

February 28, 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
478 Good Hill Road, Woodbury, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the top of the existing 147-foot tower at 478 Good Hill Road in Woodbury, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of this tower in 2004. Cellco now intends to replace six (6) of its existing antennas with three (3) model JAHH-65B-R3B, 700/2100 MHz antennas and three (3) model JAHH-65B-R3B, 850 MHz antennas, all at the same level on the tower. Cellco also intends to install six (6) new remote radio heads (“RRHs”) behind its antennas. 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 Woodbury First Selectman, William J. Butterly, Jr.; Maryellen Edwards, Woodbury Town Planner; the Roxbury Land Trust, the owner of the Property; and ATC, the tower owner.

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 RRHs will be installed at the top level of the tower.


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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 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:

William J. Butterly, Jr., First Selectman
Maryellen Edwards, Town Planner
Roxbury Land Trust
ATC
Tim Parks

ATTACHMENT 1



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 at 50°C, maximum, watts	200	200	300	300	300	250
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

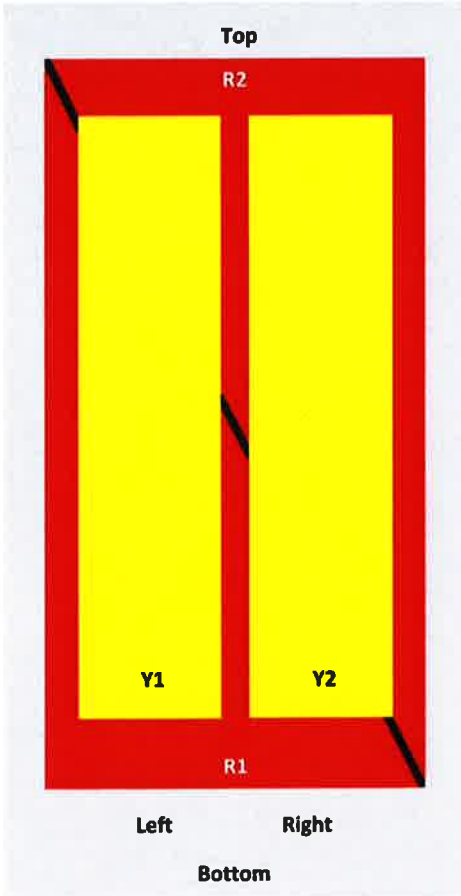
Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2° 14.3	2° 15.0	0° 17.2	0° 17.6	0° 17.7	0° 17.9
	8° 14.3	8° 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.](#)

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	ANXXXXXXXXXXXXX1
R2	824-894	3-4	2	ANXXXXXXXXXXXXX2
Y1	1695-2360	5-6	3	ANXXXXXXXXXXXXX3
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

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	301.0 N @ 150 km/h 67.7 lbf @ 150 km/h
Wind Loading, lateral	254.0 N @ 150 km/h 57.1 lbf @ 150 km/h
Wind Loading, maximum	638.0 N @ 150 km/h 143.4 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



JAHH-65BR3B

Included Products

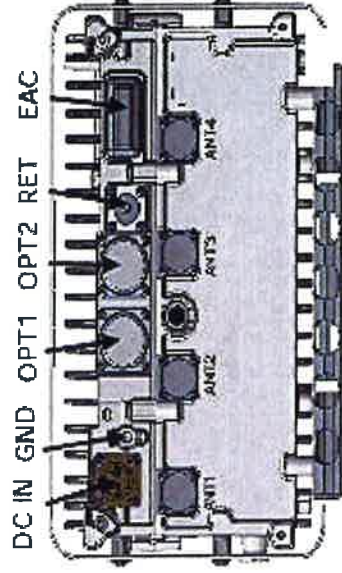
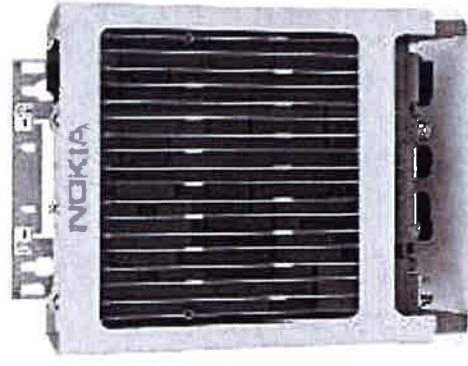
BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* 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 MISO ON]
Antenna Ports	4 Ports, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps
ALD Control Interfaces	AISG3.0 from ANT 1, 2, 3, 4 and RET (power supply ANT1 and ANT3)
Other Interfaces	External Alarm MCR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector



Operational Temperature Range	-40°C to 55°C (with solar cover)
Dimensions (mm)	337 x 295 x 165 (radio only)
Height x width x depth	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

NOKIA

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.



The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

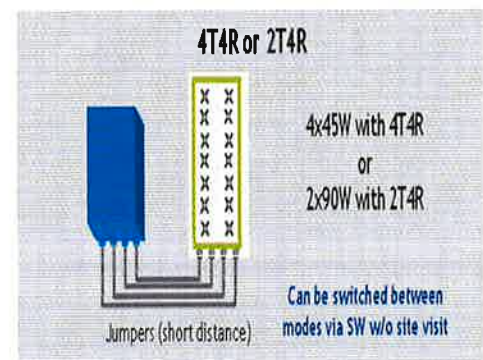
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



TECHNICAL SPECIFICATIONS

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz - 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure - RX Diversity scheme Receiver Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) - 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mm (in.)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 56W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) UL50E Type 4 Enclosure
Wind load (@150km/h or 93mph)	250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

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ATTACHMENT 2

Site Name: Woodbury W Tower Height: 147'		General	Power	Density				
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*AT&T	2	565	124	880	0.0292	0.5867	0.50%	
*AT&T	2	875	124	1900	0.0452	1.0000	0.45%	
*AT&T	1	283	124	880	0.0073	0.5867	0.12%	
*AT&T	4	525	124	1900	0.0542	1.0000	0.54%	
*AT&T	1	1313	124	734	0.0339	0.4893	0.69%	
VZW PCS	1	5062	147	0.0842	1970	1.0	8.42%	
VZW Cellular	3	401	147	0.0200	880	0.5793	3.46%	
VZW Cellular	1	3709	147	0.0617	869	0.5866	10.52%	
VZW AWS	1	7770	147	0.1293	2145	1.0	12.93%	
VZW 700	1	2062	147	0.0343	746	0.4973	6.90%	44.5%
* Source: Siting Council								

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 147 ft Monopole
ATC Site Name : Good Hill CT, CT
ATC Site Number : 411180
Engineering Number : OAA723179_C3_01
Proposed Carrier : Verizon
Carrier Site Name : Woodbury West CT
Carrier Site Number : 469342/2581397
Site Location : 481 Good Hill Road
Woodbury, CT 06798-2507
41.557200,-73.256800
County : Litchfield
Date : February 9, 2018
Max Usage : 40%
Result : Pass

Prepared By:
Christiana Lancaster
Structural Engineer I

Reviewed By:



Feb 9 2018 4:07 PM **cosign**

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 147 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	Summit, PJF Job #29200-1379, dated September 15, 2000
Foundation Drawing	Summit, PJF Job #29200-1300, dated September 14, 2000
Geotechnical Report	Clarence Welti Job #7081, dated March 27, 2000

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:	93 mph (3-Second Gust, V_{asd}) / 120 mph (3-second Gust, V_{ult})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.19$, $S_1 = 0.06$
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					
146.0	147.0	3	Alcatel-Lucent RRH2x60 700	Platform w/ Handrails	(6) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		4	Antel LPA-80080/4CF			
		1	VZW Unused Reserve: 17,520 sq in			
		2	Antel LPA-80063/4CF			
		1	3' Yagi		(1) 1/2" Coax	Woodbury Fire Department
124.0	125.0	6	Powerwave LGP21901	Low Profile Platform	(12) 1 5/8" Coax (4) 0.76" 8 AWG 6 (2) 0.45" Fiber	AT&T Mobility
		6	Powerwave LGP2140X			
		1	Raycap DC6-48-60-18-8F ("Squid")			
		1	Raycap DC6-48-60-18-8F(32.8 lbs)			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 32 B2			
		6	Ericsson RRUS-11			
		6	Powerwave 7770.00			
		1	Kathrein 800 10764			
		2	KMW AM-X-CD-16-65-00T-RET			
3	KMW EPBQ-654L8H6-L2					
117.5	117.5	2	3' Omni-Grid	Flush	(2) 1/2" Coax	Woodbury Fire Department
110.0	110.0	1	8' Yagi	Flush	(1) 1/2" Coax	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
146.0	147.0	6	Commscope SBNHH-1D65B	-	(5) 1 5/8" Coax	Verizon
		3	Alcatel-Lucent RRH2X60-1900A-4R			
		3	Alcatel-Lucent RRH2x60 - AWS Band 4 (20" Height)			
		1	RFS DB-T1-6Z-8AB-0Z			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
146.0	147.0	3	Nokia AirScale RRH 4T4R B5 160W AHCA	Platform w/ Handrails	-	Verizon
		3	Alcatel-Lucent B66A RRH4x45-4R w/o Solar Shield			
		1	RFS DB-C1-12C-24AB-0Z			
		6	Commscope JAHH-65B-R3B (63.3 lb)			

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



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	33%	Pass
Shaft	40%	Pass
Base Plate	26%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,847.2	25%
Axial (Kips)	53.5	18%
Shear (Kips)	25.8	19%

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) (°)
146.0	Nokia AirScale RRH 4T4R B5 160W AHCA	Verizon	0.832	0.558
	Alcatel-Lucent B66A RRH4x45-4R w/o Solar Shield			
	RFS DB-C1-12C-24AB-0Z			
	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 performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

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

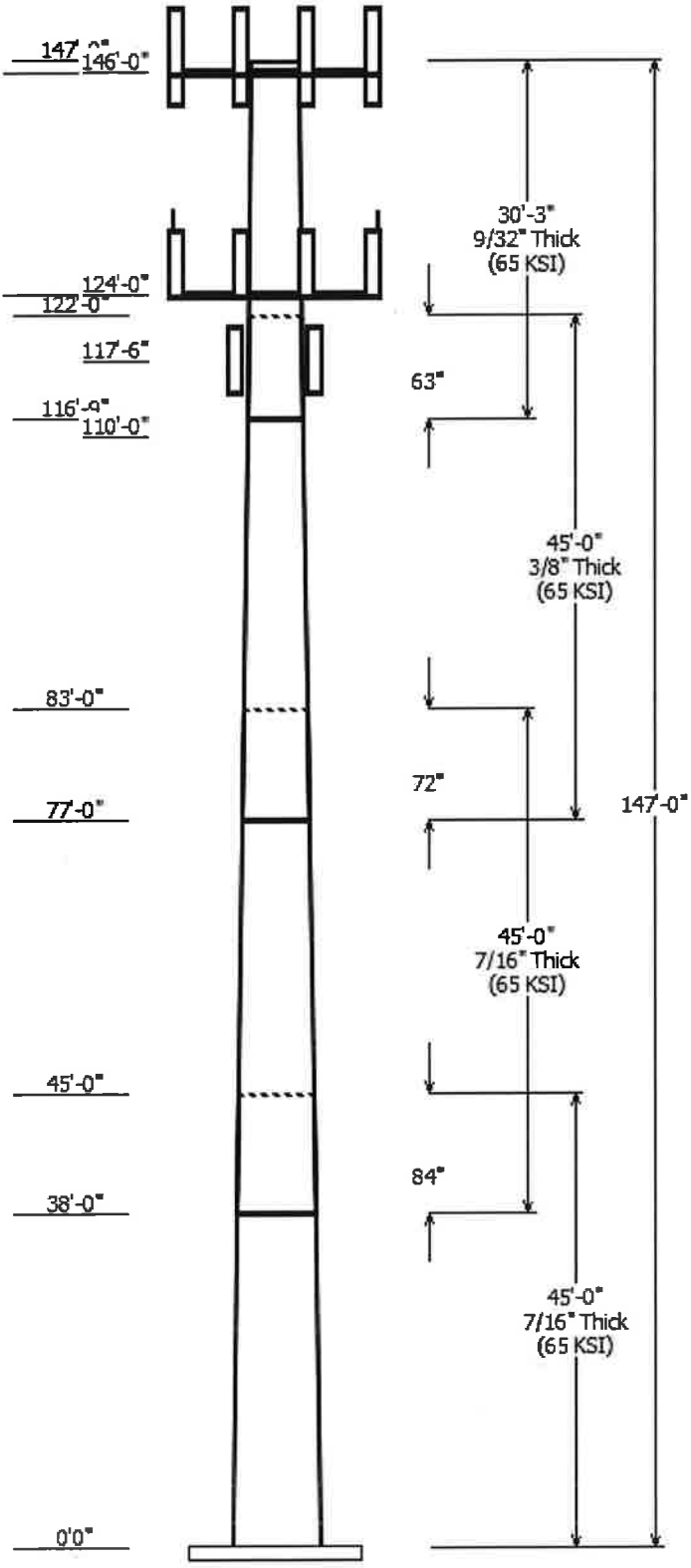
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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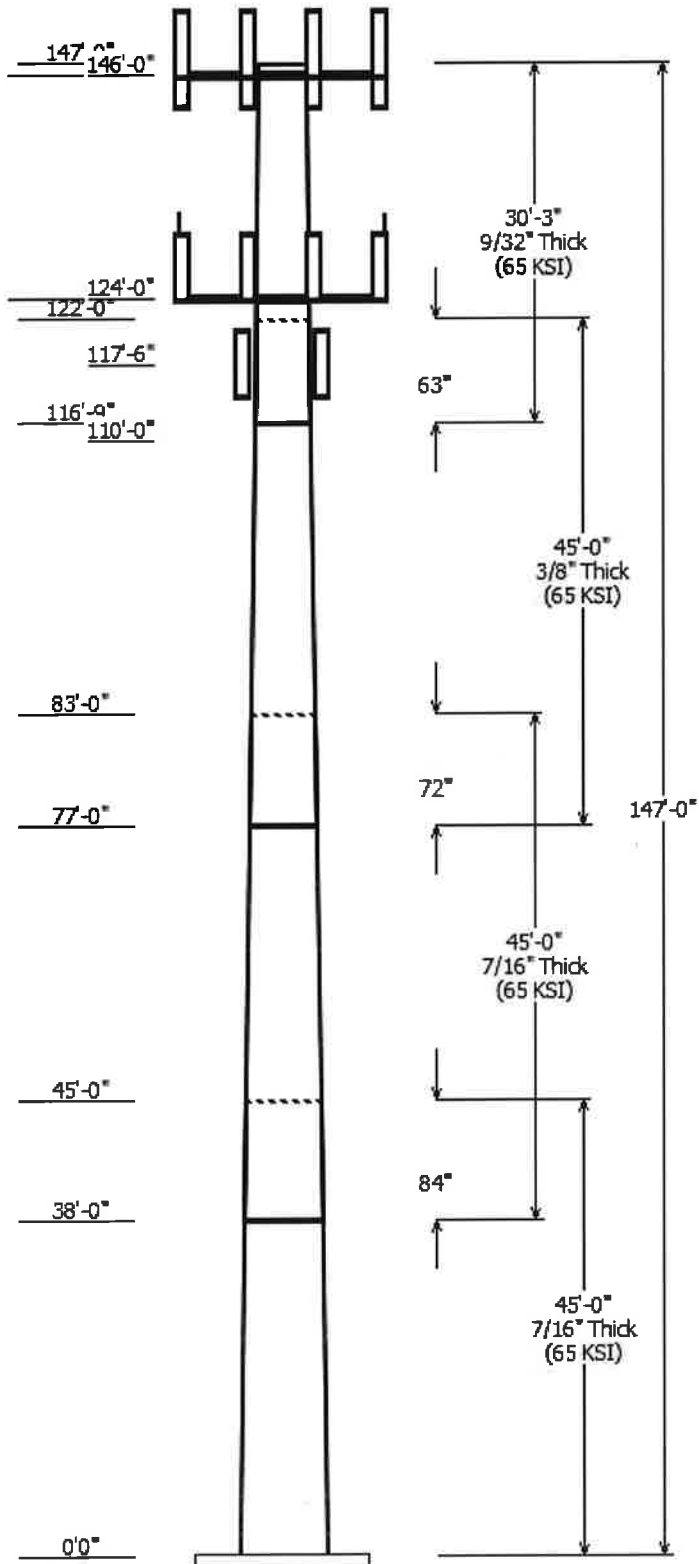
Job Information	
Pole : 411180	Code: ANSI/TIA-222-G
Location : Good Hill CT, CT	
Description : 147' Summit Monopole	
Client : VERIZON WIRELESS	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 147.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.20729(in/ft)	

