Robinson + Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

January 31, 2018

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

Re: **Notice of Exempt Modification – Facility Modification**
174 Ashford Center Road, Ashford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the top of the existing 119-foot tower at 174 Ashford Center Road in Ashford, Connecticut (the "Property"). The tower is owned by Cellco and managed by American Tower Corporation ("ATC"). The Council approved Cellco's use of this tower in 2007 (Docket No. 341). Cellco now intends to modify its facility by replacing six (6) of its existing antennas with three (3) model JAHH-65B-R3B, 700 MHz antennas and three (3) model JAHH-65B-R3B, 850 MHz antennas, at the same level on the tower. Cellco also intends to install three (3) new remote radio heads ("RRHs"). Included in Attachment 1 are specifications for Cellco's replacement antennas and RRHs.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Ashford's First Selectman, Michael J. Zambo; Michael Gardner, Ashford's Land Use Department Administrator; P&G Realty LLC, the owner of the Property; and ATC, the tower manager.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and new RRHs will be installed on its existing platform at the top of the tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Attachment 2.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The tower and its foundation can support Cellco's proposed facility modifications. *See* Structural Analysis Report included in Attachment 3.

A copy of the parcel map and owner information for the Property is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Michael J. Zambo, Ashford First Selectman
Michael Gardner, Ashford Land Use Department Administrator
P&G Realty LLC
ATC
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

JAHH-65B-R3B

8-port sector antenna, 2x 698–787, 2x 824-894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB (Port 5).

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

Electrical Specifications

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	15.8	18.0	18.4	18.5	18.8
Beamwidth, Horizontal, degrees	67	65	63	63	65	68
Beamwidth, Vertical, degrees	12.4	10.5	5.7	5.2	4.9	4.4
Beam Tilt, degrees	2–14	2–14	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	18	18	20	20	21	23
Front-to-Back Ratio at 180°, dB	32	34	31	35	36	38
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
	2 ° | 14.3	2 ° | 15.0	0 ° | 17.2	0 ° | 17.6	0 ° | 17.7	0 ° | 17.9
Gain by Beam Tilt, average, dBi	8 ° | 14.3	8 ° | 14.9	5 ° | 17.6	5 ° | 18.2	5 ° | 18.3	5 ° | 18.7
	14 ° | 14.3	14 ° | 15.4	10 ° | 17.6	10 ° | 18.2	10 ° | 18.3	10 ° | 18.7
Beamwidth, Horizontal Tolerance, degrees	±1.2	±1.4	±4	±2.4	±2.9	±2.7
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	18	17	17	18	19	18
Front-to-Back Total Power at 180° ± 30°, dB	25	24	26	29	27	29
CPR at Boresight, dB	22	23	20	21	21	24
CPR at Sector, dB	11	12	11	11	11	8

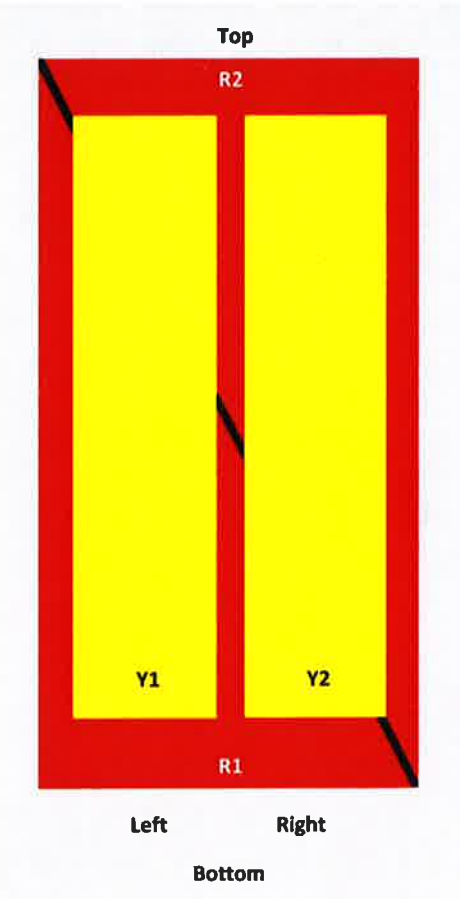
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Product Specifications

JAHH-65B-R3B

Array Layout

JAHH-65A-R3B JAHH-65B-R3B JAHH-65C-R3B



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-798	1-2	1	ANxxxxxxxxxxxxxxx1
R2	824-894	3-4	2	ANxxxxxxxxxxxxxxx2
Y1	1695-2360	5-6	3	ANxxxxxxxxxxxxxxx3
Y2	1695-2360	7-8		

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

General Specifications

Operating Frequency Band	1695 – 2360 MHz | 698 – 787 MHz | 824 – 894 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	8
RF Connector Quantity, low band	4
RF Connector Quantity, high band	4
RF Connector Interface	4.3-10 Female

Product Specifications

JAHH-65B-R3B

Color	Light gray
Grounding Type	RF connector body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	746.0 N @ 150 km/h 167.7 lbf @ 150 km/h
Wind Loading, lateral	243.0 N @ 150 km/h 54.6 lbf @ 150 km/h
Wind Loading, rear	776.0 N @ 150 km/h 174.5 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1828.0 mm | 72.0 in
Width	350.0 mm | 13.8 in
Depth	208.0 mm | 8.2 in
Net Weight, without mounting kit	28.7 kg | 63.3 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 5
Internal RET	High band (1) | Low band (2)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W
Protocol	3GPP/AISG 2.0 (Single RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

Packed Dimensions

Length	1975.0 mm | 77.8 in
Width	456.0 mm | 18.0 in
Depth	357.0 mm | 14.1 in
Shipping Weight	42.0 kg | 92.6 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Product Specifications

JAHH-65B-R3B

Included Products

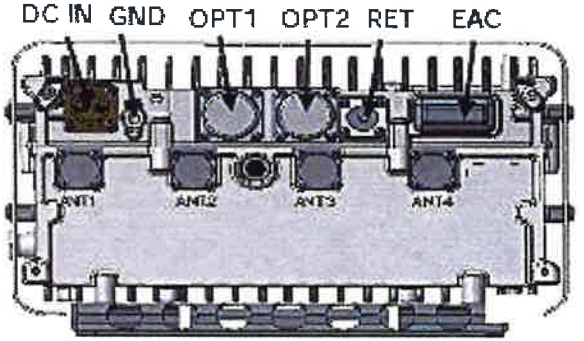
BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

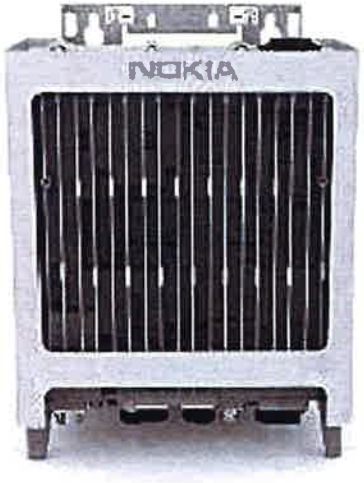
* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

AHCA AirScale RRH 4T4R B5 160W

Supported Frequency bands	3GPP band 5
Frequencies	DL 869-894MHz, UL 824-849MHz
Number of TX/RX paths/pipes	4TX/4RX
Instantaneous Bandwidth IBW	25MHz (Full Band)
Occupied Bandwidth OBW	25MHz (Full Band)
Output Power	4T4R @ 40W / 2T4R @ 60W
RF Sharing	LTE, WCDMA, LTE + NB-IoT supported
256 QAM Back Off	No backoff at 40W and 0.8dB at 60W.
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	365W [50% ETSI Busy Hour Load at 4TX @ 40W]
	529W [100% RF Load at 4 TX @ 40W]
	574W [100% RF Load at 4 TX @ 40W with SBT and AISG ON]
Antenna Ports	4 Ports, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps
ALD Control Interfaces	AISG3.0 from ANT1,2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm MDR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector





Operational Temperature Range	-40°C to 55°C (with solar cover)
Dimensions (mm) Height x width x depth	337 x 295 x 165 (radio only) 13.3" x 11.7" x 6.5" 428 x 324 x 208 (with bracket and enclosure) 16.9" x 12.8" x 8.2"
Volume (liters)	16.5
Weight (kg)	16/ 35.3 lb – w/o bracket
Ingress protection class	IP65
Installation options	Pole or Wall, Vertical or Horizontal Book Mount
Surge protection	Class II 5kA

ATTACHMENT 2

	General	Power	Density					
Site Name: Ashford N								
Tower Height: 119'								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*Town of Ashford	1	100	120	45.4	0.0028	0.2000	0.14%	
*Town of Ashford	1	300	120	460	0.0083	0.3067	0.27%	
Verizon PCS	**1**	**0**	**117**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**503**	**117**	**0.1189**	**869**	**0.5793**	**20.53%**	
Verizon Cellular	**1**	**3710**	**117**	**0.0974**	**869**	**0.5793**	**16.82%**	
Verizon AWS	**1**	**7771**	**117**	**0.2041**	**2145**	**1.0000**	**20.41%**	
Verizon 700	**1**	**2063**	**117**	**0.0542**	**746**	**0.4973**	**10.90%**	
								69.1%
* Source: Siting Council								

ATTACHMENT 3

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER
ENGINEERING
PROFESSIONALS

Structural Analysis Report

Structure	:	**119 ft Monopole**
ATC Site Name	:	**Ashford North CT, CT**
ATC Site Number	:	**414867**
Engineering Number	:	**OAA712238_C3_01**
Proposed Carrier	:	**Verizon**
Carrier Site Name	:	**Ashford North CT**
Carrier Site Number	:	**468148**
Site Location	:	**174 Ashford Center Road** **Ashford, CT 06278-1421** **41.868300,-72.145800**
County	:	**Windham**
Date	:	**September 15, 2017**
Max Usage	:	**20%**
Result	:	**Pass**

Prepared By:
Charles Cages, E.I.
TEP

Charles Cages

Reviewed By:

STATE OF CONNECTICUT
GRAHAM M. ANDRES
29538
LICENSED
PROFESSIONAL ENGINEER

9/15/17

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 119 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EEI Project #15269, dated February 14, 2008
Foundation Drawing	EEI Project #15269, dated February 8, 2008
Geotechnical Report	Dewberry Site: Ashford, Connecticut, dated January 2008

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:	101 mph (3-Second Gust, V_{asd}) / 130 mph (3-second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Spectral Response:	Ss = 0.17, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	117.0	3	Alcatel-Lucent B13 RRH4x30-4R	Low Profile Platform	(12) 1 5/8" Coax (2) 1.25" Hybrid	Verizon
		3	Alcatel-Lucent B66A RRH 4x45			
		2	RFS DB-T1-6Z-8AB-0Z			
		6	Antel LPA-80080/6CF ___			
		1	VZW Unused Reserve: 15,109 sq in			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	117.0	6	Commscope SBNHH-1D65B	-	-	Verizon

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	117.0	3	Nokia AirScale RRH 4T4R B5 160W AHCA	Low Profile Platform	-	Verizon
		6	Commscope JAHH-65B-R3B (63.3 lb)			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	15%	Pass
Shaft	20%	Pass
Base Plate	14%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	6,803.12	1,658.7	24%
Shear (Kips)	65.1	19.1	29%

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.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
117.0	Nokia AirScale RRH 4T4R B5 160W AHCA	Verizon	0.280	0.259
	Commscope JAHH-65B-R3B (63.3 lb)			

