

November 9, 2017

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
123 Palmer Road, Chaplin, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the top of an existing 146-foot tower at 123 Palmer Road in Chaplin, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of this tower in 2002 (Docket No. 211). Cellco now intends to replace six (6) of its existing antennas with three (3) model QUAD656C0000X, 850 MHz antennas; three (3) model SBNHH-1D65B, 700 MHz antennas; and three (3) model SBNHH-1D65B, 2100 MHz antennas, for a total of fifteen (15) antennas, all at the same level on the tower. Cellco also intends to install nine (9) remote radio heads (“RRHs”) on its antenna platform and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cables.

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 Matthew Cunningham, First Selectman of the Town of Chaplin; James Gugliotti, Chaplin’s Zoning Official; the Janet Bassett Revocable Living 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 of the existing 146-foot tower.

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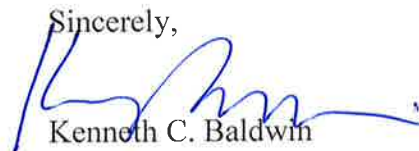
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2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels 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 the modified facility is included in 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:

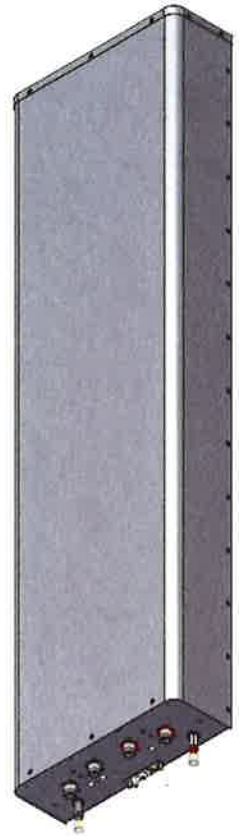
Matthew Cunningham, Chaplin First Selectman
James Gugliotti, Chaplin Zoning Official
Janet Bassett Revocable Living Trust
ATC
Tim Parks

ATTACHMENT 1

QUAD656C0000x

Twin Band | Quad Port | Panel Antenna | (2x) X-Pol | 65° / 65° | 15.0 / 15.0 dBi | Variable Tilt

- Twin band, quad-port panel antenna with variable electrical tilt
- 4x4 MIMO
- Patented internal RET actuator adds no additional length to the antenna



Ordering Options	Model Number
When ordering, replace "x" in the model number with one of the options listed below.	
Manual Electrical Tilt	QUAD656C0000M
Remote Electrical Tilt AISG v2.0 / 3GPP with an MDCU RET Actuator	QUAD656C0000G
Remote Electrical Tilt AISG v2.0 / 3GPP with an MDDU RET Actuator	QUAD656C0000L

Mounting bracket kits and other accessories are ordered separately.

Electrical Characteristics	(2x) 696-900 MHz	
Frequency Bands	696-806 MHz	806-900 MHz
Polarization	(2x) ±45° (Quad-Pol)	
Horizontal Beamwidth	67°	66°
Vertical Beamwidth	13.6°	12.4°
Gain	14.5 dBi	15.0 dBi
Electrical Downtilt	0-12°	
Impedance	50Ω	
VSWR	≤ 1.5:1	
Upper Sidelobe Suppression	18 dB	18 dB
Front-to-Back Ratio	> 25 dB	> 25 dB
Inband Isolation	25 dB	
Isolation Between Bands	28 dB	
IM3 (2x20W carrier)	< -153 dBc	
Input Power	(4x) 500 W	
Total Number of Connectors	Antennas has 4 connectors located at the bottom	
Connectors Per Band	696-900 MHz	(2x) 7/16-DIN Female
	696-900 MHz	(2x) 7/16-DIN Female
Diplexed	No	
Lightning Protection	Direct Ground	
Operating Temperature	-40° to +60° C (-40° to +140° F)	

Mechanical Characteristics			
Dimensions (Length x Width x Depth)	1889 x 520 x 182 mm	74.4 x 20.5 x 7.2 in	
Depth with Z-Brackets	227 mm	8.9 in	
Weight without Mounting Brackets: MET	24.5 kg	54.0 lbs	
Weight without Mounting Brackets: RET	24.8 kg	54.7 lbs	
Survival Wind Speed	> 241 km/hr	> 150 mph	
Wind Area	Front	0.98 m ²	10.6 ft ²
	Side	0.34 m ²	3.7 ft ²
Wind Loads (160 km/hr or 100 mph)	Front	1200 N	270 lbf
	Side	415 N	93 lbf


Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

QUAD656C0000x

Twin Band | Quad Port | Panel Antenna | (2x) X-Pol | 65° / 65° | 15.0 / 15.0 dBi | Variable Tilt


Electrical Downtilt Control

Electrical downtilt for each band can be controlled separately. Tilt indicator(s) are covered by removable transparent cap(s).

Manual Electrical Tilt (MET) Control	A colored knob at the end of the tilt indicator allows change of the tilt without need of a tool. The knob color is identical to the corresponding connector ring color. To access the knob, remove the cap by turning it counter-clockwise. It is re-installed by opposite rotation. Do not remove the transparent cap(s) from the antenna.		
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by either a Multi-Device Control Unit (MDCU) or a Multi-Device Dual Unit (MDDU) inserted in the bottom of the antenna. A single actuator individually controls the tilt of each band (no need for daisy chain cables between the bands). This module does not add any additional length to the antenna. For RET control, the transparent caps must be in place and locked. The tilt angle indicators always remain visible and the antenna still has manual tilt control (manual override).		
RET Actuator	Select one of the following RET actuators when ordering this antenna.		
	Multi-Device Control Unit (MDCU)	The MDCU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed. Refer to ordering options.	
	Multi-Device Dual Unit (MDDU)	The MDDU allows two separate RET Controllers to independently drive the RETs in Amphenol antennas with factory installed motors (for antenna sharing). The MDDU is factory installed. Refer to ordering options.	
Important Installation Instructions 	In order to operate RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. Do not cut them from the antenna.		
	Do not install the antenna with the connectors facing upward.		

Mounting Options	Part Number	Image	Fits Pipe Diameter	Weight
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All mounting bracket kits are ordered separately unless otherwise indicated. Select from the options listed below.

3-Point Mounting and Downtilt Bracket Kit	36210008		40-115 mm 1.6-4.5 in	6.9 kg 15.2 lbs
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Configuration Options

This antenna model cannot be used with Amphenol's UNICELL 3-sector antenna enclosures.

QUAD656C0000x

Twin Band | Quad Port | Panel Antenna | (2x) X-Pol | 65° / 65° | 15.0 / 15.0 dBi | Variable Tilt

Bottom View of Antenna



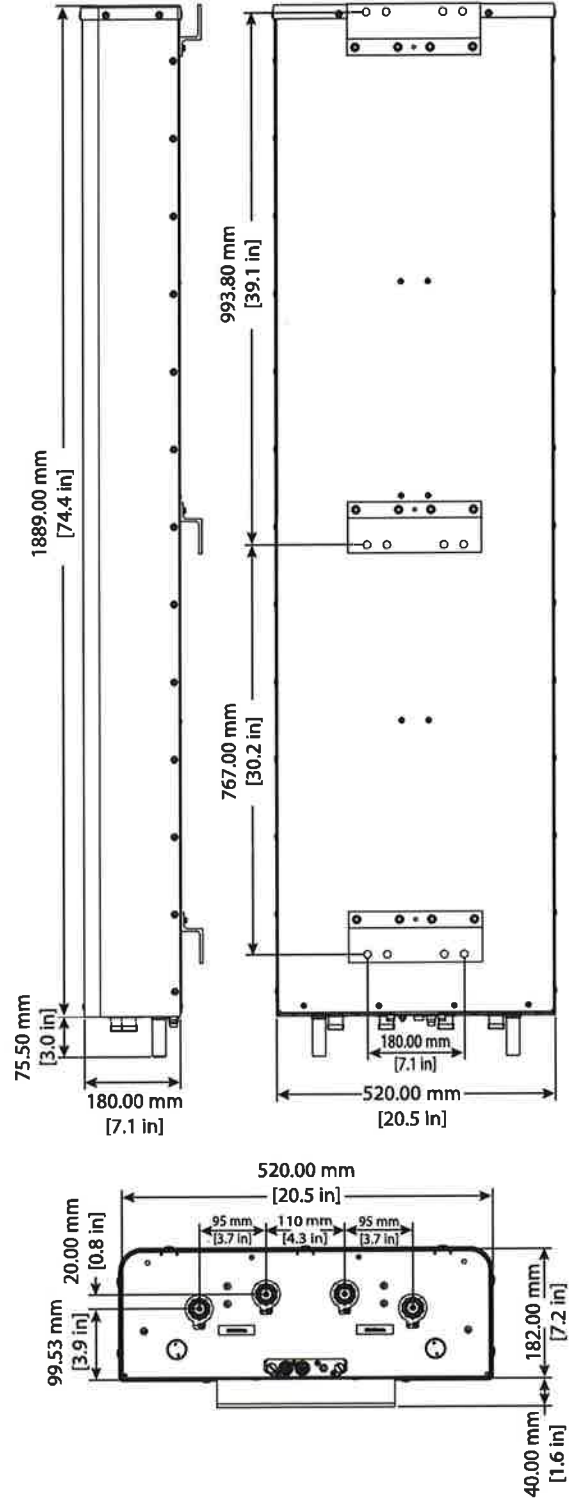
Location of the MDCU or MDDU for RET Control (MDCU shown)

Tilt indicators covered by transparent caps.
Manual adjustment is accessed by removing the caps.
Knob colors are the same as the connectors.



In order to operate RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. Do not cut them from the antenna.

Dimensions

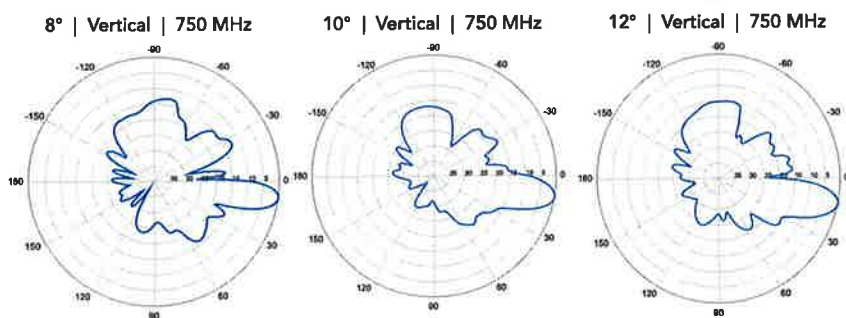
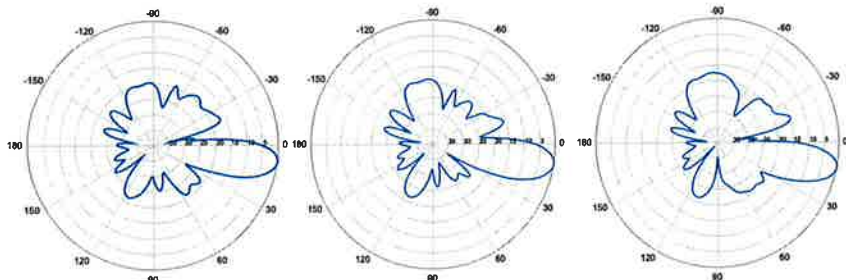
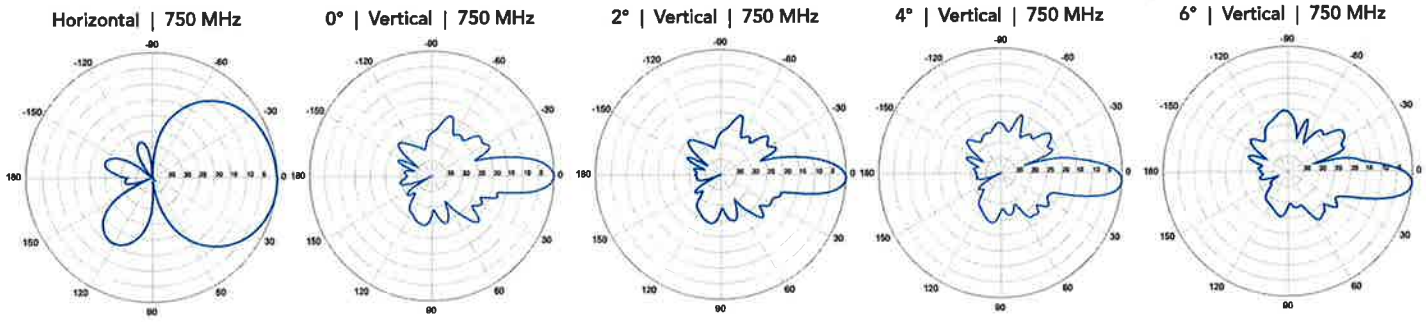
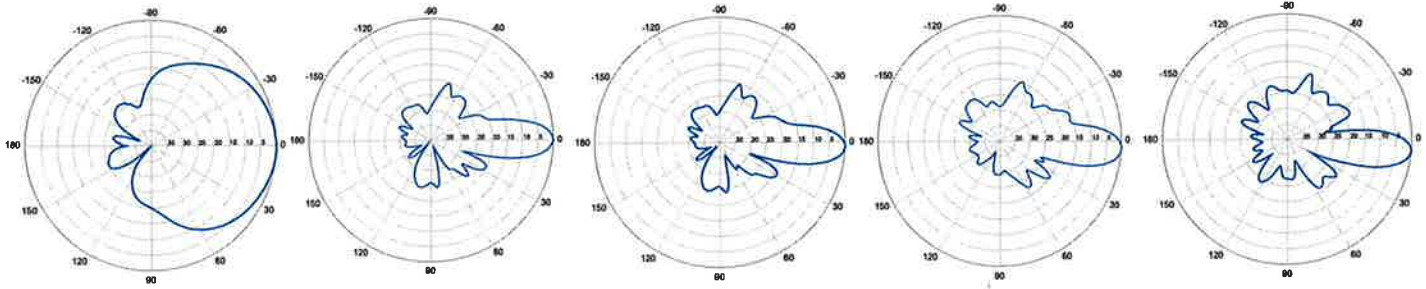


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QUAD656C0000x

Twin Band | Quad Port | Panel Antenna | (2x) X-Pol | 65° / 65° | 15.0 / 15.0 dBi | Variable Tilt

696-900 MHz



Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.



SBNHH-1D65B

6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR Return Loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
Gain by Beam Tilt, average, dBi	7° 14.6	7° 14.4	3° 17.5	3° 17.9	3° 18.3	3° 18.4
	14° 14.2	14° 13.6	7° 17.4	7° 17.9	7° 18.2	7° 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

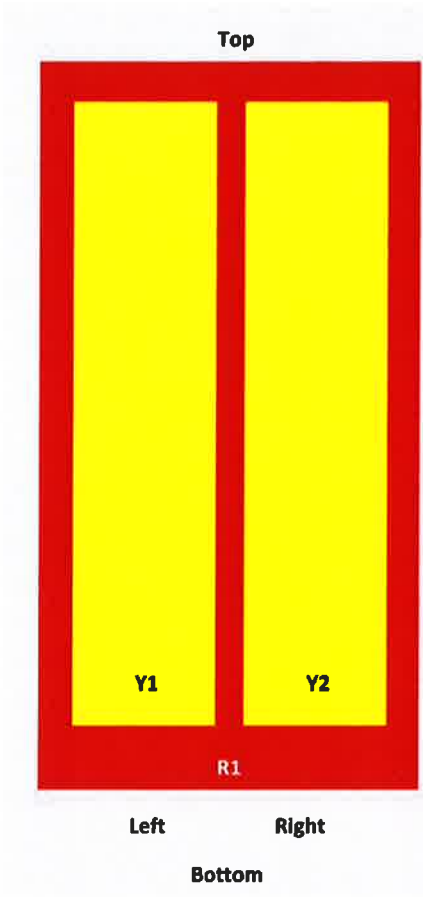
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

Array Layout

SBNHH-1D65B

SBNHH 65

Array	Freq (MHz)	Coors	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	A\XXXXXXXXXXXXXXXXX.1
Y1	1695-2360	3-4	2	A\XXXXXXXXXXXXXXXXX.2
Y2	1695-2360	5-6		



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 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	6
RF Connector Quantity, low band	2
RF Connector Quantity, high band	4
RF Connector Interface	7-16 DIN Female

SBNHH-1D65B

Color	Light gray
Grounding Type	RF connector inner conductor and 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	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Length	1851.0 mm 72.9 in
Width	301.0 mm 11.9 in
Depth	180.0 mm 7.1 in
Net Weight, without mounting kit	18.4 kg 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (1) Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male

Packed Dimensions

Length	2025.0 mm 79.7 in
Width	390.0 mm 15.4 in
Depth	296.0 mm 11.7 in
Shipping Weight	31.0 kg 68.3 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



SBNHH-1D65B

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

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R 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.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a 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 B13 RRH4x30-4R 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.

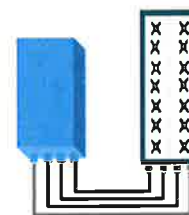


FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz 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 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield)
Volume in L	38 (with solar shield)
Weight in kg (lb) (w/o mounting HW)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (In 2Tx or 4TX mode)
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

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ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new 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.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a 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 B25 RRH4x30 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.

