143
65.00	-45.16	-7.84	0.00	-449.4	0.00	449.38	4,188.54	989.42	3,628.68	3,488.95	3.78	-0.58	0.140
66.00	-44.47	-7.63	0.00	-441.5	0.00	441.54	4,162.01	983.15	3,582.86	3,444.66	3.9	-0.59	0.139
69.60	-43.23	-7.27	0.00	-414.1	0.00	414.08	4,066.49	960.59	3,420.33	3,287.54	4.37	-0.63	0.137
70.00	-42.94	-7.12	0.00	-411.1	0.00	411.10	4,055.88	958.08	3,402.50	3,270.31	4.42	-0.64	0.136
75.00	-41.49	-6.98	0.00	-375.5	0.00	375.52	3,923.22	926.75	3,183.60	3,058.74	5.11	-0.69	0.133
80.00	-40.09	-6.84	0.00	-340.6	0.00	340.64	3,790.56	895.41	2,971.98	2,854.24	5.86	-0.74	0.130
85.00	-38.73	-6.71	0.00	-306.4	0.00	306.43	3,657.90	864.07	2,767.63	2,656.82	6.67	-0.79	0.126
89.25	-37.61	-6.64	0.00	-277.9	0.00	277.90	3,545.13	837.43	2,599.65	2,494.57	7.4	-0.84	0.122
90.00	-37.31	-6.57	0.00	-272.9	0.00	272.93	3,525.24	832.73	2,570.56	2,466.48	7.53	-0.85	0.121
94.50	-35.53	-6.49	0.00	-243.4	0.00	243.35	2,437.06	587.72	1,792.40	1,690.71	8.35	-0.89	0.159
95.00	-35.43	-6.43	0.00	-240.1	0.00	240.11	2,430.35	585.48	1,778.79	1,679.58	8.44	-0.9	0.158
100.00	-34.44	-6.30	0.00	-208.0	0.00	207.97	2,362.08	563.10	1,645.40	1,569.41	9.42	-0.97	0.147
105.00	-33.49	-6.18	0.00	-176.4	0.00	176.45	2,289.03	540.71	1,517.20	1,459.85	10.47	-1.03	0.136
110.00	-32.58	-6.08	0.00	-145.5	0.00	145.54	2,194.27	518.33	1,394.21	1,340.91	11.58	-1.09	0.124
113.00	-26.80	-5.21	0.00	-127.3	0.00	127.29	2,137.42	504.90	1,322.91	1,271.97	12.28	-1.13	0.113
115.00	-26.46	-5.16	0.00	-116.9	0.00	116.88	2,099.51	495.95	1,276.41	1,227.02	12.76	-1.15	0.108
116.67	-26.17	-5.10	0.00	-108.3	0.00	108.28	2,067.92	488.49	1,238.30	1,190.18	13.16	-1.17	0.104
120.00	-25.35	-5.04	0.00	-91.3	0.00	91.28	2,004.76	473.56	1,163.82	1,118.19	13.99	-1.2	0.094
121.00	-25.11	-4.98	0.00	-86.2	0.00	86.24	1,326.25	334.91	831.27	749.80	14.25	-1.21	0.134
125.00	-24.60	-4.91	0.00	-66.3	0.00	66.34	1,292.72	322.37	770.21	703.28	15.28	-1.25	0.114
126.00	-19.46	-3.84	0.00	-61.4	0.00	61.43	1,284.14	319.24	755.30	691.76	15.54	-1.26	0.104
130.00	-19.00	-3.73	0.00	-46.1	0.00	46.07	1,249.05	306.70	697.15	646.21	16.61	-1.3	0.087
135.00	-18.44	-3.66	0.00	-27.4	0.00	27.40	1,203.41	291.03	627.73	590.51	17.99	-1.34	0.062
136.00	-11.14	-2.33	0.00	-23.8	0.00	23.75	1,194.05	287.90	614.28	579.55	18.27	-1.34	0.050
140.00	-10.72	-2.23	0.00	-14.4	0.00	14.41	1,155.82	275.36	561.95	536.34	19.41	-1.36	0.036
145.00	-10.23	-2.15	0.00	-3.3	0.00	3.27	1,099.34	259.69	499.82	480.82	20.84	-1.37	0.016
146.00	-0.66	-0.19	0.00	-1.1	0.00	1.12	1,086.07	256.55	487.82	469.22	21.13	-1.37	0.003
149.00	0.00	-0.17	0.00	-0.6	0.00	0.56	1,046.26	247.15	452.73	435.29	21.99	-1.37	0.001

