

Alex Murshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
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February 1, 2018

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

**RE: Notice of Exempt Modification // Site: Winchester East CT (ATC: 302506)
15 (108) Oakdale Avenue, Winchester, CT 06098
N 41.92170 // W 73.0495**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains nine (9) antennas at the 125-foot mount on the existing 180-foot monopole tower, located (off Oakdale Avenue aka 15 aka) at 108 Oakdale Avenue, Winchester (Winstead), CT. The Council approved Verizon Wireless use of the existing tower in 2003. The tower and property are both owned and controlled by American Tower; latter c/o William P. Stow Revocable Trust. Verizon Wireless now intends to remove six (6) of its antennas and replace with six (6) newer JAHH-65B-R3B models on side-by-side mounts for LTE/PCS/AWS (700/850/1900/2100 MHz) upgrades. Additionally, Verizon Wireless will install twelve (12) new remote radio heads (RRHs), one (1) over surge protector box and one (1) new HYBRIFLEX cable; while updating certain leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 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 Althea Candy Perez, Mayor for the City of Winchester, Director of Planning and Community Development Steven Sadlowski, including for Winchester's Planning and Zoning Commission, and American Tower, the tower owner and ground owner.

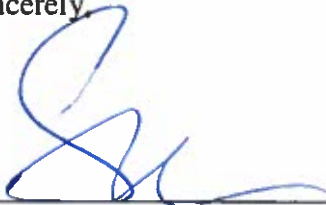
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are specifications for all the new and replacement Verizon Wireless equipment, a structural analysis dated January 19,

2018 by A.T. Engineering Service, PLLC and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications 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 new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by A.T. Engineering Service, PLLC, dated January 19, 2018.

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

Sincerely,



Alex Murshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Attachments

cc: Althea Candy Perez, Mayor - as elected official - 1Z9Y45030319428348
Steven Sadlowski, Director of Planning - as P&Z official - 1Z9Y45030305099355
American Tower Corporation - as tower & property owner - 1Z9Y45030304972368



JAHH-65B-R3B

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

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

Electrical Specifications

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

Electrical Specifications, BASTA*

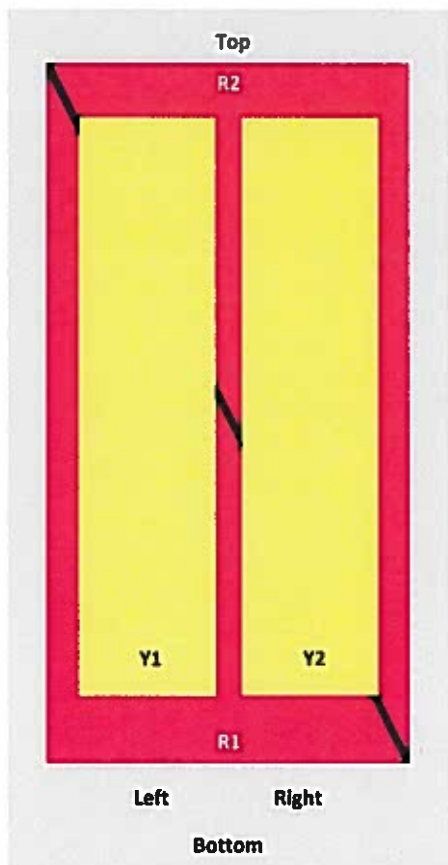
Frequency Band, MHz	698-787	824-894	1695-1880	1850-1990	1920-2200	2300-2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2 ° 14.3	2 ° 15.0	0 ° 17.2	0 ° 17.6	0 ° 17.7	0 ° 17.9
Gain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

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

Array Layout

JAHH-65B-R3B

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



Array	Freq (MHz)	Cones	RET (SRET)	AISG RET CID
R1	698-787	1-2	1	ANXXXXXXXXXXXXX1
R2	824-894	3-4	2	ANXXXXXXXXXXXXX2
Y1	1695-2360	5-6	3	ANXXXXXXXXXXXXX3
Y2	1695-2360	7-8		

View from the front of the antenna

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

General Specifications

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

Mechanical Specifications

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

JAHH65BR3B

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

Dimensions

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

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 Port 5
Internal RET	High band (1) Low band (2)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Single RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	2 female 2 male

Packed Dimensions

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

Regulatory Compliance/Certifications

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



JAHH-65BR3B

Included Products

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

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance



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.

General Specifications

Application	Outdoor
Includes	Brackets Hardware
Package Quantity	1

Mechanical Specifications

Color	Silver
Material Type	Galvanized steel

Dimensions

Compatible Diameter, maximum	115.0 mm 4.5 in
Compatible Diameter, minimum	60.0 mm 2.4 in
Net Weight	6.0 kg 13.3 lb

Regulatory Compliance/Certifications

Agency RoHS 2011/65/EU China RoHS SJ/T 11364-2006 ISO 9001:2008	Classification Compliant by Exemption Above Maximum Concentration Value (MCV) Designed, manufactured and/or distributed under this quality management system
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BSAMNT-SBS-2-2

Side-by-Side Mounting Kit for these antennas: JAHH-65A/B/C, JAHH-45A, NHH-45A, SBNHH-1D45A/B

- 4x4 MIMO capability at both UMTS and LTE band for faster data throughput
- Ensures consistent distance between the antennas for each site (2 inches / 50mm)
- Forces both antennas to point to the same boresight direction
- Designed to be attached to 2.4 - 4.5 in (60 - 115mm) OD pipes

General Specifications

Application	Outdoor
Includes	Brackets Hardware
Package Quantity	1

Mechanical Specifications

Color	Silver
Material Type	Galvanized steel

Dimensions

Compatible Diameter, maximum	115.0 mm 4.5 in
Compatible Diameter, minimum	60.0 mm 2.4 in
Net Weight	30.6 kg 67.4 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



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.