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Shape	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom					
1	45.000	53.32	62.65	0.438		0.000	18 Sides	65
2	45.000	46.31	55.64	0.438	Slip Joint	84.000	18 Sides	65
3	45.000	38.98	48.31	0.375	Slip Joint	72.000	18 Sides	65
4	30.250	34.36	40.63	0.281	Slip Joint	63.000	18 Sides	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
146.000	147.000	6	Commscope JAHH-65B-R3B	
146.000	147.000	1	RFS DB-C1-12C-24AB-0Z	
146.000	147.000	3	Alcatel-Lucent B66A RRR4x45-	
146.000	147.000	3	Nokia AirScale RRR 4T4R B5 160	
146.000	147.000	3	Alcatel-Lucent RRR2x60 700	
146.000	147.000	1	3' Yagi	
146.000	146.000	1	Flat Platform w/ Handrails	
146.000	146.000	2	Antel LPA-80063/4CF	
146.000	147.000	4	Antel LPA-80080/4CF	
146.000	147.000	1	VZW Unused Reserve: 17,520	
124.000	125.000	3	KMW EPBQ-654L8H6-L2	
124.000	125.000	3	Ericsson RRUS 32 B2	
124.000	125.000	3	Ericsson RRUS 4478 B14	
124.000	125.000	1	Raycap DC6-48-60-18-8F	
124.000	125.000	6	Powerwave LGP21901	
124.000	124.000	1	Round Low Profile Platform	
124.000	125.000	2	KMW AM-X-CD-16-65-00T-RET	
124.000	125.000	1	Kathrein Scala 800 10764	
124.000	125.000	6	Powerwave Allgon 7770.00	
124.000	125.000	6	Ericsson RRUS-11	
124.000	125.000	1	Raycap DC6-48-60-18-8F(32.8 lb	
124.000	125.000	6	Powerwave LGP2140X	
117.500	117.500	2	3' Omni-Grid	
110.000	110.000	1	8' Yagi	

Linear Appurtenance				
Elev (ft)	From	To	Exposed To Wind	
				Description
0.000	110.0		1/2" Coax	No
0.000	117.5		1/2" Coax	No
0.000	124.0		0.45" (11.5mm)	No
0.000	124.0		0.76" 8 AWG 6	No
0.000	124.0		1 5/8" Coax	No
0.000	146.0		1 5/8" (1.63"-	No
0.000	146.0		1 5/8" Coax	No
0.000	146.0		1/2" Coax	No

Load Cases	
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)

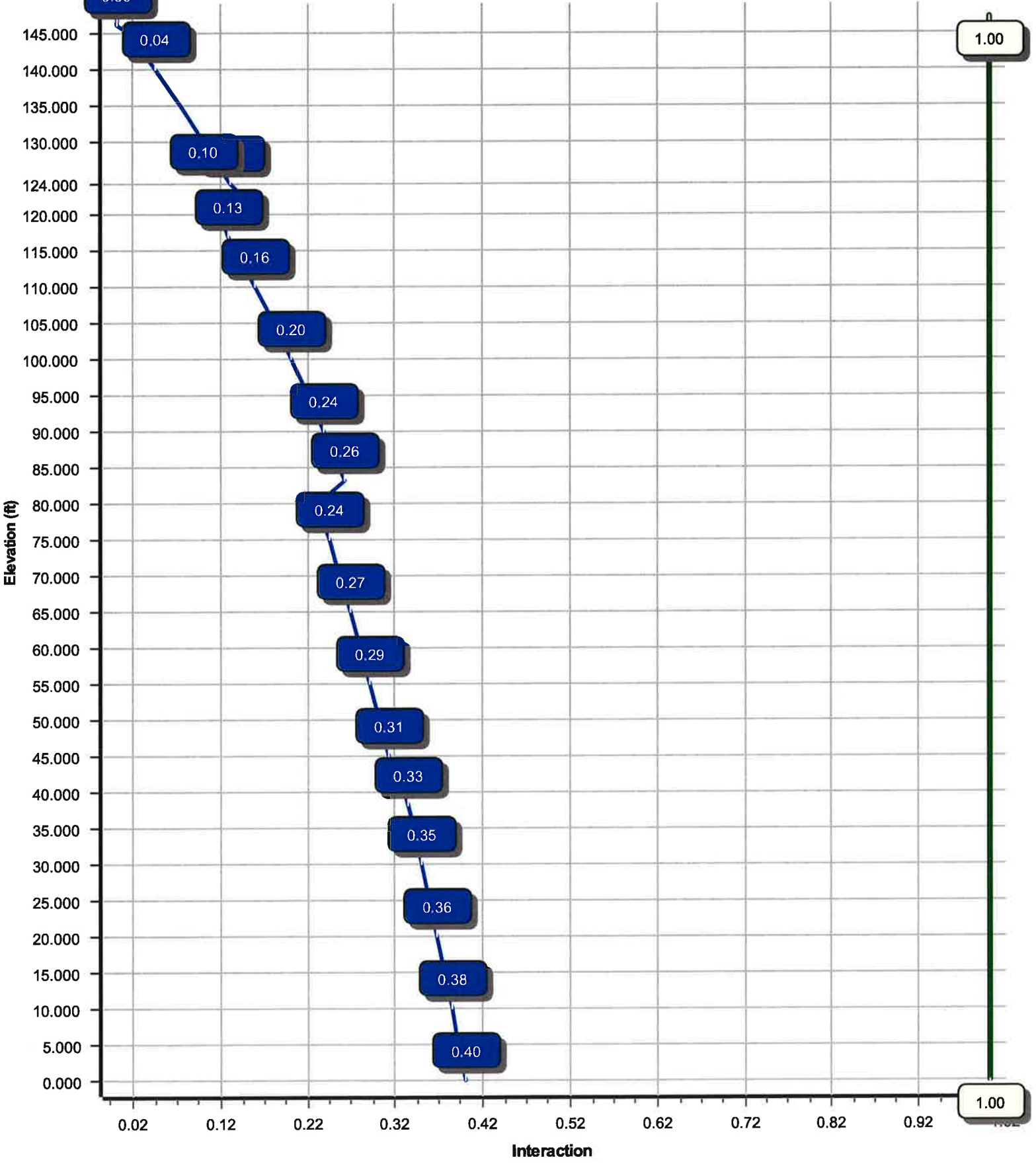


1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2847.22	25.80	53.46
0.9D + 1.6W	2830.27	25.79	40.09
1.2D + 1.0Di + 1.0Wi	583.50	5.39	76.09
(1.2 + 0.2Sds) * DL + E ELFM	212.12	1.88	53.40
(1.2 + 0.2Sds) * DL + E EMAM	286.06	2.43	53.40
(0.9 - 0.2Sds) * DL + E ELFM	210.64	1.88	36.92
(0.9 - 0.2Sds) * DL + E EMAM	283.92	2.43	36.92
1.0D + 1.0W	737.80	6.71	44.57

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 39.69% at 0.0 ft



Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:51 AM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	LITCHFIELD County, CT	Height (ft) :	147
Code :	ANSI/TIA-222-G	Base Diameter (in) :	62.65
Shape :	18 Sides	Top Diameter (in) :	34.36
Pole Type :	Taper	Taper (in/ft) :	0.207
Pole Manufacturer :	Summit Manufacturing	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	1.64		
T _L (sec):	6	p:	1
S _s :	0.195	S ₁ :	0.065
F _a :	1.600	F _v :	2.400
S _{ds} :	0.208	S _{d1} :	0.104
		C _s :	0.042
		C _s Max:	0.042
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:51 AM

Customer: VERIZON WIRELESS

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	45.000	0.4375	65		0.00	12,236	62.65	0.00	86.39	42243.1	23.49	143.20	53.32	45.00	73.43	25947.7	19.73	121.88	0.207297
2-18	45.000	0.4375	65	Slip	84.00	10,747	55.64	38.00	76.66	29524.4	20.66	127.19	46.31	83.00	63.71	16945.2	16.90	105.87	0.207297
3-18	45.000	0.3750	65	Slip	72.00	7,887	48.31	77.00	57.06	16566.1	20.95	128.84	38.98	122.00	45.95	8655.0	16.57	103.96	0.207297
4-18	30.250	0.2813	65	Slip	63.00	3,420	40.63	116.75	36.02	7411.5	23.71	144.48	34.36	147.00	30.42	4465.6	19.78	122.19	0.207297
Shaft Weight						34,290													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
146.00	3' Yagi	1	0.000	1.000	10.00	2.980	1.00
146.00	Alcatel-Lucent B66A RRH4x45-4R	3	0.000	1.000	56.80	2.390	0.67
146.00	Alcatel-Lucent RRH2x60 700	3	0.000	1.000	56.70	2.150	0.67
146.00	Antel LPA-80063/4CF	2	0.000	0.000	20.00	6.140	0.76
146.00	Antel LPA-80080/4CF	4	0.000	1.000	12.00	5.400	0.64
146.00	Commscope JAHH-65B-R3B	6	0.000	1.000	63.30	9.110	0.69
146.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
146.00	Nokia AirScale RRH 4T4R B5 160	3	0.000	1.000	35.50	1.290	0.50
146.00	RFS DB-C1-12C-24AB-0Z	1	0.000	1.000	32.00	4.060	0.67
146.00	VZW Unused Reserve: 17,520 sq	1	0.000	1.000	1553.80	121.77	1.00
124.00	Ericsson RRUS 32 B2	3	0.000	1.000	53.00	2.740	0.67
124.00	Ericsson RRUS 4478 B14	3	0.000	1.000	59.90	1.840	0.50
124.00	Ericsson RRUS-11	6	0.000	1.000	55.00	3.790	0.67
124.00	Kathrein Scala 800 10764	1	0.000	1.000	40.80	5.870	0.67
124.00	KMW AM-X-CD-16-65-00T-RET	2	0.000	1.000	48.50	8.020	0.67
124.00	KMW EPBQ-654L8H6-L2	3	0.000	1.000	72.80	13.240	0.61
124.00	Powerwave Allgon 7770.00	6	0.000	1.000	35.00	5.510	0.65
124.00	Powerwave LGP2140X	6	0.000	1.000	19.00	1.080	0.50
124.00	Powerwave LGP21901	6	0.000	1.000	5.50	0.230	0.50
124.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	1.000	31.80	1.280	1.00
124.00	Raycap DC6-48-60-18-8F(32.8 lb	1	0.000	1.000	32.80	1.280	1.00
124.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
117.50	3' Omni-Grid	2	0.000	0.000	15.00	2.460	1.00
110.00	8' Yagi	1	0.000	0.000	30.00	12.000	1.00
Totals	Num Loadings:24	67			7517.10		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width Flat (in)	Exposed To Wind	Carrier
0.00	146.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0.00	N	Verizon
0.00	146.00	6	1 5/8" Coax	1.98	0.82	N 0.00	N	Verizon
0.00	146.00	1	1/2" Coax	0.63	0.15	N 0.00	N	Woodbury Fire Department
0.00	124.00	2	0.45" (11.5mm) Fiber	0.45	0.08	N 0.00	N	AT&T Mobility
0.00	124.00	4	0.76" 8 AWG 6	0.76	0.53	N 0.00	N	AT&T Mobility
0.00	124.00	12	1 5/8" Coax	1.98	0.82	N 0.00	N	AT&T Mobility
0.00	117.50	2	1/2" Coax	0.63	0.15	N 0.00	N	Woodbury Fire Department
0.00	110.00	1	1/2" Coax	0.63	0.15	N 0.00	N	Woodbury Fire Department

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:51 AM

Customer: VERIZON WIRELESS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.4375	62.650	86.387	42,243.1	23.49	143.20	73.8	1328.	0.0	0.0
5.00		0.4375	61.614	84.947	40,166.7	23.07	140.83	74.3	1284.	0.0	1,457.5
10.00		0.4375	60.577	83.508	38,159.5	22.65	138.46	74.8	1240.	0.0	1,433.0
15.00		0.4375	59.541	82.069	36,220.3	22.23	136.09	75.3	1198.	0.0	1,408.6
20.00		0.4375	58.504	80.630	34,348.0	21.82	133.72	75.7	1156.	0.0	1,384.1
25.00		0.4375	57.468	79.191	32,541.3	21.40	131.35	76.2	1115.	0.0	1,359.6
30.00		0.4375	56.431	77.751	30,799.1	20.98	128.99	76.7	1075.	0.0	1,335.1
35.00		0.4375	55.395	76.312	29,120.2	20.56	126.62	77.2	1035.	0.0	1,310.6
38.00	Bot - Section 2	0.4375	54.773	75.449	28,142.8	20.31	125.19	77.5	1012.	0.0	774.6
40.00		0.4375	54.358	74.873	27,503.5	20.14	124.25	77.7	996.6	0.0	1,031.3
45.00	Top - Section 1	0.4375	54.197	74.649	27,257.1	20.08	123.88	77.8	990.6	0.0	2,543.9
50.00		0.4375	53.160	73.209	25,710.7	19.66	121.51	78.3	952.6	0.0	1,257.8
55.00		0.4375	52.124	71.770	24,224.0	19.24	119.14	78.8	915.4	0.0	1,233.3
60.00		0.4375	51.087	70.331	22,795.7	18.83	116.77	79.3	878.9	0.0	1,208.8
65.00		0.4375	50.051	68.892	21,424.7	18.41	114.40	79.7	843.1	0.0	1,184.4
70.00		0.4375	49.014	67.452	20,109.8	17.99	112.03	80.2	808.1	0.0	1,159.9
75.00		0.4375	47.978	66.013	18,849.8	17.57	109.66	80.7	773.8	0.0	1,135.4
77.00	Bot - Section 3	0.4375	47.563	65.438	18,360.9	17.41	108.72	80.9	760.3	0.0	447.3
80.00		0.4375	46.941	64.574	17,643.6	17.16	107.29	81.2	740.3	0.0	1,242.3
83.00	Top - Section 2	0.3750	47.069	55.576	15,309.8	20.37	125.52	77.4	640.6	0.0	1,225.9
85.00		0.3750	46.655	55.083	14,905.6	20.17	124.41	77.7	629.3	0.0	376.5
90.00		0.3750	45.618	53.849	13,926.4	19.69	121.65	78.2	601.3	0.0	926.7
95.00		0.3750	44.582	52.615	12,991.0	19.20	118.88	78.8	573.9	0.0	905.7
100.00		0.3750	43.545	51.382	12,098.5	18.71	116.12	79.4	547.2	0.0	884.7
105.00		0.3750	42.509	50.148	11,247.8	18.22	113.36	80.0	521.2	0.0	863.7
110.00		0.3750	41.472	48.914	10,438.0	17.74	110.59	80.5	495.7	0.0	842.7
115.00		0.3750	40.436	47.681	9,668.0	17.25	107.83	81.1	470.9	0.0	821.7
116.7	Bot - Section 4	0.3750	40.073	47.249	9,407.7	17.08	106.86	81.3	462.4	0.0	282.6
117.5		0.3750	39.918	47.064	9,297.6	17.01	106.45	81.4	458.8	0.0	212.1
120.00		0.3750	39.399	46.447	8,936.9	16.76	105.07	81.7	446.8	0.0	701.0
122.00	Top - Section 3	0.2813	39.547	35.051	6,827.9	23.03	140.61	74.3	340.1	0.0	554.2
124.00		0.2813	39.133	34.681	6,613.9	22.77	139.14	74.6	332.9	0.0	237.3
125.00		0.2813	38.925	34.496	6,508.6	22.64	138.40	74.8	329.3	0.0	117.7
130.00		0.2813	37.889	33.571	5,998.8	21.99	134.72	75.5	311.8	0.0	579.0
135.00		0.2813	36.852	32.645	5,516.4	21.34	131.03	76.3	294.8	0.0	563.3
140.00		0.2813	35.816	31.720	5,060.5	20.69	127.35	77.1	278.3	0.0	547.6
145.00		0.2813	34.779	30.795	4,630.5	20.04	123.66	77.8	262.2	0.0	531.8
146.00		0.2813	34.572	30.610	4,547.5	19.91	122.92	78.0	259.1	0.0	104.5
147.00		0.2813	34.365	30.425	4,465.6	19.78	122.19	78.1	255.9	0.0	103.8
34,290.2											

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:51 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