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

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

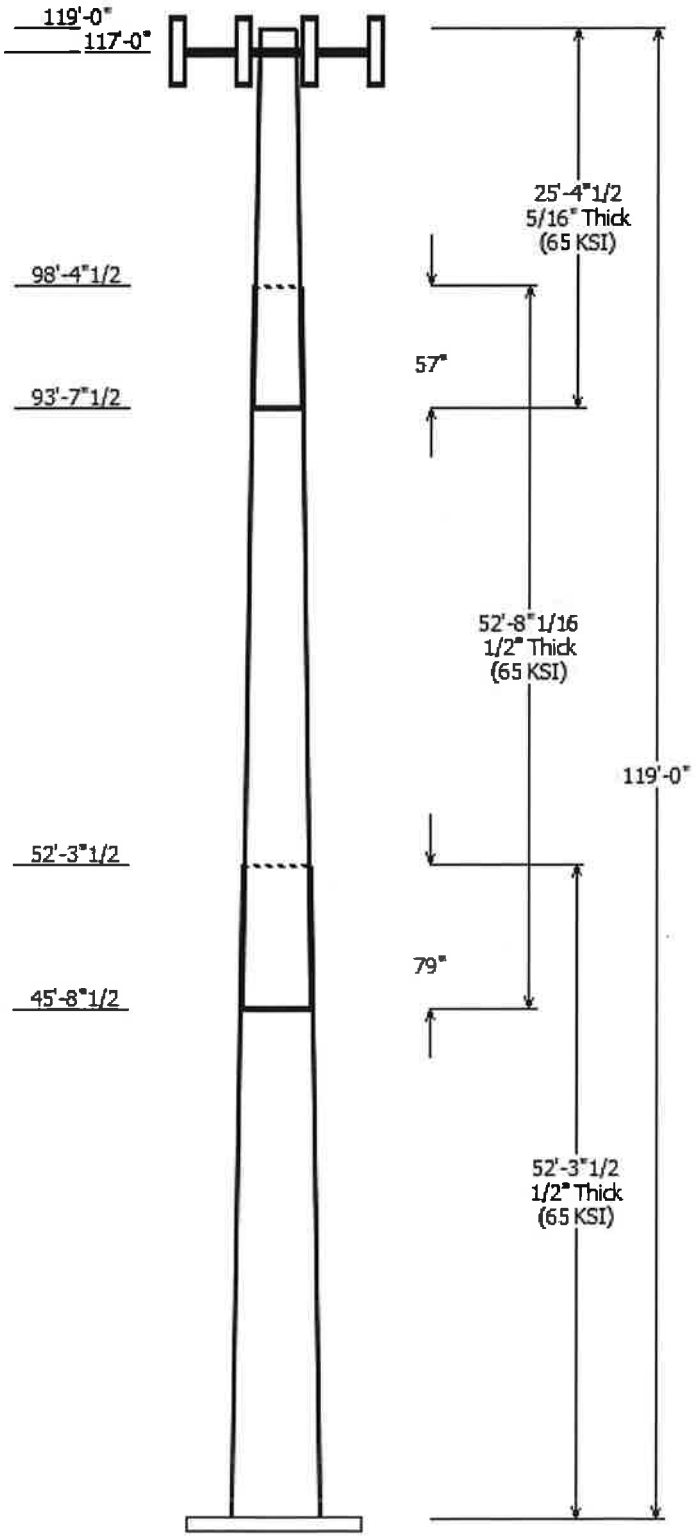
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

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

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



Job Information

Pole :	414867	Code:	ANSI/TIA-222-G
Description :	119 ft Monopole		
Client :	VERIZON WIRELESS	Struct Class :	II
Location :	Ashford North CT, CT		
Shape :	18 Sides	Exposure :	B
Height :	119.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.320723 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	52.290	45.22	62.00	0.500		0.000	0.320700	65
2	52.670	31.44	48.34	0.500	Slip Joint	79.000	0.320700	65
3	25.373	25.45	33.59	0.313	Slip Joint	57.000	0.320700	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
117.000	117.000	1	VZW Unused Reserve: 15,109
117.000	117.000	6	Commscope JAHH-65B-R3B
117.000	117.000	3	Nokia AirScale RRH 4T4R B5 160
117.000	117.000	3	Alcatel-Lucent B13 RRH4x30-4R
117.000	117.000	2	RFS DB-T1-6Z-8AB-0Z
117.000	117.000	3	Alcatel-Lucent B66A RRH 4x45
117.000	117.000	6	Antel LPA-80080/6CF ___
117.000	117.000	1	Flat Low Profile Platform

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	117.0	1 5/8" Coax	No
0.000	117.0	1.25" Hybrid	No

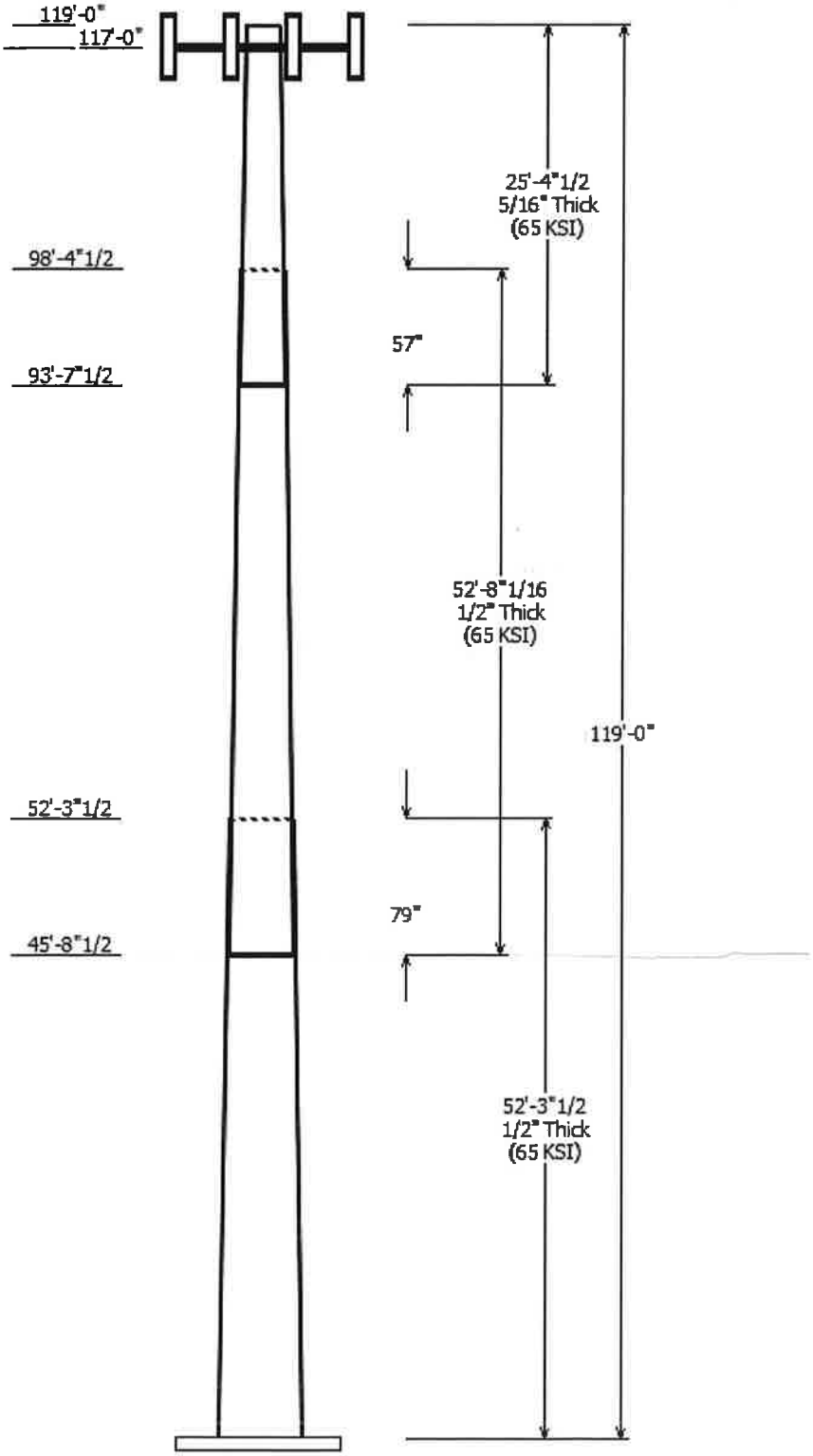
Load Cases

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 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

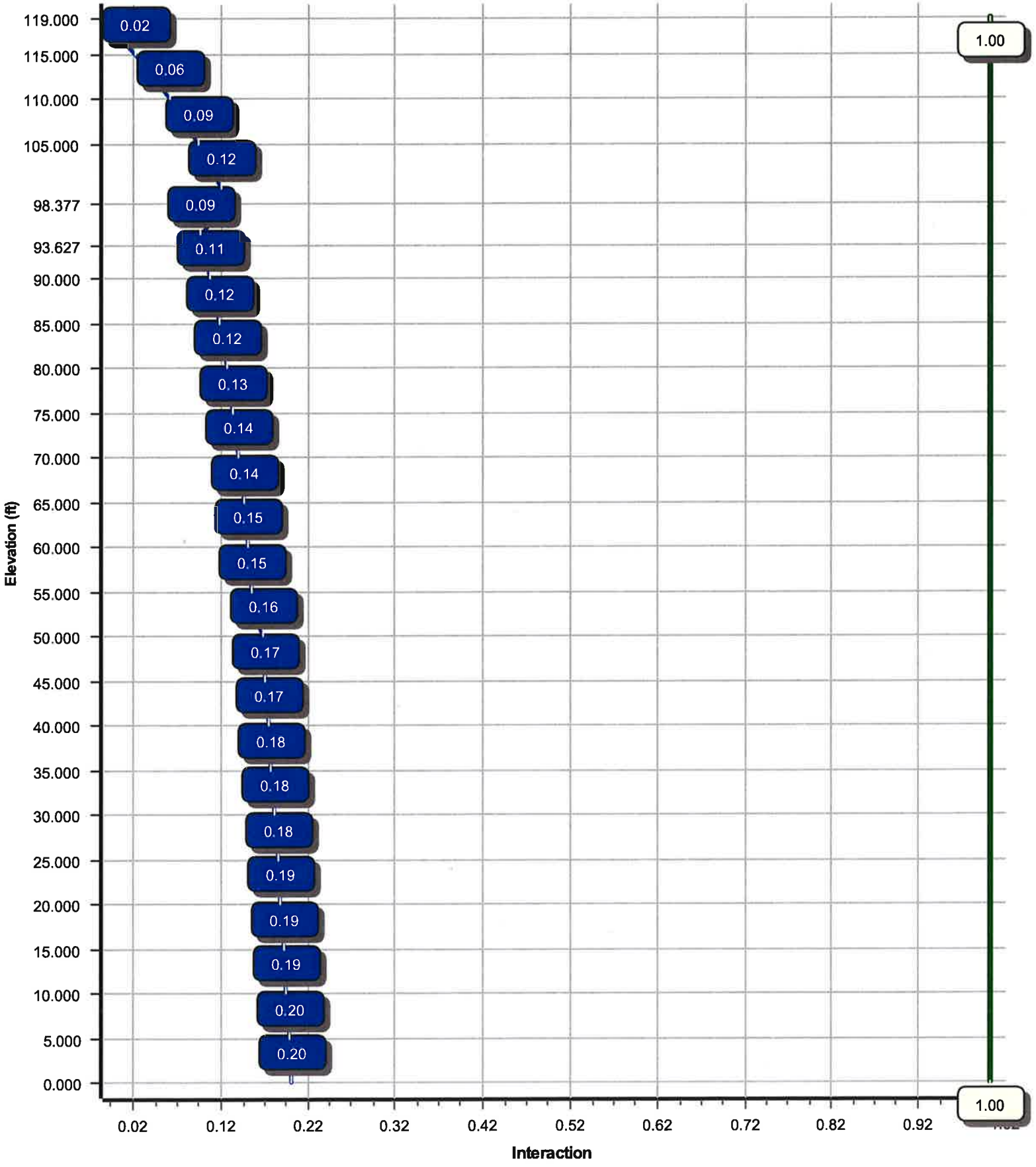
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1658.67	19.12	40.96
0.9D + 1.6W	1654.00	19.12	30.72
1.2D + 1.0Di + 1.0Wi	467.06	5.47	62.17
(1.2 + 0.2Sds) * DL + E ELFM	246.91	2.94	40.12
(1.2 + 0.2Sds) * DL + E EMAM	243.45	2.59	40.12
(0.9 - 0.2Sds) * DL + E ELFM	246.17	2.94	28.00
(0.9 - 0.2Sds) * DL + E EMAM	242.65	2.59	28.00
1.0D + 1.0W	365.15	4.22	34.14

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 19.91% at 0.0 ft



Site Number:	**414867**	**Code: ANSI/TIA-222-G**	
Site Name:	**Ashford North CT, CT**	**Engineering Number:OAA712238_C3_01**	**9/15/2017 4:56:10 PM**
Customer:	**VERIZON WIRELESS**		

Analysis Parameters

Location:	**WINDHAM County, CT**	**Height (ft):**	**119**
Code:	**ANSI/TIA-222-G**	**Base Diameter (in):**	**62.00**
Shape:	**18 Sides**	**Top Diameter (in):**	**25.46**
Pole Type:	**Taper**	**Taper (in/ft) :**	**0.321**
Pole Manfacturer:		**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:	**0.0 ft**	**Design Ice Thickness:**	**1.00 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**1.01**				
T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.066**
S_s:	**0.173**	**S_1:**	**0.063**	**C_s Max:**	**0.066**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.185**	**S_{d1}:**	**0.101**		

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 1.00 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 414867 | Code: ANSI/TIA-222-G |