ASSET: 209115, Ridgfield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	22 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.00		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.32	-7.97	0.00	-873.9	0.00	873.87	6,432.44	1,570.23	7,996.47	7,454.51	0	0	0.124
5.00	-43.74	-7.88	0.00	-834.0	0.00	833.99	6,327.70	1,534.42	7,635.91	7,164.41	0.02	-0.03	0.123
10.00	-42.20	-7.78	0.00	-794.6	0.00	794.60	6,221.00	1,498.60	7,283.67	6,877.72	0.07	-0.07	0.122
15.00	-40.69	-7.69	0.00	-755.7	0.00	755.69	6,112.34	1,462.79	6,939.75	6,594.61	0.16	-0.1	0.121
20.00	-39.22	-7.59	0.00	-717.2	0.00	717.25	6,001.72	1,426.98	6,604.15	6,315.24	0.29	-0.14	0.120
25.00	-37.78	-7.49	0.00	-679.3	0.00	679.30	5,889.26	1,391.16	6,276.86	6,039.87	0.46	-0.18	0.119
30.00	-36.38	-7.38	0.00	-641.9	0.00	641.87	5,737.65	1,355.35	5,957.89	5,731.40	0.66	-0.21	0.118
35.00	-35.01	-7.27	0.00	-605.0	0.00	604.96	5,586.03	1,319.54	5,647.24	5,431.01	0.91	-0.25	0.118
40.00	-33.67	-7.17	0.00	-568.6	0.00	568.59	5,434.42	1,283.72	5,344.90	5,138.71	1.19	-0.29	0.117
45.00	-32.37	-7.09	0.00	-532.8	0.00	532.76	5,282.81	1,247.91	5,050.88	4,854.49	1.52	-0.33	0.116
46.25	-32.05	-7.04	0.00	-523.9	0.00	523.89	5,244.90	1,238.95	4,978.66	4,784.68	1.61	-0.34	0.116
50.00	-30.31	-6.96	0.00	-497.5	0.00	497.49	5,131.20	1,212.09	4,765.18	4,578.36	1.89	-0.37	0.115
52.67	-29.10	-6.90	0.00	-478.9	0.00	478.92	4,513.96	1,066.71	4,217.69	4,056.89	2.1	-0.4	0.125
55.00	-28.58	-6.82	0.00	-462.8	0.00	462.82	4,453.86	1,052.09	4,102.87	3,947.47	2.3	-0.42	0.124
60.00	-27.50	-6.71	0.00	-428.7	0.00	428.71	4,321.20	1,020.76	3,862.14	3,714.67	2.76	-0.46	0.122
65.00	-26.46	-6.64	0.00	-395.2	0.00	395.15	4,188.54	989.42	3,628.68	3,488.95	3.27	-0.51	0.120
66.00	-26.03	-6.49	0.00	-388.5	0.00	388.51	4,162.01	983.15	3,582.86	3,444.66	3.37	-0.51	0.119
69.60	-25.25	-6.37	0.00	-365.1	0.00	365.14	4,066.49	960.59	3,420.33	3,287.54	3.78	-0.55	0.117
70.00	-25.12	-6.21	0.00	-362.5	0.00	362.50	4,055.88	958.08	3,402.50	3,270.31	3.82	-0.55	0.117
75.00	-24.13	-6.10	0.00	-331.4	0.00	331.44	3,923.22	926.75	3,183.60	3,058.74	4.43	-0.6	0.115
80.00	-23.18	-6.00	0.00	-300.9	0.00	300.92	3,790.56	895.41	2,971.98	2,854.24	5.08	-0.65	0.112
85.00	-22.26	-5.90	0.00	-270.9	0.00	270.93	3,657.90	864.07	2,767.63	2,656.82	5.78	-0.69	0.108
89.25	-21.50	-5.84	0.00	-245.9	0.00	245.87	3,545.13	837.43	2,599.65	2,494.57	6.41	-0.73	0.105
90.00	-21.28	-5.79	0.00	-241.5	0.00	241.49	3,525.24	832.73	2,570.56	2,466.48	6.53	-0.74	0.104
94.50	-19.99	-5.72	0.00	-215.4	0.00	215.44	2,437.06	587.72	1,792.40	1,690.71	7.25	-0.78	0.136
95.00	-19.92	-5.67	0.00	-212.6	0.00	212.58	2,430.35	585.48	1,778.79	1,679.58	7.33	-0.79	0.135
100.00	-19.29	-5.58	0.00	-184.2	0.00	184.20	2,362.08	563.10	1,645.40	1,569.41	8.18	-0.85	0.126
105.00	-18.69	-5.48	0.00	-156.3	0.00	156.31	2,289.03	540.71	1,517.20	1,459.85	9.1	-0.9	0.115
110.00	-18.11	-5.41	0.00	-128.9	0.00	128.89	2,194.27	518.33	1,394.21	1,340.91	10.07	-0.96	0.104
113.00	-14.65	-4.59	0.00	-112.7	0.00	112.67	2,137.42	504.90	1,322.91	1,271.97	10.68	-0.99	0.096
115.00	-14.44	-4.55	0.00	-103.5	0.00	103.49	2,099.51	495.95	1,276.41	1,227.02	11.1	-1.01	0.091
116.67	-14.26	-4.51	0.00	-95.9	0.00	95.91	2,067.92	488.49	1,238.30	1,190.18	11.46	-1.02	0.088
120.00	-13.69	-4.46	0.00	-80.9	0.00	80.89	2,004.76	473.56	1,163.82	1,118.19	12.18	-1.05	0.079
121.00	-13.52	-4.41	0.00	-76.4	0.00	76.43	1,326.25	334.91	831.27	749.80	12.41	-1.06	0.112
125.00	-13.23	-4.37	0.00	-58.8	0.00	58.77	1,292.72	322.37	770.21	703.28	13.31	-1.09	0.094
126.00	-10.55	-3.37	0.00	-54.4	0.00	54.41	1,284.14	319.24	755.30	691.76	13.54	-1.1	0.087
130.00	-10.28	-3.29	0.00	-40.9	0.00	40.92	1,249.05	306.70	697.15	646.21	14.48	-1.14	0.072
135.00	-9.97	-3.24	0.00	-24.5	0.00	24.46	1,203.41	291.03	627.73	590.51	15.69	-1.17	0.050
136.00	-5.86	-2.08	0.00	-21.2	0.00	21.22	1,194.05	287.90	614.28	579.55	15.94	-1.18	0.042
140.00	-5.63	-2.01	0.00	-12.9	0.00	12.90	1,155.82	275.36	561.95	536.34	16.93	-1.19	0.029
145.00	-5.35	-1.95	0.00	-2.9	0.00	2.87	1,099.34	259.69	499.82	480.82	18.19	-1.21	0.011
146.00	-0.36	-0.16	0.00	-0.9	0.00	0.92	1,086.07	256.55	487.82	469.22	18.44	-1.21	0.002
149.00	0.00	-0.15	0.00	-0.4	0.00	0.45	1,046.26	247.15	452.73	435.29	19.2	-1.21	0.001

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.241
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.057
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_a):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.257
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.091
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_s :	0.030
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	2.260
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.880
Total Unfactored Dead Load:	45.320 k
Seismic Base Shear (E):	1.360 k