93 mph with No Ice

20 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		221.4	0.0					0.0	0.0	221.4	0.0	0.0	0.0
5.00		439.1	1,749.0					0.0	125.2	439.1	1,874.2	0.0	0.0
10.00		431.7	1,719.7					0.0	125.2	431.7	1,844.8	0.0	0.0
15.00		424.3	1,690.3					0.0	125.2	424.3	1,815.4	0.0	0.0
20.00		416.9	1,660.9					0.0	125.2	416.9	1,786.0	0.0	0.0
25.00		409.6	1,631.5					0.0	125.2	409.6	1,756.7	0.0	0.0
30.00		407.0	1,602.1					0.0	125.2	407.0	1,727.3	0.0	0.0
35.00		328.7	1,572.7					0.0	125.2	328.7	1,697.9	0.0	0.0
38.00	Bot - Section 2	209.9	929.5					0.0	75.1	209.9	1,004.6	0.0	0.0
40.00		300.8	1,237.5					0.0	50.1	300.8	1,287.6	0.0	0.0
45.00	Top - Section 1	433.8	3,052.7					0.0	125.2	433.8	3,177.9	0.0	0.0
50.00		438.6	1,509.4					0.0	125.2	438.6	1,634.5	0.0	0.0
55.00		441.9	1,480.0					0.0	125.2	441.9	1,605.2	0.0	0.0
60.00		444.1	1,450.6					0.0	125.2	444.1	1,575.8	0.0	0.0
65.00		445.1	1,421.2					0.0	125.2	445.1	1,546.4	0.0	0.0
70.00		445.3	1,391.8					0.0	125.2	445.3	1,517.0	0.0	0.0
75.00		311.4	1,362.5					0.0	125.2	311.4	1,487.6	0.0	0.0
77.00	Bot - Section 3	224.1	536.8					0.0	50.1	224.1	586.8	0.0	0.0
80.00		270.1	1,490.7					0.0	75.1	270.1	1,565.8	0.0	0.0
83.00	Top - Section 2	224.6	1,471.1					0.0	75.1	224.6	1,546.2	0.0	0.0
85.00		313.1	451.9					0.0	50.1	313.1	501.9	0.0	0.0
90.00		445.3	1,112.0					0.0	125.2	445.3	1,237.2	0.0	0.0
95.00		442.0	1,086.8					0.0	125.2	442.0	1,212.0	0.0	0.0
100.00		438.1	1,061.6					0.0	125.2	438.1	1,186.8	0.0	0.0
105.00		433.6	1,036.4					0.0	125.2	433.6	1,161.6	0.0	0.0
110.00	Appurtenance(s)	428.7	1,011.3	451.1	0.0	0.0	36.0	0.0	125.2	879.9	1,172.4	0.0	0.0
115.00		287.0	986.1					0.0	124.3	287.0	1,110.3	0.0	0.0
116.75	Bot - Section 4	105.9	339.2					0.0	43.5	105.9	382.7	0.0	0.0
117.50	Appurtenance(s)	138.3	254.5	188.5	0.0	0.0	36.0	0.0	18.6	326.8	309.2	0.0	0.0
120.00		190.7	841.2					0.0	61.2	190.7	902.5	0.0	0.0
122.00	Top - Section 3	168.5	665.1					0.0	49.0	168.5	714.0	0.0	0.0
124.00	Appurtenance(s)	125.8	284.7	3,663.9	0.0	2,819.7	3,535.8	0.0	49.0	3,789.7	3,869.5	0.0	0.0
125.00		248.9	141.2					0.0	9.9	248.9	151.2	0.0	0.0
130.00		410.8	694.8					0.0	49.7	410.8	744.6	0.0	0.0
135.00		403.9	676.0					0.0	49.7	403.9	725.7	0.0	0.0
140.00		396.7	657.1					0.0	49.7	396.7	706.8	0.0	0.0
145.00		235.3	638.2					0.0	49.7	235.3	687.9	0.0	0.0
146.00	Appurtenance(s)	77.5	125.4	9,079.1	0.0	7,065.4	5,412.7	0.0	9.9	9,156.6	5,548.0	0.0	0.0
147.00		38.7	124.6					0.0	0.0	38.7	124.6	0.0	0.0
Totals:										25,979.8	53,486.7	0.00	0.00

Site Number: 411180

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:54 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

93 mph with No Ice

20 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	-53.46	-25.80	0.00	-2,847.22	0.00	2,847.22	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.397
5.00	-51.55	-25.45	0.00	-2,718.21	0.00	2,718.21	5,677.95	2,838.97	14,282.8	7,152.06	0.05	-0.09	0.389
10.00	-49.66	-25.09	0.00	-2,590.98	0.00	2,590.98	5,618.68	2,809.34	13,892.6	6,956.64	0.20	-0.19	0.381
15.00	-47.81	-24.74	0.00	-2,465.53	0.00	2,465.53	5,558.13	2,779.06	13,504.3	6,762.21	0.45	-0.28	0.373
20.00	-45.99	-24.39	0.00	-2,341.84	0.00	2,341.84	5,496.31	2,748.16	13,118.2	6,568.87	0.79	-0.38	0.365
25.00	-44.19	-24.04	0.00	-2,219.90	0.00	2,219.90	5,433.22	2,716.61	12,734.4	6,376.70	1.24	-0.47	0.356
30.00	-42.43	-23.68	0.00	-2,099.72	0.00	2,099.72	5,368.85	2,684.43	12,353.1	6,185.76	1.78	-0.57	0.347
35.00	-40.71	-23.39	0.00	-1,981.30	0.00	1,981.30	5,303.22	2,651.61	11,974.5	5,996.16	2.43	-0.66	0.338
38.00	-39.68	-23.20	0.00	-1,911.12	0.00	1,911.12	5,263.22	2,631.61	11,748.6	5,883.07	2.86	-0.72	0.332
40.00	-38.37	-22.93	0.00	-1,864.72	0.00	1,864.72	5,236.31	2,618.15	11,598.6	5,807.97	3.17	-0.75	0.328
45.00	-35.17	-22.51	0.00	-1,750.07	0.00	1,750.07	5,225.77	2,612.88	11,540.4	5,778.78	4.01	-0.85	0.310
50.00	-33.50	-22.10	0.00	-1,637.53	0.00	1,637.53	5,157.39	2,578.69	11,168.0	5,592.31	4.95	-0.94	0.299
55.00	-31.87	-21.68	0.00	-1,527.05	0.00	1,527.05	5,087.73	2,543.87	10,798.8	5,407.44	5.98	-1.03	0.289
60.00	-30.28	-21.25	0.00	-1,418.67	0.00	1,418.67	5,016.81	2,508.40	10,432.9	5,224.23	7.10	-1.12	0.278
65.00	-28.71	-20.81	0.00	-1,312.44	0.00	1,312.44	4,944.61	2,472.30	10,070.5	5,042.78	8.32	-1.20	0.266
70.00	-27.17	-20.38	0.00	-1,208.37	0.00	1,208.37	4,871.14	2,435.57	9,711.87	4,863.15	9.62	-1.28	0.254
75.00	-25.67	-20.05	0.00	-1,106.49	0.00	1,106.49	4,796.39	2,398.20	9,356.98	4,685.44	11.01	-1.37	0.242
77.00	-25.08	-19.83	0.00	-1,066.38	0.00	1,066.38	4,766.14	2,383.07	9,216.13	4,614.92	11.59	-1.40	0.236
80.00	-23.50	-19.55	0.00	-1,006.88	0.00	1,006.88	4,720.37	2,360.19	9,006.08	4,509.74	12.48	-1.45	0.228
83.00	-21.95	-19.30	0.00	-948.25	0.00	948.25	3,873.58	1,936.79	7,430.90	3,720.97	13.41	-1.49	0.261
85.00	-21.44	-18.99	0.00	-909.66	0.00	909.66	3,850.55	1,925.28	7,320.62	3,665.75	14.04	-1.53	0.254
90.00	-20.18	-18.54	0.00	-814.70	0.00	814.70	3,792.09	1,896.05	7,046.72	3,528.60	15.68	-1.61	0.236
95.00	-18.96	-18.09	0.00	-722.00	0.00	722.00	3,732.36	1,866.18	6,775.53	3,392.80	17.41	-1.69	0.218
100.00	-17.77	-17.64	0.00	-631.56	0.00	631.56	3,671.36	1,835.68	6,507.21	3,258.44	19.22	-1.76	0.199
105.00	-16.60	-17.19	0.00	-543.37	0.00	543.37	3,609.08	1,804.54	6,241.92	3,125.60	21.10	-1.83	0.179
110.00	-15.44	-16.29	0.00	-457.43	0.00	457.43	3,545.54	1,772.77	5,979.84	2,994.36	23.05	-1.89	0.157
115.00	-14.33	-15.97	0.00	-376.00	0.00	376.00	3,480.72	1,740.36	5,721.12	2,864.81	25.06	-1.95	0.135
116.75	-13.95	-15.86	0.00	-348.05	0.00	348.05	3,457.73	1,728.86	5,631.39	2,819.88	25.78	-1.97	0.128
117.50	-13.64	-15.52	0.00	-336.16	0.00	336.16	3,447.83	1,723.91	5,593.07	2,800.69	26.09	-1.98	0.124
120.00	-12.74	-15.31	0.00	-297.36	0.00	297.36	3,414.62	1,707.31	5,465.93	2,737.03	27.13	-2.00	0.112
122.00	-12.03	-15.12	0.00	-266.75	0.00	266.75	2,344.26	1,172.13	3,784.97	1,895.30	27.97	-2.02	0.146
124.00	-8.30	-11.19	0.00	-233.70	0.00	233.70	2,329.06	1,164.53	3,720.43	1,862.98	28.82	-2.03	0.129
125.00	-8.15	-10.94	0.00	-222.50	0.00	222.50	2,321.37	1,160.69	3,688.23	1,846.86	29.25	-2.04	0.124
130.00	-7.41	-10.51	0.00	-167.79	0.00	167.79	2,282.20	1,141.10	3,528.04	1,766.64	31.42	-2.09	0.098
135.00	-6.70	-10.08	0.00	-115.24	0.00	115.24	2,241.76	1,120.88	3,369.30	1,687.15	33.62	-2.12	0.071
140.00	-6.00	-9.66	0.00	-64.82	0.00	64.82	2,200.04	1,100.02	3,212.17	1,608.47	35.86	-2.14	0.043
145.00	-5.32	-9.40	0.00	-16.51	0.00	16.51	2,157.05	1,078.53	3,056.82	1,530.68	38.11	-2.16	0.013
146.00	-0.12	-0.04	0.00	-0.04	0.00	0.04	2,148.30	1,074.15	3,025.98	1,515.24	38.56	-2.16	0.000
147.00	0.00	-0.04	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	39.01	-2.16	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:54 AM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

20 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		221.4	0.0					0.0	0.0	221.4	0.0	0.0	0.0
5.00		439.1	1,311.8					0.0	93.9	439.1	1,405.6	0.0	0.0
10.00		431.7	1,289.7					0.0	93.9	431.7	1,383.6	0.0	0.0
15.00		424.3	1,267.7					0.0	93.9	424.3	1,361.6	0.0	0.0
20.00		416.9	1,245.7					0.0	93.9	416.9	1,339.5	0.0	0.0
25.00		409.6	1,223.6					0.0	93.9	409.6	1,317.5	0.0	0.0
30.00		407.0	1,201.6					0.0	93.9	407.0	1,295.5	0.0	0.0
35.00		328.7	1,179.5					0.0	93.9	328.7	1,273.4	0.0	0.0
38.00	Bot - Section 2	209.9	697.2					0.0	56.3	209.9	753.5	0.0	0.0
40.00		300.8	928.2					0.0	37.5	300.8	965.7	0.0	0.0
45.00	Top - Section 1	433.8	2,289.5					0.0	93.9	433.8	2,383.4	0.0	0.0
50.00		438.6	1,132.0					0.0	93.9	438.6	1,225.9	0.0	0.0
55.00		441.9	1,110.0					0.0	93.9	441.9	1,203.9	0.0	0.0
60.00		444.1	1,088.0					0.0	93.9	444.1	1,181.8	0.0	0.0
65.00		445.1	1,065.9					0.0	93.9	445.1	1,159.8	0.0	0.0
70.00		445.3	1,043.9					0.0	93.9	445.3	1,137.8	0.0	0.0
75.00		311.4	1,021.8					0.0	93.9	311.4	1,115.7	0.0	0.0
77.00	Bot - Section 3	224.1	402.6					0.0	37.5	224.1	440.1	0.0	0.0
80.00		270.1	1,118.0					0.0	56.3	270.1	1,174.4	0.0	0.0
83.00	Top - Section 2	224.6	1,103.3					0.0	56.3	224.6	1,159.6	0.0	0.0
85.00		313.1	338.9					0.0	37.5	313.1	376.4	0.0	0.0
90.00		445.3	834.0					0.0	93.9	445.3	927.9	0.0	0.0
95.00		442.0	815.1					0.0	93.9	442.0	909.0	0.0	0.0
100.00		438.1	796.2					0.0	93.9	438.1	890.1	0.0	0.0
105.00		433.6	777.3					0.0	93.9	433.6	871.2	0.0	0.0
110.00	Appurtenance(s)	428.7	758.4	451.1	0.0	0.0	27.0	0.0	93.9	879.9	879.3	0.0	0.0
115.00		287.0	739.6					0.0	93.2	287.0	832.8	0.0	0.0
116.75	Bot - Section 4	105.9	254.4					0.0	32.6	105.9	287.0	0.0	0.0
117.50	Appurtenance(s)	138.3	190.9	188.5	0.0	0.0	27.0	0.0	14.0	326.8	231.9	0.0	0.0
120.00		190.7	630.9					0.0	45.9	190.7	676.9	0.0	0.0
122.00	Top - Section 3	168.5	498.8					0.0	36.7	168.5	535.5	0.0	0.0
124.00	Appurtenance(s)	125.8	213.6	3,663.9	0.0	2,819.7	2,651.8	0.0	36.7	3,789.7	2,902.1	0.0	0.0
125.00		248.9	105.9					0.0	7.5	248.9	113.4	0.0	0.0
130.00		410.8	521.1					0.0	37.3	410.8	558.4	0.0	0.0
135.00		403.9	507.0					0.0	37.3	403.9	544.3	0.0	0.0
140.00		396.7	492.8					0.0	37.3	396.7	530.1	0.0	0.0
145.00		235.3	478.6					0.0	37.3	235.3	515.9	0.0	0.0
146.00	Appurtenance(s)	77.5	94.0	9,079.1	0.0	7,065.4	4,059.5	0.0	7.5	9,156.6	4,161.0	0.0	0.0
147.00		38.7	93.5					0.0	0.0	38.7	93.5	0.0	0.0
Totals:										25,979.8	40,115.0	0.00	0.00

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:57 AM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

20 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	-40.09	-25.79	0.00	-2,830.27	0.00	2,830.27	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.392
5.00	-38.65	-25.41	0.00	-2,701.32	0.00	2,701.32	5,677.95	2,838.97	14,282.8	7,152.06	0.05	-0.09	0.385
10.00	-37.22	-25.04	0.00	-2,574.25	0.00	2,574.25	5,618.68	2,809.34	13,892.6	6,956.64	0.20	-0.19	0.377
15.00	-35.82	-24.67	0.00	-2,449.06	0.00	2,449.06	5,558.13	2,779.06	13,504.3	6,762.21	0.44	-0.28	0.369
20.00	-34.45	-24.30	0.00	-2,325.72	0.00	2,325.72	5,496.31	2,748.16	13,118.2	6,568.87	0.79	-0.37	0.360
25.00	-33.09	-23.93	0.00	-2,204.22	0.00	2,204.22	5,433.22	2,716.61	12,734.4	6,376.70	1.23	-0.47	0.352
30.00	-31.76	-23.57	0.00	-2,084.55	0.00	2,084.55	5,368.85	2,684.43	12,353.1	6,185.76	1.77	-0.56	0.343
35.00	-30.46	-23.27	0.00	-1,966.71	0.00	1,966.71	5,303.22	2,651.61	11,974.5	5,996.16	2.41	-0.66	0.334
38.00	-29.69	-23.07	0.00	-1,896.91	0.00	1,896.91	5,263.22	2,631.61	11,748.6	5,883.07	2.84	-0.71	0.328
40.00	-28.70	-22.79	0.00	-1,850.77	0.00	1,850.77	5,236.31	2,618.15	11,598.6	5,807.97	3.15	-0.75	0.324
45.00	-26.29	-22.37	0.00	-1,736.82	0.00	1,736.82	5,225.77	2,612.88	11,540.4	5,778.78	3.98	-0.84	0.306
50.00	-25.04	-21.95	0.00	-1,624.99	0.00	1,624.99	5,157.39	2,578.69	11,168.0	5,592.31	4.91	-0.93	0.296
55.00	-23.81	-21.52	0.00	-1,515.25	0.00	1,515.25	5,087.73	2,543.87	10,798.8	5,407.44	5.94	-1.02	0.285
60.00	-22.61	-21.09	0.00	-1,407.64	0.00	1,407.64	5,016.81	2,508.40	10,432.9	5,224.23	7.06	-1.11	0.274
65.00	-21.42	-20.65	0.00	-1,302.19	0.00	1,302.19	4,944.61	2,472.30	10,070.5	5,042.78	8.26	-1.19	0.263
70.00	-20.27	-20.21	0.00	-1,198.93	0.00	1,198.93	4,871.14	2,435.57	9,711.87	4,863.15	9.56	-1.27	0.251
75.00	-19.14	-19.89	0.00	-1,097.88	0.00	1,097.88	4,796.39	2,398.20	9,356.98	4,685.44	10.93	-1.36	0.238
77.00	-18.69	-19.67	0.00	-1,058.09	0.00	1,058.09	4,766.14	2,383.07	9,216.13	4,614.92	11.51	-1.39	0.233
80.00	-17.51	-19.39	0.00	-999.07	0.00	999.07	4,720.37	2,360.19	9,006.08	4,509.74	12.40	-1.44	0.225
83.00	-16.34	-19.14	0.00	-940.91	0.00	940.91	3,873.58	1,936.79	7,430.90	3,720.97	13.32	-1.48	0.257
85.00	-15.95	-18.84	0.00	-902.62	0.00	902.62	3,850.55	1,925.28	7,320.62	3,665.75	13.94	-1.51	0.250
90.00	-15.01	-18.39	0.00	-808.43	0.00	808.43	3,792.09	1,896.05	7,046.72	3,528.60	15.57	-1.60	0.233
95.00	-14.09	-17.94	0.00	-716.49	0.00	716.49	3,732.36	1,866.18	6,775.53	3,392.80	17.29	-1.67	0.215
100.00	-13.20	-17.49	0.00	-626.80	0.00	626.80	3,671.36	1,835.68	6,507.21	3,258.44	19.08	-1.75	0.196
105.00	-12.32	-17.05	0.00	-539.34	0.00	539.34	3,609.08	1,804.54	6,241.92	3,125.60	20.95	-1.82	0.176
110.00	-11.45	-16.15	0.00	-454.11	0.00	454.11	3,545.54	1,772.77	5,979.84	2,994.36	22.89	-1.88	0.155
115.00	-10.62	-15.84	0.00	-373.37	0.00	373.37	3,480.72	1,740.36	5,721.12	2,864.81	24.88	-1.94	0.133
116.75	-10.33	-15.73	0.00	-345.65	0.00	345.65	3,457.73	1,728.86	5,631.39	2,819.88	25.60	-1.95	0.126
117.50	-10.11	-15.40	0.00	-333.85	0.00	333.85	3,447.83	1,723.91	5,593.07	2,800.69	25.91	-1.96	0.122
120.00	-9.43	-15.19	0.00	-295.36	0.00	295.36	3,414.62	1,707.31	5,465.93	2,737.03	26.94	-1.99	0.111
122.00	-8.90	-15.00	0.00	-264.99	0.00	264.99	2,344.26	1,172.13	3,784.97	1,895.30	27.77	-2.00	0.144
124.00	-6.13	-11.11	0.00	-232.16	0.00	232.16	2,329.06	1,164.53	3,720.43	1,862.98	28.62	-2.02	0.127
125.00	-6.02	-10.86	0.00	-221.05	0.00	221.05	2,321.37	1,160.69	3,688.23	1,846.86	29.04	-2.03	0.122
130.00	-5.47	-10.44	0.00	-166.73	0.00	166.73	2,282.20	1,141.10	3,528.04	1,766.64	31.19	-2.07	0.097
135.00	-4.93	-10.02	0.00	-114.54	0.00	114.54	2,241.76	1,120.88	3,369.30	1,687.15	33.38	-2.11	0.070
140.00	-4.42	-9.60	0.00	-64.46	0.00	64.46	2,200.04	1,100.02	3,212.17	1,608.47	35.60	-2.13	0.042
145.00	-3.91	-9.35	0.00	-16.46	0.00	16.46	2,157.05	1,078.53	3,056.82	1,530.68	37.83	-2.14	0.013
146.00	-0.09	-0.04	0.00	-0.04	0.00	0.04	2,148.30	1,074.15	3,025.98	1,515.24	38.28	-2.14	0.000
147.00	0.00	-0.04	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	38.73	-2.14	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:40:57 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 0.75 in Radial Ice