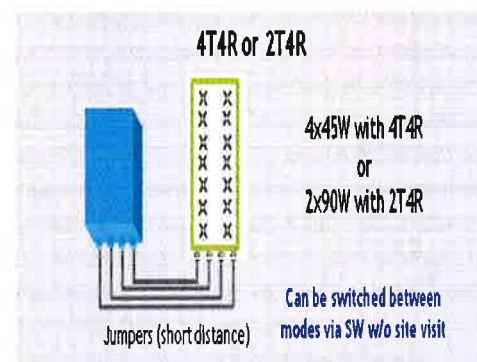
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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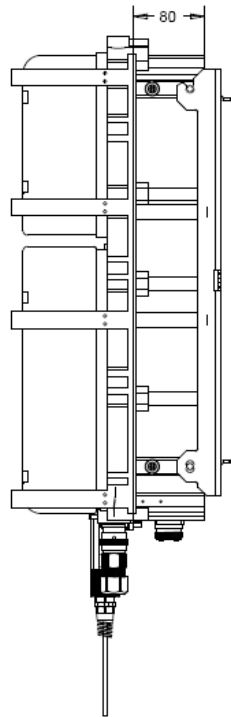
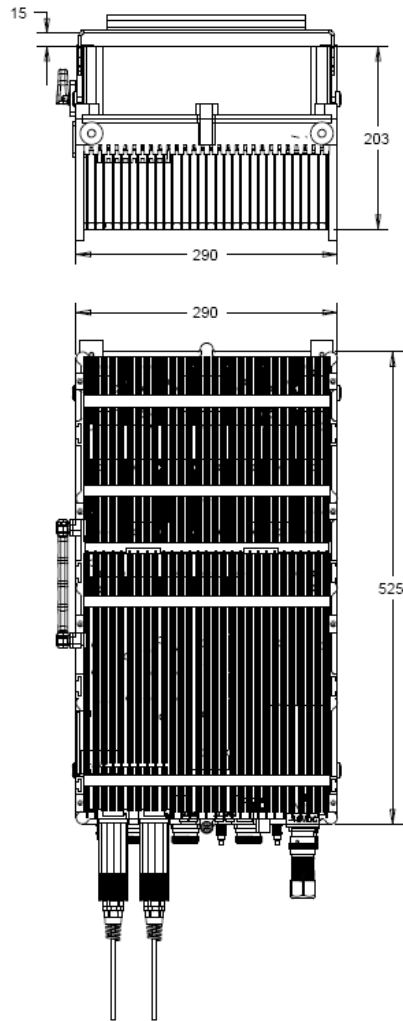


700 2x60 RRH Preliminary Dimensions

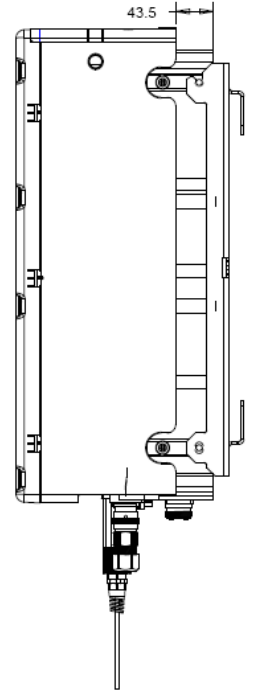
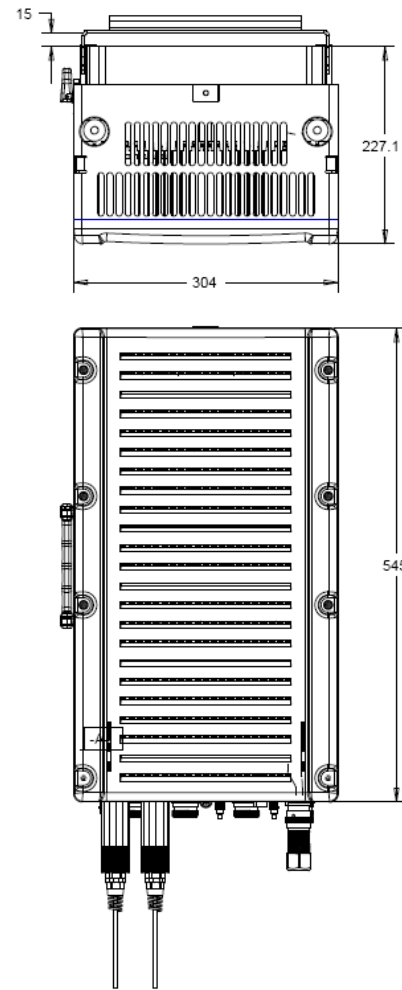
Robert Thompson (robert.thompson@alcatel-lucent.com)

700U

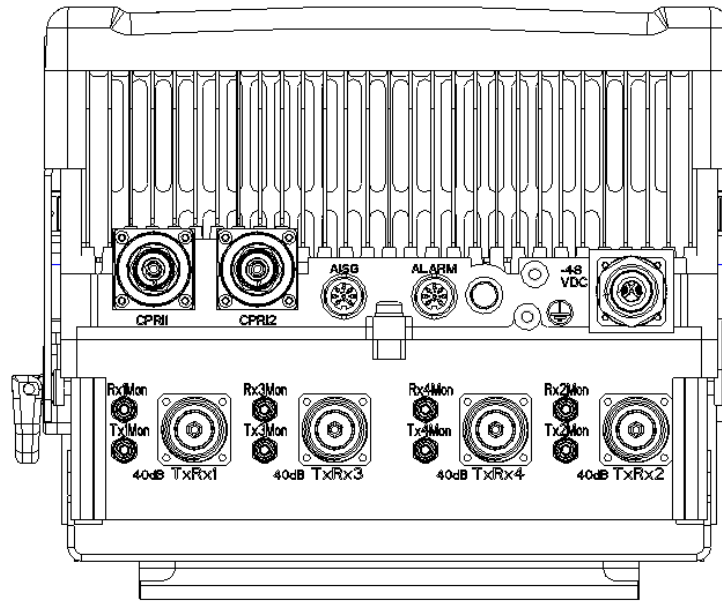
Without Solar Shield



With Solar Shield



700 U 2x60 Dimensions



Without solar shield	L	W	H	Volume	Weight	Weight of Solar shield
700U(without solar shield)- mm	525	290	203	30.9L	24.2kg	
700U(without solar shield)	21"	11.5"	8"		53.4 lb	
700U(with solar shield)	545	304	227	37.6L	25.7kg	1.5kg
700U(with solar shield)	21.5"	12"	9"		56.7 lb	3.1 lb