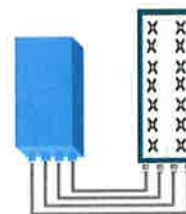


FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options (Pole or Wall)



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
Environmental conditions	-40°C (-40°F) / +55°C (+131°F)
Wind load (@150km/h or 93mph)	IP65 Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

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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.

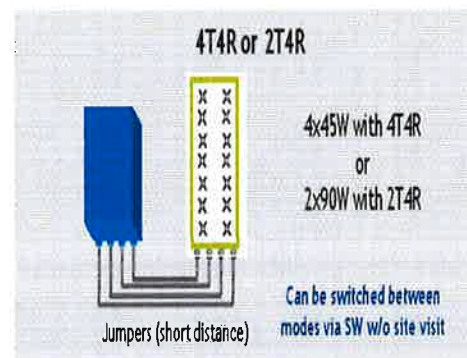
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the 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 58W 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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HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection



Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Mechanical Properties			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
Electrical Properties			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Optical Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
DC Power Cable Properties			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Environmental			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

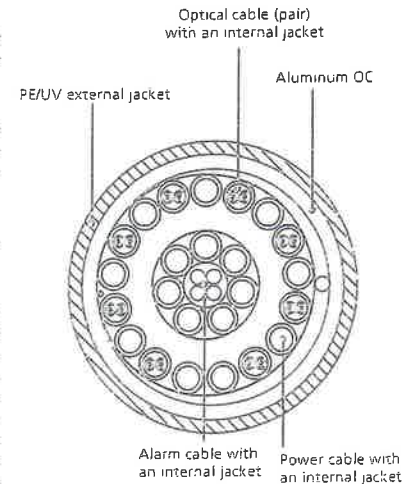


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

ATTACHMENT 2

		General		Power		Density							
Site Name: Chaplin S Tower Height: 146ft													
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*AT&T	2	565	128	880	0.0273	0.5867	0.47%						
*AT&T	2	875	128	1900	0.0423	1.0000	0.42%						
*AT&T	1	283	128	880	0.0068	0.5867	0.12%						
*AT&T	4	525	128	1900	0.0507	1.0000	0.51%						
*AT&T	1	1771	128	734	0.0428	0.4893	0.87%						
*Sprint	11	343	137	1962.5	0.0790	1.0000	0.79%						
*T-Mobile	6	1871	115	1900/2100	0.3398	1.0000	3.40%						
*T-Mobile	1	865	115	700	0.0262	0.4667	0.56%						
Verizon PCS	1	0	149	0.0000	1970	1.0000	0.00%						
Verizon Cellular	9	400	149	0.0583	869	0.5793	10.06%						
Verizon 850 LTE	1	2879	149	0.0466	869	0.5793	8.05%						
Verizon AWS	1	7951	149	0.1288	2145	1.0000	12.88%						
Verizon 700	1	2261	149	0.0366	746	0.4973	7.36%						
								45.49%					
* Source: Siting Council													

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 146 ft Monopole
ATC Site Name : CT Chaplin South CT, CT
ATC Site Number : 411216
Engineering Number : OAA704828_C3_01
Proposed Carrier : Verizon
Carrier Site Name : Chaplin South CT
Carrier Site Number : 118590
Site Location : 123 Palmer Road
Chaplin, CT 06235-2416
41.784500,-72.135700
County : Windham
Date : June 15, 2017
Max Usage : 77%
Result : Pass

Prepared By:
Kelsey Sargent, E.I.
Structural Engineer I

Reviewed By:



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COA: PEC.0001553



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Standard Conditions	4
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 146 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EI Project #12120 Rev. 2, dated November 21, 2003
Foundation Drawing	EI Project #12120 Rev. 3, dated December 18, 2003
Geotechnical Report	GEOServices Project #31-151287M, dated September 8, 2015

Analysis

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

Basic Wind Speed:	101 mph (3-Second Gust, V_{asd}) / 130 mph (3-Second Gust V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 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:	$S_s = 0.17, S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	148.0	4	Antel LPA-80080/4CF ____	Low Profile Platform	(12) 1 5/8" Coax	Verizon
		2	Antel LPA-80063/4CF			
139.0	139.0	12	60" x 6" Panel	Low Profile Platform	(12) 1 5/8" Coax	Sprint Nextel
126.0	126.0	6	Powerwave LGP21901	Low Profile Platform	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.40" Fiber	AT&T Mobility
		3	6" x 6" Junction Box			
		6	Powerwave LGP21401			
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS-11 1900MHz			
		6	Allgon 7770.00			
		3	KMW AM-X-CD-17-65-00T-RET (96" Height)			
116.0	116.0	3	RFS 1900 PCS	Platform w/ Handrails	(12) 1 5/8" Coax	T-Mobile
		3	RFS APXV18-206517			
		3	Commscope LNX-6515DS-VTM			
75.0	75.0	1	GPS	Stand-Off	(1) 1 5/8" Coax	Sprint Nextel
63.0	63.0	1	GPS	Stand-Off	(1) 1/2" Coax	AT&T Mobility

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	148.0	3	Antel BXA-70063/6CF __ 2°	-	(6) 1 5/8" Coax	Verizon
		3	48" x 6" Panel			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	148.0	6	Andrew SBNHH-1D65B	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon
		3	Antel QUAD656C0000X			
	147.0	3	Nokia B5 RRH4x40-850			
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent AWS4 (B66) 4x45 RRH			
		2	Raycap RC3DC-3315-PF-48			

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).

Install proposed coax outside the pole shaft. Stacking coax is not allowed.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	51%	Pass
Shaft	59%	Pass
Base Plate	77%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,157.8	4,263.0	2,741.4	64%
Shear (Kips)	30.5	41.2	25.2	61%

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

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
148.0	Andrew SBNHH-1D65B	Verizon	1.434	1.030
	Antel QUAD656C0000X			
147.0	Nokia B5 RRH4x40-850			
	Alcatel-Lucent RRH2x60 700			
	Alcatel-Lucent AWS4 (B66) 4x45 RRH			
	Raycap RC3DC-3315-PF-48			

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



Standard Conditions

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

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

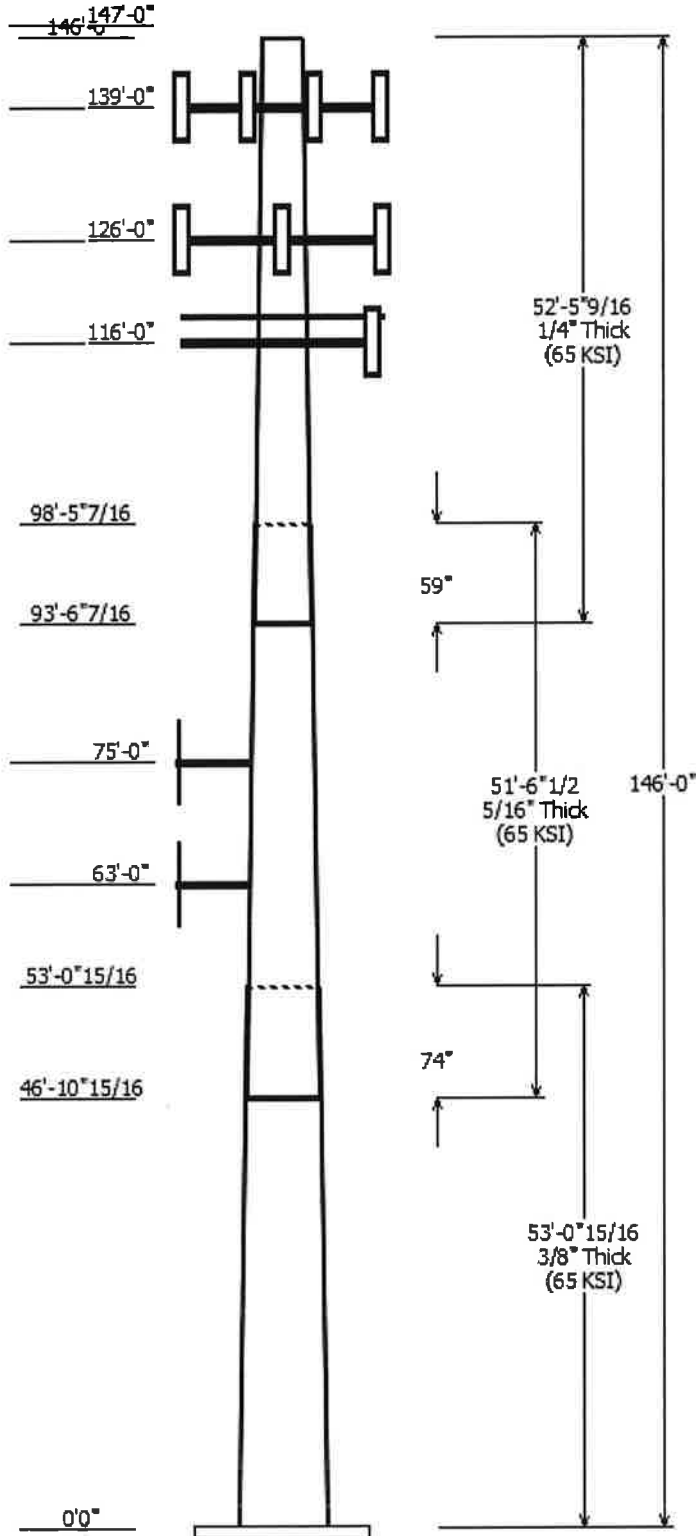
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

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

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

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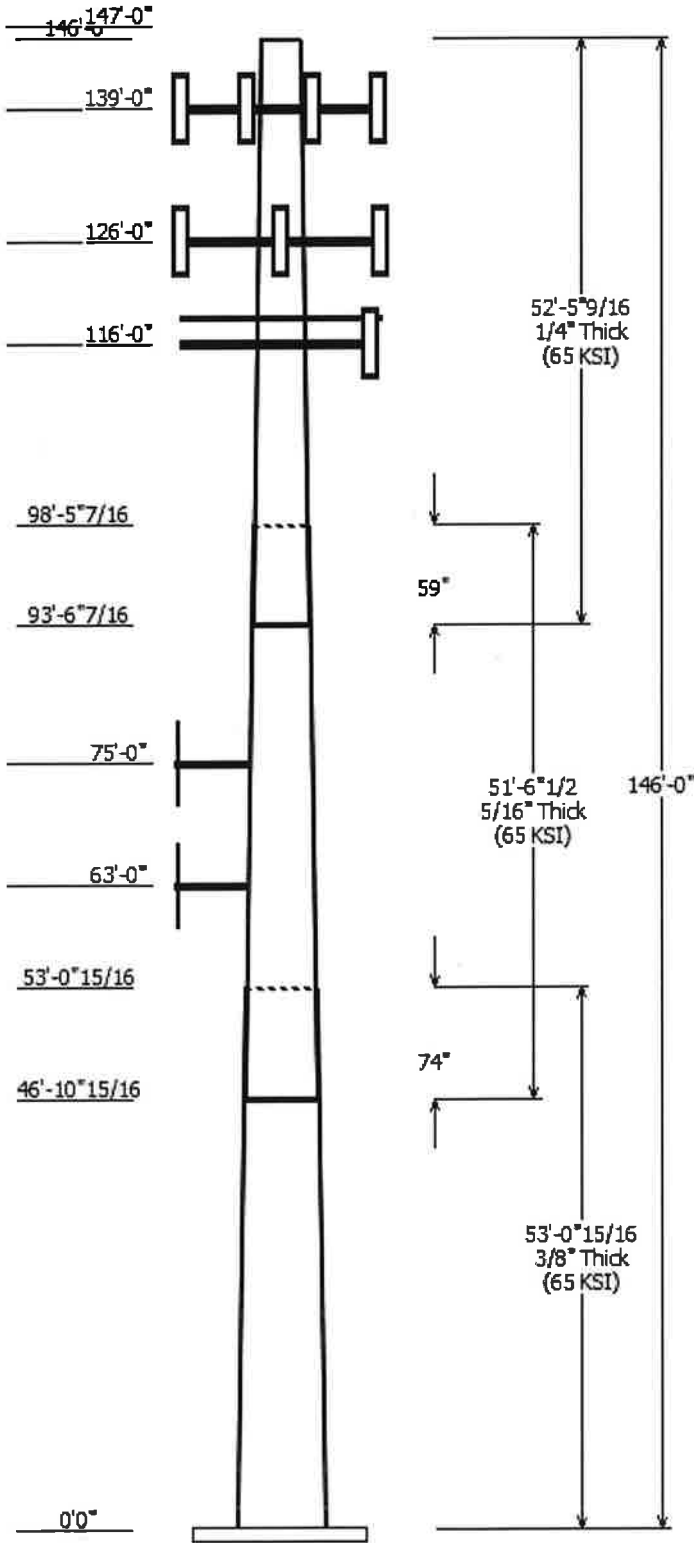


Job Information	
Pole :	411216
Code:	ANSI/TIA-222-G
Description :	146 ft EEI Monopole
Client :	VERIZON WIRELESS
Struct Class :	II
Location :	CT Chaplin South CT, CT
Shape :	18 Sides
Exposure :	B
Height :	146.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.220039(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom					
1	53.080	42.82	54.50	0.375		0.000	0.220000	65
2	51.540	33.46	44.80	0.313	Slip Joint	74.000	0.220000	65
3	52.463	23.49	35.04	0.250	Slip Joint	59.000	0.220000	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
147.000	147.000	2	Raycap RC3DC-3315-PF-48	
147.000	147.000	3	Alcatel-Lucent AWS4 (B66)	
147.000	147.000	3	Alcatel-Lucent RRH2x60 700	
147.000	147.000	3	Nokia B5 RRH4x40-850	
147.000	148.000	3	Amphenol Antel	
147.000	148.000	6	Andrew SBNHH-1D65B	
147.000	148.000	2	Antel LPA-80063/4CF	
147.000	147.000	1	Flat Low Profile Platform	
147.000	148.000	4	Antel LPA-80080/4CF	
139.000	139.000	1	Flat Low Profile Platform	
139.000	139.000	12	60" x 6" Panel	
126.000	126.000	1	Flat Low Profile Platform	
126.000	126.000	3	KMW AM-X-CD-17-65-00T-RET	
126.000	126.000	6	Allgon 7770.00	
126.000	126.000	6	Ericsson RRUS-11 1900 MHz	
126.000	126.000	1	Raycap DC6-48-60-18-8F	
126.000	126.000	6	Powerwave Allgon LGP21401	
126.000	126.000	3	6" x 6" Junction Box	
126.000	126.000	6	Powerwave Allgon LGP21901	
116.000	116.000	1	Round Platform w/ Handrails	
116.000	116.000	3	Commscope LNX-6515DS-VTM	
116.000	116.000	3	RFS APXV18-206517	
116.000	116.000	3	RFS 1900 PCS	
75.000	75.000	1	Stand-Off	
75.000	75.000	1	GPS	
63.000	63.000	1	Stand-Off	
63.000	63.000	1	GPS	

Linear Appurtenance			
Elev (ft)	From To		Exposed To Wind
	Description		
0.000	63.000	1/2" Coax	Yes
0.000	75.000	1 5/8" Coax	No
0.000	116.0	1 5/8" Coax	No
0.000	126.0	0.40" Fiber	No
0.000	126.0	0.78" 8 AWG 6	No
0.000	126.0	1 5/8" Coax	No
0.000	139.0	1 5/8" Coax	No
0.000	147.0	1 5/8" Coax	No
0.000	147.0	1 5/8" Coax	Yes
0.000	147.0	1 5/8" Hybriflex	Yes

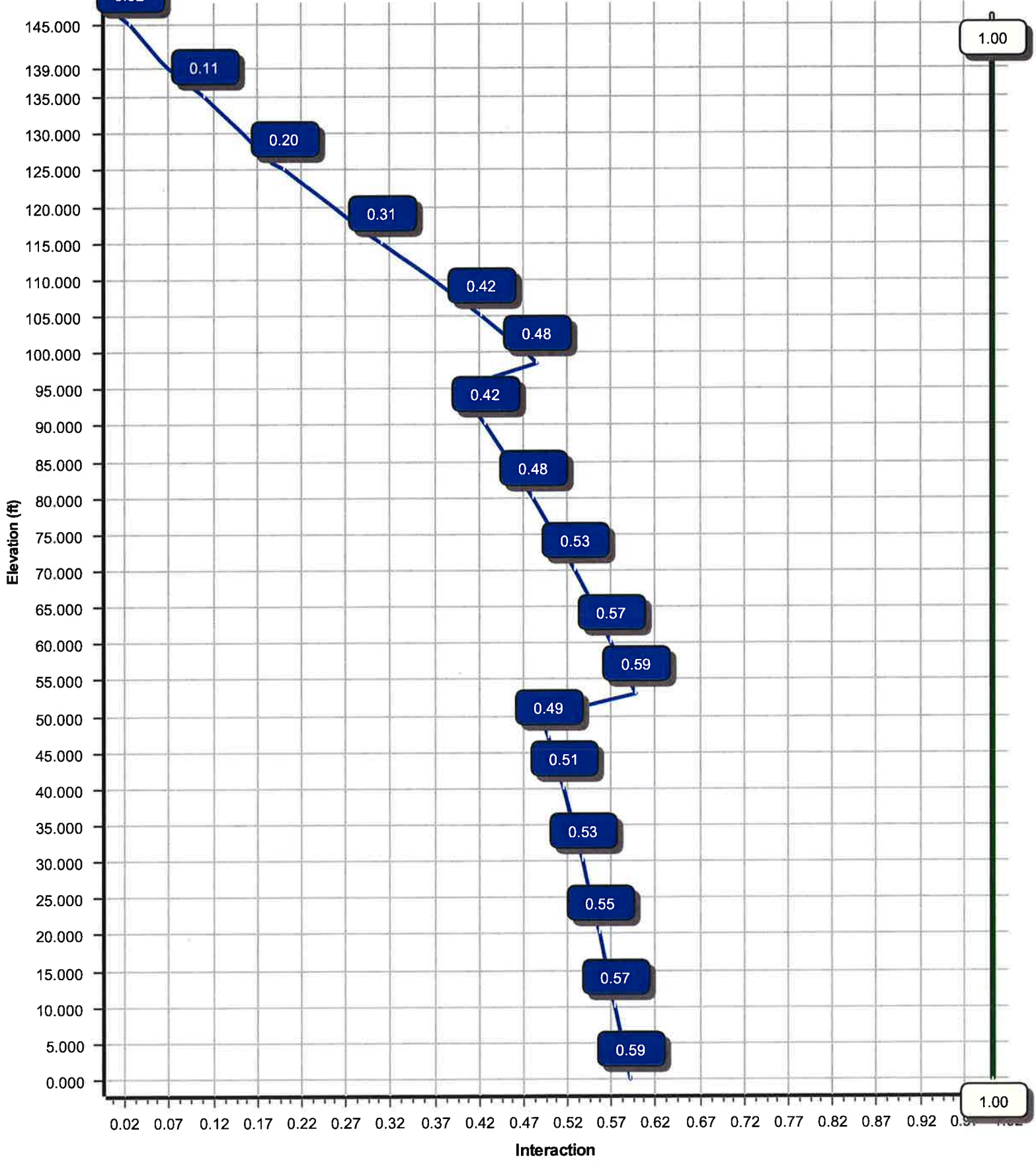


Load Cases	
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic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