19 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		49.0	0.0					0.0	0.0	49.0	0.0	0.0	0.0
5.00		97.4	2,204.8					0.0	125.2	97.4	2,329.9	0.0	0.0
10.00		96.1	2,221.0					0.0	125.2	96.1	2,346.1	0.0	0.0
15.00		94.7	2,209.6					0.0	125.2	94.7	2,334.8	0.0	0.0
20.00		93.3	2,189.3					0.0	125.2	93.3	2,314.4	0.0	0.0
25.00		91.8	2,164.3					0.0	125.2	91.8	2,289.4	0.0	0.0
30.00		91.4	2,136.4					0.0	125.2	91.4	2,261.5	0.0	0.0
35.00		73.9	2,106.5					0.0	125.2	73.9	2,231.6	0.0	0.0
38.00	Bot - Section 2	47.2	1,250.1					0.0	75.1	47.2	1,325.2	0.0	0.0
40.00		67.7	1,454.5					0.0	50.1	67.7	1,504.5	0.0	0.0
45.00	Top - Section 1	97.8	3,589.8					0.0	125.2	97.8	3,715.0	0.0	0.0
50.00		99.0	2,042.6					0.0	125.2	99.0	2,167.7	0.0	0.0
55.00		100.0	2,008.5					0.0	125.2	100.0	2,133.6	0.0	0.0
60.00		100.6	1,973.8					0.0	125.2	100.6	2,098.9	0.0	0.0
65.00		101.0	1,938.5					0.0	125.2	101.0	2,063.7	0.0	0.0
70.00		101.2	1,902.8					0.0	125.2	101.2	2,027.9	0.0	0.0
75.00		70.9	1,866.6					0.0	125.2	70.9	1,991.8	0.0	0.0
77.00	Bot - Section 3	51.0	737.7					0.0	50.1	51.0	787.8	0.0	0.0
80.00		61.6	1,794.0					0.0	75.1	61.6	1,869.1	0.0	0.0
83.00	Top - Section 2	51.2	1,771.7					0.0	75.1	51.2	1,846.8	0.0	0.0
85.00		71.5	651.2					0.0	50.1	71.5	701.2	0.0	0.0
90.00		101.9	1,601.6					0.0	125.2	101.9	1,726.8	0.0	0.0
95.00		101.3	1,568.5					0.0	125.2	101.3	1,693.6	0.0	0.0
100.00		100.6	1,535.0					0.0	125.2	100.6	1,660.2	0.0	0.0
105.00		99.8	1,501.4					0.0	125.2	99.8	1,626.6	0.0	0.0
110.00	Appurtenance(s)	98.9	1,467.6	192.9	0.0	0.0	267.1	0.0	125.2	291.7	1,859.8	0.0	0.0
115.00		66.3	1,433.5					0.0	124.3	66.3	1,557.8	0.0	0.0
116.75	Bot - Section 4	24.5	494.9					0.0	43.5	24.5	538.4	0.0	0.0
117.50	Appurtenance(s)	32.0	322.0	120.9	0.0	0.0	193.1	0.0	18.6	152.9	533.7	0.0	0.0
120.00		44.1	1,063.7					0.0	61.2	44.1	1,124.9	0.0	0.0
122.00	Top - Section 3	39.0	841.6					0.0	49.0	39.0	890.6	0.0	0.0
124.00	Appurtenance(s)	29.2	459.8	621.6	0.0	439.1	7,247.5	0.0	49.0	650.7	7,756.3	0.0	0.0
125.00		57.8	228.4					0.0	9.9	57.8	238.4	0.0	0.0
130.00		95.5	1,120.7					0.0	49.7	95.5	1,170.5	0.0	0.0
135.00		94.2	1,092.4					0.0	49.7	94.2	1,142.1	0.0	0.0
140.00		92.7	1,063.9					0.0	49.7	92.7	1,113.6	0.0	0.0
145.00		55.1	1,035.2					0.0	49.7	55.1	1,084.9	0.0	0.0
146.00	Appurtenance(s)	18.2	204.5	1,621.6	0.0	1,284.4	9,618.7	0.0	9.9	1,639.8	9,833.2	0.0	0.0
147.00		9.1	203.3					0.0	0.0	9.1	203.3	0.0	0.0
Totals:										5,425.44	76,095.6	0.00	0.00

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:41:00 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 0.75 in Radial Ice

19 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	-76.09	-5.39	0.00	-583.50	0.00	583.50	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.093
5.00	-73.76	-5.32	0.00	-556.56	0.00	556.56	5,677.95	2,838.97	14,282.8	7,152.06	0.01	-0.02	0.091
10.00	-71.42	-5.24	0.00	-529.98	0.00	529.98	5,618.68	2,809.34	13,892.6	6,956.64	0.04	-0.04	0.089
15.00	-69.08	-5.17	0.00	-503.77	0.00	503.77	5,558.13	2,779.06	13,504.3	6,762.21	0.09	-0.06	0.087
20.00	-66.76	-5.10	0.00	-477.93	0.00	477.93	5,496.31	2,748.16	13,118.2	6,568.87	0.16	-0.08	0.085
25.00	-64.47	-5.02	0.00	-452.46	0.00	452.46	5,433.22	2,716.61	12,734.4	6,376.70	0.25	-0.10	0.083
30.00	-62.21	-4.95	0.00	-427.35	0.00	427.35	5,368.85	2,684.43	12,353.1	6,185.76	0.36	-0.12	0.081
35.00	-59.98	-4.88	0.00	-402.62	0.00	402.62	5,303.22	2,651.61	11,974.5	5,996.16	0.50	-0.13	0.078
38.00	-58.65	-4.84	0.00	-387.96	0.00	387.96	5,263.22	2,631.61	11,748.6	5,883.07	0.58	-0.15	0.077
40.00	-57.14	-4.79	0.00	-378.28	0.00	378.28	5,236.31	2,618.15	11,598.6	5,807.97	0.65	-0.15	0.076
45.00	-53.43	-4.69	0.00	-354.35	0.00	354.35	5,225.77	2,612.88	11,540.4	5,778.78	0.82	-0.17	0.072
50.00	-51.26	-4.60	0.00	-330.88	0.00	330.88	5,157.39	2,578.69	11,168.0	5,592.31	1.01	-0.19	0.069
55.00	-49.12	-4.51	0.00	-307.86	0.00	307.86	5,087.73	2,543.87	10,798.8	5,407.44	1.22	-0.21	0.067
60.00	-47.03	-4.42	0.00	-285.30	0.00	285.30	5,016.81	2,508.40	10,432.9	5,224.23	1.45	-0.23	0.064
65.00	-44.96	-4.32	0.00	-263.21	0.00	263.21	4,944.61	2,472.30	10,070.5	5,042.78	1.70	-0.24	0.061
70.00	-42.93	-4.22	0.00	-241.60	0.00	241.60	4,871.14	2,435.57	9,711.87	4,863.15	1.96	-0.26	0.058
75.00	-40.94	-4.15	0.00	-220.48	0.00	220.48	4,796.39	2,398.20	9,356.98	4,685.44	2.24	-0.28	0.056
77.00	-40.15	-4.10	0.00	-212.18	0.00	212.18	4,766.14	2,383.07	9,216.13	4,614.92	2.36	-0.28	0.054
80.00	-38.28	-4.04	0.00	-199.87	0.00	199.87	4,720.37	2,360.19	9,006.08	4,509.74	2.54	-0.29	0.052
83.00	-36.44	-3.98	0.00	-187.76	0.00	187.76	3,873.58	1,936.79	7,430.90	3,720.97	2.73	-0.30	0.060
85.00	-35.73	-3.91	0.00	-179.79	0.00	179.79	3,850.55	1,925.28	7,320.62	3,665.75	2.86	-0.31	0.058
90.00	-34.01	-3.81	0.00	-160.22	0.00	160.22	3,792.09	1,896.05	7,046.72	3,528.60	3.19	-0.32	0.054
95.00	-32.31	-3.71	0.00	-141.16	0.00	141.16	3,732.36	1,866.18	6,775.53	3,392.80	3.54	-0.34	0.050
100.00	-30.65	-3.61	0.00	-122.62	0.00	122.62	3,671.36	1,835.68	6,507.21	3,258.44	3.90	-0.35	0.046
105.00	-29.03	-3.50	0.00	-104.59	0.00	104.59	3,609.08	1,804.54	6,241.92	3,125.60	4.28	-0.37	0.042
110.00	-27.17	-3.20	0.00	-87.08	0.00	87.08	3,545.54	1,772.77	5,979.84	2,994.36	4.67	-0.38	0.037
115.00	-25.61	-3.13	0.00	-71.06	0.00	71.06	3,480.72	1,740.36	5,721.12	2,864.81	5.08	-0.39	0.032
116.75	-25.07	-3.10	0.00	-65.58	0.00	65.58	3,457.73	1,728.86	5,631.39	2,819.88	5.22	-0.39	0.031
117.50	-24.54	-2.95	0.00	-63.25	0.00	63.25	3,447.83	1,723.91	5,593.07	2,800.69	5.28	-0.40	0.030
120.00	-23.41	-2.90	0.00	-55.88	0.00	55.88	3,414.62	1,707.31	5,465.93	2,737.03	5.49	-0.40	0.027
122.00	-22.52	-2.85	0.00	-50.08	0.00	50.08	2,344.26	1,172.13	3,784.97	1,895.30	5.66	-0.40	0.036
124.00	-14.77	-2.15	0.00	-43.94	0.00	43.94	2,329.06	1,164.53	3,720.43	1,862.98	5.83	-0.41	0.030
125.00	-14.53	-2.09	0.00	-41.79	0.00	41.79	2,321.37	1,160.69	3,688.23	1,846.86	5.92	-0.41	0.029
130.00	-13.36	-1.99	0.00	-31.33	0.00	31.33	2,282.20	1,141.10	3,528.04	1,766.64	6.35	-0.42	0.024
135.00	-12.22	-1.89	0.00	-21.39	0.00	21.39	2,241.76	1,120.88	3,369.30	1,687.15	6.79	-0.42	0.018
140.00	-11.11	-1.79	0.00	-11.95	0.00	11.95	2,200.04	1,100.02	3,212.17	1,608.47	7.24	-0.43	0.012
145.00	-10.02	-1.72	0.00	-3.02	0.00	3.02	2,157.05	1,078.53	3,056.82	1,530.68	7.68	-0.43	0.007
146.00	-0.20	-0.01	0.00	-0.01	0.00	0.01	2,148.30	1,074.15	3,025.98	1,515.24	7.77	-0.43	0.000
147.00	0.00	-0.01	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	7.86	-0.43	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:41:01 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

19 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		57.6	0.0					0.0	0.0	57.6	0.0	0.0	0.0
5.00		114.2	1,457.5					0.0	104.3	114.2	1,561.8	0.0	0.0
10.00		112.3	1,433.0					0.0	104.3	112.3	1,537.3	0.0	0.0
15.00		110.4	1,408.6					0.0	104.3	110.4	1,512.9	0.0	0.0
20.00		108.5	1,384.1					0.0	104.3	108.5	1,488.4	0.0	0.0
25.00		106.5	1,359.6					0.0	104.3	106.5	1,463.9	0.0	0.0
30.00		105.9	1,335.1					0.0	104.3	105.9	1,439.4	0.0	0.0
35.00		85.5	1,310.6					0.0	104.3	85.5	1,414.9	0.0	0.0
38.00	Bot - Section 2	54.6	774.6					0.0	62.6	54.6	837.2	0.0	0.0
40.00		78.3	1,031.3					0.0	41.7	78.3	1,073.0	0.0	0.0
45.00	Top - Section 1	112.9	2,543.9					0.0	104.3	112.9	2,648.2	0.0	0.0
50.00		114.1	1,257.8					0.0	104.3	114.1	1,362.1	0.0	0.0
55.00		115.0	1,233.3					0.0	104.3	115.0	1,337.6	0.0	0.0
60.00		115.5	1,208.8					0.0	104.3	115.5	1,313.1	0.0	0.0
65.00		115.8	1,184.4					0.0	104.3	115.8	1,288.7	0.0	0.0
70.00		115.8	1,159.9					0.0	104.3	115.8	1,264.2	0.0	0.0
75.00		81.0	1,135.4					0.0	104.3	81.0	1,239.7	0.0	0.0
77.00	Bot - Section 3	58.3	447.3					0.0	41.7	58.3	489.0	0.0	0.0
80.00		70.3	1,242.3					0.0	62.6	70.3	1,304.9	0.0	0.0
83.00	Top - Section 2	58.4	1,225.9					0.0	62.6	58.4	1,288.5	0.0	0.0
85.00		81.5	376.5					0.0	41.7	81.5	418.3	0.0	0.0
90.00		115.8	926.7					0.0	104.3	115.8	1,031.0	0.0	0.0
95.00		115.0	905.7					0.0	104.3	115.0	1,010.0	0.0	0.0
100.00		114.0	884.7					0.0	104.3	114.0	989.0	0.0	0.0
105.00		112.8	863.7					0.0	104.3	112.8	968.0	0.0	0.0
110.00	Appurtenance(s)	111.5	842.7	117.4	0.0	0.0	30.0	0.0	104.3	228.9	977.0	0.0	0.0
115.00		74.7	821.7					0.0	103.6	74.7	925.3	0.0	0.0
116.75	Bot - Section 4	27.6	282.6					0.0	36.2	27.6	318.9	0.0	0.0
117.50	Appurtenance(s)	36.0	212.1	49.0	0.0	0.0	30.0	0.0	15.5	85.0	257.6	0.0	0.0
120.00		49.6	701.0					0.0	51.0	49.6	752.1	0.0	0.0
122.00	Top - Section 3	43.8	554.2					0.0	40.8	43.8	595.0	0.0	0.0
124.00	Appurtenance(s)	32.7	237.3	953.2	0.0	733.5	2,946.5	0.0	40.8	985.9	3,224.6	0.0	0.0
125.00		64.8	117.7					0.0	8.3	64.8	126.0	0.0	0.0
130.00		106.9	579.0					0.0	41.5	106.9	620.5	0.0	0.0
135.00		105.1	563.3					0.0	41.5	105.1	604.7	0.0	0.0
140.00		103.2	547.6					0.0	41.5	103.2	589.0	0.0	0.0
145.00		61.2	531.8					0.0	41.5	61.2	573.3	0.0	0.0
146.00	Appurtenance(s)	20.2	104.5	2,361.9	0.0	1,838.0	4,510.6	0.0	8.3	2,382.0	4,623.4	0.0	0.0
147.00		10.1	103.8					0.0	0.0	10.1	103.8	0.0	0.0
Totals:										6,758.56	44,572.2	0.00	0.00