AirScale RRH 4T4R B5 160W AHCA

Capacity, performance, low total cost of ownership and investment protection

Nokia AirScale Remote Radio Head (RRH) AHCA supports band 5 - full band - along with 4x4 MIMO and 256QAM modulation to deliver higher data rates. It offers Nokia's unique book mounting for faster roll out and radio-integrated Passive Intermodulation (PIM) cancellation for enhanced network performance.

Furthermore, 4TX and 4RX paths in a single radio unit gives the flexibility to support 2T2R-2 sectors or 4T4R-single sector from a single unit, for cost-effective scaling of both coverage and capacity.

Capacity and performance

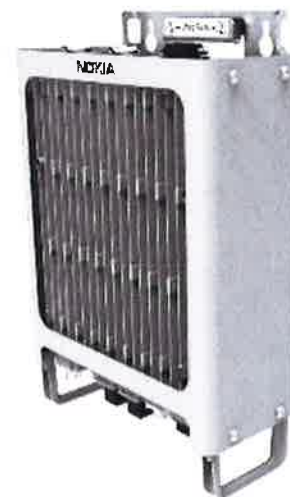
AirScale RRH 4T4R delivers 160 W (4x40 W) transmit power and can support 2x2 MIMO, 4x2 MIMO and 4x4 MIMO. The radio supports 256 QAM modulation in the downlink (DL) for up to 30 percent higher throughput. The Virtual Spectrum Analyzer feature enables both uplink and downlink spectrum to be analyzed.

Low total cost of ownership

With up to two sectors in a single radio, light weight and zero-bolt book mounting, AirScale RRH 4T4R allows operators to achieve faster roll outs and more cost-effective installation and maintenance of radios and tower space.

Investment protection

AirScale RRH 4T4R complements the AirScale System Module, offering a complete base station solution that is software upgradeable to 5G. AirScale System



Module offers 28 Gbps capacity that can be further enhanced by chaining more modules or through Cloud RAN. AirScale RRH is part of the AirScale Base Station portfolio, the next generation Nokia base station platform, and is backwards-compatible with the Nokia Flexi Multiradio 10 Base Station to best use an operator's existing investments.

Product name	AirScale RRH 4T4R B5 160W AHCA - 473966A
Supported frequency bands	3GPP band 5
Frequencies	DL 869-894MHz, UL 824-849MHz
Number of TX/RX ports	4/4
Instantaneous Bandwidth IBW	25MHz
Occupied Bandwidth OBW	25MHz
Output power	4T4R 40 W/ 2T4R 60W
Dimensions (mm) height x width x depth	337 x 295 x 165
Volume (liters)	16.4
Weight (kg)	16
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	207 W (ETSI 24h Avg – 4x20W mode)
Antenna ports	4TX/4RX, 4.3-10+
Optical ports	2 x CPRI 9.8 Gbps
ALD control interfaces	AISG3.0 from ANT1, 2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other interfaces	External alarm MDR-26 serial connector (4 inputs, 1 output) DC circular power connector
Operational temperature range	-40°C to 55°C (with no solar load)
Ingress protection class	IP65
Installation options	Pole or wall, RAS, vertical or horizontal book mount
Surge protection	Class II 5kA

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Nokia Oyj
Karaportti 3
FI-02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Product code: SR1611002341EN (April)

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.

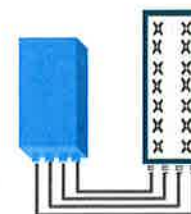


FEATURES

- 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) IP65
Wind load (@150km/h or 93mph)	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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B25 RRH4x30

ALCATEL-LUCENT DATA SHEET REV1.1 – JANUARY 2015



DC and Fiber Management Distribution Boxes for HYBRIFLEX™ Cable

Product Description

RFS' flexible Tower, Base Stations and Rooftop protection and Distribution products provide protection for up to 6 Remote Radio Heads/Integrated Antennas. The solutions mitigate the risk of damage due to lightning and provide high levels of availability and reliability to radio equipment.

Features

- Employs the Strikesorb® 30-V1-HV Surge Protective Device (SPD) specifically designed for the Remote Radio Head (RRH) installation environment and certified for use in DC applications and at low DC operating voltages (48V).
- The Strikesorb 30-V1-HV is a Class I SPD, certified by VDE per the IEC 61643-1 standard as suitable for installation in areas where direct lightning exposure is expected. Strikesorb 30-V1-HV is able to withstand direct lightning currents of up to 5kA (10/350) and induced surge currents of up to 60kA (8/20).
- Provides very low let through / clamping voltage – unique for a Class I product – as it does not employ spark gaps or other switching elements. Strikesorb offers unique protection levels to the RRH equipment as well as the Base Band Units.
- Alarms for SPD sacrifice, Moisture detection and Intrusion.
- Fully recognized to the UL 1449 3rd Edition Safety Standard.
- Patent pending design