1.2D + 1.0Ev + 1.0Eh Normal

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	147.5	147	1,751	0.008	10	185
41	145.5	54	623	0.003	4	67
40	142.5	278	3,096	0.014	19	348
39	138	234	2,447	0.011	15	292
38	135.5	61	620	0.003	4	77
37	132.5	315	3,058	0.014	18	394
36	128	263	2,392	0.010	14	329
35	125.5	72	635	0.003	4	91
34	123.0002	296	2,498	0.011	15	370
33	120.5002	167	1,356	0.006	8	209
32	118.3335	567	4,449	0.020	27	709
31	115.8335	176	1,329	0.006	8	221
30	114	215	1,570	0.007	9	269
29	111.5	337	2,362	0.010	14	421
28	107.5	578	3,790	0.017	23	724
27	102.5	600	3,595	0.016	22	751
26	97.5	622	3,391	0.015	20	778
25	94.7502	63	327	0.001	2	79
24	92.2502	1,294	6,363	0.028	38	1,620
23	89.6252	220	1,023	0.004	6	275
22	87.1252	756	3,339	0.015	20	947
21	82.5	918	3,658	0.016	22	1,149
20	77.5	948	3,360	0.015	20	1,187
19	72.5	979	3,059	0.014	18	1,225
18	69.8	80	232	0.001	1	100
17	67.8	726	2,002	0.009	12	909
16	65.5	205	529	0.002	3	256
15	62.5	1,043	2,466	0.011	15	1,305
14	57.5	1,073	2,170	0.010	13	1,343
13	53.8335	511	913	0.004	5	640
12	51.3335	1,214	1,984	0.009	12	1,519
11	48.1252	1,738	2,517	0.011	15	2,175
10	45.6252	319	417	0.002	2	399
9	42.5	1,295	1,485	0.006	9	1,621

ASSET: 209115, Ridgefield 2
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 ENG NO: 13741746_C3_02

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
8	37.5	1,330	1,205	0.005	7	1,665
7	32.5	1,365	945	0.004	6	1,708
6	27.5	1,400	708	0.003	4	1,751
5	22.5	1,434	498	0.002	3	1,795
4	17.5	1,469	318	0.001	2	1,838
3	12.5	1,504	173	0.001	1	1,882
2	7.5	1,538	68	0.000	0	1,925
1	2.5	1,573	9	0.000	0	1,969
RFI Antennas BA40-41	149	32	387	0.002	2	40
Generic Flat Stand-Off	149	188	2,269	0.010	14	235
Generic Flat Stand-Off	66	188	491	0.002	3	235
Kaelus DBCT108F1V92-1	146	42	486	0.002	3	52
Raycap DC6-48-60-18-8F(32.8 lbs)	146	131	1,528	0.007	9	164
Ericsson RRUS A2 Module	146	64	741	0.003	4	80
Ericsson RRUS 8843 B2, B66A	146	216	2,515	0.011	15	270
Ericsson RRUS 4478 B5	146	180	2,093	0.009	13	225
Ericsson RRUS 4478 B14	146	178	2,075	0.009	12	223
Ericsson RRUS E2	146	159	1,848	0.008	11	199
Ericsson RRUS 32 (50.8 lbs)	146	152	1,775	0.008	11	191
Ericsson RRUS-11	146	330	3,843	0.017	23	413
Generic Mount Reinforcement	146	200	2,329	0.010	14	250
Generic Mount Reinforcement	136	200	2,038	0.009	12	250
Generic Mount Reinforcement	126	200	1,766	0.008	11	250
CCI HPA-65R-BUU-H8	146	816	9,503	0.042	57	1,021
Generic Round Platform with Handrails	146	2,500	29,114	0.128	174	3,129
Generic Round Platform with Handrails	136	2,500	25,481	0.112	152	3,129
Commscope CBC78T-DS-43-2X	136	62	633	0.003	4	78
Samsung B2/B66A RRH-BR049	136	253	2,581	0.011	15	317
Samsung B5/B13 RRH-BR04C	136	211	2,150	0.010	13	264
RFS DB-C1-12C-24AB-0Z	136	32	326	0.001	2	40
Samsung MT6407-77A	136	245	2,495	0.011	15	306
Commscope JAHH-65B-R3B (63.3 lb)	136	570	5,807	0.026	35	713
Commscope SDX1926Q-43	126	19	164	0.001	1	23
Ericsson Radio 4424 B25	126	139	1,226	0.005	7	174
Ericsson Radio 4449 B71+B85	126	225	1,987	0.009	12	282
Ericsson Radio 4415 B2,B66A	126	142	1,256	0.006	8	178
Ericsson RRUS 11 B4	126	152	1,343	0.006	8	190
Ericsson AIR 6449 B41	126	305	2,691	0.012	16	381
RFS APX16DWV-16DWVS-E-A20	126	122	1,078	0.005	6	153
Generic Round T-Arm	126	938	8,278	0.036	50	1,173
RFS APXVAARR24_43-U-NA20	126	384	3,388	0.015	20	480
Commscope RDIDC-9181-PF-48	113	22	158	0.001	1	27
Fujitsu TA08025-B605	113	225	1,619	0.007	10	282
Fujitsu TA08025-B604	113	192	1,380	0.006	8	240
JMA Wireless MX08FRO665-21	113	194	1,393	0.006	8	242
Generic Flat Platform with Handrails	113	2,500	17,991	0.079	108	3,129
Commscope VHLP3-11W-6GR	70	53	155	0.001	1	66
Generic 4' Grid Dish	69.6	51	148	0.001	1	64
Sinclair SD210R-SF2P90LDF(S)	66	37	97	0.000	1	46
		45,323	227,356	1.000	1,360	56,718