Site Name: Ashford North CT, CT | Engineering Number:OAA712238_C3_01 | 9/15/2017 4:56:10 PM

Customer: VERIZON WIRELESS

Shaft Section Properties

							Bottom						Top						
Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	52.290	0.5000	65		0.00	14,998	62.00	0.00	97.60	46638.0	20.45	124.00	45.22	52.29	70.98	17942.9	14.54	90.46	0.320723
2-18	52.670	0.5000	65	Slip	79.00	11,205	48.34	45.71	75.92	21953.8	15.64	96.68	31.44	98.38	49.11	5943.3	9.68	62.90	0.320723
3-18	25.373	0.3125	65	Slip	57.00	2,502	33.59	93.63	33.01	4620.7	17.55	107.51	25.45	119.00	24.94	1992.6	12.95	81.47	0.320723
				Shaft Weight		28,704													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
117.00	Alcatel-Lucent B13 RRH4x30-	3	57.80	2.140	0.67	170.32	2.972	0.67	0.000	0.000
117.00	Alcatel-Lucent B66A RRH	3	67.00	2.580	0.67	186.16	3.513	0.67	0.000	0.000
117.00	Antel LPA-80080/6CF ___	6	21.00	8.630	0.65	289.39	10.372	0.65	0.000	0.000
117.00	Commscope JAHH-65B-R3B	6	63.30	9.110	0.69	378.47	10.891	0.69	0.000	0.000
117.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,343.66	50.961	1.00	0.000	0.000
117.00	Nokia AirScale RRH 4T4R B5	3	35.30	1.290	0.50	74.95	1.471	0.50	0.000	0.000
117.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	4.800	0.67	240.92	5.958	0.67	0.000	0.000
117.00	VZW Unused Reserve:	1	1425.90	105.01	1.00	2,227.88	205.034	1.00	0.000	0.000
	Totals	25	4000.00		10,354.86			Number of Loadings :		8

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	117.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	117.00	2	1.25" Hybrid	1.25	1.21	N	0.00	N	Verizon

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	62.000	97.597	46,638.0	20.45	124.00	77.3	1481.	0.0	0.0
5.00		0.5000	60.396	95.052	43,084.0	19.89	120.79	78.0	1405.	0.0	1,638.9
10.00		0.5000	58.793	92.507	39,715.3	19.32	117.59	78.7	1330.	0.0	1,595.6
15.00		0.5000	57.189	89.962	36,527.0	18.76	114.38	79.3	1258.	0.0	1,552.3
20.00		0.5000	55.586	87.418	33,514.1	18.19	111.17	80.0	1187.	0.0	1,509.0
25.00		0.5000	53.982	84.873	30,671.5	17.63	107.96	80.7	1119.	0.0	1,465.7
30.00		0.5000	52.378	82.328	27,994.4	17.06	104.76	81.3	1052.	0.0	1,422.4
35.00		0.5000	50.775	79.783	25,477.8	16.50	101.55	82.0	988.3	0.0	1,379.1
40.00		0.5000	49.171	77.238	23,116.8	15.93	98.34	82.6	926.0	0.0	1,335.8
45.00		0.5000	47.567	74.693	20,906.3	15.36	95.13	82.6	865.7	0.0	1,292.5
45.71	Bot - Section 2	0.5000	47.341	74.334	20,605.7	15.28	94.68	82.6	857.3	0.0	179.2
50.00		0.5000	45.964	72.149	18,841.4	14.80	91.93	82.6	807.4	0.0	2,163.2
52.29	Top - Section 1	0.5000	46.229	72.570	19,173.5	14.89	92.46	82.6	816.9	0.0	1,127.7
55.00		0.5000	45.360	71.191	18,100.8	14.59	90.72	82.6	786.0	0.0	662.8
60.00		0.5000	43.757	68.646	16,228.2	14.02	87.51	82.6	730.5	0.0	1,189.6
65.00		0.5000	42.153	66.101	14,489.5	13.45	84.31	82.6	677.0	0.0	1,146.3
70.00		0.5000	40.549	63.556	12,879.6	12.89	81.10	82.6	625.6	0.0	1,103.0
75.00		0.5000	38.946	61.011	11,393.6	12.32	77.89	82.6	576.2	0.0	1,059.7
80.00		0.5000	37.342	58.466	10,026.5	11.76	74.68	82.6	528.8	0.0	1,016.4
85.00		0.5000	35.739	55.922	8,773.4	11.19	71.48	82.6	483.5	0.0	973.1
90.00		0.5000	34.135	53.377	7,629.3	10.63	68.27	82.6	440.2	0.0	929.8
93.63	Bot - Section 3	0.5000	32.972	51.531	6,864.9	10.22	65.94	82.6	410.1	0.0	647.3
95.00		0.5000	32.531	50.832	6,589.3	10.06	65.06	82.6	398.9	0.0	392.4
98.38	Top - Section 2	0.3125	32.073	31.502	4,014.8	16.69	102.63	81.8	246.6	0.0	942.3
100.0		0.3125	31.553	30.985	3,820.6	16.39	100.97	82.1	238.5	0.0	172.6
105.0		0.3125	29.949	29.395	3,262.0	15.49	95.84	82.6	214.5	0.0	513.6
110.0		0.3125	28.345	27.804	2,760.6	14.58	90.71	82.6	191.8	0.0	486.6
115.0		0.3125	26.742	26.214	2,313.4	13.68	85.57	82.6	170.4	0.0	459.5
117.0		0.3125	26.100	25.577	2,149.0	13.32	83.52	82.6	162.2	0.0	176.2
119.0		0.3125	25.459	24.941	1,992.6	12.95	81.47	82.6	154.2	0.0	171.9
											28,704.2

Load Case: 1.2D + 1.6W — 101 mph with No Ice — 17 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		257.2	0.0					0.0	0.0	257.2	0.0	0.0	0.0
5.00		507.7	1,966.6					0.0	73.6	507.7	2,040.2	0.0	0.0
10.00		494.2	1,914.7					0.0	73.6	494.2	1,988.2	0.0	0.0
15.00		480.7	1,862.7					0.0	73.6	480.7	1,936.3	0.0	0.0
20.00		467.2	1,810.8					0.0	73.6	467.2	1,884.3	0.0	0.0
25.00		453.7	1,758.8					0.0	73.6	453.7	1,832.4	0.0	0.0
30.00		445.5	1,706.8					0.0	73.6	445.5	1,780.4	0.0	0.0
35.00		446.0	1,654.9					0.0	73.6	446.0	1,728.4	0.0	0.0
40.00		448.8	1,602.9					0.0	73.6	448.8	1,676.5	0.0	0.0
45.00		256.5	1,551.0					0.0	73.6	256.5	1,624.5	0.0	0.0
45.71	Bot - Section 2	228.4	215.0					0.0	10.4	228.4	225.4	0.0	0.0
50.00		301.2	2,595.8					0.0	63.2	301.2	2,659.0	0.0	0.0
52.29	Top - Section 1	227.8	1,353.2					0.0	33.7	227.8	1,386.9	0.0	0.0
55.00		349.0	795.4					0.0	39.9	349.0	835.3	0.0	0.0
60.00		448.6	1,427.5					0.0	73.6	448.6	1,501.1	0.0	0.0
65.00		442.1	1,375.5					0.0	73.6	442.1	1,449.1	0.0	0.0
70.00		434.4	1,323.6					0.0	73.6	434.4	1,397.1	0.0	0.0
75.00		425.6	1,271.6					0.0	73.6	425.6	1,345.2	0.0	0.0
80.00		415.6	1,219.7					0.0	73.6	415.6	1,293.2	0.0	0.0
85.00		404.7	1,167.7					0.0	73.6	404.7	1,241.3	0.0	0.0
90.00		340.5	1,115.8					0.0	73.6	340.5	1,189.3	0.0	0.0
93.63	Bot - Section 3	194.4	776.8					0.0	53.4	194.4	830.1	0.0	0.0
95.00		182.9	470.9					0.0	20.2	182.9	491.1	0.0	0.0
98.38	Top - Section 2	190.6	1,130.8					0.0	49.7	190.6	1,180.5	0.0	0.0
100.00		244.9	207.1					0.0	23.9	244.9	231.0	0.0	0.0
105.00		360.3	616.4					0.0	73.6	360.3	689.9	0.0	0.0
110.00		345.6	583.9					0.0	73.6	345.6	657.5	0.0	0.0
115.00		234.4	551.4					0.0	73.6	234.4	625.0	0.0	0.0
117.00	Appertunance(s)	129.6	211.5	9,138.3	0.0	0.0	4,800.0	0.0	29.4	9,267.9	5,040.9	0.0	0.0
119.00		64.1	206.3					0.0	0.0	64.1	206.3	0.0	0.0
								Totals:		19,360.5	40,966.3	0.00	0.00

Site Number: 414867 | Code: ANSI/TIA-222-G |

Site Name: Ashford North CT, CT | Engineering Number:OAA712238_C3_01 | 9/15/2017 4:56:11 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W — 101 mph with No Ice — 17 Iterations

Gust Response Factor :1.10 — Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.96	-19.12	0.00	-1,658.67	0.00	1,658.67	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.199
5.00	-38.90	-18.65	0.00	-1,563.06	0.00	1,563.06	6,673.37	3,336.69	16,416.2	8,220.32	0.03	-0.05	0.196
10.00	-36.90	-18.18	0.00	-1,469.83	0.00	1,469.83	6,550.08	3,275.04	15,677.9	7,850.64	0.11	-0.10	0.193
15.00	-34.95	-17.73	0.00	-1,378.92	0.00	1,378.92	6,423.74	3,211.87	14,949.0	7,485.62	0.24	-0.15	0.190
20.00	-33.05	-17.29	0.00	-1,290.28	0.00	1,290.28	6,294.36	3,147.18	14,229.9	7,125.55	0.42	-0.20	0.186
25.00	-31.20	-16.85	0.00	-1,203.85	0.00	1,203.85	6,161.93	3,080.96	13,521.3	6,770.73	0.66	-0.26	0.183
30.00	-29.41	-16.43	0.00	-1,119.58	0.00	1,119.58	6,026.45	3,013.23	12,823.8	6,421.48	0.96	-0.31	0.179
35.00	-27.67	-16.00	0.00	-1,037.44	0.00	1,037.44	5,887.93	2,943.96	12,138.1	6,078.09	1.31	-0.36	0.175
40.00	-25.98	-15.56	0.00	-957.45	0.00	957.45	5,738.41	2,869.21	11,448.8	5,732.94	1.72	-0.42	0.172
45.00	-24.35	-15.31	0.00	-879.64	0.00	879.64	5,549.34	2,774.67	10,703.1	5,359.53	2.19	-0.48	0.169
45.71	-24.12	-15.09	0.00	-868.82	0.00	868.82	5,522.62	2,761.31	10,599.7	5,307.76	2.27	-0.48	0.168
50.00	-21.45	-14.78	0.00	-804.03	0.00	804.03	5,360.27	2,680.14	9,982.54	4,998.69	2.73	-0.53	0.165
52.29	-20.06	-14.55	0.00	-770.19	0.00	770.19	5,391.58	2,695.79	10,100.1	5,057.57	2.99	-0.56	0.156
55.00	-19.22	-14.21	0.00	-730.76	0.00	730.76	5,289.11	2,644.55	9,717.80	4,866.13	3.32	-0.59	0.154
60.00	-17.71	-13.76	0.00	-659.74	0.00	659.74	5,100.04	2,550.02	9,031.77	4,522.60	3.97	-0.65	0.149
65.00	-16.25	-13.31	0.00	-590.95	0.00	590.95	4,910.97	2,455.48	8,370.84	4,191.64	4.68	-0.70	0.144
70.00	-14.85	-12.88	0.00	-524.38	0.00	524.38	4,721.90	2,360.95	7,735.03	3,873.26	5.44	-0.76	0.139
75.00	-13.50	-12.44	0.00	-460.00	0.00	460.00	4,532.83	2,266.41	7,124.33	3,567.46	6.27	-0.81	0.132
80.00	-12.20	-12.02	0.00	-397.77	0.00	397.77	4,343.76	2,171.88	6,538.75	3,274.23	7.15	-0.87	0.124
85.00	-10.95	-11.61	0.00	-337.66	0.00	337.66	4,154.69	2,077.34	5,978.27	2,993.58	8.08	-0.92	0.115
90.00	-9.76	-11.25	0.00	-279.63	0.00	279.63	3,965.62	1,982.81	5,442.91	2,725.50	9.07	-0.97	0.105
93.63	-8.93	-11.05	0.00	-238.81	0.00	238.81	3,828.48	1,914.24	5,070.31	2,538.92	9.82	-1.00	0.096
95.00	-8.44	-10.86	0.00	-223.63	0.00	223.63	3,776.55	1,888.28	4,932.66	2,470.00	10.11	-1.02	0.093
98.38	-7.26	-10.65	0.00	-186.96	0.00	186.96	2,318.41	1,159.21	3,019.73	1,512.11	10.84	-1.05	0.127
100.00	-7.02	-10.41	0.00	-169.67	0.00	169.67	2,290.04	1,145.02	2,933.41	1,468.89	11.20	-1.06	0.119
105.00	-6.33	-10.04	0.00	-117.63	0.00	117.63	2,183.88	1,091.94	2,652.40	1,328.17	12.34	-1.11	0.092
110.00	-5.68	-9.68	0.00	-67.43	0.00	67.43	2,065.71	1,032.86	2,371.71	1,187.62	13.53	-1.15	0.060
115.00	-5.05	-9.44	0.00	-19.01	0.00	19.01	1,947.54	973.77	2,106.72	1,054.92	14.75	-1.18	0.021
117.00	-0.20	-0.07	0.00	-0.14	0.00	0.14	1,900.28	950.14	2,005.11	1,004.05	15.25	-1.18	0.000
119.00	0.00	-0.06	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	15.74	-1.18	0.000