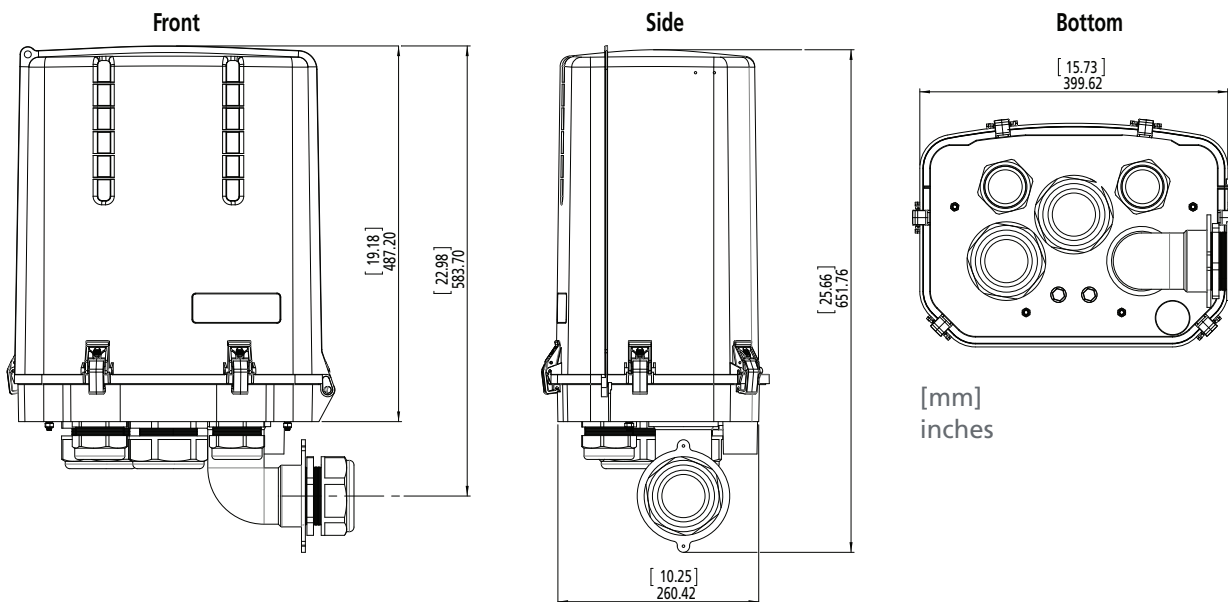
Tower / Base / Rooftop /
Rooftop Distribution Models:
DB-T1-6Z-12AB-0Z
DB-B1-6C-12AB-0Z

Companion Sector Model:
DB-E1-2C-4AB-0Z

Benefits

- Offers unique maintenance-free protection against direct lightning currents.
- Protects up to 6 Remote Radio Heads and connects up to 12 fiber pairs.
- Utilizes an IP67 rated enclosure, allowing for indoor or outdoor installation on a roof or tower top.
- Configurable cable ports are designed to accommodate varying diameters of hybrid (combined power and fiber optic) or standard cables with diameters up to 2" (will fit most standard 15/8" coax class cables) depending upon port configuration.
- Lightweight aerodynamic design provides maximum flexibility for tower top installation.

Product Diagram



* This data is provisional and subject to change.

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



Technical Specifications

Electrical Specifications

Model Numbers	DB-T1-6Z-12AB-0Z	DB-B1-6C-12AB-0Z
Nominal Operating Voltage		48 VDC
Nominal Discharge Current [I _n]		20 kA 8/20 μs
Maximum Surge Current [I _{max}]		60 kA 8/20 μs
Maximum Impulse (Lightning) Current per IEC 61643-1		5 kA 10/350 μs
Maximum Continuous Operating Voltage [U _c]		75 VDC
Voltage Protection Rating (VPR) per UL 1449 3rd Edition		400V
Protection Class as per IEC 61643-1		Class I
SPD Alarm		Upon sacrifice
Intrusion Sensor		Microswitch
Moisture Sensor		Infrared moisture detector
Strikesorb Module Type	No Strikesorb modules installed <i>(used as Distribution Unit only)</i>	30-V1-HV – Strikesorb modules installed to protect 6 RRHs

Mechanical Specifications

Suppression Connection Method	Compression lug, #20-#6 AWG (0.5 mm ² -16 mm ²)	
Fiber Connection Method	LC-LC Single mode	
Pressure Equalizing Vent	Gore™ Vent	
Environmental Rating	IP 67	
Operating Temperature	-40° C to +80° C	
UV Resistant	Yes	
Weight	System: 16.0 lbs (7.25 kg) Mount: 5.5 lbs (2.49 kg) Total: 21.5 lbs (9.75 kg)	System: 21.4 lbs (9.70 kg) Mount: 5.5 lbs (2.49 kg) Total: 26.9 lbs (12.20 kg)
Combined Wind Loading	150mph (sustained): 200 lbs (889.6 N)	

Standards Compliance

Standards (Strikesorb modules ONLY)	Not Applicable	ANSI/UL 1449 3rd Edition IEEE C62.41, NEMA LS-1 IEC 61643-1:2005 2nd Ed (Class I Protection) IEC 61643-12 EN 61643-11:2002 (including A11:2007)
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* This data is provisional and subject to change.