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2741.38	25.15	43.53
0.9D + 1.6W	2712.16	25.14	32.64
1.2D + 1.0Di + 1.0Wi	701.77	6.56	68.79
(1.2 + 0.2Sds) * DL + E ELFM	130.05	1.16	40.04
(1.2 + 0.2Sds) * DL + E EMAM	150.84	1.49	40.04
(0.9 - 0.2Sds) * DL + E ELFM	128.78	1.16	27.94
(0.9 - 0.2Sds) * DL + E EMAM	149.31	1.49	27.94
1.0D + 1.0W	600.83	5.54	36.30

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 59.38% at 53.1 ft



Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

Analysis Parameters

Location:	WINDHAM County, CT	Height (ft):	146
Code:	ANSI/TIA-222-G	Base Diameter (in):	54.50
Shape:	18 Sides	Top Diameter (in):	23.50
Pole Type:	Taper	Taper (in/ft) :	0.220
Pole Manufacturer:	EEL	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.22		
T _L (sec):	6	p:	1.3
S _s :	0.173	S ₁ :	0.062
F _a :	1.600	F _v :	2.400
S _{ds} :	0.185	S _{d1} :	0.099
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S _{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: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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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	53.080	0.3750	65		0.00	10,380	54.50	0.00	64.42	23843.5	23.86	145.33	42.82	53.08	50.52	11499.1	18.37	114.19	0.220039
2-18	51.540	0.3125	65	Slip	74.00	6,753	44.80	46.91	44.13	11035.0	23.52	143.37	33.46	98.45	32.88	4564.6	17.12	107.08	0.220039
3-18	52.463	0.2500	65	Slip	59.00	4,111	35.04	93.54	27.61	4222.5	22.95	140.17	23.49	146.00	18.45	1259.8	14.81	94.00	0.220039
						Shaft Weight	21,244												

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor		
147.00	Alcatel-Lucent AWS4 (B66)	3	64.00	2.660	0.67	148.88	3.376	0.67	0.000	0.000
147.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	137.78	2.773	0.67	0.000	0.000
147.00	Amphenol Antel	3	54.00	13.240	0.62	344.49	14.766	0.62	0.000	1.000
147.00	Andrew SBNHH-1D65B	6	50.70	8.170	0.69	253.40	9.473	0.69	0.000	1.000
147.00	Antel LPA-80063/4CF	2	20.00	6.140	0.76	225.55	7.180	0.76	0.000	1.000
147.00	Antel LPA-80080/4CF	4	12.00	5.400	0.64	146.95	3.460	0.64	0.000	1.000
147.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,147.25	45.173	1.00	0.000	0.000
147.00	Nokia B5 RRH4x40-850	3	48.50	1.320	0.50	99.85	1.802	0.50	0.000	0.000
147.00	Raycap RC3DC-3315-PF-48	2	32.00	3.780	0.67	157.95	4.597	0.67	0.000	0.000
139.00	60" x 6" Panel	12	30.00	3.750	0.68	100.40	5.724	0.68	0.000	0.000
139.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,143.36	45.058	1.00	0.000	0.000
126.00	6" x 6" Junction Box	3	10.00	0.350	0.50	19.78	0.784	0.50	0.000	0.000
126.00	Allgon 7770.00	6	35.00	5.510	0.65	167.25	6.545	0.65	0.000	0.000
126.00	Ericsson RRUS-11 1900 MHz	6	44.00	2.520	0.67	110.23	3.543	0.67	0.000	0.000
126.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,137.75	44.893	1.00	0.000	0.000
126.00	KMW AM-X-CD-17-65-00T-	3	59.50	11.310	0.68	270.00	14.482	0.68	0.000	0.000
126.00	Powerwave Allgon LGP21401	6	14.10	1.100	0.50	38.66	1.800	0.50	0.000	0.000
126.00	Powerwave Allgon LGP21901	6	5.50	0.230	0.50	13.05	0.591	0.50	0.000	0.000
126.00	Raycap DC6-48-60-18-8F	1	20.00	1.110	1.00	71.83	1.681	1.00	0.000	0.000
116.00	Commscope LNX-6515DS-	3	50.30	11.450	0.70	274.26	14.611	0.70	0.000	0.000
116.00	RFS 1900 PCS	3	19.00	0.960	0.50	49.03	1.599	0.50	0.000	0.000
116.00	RFS APXV18-206517	3	26.40	5.050	0.68	115.61	7.358	0.68	0.000	0.000
116.00	Round Platform w/ Handrails	1	2000.00	27.200	1.00	3,264.94	51.062	1.00	0.000	0.000
75.00	GPS	1	10.00	1.000	1.00	37.26	1.662	1.00	0.000	0.000
75.00	Stand-Off	1	75.00	2.500	1.00	123.68	4.123	1.00	0.000	0.000
63.00	GPS	1	10.00	1.000	1.00	36.82	1.651	1.00	0.000	0.000
63.00	Stand-Off	1	75.00	2.500	1.00	122.89	4.096	1.00	0.000	0.000
		Totals	86	9263.00		20,519.94			Number of Loadings : 27	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width (in)	Exposed To Wind	Carrier	
0.00	147.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	147.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	Verizon
0.00	147.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.01	Y	
0.00	139.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
0.00	126.00	1	0.40" Fiber	0.40	0.09	N	0.00	N	AT&T MOBILITY
0.00	126.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	126.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	116.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	75.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:29 PM

Customer: VERIZON WIRELESS

0.00	63.00	1 1/2" Coax	0.63	0.15	N	0.63	Y	AT&T Mobility
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Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:29 PM

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		0.3750	54.500	64.420	23,843.5	23.86	145.33	73.3	861.7	0.0	0.0
5.00		0.3750	53.400	63.110	22,418.8	23.35	142.40	73.9	826.9	0.0	1,084.9
10.00		0.3750	52.300	61.801	21,052.1	22.83	139.47	74.6	792.8	0.0	1,062.6
15.00		0.3750	51.199	60.492	19,742.1	22.31	136.53	75.2	759.5	0.0	1,040.3
20.00		0.3750	50.099	59.182	18,487.6	21.79	133.60	75.8	726.8	0.0	1,018.1
25.00		0.3750	48.999	57.873	17,287.3	21.28	130.66	76.4	694.9	0.0	995.8
30.00		0.3750	47.899	56.563	16,140.2	20.76	127.73	77.0	663.7	0.0	973.5
35.00		0.3750	46.799	55.254	15,045.0	20.24	124.80	77.6	633.2	0.0	951.2
40.00		0.3750	45.698	53.944	14,000.5	19.72	121.86	78.2	603.4	0.0	928.9
45.00		0.3750	44.598	52.635	13,005.5	19.21	118.93	78.8	574.4	0.0	906.7
46.91	Bot - Section 2	0.3750	44.177	52.134	12,637.6	19.01	117.81	79.0	563.4	0.0	341.1
50.00		0.3750	43.498	51.325	12,058.8	18.69	115.99	79.4	546.0	0.0	1,003.3
53.08	Top - Section 1	0.3125	43.445	42.781	10,055.8	22.75	139.03	74.6	455.9	0.0	985.6
55.00		0.3125	43.023	42.362	9,763.2	22.51	137.67	74.9	447.0	0.0	278.1
60.00		0.3125	41.923	41.271	9,028.0	21.89	134.15	75.7	424.2	0.0	711.5
63.00		0.3125	41.263	40.616	8,605.1	21.52	132.04	76.1	410.8	0.0	418.0
65.00		0.3125	40.822	40.179	8,330.7	21.27	130.63	76.4	401.9	0.0	274.9
70.00		0.3125	39.722	39.088	7,670.2	20.65	127.11	77.1	380.3	0.0	674.3
75.00		0.3125	38.622	37.997	7,045.6	20.03	123.59	77.8	359.3	0.0	655.8
80.00		0.3125	37.522	36.906	6,455.8	19.41	120.07	78.6	338.9	0.0	637.2
85.00		0.3125	36.422	35.815	5,899.9	18.79	116.55	79.3	319.1	0.0	618.6
90.00		0.3125	35.321	34.723	5,376.9	18.17	113.03	80.0	299.8	0.0	600.1
93.54	Bot - Section 3	0.3125	34.543	33.951	5,026.3	17.73	110.54	80.5	286.6	0.0	413.2
95.00		0.3125	34.221	33.632	4,885.8	17.55	109.51	80.8	281.2	0.0	305.1
98.45	Top - Section 2	0.2500	33.961	26.749	3,840.7	22.19	135.85	75.3	222.7	0.0	708.6
100.0		0.2500	33.621	26.479	3,725.6	21.95	134.48	75.6	218.3	0.0	140.1
105.0		0.2500	32.521	25.606	3,369.1	21.17	130.08	76.5	204.0	0.0	443.1
110.0		0.2500	31.421	24.733	3,036.2	20.40	125.68	77.4	190.3	0.0	428.2
115.0		0.2500	30.321	23.860	2,725.9	19.62	121.28	78.3	177.1	0.0	413.4
116.0		0.2500	30.100	23.685	2,666.5	19.47	120.40	78.5	174.5	0.0	80.9
120.0		0.2500	29.220	22.987	2,437.5	18.85	116.88	79.2	164.3	0.0	317.6
125.0		0.2500	28.120	22.114	2,170.2	18.07	112.48	80.1	152.0	0.0	383.7
126.0		0.2500	27.900	21.940	2,119.2	17.91	111.60	80.3	149.6	0.0	75.0
130.0		0.2500	27.020	21.241	1,923.2	17.29	108.08	81.1	140.2	0.0	293.9
135.0		0.2500	25.920	20.368	1,695.7	16.52	103.68	82.0	128.9	0.0	354.0
139.0		0.2500	25.040	19.670	1,527.2	15.90	100.16	82.6	120.1	0.0	272.5
140.0		0.2500	24.820	19.495	1,486.9	15.74	99.28	82.6	118.0	0.0	66.6
145.0		0.2500	23.719	18.622	1,295.9	14.97	94.88	82.6	107.6	0.0	324.3
146.0		0.2500	23.499	18.448	1,259.8	14.81	94.00	82.6	105.6	0.0	63.1
21,243.5											

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:29 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

101 mph with No Ice

24 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		226.7	0.0					0.0	0.0	226.7	0.0	0.0	0.0
5.00		448.9	1,301.9					0.0	265.2	448.9	1,567.1	0.0	0.0
10.00		439.6	1,275.1					0.0	265.2	439.6	1,540.3	0.0	0.0
15.00		430.4	1,248.4					0.0	265.2	430.4	1,513.6	0.0	0.0
20.00		421.1	1,221.7					0.0	265.2	421.1	1,486.9	0.0	0.0
25.00		411.9	1,194.9					0.0	265.2	411.9	1,460.1	0.0	0.0
30.00		407.4	1,168.2					0.0	265.2	407.4	1,433.4	0.0	0.0
35.00		411.1	1,141.5					0.0	265.2	411.1	1,406.7	0.0	0.0
40.00		417.1	1,114.7					0.0	265.2	417.1	1,379.9	0.0	0.0
45.00		290.5	1,088.0					0.0	265.2	290.5	1,353.2	0.0	0.0
46.91	Bot - Section 2	213.1	409.3					0.0	101.5	213.1	510.8	0.0	0.0
50.00		264.8	1,203.9					0.0	163.7	264.8	1,367.6	0.0	0.0
53.08	Top - Section 1	215.0	1,182.7					0.0	163.4	215.0	1,346.1	0.0	0.0
55.00		297.8	333.8					0.0	101.8	297.8	435.6	0.0	0.0
60.00		344.0	853.7					0.0	265.2	344.0	1,118.9	0.0	0.0
63.00	Appertunance(s)	214.6	501.6	132.3	0.0	0.0	102.0	0.0	159.1	347.0	762.7	0.0	0.0
65.00		299.3	329.9					0.0	105.7	299.3	435.6	0.0	0.0
70.00		425.6	809.2					0.0	264.3	425.6	1,073.5	0.0	0.0
75.00	Appertunance(s)	422.0	786.9	139.1	0.0	0.0	102.0	0.0	264.3	561.2	1,153.2	0.0	0.0
80.00		417.7	764.6					0.0	259.4	417.7	1,024.0	0.0	0.0
85.00		412.5	742.4					0.0	259.4	412.5	1,001.7	0.0	0.0
90.00		347.9	720.1					0.0	259.4	347.9	979.5	0.0	0.0
93.54	Bot - Section 3	202.6	495.9					0.0	183.5	202.6	679.3	0.0	0.0
95.00		199.0	366.1					0.0	75.9	199.0	442.0	0.0	0.0
98.45	Top - Section 2	201.3	850.4					0.0	179.1	201.3	1,029.5	0.0	0.0
100.00		259.5	168.1					0.0	80.2	259.5	248.3	0.0	0.0
105.00		391.3	531.7					0.0	259.4	391.3	791.1	0.0	0.0
110.00		383.1	513.9					0.0	259.4	383.1	773.3	0.0	0.0
115.00		226.8	496.1					0.0	259.4	226.8	755.4	0.0	0.0
116.00	Appertunance(s)	185.0	97.1	2,432.8	0.0	0.0	2,744.5	0.0	51.9	2,617.8	2,893.5	0.0	0.0
120.00		327.9	381.2					0.0	160.3	327.9	541.4	0.0	0.0
125.00		215.7	460.4					0.0	200.3	215.7	660.7	0.0	0.0
126.00	Appertunance(s)	175.3	89.9	3,427.3	0.0	0.0	2,784.1	0.0	40.1	3,602.7	2,914.1	0.0	0.0
130.00		310.1	352.6					0.0	106.9	310.1	459.6	0.0	0.0
135.00		302.5	424.8					0.0	133.7	302.5	558.4	0.0	0.0
139.00	Appertunance(s)	164.9	327.0	2,397.8	0.0	0.0	2,232.0	0.0	106.9	2,562.7	2,665.9	0.0	0.0
140.00		191.9	80.0					0.0	14.9	191.9	94.9	0.0	0.0
145.00		190.5	389.1					0.0	74.6	190.5	463.8	0.0	0.0
146.00		31.2	75.7					0.0	14.9	31.2	90.6	0.0	0.0
Totals:										20,266.9	40,412.3	0.00	0.00

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:30 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