0.9D - 1.0Ev + 1.0Eh Normal

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	147.5	147	1,751	0.008	10	125
41	145.5	54	623	0.003	4	46
40	142.5	278	3,096	0.014	19	236
39	138	234	2,447	0.011	15	198
38	135.5	61	620	0.003	4	52
37	132.5	315	3,058	0.014	18	267
36	128	263	2,392	0.010	14	223
35	125.5	72	635	0.003	4	62

ASSET: 209115, Ridgefield 2
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 ENG NO: 13741746_C3_02

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
34	123.0002	296	2,498	0.011	15	251
33	120.5002	167	1,356	0.006	8	142
32	118.3335	567	4,449	0.020	27	481
31	115.8335	176	1,329	0.006	8	150
30	114	215	1,570	0.007	9	182
29	111.5	337	2,362	0.010	14	286
28	107.5	578	3,790	0.017	23	491
27	102.5	600	3,595	0.016	22	509
26	97.5	622	3,391	0.015	20	528
25	94.7502	63	327	0.001	2	54
24	92.2502	1,294	6,363	0.028	38	1,098
23	89.6252	220	1,023	0.004	6	186
22	87.1252	756	3,339	0.015	20	642
21	82.5	918	3,658	0.016	22	779
20	77.5	948	3,360	0.015	20	805
19	72.5	979	3,059	0.014	18	830
18	69.8	80	232	0.001	1	68
17	67.8	726	2,002	0.009	12	616
16	65.5	205	529	0.002	3	174
15	62.5	1,043	2,466	0.011	15	885
14	57.5	1,073	2,170	0.010	13	911
13	53.8335	511	913	0.004	5	434
12	51.3335	1,214	1,984	0.009	12	1,030
11	48.1252	1,738	2,517	0.011	15	1,475
10	45.6252	319	417	0.002	2	270
9	42.5	1,295	1,485	0.006	9	1,099
8	37.5	1,330	1,205	0.005	7	1,129
7	32.5	1,365	945	0.004	6	1,158
6	27.5	1,400	708	0.003	4	1,188
5	22.5	1,434	498	0.002	3	1,217
4	17.5	1,469	318	0.001	2	1,247
3	12.5	1,504	173	0.001	1	1,276
2	7.5	1,538	68	0.000	0	1,305
1	2.5	1,573	9	0.000	0	1,335
RFI Antennas BA40-41	149	32	387	0.002	2	27
Generic Flat Stand-Off	149	188	2,269	0.010	14	159
Generic Flat Stand-Off	66	188	491	0.002	3	159
Kaelus DBCT108F1V92-1	146	42	486	0.002	3	35
Raycap DC6-48-60-18-8F(32.8 lbs)	146	131	1,528	0.007	9	111
Ericsson RRUS A2 Module	146	64	741	0.003	4	54
Ericsson RRUS 8843 B2, B66A	146	216	2,515	0.011	15	183
Ericsson RRUS 4478 B5	146	180	2,093	0.009	13	152
Ericsson RRUS 4478 B14	146	178	2,075	0.009	12	151
Ericsson RRUS E2	146	159	1,848	0.008	11	135
Ericsson RRUS 32 (50.8 lbs)	146	152	1,775	0.008	11	129
Ericsson RRUS-11	146	330	3,843	0.017	23	280
Generic Mount Reinforcement	146	200	2,329	0.010	14	170
Generic Mount Reinforcement	136	200	2,038	0.009	12	170
Generic Mount Reinforcement	126	200	1,766	0.008	11	170
CCI HPA-65R-BUU-H8	146	816	9,503	0.042	57	692
Generic Round Platform with Handrails	146	2,500	29,114	0.128	174	2,121
Generic Round Platform with Handrails	136	2,500	25,481	0.112	152	2,121
Commscope CBC78T-DS-43-2X	136	62	633	0.003	4	53
Samsung B2/B66A RRH-BR049	136	253	2,581	0.011	15	215
Samsung B5/B13 RRH-BR04C	136	211	2,150	0.010	13	179
RFS DB-C1-12C-24AB-0Z	136	32	326	0.001	2	27
Samsung MT6407-77A	136	245	2,495	0.011	15	208
Commscope JAHH-65B-R3B (63.3 lb)	136	570	5,807	0.026	35	483
Commscope SDX1926Q-43	126	19	164	0.001	1	16
Ericsson Radio 4424 B25	126	139	1,226	0.005	7	118
Ericsson Radio 4449 B71+B85	126	225	1,987	0.009	12	191
Ericsson Radio 4415 B2,B66A	126	142	1,256	0.006	8	121
Ericsson RRUS 11 B4	126	152	1,343	0.006	8	129
Ericsson AIR 6449 B41	126	305	2,691	0.012	16	259
RFS APX16DWV-16DWVS-E-A20	126	122	1,078	0.005	6	104
Generic Round T-Arm	126	938	8,278	0.036	50	796
RFS APXVAARR24_43-U-NA20	126	384	3,388	0.015	20	326
Commscope RDIDC-9181-PF-48	113	22	158	0.001	1	19
Fujitsu TA08025-B605	113	225	1,619	0.007	10	191
Fujitsu TA08025-B604	113	192	1,380	0.006	8	163

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
JMA Wireless MX08FRO665-21	113	194	1,393	0.006	8	164
Generic Flat Platform with Handrails	113	2,500	17,991	0.079	108	2,121
Commscope VHLP3-11W-6GR	70	53	155	0.001	1	45
Generic 4' Grid Dish	69.6	51	148	0.001	1	43
Sinclair SD210R-SF2P90LDF(S)	66	37	97	0.000	1	31
		45,323	227,356	1.000	1,360	38,461