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
Standard 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)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm ² (18AWG)		[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
Operating Range			
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

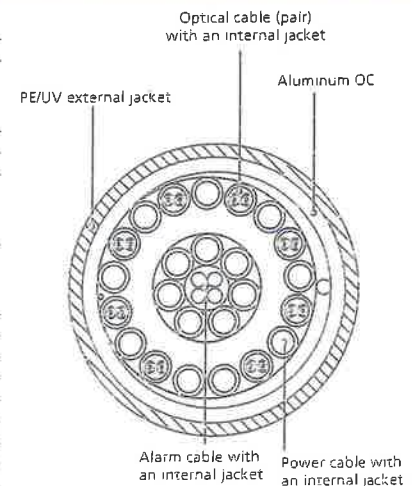


Figure 2: Construction Detail

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



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 180 ft Monopole
ATC Site Name : Winchester CT 3, CT
ATC Site Number : 302506
Engineering Number : OAA721430_C3_01
Proposed Carrier : Verizon
Carrier Site Name : Winchester E CT
Carrier Site Number : PSLC# 117770
Site Location : 15 Oakdale Avenue
Winsted, CT 06098-1862
41.921700,-73.049500
County : Litchfield
Date : January 19, 2018
Max Usage : 89%
Result : Pass

Prepared By:
Trevor Ridilla
Structural Engineer I

Reviewed By:



Jan 19 2018 5:06 PM

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	3
Proposed Equipment	3
Structure Usages	4
Foundations	4
Deflection, Twist, and Sway.....	4
Standard Conditions	5
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EEI Job #7676, dated August 21, 2000
Foundation Drawing	SNET Project #F301804.10/F04, dated August 23, 2000
Geotechnical Report	Walti Project: Whalen's Hill, dated February 8, 2000
Modifications	ATC Job #42523432, dated October 24, 2008 ATC Job #50492933, dated October 15, 2012

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:	90 mph (3-Second Gust, Vasd) / 115 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	III
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.18, S_1 = 0.06$
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					
180.0	187.0	1	4' Omni	Low Profile Platform	(12) 1 5/8" Coax (4) 0.78" 8 AWG 6 (1) 0.40" Fiber (1) 0.39" Fiber Trunk (1) 3" Conduit	Other
	184.0	2	Raycap DC6-48-60-18-8F (23.5" Height)			AT&T Mobility
	183.0	1	Andrew ABT-D MDF-ADBH			
		3	Powerwave TT19-08BP111-001			
		3	Powerwave LGP21401			
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson RRUS 32 (50.8 lbs)			
		3	Ericsson RRUS-12 B2			
		3	Powerwave 7770.00			
		3	KMW AM-X-CD-16-65-00T-RET			
		3	CCI HPA-65R-BUU-H6			
179.0	1	2' x 4' Rectangular Grid Dish				
167.0	167.0	3	Ericsson KRY 112 144/1	T-Arms	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
150.0	150.0	1	Sinclair SD210-SF2P4SNM	Side Arm	(1) 1 5/8" Coax	Litchfield County Dispatch
140.0	149.0	3	Decibel DB809K-XT	Side Arms	(6) 1 5/8" Coax (2) 3/8" Coax (1) 7/8" Coax (1) 1/2" Coax	Ct Police Dept.
		1	Sinclair SC432D-HF6LDF (I40-G06)			
	141.0	1	Telewave ANT150D (5 lbs)			
		2	Bird 432-83H-01-T			
135.0	135.0	3	Alcatel-Lucent 800MHz RRH w/ Notch Filter	Platform w/ Handrails	(3) 1 1/4" Hybriflex (1) 7/8" Fiber	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSP18-C-A20			
125.0	125.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		1	RFS DB-B1-6C-12AB-OZ			
		3	Alcatel-Lucent B66a RRH4x45 (AWS-3)			
		2	Antel LPA-80080/6CF			
		6	Commscope JAHH-65B-R3B			
		1	Antel LPA-80063/6CF			
112.0	112.0	12	Decibel DB844H90E-XY	Low Profile Platform	(12) 1 1/4" Coax	Sprint Nextel
105.0	105.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS
96.0	96.0	2	Andrew DB586	Side Arms	(2) 7/8" Coax (1) 1/2" Coax	Eversource Energy
		1	Bird 429-83H-01-T			
79.0	79.0	1	PCTEL GPS-TMG-HR-26N	Flush	(1) 1/2" Coax	Sprint Nextel
30.0	30.0	1	GPS	Flush	(1) 7/8" Coax	Verizon



Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
125.0	125.0	3	Alcatel-Lucent B25 RRH4x30	Low Profile Platform	-	Verizon

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 inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	58%	Pass
Shaft	67%	Pass
Base Plate	30%	Pass
Reinforcement	66%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,116.8	46%
Axial (Kips)	70.1	6%
Shear (Kips)	34.7	89%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
125.0	Alcatel-Lucent B25 RRH4x30	Verizon	1.362	1.370