101 mph with No Ice

24 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	-43.53	-25.15	0.00	-2,741.38	0.00	2,741.38	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.589
5.00	-41.89	-24.82	0.00	-2,615.61	0.00	2,615.61	4,199.87	2,099.94	9,157.83	4,585.72	0.09	-0.16	0.580
10.00	-40.28	-24.49	0.00	-2,491.51	0.00	2,491.51	4,146.57	2,073.29	8,852.70	4,432.93	0.34	-0.32	0.572
15.00	-38.70	-24.16	0.00	-2,369.07	0.00	2,369.07	4,091.84	2,045.92	8,549.42	4,281.06	0.77	-0.49	0.563
20.00	-37.15	-23.83	0.00	-2,248.27	0.00	2,248.27	4,035.67	2,017.84	8,248.20	4,130.23	1.36	-0.65	0.554
25.00	-35.63	-23.51	0.00	-2,129.10	0.00	2,129.10	3,978.07	1,989.03	7,949.23	3,980.52	2.14	-0.82	0.544
30.00	-34.13	-23.18	0.00	-2,011.56	0.00	2,011.56	3,919.03	1,959.52	7,652.71	3,832.04	3.09	-0.99	0.534
35.00	-32.66	-22.84	0.00	-1,895.67	0.00	1,895.67	3,858.56	1,929.28	7,358.83	3,684.88	4.22	-1.16	0.523
40.00	-31.22	-22.49	0.00	-1,781.46	0.00	1,781.46	3,796.66	1,898.33	7,067.80	3,539.15	5.53	-1.34	0.512
45.00	-29.83	-22.23	0.00	-1,669.02	0.00	1,669.02	3,733.32	1,866.66	6,779.80	3,394.94	7.03	-1.51	0.500
46.91	-29.29	-22.05	0.00	-1,626.49	0.00	1,626.49	3,708.70	1,854.35	6,670.44	3,340.18	7.65	-1.58	0.495
50.00	-27.89	-21.80	0.00	-1,558.43	0.00	1,558.43	3,668.55	1,834.27	6,495.03	3,252.34	8.71	-1.69	0.487
53.08	-26.52	-21.58	0.00	-1,491.30	0.00	1,491.30	2,873.92	1,436.96	5,096.66	2,552.12	9.83	-1.80	0.594
55.00	-26.04	-21.33	0.00	-1,449.86	0.00	1,449.86	2,856.46	1,428.23	5,015.72	2,511.59	10.57	-1.87	0.587
60.00	-24.88	-21.02	0.00	-1,343.18	0.00	1,343.18	2,810.00	1,405.00	4,806.12	2,406.63	12.64	-2.08	0.567
63.00	-24.09	-20.69	0.00	-1,280.12	0.00	1,280.12	2,781.43	1,390.72	4,681.23	2,344.09	13.99	-2.20	0.555
65.00	-23.61	-20.43	0.00	-1,238.73	0.00	1,238.73	2,762.10	1,381.05	4,598.36	2,302.60	14.93	-2.28	0.547
70.00	-22.49	-20.04	0.00	-1,136.56	0.00	1,136.56	2,712.77	1,356.39	4,392.64	2,199.58	17.43	-2.49	0.525
75.00	-21.29	-19.51	0.00	-1,036.34	0.00	1,036.34	2,662.01	1,331.01	4,189.16	2,097.69	20.14	-2.69	0.502
80.00	-20.23	-19.11	0.00	-938.81	0.00	938.81	2,609.81	1,304.91	3,988.12	1,997.02	23.06	-2.89	0.478
85.00	-19.18	-18.71	0.00	-843.26	0.00	843.26	2,556.18	1,278.09	3,789.70	1,897.67	26.19	-3.08	0.452
90.00	-18.17	-18.36	0.00	-749.71	0.00	749.71	2,501.11	1,250.56	3,594.12	1,799.73	29.52	-3.28	0.424
93.54	-17.48	-18.15	0.00	-684.78	0.00	684.78	2,461.30	1,230.65	3,457.58	1,731.36	32.00	-3.41	0.403
95.00	-17.02	-17.95	0.00	-658.23	0.00	658.23	2,444.61	1,222.31	3,401.55	1,703.30	33.05	-3.47	0.394
98.45	-15.98	-17.71	0.00	-596.24	0.00	596.24	1,812.81	906.41	2,512.23	1,257.98	35.61	-3.59	0.483
100.00	-15.70	-17.47	0.00	-568.85	0.00	568.85	1,801.24	900.62	2,470.81	1,237.24	36.78	-3.65	0.469
105.00	-14.88	-17.08	0.00	-481.50	0.00	481.50	1,762.89	881.45	2,337.88	1,170.68	40.71	-3.85	0.420
110.00	-14.09	-16.69	0.00	-396.10	0.00	396.10	1,723.10	861.55	2,206.62	1,104.95	44.84	-4.03	0.367
115.00	-13.32	-16.43	0.00	-312.66	0.00	312.66	1,681.88	840.94	2,077.21	1,040.15	49.15	-4.20	0.309
116.00	-10.61	-13.62	0.00	-296.23	0.00	296.23	1,673.47	836.73	2,051.56	1,027.31	50.03	-4.23	0.295
120.00	-10.07	-13.27	0.00	-241.76	0.00	241.76	1,639.23	819.62	1,949.84	976.37	53.63	-4.35	0.254
125.00	-9.41	-13.02	0.00	-175.39	0.00	175.39	1,595.14	797.57	1,824.73	913.72	58.24	-4.47	0.198
126.00	-6.78	-9.21	0.00	-162.37	0.00	162.37	1,586.15	793.08	1,799.99	901.33	59.18	-4.49	0.185
130.00	-6.33	-8.87	0.00	-125.55	0.00	125.55	1,549.62	774.81	1,702.06	852.29	62.97	-4.57	0.152
135.00	-5.79	-8.53	0.00	-81.21	0.00	81.21	1,502.66	751.33	1,582.02	792.19	67.79	-4.64	0.106
139.00	-3.34	-5.76	0.00	-47.10	0.00	47.10	1,461.37	730.68	1,485.28	743.75	71.70	-4.69	0.066
140.00	-3.26	-5.56	0.00	-41.34	0.00	41.34	1,448.40	724.20	1,458.90	730.54	72.68	-4.70	0.059
145.00	-2.81	-5.33	0.00	-13.54	0.00	13.54	1,383.54	691.77	1,330.54	666.26	77.61	-4.72	0.022
146.00	0.00	-5.08	0.00	-8.20	0.00	8.20	1,370.57	685.28	1,305.58	653.76	78.60	-4.72	0.013

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:31 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

101 mph with No Ice (Reduced DL)

23 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		226.7	0.0					0.0	0.0	226.7	0.0	0.0	0.0
5.00		448.9	976.4					0.0	198.9	448.9	1,175.3	0.0	0.0
10.00		439.6	956.4					0.0	198.9	439.6	1,155.3	0.0	0.0
15.00		430.4	936.3					0.0	198.9	430.4	1,135.2	0.0	0.0
20.00		421.1	916.3					0.0	198.9	421.1	1,115.2	0.0	0.0
25.00		411.9	896.2					0.0	198.9	411.9	1,095.1	0.0	0.0
30.00		407.4	876.1					0.0	198.9	407.4	1,075.0	0.0	0.0
35.00		411.1	856.1					0.0	198.9	411.1	1,055.0	0.0	0.0
40.00		417.1	836.0					0.0	198.9	417.1	1,034.9	0.0	0.0
45.00		290.5	816.0					0.0	198.9	290.5	1,014.9	0.0	0.0
46.91	Bot - Section 2	213.1	307.0					0.0	76.1	213.1	383.1	0.0	0.0
50.00		264.8	902.9					0.0	122.8	264.8	1,025.7	0.0	0.0
53.08	Top - Section 1	215.0	887.0					0.0	122.5	215.0	1,009.5	0.0	0.0
55.00		297.8	250.3					0.0	76.4	297.8	326.7	0.0	0.0
60.00		344.0	640.3					0.0	198.9	344.0	839.2	0.0	0.0
63.00	Appertunance(s)	214.6	376.2	132.3	0.0	0.0	76.5	0.0	119.3	347.0	572.0	0.0	0.0
65.00		299.3	247.4					0.0	79.3	299.3	326.7	0.0	0.0
70.00		425.6	606.9					0.0	198.2	425.6	805.1	0.0	0.0
75.00	Appertunance(s)	422.0	590.2	139.1	0.0	0.0	76.5	0.0	198.2	561.2	864.9	0.0	0.0
80.00		417.7	573.5					0.0	194.5	417.7	768.0	0.0	0.0
85.00		412.5	556.8					0.0	194.5	412.5	751.3	0.0	0.0
90.00		347.9	540.1					0.0	194.5	347.9	734.6	0.0	0.0
93.54	Bot - Section 3	202.6	371.9					0.0	137.6	202.6	509.5	0.0	0.0
95.00		199.0	274.6					0.0	56.9	199.0	331.5	0.0	0.0
98.45	Top - Section 2	201.3	637.8					0.0	134.4	201.3	772.1	0.0	0.0
100.00		259.5	126.1					0.0	60.2	259.5	186.2	0.0	0.0
105.00		391.3	398.8					0.0	194.5	391.3	593.3	0.0	0.0
110.00		383.1	385.4					0.0	194.5	383.1	579.9	0.0	0.0
115.00		226.8	372.0					0.0	194.5	226.8	566.6	0.0	0.0
116.00	Appertunance(s)	185.0	72.8	2,432.8	0.0	0.0	2,058.4	0.0	38.9	2,617.8	2,170.1	0.0	0.0
120.00		327.9	285.9					0.0	120.2	327.9	406.1	0.0	0.0
125.00		215.7	345.3					0.0	150.3	215.7	495.6	0.0	0.0
126.00	Appertunance(s)	175.3	67.5	3,427.3	0.0	0.0	2,088.1	0.0	30.1	3,602.7	2,185.6	0.0	0.0
130.00		310.1	264.5					0.0	80.2	310.1	344.7	0.0	0.0
135.00		302.5	318.6					0.0	100.3	302.5	418.8	0.0	0.0
139.00	Appertunance(s)	164.9	245.2	2,397.8	0.0	0.0	1,674.0	0.0	80.2	2,562.7	1,999.4	0.0	0.0
140.00		191.9	60.0					0.0	11.2	191.9	71.2	0.0	0.0
145.00		190.5	291.8					0.0	56.0	190.5	347.8	0.0	0.0
146.00		31.2	56.8					0.0	11.2	31.2	68.0	0.0	0.0
Totals:										20,266.9	30,309.2	0.00	0.00

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:32 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

101 mph with No Ice (Reduced DL)

23 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	-32.64	-25.14	0.00	-2,712.16	0.00	2,712.16	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.580
5.00	-31.39	-24.77	0.00	-2,586.47	0.00	2,586.47	4,199.87	2,099.94	9,157.83	4,585.72	0.09	-0.16	0.572
10.00	-30.17	-24.41	0.00	-2,462.61	0.00	2,462.61	4,146.57	2,073.29	8,852.70	4,432.93	0.34	-0.32	0.563
15.00	-28.97	-24.06	0.00	-2,340.53	0.00	2,340.53	4,091.84	2,045.92	8,549.42	4,281.06	0.76	-0.48	0.554
20.00	-27.79	-23.71	0.00	-2,220.24	0.00	2,220.24	4,035.67	2,017.84	8,248.20	4,130.23	1.35	-0.64	0.545
25.00	-26.63	-23.36	0.00	-2,101.71	0.00	2,101.71	3,978.07	1,989.03	7,949.23	3,980.52	2.11	-0.81	0.535
30.00	-25.50	-23.01	0.00	-1,984.91	0.00	1,984.91	3,919.03	1,959.52	7,652.71	3,832.04	3.05	-0.98	0.525
35.00	-24.38	-22.65	0.00	-1,869.86	0.00	1,869.86	3,858.56	1,929.28	7,358.83	3,684.88	4.17	-1.15	0.514
40.00	-23.29	-22.28	0.00	-1,756.60	0.00	1,756.60	3,796.66	1,898.33	7,067.80	3,539.15	5.47	-1.32	0.503
45.00	-22.24	-22.01	0.00	-1,645.18	0.00	1,645.18	3,733.32	1,866.66	6,779.80	3,394.94	6.94	-1.49	0.491
46.91	-21.83	-21.83	0.00	-1,603.06	0.00	1,603.06	3,708.70	1,854.35	6,670.44	3,340.18	7.55	-1.56	0.486
50.00	-20.77	-21.57	0.00	-1,535.70	0.00	1,535.70	3,668.55	1,834.27	6,495.03	3,252.34	8.60	-1.67	0.478
53.08	-19.73	-21.36	0.00	-1,469.26	0.00	1,469.26	2,873.92	1,436.96	5,096.66	2,552.12	9.71	-1.78	0.583
55.00	-19.36	-21.09	0.00	-1,428.26	0.00	1,428.26	2,856.46	1,428.23	5,015.72	2,511.59	10.44	-1.85	0.576
60.00	-18.48	-20.77	0.00	-1,322.79	0.00	1,322.79	2,810.00	1,405.00	4,806.12	2,406.63	12.49	-2.05	0.556
63.00	-17.88	-20.44	0.00	-1,260.47	0.00	1,260.47	2,781.43	1,390.72	4,681.23	2,344.09	13.81	-2.17	0.544
65.00	-17.52	-20.17	0.00	-1,219.59	0.00	1,219.59	2,762.10	1,381.05	4,598.36	2,302.60	14.74	-2.25	0.536
70.00	-16.66	-19.77	0.00	-1,118.75	0.00	1,118.75	2,712.77	1,356.39	4,392.64	2,199.58	17.21	-2.45	0.515
75.00	-15.76	-19.22	0.00	-1,019.90	0.00	1,019.90	2,662.01	1,331.01	4,189.16	2,097.69	19.88	-2.65	0.492
80.00	-14.95	-18.82	0.00	-923.78	0.00	923.78	2,609.81	1,304.91	3,988.12	1,997.02	22.77	-2.85	0.469
85.00	-14.16	-18.42	0.00	-829.67	0.00	829.67	2,556.18	1,278.09	3,789.70	1,897.67	25.85	-3.04	0.443
90.00	-13.39	-18.07	0.00	-737.58	0.00	737.58	2,501.11	1,250.56	3,594.12	1,799.73	29.14	-3.23	0.415
93.54	-12.87	-17.86	0.00	-673.68	0.00	673.68	2,461.30	1,230.65	3,457.58	1,731.36	31.58	-3.36	0.395
95.00	-12.52	-17.66	0.00	-647.55	0.00	647.55	2,444.61	1,222.31	3,401.55	1,703.30	32.62	-3.42	0.386
98.45	-11.73	-17.43	0.00	-586.57	0.00	586.57	1,812.81	906.41	2,512.23	1,257.98	35.13	-3.54	0.473
100.00	-11.53	-17.18	0.00	-559.61	0.00	559.61	1,801.24	900.62	2,470.81	1,237.24	36.29	-3.60	0.459
105.00	-10.90	-16.79	0.00	-473.69	0.00	473.69	1,762.89	881.45	2,337.88	1,170.68	40.16	-3.79	0.411
110.00	-10.30	-16.40	0.00	-389.73	0.00	389.73	1,723.10	861.55	2,206.62	1,104.95	44.23	-3.97	0.359
115.00	-9.73	-16.15	0.00	-307.72	0.00	307.72	1,681.88	840.94	2,077.21	1,040.15	48.48	-4.14	0.302
116.00	-7.73	-13.39	0.00	-291.57	0.00	291.57	1,673.47	836.73	2,051.56	1,027.31	49.35	-4.17	0.289
120.00	-7.33	-13.05	0.00	-238.00	0.00	238.00	1,639.23	819.62	1,949.84	976.37	52.89	-4.28	0.248
125.00	-6.83	-12.81	0.00	-172.74	0.00	172.74	1,595.14	797.57	1,824.73	913.72	57.44	-4.40	0.194
126.00	-4.92	-9.05	0.00	-159.93	0.00	159.93	1,586.15	793.08	1,799.99	901.33	58.36	-4.42	0.181
130.00	-4.59	-8.72	0.00	-123.72	0.00	123.72	1,549.62	774.81	1,702.06	852.29	62.10	-4.50	0.148
135.00	-4.19	-8.39	0.00	-80.12	0.00	80.12	1,502.66	751.33	1,582.02	792.19	66.85	-4.58	0.104
139.00	-2.40	-5.68	0.00	-46.55	0.00	46.55	1,461.37	730.68	1,485.28	743.75	70.70	-4.62	0.064
140.00	-2.34	-5.48	0.00	-40.87	0.00	40.87	1,448.40	724.20	1,458.90	730.54	71.67	-4.63	0.058
145.00	-2.01	-5.26	0.00	-13.47	0.00	13.47	1,383.54	691.77	1,330.54	666.26	76.52	-4.65	0.022
146.00	0.00	-5.08	0.00	-8.20	0.00	8.20	1,370.57	685.28	1,305.58	653.76	77.50	-4.65	0.013