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 17 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		257.2	0.0					0.0	0.0	257.2	0.0	0.0	0.0
5.00		507.7	1,475.0					0.0	55.2	507.7	1,530.1	0.0	0.0
10.00		494.2	1,436.0					0.0	55.2	494.2	1,491.2	0.0	0.0
15.00		480.7	1,397.0					0.0	55.2	480.7	1,452.2	0.0	0.0
20.00		467.2	1,358.1					0.0	55.2	467.2	1,413.2	0.0	0.0
25.00		453.7	1,319.1					0.0	55.2	453.7	1,374.3	0.0	0.0
30.00		445.5	1,280.1					0.0	55.2	445.5	1,335.3	0.0	0.0
35.00		446.0	1,241.2					0.0	55.2	446.0	1,296.3	0.0	0.0
40.00		448.8	1,202.2					0.0	55.2	448.8	1,257.4	0.0	0.0
45.00		256.5	1,163.2					0.0	55.2	256.5	1,218.4	0.0	0.0
45.71	Bot - Section 2	228.4	161.3					0.0	7.8	228.4	169.1	0.0	0.0
50.00		301.2	1,946.9					0.0	47.4	301.2	1,994.2	0.0	0.0
52.29	Top - Section 1	227.8	1,014.9					0.0	25.3	227.8	1,040.2	0.0	0.0
55.00		349.0	596.6					0.0	29.9	349.0	626.5	0.0	0.0
60.00		448.6	1,070.6					0.0	55.2	448.6	1,125.8	0.0	0.0
65.00		442.1	1,031.7					0.0	55.2	442.1	1,086.8	0.0	0.0
70.00		434.4	992.7					0.0	55.2	434.4	1,047.9	0.0	0.0
75.00		425.6	953.7					0.0	55.2	425.6	1,008.9	0.0	0.0
80.00		415.6	914.8					0.0	55.2	415.6	969.9	0.0	0.0
85.00		404.7	875.8					0.0	55.2	404.7	931.0	0.0	0.0
90.00		340.5	836.8					0.0	55.2	340.5	892.0	0.0	0.0
93.63	Bot - Section 3	194.4	582.6					0.0	40.0	194.4	622.6	0.0	0.0
95.00		182.9	353.2					0.0	15.2	182.9	368.3	0.0	0.0
98.38	Top - Section 2	190.6	848.1					0.0	37.3	190.6	885.3	0.0	0.0
100.00		244.9	155.3					0.0	17.9	244.9	173.2	0.0	0.0
105.00		360.3	462.3					0.0	55.2	360.3	517.5	0.0	0.0
110.00		345.6	437.9					0.0	55.2	345.6	493.1	0.0	0.0
115.00		234.4	413.6					0.0	55.2	234.4	468.7	0.0	0.0
117.00	Appertunance(s)	129.6	158.6	9,138.3	0.0	0.0	3,600.0	0.0	22.1	9,267.9	3,780.7	0.0	0.0
119.00		64.1	154.7					0.0	0.0	64.1	154.7	0.0	0.0
								Totals:		19,360.5	30,724.7	0.00	0.00

Site Number: 414867 | Code: ANSI/TIA-222-G |

Site Name: Ashford North CT, CT | Engineering Number:OAA712238_C3_01 | 9/15/2017 4:56:11 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 17 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.72	-19.12	0.00	-1,654.00	0.00	1,654.00	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.197
5.00	-29.17	-18.63	0.00	-1,558.42	0.00	1,558.42	6,673.37	3,336.69	16,416.2	8,220.32	0.03	-0.05	0.194
10.00	-27.66	-18.16	0.00	-1,465.25	0.00	1,465.25	6,550.08	3,275.04	15,677.9	7,850.64	0.11	-0.10	0.191
15.00	-26.20	-17.70	0.00	-1,374.44	0.00	1,374.44	6,423.74	3,211.87	14,949.0	7,485.62	0.24	-0.15	0.188
20.00	-24.77	-17.25	0.00	-1,285.94	0.00	1,285.94	6,294.36	3,147.18	14,229.9	7,125.55	0.42	-0.20	0.184
25.00	-23.38	-16.81	0.00	-1,199.68	0.00	1,199.68	6,161.93	3,080.96	13,521.3	6,770.73	0.66	-0.25	0.181
30.00	-22.03	-16.38	0.00	-1,115.60	0.00	1,115.60	6,026.45	3,013.23	12,823.8	6,421.48	0.96	-0.31	0.177
35.00	-20.72	-15.95	0.00	-1,033.68	0.00	1,033.68	5,887.93	2,943.96	12,138.1	6,078.09	1.31	-0.36	0.174
40.00	-19.45	-15.51	0.00	-953.93	0.00	953.93	5,738.41	2,869.21	11,448.8	5,732.94	1.72	-0.42	0.170
45.00	-18.23	-15.26	0.00	-876.38	0.00	876.38	5,549.34	2,774.67	10,703.1	5,359.53	2.19	-0.47	0.167
45.71	-18.05	-15.04	0.00	-865.60	0.00	865.60	5,522.62	2,761.31	10,599.7	5,307.76	2.26	-0.48	0.166
50.00	-16.05	-14.73	0.00	-801.05	0.00	801.05	5,360.27	2,680.14	9,982.54	4,998.69	2.72	-0.53	0.163
52.29	-15.01	-14.50	0.00	-767.32	0.00	767.32	5,391.58	2,695.79	10,100.1	5,057.57	2.98	-0.56	0.155
55.00	-14.37	-14.15	0.00	-728.03	0.00	728.03	5,289.11	2,644.55	9,717.80	4,866.13	3.31	-0.59	0.152
60.00	-13.24	-13.70	0.00	-657.27	0.00	657.27	5,100.04	2,550.02	9,031.77	4,522.60	3.95	-0.65	0.148
65.00	-12.15	-13.26	0.00	-588.75	0.00	588.75	4,910.97	2,455.48	8,370.84	4,191.64	4.66	-0.70	0.143
70.00	-11.09	-12.82	0.00	-522.44	0.00	522.44	4,721.90	2,360.95	7,735.03	3,873.26	5.42	-0.76	0.137
75.00	-10.08	-12.39	0.00	-458.32	0.00	458.32	4,532.83	2,266.41	7,124.33	3,567.46	6.24	-0.81	0.131
80.00	-9.10	-11.97	0.00	-396.35	0.00	396.35	4,343.76	2,171.88	6,538.75	3,274.23	7.12	-0.86	0.123
85.00	-8.17	-11.56	0.00	-336.49	0.00	336.49	4,154.69	2,077.34	5,978.27	2,993.58	8.05	-0.91	0.114
90.00	-7.27	-11.21	0.00	-278.68	0.00	278.68	3,965.62	1,982.81	5,442.91	2,725.50	9.04	-0.96	0.104
93.63	-6.65	-11.01	0.00	-238.02	0.00	238.02	3,828.48	1,914.24	5,070.31	2,538.92	9.79	-1.00	0.096
95.00	-6.28	-10.82	0.00	-222.90	0.00	222.90	3,776.55	1,888.28	4,932.66	2,470.00	10.08	-1.01	0.092
98.38	-5.39	-10.62	0.00	-186.36	0.00	186.36	2,318.41	1,159.21	3,019.73	1,512.11	10.80	-1.04	0.126
100.00	-5.22	-10.37	0.00	-169.12	0.00	169.12	2,290.04	1,145.02	2,933.41	1,468.89	11.16	-1.06	0.117
105.00	-4.70	-10.01	0.00	-117.26	0.00	117.26	2,183.88	1,091.94	2,652.40	1,328.17	12.30	-1.11	0.091
110.00	-4.21	-9.65	0.00	-67.23	0.00	67.23	2,065.71	1,032.86	2,371.71	1,187.62	13.48	-1.15	0.059
115.00	-3.74	-9.41	0.00	-18.96	0.00	18.96	1,947.54	973.77	2,106.72	1,054.92	14.70	-1.17	0.020
117.00	-0.15	-0.07	0.00	-0.13	0.00	0.13	1,900.28	950.14	2,005.11	1,004.05	15.19	-1.17	0.000
119.00	0.00	-0.06	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	15.69	-1.17	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 16 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance Factor :1.00
Dead Load Factor :1.20 | Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		76.3	0.0					0.0	0.0	76.3	0.0	0.0	0.0
5.00		151.2	2,566.2					0.0	73.6	151.2	2,639.7	0.0	0.0
10.00		148.0	2,568.4					0.0	73.6	148.0	2,642.0	0.0	0.0
15.00		144.6	2,533.5					0.0	73.6	144.6	2,607.1	0.0	0.0
20.00		141.0	2,486.4					0.0	73.6	141.0	2,559.9	0.0	0.0
25.00		137.4	2,432.8					0.0	73.6	137.4	2,506.4	0.0	0.0
30.00		135.4	2,375.3					0.0	73.6	135.4	2,448.8	0.0	0.0
35.00		136.0	2,314.9					0.0	73.6	136.0	2,388.5	0.0	0.0
40.00		137.3	2,252.5					0.0	73.6	137.3	2,326.0	0.0	0.0
45.00		78.6	2,188.4					0.0	73.6	78.6	2,261.9	0.0	0.0
45.71	Bot - Section 2	70.1	305.3					0.0	10.4	70.1	315.7	0.0	0.0
50.00		92.6	3,143.2					0.0	63.2	92.6	3,206.4	0.0	0.0
52.29	Top - Section 1	70.2	1,642.8					0.0	33.7	70.2	1,676.5	0.0	0.0
55.00		107.8	1,133.6					0.0	39.9	107.8	1,173.5	0.0	0.0
60.00		139.0	2,034.8					0.0	73.6	139.0	2,108.4	0.0	0.0
65.00		137.5	1,966.7					0.0	73.6	137.5	2,040.3	0.0	0.0
70.00		135.7	1,898.0					0.0	73.6	135.7	1,971.5	0.0	0.0
75.00		133.6	1,828.6					0.0	73.6	133.6	1,902.2	0.0	0.0
80.00		131.1	1,758.7					0.0	73.6	131.1	1,832.2	0.0	0.0
85.00		128.3	1,688.3					0.0	73.6	128.3	1,761.8	0.0	0.0
90.00		108.5	1,617.4					0.0	73.6	108.5	1,691.0	0.0	0.0
93.63	Bot - Section 3	62.1	1,130.8					0.0	53.4	62.1	1,184.1	0.0	0.0
95.00		58.6	606.1					0.0	20.2	58.6	626.3	0.0	0.0
98.38	Top - Section 2	61.2	1,453.7					0.0	49.7	61.2	1,503.4	0.0	0.0
100.00		79.1	360.4					0.0	23.9	79.1	384.3	0.0	0.0
105.00		116.9	1,067.8					0.0	73.6	116.9	1,141.3	0.0	0.0
110.00		113.0	1,015.0					0.0	73.6	113.0	1,088.5	0.0	0.0
115.00		77.1	961.9					0.0	73.6	77.1	1,035.4	0.0	0.0
117.00	Appertunance(s)	42.9	372.6	2,371.0	0.0	0.0	12,380.8	0.0	29.4	2,414.0	12,782.7	0.0	0.0
119.00		21.3	364.0					0.0	0.0	21.3	364.0	0.0	0.0
									Totals:	5,543.54	62,169.9	0.00	0.00