1.2D + 1.0Ev + 1.0Eh Normal Seismic

CALCULATED FORCES

Seg Elev (ft)	P _u FY (-) (kips)	V _u FX (-) (kips)	T _u MY (ft-kips)	M _u MZ (fr-kips)	M _u Mx (ft-kips)	Resultant Moment (ft-kips)	Phi P _n (kips)	Phi V _n (kips)	Phi T _n (kips)	Phi M _n (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.75	-1.36	0.00	-170.02	0.00	170.02	6,432.44	1,570.23	7,996	7,454.51	0.00	0.00	0.03
5.00	-52.82	-1.37	0.00	-163.22	0.00	163.22	6,327.70	1,534.42	7,636	7,164.41	0.00	-0.01	0.03
10.00	-50.94	-1.37	0.00	-156.38	0.00	156.38	6,221.00	1,498.60	7,284	6,877.72	0.01	-0.01	0.03
15.00	-49.10	-1.38	0.00	-149.52	0.00	149.52	6,112.34	1,462.79	6,940	6,594.61	0.03	-0.02	0.03
20.00	-47.31	-1.38	0.00	-142.64	0.00	142.64	6,001.72	1,426.98	6,604	6,315.24	0.06	-0.03	0.03
25.00	-45.56	-1.38	0.00	-135.76	0.00	135.76	5,889.26	1,391.16	6,277	6,039.87	0.09	-0.03	0.03
30.00	-43.85	-1.38	0.00	-128.86	0.00	128.86	5,737.65	1,355.35	5,958	5,731.40	0.13	-0.04	0.03
35.00	-42.18	-1.37	0.00	-121.98	0.00	121.98	5,586.03	1,319.54	5,647	5,431.01	0.18	-0.05	0.03
40.00	-40.56	-1.37	0.00	-115.10	0.00	115.10	5,434.42	1,283.72	5,345	5,138.71	0.24	-0.06	0.03
45.00	-40.16	-1.37	0.00	-108.25	0.00	108.25	5,282.81	1,247.91	5,051	4,854.49	0.30	-0.07	0.03
46.25	-37.99	-1.36	0.00	-106.54	0.00	106.54	5,244.90	1,238.95	4,979	4,784.68	0.32	-0.07	0.03
50.00	-36.47	-1.35	0.00	-101.46	0.00	101.46	5,131.20	1,212.09	4,765	4,578.36	0.37	-0.07	0.03
52.67	-35.83	-1.34	0.00	-97.87	0.00	97.87	4,513.96	1,066.71	4,218	4,056.89	0.42	-0.08	0.03
55.00	-34.49	-1.33	0.00	-94.74	0.00	94.74	4,453.86	1,052.09	4,103	3,947.47	0.46	-0.08	0.03
60.00	-33.18	-1.32	0.00	-88.08	0.00	88.08	4,321.20	1,020.76	3,862	3,714.67	0.55	-0.09	0.03
65.00	-32.93	-1.32	0.00	-81.48	0.00	81.48	4,188.54	989.42	3,629	3,488.95	0.65	-0.10	0.03
66.00	-31.74	-1.30	0.00	-80.17	0.00	80.17	4,162.01	983.15	3,583	3,444.66	0.67	-0.10	0.03
69.60	-31.57	-1.30	0.00	-75.47	0.00	75.47	4,066.49	960.59	3,420	3,287.54	0.75	-0.11	0.03
70.00	-30.28	-1.28	0.00	-74.95	0.00	74.95	4,055.88	958.08	3,402	3,270.31	0.76	-0.11	0.03
75.00	-29.09	-1.27	0.00	-68.52	0.00	68.52	3,923.22	926.75	3,184	3,058.74	0.88	-0.12	0.03
80.00	-27.94	-1.25	0.00	-62.19	0.00	62.19	3,790.56	895.41	2,972	2,854.24	1.02	-0.13	0.03
85.00	-27.00	-1.23	0.00	-55.95	0.00	55.95	3,657.90	864.07	2,768	2,656.82	1.16	-0.14	0.03
89.25	-26.72	-1.23	0.00	-50.73	0.00	50.73	3,545.13	837.43	2,600	2,494.57	1.29	-0.15	0.03
90.00	-25.10	-1.19	0.00	-49.81	0.00	49.81	3,525.24	832.73	2,571	2,466.48	1.31	-0.15	0.03
94.50	-25.02	-1.19	0.00	-44.47	0.00	44.47	2,437.06	587.72	1,792	1,690.71	1.46	-0.16	0.04
95.00	-24.25	-1.17	0.00	-43.88	0.00	43.88	2,430.35	585.48	1,779	1,679.58	1.47	-0.16	0.04
100.00	-23.49	-1.15	0.00	-38.06	0.00	38.06	2,362.08	563.10	1,645	1,569.41	1.65	-0.17	0.03
105.00	-22.77	-1.13	0.00	-32.32	0.00	32.32	2,289.03	540.71	1,517	1,459.85	1.83	-0.18	0.03
110.00	-22.35	-1.11	0.00	-26.69	0.00	26.69	2,194.27	518.33	1,394	1,340.91	2.03	-0.19	0.03
113.00	-18.16	-0.96	0.00	-23.35	0.00	23.35	2,137.42	504.90	1,323	1,271.97	2.16	-0.20	0.03
115.00	-17.94	-0.95	0.00	-21.43	0.00	21.43	2,099.51	495.95	1,276	1,227.02	2.24	-0.21	0.03
116.67	-17.23	-0.92	0.00	-19.85	0.00	19.85	2,067.92	488.49	1,238	1,190.18	2.31	-0.21	0.03
120.00	-17.02	-0.91	0.00	-16.78	0.00	16.78	2,004.76	473.56	1,164	1,118.19	2.46	-0.22	0.02
121.00	-16.65	-0.90	0.00	-15.86	0.00	15.86	1,326.25	334.91	831	749.80	2.51	-0.22	0.03
125.00	-16.56	-0.90	0.00	-12.26	0.00	12.26	1,292.72	322.37	770	703.28	2.69	-0.22	0.03
126.00	-12.95	-0.73	0.00	-11.37	0.00	11.37	1,284.14	319.24	755	691.76	2.74	-0.23	0.03
130.00	-12.55	-0.71	0.00	-8.44	0.00	8.44	1,249.05	306.70	697	646.21	2.93	-0.23	0.02
135.00	-12.48	-0.71	0.00	-4.88	0.00	4.88	1,203.41	291.03	628	590.51	3.18	-0.24	0.02
136.00	-7.09	-0.42	0.00	-4.17	0.00	4.17	1,194.05	287.90	614	579.55	3.23	-0.24	0.01
140.00	-6.74	-0.40	0.00	-2.47	0.00	2.47	1,155.82	275.36	562	536.34	3.43	-0.24	0.01
145.00	-6.67	-0.40	0.00	-0.45	0.00	0.45	1,099.34	259.69	500	480.82	3.69	-0.25	0.01
146.00	-0.27	-0.02	0.00	-0.05	0.00	0.05	1,086.07	256.55	488	469.22	3.74	-0.25	0.00
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	1,046.26	247.15	453	435.29	3.89	-0.25	0.00