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:32 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 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		66.8	0.0					0.0	0.0	66.8	0.0	0.0	0.0
5.00		132.7	1,698.0					0.0	377.3	132.7	2,075.3	0.0	0.0
10.00		130.5	1,709.4					0.0	392.0	130.5	2,101.3	0.0	0.0
15.00		128.2	1,696.6					0.0	399.6	128.2	2,096.2	0.0	0.0
20.00		125.8	1,675.9					0.0	404.9	125.8	2,080.8	0.0	0.0
25.00		123.3	1,651.1					0.0	409.1	123.3	2,060.2	0.0	0.0
30.00		122.2	1,623.7					0.0	412.5	122.2	2,036.3	0.0	0.0
35.00		123.6	1,594.5					0.0	415.5	123.6	2,010.0	0.0	0.0
40.00		125.7	1,564.1					0.0	418.1	125.7	1,982.1	0.0	0.0
45.00		87.7	1,532.6					0.0	420.4	87.7	1,952.9	0.0	0.0
46.91	Bot - Section 2	64.4	579.2					0.0	161.4	64.4	740.6	0.0	0.0
50.00		80.1	1,479.2					0.0	261.0	80.1	1,740.3	0.0	0.0
53.08	Top - Section 1	65.1	1,455.1					0.0	261.2	65.1	1,716.3	0.0	0.0
55.00		90.4	502.8					0.0	163.2	90.4	665.9	0.0	0.0
60.00		104.5	1,285.8					0.0	426.1	104.5	1,711.9	0.0	0.0
63.00	Appertunance(s)	65.3	758.7	33.3	0.0	0.0	243.7	0.0	256.4	98.6	1,258.8	0.0	0.0
65.00		91.3	500.3					0.0	163.0	91.3	663.3	0.0	0.0
70.00		130.0	1,226.3					0.0	408.4	130.0	1,634.7	0.0	0.0
75.00	Appertunance(s)	129.3	1,195.9	35.2	0.0	0.0	244.9	0.0	409.5	164.5	1,850.4	0.0	0.0
80.00		128.3	1,165.2					0.0	405.7	128.3	1,571.0	0.0	0.0
85.00		127.0	1,134.2					0.0	406.8	127.0	1,541.0	0.0	0.0
90.00		107.4	1,103.0					0.0	407.7	107.4	1,510.7	0.0	0.0
93.54	Bot - Section 3	62.7	762.3					0.0	289.0	62.7	1,051.3	0.0	0.0
95.00		61.6	477.2					0.0	119.7	61.6	596.9	0.0	0.0
98.45	Top - Section 2	62.4	1,107.8					0.0	282.8	62.4	1,390.6	0.0	0.0
100.00		80.7	282.6					0.0	126.8	80.7	409.4	0.0	0.0
105.00		121.9	891.5					0.0	410.4	121.9	1,301.9	0.0	0.0
110.00		119.8	863.8					0.0	411.3	119.8	1,275.1	0.0	0.0
115.00		71.1	836.0					0.0	412.1	71.1	1,248.1	0.0	0.0
116.00	Appertunance(s)	58.2	164.8	600.8	0.0	0.0	4,336.4	0.0	82.5	659.0	4,583.7	0.0	0.0
120.00		103.4	645.1					0.0	283.1	103.4	928.2	0.0	0.0
125.00		68.2	779.8					0.0	354.5	68.2	1,134.3	0.0	0.0
126.00	Appertunance(s)	55.7	153.5	765.1	0.0	0.0	4,938.8	0.0	71.0	820.8	5,163.3	0.0	0.0
130.00		98.7	599.9					0.0	230.9	98.7	830.8	0.0	0.0
135.00		96.7	723.1					0.0	289.2	96.7	1,012.3	0.0	0.0
139.00	Appertunance(s)	52.9	558.8	598.5	0.0	0.0	3,275.3	0.0	231.9	651.4	4,066.0	0.0	0.0
140.00		61.9	137.6					0.0	46.2	61.9	183.8	0.0	0.0
145.00		61.5	665.8					0.0	231.5	61.5	897.3	0.0	0.0
146.00		10.1	130.7					0.0	46.4	10.1	177.0	0.0	0.0
Totals:										5,630.12	61,250.0	0.00	0.00

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:34 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 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	-68.79	-6.56	0.00	-701.77	0.00	701.77	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.164
5.00	-66.71	-6.47	0.00	-668.98	0.00	668.98	4,199.87	2,099.94	9,157.83	4,585.72	0.02	-0.04	0.162
10.00	-64.60	-6.39	0.00	-636.62	0.00	636.62	4,146.57	2,073.29	8,852.70	4,432.93	0.09	-0.08	0.159
15.00	-62.50	-6.30	0.00	-604.68	0.00	604.68	4,091.84	2,045.92	8,549.42	4,281.06	0.20	-0.12	0.157
20.00	-60.42	-6.21	0.00	-573.18	0.00	573.18	4,035.67	2,017.84	8,248.20	4,130.23	0.35	-0.17	0.154
25.00	-58.35	-6.13	0.00	-542.11	0.00	542.11	3,978.07	1,989.03	7,949.23	3,980.52	0.55	-0.21	0.151
30.00	-56.31	-6.04	0.00	-511.47	0.00	511.47	3,919.03	1,959.52	7,652.71	3,832.04	0.79	-0.25	0.148
35.00	-54.30	-5.95	0.00	-481.26	0.00	481.26	3,858.56	1,929.28	7,358.83	3,684.88	1.08	-0.30	0.145
40.00	-52.31	-5.85	0.00	-451.52	0.00	451.52	3,796.66	1,898.33	7,067.80	3,539.15	1.41	-0.34	0.141
45.00	-50.36	-5.78	0.00	-422.26	0.00	422.26	3,733.32	1,866.66	6,779.80	3,394.94	1.79	-0.39	0.138
46.91	-49.61	-5.73	0.00	-411.20	0.00	411.20	3,708.70	1,854.35	6,670.44	3,340.18	1.95	-0.40	0.136
50.00	-47.87	-5.66	0.00	-393.51	0.00	393.51	3,668.55	1,834.27	6,495.03	3,252.34	2.22	-0.43	0.134
53.08	-46.15	-5.60	0.00	-376.08	0.00	376.08	2,873.92	1,436.96	5,096.66	2,552.12	2.51	-0.46	0.163
55.00	-45.49	-5.53	0.00	-365.33	0.00	365.33	2,856.46	1,428.23	5,015.72	2,511.59	2.70	-0.48	0.161
60.00	-43.77	-5.44	0.00	-337.67	0.00	337.67	2,810.00	1,405.00	4,806.12	2,406.63	3.22	-0.53	0.156
63.00	-42.51	-5.35	0.00	-321.33	0.00	321.33	2,781.43	1,390.72	4,681.23	2,344.09	3.56	-0.56	0.152
65.00	-41.84	-5.28	0.00	-310.63	0.00	310.63	2,762.10	1,381.05	4,598.36	2,302.60	3.80	-0.58	0.150
70.00	-40.21	-5.17	0.00	-284.22	0.00	284.22	2,712.77	1,356.39	4,392.64	2,199.58	4.44	-0.63	0.144
75.00	-38.35	-5.02	0.00	-258.38	0.00	258.38	2,662.01	1,331.01	4,189.16	2,097.69	5.12	-0.68	0.138
80.00	-36.78	-4.90	0.00	-233.29	0.00	233.29	2,609.81	1,304.91	3,988.12	1,997.02	5.86	-0.73	0.131
85.00	-35.24	-4.78	0.00	-208.79	0.00	208.79	2,556.18	1,278.09	3,789.70	1,897.67	6.65	-0.78	0.124
90.00	-33.73	-4.68	0.00	-184.87	0.00	184.87	2,501.11	1,250.56	3,594.12	1,799.73	7.50	-0.83	0.116
93.54	-32.67	-4.61	0.00	-168.32	0.00	168.32	2,461.30	1,230.65	3,457.58	1,731.36	8.12	-0.86	0.111
95.00	-32.08	-4.56	0.00	-161.57	0.00	161.57	2,444.61	1,222.31	3,401.55	1,703.30	8.39	-0.87	0.108
98.45	-30.68	-4.48	0.00	-145.84	0.00	145.84	1,812.81	906.41	2,512.23	1,257.98	9.03	-0.90	0.133
100.00	-30.27	-4.41	0.00	-138.91	0.00	138.91	1,801.24	900.62	2,470.81	1,237.24	9.32	-0.92	0.129
105.00	-28.97	-4.29	0.00	-116.84	0.00	116.84	1,762.89	881.45	2,337.88	1,170.68	10.31	-0.97	0.116
110.00	-27.69	-4.17	0.00	-95.37	0.00	95.37	1,723.10	861.55	2,206.62	1,104.95	11.35	-1.01	0.102
115.00	-26.45	-4.09	0.00	-74.51	0.00	74.51	1,681.88	840.94	2,077.21	1,040.15	12.43	-1.05	0.087
116.00	-21.87	-3.35	0.00	-70.42	0.00	70.42	1,673.47	836.73	2,051.56	1,027.31	12.65	-1.06	0.082
120.00	-20.95	-3.24	0.00	-57.01	0.00	57.01	1,639.23	819.62	1,949.84	976.37	13.55	-1.09	0.071
125.00	-19.81	-3.16	0.00	-40.80	0.00	40.80	1,595.14	797.57	1,824.73	913.72	14.70	-1.11	0.057
126.00	-14.67	-2.24	0.00	-37.65	0.00	37.65	1,586.15	793.08	1,799.99	901.33	14.94	-1.12	0.051
130.00	-13.84	-2.13	0.00	-28.69	0.00	28.69	1,549.62	774.81	1,702.06	852.29	15.88	-1.14	0.043
135.00	-12.83	-2.01	0.00	-18.04	0.00	18.04	1,502.66	751.33	1,582.02	792.19	17.09	-1.15	0.031
139.00	-8.77	-1.28	0.00	-9.99	0.00	9.99	1,461.37	730.68	1,485.28	743.75	18.06	-1.16	0.019
140.00	-8.59	-1.22	0.00	-8.70	0.00	8.70	1,448.40	724.20	1,458.90	730.54	18.30	-1.17	0.018
145.00	-7.70	-1.14	0.00	-2.62	0.00	2.62	1,383.54	691.77	1,330.54	666.26	19.53	-1.17	0.009
146.00	0.00	-0.98	0.00	-1.48	0.00	1.48	1,370.57	685.28	1,305.58	653.76	19.77	-1.17	0.002

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:34 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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		50.0	0.0					0.0	0.0	50.0	0.0	0.0	0.0
5.00		99.0	1,084.9					0.0	221.0	99.0	1,305.9	0.0	0.0
10.00		97.0	1,062.6					0.0	221.0	97.0	1,283.6	0.0	0.0
15.00		94.9	1,040.3					0.0	221.0	94.9	1,261.3	0.0	0.0
20.00		92.9	1,018.1					0.0	221.0	92.9	1,239.1	0.0	0.0
25.00		90.8	995.8					0.0	221.0	90.8	1,216.8	0.0	0.0
30.00		89.9	973.5					0.0	221.0	89.9	1,194.5	0.0	0.0
35.00		90.7	951.2					0.0	221.0	90.7	1,172.2	0.0	0.0
40.00		92.0	928.9					0.0	221.0	92.0	1,149.9	0.0	0.0
45.00		64.1	906.7					0.0	221.0	64.1	1,127.7	0.0	0.0
46.91	Bot - Section 2	47.0	341.1					0.0	84.6	47.0	425.6	0.0	0.0
50.00		58.4	1,003.3					0.0	136.4	58.4	1,139.7	0.0	0.0
53.08	Top - Section 1	47.4	985.6					0.0	136.1	47.4	1,121.7	0.0	0.0
55.00		65.7	278.1					0.0	84.9	65.7	363.0	0.0	0.0
60.00		75.9	711.5					0.0	221.0	75.9	932.5	0.0	0.0
63.00	Appertunance(s)	47.3	418.0	29.2	0.0	0.0	85.0	0.0	132.6	76.5	635.6	0.0	0.0
65.00		66.0	274.9					0.0	88.1	66.0	363.0	0.0	0.0
70.00		93.9	674.3					0.0	220.3	93.9	894.6	0.0	0.0
75.00	Appertunance(s)	93.1	655.8	30.7	0.0	0.0	85.0	0.0	220.3	123.8	961.0	0.0	0.0
80.00		92.1	637.2					0.0	216.2	92.1	853.3	0.0	0.0
85.00		91.0	618.6					0.0	216.2	91.0	834.8	0.0	0.0
90.00		76.7	600.1					0.0	216.2	76.7	816.2	0.0	0.0
93.54	Bot - Section 3	44.7	413.2					0.0	152.9	44.7	566.1	0.0	0.0
95.00		43.9	305.1					0.0	63.3	43.9	368.4	0.0	0.0
98.45	Top - Section 2	44.4	708.6					0.0	149.3	44.4	857.9	0.0	0.0
100.00		57.2	140.1					0.0	66.9	57.2	206.9	0.0	0.0
105.00		86.3	443.1					0.0	216.2	86.3	659.2	0.0	0.0
110.00		84.5	428.2					0.0	216.2	84.5	644.4	0.0	0.0
115.00		50.0	413.4					0.0	216.2	50.0	629.5	0.0	0.0
116.00	Appertunance(s)	40.8	80.9	536.6	0.0	0.0	2,287.1	0.0	43.2	577.4	2,411.2	0.0	0.0
120.00		72.3	317.6					0.0	133.6	72.3	451.2	0.0	0.0
125.00		47.6	383.7					0.0	167.0	47.6	550.6	0.0	0.0
126.00	Appertunance(s)	38.7	75.0	756.0	0.0	0.0	2,320.1	0.0	33.4	794.6	2,428.4	0.0	0.0
130.00		68.4	293.9					0.0	89.1	68.4	383.0	0.0	0.0
135.00		66.7	354.0					0.0	111.4	66.7	465.4	0.0	0.0
139.00	Appertunance(s)	36.4	272.5	528.9	0.0	0.0	1,860.0	0.0	89.1	565.2	2,221.6	0.0	0.0
140.00		42.3	66.6					0.0	12.4	42.3	79.1	0.0	0.0
145.00		42.0	324.3					0.0	62.2	42.0	386.5	0.0	0.0
146.00		6.9	63.1					0.0	12.4	6.9	75.5	0.0	0.0
Totals:										4,470.21	33,676.9	0.00	0.00

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:36 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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	-36.30	-5.54	0.00	-600.83	0.00	600.83	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.135
5.00	-34.99	-5.47	0.00	-573.11	0.00	573.11	4,199.87	2,099.94	9,157.83	4,585.72	0.02	-0.04	0.133
10.00	-33.70	-5.39	0.00	-545.77	0.00	545.77	4,146.57	2,073.29	8,852.70	4,432.93	0.07	-0.07	0.131
15.00	-32.44	-5.31	0.00	-518.82	0.00	518.82	4,091.84	2,045.92	8,549.42	4,281.06	0.17	-0.11	0.129
20.00	-31.20	-5.24	0.00	-492.25	0.00	492.25	4,035.67	2,017.84	8,248.20	4,130.23	0.30	-0.14	0.127
25.00	-29.98	-5.16	0.00	-466.07	0.00	466.07	3,978.07	1,989.03	7,949.23	3,980.52	0.47	-0.18	0.125
30.00	-28.78	-5.09	0.00	-440.25	0.00	440.25	3,919.03	1,959.52	7,652.71	3,832.04	0.68	-0.22	0.122
35.00	-27.61	-5.01	0.00	-414.81	0.00	414.81	3,858.56	1,929.28	7,358.83	3,684.88	0.92	-0.25	0.120
40.00	-26.45	-4.93	0.00	-389.76	0.00	389.76	3,796.66	1,898.33	7,067.80	3,539.15	1.21	-0.29	0.117
45.00	-25.32	-4.87	0.00	-365.11	0.00	365.11	3,733.32	1,866.66	6,779.80	3,394.94	1.54	-0.33	0.114
46.91	-24.90	-4.83	0.00	-355.78	0.00	355.78	3,708.70	1,854.35	6,670.44	3,340.18	1.67	-0.35	0.113
50.00	-23.76	-4.78	0.00	-340.87	0.00	340.87	3,668.55	1,834.27	6,495.03	3,252.34	1.91	-0.37	0.111
53.08	-22.63	-4.73	0.00	-326.16	0.00	326.16	2,873.92	1,436.96	5,096.66	2,552.12	2.15	-0.39	0.136
55.00	-22.27	-4.67	0.00	-317.08	0.00	317.08	2,856.46	1,428.23	5,015.72	2,511.59	2.32	-0.41	0.134
60.00	-21.33	-4.60	0.00	-293.72	0.00	293.72	2,810.00	1,405.00	4,806.12	2,406.63	2.77	-0.45	0.130
63.00	-20.70	-4.53	0.00	-279.92	0.00	279.92	2,781.43	1,390.72	4,681.23	2,344.09	3.06	-0.48	0.127
65.00	-20.33	-4.47	0.00	-270.86	0.00	270.86	2,762.10	1,381.05	4,598.36	2,302.60	3.27	-0.50	0.125
70.00	-19.43	-4.38	0.00	-248.50	0.00	248.50	2,712.77	1,356.39	4,392.64	2,199.58	3.82	-0.54	0.120
75.00	-18.47	-4.26	0.00	-226.58	0.00	226.58	2,662.01	1,331.01	4,189.16	2,097.69	4.41	-0.59	0.115
80.00	-17.62	-4.18	0.00	-205.26	0.00	205.26	2,609.81	1,304.91	3,988.12	1,997.02	5.05	-0.63	0.110
85.00	-16.78	-4.09	0.00	-184.37	0.00	184.37	2,556.18	1,278.09	3,789.70	1,897.67	5.73	-0.67	0.104
90.00	-15.96	-4.01	0.00	-163.93	0.00	163.93	2,501.11	1,250.56	3,594.12	1,799.73	6.46	-0.72	0.097
93.54	-15.39	-3.97	0.00	-149.74	0.00	149.74	2,461.30	1,230.65	3,457.58	1,731.36	7.01	-0.75	0.093
95.00	-15.02	-3.92	0.00	-143.94	0.00	143.94	2,444.61	1,222.31	3,401.55	1,703.30	7.24	-0.76	0.091
98.45	-14.17	-3.87	0.00	-130.39	0.00	130.39	1,812.81	906.41	2,512.23	1,257.98	7.80	-0.79	0.111
100.00	-13.96	-3.82	0.00	-124.40	0.00	124.40	1,801.24	900.62	2,470.81	1,237.24	8.05	-0.80	0.108
105.00	-13.30	-3.73	0.00	-105.31	0.00	105.31	1,762.89	881.45	2,337.88	1,170.68	8.91	-0.84	0.098
110.00	-12.65	-3.65	0.00	-86.65	0.00	86.65	1,723.10	861.55	2,206.62	1,104.95	9.82	-0.88	0.086
115.00	-12.02	-3.59	0.00	-68.41	0.00	68.41	1,681.88	840.94	2,077.21	1,040.15	10.76	-0.92	0.073
116.00	-9.62	-2.98	0.00	-64.82	0.00	64.82	1,673.47	836.73	2,051.56	1,027.31	10.95	-0.93	0.069
120.00	-9.17	-2.90	0.00	-52.91	0.00	52.91	1,639.23	819.62	1,949.84	976.37	11.74	-0.95	0.060
125.00	-8.62	-2.85	0.00	-38.40	0.00	38.40	1,595.14	797.57	1,824.73	913.72	12.75	-0.98	0.047
126.00	-6.20	-2.01	0.00	-35.55	0.00	35.55	1,586.15	793.08	1,799.99	901.33	12.96	-0.98	0.043
130.00	-5.82	-1.94	0.00	-27.50	0.00	27.50	1,549.62	774.81	1,702.06	852.29	13.79	-1.00	0.036
135.00	-5.36	-1.87	0.00	-17.80	0.00	17.80	1,502.66	751.33	1,582.02	792.19	14.84	-1.02	0.026
139.00	-3.14	-1.26	0.00	-10.33	0.00	10.33	1,461.37	730.68	1,485.28	743.75	15.70	-1.03	0.016
140.00	-3.07	-1.22	0.00	-9.07	0.00	9.07	1,448.40	724.20	1,458.90	730.54	15.91	-1.03	0.015
145.00	-2.68	-1.17	0.00	-2.98	0.00	2.98	1,383.54	691.77	1,330.54	666.26	16.99	-1.03	0.006
146.00	0.00	-1.12	0.00	-1.81	0.00	1.81	1,370.57	685.28	1,305.58	653.76	17.21	-1.03	0.003