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



Standard Conditions

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

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

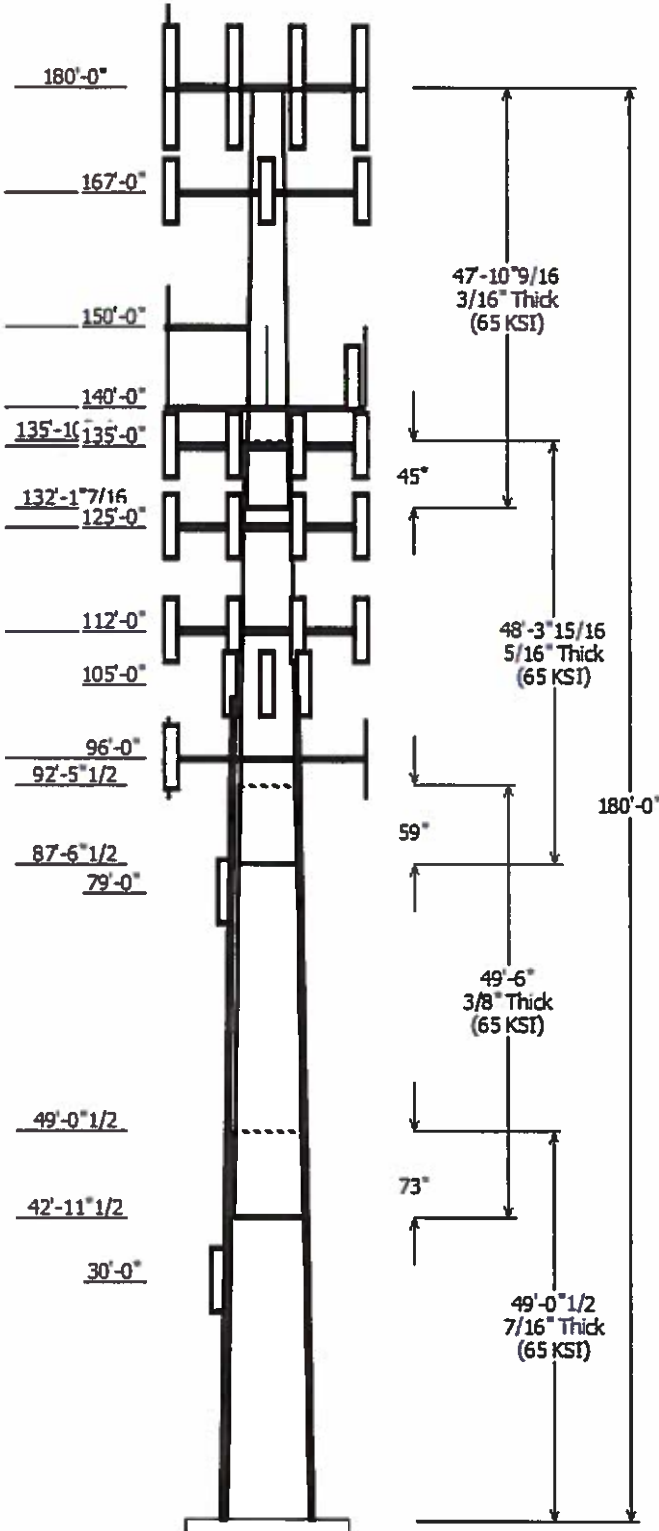
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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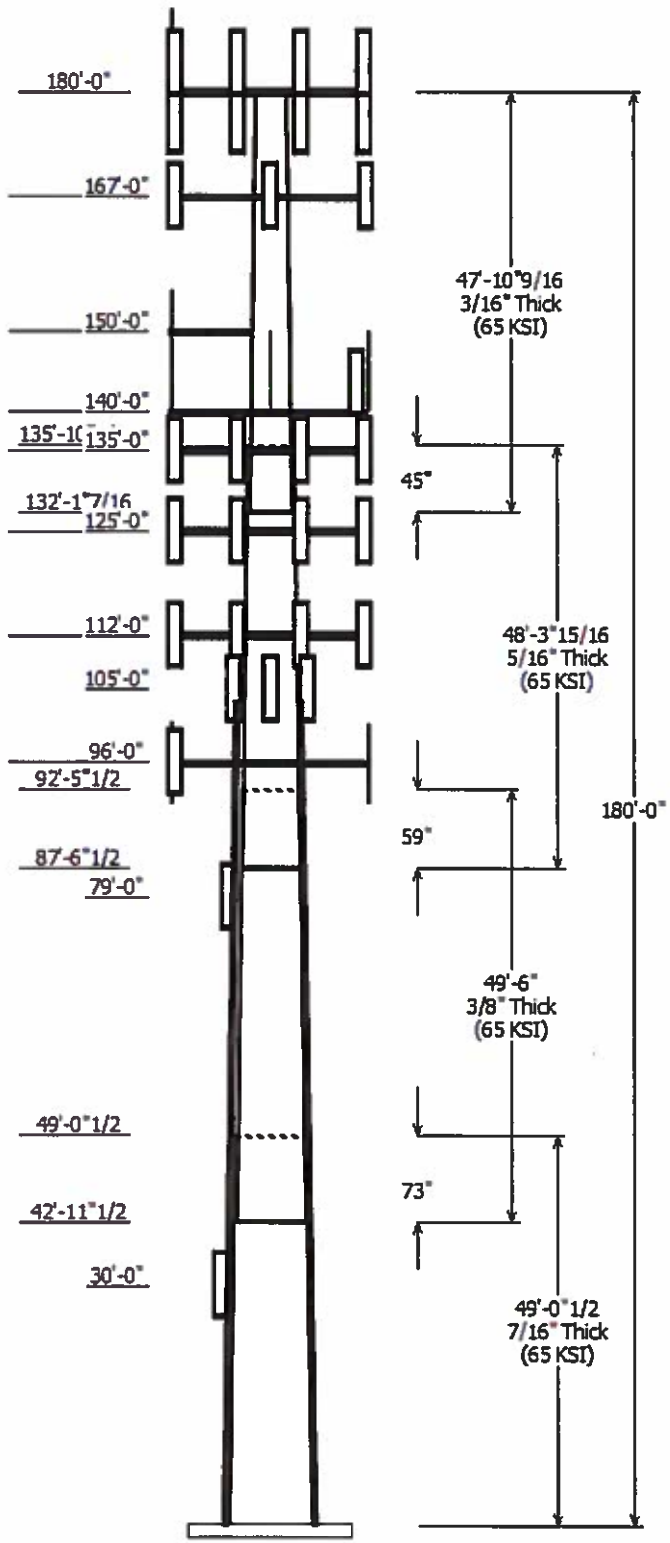