0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)

CALCULATED FORCES

ASSET: 209115, Ridgefield 2
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
ENG NO: 13741746_C3_02

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 (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.13	-1.36	0.00	-167.68	0.00	167.68	6,432.44	1,570.23	7,996	7,454.51	0.00	0.00	0.03
5.00	-35.82	-1.36	0.00	-160.88	0.00	160.88	6,327.70	1,534.42	7,636	7,164.41	0.00	-0.01	0.03
10.00	-34.54	-1.37	0.00	-154.06	0.00	154.06	6,221.00	1,498.60	7,284	6,877.72	0.01	-0.01	0.03
15.00	-33.30	-1.37	0.00	-147.22	0.00	147.22	6,112.34	1,462.79	6,940	6,594.61	0.03	-0.02	0.03
20.00	-32.08	-1.37	0.00	-140.38	0.00	140.38	6,001.72	1,426.98	6,604	6,315.24	0.06	-0.03	0.03
25.00	-30.89	-1.37	0.00	-133.53	0.00	133.53	5,889.26	1,391.16	6,277	6,039.87	0.09	-0.03	0.03
30.00	-29.73	-1.37	0.00	-126.69	0.00	126.69	5,737.65	1,355.35	5,958	5,731.40	0.13	-0.04	0.03
35.00	-28.60	-1.36	0.00	-119.86	0.00	119.86	5,586.03	1,319.54	5,647	5,431.01	0.18	-0.05	0.03
40.00	-27.51	-1.36	0.00	-113.05	0.00	113.05	5,434.42	1,283.72	5,345	5,138.71	0.23	-0.06	0.03
45.00	-27.24	-1.36	0.00	-106.28	0.00	106.28	5,282.81	1,247.91	5,051	4,854.49	0.30	-0.07	0.03
46.25	-25.76	-1.34	0.00	-104.58	0.00	104.58	5,244.90	1,238.95	4,979	4,784.68	0.31	-0.07	0.03
50.00	-24.73	-1.33	0.00	-99.56	0.00	99.56	5,131.20	1,212.09	4,765	4,578.36	0.37	-0.07	0.03
52.67	-24.30	-1.33	0.00	-96.01	0.00	96.01	4,513.96	1,066.71	4,218	4,056.89	0.41	-0.08	0.03
55.00	-23.38	-1.31	0.00	-92.92	0.00	92.92	4,453.86	1,052.09	4,103	3,947.47	0.45	-0.08	0.03
60.00	-22.50	-1.30	0.00	-86.35	0.00	86.35	4,321.20	1,020.76	3,862	3,714.67	0.54	-0.09	0.03
65.00	-22.33	-1.30	0.00	-79.85	0.00	79.85	4,188.54	989.42	3,629	3,488.95	0.64	-0.10	0.03
66.00	-21.52	-1.28	0.00	-78.55	0.00	78.55	4,162.01	983.15	3,583	3,444.66	0.66	-0.10	0.03
69.60	-21.41	-1.28	0.00	-73.92	0.00	73.92	4,066.49	960.59	3,420	3,287.54	0.74	-0.11	0.03
70.00	-20.53	-1.26	0.00	-73.41	0.00	73.41	4,055.88	958.08	3,402	3,270.31	0.75	-0.11	0.03
75.00	-19.73	-1.25	0.00	-67.09	0.00	67.09	3,923.22	926.75	3,184	3,058.74	0.87	-0.12	0.03
80.00	-18.95	-1.23	0.00	-60.86	0.00	60.86	3,790.56	895.41	2,972	2,854.24	1.00	-0.13	0.03
85.00	-18.31	-1.21	0.00	-54.73	0.00	54.73	3,657.90	864.07	2,768	2,656.82	1.14	-0.14	0.03
89.25	-18.12	-1.20	0.00	-49.60	0.00	49.60	3,545.13	837.43	2,600	2,494.57	1.26	-0.15	0.03
90.00	-17.02	-1.16	0.00	-48.70	0.00	48.70	3,525.24	832.73	2,571	2,466.48	1.29	-0.15	0.03
94.50	-16.97	-1.16	0.00	-43.47	0.00	43.47	2,437.06	587.72	1,792	1,690.71	1.43	-0.16	0.03
95.00	-16.44	-1.14	0.00	-42.89	0.00	42.89	2,430.35	585.48	1,779	1,679.58	1.45	-0.16	0.03
100.00	-15.93	-1.12	0.00	-37.18	0.00	37.18	2,362.08	563.10	1,645	1,569.41	1.62	-0.17	0.03
105.00	-15.44	-1.10	0.00	-31.57	0.00	31.57	2,289.03	540.71	1,517	1,459.85	1.80	-0.18	0.03
110.00	-15.15	-1.09	0.00	-26.06	0.00	26.06	2,194.27	518.33	1,394	1,340.91	1.99	-0.19	0.03
113.00	-12.31	-0.94	0.00	-22.80	0.00	22.80	2,137.42	504.90	1,323	1,271.97	2.12	-0.20	0.02
115.00	-12.17	-0.93	0.00	-20.92	0.00	20.92	2,099.51	495.95	1,276	1,227.02	2.20	-0.20	0.02
116.67	-11.68	-0.90	0.00	-19.38	0.00	19.38	2,067.92	488.49	1,238	1,190.18	2.27	-0.20	0.02
120.00	-11.54	-0.89	0.00	-16.37	0.00	16.37	2,004.76	473.56	1,164	1,118.19	2.42	-0.21	0.02
121.00	-11.29	-0.88	0.00	-15.48	0.00	15.48	1,326.25	334.91	831	749.80	2.46	-0.21	0.03
125.00	-11.23	-0.87	0.00	-11.97	0.00	11.97	1,292.72	322.37	770	703.28	2.64	-0.22	0.03
126.00	-8.78	-0.71	0.00	-11.09	0.00	11.09	1,284.14	319.24	755	691.76	2.69	-0.22	0.02
130.00	-8.51	-0.70	0.00	-8.24	0.00	8.24	1,249.05	306.70	697	646.21	2.88	-0.23	0.02
135.00	-8.46	-0.69	0.00	-4.76	0.00	4.76	1,203.41	291.03	628	590.51	3.12	-0.23	0.02
136.00	-4.81	-0.41	0.00	-4.07	0.00	4.07	1,194.05	287.90	614	579.55	3.17	-0.24	0.01
140.00	-4.57	-0.39	0.00	-2.42	0.00	2.42	1,155.82	275.36	562	536.34	3.37	-0.24	0.01
145.00	-4.53	-0.39	0.00	-0.44	0.00	0.44	1,099.34	259.69	500	480.82	3.62	-0.24	0.01
146.00	-0.19	-0.02	0.00	-0.05	0.00	0.05	1,086.07	256.55	488	469.22	3.67	-0.24	0.00
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	1,046.26	247.15	453	435.29	3.82	-0.24	0.00