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:41:03 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

19 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	-44.57	-6.71	0.00	-737.80	0.00	737.80	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.108
5.00	-43.01	-6.61	0.00	-704.26	0.00	704.26	5,677.95	2,838.97	14,282.8	7,152.06	0.01	-0.02	0.106
10.00	-41.47	-6.52	0.00	-671.19	0.00	671.19	5,618.68	2,809.34	13,892.6	6,956.64	0.05	-0.05	0.104
15.00	-39.95	-6.42	0.00	-638.61	0.00	638.61	5,558.13	2,779.06	13,504.3	6,762.21	0.12	-0.07	0.102
20.00	-38.46	-6.33	0.00	-606.49	0.00	606.49	5,496.31	2,748.16	13,118.2	6,568.87	0.21	-0.10	0.099
25.00	-36.99	-6.23	0.00	-574.85	0.00	574.85	5,433.22	2,716.61	12,734.4	6,376.70	0.32	-0.12	0.097
30.00	-35.55	-6.14	0.00	-543.68	0.00	543.68	5,368.85	2,684.43	12,353.1	6,185.76	0.46	-0.15	0.095
35.00	-34.13	-6.06	0.00	-512.98	0.00	512.98	5,303.22	2,651.61	11,974.5	5,996.16	0.63	-0.17	0.092
38.00	-33.30	-6.01	0.00	-494.79	0.00	494.79	5,263.22	2,631.61	11,748.6	5,883.07	0.74	-0.19	0.090
40.00	-32.22	-5.94	0.00	-482.76	0.00	482.76	5,236.31	2,618.15	11,598.6	5,807.97	0.82	-0.20	0.089
45.00	-29.57	-5.83	0.00	-453.06	0.00	453.06	5,225.77	2,612.88	11,540.4	5,778.78	1.04	-0.22	0.084
50.00	-28.21	-5.72	0.00	-423.91	0.00	423.91	5,157.39	2,578.69	11,168.0	5,592.31	1.28	-0.24	0.081
55.00	-26.87	-5.61	0.00	-395.30	0.00	395.30	5,087.73	2,543.87	10,798.8	5,407.44	1.55	-0.27	0.078
60.00	-25.55	-5.50	0.00	-367.24	0.00	367.24	5,016.81	2,508.40	10,432.9	5,224.23	1.84	-0.29	0.075
65.00	-24.26	-5.39	0.00	-339.74	0.00	339.74	4,944.61	2,472.30	10,070.5	5,042.78	2.15	-0.31	0.072
70.00	-23.00	-5.27	0.00	-312.80	0.00	312.80	4,871.14	2,435.57	9,711.87	4,863.15	2.49	-0.33	0.069
75.00	-21.76	-5.19	0.00	-286.44	0.00	286.44	4,796.39	2,398.20	9,356.98	4,685.44	2.85	-0.35	0.066
77.00	-21.27	-5.13	0.00	-276.06	0.00	276.06	4,766.14	2,383.07	9,216.13	4,614.92	3.00	-0.36	0.064
80.00	-19.96	-5.06	0.00	-260.67	0.00	260.67	4,720.37	2,360.19	9,006.08	4,509.74	3.23	-0.37	0.062
83.00	-18.67	-4.99	0.00	-245.49	0.00	245.49	3,873.58	1,936.79	7,430.90	3,720.97	3.47	-0.39	0.071
85.00	-18.25	-4.91	0.00	-235.50	0.00	235.50	3,850.55	1,925.28	7,320.62	3,665.75	3.64	-0.39	0.069
90.00	-17.22	-4.80	0.00	-210.93	0.00	210.93	3,792.09	1,896.05	7,046.72	3,528.60	4.06	-0.42	0.064
95.00	-16.21	-4.68	0.00	-186.94	0.00	186.94	3,732.36	1,866.18	6,775.53	3,392.80	4.51	-0.44	0.059
100.00	-15.22	-4.56	0.00	-163.54	0.00	163.54	3,671.36	1,835.68	6,507.21	3,258.44	4.98	-0.46	0.054
105.00	-14.25	-4.45	0.00	-140.72	0.00	140.72	3,609.08	1,804.54	6,241.92	3,125.60	5.46	-0.47	0.049
110.00	-13.28	-4.21	0.00	-118.48	0.00	118.48	3,545.54	1,772.77	5,979.84	2,994.36	5.97	-0.49	0.043
115.00	-12.35	-4.13	0.00	-97.40	0.00	97.40	3,480.72	1,740.36	5,721.12	2,864.81	6.49	-0.50	0.038
116.75	-12.03	-4.10	0.00	-90.17	0.00	90.17	3,457.73	1,728.86	5,631.39	2,819.88	6.68	-0.51	0.035
117.50	-11.78	-4.02	0.00	-87.09	0.00	87.09	3,447.83	1,723.91	5,593.07	2,800.69	6.76	-0.51	0.035
120.00	-11.02	-3.96	0.00	-77.05	0.00	77.05	3,414.62	1,707.31	5,465.93	2,737.03	7.03	-0.52	0.031
122.00	-10.43	-3.91	0.00	-69.12	0.00	69.12	2,344.26	1,172.13	3,784.97	1,895.30	7.24	-0.52	0.041
124.00	-7.21	-2.90	0.00	-60.56	0.00	60.56	2,329.06	1,164.53	3,720.43	1,862.98	7.46	-0.53	0.036
125.00	-7.09	-2.83	0.00	-57.66	0.00	57.66	2,321.37	1,160.69	3,688.23	1,846.86	7.58	-0.53	0.034
130.00	-6.47	-2.72	0.00	-43.49	0.00	43.49	2,282.20	1,141.10	3,528.04	1,766.64	8.14	-0.54	0.027
135.00	-5.86	-2.61	0.00	-29.87	0.00	29.87	2,241.76	1,120.88	3,369.30	1,687.15	8.71	-0.55	0.020
140.00	-5.28	-2.50	0.00	-16.81	0.00	16.81	2,200.04	1,100.02	3,212.17	1,608.47	9.29	-0.56	0.013
145.00	-4.70	-2.44	0.00	-4.29	0.00	4.29	2,157.05	1,078.53	3,056.82	1,530.68	9.87	-0.56	0.005
146.00	-0.10	-0.01	0.00	-0.01	0.00	0.01	2,148.30	1,074.15	3,025.98	1,515.24	9.99	-0.56	0.000
147.00	0.00	-0.01	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	10.10	-0.56	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

2/9/2018 11:41:03 AM

Customer: VERIZON WIRELESS

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_a):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_{a1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.64
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	1.57
Total Unfactored Dead Load:	44.57 k
Seismic Base Shear (E):	1.88 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)
38	146.50	104	263	0.006	11	129
37	145.50	113	282	0.006	11	140
36	142.50	573	1,389	0.030	56	712
35	137.50	589	1,349	0.029	55	731
34	132.50	605	1,307	0.028	53	751
33	127.50	620	1,262	0.027	51	770
32	124.50	126	247	0.005	10	156
31	123.00	278	535	0.012	22	345
30	121.00	595	1,115	0.024	45	739
29	118.75	752	1,368	0.030	56	934
28	117.13	228	405	0.009	16	283
27	115.88	319	558	0.012	23	396
26	112.50	925	1,546	0.033	63	1,149
25	107.50	947	1,473	0.032	60	1,176
24	102.50	968	1,397	0.030	57	1,202
23	97.50	989	1,320	0.029	54	1,228
22	92.50	1,010	1,241	0.027	50	1,254
21	87.50	1,031	1,161	0.025	47	1,280
20	84.00	418	442	0.010	18	519
19	81.50	1,288	1,297	0.028	53	1,600
18	78.50	1,305	1,239	0.027	50	1,620
17	76.00	489	441	0.010	18	607
16	72.50	1,240	1,039	0.022	42	1,539

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

15	67.50	1,264	947	0.020	38	1,570
14	62.50	1,289	855	0.018	35	1,600
13	57.50	1,313	764	0.017	31	1,630
12	52.50	1,338	675	0.015	27	1,661
11	47.50	1,362	587	0.013	24	1,691
10	42.50	2,648	959	0.021	39	3,288
9	39.00	1,073	339	0.007	14	1,332
8	36.50	837	239	0.005	10	1,039
7	32.50	1,415	336	0.007	14	1,757
6	27.50	1,439	263	0.006	11	1,787
5	22.50	1,464	195	0.004	8	1,818
4	17.50	1,488	134	0.003	5	1,848
3	12.50	1,513	80	0.002	3	1,878
2	7.50	1,537	36	0.001	1	1,909
1	2.50	1,562	7	0.000	0	1,939
Nokia AirScale RRH 4	146.00	106	268	0.006	11	132
Alcatel-Lucent RRH2x	146.00	170	428	0.009	17	211
Alcatel-Lucent B66A	146.00	170	429	0.009	17	212
3' Yagi	146.00	10	25	0.001	1	12
RFS DB-C1-12C-24AB-0	146.00	32	81	0.002	3	40
Antel LPA-80080/4CF	146.00	48	121	0.003	5	60
Antel LPA-80063/4CF	146.00	40	101	0.002	4	50
Commscope JAHH-65B-R	146.00	380	956	0.021	39	472
Flat Platform w/ Han	146.00	2,000	5,033	0.109	205	2,483
VZW Unused Reserve:	146.00	1,554	3,910	0.084	159	1,929
Powerwave LGP21901	124.00	33	64	0.001	3	41
Powerwave LGP2140X	124.00	114	222	0.005	9	142
Raycap DC6-48-60-18-	124.00	33	64	0.001	3	41
Raycap DC6-48-60-18-	124.00	32	62	0.001	3	39
Ericsson RRUS 4478 B	124.00	180	350	0.008	14	223
Ericsson RRUS 32 B2	124.00	159	310	0.007	13	197
Ericsson RRUS-11	124.00	330	643	0.014	26	410
Powerwave Allgon 777	124.00	210	409	0.009	17	261
Kathrein Scala 800 1	124.00	41	79	0.002	3	51
KMW AM-X-CD-16-65-00	124.00	97	189	0.004	8	120
KMW EPBQ-654L8H6-L2	124.00	218	425	0.009	17	271
Round Low Profile PI	124.00	1,500	2,920	0.063	119	1,862
3' Omni-Grid	117.50	30	54	0.001	2	37
8' Yagi	110.00	30	48	0.001	2	37
		44,572	46,279	1.000	1,881	55,341

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)
38	146.50	104	263	0.006	11	89
37	145.50	113	282	0.006	11	97
36	142.50	573	1,389	0.030	56	492
35	137.50	589	1,349	0.029	55	506
34	132.50	605	1,307	0.028	53	519
33	127.50	620	1,262	0.027	51	533
32	124.50	126	247	0.005	10	108
31	123.00	278	535	0.012	22	239
30	121.00	595	1,115	0.024	45	511
29	118.75	752	1,368	0.030	56	646
28	117.13	228	405	0.009	16	195
27	115.88	319	558	0.012	23	274
26	112.50	925	1,546	0.033	63	794
25	107.50	947	1,473	0.032	60	813
24	102.50	968	1,397	0.030	57	831

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

23	97.50	989	1,320	0.029	54	849
22	92.50	1,010	1,241	0.027	50	867
21	87.50	1,031	1,161	0.025	47	885
20	84.00	418	442	0.010	18	359
19	81.50	1,288	1,297	0.028	53	1,106
18	78.50	1,305	1,239	0.027	50	1,120
17	76.00	489	441	0.010	18	420
16	72.50	1,240	1,039	0.022	42	1,064
15	67.50	1,264	947	0.020	38	1,085
14	62.50	1,289	855	0.018	35	1,106
13	57.50	1,313	764	0.017	31	1,127
12	52.50	1,338	675	0.015	27	1,148
11	47.50	1,362	587	0.013	24	1,169
10	42.50	2,648	959	0.021	39	2,273
9	39.00	1,073	339	0.007	14	921
8	36.50	837	239	0.005	10	719
7	32.50	1,415	336	0.007	14	1,215
6	27.50	1,439	263	0.006	11	1,236
5	22.50	1,464	195	0.004	8	1,257
4	17.50	1,488	134	0.003	5	1,278
3	12.50	1,513	80	0.002	3	1,299
2	7.50	1,537	36	0.001	1	1,320
1	2.50	1,562	7	0.000	0	1,341
Nokia AirScale RRH 4	146.00	106	268	0.006	11	91
Alcatel-Lucent RRH2x	146.00	170	428	0.009	17	146
Alcatel-Lucent B66A	146.00	170	429	0.009	17	146
3' Yagi	146.00	10	25	0.001	1	9
RFS DB-C1-12C-24AB-0	146.00	32	81	0.002	3	27
Antel LPA-80080/4CF	146.00	48	121	0.003	5	41
Antel LPA-80063/4CF	146.00	40	101	0.002	4	34
Commscope JAHH-65B-R	146.00	380	956	0.021	39	326
Flat Platform w/ Han	146.00	2,000	5,033	0.109	205	1,717
VZW Unused Reserve:	146.00	1,554	3,910	0.084	159	1,334
Powerwave LGP21901	124.00	33	64	0.001	3	28
Powerwave LGP2140X	124.00	114	222	0.005	9	98
Raycap DC6-48-60-18-	124.00	33	64	0.001	3	28
Raycap DC6-48-60-18-	124.00	32	62	0.001	3	27
Ericsson RRUS 4478 B	124.00	180	350	0.008	14	154
Ericsson RRUS 32 B2	124.00	159	310	0.007	13	136
Ericsson RRUS-11	124.00	330	643	0.014	26	283
Powerwave Allgon 777	124.00	210	409	0.009	17	180
Kathrein Scala 800 1	124.00	41	79	0.002	3	35
KMW AM-X-CD-16-65-00	124.00	97	189	0.004	8	83
KMW EPBQ-654L8H6-L2	124.00	218	425	0.009	17	187
Round Low Profile PI	124.00	1,500	2,920	0.063	119	1,288
3' Omni-Grid	117.50	30	54	0.001	2	26
8' Yagi	110.00	30	48	0.001	2	26
		44,572	46,279	1.000	1,881	38,261