Job Information	
Pole : 302506	Code: ANSI/TIA-222-G
Location : Winchester CT 3, CT	
Description : 180 ft EEI Monopole	
Client : VERIZON WIRELESS	Struct Class : III
Shape : 18 Sides	Exposure : B
Height : 180.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.219444(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Shape	Steel Grade (ksi)
		Accross Top	Flats Bottom				
1	49.040	41.98	52.75	0.438	0.000	18 Sides	65
2	49.500	33.21	44.07	0.375 Slip Joint	73.000	18 Sides	65
3	48.330	24.30	34.91	0.313 Slip Joint	59.000	18 Sides	65
4	47.880	15.00	25.50	0.188 Slip Joint	45.000	18 Sides	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
180.000	183.000	3	CCI HPA-65R-BUU-H6	
180.000	183.000	1	Andrew ABT-DMDF-ADBH	
180.000	183.000	3	Powerwave Allgon 7770.00	
180.000	184.000	2	Raycap DC6-48-60-18-8F (23.5"	
180.000	183.000	3	Powerwave Allgon TT19-	
180.000	183.000	3	Ericsson RRUS 32 (50.8 lbs)	
180.000	180.000	1	Flat Low Profile Platform	
180.000	183.000	3	KMW AM-X-CD-16-65-00T-RET	
180.000	179.000	1	2' x 4' Rectangular Grid Dish	
180.000	183.000	3	Ericsson RRUS-12 B2	
180.000	183.000	3	Ericsson RRUS 11 (Band 12)	
180.000	183.000	3	Powerwave Allgon LGP21401	
180.000	187.000	1	4' Omni	
167.000	167.000	3	Round T-Arm	
167.000	167.000	3	Ericsson AIR 21, 1.3M, B4A B2P	
167.000	167.000	3	Ericsson AIR 21, 1.3 M, B2A B4	
167.000	167.000	3	Ericsson KRY 112 144/1	
150.000	150.000	1	Round Side Arm	
150.000	150.000	1	Sinclair SD210-SF2P4SNM	
140.000	149.000	3	Decibel DB809K-XT	
140.000	149.000	1	Sinclair SC432D-HF6LDF (I40-G0	
140.000	141.000	2	Bird 432-83H-01-T	
140.000	140.000	3	Round Side Arm	
140.000	141.000	1	Telewave ANT150D (5 lbs)	
135.000	135.000	1	Flat Platform w/ Handrails	
135.000	135.000	3	RFS APXVSP18-C-A20	
135.000	135.000	3	RFS APXVTM14-C-I20	
135.000	135.000	3	Alcatel-Lucent TD-RRH8x20-25	
135.000	135.000	3	Alcatel-Lucent 1900MHz RRH	
135.000	135.000	3	Alcatel-Lucent 800 MHz RRH	
125.000	125.000	3	Alcatel-Lucent RRH2x60 700	
125.000	125.000	2	Antel LPA-80080/6CF	
125.000	125.000	3	Alcatel-Lucent B66a RRH4x45	
125.000	125.000	1	RFS DB-B1-6C-12AB-0Z	
125.000	125.000	3	Alcatel-Lucent B25 RRH4x30	
125.000	125.000	3	Nokia B5 RRH4x40-850	
125.000	125.000	1	Round Low Profile Platform	
125.000	125.000	1	Antel LPA-80063/6CF	
125.000	125.000	6	Commscope JAHH-65B-R3B	
112.000	112.000	1	Round Low Profile Platform	
112.000	112.000	12	Decibel DB844H90E-XY	
105.000	105.000	3	RFS APXV18-206517S-C	
96.000	96.000	3	Flat Side Arm	
96.000	96.000	1	Bird 429-83H-01-T	

96.000	96.000	2	Andrew DB586
79.000	79.000	1	PCTEL GPS-TMG-HR-26N
30.000	30.000	1	GPS



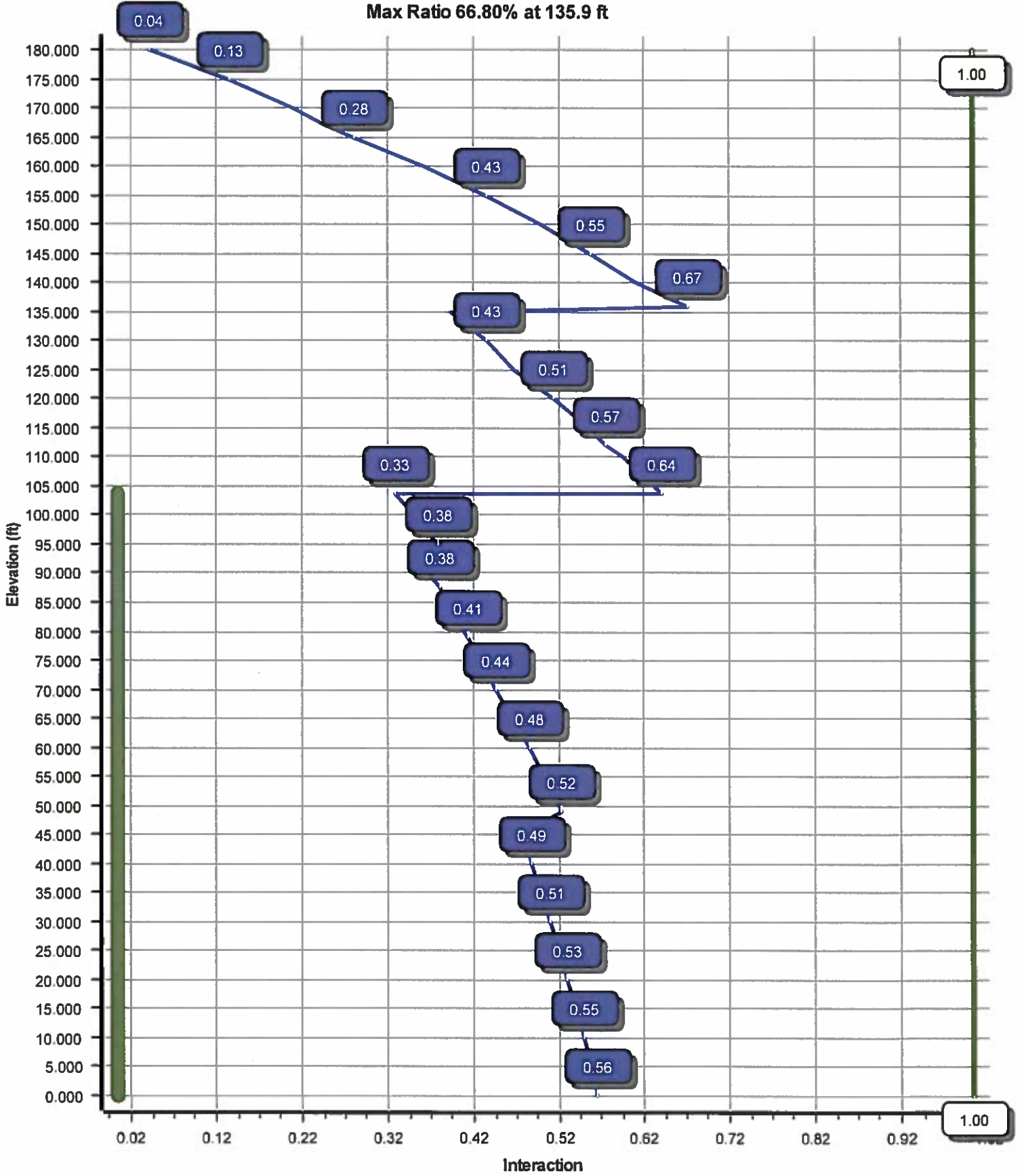
Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
112.5	125.0	1 5/8" Coax	Yes
112.5	167.0	1 5/8" Coax	Yes
0.000	180.0	0.39" (10mm)	No
0.000	180.0	0.40" Fiber Cable	No
0.000	180.0	0.78" 8 AWG 6	No
0.000	180.0	0.78" 8 AWG 6	No
0.000	180.0	1 5/8" Coax	No
0.000	180.0	3" Conduit	No
0.000	135.0	1 1/4" Hybriflex	No
0.000	135.0	7/8" Fiber	No
0.000	140.0	1 5/8" Coax	No
0.000	140.0	1/2" Coax	No
0.000	140.0	3/8" Coax	No
0.000	140.0	7/8" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	167.0	1 1/4" Hybriflex	No
0.000	30.000	7/8" Coax	Yes
0.000	79.000	1/2" Coax	No
0.000	96.000	1/2" Coax	No
0.000	96.000	7/8" Coax	No
0.000	105.0	1 5/8" Coax	Yes
0.000	112.0	1 1/4" Coax	Yes
0.000	112.5	1 5/8" Coax	Yes
0.000	112.5	1 5/8" Coax	Yes
0.000	112.5	Reinforcement	Yes
0.000	125.0	1 5/8" Hybriflex	No