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.22
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.86
Total Unfactored Dead Load:	36.30 k
Seismic Base Shear (E):	1.42 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	145.50	76	805	0.005	7	93
37	142.50	386	3,962	0.025	36	478
36	139.50	79	779	0.005	7	98
35	137.00	362	3,445	0.022	31	447
34	132.50	465	4,166	0.027	38	576
33	128.00	383	3,215	0.021	29	474
32	125.50	108	877	0.006	8	134
31	122.50	551	4,259	0.027	39	681
30	118.00	451	3,255	0.021	30	558
29	115.50	124	860	0.006	8	154
28	112.50	630	4,155	0.027	38	779
27	107.50	644	3,908	0.025	36	797
26	102.50	659	3,659	0.023	33	815
25	99.23	207	1,081	0.007	10	256
24	96.73	858	4,274	0.027	39	1,061
23	94.27	368	1,749	0.011	16	456
22	91.77	566	2,557	0.016	23	700
21	87.50	816	3,374	0.022	31	1,010
20	82.50	835	3,093	0.020	28	1,033
19	77.50	853	2,814	0.018	26	1,056
18	72.50	876	2,551	0.016	23	1,084
17	67.50	895	2,281	0.015	21	1,107
16	64.00	363	838	0.005	8	449

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

15	61.50	551	1,180	0.008	11	681
14	57.50	932	1,764	0.011	16	1,153
13	54.04	363	612	0.004	6	449
12	51.54	1,122	1,731	0.011	16	1,387
11	48.46	1,140	1,567	0.010	14	1,410
10	45.96	426	530	0.003	5	526
9	42.50	1,128	1,215	0.008	11	1,395
8	37.50	1,150	981	0.006	9	1,422
7	32.50	1,172	766	0.005	7	1,450
6	27.50	1,194	572	0.004	5	1,477
5	22.50	1,217	401	0.003	4	1,505
4	17.50	1,239	256	0.002	2	1,533
3	12.50	1,261	139	0.001	1	1,560
2	7.50	1,284	55	0.000	0	1,588
1	2.50	1,306	7	0.000	0	1,615
Nokia B5 RRH4x40-850	147.00	146	1,580	0.010	14	180
Alcatel-Lucent RRH2x	147.00	170	1,848	0.012	17	210
Alcatel-Lucent AWS4	147.00	192	2,085	0.013	19	237
Raycap RC3DC-3315-PF	147.00	64	695	0.004	6	79
Antel LPA-80080/4CF	147.00	48	521	0.003	5	59
Antel LPA-80063/4CF	147.00	40	434	0.003	4	49
Andrew SBNHH-1D65B	147.00	304	3,304	0.021	30	376
Amphenol Antel QUAD6	147.00	162	1,760	0.011	16	200
Flat Low Profile Pla	147.00	1,500	16,293	0.105	148	1,855
60" x 6" Panel	139.00	360	3,523	0.023	32	445
Flat Low Profile Pla	139.00	1,500	14,680	0.094	133	1,855
Powerwave Allgon LGP	126.00	33	269	0.002	2	41
6" x 6" Junction Box	126.00	30	245	0.002	2	37
Powerwave Allgon LGP	126.00	85	690	0.004	6	105
Raycap DC6-48-60-18-	126.00	20	163	0.001	1	25
Ericsson RRUS-11 190	126.00	264	2,152	0.014	20	327
Allgon 7770.00	126.00	210	1,712	0.011	16	260
KMW AM-X-CD-17-65-00	126.00	178	1,455	0.009	13	221
Flat Low Profile Pla	126.00	1,500	12,227	0.078	111	1,855
RFS 1900 PCS	116.00	57	398	0.003	4	71
RFS APXV18-206517	116.00	79	553	0.004	5	98
Commscope LNX-6515DS	116.00	151	1,055	0.007	10	187
Round Platform w/ Ha	116.00	2,000	13,976	0.090	127	2,474
GPS	75.00	10	31	0.000	0	12
Stand-Off	75.00	75	233	0.001	2	93
GPS	63.00	10	22	0.000	0	12
Stand-Off	63.00	75	168	0.001	2	93
		36,303	155,806	1.000	1,416	44,903

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	145.50	76	805	0.005	7	65
37	142.50	386	3,962	0.025	36	334
36	139.50	79	779	0.005	7	68
35	137.00	362	3,445	0.022	31	312
34	132.50	465	4,166	0.027	38	402
33	128.00	383	3,215	0.021	29	331
32	125.50	108	877	0.006	8	94
31	122.50	551	4,259	0.027	39	475
30	118.00	451	3,255	0.021	30	389
29	115.50	124	860	0.006	8	107
28	112.50	630	4,155	0.027	38	543
27	107.50	644	3,908	0.025	36	556

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

26	102.50	659	3,659	0.023	33	569
25	99.23	207	1,081	0.007	10	179
24	96.73	858	4,274	0.027	39	740
23	94.27	368	1,749	0.011	16	318
22	91.77	566	2,557	0.016	23	489
21	87.50	816	3,374	0.022	31	704
20	82.50	835	3,093	0.020	28	720
19	77.50	853	2,814	0.018	26	737
18	72.50	876	2,551	0.016	23	756
17	67.50	895	2,281	0.015	21	772
16	64.00	363	838	0.005	8	313
15	61.50	551	1,180	0.008	11	475
14	57.50	932	1,764	0.011	16	805
13	54.04	363	612	0.004	6	313
12	51.54	1,122	1,731	0.011	16	968
11	48.46	1,140	1,567	0.010	14	984
10	45.96	426	530	0.003	5	367
9	42.50	1,128	1,215	0.008	11	973
8	37.50	1,150	981	0.006	9	993
7	32.50	1,172	766	0.005	7	1,012
6	27.50	1,194	572	0.004	5	1,031
5	22.50	1,217	401	0.003	4	1,050
4	17.50	1,239	256	0.002	2	1,069
3	12.50	1,261	139	0.001	1	1,089
2	7.50	1,284	55	0.000	0	1,108
1	2.50	1,306	7	0.000	0	1,127
Nokia B5 RRH4x40-850	147.00	146	1,580	0.010	14	126
Alcatel-Lucent RRH2x	147.00	170	1,848	0.012	17	147
Alcatel-Lucent AWS4	147.00	192	2,085	0.013	19	166
Raycap RC3DC-3315-PF	147.00	64	695	0.004	6	55
Antel LPA-80080/4CF	147.00	48	521	0.003	5	41
Antel LPA-80063/4CF	147.00	40	434	0.003	4	35
Andrew SBNHH-1D65B	147.00	304	3,304	0.021	30	263
Amphenol Antel QUAD6	147.00	162	1,760	0.011	16	140
Flat Low Profile Pla	147.00	1,500	16,293	0.105	148	1,295
60" x 6" Panel	139.00	360	3,523	0.023	32	311
Flat Low Profile Pla	139.00	1,500	14,680	0.094	133	1,295
Powerwave Allgon LGP	126.00	33	269	0.002	2	28
6" x 6" Junction Box	126.00	30	245	0.002	2	26
Powerwave Allgon LGP	126.00	85	690	0.004	6	73
Raycap DC6-48-60-18-	126.00	20	163	0.001	1	17
Ericsson RRUS-11 190	126.00	264	2,152	0.014	20	228
Allgon 7770.00	126.00	210	1,712	0.011	16	181
KMW AM-X-CD-17-65-00	126.00	178	1,455	0.009	13	154
Flat Low Profile Pla	126.00	1,500	12,227	0.078	111	1,295
RFS 1900 PCS	116.00	57	398	0.003	4	49
RFS APXV18-206517	116.00	79	553	0.004	5	68
Commscope LNX-6515DS	116.00	151	1,055	0.007	10	130
Round Platform w/ Ha	116.00	2,000	13,976	0.090	127	1,726
GPS	75.00	10	31	0.000	0	9
Stand-Off	75.00	75	233	0.001	2	65
GPS	63.00	10	22	0.000	0	9
Stand-Off	63.00	75	168	0.001	2	65
		36,303	155,806	1.000	1,416	31,333

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.04	-1.16	0.00	-130.05	0.00	130.05	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.037
5.00	-38.45	-1.16	0.00	-124.25	0.00	124.25	4,199.87	2,099.94	9,157.83	4,585.72	0.00	-0.01	0.036
10.00	-36.89	-1.17	0.00	-118.44	0.00	118.44	4,146.57	2,073.29	8,852.70	4,432.93	0.02	-0.02	0.036
15.00	-35.36	-1.17	0.00	-112.61	0.00	112.61	4,091.84	2,045.92	8,549.42	4,281.06	0.04	-0.02	0.035
20.00	-33.85	-1.17	0.00	-106.76	0.00	106.76	4,035.67	2,017.84	8,248.20	4,130.23	0.06	-0.03	0.034
25.00	-32.38	-1.17	0.00	-100.92	0.00	100.92	3,978.07	1,989.03	7,949.23	3,980.52	0.10	-0.04	0.033
30.00	-30.93	-1.16	0.00	-95.08	0.00	95.08	3,919.03	1,959.52	7,652.71	3,832.04	0.15	-0.05	0.033
35.00	-29.50	-1.16	0.00	-89.26	0.00	89.26	3,858.56	1,929.28	7,358.83	3,684.88	0.20	-0.06	0.032
40.00	-28.11	-1.15	0.00	-83.48	0.00	83.48	3,796.66	1,898.33	7,067.80	3,539.15	0.26	-0.06	0.031
45.00	-27.58	-1.15	0.00	-77.73	0.00	77.73	3,733.32	1,866.66	6,779.80	3,394.94	0.33	-0.07	0.030
46.91	-26.17	-1.13	0.00	-75.54	0.00	75.54	3,708.70	1,854.35	6,670.44	3,340.18	0.36	-0.07	0.030
50.00	-24.78	-1.12	0.00	-72.04	0.00	72.04	3,668.55	1,834.27	6,495.03	3,252.34	0.41	-0.08	0.029
53.08	-24.34	-1.11	0.00	-68.60	0.00	68.60	2,873.92	1,436.96	5,096.66	2,552.12	0.47	-0.08	0.035
55.00	-23.18	-1.10	0.00	-66.46	0.00	66.46	2,856.46	1,428.23	5,015.72	2,511.59	0.50	-0.09	0.035
60.00	-22.50	-1.09	0.00	-60.98	0.00	60.98	2,810.00	1,405.00	4,806.12	2,406.63	0.60	-0.10	0.033
63.00	-21.95	-1.08	0.00	-57.71	0.00	57.71	2,781.43	1,390.72	4,681.23	2,344.09	0.66	-0.10	0.033
65.00	-20.84	-1.06	0.00	-55.55	0.00	55.55	2,762.10	1,381.05	4,598.36	2,302.60	0.71	-0.11	0.032
70.00	-19.76	-1.04	0.00	-50.26	0.00	50.26	2,712.77	1,356.39	4,392.64	2,199.58	0.82	-0.12	0.030
75.00	-18.60	-1.01	0.00	-45.07	0.00	45.07	2,662.01	1,331.01	4,189.16	2,097.69	0.95	-0.12	0.028
80.00	-17.56	-0.98	0.00	-40.02	0.00	40.02	2,609.81	1,304.91	3,988.12	1,997.02	1.08	-0.13	0.027
85.00	-16.55	-0.95	0.00	-35.11	0.00	35.11	2,556.18	1,278.09	3,789.70	1,897.67	1.23	-0.14	0.025
90.00	-15.85	-0.93	0.00	-30.36	0.00	30.36	2,501.11	1,250.56	3,594.12	1,799.73	1.38	-0.15	0.023
93.54	-15.40	-0.91	0.00	-27.07	0.00	27.07	2,461.30	1,230.65	3,457.58	1,731.36	1.49	-0.15	0.022
95.00	-14.34	-0.87	0.00	-25.74	0.00	25.74	2,444.61	1,222.31	3,401.55	1,703.30	1.54	-0.16	0.021
98.45	-14.08	-0.86	0.00	-22.73	0.00	22.73	1,812.81	906.41	2,512.23	1,257.98	1.66	-0.16	0.026
100.00	-13.27	-0.83	0.00	-21.40	0.00	21.40	1,801.24	900.62	2,470.81	1,237.24	1.71	-0.16	0.025
105.00	-12.47	-0.79	0.00	-17.26	0.00	17.26	1,762.89	881.45	2,337.88	1,170.68	1.88	-0.17	0.022
110.00	-11.69	-0.75	0.00	-13.31	0.00	13.31	1,723.10	861.55	2,206.62	1,104.95	2.07	-0.18	0.019
115.00	-11.54	-0.74	0.00	-9.55	0.00	9.55	1,681.88	840.94	2,077.21	1,040.15	2.26	-0.18	0.016
116.00	-8.15	-0.56	0.00	-8.81	0.00	8.81	1,673.47	836.73	2,051.56	1,027.31	2.30	-0.18	0.013
120.00	-7.47	-0.52	0.00	-6.57	0.00	6.57	1,639.23	819.62	1,949.84	976.37	2.45	-0.19	0.011
125.00	-7.33	-0.51	0.00	-3.98	0.00	3.98	1,595.14	797.57	1,824.73	913.72	2.65	-0.19	0.009
126.00	-3.99	-0.30	0.00	-3.47	0.00	3.47	1,586.15	793.08	1,799.99	901.33	2.69	-0.19	0.006
130.00	-3.42	-0.26	0.00	-2.28	0.00	2.28	1,549.62	774.81	1,702.06	852.29	2.85	-0.19	0.005
135.00	-2.97	-0.23	0.00	-0.99	0.00	0.99	1,502.66	751.33	1,582.02	792.19	3.05	-0.19	0.003
139.00	-0.57	-0.05	0.00	-0.08	0.00	0.08	1,461.37	730.68	1,485.28	743.75	3.22	-0.19	0.001
140.00	-0.09	-0.01	0.00	-0.04	0.00	0.04	1,448.40	724.20	1,458.90	730.54	3.26	-0.19	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,383.54	691.77	1,330.54	666.26	3.46	-0.19	0.000
146.00	0.00	0.00	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	3.50	-0.19	0.000