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

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

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	-53.40	-1.88	0.00	-212.12	0.00	212.12	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.038
5.00	-51.49	-1.89	0.00	-202.70	0.00	202.70	5,677.95	2,838.97	14,282.8	7,152.06	0.00	-0.01	0.037
10.00	-49.61	-1.89	0.00	-193.26	0.00	193.26	5,618.68	2,809.34	13,892.6	6,956.64	0.01	-0.01	0.037
15.00	-47.77	-1.89	0.00	-183.81	0.00	183.81	5,558.13	2,779.06	13,504.3	6,762.21	0.03	-0.02	0.036
20.00	-45.95	-1.89	0.00	-174.36	0.00	174.36	5,496.31	2,748.16	13,118.2	6,568.87	0.06	-0.03	0.035
25.00	-44.16	-1.88	0.00	-164.93	0.00	164.93	5,433.22	2,716.61	12,734.4	6,376.70	0.09	-0.04	0.034
30.00	-42.40	-1.87	0.00	-155.52	0.00	155.52	5,368.85	2,684.43	12,353.1	6,185.76	0.13	-0.04	0.033
35.00	-41.36	-1.86	0.00	-146.17	0.00	146.17	5,303.22	2,651.61	11,974.5	5,996.16	0.18	-0.05	0.032
38.00	-40.03	-1.85	0.00	-140.57	0.00	140.57	5,263.22	2,631.61	11,748.6	5,883.07	0.21	-0.05	0.032
40.00	-36.74	-1.81	0.00	-136.87	0.00	136.87	5,236.31	2,618.15	11,598.6	5,807.97	0.24	-0.06	0.031
45.00	-35.05	-1.79	0.00	-127.80	0.00	127.80	5,225.77	2,612.88	11,540.4	5,778.78	0.30	-0.06	0.029
50.00	-33.39	-1.77	0.00	-118.85	0.00	118.85	5,157.39	2,578.69	11,168.0	5,592.31	0.37	-0.07	0.028
55.00	-31.76	-1.74	0.00	-110.02	0.00	110.02	5,087.73	2,543.87	10,798.8	5,407.44	0.44	-0.08	0.027
60.00	-30.16	-1.70	0.00	-101.33	0.00	101.33	5,016.81	2,508.40	10,432.9	5,224.23	0.53	-0.08	0.025
65.00	-28.59	-1.66	0.00	-92.82	0.00	92.82	4,944.61	2,472.30	10,070.5	5,042.78	0.62	-0.09	0.024
70.00	-27.05	-1.62	0.00	-84.50	0.00	84.50	4,871.14	2,435.57	9,711.87	4,863.15	0.71	-0.09	0.023
75.00	-26.44	-1.61	0.00	-76.38	0.00	76.38	4,796.39	2,398.20	9,356.98	4,685.44	0.81	-0.10	0.022
77.00	-24.82	-1.55	0.00	-73.17	0.00	73.17	4,766.14	2,383.07	9,216.13	4,614.92	0.86	-0.10	0.021
80.00	-23.22	-1.50	0.00	-68.51	0.00	68.51	4,720.37	2,360.19	9,006.08	4,509.74	0.92	-0.11	0.020
83.00	-22.71	-1.48	0.00	-64.01	0.00	64.01	3,873.58	1,936.79	7,430.90	3,720.97	0.99	-0.11	0.023
85.00	-21.42	-1.43	0.00	-61.05	0.00	61.05	3,850.55	1,925.28	7,320.62	3,665.75	1.03	-0.11	0.022
90.00	-20.17	-1.38	0.00	-53.88	0.00	53.88	3,792.09	1,896.05	7,046.72	3,528.60	1.15	-0.12	0.021
95.00	-18.94	-1.33	0.00	-46.97	0.00	46.97	3,732.36	1,866.18	6,775.53	3,392.80	1.28	-0.12	0.019
100.00	-17.74	-1.27	0.00	-40.33	0.00	40.33	3,671.36	1,835.68	6,507.21	3,258.44	1.41	-0.13	0.017
105.00	-16.57	-1.21	0.00	-33.97	0.00	33.97	3,609.08	1,804.54	6,241.92	3,125.60	1.54	-0.13	0.015
110.00	-15.38	-1.14	0.00	-27.93	0.00	27.93	3,545.54	1,772.77	5,979.84	2,994.36	1.68	-0.13	0.014
115.00	-14.98	-1.12	0.00	-22.22	0.00	22.22	3,480.72	1,740.36	5,721.12	2,864.81	1.82	-0.14	0.012
116.75	-14.70	-1.10	0.00	-20.26	0.00	20.26	3,457.73	1,728.86	5,631.39	2,819.88	1.87	-0.14	0.011
117.50	-13.73	-1.04	0.00	-19.43	0.00	19.43	3,447.83	1,723.91	5,593.07	2,800.69	1.90	-0.14	0.011
120.00	-12.99	-1.00	0.00	-16.83	0.00	16.83	3,414.62	1,707.31	5,465.93	2,737.03	1.97	-0.14	0.010
122.00	-12.65	-0.97	0.00	-14.84	0.00	14.84	2,344.26	1,172.13	3,784.97	1,895.30	2.03	-0.14	0.013
124.00	-8.83	-0.72	0.00	-12.89	0.00	12.89	2,329.06	1,164.53	3,720.43	1,862.98	2.09	-0.14	0.011
125.00	-8.06	-0.67	0.00	-12.17	0.00	12.17	2,321.37	1,160.69	3,688.23	1,846.86	2.12	-0.14	0.010
130.00	-7.31	-0.61	0.00	-8.83	0.00	8.83	2,282.20	1,141.10	3,528.04	1,766.64	2.27	-0.15	0.008
135.00	-6.58	-0.56	0.00	-5.76	0.00	5.76	2,241.76	1,120.88	3,369.30	1,687.15	2.42	-0.15	0.006
140.00	-5.87	-0.50	0.00	-2.98	0.00	2.98	2,200.04	1,100.02	3,212.17	1,608.47	2.58	-0.15	0.005
145.00	-5.73	-0.49	0.00	-0.49	0.00	0.49	2,157.05	1,078.53	3,056.82	1,530.68	2.73	-0.15	0.003
146.00	0.00	0.00	0.00	0.00	0.00	0.00	2,148.30	1,074.15	3,025.98	1,515.24	2.77	-0.15	0.000
147.00	0.00	0.00	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	2.80	-0.15	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.92	-1.88	0.00	-210.64	0.00	210.64	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.035
5.00	-35.60	-1.88	0.00	-201.23	0.00	201.23	5,677.95	2,838.97	14,282.8	7,152.06	0.00	-0.01	0.034
10.00	-34.30	-1.89	0.00	-191.80	0.00	191.80	5,618.68	2,809.34	13,892.6	6,956.64	0.01	-0.01	0.034
15.00	-33.02	-1.88	0.00	-182.38	0.00	182.38	5,558.13	2,779.06	13,504.3	6,762.21	0.03	-0.02	0.033
20.00	-31.77	-1.88	0.00	-172.96	0.00	172.96	5,496.31	2,748.16	13,118.2	6,568.87	0.06	-0.03	0.032
25.00	-30.53	-1.87	0.00	-163.56	0.00	163.56	5,433.22	2,716.61	12,734.4	6,376.70	0.09	-0.03	0.031
30.00	-29.32	-1.86	0.00	-154.21	0.00	154.21	5,368.85	2,684.43	12,353.1	6,185.76	0.13	-0.04	0.030
35.00	-28.60	-1.85	0.00	-144.90	0.00	144.90	5,303.22	2,651.61	11,974.5	5,996.16	0.18	-0.05	0.030
38.00	-27.68	-1.84	0.00	-139.34	0.00	139.34	5,263.22	2,631.61	11,748.6	5,883.07	0.21	-0.05	0.029
40.00	-25.40	-1.80	0.00	-135.66	0.00	135.66	5,236.31	2,618.15	11,598.6	5,807.97	0.23	-0.06	0.028
45.00	-24.23	-1.78	0.00	-126.66	0.00	126.66	5,225.77	2,612.88	11,540.4	5,778.78	0.30	-0.06	0.027
50.00	-23.08	-1.75	0.00	-117.76	0.00	117.76	5,157.39	2,578.69	11,168.0	5,592.31	0.37	-0.07	0.026
55.00	-21.96	-1.72	0.00	-109.00	0.00	109.00	5,087.73	2,543.87	10,798.8	5,407.44	0.44	-0.08	0.024
60.00	-20.85	-1.69	0.00	-100.39	0.00	100.39	5,016.81	2,508.40	10,432.9	5,224.23	0.52	-0.08	0.023
65.00	-19.77	-1.65	0.00	-91.94	0.00	91.94	4,944.61	2,472.30	10,070.5	5,042.78	0.61	-0.09	0.022
70.00	-18.70	-1.61	0.00	-83.69	0.00	83.69	4,871.14	2,435.57	9,711.87	4,863.15	0.71	-0.09	0.021
75.00	-18.28	-1.59	0.00	-75.65	0.00	75.65	4,796.39	2,398.20	9,356.98	4,685.44	0.81	-0.10	0.020
77.00	-17.16	-1.54	0.00	-72.46	0.00	72.46	4,766.14	2,383.07	9,216.13	4,614.92	0.85	-0.10	0.019
80.00	-16.06	-1.49	0.00	-67.85	0.00	67.85	4,720.37	2,360.19	9,006.08	4,509.74	0.91	-0.10	0.018
83.00	-15.70	-1.47	0.00	-63.39	0.00	63.39	3,873.58	1,936.79	7,430.90	3,720.97	0.98	-0.11	0.021
85.00	-14.81	-1.42	0.00	-60.45	0.00	60.45	3,850.55	1,925.28	7,320.62	3,665.75	1.03	-0.11	0.020
90.00	-13.94	-1.37	0.00	-53.35	0.00	53.35	3,792.09	1,896.05	7,046.72	3,528.60	1.14	-0.12	0.019
95.00	-13.10	-1.32	0.00	-46.50	0.00	46.50	3,732.36	1,866.18	6,775.53	3,392.80	1.27	-0.12	0.017
100.00	-12.26	-1.26	0.00	-39.93	0.00	39.93	3,671.36	1,835.68	6,507.21	3,258.44	1.40	-0.12	0.016
105.00	-11.45	-1.20	0.00	-33.64	0.00	33.64	3,609.08	1,804.54	6,241.92	3,125.60	1.53	-0.13	0.014
110.00	-10.63	-1.13	0.00	-27.66	0.00	27.66	3,545.54	1,772.77	5,979.84	2,994.36	1.67	-0.13	0.012
115.00	-10.36	-1.11	0.00	-22.00	0.00	22.00	3,480.72	1,740.36	5,721.12	2,864.81	1.81	-0.14	0.011
116.75	-10.16	-1.09	0.00	-20.06	0.00	20.06	3,457.73	1,728.86	5,631.39	2,819.88	1.86	-0.14	0.010
117.50	-9.49	-1.03	0.00	-19.24	0.00	19.24	3,447.83	1,723.91	5,593.07	2,800.69	1.88	-0.14	0.010
120.00	-8.98	-0.99	0.00	-16.66	0.00	16.66	3,414.62	1,707.31	5,465.93	2,737.03	1.95	-0.14	0.009
122.00	-8.74	-0.96	0.00	-14.69	0.00	14.69	2,344.26	1,172.13	3,784.97	1,895.30	2.01	-0.14	0.011
124.00	-6.11	-0.71	0.00	-12.77	0.00	12.77	2,329.06	1,164.53	3,720.43	1,862.98	2.07	-0.14	0.009
125.00	-5.57	-0.66	0.00	-12.05	0.00	12.05	2,321.37	1,160.69	3,688.23	1,846.86	2.10	-0.14	0.009
130.00	-5.05	-0.61	0.00	-8.74	0.00	8.74	2,282.20	1,141.10	3,528.04	1,766.64	2.25	-0.14	0.007
135.00	-4.55	-0.55	0.00	-5.71	0.00	5.71	2,241.76	1,120.88	3,369.30	1,687.15	2.40	-0.15	0.005
140.00	-4.06	-0.49	0.00	-2.95	0.00	2.95	2,200.04	1,100.02	3,212.17	1,608.47	2.56	-0.15	0.004
145.00	-3.96	-0.48	0.00	-0.48	0.00	0.48	2,157.05	1,078.53	3,056.82	1,530.68	2.71	-0.15	0.002
146.00	0.00	0.00	0.00	0.00	0.00	0.00	2,148.30	1,074.15	3,025.98	1,515.24	2.74	-0.15	0.000
147.00	0.00	0.00	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	2.77	-0.15	0.000

Site Number: 411180

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.64
Redundancy Factor (ρ):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	146.50	104	1.877	1.913	1.116	0.395	27	129
37	145.50	113	1.852	1.784	1.069	0.377	28	140
36	142.50	573	1.776	1.432	0.937	0.327	125	712
35	137.50	589	1.654	0.954	0.745	0.252	99	731
34	132.50	605	1.536	0.592	0.586	0.185	75	751
33	127.50	620	1.422	0.326	0.455	0.129	53	770
32	124.50	126	1.356	0.205	0.388	0.099	8	156
31	123.00	278	1.323	0.154	0.357	0.086	16	345
30	121.00	595	1.281	0.094	0.319	0.069	27	739
29	118.75	752	1.233	0.038	0.280	0.052	26	934
28	117.13	228	1.200	0.005	0.255	0.041	6	283
27	115.88	319	1.174	-0.018	0.236	0.033	7	396
26	112.50	925	1.107	-0.066	0.191	0.014	9	1,149
25	107.50	947	1.011	-0.107	0.137	-0.006	-4	1,176
24	102.50	968	0.919	-0.121	0.095	-0.017	-11	1,202
23	97.50	989	0.831	-0.117	0.063	-0.021	-14	1,228
22	92.50	1,010	0.748	-0.100	0.040	-0.018	-12	1,254
21	87.50	1,031	0.670	-0.077	0.024	-0.009	-6	1,280
20	84.00	418	0.617	-0.059	0.017	-0.001	0	519
19	81.50	1,288	0.581	-0.046	0.013	0.005	4	1,600
18	78.50	1,305	0.539	-0.030	0.009	0.013	11	1,620
17	76.00	489	0.505	-0.018	0.007	0.019	6	607
16	72.50	1,240	0.460	-0.002	0.006	0.027	22	1,539
15	67.50	1,264	0.399	0.019	0.007	0.037	31	1,570
14	62.50	1,289	0.342	0.035	0.009	0.043	37	1,600
13	57.50	1,313	0.289	0.048	0.013	0.048	42	1,630
12	52.50	1,338	0.241	0.057	0.018	0.049	44	1,661
11	47.50	1,362	0.197	0.063	0.024	0.050	45	1,691
10	42.50	2,648	0.158	0.067	0.029	0.049	86	3,288
9	39.00	1,073	0.133	0.069	0.033	0.048	34	1,332
8	36.50	837	0.117	0.070	0.035	0.047	26	1,039
7	32.50	1,415	0.092	0.071	0.038	0.046	43	1,757
6	27.50	1,439	0.066	0.072	0.041	0.044	42	1,787
5	22.50	1,464	0.044	0.071	0.042	0.042	41	1,818

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Site Name: Good Hill CT, CT

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Customer: VERIZON WIRELESS

4	17.50	1,488	0.027	0.067	0.040	0.040	39	1,848
3	12.50	1,513	0.014	0.059	0.035	0.035	36	1,878
2	7.50	1,537	0.005	0.044	0.025	0.027	28	1,909
1	2.50	1,562	0.001	0.019	0.010	0.012	13	1,939
Nokia AirScale RRH 4	146.00	106	1.864	1.848	1.092	0.386	27	132
Alcatel-Lucent RRH2x	146.00	170	1.864	1.848	1.092	0.386	44	211
Alcatel-Lucent B66A	146.00	170	1.864	1.848	1.092	0.386	44	212
3' Yagi	146.00	10	1.864	1.848	1.092	0.386	3	12
RFS DB-C1-12C-24AB-0	146.00	32	1.864	1.848	1.092	0.386	8	40
Antel LPA-80080/4CF	146.00	48	1.864	1.848	1.092	0.386	12	60
Antel LPA-80063/4CF	146.00	40	1.864	1.848	1.092	0.386	10	50
Commscope JAHH-65B-	146.00	380	1.864	1.848	1.092	0.386	98	472
Flat Platform w/ Han	146.00	2,000	1.864	1.848	1.092	0.386	515	2,483
VZW Unused Reserve:	146.00	1,554	1.864	1.848	1.092	0.386	400	1,929
Powerwave LGP21901	124.00	33	1.345	0.187	0.377	0.095	2	41
Powerwave LGP2140X	124.00	114	1.345	0.187	0.377	0.095	7	142
Raycap DC6-48-60-18-	124.00	33	1.345	0.187	0.377	0.095	2	41
Raycap DC6-48-60-18-	124.00	32	1.345	0.187	0.377	0.095	2	39
Ericsson RRUS 4478 B	124.00	180	1.345	0.187	0.377	0.095	11	223
Ericsson RRUS 32 B2	124.00	159	1.345	0.187	0.377	0.095	10	197
Ericsson RRUS-11	124.00	330	1.345	0.187	0.377	0.095	21	410
Powerwave Allgon 777	124.00	210	1.345	0.187	0.377	0.095	13	261
Kathrein Scala 800 1	124.00	41	1.345	0.187	0.377	0.095	3	51
KMW AM-X-CD-16-65-00	124.00	97	1.345	0.187	0.377	0.095	6	120
KMW EPBQ-654L8H6-L2	124.00	218	1.345	0.187	0.377	0.095	14	271
Round Low Profile PI	124.00	1,500	1.345	0.187	0.377	0.095	95	1,862
3' Omni-Grid	117.50	30	1.208	0.012	0.260	0.043	1	37
8' Yagi	110.00	30	1.058	-0.090	0.162	0.003	0	37
		44,572	64.843	28.213	23.611	7.712	2,440	55,341

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)
38	146.50	104	1.877	1.913	1.116	0.395	27	89
37	145.50	113	1.852	1.784	1.069	0.377	28	97
36	142.50	573	1.776	1.432	0.937	0.327	125	492
35	137.50	589	1.654	0.954	0.745	0.252	99	506
34	132.50	605	1.536	0.592	0.586	0.185	75	519
33	127.50	620	1.422	0.326	0.455	0.129	53	533
32	124.50	126	1.356	0.205	0.388	0.099	8	108
31	123.00	278	1.323	0.154	0.357	0.086	16	239
30	121.00	595	1.281	0.094	0.319	0.069	27	511
29	118.75	752	1.233	0.038	0.280	0.052	26	646
28	117.13	228	1.200	0.005	0.255	0.041	6	195
27	115.88	319	1.174	-0.018	0.236	0.033	7	274
26	112.50	925	1.107	-0.066	0.191	0.014	9	794
25	107.50	947	1.011	-0.107	0.137	-0.006	-4	813
24	102.50	968	0.919	-0.121	0.095	-0.017	-11	831
23	97.50	989	0.831	-0.117	0.063	-0.021	-14	849
22	92.50	1,010	0.748	-0.100	0.040	-0.018	-12	867
21	87.50	1,031	0.670	-0.077	0.024	-0.009	-6	885
20	84.00	418	0.617	-0.059	0.017	-0.001	0	359
19	81.50	1,288	0.581	-0.046	0.013	0.005	4	1,106
18	78.50	1,305	0.539	-0.030	0.009	0.013	11	1,120
17	76.00	489	0.505	-0.018	0.007	0.019	6	420
16	72.50	1,240	0.460	-0.002	0.006	0.027	22	1,064
15	67.50	1,264	0.399	0.019	0.007	0.037	31	1,085
14	62.50	1,289	0.342	0.035	0.009	0.043	37	1,106