Site Number: 414867 Code: ANSI/TIA-222-G

Site Name: Ashford North CT, CT Engineering Number:OAA712238_C3_01 9/15/2017 4:56:12 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 16 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg 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	-62.17	-5.47	0.00	-467.06	0.00	467.06	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.063
5.00	-59.53	-5.34	0.00	-439.69	0.00	439.69	6,673.37	3,336.69	16,416.2	8,220.32	0.01	-0.01	0.062
10.00	-56.88	-5.20	0.00	-413.00	0.00	413.00	6,550.08	3,275.04	15,677.9	7,850.64	0.03	-0.03	0.061
15.00	-54.28	-5.07	0.00	-386.99	0.00	386.99	6,423.74	3,211.87	14,949.0	7,485.62	0.07	-0.04	0.060
20.00	-51.72	-4.94	0.00	-361.64	0.00	361.64	6,294.36	3,147.18	14,229.9	7,125.55	0.12	-0.06	0.059
25.00	-49.21	-4.81	0.00	-336.94	0.00	336.94	6,161.93	3,080.96	13,521.3	6,770.73	0.19	-0.07	0.058
30.00	-46.76	-4.69	0.00	-312.88	0.00	312.88	6,026.45	3,013.23	12,823.8	6,421.48	0.27	-0.09	0.056
35.00	-44.37	-4.56	0.00	-289.45	0.00	289.45	5,887.93	2,943.96	12,138.1	6,078.09	0.37	-0.10	0.055
40.00	-42.04	-4.43	0.00	-266.66	0.00	266.66	5,738.41	2,869.21	11,448.8	5,732.94	0.48	-0.12	0.054
45.00	-39.78	-4.35	0.00	-244.51	0.00	244.51	5,549.34	2,774.67	10,703.1	5,359.53	0.62	-0.13	0.053
45.71	-39.46	-4.29	0.00	-241.44	0.00	241.44	5,522.62	2,761.31	10,599.7	5,307.76	0.64	-0.14	0.053
50.00	-36.26	-4.19	0.00	-223.04	0.00	223.04	5,360.27	2,680.14	9,982.54	4,998.69	0.76	-0.15	0.051
52.29	-34.58	-4.12	0.00	-213.44	0.00	213.44	5,391.58	2,695.79	10,100.1	5,057.57	0.84	-0.16	0.049
55.00	-33.41	-4.02	0.00	-202.27	0.00	202.27	5,289.11	2,644.55	9,717.80	4,866.13	0.93	-0.17	0.048
60.00	-31.30	-3.88	0.00	-182.18	0.00	182.18	5,100.04	2,550.02	9,031.77	4,522.60	1.11	-0.18	0.046
65.00	-29.26	-3.74	0.00	-162.78	0.00	162.78	4,910.97	2,455.48	8,370.84	4,191.64	1.31	-0.20	0.045
70.00	-27.28	-3.61	0.00	-144.06	0.00	144.06	4,721.90	2,360.95	7,735.03	3,873.26	1.52	-0.21	0.043
75.00	-25.38	-3.47	0.00	-126.02	0.00	126.02	4,532.83	2,266.41	7,124.33	3,567.46	1.75	-0.23	0.041
80.00	-23.55	-3.34	0.00	-108.64	0.00	108.64	4,343.76	2,171.88	6,538.75	3,274.23	2.00	-0.24	0.039
85.00	-21.79	-3.21	0.00	-91.93	0.00	91.93	4,154.69	2,077.34	5,978.27	2,993.58	2.26	-0.25	0.036
90.00	-20.10	-3.10	0.00	-75.88	0.00	75.88	3,965.62	1,982.81	5,442.91	2,725.50	2.53	-0.27	0.033
93.63	-18.91	-3.03	0.00	-64.64	0.00	64.64	3,828.48	1,914.24	5,070.31	2,538.92	2.74	-0.28	0.030
95.00	-18.29	-2.97	0.00	-60.47	0.00	60.47	3,776.55	1,888.28	4,932.66	2,470.00	2.82	-0.28	0.029
98.38	-16.78	-2.91	0.00	-50.43	0.00	50.43	2,318.41	1,159.21	3,019.73	1,512.11	3.02	-0.29	0.041
100.00	-16.40	-2.83	0.00	-45.71	0.00	45.71	2,290.04	1,145.02	2,933.41	1,468.89	3.12	-0.29	0.038
105.00	-15.26	-2.71	0.00	-31.57	0.00	31.57	2,183.88	1,091.94	2,652.40	1,328.17	3.44	-0.31	0.031
110.00	-14.17	-2.59	0.00	-18.03	0.00	18.03	2,065.71	1,032.86	2,371.71	1,187.62	3.77	-0.32	0.022
115.00	-13.13	-2.51	0.00	-5.07	0.00	5.07	1,947.54	973.77	2,106.72	1,054.92	4.10	-0.32	0.012
117.00	-0.36	-0.02	0.00	-0.05	0.00	0.05	1,900.28	950.14	2,005.11	1,004.05	4.24	-0.33	0.000
119.00	0.00	-0.02	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	4.38	-0.33	0.000

Load Case: 1.0D + 1.0W | Serviceability 60 mph | 16 Iterations

Gust Response Factor :1.10 | Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		56.7	0.0					0.0	0.0	56.7	0.0	0.0	0.0
5.00		112.0	1,638.9					0.0	61.3	112.0	1,700.2	0.0	0.0
10.00		109.0	1,595.6					0.0	61.3	109.0	1,656.9	0.0	0.0
15.00		106.0	1,552.3					0.0	61.3	106.0	1,613.6	0.0	0.0
20.00		103.1	1,509.0					0.0	61.3	103.1	1,570.3	0.0	0.0
25.00		100.1	1,465.7					0.0	61.3	100.1	1,527.0	0.0	0.0
30.00		98.3	1,422.4					0.0	61.3	98.3	1,483.7	0.0	0.0
35.00		98.4	1,379.1					0.0	61.3	98.4	1,440.4	0.0	0.0
40.00		99.0	1,335.8					0.0	61.3	99.0	1,397.1	0.0	0.0
45.00		56.6	1,292.5					0.0	61.3	56.6	1,353.8	0.0	0.0
45.71	Bot - Section 2	50.4	179.2					0.0	8.7	50.4	187.8	0.0	0.0
50.00		66.4	2,163.2					0.0	52.6	66.4	2,215.8	0.0	0.0
52.29	Top - Section 1	50.2	1,127.7					0.0	28.1	50.2	1,155.8	0.0	0.0
55.00		77.0	662.8					0.0	33.2	77.0	696.1	0.0	0.0
60.00		98.9	1,189.6					0.0	61.3	98.9	1,250.9	0.0	0.0
65.00		97.5	1,146.3					0.0	61.3	97.5	1,207.6	0.0	0.0
70.00		95.8	1,103.0					0.0	61.3	95.8	1,164.3	0.0	0.0
75.00		93.9	1,059.7					0.0	61.3	93.9	1,121.0	0.0	0.0
80.00		91.7	1,016.4					0.0	61.3	91.7	1,077.7	0.0	0.0
85.00		89.3	973.1					0.0	61.3	89.3	1,034.4	0.0	0.0
90.00		75.1	929.8					0.0	61.3	75.1	991.1	0.0	0.0
93.63	Bot - Section 3	42.9	647.3					0.0	44.5	42.9	691.8	0.0	0.0
95.00		40.3	392.4					0.0	16.8	40.3	409.3	0.0	0.0
98.38	Top - Section 2	42.0	942.3					0.0	41.4	42.0	983.7	0.0	0.0
100.00		54.0	172.6					0.0	19.9	54.0	192.5	0.0	0.0
105.00		79.5	513.6					0.0	61.3	79.5	574.9	0.0	0.0
110.00		76.2	486.6					0.0	61.3	76.2	547.9	0.0	0.0
115.00		51.7	459.5					0.0	61.3	51.7	520.8	0.0	0.0
117.00	Appertunance(s)	28.6	176.2	2,015.6	0.0	0.0	4,000.0	0.0	24.5	2,044.2	4,200.8	0.0	0.0
119.00		14.1	171.9					0.0	0.0	14.1	171.9	0.0	0.0
								Totals:		4,270.29	34,138.6	0.00	0.00

Site Number: 414867 Code: ANSI/TIA-222-G

Site Name: Ashford North CT, CT Engineering Number:OAA712238_C3_01 9/15/2017 4:56:12 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W Serviceability 60 mph 16 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.14	-4.22	0.00	-365.15	0.00	365.15	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.048
5.00	-32.44	-4.11	0.00	-344.07	0.00	344.07	6,673.37	3,336.69	16,416.2	8,220.32	0.01	-0.01	0.047
10.00	-30.78	-4.01	0.00	-323.52	0.00	323.52	6,550.08	3,275.04	15,677.9	7,850.64	0.02	-0.02	0.046
15.00	-29.17	-3.91	0.00	-303.48	0.00	303.48	6,423.74	3,211.87	14,949.0	7,485.62	0.05	-0.03	0.045
20.00	-27.59	-3.81	0.00	-283.95	0.00	283.95	6,294.36	3,147.18	14,229.9	7,125.55	0.09	-0.04	0.044
25.00	-26.07	-3.71	0.00	-264.91	0.00	264.91	6,161.93	3,080.96	13,521.3	6,770.73	0.15	-0.06	0.043
30.00	-24.58	-3.62	0.00	-246.36	0.00	246.36	6,026.45	3,013.23	12,823.8	6,421.48	0.21	-0.07	0.042
35.00	-23.14	-3.52	0.00	-228.27	0.00	228.27	5,887.93	2,943.96	12,138.1	6,078.09	0.29	-0.08	0.041
40.00	-21.74	-3.42	0.00	-210.67	0.00	210.67	5,738.41	2,869.21	11,448.8	5,732.94	0.38	-0.09	0.041
45.00	-20.39	-3.37	0.00	-193.54	0.00	193.54	5,549.34	2,774.67	10,703.1	5,359.53	0.48	-0.10	0.040
45.71	-20.20	-3.32	0.00	-191.16	0.00	191.16	5,522.62	2,761.31	10,599.7	5,307.76	0.50	-0.11	0.040
50.00	-17.99	-3.25	0.00	-176.91	0.00	176.91	5,360.27	2,680.14	9,982.54	4,998.69	0.60	-0.12	0.039
52.29	-16.83	-3.20	0.00	-169.46	0.00	169.46	5,391.58	2,695.79	10,100.1	5,057.57	0.66	-0.12	0.037
55.00	-16.13	-3.13	0.00	-160.79	0.00	160.79	5,289.11	2,644.55	9,717.80	4,866.13	0.73	-0.13	0.036
60.00	-14.88	-3.03	0.00	-145.16	0.00	145.16	5,100.04	2,550.02	9,031.77	4,522.60	0.87	-0.14	0.035
65.00	-13.67	-2.93	0.00	-130.03	0.00	130.03	4,910.97	2,455.48	8,370.84	4,191.64	1.03	-0.15	0.034
70.00	-12.51	-2.83	0.00	-115.38	0.00	115.38	4,721.90	2,360.95	7,735.03	3,873.26	1.20	-0.17	0.032
75.00	-11.39	-2.74	0.00	-101.22	0.00	101.22	4,532.83	2,266.41	7,124.33	3,567.46	1.38	-0.18	0.031
80.00	-10.31	-2.64	0.00	-87.53	0.00	87.53	4,343.76	2,171.88	6,538.75	3,274.23	1.57	-0.19	0.029
85.00	-9.28	-2.55	0.00	-74.31	0.00	74.31	4,154.69	2,077.34	5,978.27	2,993.58	1.78	-0.20	0.027
90.00	-8.28	-2.48	0.00	-61.54	0.00	61.54	3,965.62	1,982.81	5,442.91	2,725.50	2.00	-0.21	0.025
93.63	-7.59	-2.43	0.00	-52.56	0.00	52.56	3,828.48	1,914.24	5,070.31	2,538.92	2.16	-0.22	0.023
95.00	-7.18	-2.39	0.00	-49.22	0.00	49.22	3,776.55	1,888.28	4,932.66	2,470.00	2.22	-0.22	0.022
98.38	-6.20	-2.34	0.00	-41.15	0.00	41.15	2,318.41	1,159.21	3,019.73	1,512.11	2.39	-0.23	0.030
100.00	-6.01	-2.29	0.00	-37.35	0.00	37.35	2,290.04	1,145.02	2,933.41	1,468.89	2.46	-0.23	0.028
105.00	-5.43	-2.21	0.00	-25.89	0.00	25.89	2,183.88	1,091.94	2,652.40	1,328.17	2.72	-0.24	0.022
110.00	-4.88	-2.13	0.00	-14.85	0.00	14.85	2,065.71	1,032.86	2,371.71	1,187.62	2.98	-0.25	0.015
115.00	-4.36	-2.08	0.00	-4.19	0.00	4.19	1,947.54	973.77	2,106.72	1,054.92	3.25	-0.26	0.006
117.00	-0.17	-0.01	0.00	-0.03	0.00	0.03	1,900.28	950.14	2,005.11	1,004.05	3.36	-0.26	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	3.46	-0.26	0.000