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_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	-27.94	-1.16	0.00	-128.78	0.00	128.78	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.034
5.00	-26.83	-1.16	0.00	-122.99	0.00	122.99	4,199.87	2,099.94	9,157.83	4,585.72	0.00	-0.01	0.033
10.00	-25.74	-1.16	0.00	-117.19	0.00	117.19	4,146.57	2,073.29	8,852.70	4,432.93	0.02	-0.02	0.033
15.00	-24.67	-1.16	0.00	-111.38	0.00	111.38	4,091.84	2,045.92	8,549.42	4,281.06	0.04	-0.02	0.032
20.00	-23.62	-1.16	0.00	-105.56	0.00	105.56	4,035.67	2,017.84	8,248.20	4,130.23	0.06	-0.03	0.031
25.00	-22.59	-1.16	0.00	-99.75	0.00	99.75	3,978.07	1,989.03	7,949.23	3,980.52	0.10	-0.04	0.031
30.00	-21.58	-1.16	0.00	-93.95	0.00	93.95	3,919.03	1,959.52	7,652.71	3,832.04	0.15	-0.05	0.030
35.00	-20.59	-1.15	0.00	-88.17	0.00	88.17	3,858.56	1,929.28	7,358.83	3,684.88	0.20	-0.05	0.029
40.00	-19.61	-1.14	0.00	-82.43	0.00	82.43	3,796.66	1,898.33	7,067.80	3,539.15	0.26	-0.06	0.028
45.00	-19.25	-1.14	0.00	-76.73	0.00	76.73	3,733.32	1,866.66	6,779.80	3,394.94	0.33	-0.07	0.028
46.91	-18.26	-1.12	0.00	-74.56	0.00	74.56	3,708.70	1,854.35	6,670.44	3,340.18	0.36	-0.07	0.027
50.00	-17.29	-1.11	0.00	-71.10	0.00	71.10	3,668.55	1,834.27	6,495.03	3,252.34	0.41	-0.08	0.027
53.08	-16.98	-1.10	0.00	-67.69	0.00	67.69	2,873.92	1,436.96	5,096.66	2,552.12	0.46	-0.08	0.032
55.00	-16.18	-1.09	0.00	-65.58	0.00	65.58	2,856.46	1,428.23	5,015.72	2,511.59	0.50	-0.09	0.032
60.00	-15.70	-1.08	0.00	-60.15	0.00	60.15	2,810.00	1,405.00	4,806.12	2,406.63	0.59	-0.10	0.031
63.00	-15.31	-1.07	0.00	-56.92	0.00	56.92	2,781.43	1,390.72	4,681.23	2,344.09	0.65	-0.10	0.030
65.00	-14.54	-1.05	0.00	-54.79	0.00	54.79	2,762.10	1,381.05	4,598.36	2,302.60	0.70	-0.11	0.029
70.00	-13.79	-1.02	0.00	-49.55	0.00	49.55	2,712.77	1,356.39	4,392.64	2,199.58	0.81	-0.11	0.028
75.00	-12.98	-1.00	0.00	-44.43	0.00	44.43	2,662.01	1,331.01	4,189.16	2,097.69	0.94	-0.12	0.026
80.00	-12.25	-0.97	0.00	-39.45	0.00	39.45	2,609.81	1,304.91	3,988.12	1,997.02	1.07	-0.13	0.024
85.00	-11.55	-0.94	0.00	-34.60	0.00	34.60	2,556.18	1,278.09	3,789.70	1,897.67	1.21	-0.14	0.023
90.00	-11.06	-0.91	0.00	-29.91	0.00	29.91	2,501.11	1,250.56	3,594.12	1,799.73	1.36	-0.15	0.021
93.54	-10.74	-0.90	0.00	-26.68	0.00	26.68	2,461.30	1,230.65	3,457.58	1,731.36	1.48	-0.15	0.020
95.00	-10.00	-0.86	0.00	-25.36	0.00	25.36	2,444.61	1,222.31	3,401.55	1,703.30	1.52	-0.16	0.019
98.45	-9.82	-0.85	0.00	-22.40	0.00	22.40	1,812.81	906.41	2,512.23	1,257.98	1.64	-0.16	0.023
100.00	-9.26	-0.81	0.00	-21.08	0.00	21.08	1,801.24	900.62	2,470.81	1,237.24	1.69	-0.16	0.022
105.00	-8.70	-0.78	0.00	-17.01	0.00	17.01	1,762.89	881.45	2,337.88	1,170.68	1.86	-0.17	0.019
110.00	-8.16	-0.74	0.00	-13.11	0.00	13.11	1,723.10	861.55	2,206.62	1,104.95	2.04	-0.18	0.017
115.00	-8.05	-0.73	0.00	-9.41	0.00	9.41	1,681.88	840.94	2,077.21	1,040.15	2.23	-0.18	0.014
116.00	-5.69	-0.55	0.00	-8.68	0.00	8.68	1,673.47	836.73	2,051.56	1,027.31	2.27	-0.18	0.012
120.00	-5.21	-0.51	0.00	-6.48	0.00	6.48	1,639.23	819.62	1,949.84	976.37	2.42	-0.18	0.010
125.00	-5.12	-0.50	0.00	-3.92	0.00	3.92	1,595.14	797.57	1,824.73	913.72	2.62	-0.19	0.008
126.00	-2.79	-0.29	0.00	-3.42	0.00	3.42	1,586.15	793.08	1,799.99	901.33	2.66	-0.19	0.006
130.00	-2.38	-0.25	0.00	-2.25	0.00	2.25	1,549.62	774.81	1,702.06	852.29	2.82	-0.19	0.004
135.00	-2.07	-0.22	0.00	-0.97	0.00	0.97	1,502.66	751.33	1,582.02	792.19	3.01	-0.19	0.003
139.00	-0.40	-0.04	0.00	-0.08	0.00	0.08	1,461.37	730.68	1,485.28	743.75	3.18	-0.19	0.000
140.00	-0.07	-0.01	0.00	-0.04	0.00	0.04	1,448.40	724.20	1,458.90	730.54	3.22	-0.19	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,383.54	691.77	1,330.54	666.26	3.42	-0.19	0.000
146.00	0.00	0.00	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	3.46	-0.19	0.000

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_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):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.22
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	145.50	76	1.877	1.913	1.116	0.344	23	93
37	142.50	386	1.800	1.541	0.978	0.298	100	478
36	139.50	79	1.725	1.221	0.854	0.255	17	98
35	137.00	362	1.664	0.991	0.761	0.222	70	447
34	132.50	465	1.557	0.650	0.613	0.167	67	576
33	128.00	383	1.453	0.391	0.488	0.119	39	474
32	125.50	108	1.397	0.277	0.428	0.095	9	134
31	122.50	551	1.331	0.165	0.364	0.069	33	681
30	118.00	451	1.235	0.040	0.281	0.035	14	558
29	115.50	124	1.183	-0.011	0.242	0.020	2	154
28	112.50	630	1.122	-0.057	0.201	0.003	2	779
27	107.50	644	1.025	-0.103	0.144	-0.018	-10	797
26	102.50	659	0.932	-0.121	0.100	-0.031	-18	815
25	99.23	207	0.873	-0.121	0.077	-0.035	-6	256
24	96.73	858	0.830	-0.117	0.063	-0.036	-27	1,061
23	94.27	368	0.788	-0.110	0.050	-0.036	-11	456
22	91.77	566	0.747	-0.100	0.040	-0.033	-16	700
21	87.50	816	0.679	-0.080	0.026	-0.026	-18	1,010
20	82.50	835	0.603	-0.054	0.015	-0.013	-9	1,033
19	77.50	853	0.533	-0.028	0.009	0.002	2	1,056
18	72.50	876	0.466	-0.004	0.006	0.017	13	1,084
17	67.50	895	0.404	0.017	0.006	0.029	23	1,107
16	64.00	363	0.363	0.029	0.008	0.036	11	449
15	61.50	551	0.335	0.037	0.010	0.040	19	681
14	57.50	932	0.293	0.047	0.013	0.044	36	1,153
13	54.04	363	0.259	0.054	0.016	0.047	15	449
12	51.54	1,122	0.236	0.058	0.019	0.047	46	1,387
11	48.46	1,140	0.208	0.062	0.022	0.048	47	1,410
10	45.96	426	0.187	0.064	0.025	0.048	18	526
9	42.50	1,128	0.160	0.067	0.029	0.048	47	1,395
8	37.50	1,150	0.125	0.070	0.034	0.047	47	1,422
7	32.50	1,172	0.094	0.071	0.038	0.046	46	1,450
6	27.50	1,194	0.067	0.072	0.041	0.044	46	1,477
5	22.50	1,217	0.045	0.071	0.042	0.043	45	1,505

Site Number: 411216

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Site Name: CT Chaplin South CT, CT

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Customer: VERIZON WIRELESS

4	17.50	1,239	0.027	0.067	0.040	0.040	43	1,533
3	12.50	1,261	0.014	0.059	0.035	0.036	40	1,560
2	7.50	1,284	0.005	0.045	0.025	0.029	32	1,588
1	2.50	1,306	0.001	0.019	0.010	0.013	15	1,615
Nokia B5 RRH4x40-850	147.00	146	1.916	2.120	1.190	0.369	46	180
Alcatel-Lucent RRH2x	147.00	170	1.916	2.120	1.190	0.369	54	210
Alcatel-Lucent AWS4	147.00	192	1.916	2.120	1.190	0.369	61	237
Raycap RC3DC-3315-PF	147.00	64	1.916	2.120	1.190	0.369	20	79
Antel LPA-80080/4CF	147.00	48	1.916	2.120	1.190	0.369	15	59
Antel LPA-80063/4CF	147.00	40	1.916	2.120	1.190	0.369	13	49
Andrew SBNHH-1D65B	147.00	304	1.916	2.120	1.190	0.369	97	376
Amphenol Antel QUAD6	147.00	162	1.916	2.120	1.190	0.369	52	200
Flat Low Profile Pla	147.00	1,500	1.916	2.120	1.190	0.369	479	1,855
60" x 6" Panel	139.00	360	1.713	1.173	0.835	0.248	78	445
Flat Low Profile Pla	139.00	1,500	1.713	1.173	0.835	0.248	323	1,855
Powerwave Allgon LGP	126.00	33	1.408	0.298	0.440	0.100	3	41
6" x 6" Junction Box	126.00	30	1.408	0.298	0.440	0.100	3	37
Powerwave Allgon LGP	126.00	85	1.408	0.298	0.440	0.100	7	105
Raycap DC6-48-60-18-	126.00	20	1.408	0.298	0.440	0.100	2	25
Ericsson RRUS-11 190	126.00	264	1.408	0.298	0.440	0.100	23	327
Allgon 7770.00	126.00	210	1.408	0.298	0.440	0.100	18	260
KMW AM-X-CD-17-65-00	126.00	178	1.408	0.298	0.440	0.100	15	221
Flat Low Profile Pla	126.00	1,500	1.408	0.298	0.440	0.100	129	1,855
RFS 1900 PCS	116.00	57	1.193	-0.002	0.250	0.023	1	71
RFS APXV18-206517	116.00	79	1.193	-0.002	0.250	0.023	2	98
Commscope LNX-	116.00	151	1.193	-0.002	0.250	0.023	3	187
Round Platform w/ Ha	116.00	2,000	1.193	-0.002	0.250	0.023	39	2,474
GPS	75.00	10	0.499	-0.016	0.007	0.010	0	12
Stand-Off	75.00	75	0.499	-0.016	0.007	0.010	1	93
GPS	63.00	10	0.352	0.032	0.009	0.038	0	12
Stand-Off	63.00	75	0.352	0.032	0.009	0.038	2	93
		36,303	65.045	31.030	24.194	6.901	2,338	44,903

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	145.50	76	1.877	1.913	1.116	0.344	23	65
37	142.50	386	1.800	1.541	0.978	0.298	100	334
36	139.50	79	1.725	1.221	0.854	0.255	17	68
35	137.00	362	1.664	0.991	0.761	0.222	70	312
34	132.50	465	1.557	0.650	0.613	0.167	67	402
33	128.00	383	1.453	0.391	0.488	0.119	39	331
32	125.50	108	1.397	0.277	0.428	0.095	9	94
31	122.50	551	1.331	0.165	0.364	0.069	33	475
30	118.00	451	1.235	0.040	0.281	0.035	14	389
29	115.50	124	1.183	-0.011	0.242	0.020	2	107
28	112.50	630	1.122	-0.057	0.201	0.003	2	543
27	107.50	644	1.025	-0.103	0.144	-0.018	-10	556
26	102.50	659	0.932	-0.121	0.100	-0.031	-18	569
25	99.23	207	0.873	-0.121	0.077	-0.035	-6	179
24	96.73	858	0.830	-0.117	0.063	-0.036	-27	740
23	94.27	368	0.788	-0.110	0.050	-0.036	-11	318
22	91.77	566	0.747	-0.100	0.040	-0.033	-16	489
21	87.50	816	0.679	-0.080	0.026	-0.026	-18	704
20	82.50	835	0.603	-0.054	0.015	-0.013	-9	720
19	77.50	853	0.533	-0.028	0.009	0.002	2	737
18	72.50	876	0.466	-0.004	0.006	0.017	13	756
17	67.50	895	0.404	0.017	0.006	0.029	23	772

Site Number: 411216

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

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Customer: VERIZON WIRELESS

16	64.00	363	0.363	0.029	0.008	0.036	11	313
15	61.50	551	0.335	0.037	0.010	0.040	19	475
14	57.50	932	0.293	0.047	0.013	0.044	36	805
13	54.04	363	0.259	0.054	0.016	0.047	15	313
12	51.54	1,122	0.236	0.058	0.019	0.047	46	968
11	48.46	1,140	0.208	0.062	0.022	0.048	47	984
10	45.96	426	0.187	0.064	0.025	0.048	18	367
9	42.50	1,128	0.160	0.067	0.029	0.048	47	973
8	37.50	1,150	0.125	0.070	0.034	0.047	47	993
7	32.50	1,172	0.094	0.071	0.038	0.046	46	1,012
6	27.50	1,194	0.067	0.072	0.041	0.044	46	1,031
5	22.50	1,217	0.045	0.071	0.042	0.043	45	1,050
4	17.50	1,239	0.027	0.067	0.040	0.040	43	1,069
3	12.50	1,261	0.014	0.059	0.035	0.036	40	1,089
2	7.50	1,284	0.005	0.045	0.025	0.029	32	1,108
1	2.50	1,306	0.001	0.019	0.010	0.013	15	1,127
Nokia B5 RRH4x40-850	147.00	146	1.916	2.120	1.190	0.369	46	126
Alcatel-Lucent RRH2x	147.00	170	1.916	2.120	1.190	0.369	54	147
Alcatel-Lucent AWS4	147.00	192	1.916	2.120	1.190	0.369	61	166
Raycap RC3DC-3315-PF	147.00	64	1.916	2.120	1.190	0.369	20	55
Antel LPA-80080/4CF	147.00	48	1.916	2.120	1.190	0.369	15	41
Antel LPA-80063/4CF	147.00	40	1.916	2.120	1.190	0.369	13	35
Andrew SBNHH-1D65B	147.00	304	1.916	2.120	1.190	0.369	97	263
Amphenol Antel QUAD6	147.00	162	1.916	2.120	1.190	0.369	52	140
Flat Low Profile Pla	147.00	1,500	1.916	2.120	1.190	0.369	479	1,295
60" x 6" Panel	139.00	360	1.713	1.173	0.835	0.248	78	311
Flat Low Profile Pla	139.00	1,500	1.713	1.173	0.835	0.248	323	1,295
Powerwave Allgon LGP	126.00	33	1.408	0.298	0.440	0.100	3	28
6" x 6" Junction Box	126.00	30	1.408	0.298	0.440	0.100	3	26
Powerwave Allgon LGP	126.00	85	1.408	0.298	0.440	0.100	7	73
Raycap DC6-48-60-18-	126.00	20	1.408	0.298	0.440	0.100	2	17
Ericsson RRUS-11 190	126.00	264	1.408	0.298	0.440	0.100	23	228
Allgon 7770.00	126.00	210	1.408	0.298	0.440	0.100	18	181
KMW AM-X-CD-17-65-00	126.00	178	1.408	0.298	0.440	0.100	15	154
Flat Low Profile Pla	126.00	1,500	1.408	0.298	0.440	0.100	129	1,295
RFS 1900 PCS	116.00	57	1.193	-0.002	0.250	0.023	1	49
RFS APXV18-206517	116.00	79	1.193	-0.002	0.250	0.023	2	68
Commscope LNX-	116.00	151	1.193	-0.002	0.250	0.023	3	130
Round Platform w/ Ha	116.00	2,000	1.193	-0.002	0.250	0.023	39	1,726
GPS	75.00	10	0.499	-0.016	0.007	0.010	0	9
Stand-Off	75.00	75	0.499	-0.016	0.007	0.010	1	65
GPS	63.00	10	0.352	0.032	0.009	0.038	0	9
Stand-Off	63.00	75	0.352	0.032	0.009	0.038	2	65
		36,303	65.045	31.030	24.194	6.901	2,338	31,333