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Site Name: Good Hill CT, CT

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Customer: VERIZON WIRELESS

13	57.50	1,313	0.289	0.048	0.013	0.048	42	1,127
12	52.50	1,338	0.241	0.057	0.018	0.049	44	1,148
11	47.50	1,362	0.197	0.063	0.024	0.050	45	1,169
10	42.50	2,648	0.158	0.067	0.029	0.049	86	2,273
9	39.00	1,073	0.133	0.069	0.033	0.048	34	921
8	36.50	837	0.117	0.070	0.035	0.047	26	719
7	32.50	1,415	0.092	0.071	0.038	0.046	43	1,215
6	27.50	1,439	0.066	0.072	0.041	0.044	42	1,236
5	22.50	1,464	0.044	0.071	0.042	0.042	41	1,257
4	17.50	1,488	0.027	0.067	0.040	0.040	39	1,278
3	12.50	1,513	0.014	0.059	0.035	0.035	36	1,299
2	7.50	1,537	0.005	0.044	0.025	0.027	28	1,320
1	2.50	1,562	0.001	0.019	0.010	0.012	13	1,341
Nokia AirScale RRH 4	146.00	106	1.864	1.848	1.092	0.386	27	91
Alcatel-Lucent RRH2x	146.00	170	1.864	1.848	1.092	0.386	44	146
Alcatel-Lucent B66A	146.00	170	1.864	1.848	1.092	0.386	44	146
3' Yagi	146.00	10	1.864	1.848	1.092	0.386	3	9
RFS DB-C1-12C-24AB-0	146.00	32	1.864	1.848	1.092	0.386	8	27
Antel LPA-80080/4CF	146.00	48	1.864	1.848	1.092	0.386	12	41
Antel LPA-80063/4CF	146.00	40	1.864	1.848	1.092	0.386	10	34
Commscope JAHH-65B-	146.00	380	1.864	1.848	1.092	0.386	98	326
Flat Platform w/ Han	146.00	2,000	1.864	1.848	1.092	0.386	515	1,717
VZW Unused Reserve:	146.00	1,554	1.864	1.848	1.092	0.386	400	1,334
Powerwave LGP21901	124.00	33	1.345	0.187	0.377	0.095	2	28
Powerwave LGP2140X	124.00	114	1.345	0.187	0.377	0.095	7	98
Raycap DC6-48-60-18-	124.00	33	1.345	0.187	0.377	0.095	2	28
Raycap DC6-48-60-18-	124.00	32	1.345	0.187	0.377	0.095	2	27
Ericsson RRUS 4478 B	124.00	180	1.345	0.187	0.377	0.095	11	154
Ericsson RRUS 32 B2	124.00	159	1.345	0.187	0.377	0.095	10	136
Ericsson RRUS-11	124.00	330	1.345	0.187	0.377	0.095	21	283
Powerwave Allgon 777	124.00	210	1.345	0.187	0.377	0.095	13	180
Kathrein Scala 800 1	124.00	41	1.345	0.187	0.377	0.095	3	35
KMW AM-X-CD-16-65-00	124.00	97	1.345	0.187	0.377	0.095	6	83
KMW EPBQ-654L8H6-L2	124.00	218	1.345	0.187	0.377	0.095	14	187
Round Low Profile PI	124.00	1,500	1.345	0.187	0.377	0.095	95	1,288
3' Omni-Grid	117.50	30	1.208	0.012	0.260	0.043	1	26
8' Yagi	110.00	30	1.058	-0.090	0.162	0.003	0	26
		44,572	64.843	28.213	23.611	7.712	2,440	38,261

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.40	-2.43	0.00	-286.06	0.00	286.06	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.048
5.00	-51.49	-2.41	0.00	-273.90	0.00	273.90	5,677.95	2,838.97	14,282.8	7,152.06	0.01	-0.01	0.047
10.00	-49.61	-2.38	0.00	-261.84	0.00	261.84	5,618.68	2,809.34	13,892.6	6,956.64	0.02	-0.02	0.046
15.00	-47.77	-2.35	0.00	-249.92	0.00	249.92	5,558.13	2,779.06	13,504.3	6,762.21	0.05	-0.03	0.046
20.00	-45.95	-2.32	0.00	-238.16	0.00	238.16	5,496.31	2,748.16	13,118.2	6,568.87	0.08	-0.04	0.045
25.00	-44.16	-2.28	0.00	-226.57	0.00	226.57	5,433.22	2,716.61	12,734.4	6,376.70	0.13	-0.05	0.044
30.00	-42.40	-2.24	0.00	-215.17	0.00	215.17	5,368.85	2,684.43	12,353.1	6,185.76	0.18	-0.06	0.043
35.00	-41.36	-2.22	0.00	-203.95	0.00	203.95	5,303.22	2,651.61	11,974.5	5,996.16	0.25	-0.07	0.042
38.00	-40.03	-2.19	0.00	-197.28	0.00	197.28	5,263.22	2,631.61	11,748.6	5,883.07	0.29	-0.07	0.041
40.00	-36.74	-2.10	0.00	-192.91	0.00	192.91	5,236.31	2,618.15	11,598.6	5,807.97	0.32	-0.08	0.040
45.00	-35.05	-2.06	0.00	-182.39	0.00	182.39	5,225.77	2,612.88	11,540.4	5,778.78	0.41	-0.09	0.038
50.00	-33.39	-2.02	0.00	-172.09	0.00	172.09	5,157.39	2,578.69	11,168.0	5,592.31	0.50	-0.10	0.037
55.00	-31.76	-1.98	0.00	-161.99	0.00	161.99	5,087.73	2,543.87	10,798.8	5,407.44	0.61	-0.11	0.036
60.00	-30.16	-1.95	0.00	-152.08	0.00	152.08	5,016.81	2,508.40	10,432.9	5,224.23	0.72	-0.11	0.035
65.00	-28.59	-1.92	0.00	-142.36	0.00	142.36	4,944.61	2,472.30	10,070.5	5,042.78	0.85	-0.12	0.034
70.00	-27.05	-1.89	0.00	-132.78	0.00	132.78	4,871.14	2,435.57	9,711.87	4,863.15	0.98	-0.13	0.033
75.00	-26.44	-1.89	0.00	-123.31	0.00	123.31	4,796.39	2,398.20	9,356.98	4,685.44	1.13	-0.14	0.032
77.00	-24.82	-1.88	0.00	-119.53	0.00	119.53	4,766.14	2,383.07	9,216.13	4,614.92	1.19	-0.15	0.031
80.00	-23.22	-1.87	0.00	-113.90	0.00	113.90	4,720.37	2,360.19	9,006.08	4,509.74	1.28	-0.15	0.030
83.00	-22.70	-1.87	0.00	-108.29	0.00	108.29	3,873.58	1,936.79	7,430.90	3,720.97	1.38	-0.16	0.035
85.00	-21.42	-1.88	0.00	-104.55	0.00	104.55	3,850.55	1,925.28	7,320.62	3,665.75	1.44	-0.16	0.034
90.00	-20.17	-1.89	0.00	-95.17	0.00	95.17	3,792.09	1,896.05	7,046.72	3,528.60	1.62	-0.17	0.032
95.00	-18.94	-1.90	0.00	-85.73	0.00	85.73	3,732.36	1,866.18	6,775.53	3,392.80	1.80	-0.18	0.030
100.00	-17.74	-1.91	0.00	-76.23	0.00	76.23	3,671.36	1,835.68	6,507.21	3,258.44	1.99	-0.19	0.028
105.00	-16.56	-1.91	0.00	-66.68	0.00	66.68	3,609.08	1,804.54	6,241.92	3,125.60	2.19	-0.20	0.026
110.00	-15.38	-1.90	0.00	-57.11	0.00	57.11	3,545.54	1,772.77	5,979.84	2,994.36	2.40	-0.20	0.023
115.00	-14.98	-1.89	0.00	-47.60	0.00	47.60	3,480.72	1,740.36	5,721.12	2,864.81	2.62	-0.21	0.021
116.75	-14.70	-1.89	0.00	-44.29	0.00	44.29	3,457.73	1,728.86	5,631.39	2,819.88	2.70	-0.21	0.020
117.50	-13.73	-1.86	0.00	-42.87	0.00	42.87	3,447.83	1,723.91	5,593.07	2,800.69	2.73	-0.21	0.019
120.00	-12.99	-1.83	0.00	-38.23	0.00	38.23	3,414.62	1,707.31	5,465.93	2,737.03	2.85	-0.22	0.018
122.00	-12.64	-1.81	0.00	-34.57	0.00	34.57	2,344.26	1,172.13	3,784.97	1,895.30	2.94	-0.22	0.024
124.00	-8.83	-1.60	0.00	-30.95	0.00	30.95	2,329.06	1,164.53	3,720.43	1,862.98	3.03	-0.22	0.020
125.00	-8.06	-1.55	0.00	-29.34	0.00	29.34	2,321.37	1,160.69	3,688.23	1,846.86	3.08	-0.22	0.019
130.00	-7.31	-1.47	0.00	-21.61	0.00	21.61	2,282.20	1,141.10	3,528.04	1,766.64	3.31	-0.23	0.015
135.00	-6.58	-1.37	0.00	-14.26	0.00	14.26	2,241.76	1,120.88	3,369.30	1,687.15	3.56	-0.23	0.011
140.00	-5.86	-1.24	0.00	-7.42	0.00	7.42	2,200.04	1,100.02	3,212.17	1,608.47	3.80	-0.24	0.007
145.00	-5.72	-1.21	0.00	-1.21	0.00	1.21	2,157.05	1,078.53	3,056.82	1,530.68	4.05	-0.24	0.003
146.00	0.00	0.00	0.00	0.00	0.00	0.00	2,148.30	1,074.15	3,025.98	1,515.24	4.10	-0.24	0.000
147.00	0.00	0.00	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	4.15	-0.24	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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Customer: VERIZON WIRELESS

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.92	-2.43	0.00	-283.92	0.00	283.92	5,735.95	2,867.97	14,674.9	7,348.40	0.00	0.00	0.045
5.00	-35.60	-2.41	0.00	-271.77	0.00	271.77	5,677.95	2,838.97	14,282.8	7,152.06	0.01	-0.01	0.044
10.00	-34.30	-2.38	0.00	-259.73	0.00	259.73	5,618.68	2,809.34	13,892.6	6,956.64	0.02	-0.02	0.043
15.00	-33.02	-2.34	0.00	-247.84	0.00	247.84	5,558.13	2,779.06	13,504.3	6,762.21	0.04	-0.03	0.043
20.00	-31.77	-2.31	0.00	-236.12	0.00	236.12	5,496.31	2,748.16	13,118.2	6,568.87	0.08	-0.04	0.042
25.00	-30.53	-2.27	0.00	-224.59	0.00	224.59	5,433.22	2,716.61	12,734.4	6,376.70	0.12	-0.05	0.041
30.00	-29.32	-2.23	0.00	-213.25	0.00	213.25	5,368.85	2,684.43	12,353.1	6,185.76	0.18	-0.06	0.040
35.00	-28.60	-2.21	0.00	-202.11	0.00	202.11	5,303.22	2,651.61	11,974.5	5,996.16	0.24	-0.07	0.039
38.00	-27.67	-2.17	0.00	-195.49	0.00	195.49	5,263.22	2,631.61	11,748.6	5,883.07	0.29	-0.07	0.038
40.00	-25.40	-2.09	0.00	-191.14	0.00	191.14	5,236.31	2,618.15	11,598.6	5,807.97	0.32	-0.08	0.038
45.00	-24.23	-2.04	0.00	-180.71	0.00	180.71	5,225.77	2,612.88	11,540.4	5,778.78	0.40	-0.09	0.036
50.00	-23.08	-2.00	0.00	-170.49	0.00	170.49	5,157.39	2,578.69	11,168.0	5,592.31	0.50	-0.10	0.035
55.00	-21.96	-1.96	0.00	-160.48	0.00	160.48	5,087.73	2,543.87	10,798.8	5,407.44	0.60	-0.10	0.034
60.00	-20.85	-1.93	0.00	-150.68	0.00	150.68	5,016.81	2,508.40	10,432.9	5,224.23	0.72	-0.11	0.033
65.00	-19.76	-1.90	0.00	-141.05	0.00	141.05	4,944.61	2,472.30	10,070.5	5,042.78	0.84	-0.12	0.032
70.00	-18.70	-1.87	0.00	-131.57	0.00	131.57	4,871.14	2,435.57	9,711.87	4,863.15	0.98	-0.13	0.031
75.00	-18.28	-1.87	0.00	-122.21	0.00	122.21	4,796.39	2,398.20	9,356.98	4,685.44	1.12	-0.14	0.030
77.00	-17.16	-1.86	0.00	-118.47	0.00	118.47	4,766.14	2,383.07	9,216.13	4,614.92	1.18	-0.14	0.029
80.00	-16.05	-1.85	0.00	-112.90	0.00	112.90	4,720.37	2,360.19	9,006.08	4,509.74	1.27	-0.15	0.028
83.00	-15.69	-1.85	0.00	-107.35	0.00	107.35	3,873.58	1,936.79	7,430.90	3,720.97	1.37	-0.16	0.033
85.00	-14.81	-1.86	0.00	-103.65	0.00	103.65	3,850.55	1,925.28	7,320.62	3,665.75	1.43	-0.16	0.032
90.00	-13.94	-1.87	0.00	-94.37	0.00	94.37	3,792.09	1,896.05	7,046.72	3,528.60	1.60	-0.17	0.030
95.00	-13.09	-1.88	0.00	-85.02	0.00	85.02	3,732.36	1,866.18	6,775.53	3,392.80	1.78	-0.18	0.029
100.00	-12.26	-1.89	0.00	-75.62	0.00	75.62	3,671.36	1,835.68	6,507.21	3,258.44	1.98	-0.19	0.027
105.00	-11.45	-1.89	0.00	-66.16	0.00	66.16	3,609.08	1,804.54	6,241.92	3,125.60	2.17	-0.19	0.024
110.00	-10.63	-1.88	0.00	-56.68	0.00	56.68	3,545.54	1,772.77	5,979.84	2,994.36	2.38	-0.20	0.022
115.00	-10.35	-1.88	0.00	-47.26	0.00	47.26	3,480.72	1,740.36	5,721.12	2,864.81	2.60	-0.21	0.019
116.75	-10.16	-1.87	0.00	-43.98	0.00	43.98	3,457.73	1,728.86	5,631.39	2,819.88	2.68	-0.21	0.019
117.50	-9.49	-1.84	0.00	-42.57	0.00	42.57	3,447.83	1,723.91	5,593.07	2,800.69	2.71	-0.21	0.018
120.00	-8.98	-1.81	0.00	-37.97	0.00	37.97	3,414.62	1,707.31	5,465.93	2,737.03	2.82	-0.22	0.017
122.00	-8.74	-1.80	0.00	-34.34	0.00	34.34	2,344.26	1,172.13	3,784.97	1,895.30	2.91	-0.22	0.022
124.00	-6.10	-1.59	0.00	-30.75	0.00	30.75	2,329.06	1,164.53	3,720.43	1,862.98	3.00	-0.22	0.019
125.00	-5.57	-1.54	0.00	-29.16	0.00	29.16	2,321.37	1,160.69	3,688.23	1,846.86	3.05	-0.22	0.018
130.00	-5.05	-1.46	0.00	-21.47	0.00	21.47	2,282.20	1,141.10	3,528.04	1,766.64	3.29	-0.23	0.014
135.00	-4.54	-1.36	0.00	-14.17	0.00	14.17	2,241.76	1,120.88	3,369.30	1,687.15	3.53	-0.23	0.010
140.00	-4.05	-1.23	0.00	-7.37	0.00	7.37	2,200.04	1,100.02	3,212.17	1,608.47	3.77	-0.23	0.006
145.00	-3.96	-1.20	0.00	-1.20	0.00	1.20	2,157.05	1,078.53	3,056.82	1,530.68	4.02	-0.24	0.003
146.00	0.00	0.00	0.00	0.00	0.00	0.00	2,148.30	1,074.15	3,025.98	1,515.24	4.06	-0.24	0.000
147.00	0.00	0.00	0.00	0.00	0.00	0.00	2,139.50	1,069.75	2,995.22	1,499.83	4.11	-0.24	0.000

Site Number: 411180

Code: ANSI/TIA-222-G

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Site Name: Good Hill CT, CT

Engineering Number: OAA723179_C3_01

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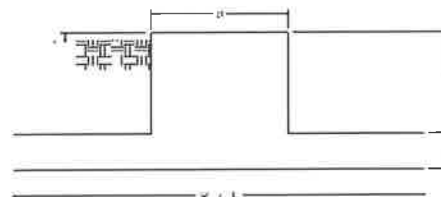
Customer: VERIZON WIRELESS