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 + 1.0W Normal	32.76	0.00	54.35	0.00	0.00	3609.77	94.50	0.54
0.9D + 1.0W Normal	32.74	0.00	40.75	0.00	0.00	3572.49	94.50	0.53
1.2D + 1.0Di + 1.0Wi Normal	9.47	0.00	71.68	0.00	0.00	1017.04	94.50	0.16
1.2D + 1.0Ev + 1.0Eh Normal	1.38	0.00	54.75	0.00	0.00	170.02	94.50	0.04
0.9D - 1.0Ev + 1.0Eh Normal	1.37	0.00	37.13	0.00	0.00	167.68	94.50	0.03
1.0D + 1.0W Service Normal	7.97	0.00	45.32	0.00	0.00	873.87	94.50	0.14

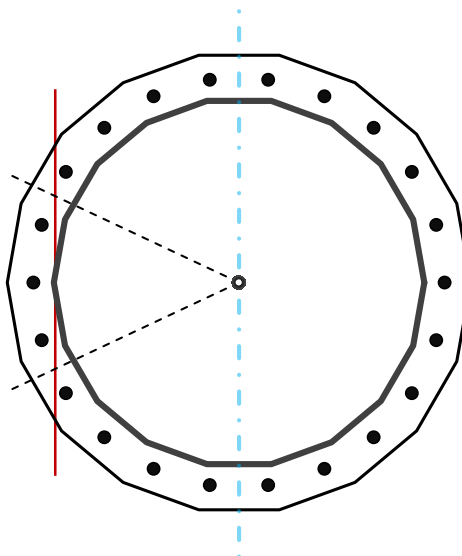
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	56.88	in
Thickness	1/2	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3,609.8	k-ft
Axial, Pu	54.4	k
Shear, Vu	32.8	k
Neutral Axis	90	°

Report Capacities		
Component	Capacity	Result
Base Plate	14%	Pass
Anchor Rods	54%	Pass
Dwyidag	-	-

Base Plate		
Number of Sides	18	-
Diameter, ϕ	71.33	in
Thickness	3 1/2	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	610.1	k
Bending Stress, ϕM_n	4217.6	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	22	-
Diameter, ϕ	2 1/4	in
Bolt Circle	64.25	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	9.2	in
Orientation Offset		°
Applied Force, Pu	129.7	k
Anchor Rods, ϕP_n	243.6	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	32.8	3609.8	1.00
Anchor Rod Forces	32.8	3609.8	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 ²	in ²	in ⁴	#	in ⁴
Pole	88.1126	4.8951	0.4097		35017.85
Bolt	3.9761	3.2477	0.8393	4.5	34211.50
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	18	-	
Width, W	71.33	in	
Thickness, t	3.5	in	
Yield Strength, Fy	50	ksi	
Tensile Strength, Fu	65	ksi	
Base Plate Chord	43.042	in	
Detail Type	d	-	
Detail Factor	0.50	-	
Clear Distance	3	-	

Anchor Rods			
Anchor Rod Quantity, N	22	-	
Rod Diameter, d	2.25	in	
Bolt Circle, BC	64.25	in	
Yield Strength, Fy	75	ksi	
Tensile Strength, Fu	100	ksi	
Applied Axial, Pu	129.7	k	
Applied Shear, Vu	0.3	k	
Compressive Capacity, ϕP_n	243.6	k	
Tensile Capacity, ϕR_n	0.532	OK	
Interaction Capacity	0.535	OK	