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 Coeffiecient 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):	0.07
Upper Limit C_s	0.07
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.01
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.26
Total Unfactored Dead Load:	34.14 k
Seismic Base Shear (E):	2.94 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)
29	118.00	172	69	0.012	34	213
28	116.00	201	79	0.013	39	248
27	112.50	521	197	0.033	97	644
26	107.50	548	196	0.033	96	678
25	102.50	575	194	0.032	95	711
24	99.19	192	62	0.010	31	238
23	96.69	984	308	0.051	151	1,217
22	94.31	409	124	0.021	61	506
21	91.81	692	203	0.034	100	856
20	87.50	991	274	0.046	134	1,226
19	82.50	1,034	265	0.044	130	1,279
18	77.50	1,078	255	0.043	126	1,333
17	72.50	1,121	244	0.041	120	1,387
16	67.50	1,164	232	0.039	114	1,440
15	62.50	1,208	218	0.036	107	1,494
14	57.50	1,251	204	0.034	100	1,547
13	53.65	696	104	0.017	51	861
12	51.15	1,156	162	0.027	80	1,430
11	47.85	2,216	287	0.048	141	2,741
10	45.35	188	23	0.004	11	232
9	42.50	1,354	151	0.025	74	1,674
8	37.50	1,397	133	0.022	65	1,728
7	32.50	1,440	115	0.019	56	1,782

6	27.50	1,484	96	0.016	47	1,835
5	22.50	1,527	76	0.013	38	1,889
4	17.50	1,570	57	0.010	28	1,942
3	12.50	1,614	39	0.006	19	1,996
2	7.50	1,657	21	0.003	10	2,049
1	2.50	1,700	5	0.001	3	2,103
Nokia AirScale RRH 4	117.00	106	42	0.007	21	131
Alcatel-Lucent B13 R	117.00	173	69	0.012	34	214
Alcatel-Lucent B66A	117.00	201	80	0.013	39	249
RFS DB-T1-6Z-8AB-0Z	117.00	88	35	0.006	17	109
Antel LPA-80080/6CF	117.00	126	50	0.008	25	156
Commscope JAHH-65B-R	117.00	380	151	0.025	74	470
Flat Low Profile Pla	117.00	1,500	597	0.100	293	1,855
VZW Unused Reserve:	117.00	1,426	567	0.095	279	1,764
		34,139	5,984	1.000	2,941	42,226

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	172	69	0.012	34	148
28	116.00	201	79	0.013	39	173
27	112.50	521	197	0.033	97	450
26	107.50	548	196	0.033	96	473
25	102.50	575	194	0.032	95	496
24	99.19	192	62	0.010	31	166
23	96.69	984	308	0.051	151	849
22	94.31	409	124	0.021	61	353
21	91.81	692	203	0.034	100	597
20	87.50	991	274	0.046	134	855
19	82.50	1,034	265	0.044	130	893
18	77.50	1,078	255	0.043	126	930
17	72.50	1,121	244	0.041	120	968
16	67.50	1,164	232	0.039	114	1,005
15	62.50	1,208	218	0.036	107	1,042
14	57.50	1,251	204	0.034	100	1,080
13	53.65	696	104	0.017	51	601
12	51.15	1,156	162	0.027	80	998
11	47.85	2,216	287	0.048	141	1,912
10	45.35	188	23	0.004	11	162
9	42.50	1,354	151	0.025	74	1,168
8	37.50	1,397	133	0.022	65	1,206
7	32.50	1,440	115	0.019	56	1,243
6	27.50	1,484	96	0.016	47	1,281
5	22.50	1,527	76	0.013	38	1,318
4	17.50	1,570	57	0.010	28	1,355
3	12.50	1,614	39	0.006	19	1,393
2	7.50	1,657	21	0.003	10	1,430
1	2.50	1,700	5	0.001	3	1,467
Nokia AirScale RRH 4	117.00	106	42	0.007	21	91
Alcatel-Lucent B13 R	117.00	173	69	0.012	34	150
Alcatel-Lucent B66A	117.00	201	80	0.013	39	173
RFS DB-T1-6Z-8AB-0Z	117.00	88	35	0.006	17	76
Antel LPA-80080/6CF	117.00	126	50	0.008	25	109
Commscope JAHH-65B-R	117.00	380	151	0.025	74	328
Flat Low Profile Pla	117.00	1,500	597	0.100	293	1,295
VZW Unused Reserve:	117.00	1,426	567	0.095	279	1,231
		34,139	5,984	1.000	2,941	29,465

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	-40.12	-2.94	0.00	-246.91	0.00	246.91	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.035
5.00	-38.07	-2.94	0.00	-232.21	0.00	232.21	6,673.37	3,336.69	16,416.2	8,220.32	0.00	-0.01	0.034
10.00	-36.08	-2.92	0.00	-217.53	0.00	217.53	6,550.08	3,275.04	15,677.9	7,850.64	0.02	-0.01	0.033
15.00	-34.13	-2.90	0.00	-202.92	0.00	202.92	6,423.74	3,211.87	14,949.0	7,485.62	0.04	-0.02	0.032
20.00	-32.25	-2.86	0.00	-188.44	0.00	188.44	6,294.36	3,147.18	14,229.9	7,125.55	0.06	-0.03	0.032
25.00	-30.41	-2.82	0.00	-174.13	0.00	174.13	6,161.93	3,080.96	13,521.3	6,770.73	0.10	-0.04	0.031
30.00	-28.63	-2.76	0.00	-160.04	0.00	160.04	6,026.45	3,013.23	12,823.8	6,421.48	0.14	-0.05	0.030
35.00	-26.90	-2.70	0.00	-146.21	0.00	146.21	5,887.93	2,943.96	12,138.1	6,078.09	0.19	-0.05	0.029
40.00	-25.22	-2.63	0.00	-132.70	0.00	132.70	5,738.41	2,869.21	11,448.8	5,732.94	0.25	-0.06	0.028
45.00	-24.99	-2.62	0.00	-119.56	0.00	119.56	5,549.34	2,774.67	10,703.1	5,359.53	0.32	-0.07	0.027
45.71	-22.25	-2.48	0.00	-117.71	0.00	117.71	5,522.62	2,761.31	10,599.7	5,307.76	0.33	-0.07	0.026
50.00	-20.82	-2.40	0.00	-107.07	0.00	107.07	5,360.27	2,680.14	9,982.54	4,998.69	0.40	-0.08	0.025
52.29	-19.96	-2.35	0.00	-101.58	0.00	101.58	5,391.58	2,695.79	10,100.1	5,057.57	0.44	-0.08	0.024
55.00	-18.41	-2.25	0.00	-95.22	0.00	95.22	5,289.11	2,644.55	9,717.80	4,866.13	0.48	-0.08	0.023
60.00	-16.92	-2.14	0.00	-83.99	0.00	83.99	5,100.04	2,550.02	9,031.77	4,522.60	0.57	-0.09	0.022
65.00	-15.48	-2.02	0.00	-73.30	0.00	73.30	4,910.97	2,455.48	8,370.84	4,191.64	0.67	-0.10	0.021
70.00	-14.09	-1.90	0.00	-63.18	0.00	63.18	4,721.90	2,360.95	7,735.03	3,873.26	0.78	-0.10	0.019
75.00	-12.76	-1.78	0.00	-53.67	0.00	53.67	4,532.83	2,266.41	7,124.33	3,567.46	0.89	-0.11	0.018
80.00	-11.48	-1.64	0.00	-44.79	0.00	44.79	4,343.76	2,171.88	6,538.75	3,274.23	1.01	-0.12	0.016
85.00	-10.26	-1.51	0.00	-36.56	0.00	36.56	4,154.69	2,077.34	5,978.27	2,993.58	1.14	-0.12	0.015
90.00	-9.40	-1.41	0.00	-29.02	0.00	29.02	3,965.62	1,982.81	5,442.91	2,725.50	1.27	-0.13	0.013
93.63	-8.89	-1.35	0.00	-23.92	0.00	23.92	3,828.48	1,914.24	5,070.31	2,538.92	1.37	-0.13	0.012
95.00	-7.68	-1.19	0.00	-22.07	0.00	22.07	3,776.55	1,888.28	4,932.66	2,470.00	1.41	-0.13	0.011
98.38	-7.44	-1.16	0.00	-18.05	0.00	18.05	2,318.41	1,159.21	3,019.73	1,512.11	1.51	-0.14	0.015
100.00	-6.73	-1.06	0.00	-16.16	0.00	16.16	2,290.04	1,145.02	2,933.41	1,468.89	1.55	-0.14	0.014
105.00	-6.05	-0.97	0.00	-10.84	0.00	10.84	2,183.88	1,091.94	2,652.40	1,328.17	1.70	-0.14	0.011
110.00	-5.41	-0.87	0.00	-6.00	0.00	6.00	2,065.71	1,032.86	2,371.71	1,187.62	1.85	-0.15	0.008
115.00	-5.16	-0.83	0.00	-1.66	0.00	1.66	1,947.54	973.77	2,106.72	1,054.92	2.01	-0.15	0.004
117.00	0.00	0.00	0.00	0.00	0.00	0.00	1,900.28	950.14	2,005.11	1,004.05	2.07	-0.15	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	2.13	-0.15	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	-28.00	-2.94	0.00	-246.17	0.00	246.17	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.033
5.00	-26.57	-2.93	0.00	-231.47	0.00	231.47	6,673.37	3,336.69	16,416.2	8,220.32	0.00	-0.01	0.032
10.00	-25.17	-2.92	0.00	-216.80	0.00	216.80	6,550.08	3,275.04	15,677.9	7,850.64	0.02	-0.01	0.031
15.00	-23.82	-2.89	0.00	-202.21	0.00	202.21	6,423.74	3,211.87	14,949.0	7,485.62	0.04	-0.02	0.031
20.00	-22.50	-2.86	0.00	-187.75	0.00	187.75	6,294.36	3,147.18	14,229.9	7,125.55	0.06	-0.03	0.030
25.00	-21.22	-2.81	0.00	-173.47	0.00	173.47	6,161.93	3,080.96	13,521.3	6,770.73	0.10	-0.04	0.029
30.00	-19.98	-2.76	0.00	-159.41	0.00	159.41	6,026.45	3,013.23	12,823.8	6,421.48	0.14	-0.05	0.028
35.00	-18.77	-2.69	0.00	-145.62	0.00	145.62	5,887.93	2,943.96	12,138.1	6,078.09	0.19	-0.05	0.027
40.00	-17.60	-2.62	0.00	-132.16	0.00	132.16	5,738.41	2,869.21	11,448.8	5,732.94	0.25	-0.06	0.026
45.00	-17.44	-2.61	0.00	-119.05	0.00	119.05	5,549.34	2,774.67	10,703.1	5,359.53	0.32	-0.07	0.025
45.71	-15.53	-2.47	0.00	-117.21	0.00	117.21	5,522.62	2,761.31	10,599.7	5,307.76	0.33	-0.07	0.025
50.00	-14.53	-2.39	0.00	-106.61	0.00	106.61	5,360.27	2,680.14	9,982.54	4,998.69	0.40	-0.08	0.024
52.29	-13.93	-2.34	0.00	-101.14	0.00	101.14	5,391.58	2,695.79	10,100.1	5,057.57	0.43	-0.08	0.023
55.00	-12.85	-2.24	0.00	-94.81	0.00	94.81	5,289.11	2,644.55	9,717.80	4,866.13	0.48	-0.08	0.022
60.00	-11.81	-2.13	0.00	-83.62	0.00	83.62	5,100.04	2,550.02	9,031.77	4,522.60	0.57	-0.09	0.021
65.00	-10.80	-2.02	0.00	-72.97	0.00	72.97	4,910.97	2,455.48	8,370.84	4,191.64	0.67	-0.10	0.020
70.00	-9.83	-1.89	0.00	-62.89	0.00	62.89	4,721.90	2,360.95	7,735.03	3,873.26	0.78	-0.10	0.018
75.00	-8.90	-1.77	0.00	-53.42	0.00	53.42	4,532.83	2,266.41	7,124.33	3,567.46	0.89	-0.11	0.017
80.00	-8.01	-1.64	0.00	-44.58	0.00	44.58	4,343.76	2,171.88	6,538.75	3,274.23	1.01	-0.12	0.015
85.00	-7.15	-1.50	0.00	-36.39	0.00	36.39	4,154.69	2,077.34	5,978.27	2,993.58	1.14	-0.12	0.014
90.00	-6.56	-1.40	0.00	-28.88	0.00	28.88	3,965.62	1,982.81	5,442.91	2,725.50	1.27	-0.13	0.012
93.63	-6.20	-1.34	0.00	-23.80	0.00	23.80	3,828.48	1,914.24	5,070.31	2,538.92	1.37	-0.13	0.011
95.00	-5.36	-1.19	0.00	-21.96	0.00	21.96	3,776.55	1,888.28	4,932.66	2,470.00	1.40	-0.13	0.010
98.38	-5.19	-1.16	0.00	-17.96	0.00	17.96	2,318.41	1,159.21	3,019.73	1,512.11	1.50	-0.14	0.014
100.00	-4.69	-1.06	0.00	-16.08	0.00	16.08	2,290.04	1,145.02	2,933.41	1,468.89	1.55	-0.14	0.013
105.00	-4.22	-0.96	0.00	-10.78	0.00	10.78	2,183.88	1,091.94	2,652.40	1,328.17	1.69	-0.14	0.010
110.00	-3.77	-0.86	0.00	-5.97	0.00	5.97	2,065.71	1,032.86	2,371.71	1,187.62	1.84	-0.15	0.007
115.00	-3.60	-0.83	0.00	-1.65	0.00	1.65	1,947.54	973.77	2,106.72	1,054.92	2.00	-0.15	0.003
117.00	0.00	0.00	0.00	0.00	0.00	0.00	1,900.28	950.14	2,005.11	1,004.05	2.06	-0.15	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	2.12	-0.15	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.17
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
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.01
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM **Seismic Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	172	1.858	1.817	1.081	0.371	55	213
28	116.00	201	1.796	1.520	0.970	0.335	58	248
27	112.50	521	1.689	1.082	0.798	0.278	126	644
26	107.50	548	1.542	0.611	0.595	0.208	99	678
25	102.50	575	1.402	0.288	0.434	0.151	75	711
24	99.19	192	1.313	0.139	0.348	0.120	20	238
23	96.69	984	1.248	0.054	0.292	0.101	86	1,217
22	94.31	409	1.187	-0.007	0.245	0.085	30	506
21	91.81	692	1.125	-0.055	0.203	0.071	43	856
20	87.50	991	1.022	-0.104	0.142	0.054	46	1,226
19	82.50	1,034	0.908	-0.122	0.091	0.042	38	1,279
18	77.50	1,078	0.802	-0.112	0.054	0.038	35	1,333
17	72.50	1,121	0.702	-0.087	0.030	0.038	37	1,387
16	67.50	1,164	0.608	-0.056	0.015	0.040	41	1,440
15	62.50	1,208	0.521	-0.024	0.008	0.043	45	1,494
14	57.50	1,251	0.441	0.005	0.006	0.045	49	1,547
13	53.65	696	0.384	0.023	0.007	0.046	27	861
12	51.15	1,156	0.349	0.033	0.009	0.045	45	1,430
11	47.85	2,216	0.306	0.044	0.012	0.045	86	2,741
10	45.35	188	0.275	0.051	0.015	0.044	7	232
9	42.50	1,354	0.241	0.057	0.018	0.042	49	1,674
8	37.50	1,397	0.188	0.064	0.025	0.039	47	1,728
7	32.50	1,440	0.141	0.069	0.031	0.036	44	1,782
6	27.50	1,484	0.101	0.071	0.037	0.032	42	1,835
5	22.50	1,527	0.068	0.072	0.041	0.029	39	1,889
4	17.50	1,570	0.041	0.070	0.042	0.026	36	1,942
3	12.50	1,614	0.021	0.065	0.038	0.023	32	1,996
2	7.50	1,657	0.008	0.051	0.029	0.017	25	2,049
1	2.50	1,700	0.001	0.022	0.012	0.008	11	2,103
Nokia AirScale RRH 4	117.00	106	1.827	1.664	1.024	0.353	32	131
Alcatel-Lucent B13 R	117.00	173	1.827	1.664	1.024	0.353	53	214
Alcatel-Lucent B66A	117.00	201	1.827	1.664	1.024	0.353	62	249
RFS DB-T1-6Z-8AB-0Z	117.00	88	1.827	1.664	1.024	0.353	27	109
Antel LPA-80080/6CF	117.00	126	1.827	1.664	1.024	0.353	39	156