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	25.80	0.00	53.46	0.00	0.00	2847.22	0.00	0.40
0.9D + 1.6W	25.79	0.00	40.09	0.00	0.00	2830.27	0.00	0.39
1.2D + 1.0Di + 1.0Wi	5.39	0.00	76.09	0.00	0.00	583.50	0.00	0.09
(1.2 + 0.2Sds) * DL + E ELFM	1.88	0.00	53.40	0.00	0.00	212.12	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.43	0.00	53.40	0.00	0.00	286.06	0.00	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.88	0.00	36.92	0.00	0.00	210.64	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.43	0.00	36.92	0.00	0.00	283.92	0.00	0.05
1.0D + 1.0W	6.71	0.00	44.57	0.00	0.00	737.80	0.00	0.11

Site Name: Good Hill CT, CT
 Site Number: 411180
 Engineering Number: OAA723179
 Engineer: Christiana.Lancaster
 Date: 02/09/18
 Tower Type: MP

Program Last Updated: 5/13/2014



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

Design / Analysis / Mapping:

Compression/Leg:	53.5 k	Concrete Strength (f_c):	3000 psi
Uplift/Leg:	0.0 k	Pad Tension Steel Depth:	32.00 in
Total Shear:	25.8 k	ϕ_{Shear} :	0.75
Moment:	2847.2 k-ft	$\phi_{\text{Flexure / Tension}}$:	0.90
Tower + Appurtenance Weight:	53.5 k	$\phi_{\text{Compression}}$:	0.65
Depth to Base of Foundation (l + t - h):	10.00 ft	β :	0.85
Diameter of Pier (d):	8.00 ft	Bottom Pad Rebar Size #:	11
Height of Pier above Ground (h):	0.50 ft	# of Bottom Pad Rebar:	48
Width of Pad (W):	28.00 ft	Pad Bottom Steel Area:	74.88 in ²
Length of Pad (L):	28.00 ft	Pad Steel F_y :	60000 psi
Thickness of Pad (t):	3.00 ft	Top Pad Rebar Size #:	11
Tower Leg Center to Center:	0.00 ft	# of Top Pad Rebar:	48
Number of Tower Legs:	1.0 (1 if MP or GT)	Pad Top Steel Area:	74.88 in ²
Tower Center from Mat Center:	0.00 ft	Pier Rebar Size #:	11
Depth Below Ground Surface to Water Table:	5.00 ft	Pier Steel Area (Single Bar):	1.56 in ²
Unit Weight of Concrete:	150.0 pcf	# of Pier Rebar:	48
Unit Weight of Soil Above Water Table:	135.0 pcf	Pier Steel F_y :	60000 psi
Unit Weight of Water:	62.4 pcf	Pier Cage Diameter:	88.0 in
Unit Weight of Soil Below Water Table:	72.6 pcf	Rebar Strain Limit:	0.008
Friction Angle of Uplift:	15.0 Degrees	Steel Elastic Modulus:	29000 ksi
Ultimate Coefficient of Shear Friction:	0.20	Tie Rebar Size #:	5
Ultimate Compressive Bearing Pressure:	24000.0 psf	Tie Steel Area (Single Bar):	0.31 in ²
Ultimate Passive Pressure on Pad Face:	0.0 psf	Tie Spacing:	4 in
$\phi_{\text{Soil and Concrete Weight}}$:	0.9	Tie Steel F_y :	40000 psi
ϕ_{Soil} :	0.75		

Overtuning Moment Usage

Design OTM:	3118.1 k-ft
OTM Resistance:	12538.8 k-ft
Design OTM / OTM Resistance:	0.25 Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	1287 psf
Factored Nominal Bearing Pressure:	18000 psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.07 Result: OK
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge

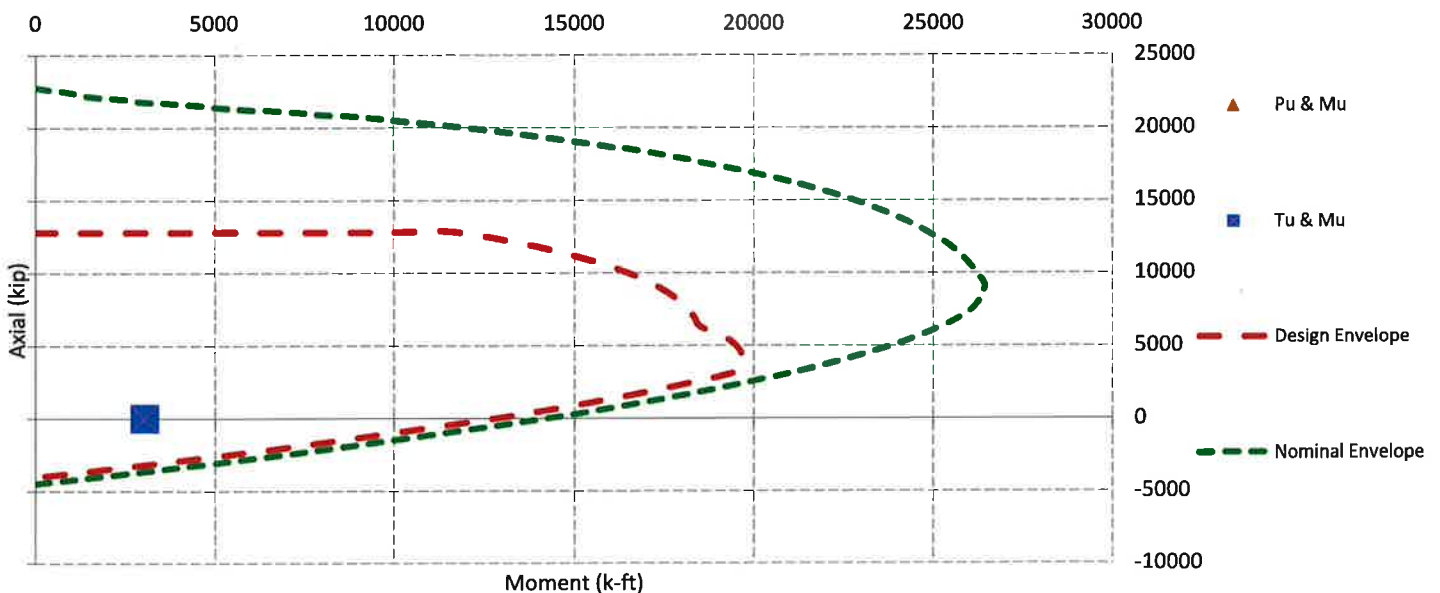
Sliding Factor of Safety

Total Factored Sliding Resistance:	135.4 k
Sliding Design / Sliding Resistance:	0.19 Result: OK

One Way Shear, Flexural Capacity, and Punching Shear

Factored One Way Shear (V_u):	162.9 k
One Way Shear Capacity (ϕV_c):	883.4 k - ACI11.3.1.1
$V_u / \phi V_c$:	0.18 Result: OK
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge
Lower Steel Pad Factored Moment (M_u):	1138.3 k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	10031.8 k-ft - ACI10.3
$M_u / \phi M_n$:	0.11 Result: OK
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge
Upper Steel Pad Factored Moment (M_u):	731.0 k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	10031.8 k-ft
$M_u / \phi M_n$:	0.07 Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0070 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0070 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	7 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	7 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	2.0 k
Nominal Punching Shear Capacity ($\phi_c V_n$):	2114.4 k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00 Result: OK
Factored Moment in Pier (M_u):	3040.7 k-ft
Pier Moment Capacity (ϕM_n):	14499.9 k-ft
$M_u / \phi M_n$:	0.21 Result: OK
Factored Shear in Pier (V_u):	25.8 k
Pier Shear Capacity (ϕV_n):	596.9 k
$V_u / \phi V_c$:	0.04 Result: OK
Pier Shear Reinforcement Ratio:	0.0005 No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0 k
Pier Tension Capacity (ϕT_n):	4043.5 k
$T_u / \phi T_n$:	0.00 Result: OK
Factored Compression in Pier (P_u):	53.5 k
Pier Compression Capacity (ϕP_n):	9498.6 k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01 Result: OK
Pier Compression Reinforcement Ratio:	0.010 OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.21 Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



Site Number: **411180**
 Site Name: **Good Hill CT, CT**
 Job Number: **OAA723179**
 Engineer: **Christiana.Lancaster**
 Date: **2/9/2018**

Last Updated: **9/1/2017**

Base Plate and Bolt Analysis

Moment: **2847.2 k-ft**
 Shear/Leg: **25.8 k**
 Compression/Leg: **53.5 k**

TIA-222 Code Revision (F/G):

Anchor Bolt Arrangement:
 Monopole Shaft Diameter (Across Flats):
 Lower Monopole Thickness:
 # of Sides of Pole:
 Monopole Shaft Yield Strength:
 Baseplate Diameter / Length:
 Base Plate Thickness:
 Base Plate Yield Strength:
 Baseplate Detail Type:
 Include Plate Thickness Beyond Bolt Circle:
 Stress Increase:
 Fillet Weld Size:
 Weld Type (CJP or F/F):
 Weld Strength:

G
Corners
62.7 in
0.438 in
18
65 ksi
70.00
3.00 in
55 ksi
D
Y
1.00
0.313 in
CJP
70 ksi

Anchor Bolts

Anchor Bolt Yield Strength: **75 ksi**
 Anchor Bolt Ultimate Strength: **100 ksi**
 Anchor Bolt Diameter: **2.25 in**
 Anchor Bolt Circle: **70.00 in**
 # of Anchor Bolts: **24**
 Minimum Anchor Bolt Separation: **6.00 in**
 Additional Anchor Bolts Installed: **N**

Baseplate Flexural Capacity

Baseplate Shear Capacity

Failure Mode:	Effective Width (in)	Moment (k-in)	S/Z (in ³)	Capacity (k-in)	Usage	Shear (k)	Area (in ²)	Capacity (k)	Usage
AA	35.21	844.1	79.2	3921.0	0.22	480.6	105.6	3136.8	0.15
BA	37.22	1076.4	83.8	4145.9	0.26	480.6	111.7	3316.7	0.14

Anchor Bolt Capacity

Area of Bolt: **3.25 in²**
 Inertia of Bolt: **0.84 in⁴**
 Total Bolt Inertia: **47761.1 in⁴**
 Maximum Bolt Tension: **79.1 k**
 Maximum Bolt Compression: **83.5 k**
 Bolt Shear: **1.1 k**
 Tensile Bolt Capacity: **259.8 k**
 Compressive Bolt Capacity: **259.8 k**
 Shear Bolt Capacity: **140.3 k**
 Interaction Equation: **0.33 Result: OK**

Base Weld Capacity

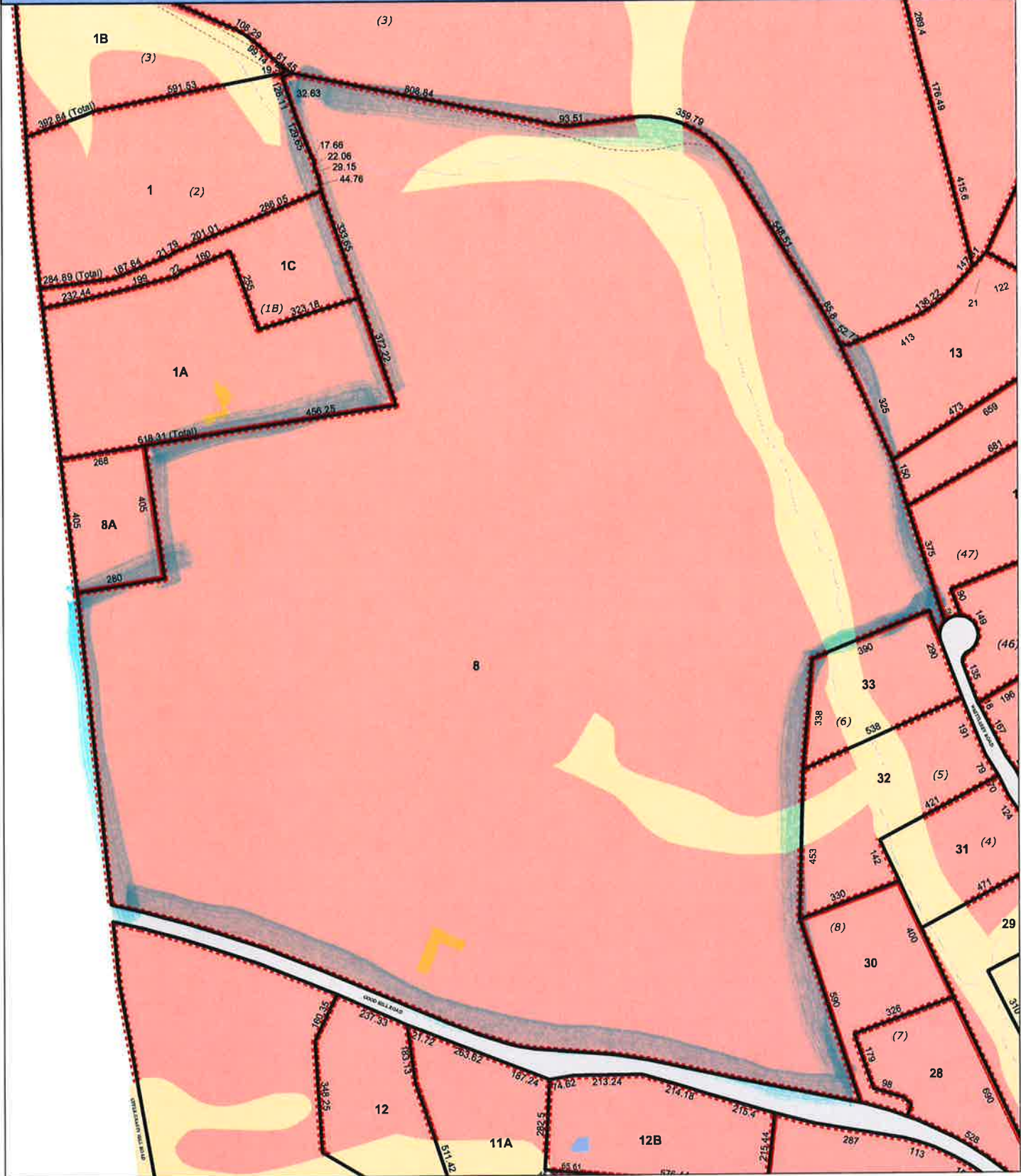
Force / Weld: **8.8 k/in**
 Weld Capacity: **28.5 k/in**
 Interaction Equation: **0.31 Result: OK**

ATTACHMENT 4

Town of Woodbury, Connecticut - Assessment Parcel Map

Parcel: 066-008

Address: 478 GOOD HILL RD



Approximate Scale: 1 inch = 400 feet



Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Woodbury and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced: 2/14/2017

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.

Town of Woodbury

First Deed from the Indians 1659



Information on the Property Records for the Municipality of Woodbury was last updated on 2/17/2018.

Parcel Information

Location:	478 GOOD HILL RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	283410	Map Block Lot:	066-008	Acres:	2.30
490 Acres:	0.00	Zone:	OS100	Volume / Page:	313/ 366
Developers Map / Lot:	29/75	Census:	3621		

Value Information

	Appraised Value	Assessed Value
Land	207,000	144,900
Buildings	0	0
Detached Outbuildings	321,892	225,320
Total	528,892	370,220

Owner's Information

Owner's Data

ROXBURY LAND TRUST INC
 (ALLTEL - CELL TOWER)
 PO BOX 51
 ROXBURY CT 06783

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Building/Equipment Cell Towers	2001	12	28	336
Building/Equipment Cell Towers	2001	12	20	240
Building/Equipment Cell Towers	2001	12	20	240
Fencing Cell Towers	2001			300
Mono Pole Cell Towers	2001			150

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
ROXBURY LAND TRUST INC	313	366	03/23/2004		No	\$0
GOOD HILL FARM LLC	249	458+	05/02/2000		No	\$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
B168-15	Other	08/19/2015		Closed	
B012-14	Other	02/06/2014		Closed	ADD 50 K DIESEL GENERATORS ON 4'X 8' CONCRETE PAD, CONDUIT TO A T A MOUNTED ON EXISTING SHELTER. AL
B229-12	Comm Renovations	11/28/2012		Closed	INSTALL 3 NEW LTE ANTENNAS TO EXISTING MONOPOLE, INSTALL 1 NEW CABIT TO EXISTING SHELTER
9397	Commercial Addition	11/28/2005		Closed	CELL TOWER(150'H)/OWNER:ALLTEL; BP#9397 INSTALL ANTENNAS ON WER;CARRIERS:ATT;VERIZON;CINGU

ATTACHMENT 5



Certificate of Mailing — Firm

Name and Address of Sender

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103

TOTAL NO.
of Pieces Listed by Sender

3

TOTAL NO.
of Pieces Received at Post Office™

3

Affix Stamp Here
Postmark with Date of Receipt.

neopostSM
02/28/2018
US POSTAGE \$002.38

ZIP 06103
0411L1220338

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 Airift

1.

William J. Butcher, Jr., First Selectman
Town of Woodbury
The Shove Building
281 Main Street
Woodbury, CT 06798

2.

Maryellen Edwards, Town Planner
Town of Woodbury
The Shove Building
281 Main Street
Woodbury, CT 06798

3.

Roxbury Land Trust
7 South Street
Roxbury, CT 06783

4.

5.

6.