External Base Plate			
Chord Length AA	43.871	in	
Additional AA	7.000	in	
Section Modulus, Z	155.792	in ³	
Applied Moment, Mu	610.1	k-ft	
Bending Capacity, ϕM_n	7010.6	k-ft	
Capacity, Mu/ ϕM_n	0.087	OK	
Chord Length AB	42.991	in	
Additional AB	7.000	in	
Section Modulus, Z	153.099	in ³	
Applied Moment, Mu	443.6	k-ft	
Bending Capacity, ϕM_n	6889.4	k-ft	
Capacity, Mu/ ϕM_n	0.064	OK	
Bend Line Length	30.604	in	
Additional Bend Line	0.000	in	
Section Modulus, Z	93.724	in ³	
Applied Moment, Mu	610.1	k-ft	
Bending Capacity, ϕM_n	4217.6	k-ft	
Capacity, Mu/ ϕM_n	0.145	OK	

Internal Base Plate			
Arc Length	0.000	in	
Section Modulus, Z	0.000	in ³	
Moment Arm	0.000	in	
Applied Moment, Mu	0.0	k-ft	
Bending Capacity, ϕM_n	0.0	k-ft	
Capacity, Mu/ ϕM_n			

Site Name: Ridgefield 2, CT
Site Number: 209115
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

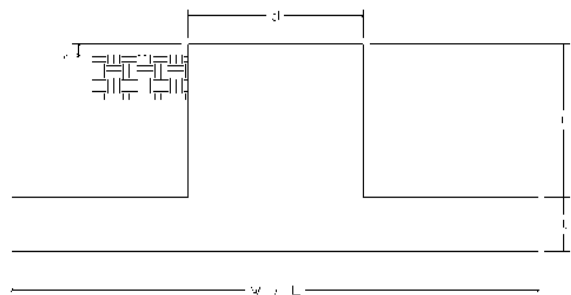
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	54.4	k
Uplift/Leg:	0.0	k
Total Shear:	32.8	k
Moment:	3,609.8	k-ft
Tower + Appurtenance Weight:	54.4	k
Depth to Base of Foundation (l + t - h):	6.5	ft
Diameter of Pier (d):	8	ft
Length of Pier (l):	4.25	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	27.5	ft
Length of Pad (L):	27.5	ft
Thickness of Pad (t):	2.75	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	100	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	37.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.5	-
Ultimate Compressive Bearing Pressure:	16,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{\text{Soil and Concrete Weight}}$:	0.9	-
f_{Soil} :	0.75	-

Overturning Moment Usage		
Design OTM:	3839.1	k-ft
OTM Resistance:	8365.4	k-ft
Design OTM / OTM Resistance:	46%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	2738	psf
Factored Nominal Bearing Pressure:	12000	psf
Factored Nominal (Net) Bearing Pressure:	23%	Pass
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	327.0	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	245.3	k
Sliding Design / Sliding Resistance:	13%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	21.8	k
Shear/Leg (Uplift):	18.0	k
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	29.44	in
Dead Load Factor:	0.9	-
f_{Shear} :	0.75	-
$f_{\text{Flexure / Tension}}$:	0.9	-
$f_{\text{Compression}}$:	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	9	-
# of Bottom Pad Rebar:	35	-
Pad Bottom Steel Area:	35.00	in ²
Pad Steel F_y :	60,000	psi
Top Pad Rebar Size #:	7	-
# of Top Pad Rebar:	28	-
Pad Top Steel Area:	16.80	in ²
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in ²
# of Pier Rebar:	57	-
Pier Steel F_y :	60,000	psi
Pier Cage Diameter:	87.6	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in ²
Tie Spacing:	12	in
Tie Steel F_y :	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	306.8	k	ACI 318-14 25.5.5.1
One Way Shear Capacity (fV_c):	798.1	k	
V_u / fV_c :	38%	Pass	
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge		
Lower Steel Pad Factored Moment (M_u):	2060.9	k-ft	ACI 318-14 22.3.1.1
Lower Steel Pad Moment Capacity (fM_n):	4469.4	k-ft	
M_u / fM_n :	46%	Pass	
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge		
Upper Steel Pad Factored Moment (M_u):	992.4	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	2187.0	k-ft	
M_u / fM_n :	45%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0036		
Upper Pad Flexural Reinforcement Ratio:	0.0017		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Pad Shrinkage Reinforcement Ratio:	0.0053		OK - ACI 318-14 24.4.3.2
Lower Pad Reinforcement Spacing:	9.5	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Upper Pad Reinforcement Spacing:	12.0	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Ultimate Punching Shear Stress, v_u :	37.70	psi	ACI 318-14 R8.4.4.2.3
Nominal Punching Shear Capacity ($f_c v_c$):	164.3	psi	ACI 318-14 22.6.5.2
$v_u / f_c v_c$:	23%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f :	0.60		TIA-222-H 9.4.2
Moment Transfer Effective Flexural Width, B_{eff} :	16.25	ft	TIA-222-H 9.4.2
Moment Transfer Through Pad Flexure:	26992.80	k-in	TIA-222-H 9.4.2
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	32894.73	k-in	
$g_f M_{sc} / fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3749.0	k-ft	
Pier Moment Capacity (fM_n):	16532.6	k-ft	
M_u / fM_n :	23%	Pass	
Factored Shear in Pier (V_u):	32.8	k	ACI 318-14 22.5.1.1
Pier Shear Capacity (fV_n):	712.1	k	
V_u / fV_c :	5%	Pass	
Pier Shear Reinforcement Ratio:	0.0003		OK - No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	4801.7	k	
T_u / fT_n :	0%	Pass	
Factored Compression in Pier (P_u):	54.4	k	ACI 318-14 22.4.2.1
Pier Compression Capacity (fP_n):	9528.7	k	
P_u / fP_n :	1%	Pass	
Pier Compression Reinforcement Ratio:	0.012		OK - TIA-222-H 9.4.1
Minimum Depth to Develop Vertical Rebar:	63	in	ACI 318-14 25.4.2.3
Minimum Hook Development Length:	31	in	ACI 318-14 25.4.3.1
Minimum Mat Thickness / Edge Distance from Pier:	34.0	in	
Minimum Foundation Depth:	8.35	ft	
$M_u / f_B M_n + T_u / f_T T_n$:	23%	Pass	