Commscope JAHH-65B-	117.00	380	1.827	1.664	1.024	0.353	116	470
Flat Low Profile Pla	117.00	1,500	1.827	1.664	1.024	0.353	459	1,855
VZW Unused Reserve:	117.00	1,426	1.827	1.664	1.024	0.353	436	1,764
		34,139	34.903	18.953	13.823	5.278	2,598	42,226

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)
29	118.00	172	1.858	1.817	1.081	0.371	55	148
28	116.00	201	1.796	1.520	0.970	0.335	58	173
27	112.50	521	1.689	1.082	0.798	0.278	126	450
26	107.50	548	1.542	0.611	0.595	0.208	99	473
25	102.50	575	1.402	0.288	0.434	0.151	75	496
24	99.19	192	1.313	0.139	0.348	0.120	20	166
23	96.69	984	1.248	0.054	0.292	0.101	86	849
22	94.31	409	1.187	-0.007	0.245	0.085	30	353
21	91.81	692	1.125	-0.055	0.203	0.071	43	597
20	87.50	991	1.022	-0.104	0.142	0.054	46	855
19	82.50	1,034	0.908	-0.122	0.091	0.042	38	893
18	77.50	1,078	0.802	-0.112	0.054	0.038	35	930
17	72.50	1,121	0.702	-0.087	0.030	0.038	37	968
16	67.50	1,164	0.608	-0.056	0.015	0.040	41	1,005
15	62.50	1,208	0.521	-0.024	0.008	0.043	45	1,042
14	57.50	1,251	0.441	0.005	0.006	0.045	49	1,080
13	53.65	696	0.384	0.023	0.007	0.046	27	601
12	51.15	1,156	0.349	0.033	0.009	0.045	45	998
11	47.85	2,216	0.306	0.044	0.012	0.045	86	1,912
10	45.35	188	0.275	0.051	0.015	0.044	7	162
9	42.50	1,354	0.241	0.057	0.018	0.042	49	1,168
8	37.50	1,397	0.188	0.064	0.025	0.039	47	1,206
7	32.50	1,440	0.141	0.069	0.031	0.036	44	1,243
6	27.50	1,484	0.101	0.071	0.037	0.032	42	1,281
5	22.50	1,527	0.068	0.072	0.041	0.029	39	1,318
4	17.50	1,570	0.041	0.070	0.042	0.026	36	1,355
3	12.50	1,614	0.021	0.065	0.038	0.023	32	1,393
2	7.50	1,657	0.008	0.051	0.029	0.017	25	1,430
1	2.50	1,700	0.001	0.022	0.012	0.008	11	1,467
Nokia AirScale RRH 4	117.00	106	1.827	1.664	1.024	0.353	32	91
Alcatel-Lucent B13 R	117.00	173	1.827	1.664	1.024	0.353	53	150
Alcatel-Lucent B66A	117.00	201	1.827	1.664	1.024	0.353	62	173
RFS DB-T1-6Z-8AB-0Z	117.00	88	1.827	1.664	1.024	0.353	27	76
Antel LPA-80080/6CF	117.00	126	1.827	1.664	1.024	0.353	39	109
Commscope JAHH-65B-	117.00	380	1.827	1.664	1.024	0.353	116	328
Flat Low Profile Pla	117.00	1,500	1.827	1.664	1.024	0.353	459	1,295
VZW Unused Reserve:	117.00	1,426	1.827	1.664	1.024	0.353	436	1,231
		34,139	34.903	18.953	13.823	5.278	2,598	29,465

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	-40.12	-2.59	0.00	-243.45	0.00	243.45	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.034
5.00	-38.07	-2.57	0.00	-230.50	0.00	230.50	6,673.37	3,336.69	16,416.2	8,220.32	0.00	-0.01	0.034
10.00	-36.08	-2.54	0.00	-217.66	0.00	217.66	6,550.08	3,275.04	15,677.9	7,850.64	0.02	-0.01	0.033
15.00	-34.13	-2.51	0.00	-204.95	0.00	204.95	6,423.74	3,211.87	14,949.0	7,485.62	0.03	-0.02	0.033
20.00	-32.25	-2.47	0.00	-192.40	0.00	192.40	6,294.36	3,147.18	14,229.9	7,125.55	0.06	-0.03	0.032
25.00	-30.41	-2.44	0.00	-180.03	0.00	180.03	6,161.93	3,080.96	13,521.3	6,770.73	0.10	-0.04	0.032
30.00	-28.63	-2.39	0.00	-167.85	0.00	167.85	6,026.45	3,013.23	12,823.8	6,421.48	0.14	-0.05	0.031
35.00	-26.90	-2.35	0.00	-155.88	0.00	155.88	5,887.93	2,943.96	12,138.1	6,078.09	0.19	-0.05	0.030
40.00	-25.23	-2.30	0.00	-144.13	0.00	144.13	5,738.41	2,869.21	11,448.8	5,732.94	0.26	-0.06	0.030
45.00	-24.99	-2.30	0.00	-132.62	0.00	132.62	5,549.34	2,774.67	10,703.1	5,359.53	0.33	-0.07	0.029
45.71	-22.25	-2.21	0.00	-131.00	0.00	131.00	5,522.62	2,761.31	10,599.7	5,307.76	0.34	-0.07	0.029
50.00	-20.82	-2.16	0.00	-121.51	0.00	121.51	5,360.27	2,680.14	9,982.54	4,998.69	0.41	-0.08	0.028
52.29	-19.96	-2.14	0.00	-116.56	0.00	116.56	5,391.58	2,695.79	10,100.1	5,057.57	0.44	-0.08	0.027
55.00	-18.41	-2.09	0.00	-110.77	0.00	110.77	5,289.11	2,644.55	9,717.80	4,866.13	0.49	-0.09	0.026
60.00	-16.92	-2.04	0.00	-100.33	0.00	100.33	5,100.04	2,550.02	9,031.77	4,522.60	0.59	-0.10	0.026
65.00	-15.48	-2.00	0.00	-90.11	0.00	90.11	4,910.97	2,455.48	8,370.84	4,191.64	0.70	-0.11	0.025
70.00	-14.09	-1.96	0.00	-80.10	0.00	80.10	4,721.90	2,360.95	7,735.03	3,873.26	0.81	-0.11	0.024
75.00	-12.76	-1.93	0.00	-70.27	0.00	70.27	4,532.83	2,266.41	7,124.33	3,567.46	0.94	-0.12	0.023
80.00	-11.48	-1.89	0.00	-60.63	0.00	60.63	4,343.76	2,171.88	6,538.75	3,274.23	1.07	-0.13	0.021
85.00	-10.25	-1.84	0.00	-51.18	0.00	51.18	4,154.69	2,077.34	5,978.27	2,993.58	1.21	-0.14	0.020
90.00	-9.40	-1.80	0.00	-41.98	0.00	41.98	3,965.62	1,982.81	5,442.91	2,725.50	1.36	-0.15	0.018
93.63	-8.89	-1.77	0.00	-35.46	0.00	35.46	3,828.48	1,914.24	5,070.31	2,538.92	1.47	-0.15	0.016
95.00	-7.68	-1.68	0.00	-33.03	0.00	33.03	3,776.55	1,888.28	4,932.66	2,470.00	1.51	-0.15	0.015
98.38	-7.44	-1.66	0.00	-27.37	0.00	27.37	2,318.41	1,159.21	3,019.73	1,512.11	1.62	-0.16	0.021
100.00	-6.73	-1.58	0.00	-24.68	0.00	24.68	2,290.04	1,145.02	2,933.41	1,468.89	1.68	-0.16	0.020
105.00	-6.05	-1.48	0.00	-16.77	0.00	16.77	2,183.88	1,091.94	2,652.40	1,328.17	1.85	-0.17	0.015
110.00	-5.40	-1.35	0.00	-9.36	0.00	9.36	2,065.71	1,032.86	2,371.71	1,187.62	2.03	-0.17	0.011
115.00	-5.16	-1.30	0.00	-2.59	0.00	2.59	1,947.54	973.77	2,106.72	1,054.92	2.21	-0.18	0.005
117.00	0.00	0.00	0.00	0.00	0.00	0.00	1,900.28	950.14	2,005.11	1,004.05	2.28	-0.18	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	2.36	-0.18	0.000