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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	-40.04	-1.49	0.00	-150.84	0.00	150.84	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.041
5.00	-38.45	-1.46	0.00	-143.41	0.00	143.41	4,199.87	2,099.94	9,157.83	4,585.72	0.00	-0.01	0.040
10.00	-36.89	-1.43	0.00	-136.11	0.00	136.11	4,146.57	2,073.29	8,852.70	4,432.93	0.02	-0.02	0.040
15.00	-35.36	-1.39	0.00	-128.98	0.00	128.98	4,091.84	2,045.92	8,549.42	4,281.06	0.04	-0.03	0.039
20.00	-33.85	-1.35	0.00	-122.05	0.00	122.05	4,035.67	2,017.84	8,248.20	4,130.23	0.07	-0.04	0.038
25.00	-32.38	-1.30	0.00	-115.32	0.00	115.32	3,978.07	1,989.03	7,949.23	3,980.52	0.12	-0.04	0.037
30.00	-30.93	-1.26	0.00	-108.79	0.00	108.79	3,919.03	1,959.52	7,652.71	3,832.04	0.17	-0.05	0.036
35.00	-29.50	-1.22	0.00	-102.48	0.00	102.48	3,858.56	1,929.28	7,358.83	3,684.88	0.23	-0.06	0.035
40.00	-28.11	-1.18	0.00	-96.38	0.00	96.38	3,796.66	1,898.33	7,067.80	3,539.15	0.30	-0.07	0.035
45.00	-27.58	-1.16	0.00	-90.51	0.00	90.51	3,733.32	1,866.66	6,779.80	3,394.94	0.38	-0.08	0.034
46.91	-26.17	-1.11	0.00	-88.29	0.00	88.29	3,708.70	1,854.35	6,670.44	3,340.18	0.42	-0.09	0.033
50.00	-24.78	-1.07	0.00	-84.85	0.00	84.85	3,668.55	1,834.27	6,495.03	3,252.34	0.47	-0.09	0.033
53.08	-24.34	-1.05	0.00	-81.57	0.00	81.57	2,873.92	1,436.96	5,096.66	2,552.12	0.54	-0.10	0.040
55.00	-23.18	-1.02	0.00	-79.54	0.00	79.54	2,856.46	1,428.23	5,015.72	2,511.59	0.58	-0.10	0.040
60.00	-22.50	-1.00	0.00	-74.45	0.00	74.45	2,810.00	1,405.00	4,806.12	2,406.63	0.69	-0.11	0.039
63.00	-21.95	-0.99	0.00	-71.44	0.00	71.44	2,781.43	1,390.72	4,681.23	2,344.09	0.76	-0.12	0.038
65.00	-20.84	-0.97	0.00	-69.46	0.00	69.46	2,762.10	1,381.05	4,598.36	2,302.60	0.81	-0.12	0.038
70.00	-19.76	-0.96	0.00	-64.63	0.00	64.63	2,712.77	1,356.39	4,392.64	2,199.58	0.95	-0.14	0.037
75.00	-18.60	-0.95	0.00	-59.85	0.00	59.85	2,662.01	1,331.01	4,189.16	2,097.69	1.10	-0.15	0.036
80.00	-17.56	-0.96	0.00	-55.07	0.00	55.07	2,609.81	1,304.91	3,988.12	1,997.02	1.26	-0.16	0.034
85.00	-16.55	-0.98	0.00	-50.25	0.00	50.25	2,556.18	1,278.09	3,789.70	1,897.67	1.43	-0.17	0.033
90.00	-15.85	-1.00	0.00	-45.33	0.00	45.33	2,501.11	1,250.56	3,594.12	1,799.73	1.62	-0.18	0.032
93.54	-15.40	-1.01	0.00	-41.79	0.00	41.79	2,461.30	1,230.65	3,457.58	1,731.36	1.76	-0.19	0.030
95.00	-14.34	-1.04	0.00	-40.31	0.00	40.31	2,444.61	1,222.31	3,401.55	1,703.30	1.81	-0.19	0.030
98.45	-14.08	-1.04	0.00	-36.73	0.00	36.73	1,812.81	906.41	2,512.23	1,257.98	1.96	-0.20	0.037
100.00	-13.26	-1.06	0.00	-35.12	0.00	35.12	1,801.24	900.62	2,470.81	1,237.24	2.02	-0.21	0.036
105.00	-12.47	-1.07	0.00	-29.82	0.00	29.82	1,762.89	881.45	2,337.88	1,170.68	2.25	-0.22	0.033
110.00	-11.69	-1.07	0.00	-24.47	0.00	24.47	1,723.10	861.55	2,206.62	1,104.95	2.48	-0.23	0.029
115.00	-11.53	-1.07	0.00	-19.14	0.00	19.14	1,681.88	840.94	2,077.21	1,040.15	2.72	-0.24	0.025
116.00	-8.15	-0.99	0.00	-18.08	0.00	18.08	1,673.47	836.73	2,051.56	1,027.31	2.78	-0.24	0.022
120.00	-7.47	-0.96	0.00	-14.10	0.00	14.10	1,639.23	819.62	1,949.84	976.37	2.98	-0.25	0.019
125.00	-7.33	-0.95	0.00	-9.31	0.00	9.31	1,595.14	797.57	1,824.73	913.72	3.24	-0.25	0.015
126.00	-3.99	-0.70	0.00	-8.36	0.00	8.36	1,586.15	793.08	1,799.99	901.33	3.30	-0.26	0.012
130.00	-3.41	-0.63	0.00	-5.58	0.00	5.58	1,549.62	774.81	1,702.06	852.29	3.51	-0.26	0.009
135.00	-2.97	-0.55	0.00	-2.45	0.00	2.45	1,502.66	751.33	1,582.02	792.19	3.79	-0.26	0.005
139.00	-0.57	-0.12	0.00	-0.24	0.00	0.24	1,461.37	730.68	1,485.28	743.75	4.01	-0.26	0.001
140.00	-0.09	-0.02	0.00	-0.11	0.00	0.11	1,448.40	724.20	1,458.90	730.54	4.06	-0.26	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,383.54	691.77	1,330.54	666.26	4.34	-0.26	0.000
146.00	0.00	0.00	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	4.39	-0.26	0.000

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_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	-27.94	-1.49	0.00	-149.31	0.00	149.31	4,251.74	2,125.87	9,464.64	4,739.35	0.00	0.00	0.038
5.00	-26.83	-1.46	0.00	-141.89	0.00	141.89	4,199.87	2,099.94	9,157.83	4,585.72	0.00	-0.01	0.037
10.00	-25.74	-1.42	0.00	-134.60	0.00	134.60	4,146.57	2,073.29	8,852.70	4,432.93	0.02	-0.02	0.037
15.00	-24.67	-1.38	0.00	-127.50	0.00	127.50	4,091.84	2,045.92	8,549.42	4,281.06	0.04	-0.03	0.036
20.00	-23.62	-1.34	0.00	-120.59	0.00	120.59	4,035.67	2,017.84	8,248.20	4,130.23	0.07	-0.04	0.035
25.00	-22.59	-1.30	0.00	-113.89	0.00	113.89	3,978.07	1,989.03	7,949.23	3,980.52	0.12	-0.04	0.034
30.00	-21.58	-1.25	0.00	-107.41	0.00	107.41	3,919.03	1,959.52	7,652.71	3,832.04	0.17	-0.05	0.034
35.00	-20.59	-1.21	0.00	-101.15	0.00	101.15	3,858.56	1,929.28	7,358.83	3,684.88	0.23	-0.06	0.033
40.00	-19.61	-1.16	0.00	-95.11	0.00	95.11	3,796.66	1,898.33	7,067.80	3,539.15	0.30	-0.07	0.032
45.00	-19.25	-1.15	0.00	-89.29	0.00	89.29	3,733.32	1,866.66	6,779.80	3,394.94	0.38	-0.08	0.031
46.91	-18.26	-1.10	0.00	-87.09	0.00	87.09	3,708.70	1,854.35	6,670.44	3,340.18	0.41	-0.08	0.031
50.00	-17.29	-1.05	0.00	-83.70	0.00	83.70	3,668.55	1,834.27	6,495.03	3,252.34	0.47	-0.09	0.030
53.08	-16.98	-1.04	0.00	-80.45	0.00	80.45	2,873.92	1,436.96	5,096.66	2,552.12	0.53	-0.10	0.037
55.00	-16.18	-1.01	0.00	-78.45	0.00	78.45	2,856.46	1,428.23	5,015.72	2,511.59	0.57	-0.10	0.037
60.00	-15.70	-0.99	0.00	-73.42	0.00	73.42	2,810.00	1,405.00	4,806.12	2,406.63	0.68	-0.11	0.036
63.00	-15.31	-0.97	0.00	-70.46	0.00	70.46	2,781.43	1,390.72	4,681.23	2,344.09	0.75	-0.12	0.036
65.00	-14.54	-0.95	0.00	-68.51	0.00	68.51	2,762.10	1,381.05	4,598.36	2,302.60	0.80	-0.12	0.035
70.00	-13.79	-0.94	0.00	-63.75	0.00	63.75	2,712.77	1,356.39	4,392.64	2,199.58	0.94	-0.13	0.034
75.00	-12.97	-0.94	0.00	-59.04	0.00	59.04	2,662.01	1,331.01	4,189.16	2,097.69	1.09	-0.15	0.033
80.00	-12.25	-0.95	0.00	-54.35	0.00	54.35	2,609.81	1,304.91	3,988.12	1,997.02	1.24	-0.16	0.032
85.00	-11.55	-0.97	0.00	-49.60	0.00	49.60	2,556.18	1,278.09	3,789.70	1,897.67	1.41	-0.17	0.031
90.00	-11.06	-0.98	0.00	-44.77	0.00	44.77	2,501.11	1,250.56	3,594.12	1,799.73	1.60	-0.18	0.029
93.54	-10.74	-1.00	0.00	-41.28	0.00	41.28	2,461.30	1,230.65	3,457.58	1,731.36	1.73	-0.19	0.028
95.00	-10.00	-1.02	0.00	-39.83	0.00	39.83	2,444.61	1,222.31	3,401.55	1,703.30	1.79	-0.19	0.027
98.45	-9.82	-1.03	0.00	-36.30	0.00	36.30	1,812.81	906.41	2,512.23	1,257.98	1.93	-0.20	0.034
100.00	-9.25	-1.04	0.00	-34.71	0.00	34.71	1,801.24	900.62	2,470.81	1,237.24	2.00	-0.20	0.033
105.00	-8.70	-1.05	0.00	-29.49	0.00	29.49	1,762.89	881.45	2,337.88	1,170.68	2.22	-0.21	0.030
110.00	-8.15	-1.05	0.00	-24.22	0.00	24.22	1,723.10	861.55	2,206.62	1,104.95	2.45	-0.23	0.027
115.00	-8.05	-1.05	0.00	-18.96	0.00	18.96	1,681.88	840.94	2,077.21	1,040.15	2.69	-0.24	0.023
116.00	-5.68	-0.98	0.00	-17.91	0.00	17.91	1,673.47	836.73	2,051.56	1,027.31	2.74	-0.24	0.021
120.00	-5.21	-0.95	0.00	-13.98	0.00	13.98	1,639.23	819.62	1,949.84	976.37	2.94	-0.24	0.017
125.00	-5.12	-0.94	0.00	-9.24	0.00	9.24	1,595.14	797.57	1,824.73	913.72	3.20	-0.25	0.013
126.00	-2.78	-0.69	0.00	-8.30	0.00	8.30	1,586.15	793.08	1,799.99	901.33	3.26	-0.25	0.011
130.00	-2.38	-0.62	0.00	-5.54	0.00	5.54	1,549.62	774.81	1,702.06	852.29	3.47	-0.26	0.008
135.00	-2.07	-0.55	0.00	-2.44	0.00	2.44	1,502.66	751.33	1,582.02	792.19	3.74	-0.26	0.004
139.00	-0.40	-0.12	0.00	-0.24	0.00	0.24	1,461.37	730.68	1,485.28	743.75	3.96	-0.26	0.001
140.00	-0.07	-0.02	0.00	-0.11	0.00	0.11	1,448.40	724.20	1,458.90	730.54	4.01	-0.26	0.000
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,383.54	691.77	1,330.54	666.26	4.29	-0.26	0.000
146.00	0.00	0.00	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	4.34	-0.26	0.000

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA704828_C3_01

6/19/2017 5:30:37 PM

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	25.15	0.00	43.53	0.00	0.00	2741.38	53.08	0.59
0.9D + 1.6W	25.14	0.00	32.64	0.00	0.00	2712.16	53.08	0.58
1.2D + 1.0Di + 1.0Wi	6.56	0.00	68.79	0.00	0.00	701.77	0.00	0.16
(1.2 + 0.2Sds) * DL + E ELFM	1.16	0.00	40.04	0.00	0.00	130.05	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.49	0.00	40.04	0.00	0.00	150.84	0.00	0.04
(0.9 - 0.2Sds) * DL + E ELFM	1.16	0.00	27.94	0.00	0.00	128.78	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	1.49	0.00	27.94	0.00	0.00	149.31	0.00	0.04
1.0D + 1.0W	5.54	0.00	36.30	0.00	0.00	600.83	53.08	0.14

Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	54.5 in
	Pole Thickness	0.375 in
	Plate Diameter	69 in
	Plate Thickness	1.75 in
	Plate Fy	60 ksi
	Weld Length	0.3125 in
	ϕ_s Resistance	442.42 k-in
	Applied	341.31 k-in
	#	0
Stiffeners	#	0

Code Rev. **G**

Moment **2741.4 k-ft**

Axial **43.5 k**

Date **2/12/2016**

Engineer **VC**

Site # **411216**

Carrier **Verizon Modeling**

Bolts	#	16
	Bolt Circle (R)adial / (S)quare	63 in R
	Diameter	2.25 in
	Hole Diameter	2.75 in
	Type	A615-75
	Fy	75 ksi
	Fu	100 ksi
	ϕ_s Resistance	259.82 k
	Applied	133.19 k
	#	0
Reinforcement	#	0
Extra Bolts	#	0

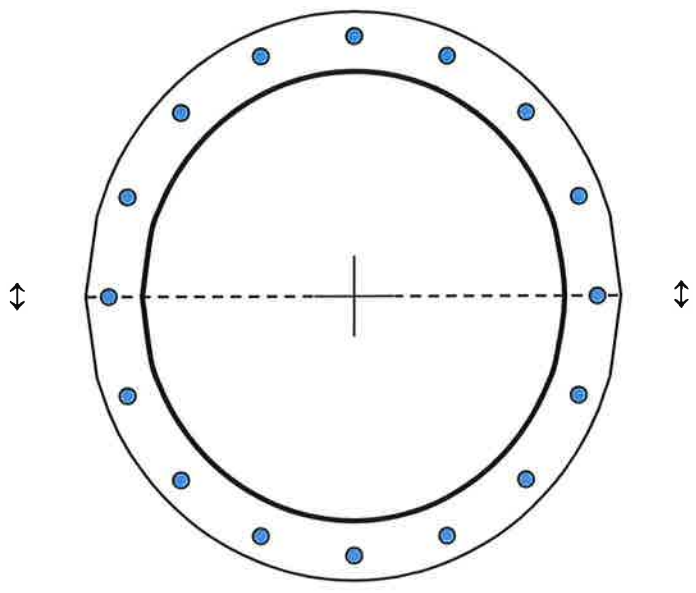


Plate Stress Ratio: **0.77** (Pass)

Bolt Stress Ratio: **0.51** (Pass)

ATTACHMENT 4



Town of Chaplin, Connecticut

Property Record Card Card 1 of 1

123 PALMER RD

ID: 55-54 Account #: B000626



Owner: BESSETTE JANET L REVOCABLE LIVING TRUST
Co-Owner:
Address: 5 VICTORY LN
WILLIMANTIC CT 06226

Assessment: Total: 22900, Assessed Value: 32700
Building: 0 Land: 22900 Yard: 0

Sales History

Grantor	Book / Page	Sale Date	Sale Price
BESSETTE JANET L REVOCABLE LIVING TRUST	102/ 971	2016-10-03	0
BESSETTE JANET L	87/ 976	2007-01-09	0
	60/ 633	1996-01-25	0



Land Information

Land Area: 10.23 AC Zoning:
Land Use: 100 - Resid Vacant
Neighborhood:

Building Information

Style:
Year Built:
Rooms: Bedrooms:
Baths: Half Baths:
Living Area:
Gross Area:

Stories:
Heat Fuel:
Heat Type:
AC Type:
Roof Structure:
Roof Covering:

Extra Features

Description	Area / Units	Assessment
Sub Areas	Living Area	Gross Area
Description	Living Area	Gross Area

ATTACHMENT 5



Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here Postmark with Date of Receipt.	Postage	Fee	Special Handling	Parcel Airlift																																			
UNITED STATES POSTAL SERVICE® Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3																																								
USPS® Tracking Number Firm-specific Identifier	<table border="1"> <thead> <tr> <th data-bbox="673 210 803 451">Address (Name, Street, City, State, and ZIP Code™)</th> <th data-bbox="673 451 803 661">Postage</th> <th data-bbox="673 661 803 871">Fee</th> <th data-bbox="673 871 803 1081">Special Handling</th> <th data-bbox="673 1081 803 1291">Parcel Airlift</th> </tr> </thead> <tbody> <tr> <td data-bbox="803 210 950 451"> 1. Matthew Cunningham, First Selectman Town of Chaplin 495 Phoenixville Road Chaplin, CT 06235 </td> <td data-bbox="803 451 950 661"></td> <td data-bbox="803 661 950 871"></td> <td data-bbox="803 871 950 1081"></td> <td data-bbox="803 1081 950 1291"></td> </tr> <tr> <td data-bbox="950 210 1096 451"> 2. James Gugliotti, Zoning Official Town of Chaplin 495 Phoenixville Road Chaplin, CT 06235 </td> <td data-bbox="950 451 1096 661"></td> <td data-bbox="950 661 1096 871"></td> <td data-bbox="950 871 1096 1081"></td> <td data-bbox="950 1081 1096 1291"></td> </tr> <tr> <td data-bbox="1096 210 1242 451"> 3. Janet Bassett Revocable Living Trust 5 Victory Lane Willimantic, CT 06226 </td> <td data-bbox="1096 451 1242 661"></td> <td data-bbox="1096 661 1242 871"></td> <td data-bbox="1096 871 1242 1081"></td> <td data-bbox="1096 1081 1242 1291"></td> </tr> <tr> <td data-bbox="1242 210 1388 451"> 4. </td> <td data-bbox="1242 451 1388 661"></td> <td data-bbox="1242 661 1388 871"></td> <td data-bbox="1242 871 1388 1081"></td> <td data-bbox="1242 1081 1388 1291"></td> </tr> <tr> <td data-bbox="1388 210 1526 451"> 5. </td> <td data-bbox="1388 451 1526 661"></td> <td data-bbox="1388 661 1526 871"></td> <td data-bbox="1388 871 1526 1081"></td> <td data-bbox="1388 1081 1526 1291"></td> </tr> <tr> <td data-bbox="1526 210 1589 451"> 6. </td> <td data-bbox="1526 451 1589 661"></td> <td data-bbox="1526 661 1589 871"></td> <td data-bbox="1526 871 1589 1081"></td> <td data-bbox="1526 1081 1589 1291"></td> </tr> </tbody> </table>							Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift	1. Matthew Cunningham, First Selectman Town of Chaplin 495 Phoenixville Road Chaplin, CT 06235					2. James Gugliotti, Zoning Official Town of Chaplin 495 Phoenixville Road Chaplin, CT 06235					3. Janet Bassett Revocable Living Trust 5 Victory Lane Willimantic, CT 06226					4.					5.					6.				
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