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	-28.00	-2.59	0.00	-242.65	0.00	242.65	6,793.61	3,396.81	17,163.1	8,594.34	0.00	0.00	0.032
5.00	-26.57	-2.57	0.00	-229.71	0.00	229.71	6,673.37	3,336.69	16,416.2	8,220.32	0.00	-0.01	0.032
10.00	-25.17	-2.54	0.00	-216.88	0.00	216.88	6,550.08	3,275.04	15,677.9	7,850.64	0.02	-0.01	0.031
15.00	-23.82	-2.50	0.00	-204.19	0.00	204.19	6,423.74	3,211.87	14,949.0	7,485.62	0.03	-0.02	0.031
20.00	-22.50	-2.47	0.00	-191.66	0.00	191.66	6,294.36	3,147.18	14,229.9	7,125.55	0.06	-0.03	0.030
25.00	-21.22	-2.43	0.00	-179.32	0.00	179.32	6,161.93	3,080.96	13,521.3	6,770.73	0.10	-0.04	0.030
30.00	-19.98	-2.39	0.00	-167.17	0.00	167.17	6,026.45	3,013.23	12,823.8	6,421.48	0.14	-0.05	0.029
35.00	-18.77	-2.34	0.00	-155.24	0.00	155.24	5,887.93	2,943.96	12,138.1	6,078.09	0.19	-0.05	0.029
40.00	-17.60	-2.29	0.00	-143.53	0.00	143.53	5,738.41	2,869.21	11,448.8	5,732.94	0.25	-0.06	0.028
45.00	-17.44	-2.29	0.00	-132.07	0.00	132.07	5,549.34	2,774.67	10,703.1	5,359.53	0.32	-0.07	0.028
45.71	-15.53	-2.20	0.00	-130.45	0.00	130.45	5,522.62	2,761.31	10,599.7	5,307.76	0.34	-0.07	0.027
50.00	-14.53	-2.16	0.00	-121.01	0.00	121.01	5,360.27	2,680.14	9,982.54	4,998.69	0.40	-0.08	0.027
52.29	-13.93	-2.13	0.00	-116.07	0.00	116.07	5,391.58	2,695.79	10,100.1	5,057.57	0.44	-0.08	0.026
55.00	-12.85	-2.08	0.00	-110.30	0.00	110.30	5,289.11	2,644.55	9,717.80	4,866.13	0.49	-0.09	0.025
60.00	-11.81	-2.03	0.00	-99.91	0.00	99.91	5,100.04	2,550.02	9,031.77	4,522.60	0.59	-0.10	0.024
65.00	-10.80	-1.99	0.00	-89.74	0.00	89.74	4,910.97	2,455.48	8,370.84	4,191.64	0.69	-0.10	0.024
70.00	-9.83	-1.96	0.00	-79.77	0.00	79.77	4,721.90	2,360.95	7,735.03	3,873.26	0.81	-0.11	0.023
75.00	-8.90	-1.92	0.00	-69.99	0.00	69.99	4,532.83	2,266.41	7,124.33	3,567.46	0.93	-0.12	0.022
80.00	-8.01	-1.88	0.00	-60.39	0.00	60.39	4,343.76	2,171.88	6,538.75	3,274.23	1.06	-0.13	0.020
85.00	-7.15	-1.83	0.00	-50.99	0.00	50.99	4,154.69	2,077.34	5,978.27	2,993.58	1.20	-0.14	0.019
90.00	-6.56	-1.79	0.00	-41.82	0.00	41.82	3,965.62	1,982.81	5,442.91	2,725.50	1.35	-0.15	0.017
93.63	-6.20	-1.76	0.00	-35.33	0.00	35.33	3,828.48	1,914.24	5,070.31	2,538.92	1.47	-0.15	0.016
95.00	-5.35	-1.67	0.00	-32.91	0.00	32.91	3,776.55	1,888.28	4,932.66	2,470.00	1.51	-0.15	0.015
98.38	-5.19	-1.65	0.00	-27.26	0.00	27.26	2,318.41	1,159.21	3,019.73	1,512.11	1.62	-0.16	0.020
100.00	-4.69	-1.58	0.00	-24.58	0.00	24.58	2,290.04	1,145.02	2,933.41	1,468.89	1.67	-0.16	0.019
105.00	-4.22	-1.48	0.00	-16.71	0.00	16.71	2,183.88	1,091.94	2,652.40	1,328.17	1.84	-0.17	0.015
110.00	-3.77	-1.35	0.00	-9.33	0.00	9.33	2,065.71	1,032.86	2,371.71	1,187.62	2.02	-0.17	0.010
115.00	-3.60	-1.29	0.00	-2.58	0.00	2.58	1,947.54	973.77	2,106.72	1,054.92	2.20	-0.18	0.004
117.00	0.00	0.00	0.00	0.00	0.00	0.00	1,900.28	950.14	2,005.11	1,004.05	2.28	-0.18	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,853.01	926.50	1,906.02	954.43	2.35	-0.18	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	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	19.12	0.00	40.96	0.00	0.00	1658.67	0.00	0.20
0.9D + 1.6W	19.12	0.00	30.72	0.00	0.00	1654.00	0.00	0.20
1.2D + 1.0Di + 1.0Wi	5.47	0.00	62.17	0.00	0.00	467.06	0.00	0.06
(1.2 + 0.2Sds) * DL + E ELFM	2.94	0.00	40.12	0.00	0.00	246.91	0.00	0.03
(1.2 + 0.2Sds) * DL + E EMAM	2.59	0.00	40.12	0.00	0.00	243.45	0.00	0.03
(0.9 - 0.2Sds) * DL + E ELFM	2.94	0.00	28.00	0.00	0.00	246.17	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	2.59	0.00	28.00	0.00	0.00	242.65	0.00	0.03
1.0D + 1.0W	4.22	0.00	34.14	0.00	0.00	365.15	0.00	0.05

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
6,803.16	46.30	65.11	1,658.67	62.17	19.12	24.38

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	3.250	76.000	Round	0	0.00	6.149	104.96	730.72	0.14

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
70.00	32	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	37.49	260.00	0.15	33.60	260.00	0.13

ATTACHMENT 4

neccog

Ashford Brooklyn Canterbury Chaplin Eastford Hampton Killingly Plainfield Pomfret Putnam Scotland Sterling Thompson Union Voluntown Woodstock

Parcel Information:

Report Generated: *1/22/2018 8:51:28 AM*

GIS ID: CT-003-35-C-7

Assessment: $378,900.00

Owner Name: *P & G REALTY LLC*

Appraisal: $541,300.00

Street Address: 174 ASHFORD CENTER RD

Mailing Address: 174 ASHFORD CNTR RD
ASHFORD CT 06278

Land: 1.77

Buildings:

	Land Value:	Improvement Value:	Total Value:
Appraised	$90,500.00	$450,800.00	$541,300.00
Assessed		$315,500.00	$378,900.00

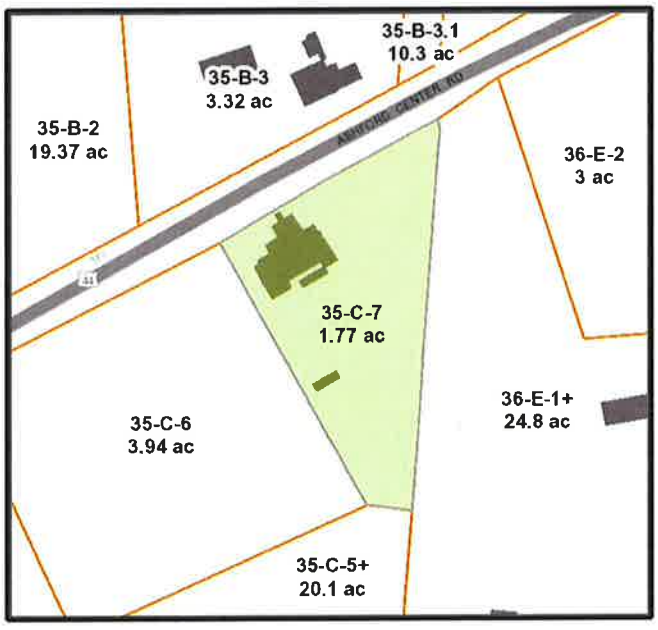
Sale Date:

Sale Price: $0

Year Built: 1937

Primary Structure Area: 5,397.00 sq. ft.

No Photo Available



Taxlot highlighted in blue

174 ASHFORD CENTER RD

Location	174 ASHFORD CENTER RD	**Mblu**	35/ C/ 7/ /
Acct#	35 C 7	**Owner**	P & G REALTY LLC
Assessment	$378,900	**Appraisal**	$541,300
PID	1171	**Building Count**	1
Lot Type		**topoTopography**	
Location			

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$385,900	$7,700	$57,200	$90,500	$541,300
Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$270,100	$5,400	$40,000	$63,400	$378,900

Parcel Addreses

Additional Addresses		
Address	**City, State Zip**	**Type**
174 ASHFORD CENTER RD		Primary

Owner of Record

Owner	P & G REALTY LLC	**Sale Price**	$0
Co-Owner	C/O MIDWAY RESTAURANT	**Certificate**	C
Address	174 ASHFORD CNTR RD ASHFORD, CT 06278	**Book & Page**	141/ 302
		Sale Date	01/26/2004

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
P & G REALTY LLC	$0	C	141/ 302	01/26/2004

Building Information

Building 1 : Section 1

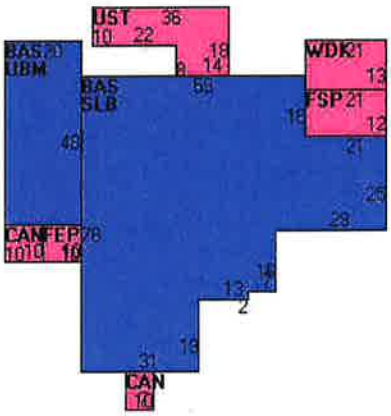
Year Built:	1937
Living Area:	5,397
Replacement Cost:	$787,548
Building Percent Good:	49
Replacement Cost Less Depreciation:	$385,900

Building Attributes	
Field	**Description**
STYLE	Restaurant
MODEL	Commercial
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	Stucco
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	Cust Wd Panel
Interior Floor 1	Ceram Clay Til
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air
AC Type	Central
Bldg Use	Commercial 94
Sprinkler Type	
Sprinkler %	
Mezzanine Fin.	
Mezanine Unf.	
219	
1st Floor Use:	
Heat/AC	Heat/AC Pkg
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Walls	Sus Ceil & Wal
Rooms/Prtns	Average
Wall Height	9
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/AshfordCTPhotos//\00\00\24/6

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	5,397	5,397
CAN	Canopy	170	0
FEP	Enclosed Porch	100	0
FSP	Screened Porch	252	0
SLB	Slab	4,437	0
UBM	Unfinished Basement	960	0
UST	Utility Storage	472	0
WDK	Wood Deck	273	0
		12,061	5,397

Extra Features

Extra Features							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**
CLR1	Cooler			80 S.F.	$2,900	$2,000	1
CLR1	Cooler			108 S.F.	$4,000	$2,800	1
FPL	Fireplace	CM	COMMERCIAL	1 UNITS	$800	$600	1
CLR2	Freezer			1 S.F.	$0	$0	1

Parcel Information

Use Code 200
Description Commercial 94
Deeded Acres 1.77

Land

Land Use

Use Code 200
Description Commercial 94
Zone C
Neighborhood C3
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 1.77
Frontage
Depth
Assessed Value $63,400
Appraised Value $90,500

Outbuildings

Outbuildings							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**
PAV1	Paving Asph.			46738 S.F.	$54,200	$37,900	1
LT1	Light 1			1 UNITS	$800	$600	1
LT2	Light 2			1 UNITS	$2,200	$1,500	1

Valuation History

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$385,900	$7,700	$57,200	$90,500	$541,300
2015	$351,800	$7,600	$16,900	$105,800	$482,100
2014	$351,800	$7,600	$16,900	$105,800	$482,100

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$270,100	$5,400	$40,000	$63,400	$378,900
2015	$246,300	$5,400	$11,800	$74,100	$337,600
2014	$246,300	$5,400	$11,800	$74,100	$337,600

ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 01/31/2018 US POSTAGE $002.38 ZIP 06103 041L122033
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Michael J. Zambo, First Selectman Town of Ashford 5 Town Hall Road Ashford, CT 06278				
2.	Michael Gardner, Land Use Department Administrator Town of Ashford 5 Town Hall Road Ashford, CT 06278				
3.	P&G Realty LLC 174 Ashford Center Road Ashford, CT 06278				
4.					
5.					
6.					

MAIN STREET STATION 06103 JAN 31 2018 U.S.P.S.

PS Form 3665, January 2017 (Page of) PSN 7530-17-000-5549

See Reverse for Instructions