Load Cases	
1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4116.76	34.75	70.07
0.9D + 1.6W	3962.17	33.28	52.54
1.2D + 1.0Di + 1.0Wi	888.66	6.58	143.59
(1.2 + 0.2Sds) * DL + E ELFM	402.86	2.97	69.76
(1.2 + 0.2Sds) * DL + E EMAM	378.33	3.23	69.76
(0.9 - 0.2Sds) * DL + E ELFM	396.01	2.97	48.59
(0.9 - 0.2Sds) * DL + E EMAM	370.99	3.22	48.59
1.0D + 1.0W	1110.30	9.28	58.43

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 66.80% at 135.9 ft



Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:07 AM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	LITCHFIELD County, CT	Height (ft) :	180
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.75
Shape :	18 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.219
Pole Manufacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	III	Design Wind Speed Without Ice:	90 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.66		
T_L (sec):	6	p :	1.3
S_s :	0.177	S_1 :	0.065
F_a :	1.600	F_v :	2.400
S_{ds} :	0.189	S_{d1} :	0.104
		C_s :	0.039
		C_s Max:	0.039
		C_s Min:	0.030

Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 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: 302506

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:07 AM

Customer: VERIZON WIRELESS

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							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	49.040	0.4375	65		0.00	10,875	52.75	0.00	72.64	25115.3	19.50	120.57	41.98	49.04	57.70	12585.4	15.16	95.97	0.219444
2-18	49.500	0.3750	65	Slip	73.00	7,672	44.07	42.96	52.01	12548.0	18.96	117.53	33.21	92.46	39.08	5323.8	13.85	88.56	0.219444
3-18	48.330	0.3125	65	Slip	59.00	4,779	34.91	87.54	34.32	5191.7	17.94	111.73	24.30	135.87	23.80	1731.6	11.95	77.79	0.219444
4-18	47.880	0.1875	65	Slip	45.00	1,946	25.50	132.12	15.07	1220.4	22.22	136.04	15.00	180.00	8.81	244.4	12.34	80.00	0.219444
Shaft Weight						25,271													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
180.00	2' x 4' Rectangular Grid Dish	1	0.000	-1.000	40.00	4.750	1.00
180.00	4' Omni	1	0.000	7.000	10.00	1.000	1.00
180.00	Andrew ABT-DMDF-ADBH	1	0.000	3.000	1.10	0.050	0.50
180.00	CCI HPA-65R-BUU-H6	3	0.000	3.000	51.00	9.660	0.69
180.00	Ericsson RRUS 11 (Band 12)	3	0.000	3.000	50.00	2.570	0.50
180.00	Ericsson RRUS 32 (50.8 lbs)	3	0.000	3.000	50.80	2.690	0.67
180.00	Ericsson RRUS-12 B2	3	0.000	3.000	58.00	3.150	0.50
180.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
180.00	KMW AM-X-CD-16-65-00T-RET	3	0.000	3.000	48.50	8.020	0.67
180.00	Powerwave Allgon 7770.00	3	0.000	3.000	35.00	5.510	0.65
180.00	Powerwave Allgon LGP21401	3	0.000	3.000	14.10	1.100	0.50
180.00	Powerwave Allgon TT19-	3	0.000	3.000	16.00	0.640	0.50
180.00	Raycap DC6-48-60-18-8F (23.5"	2	0.000	4.000	20.00	1.110	1.00
167.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
167.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.000	0.000	81.50	6.090	0.70
167.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
167.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
150.00	Round Side Arm	1	0.000	0.000	150.00	5.200	0.67
150.00	Sinclair SD210-SF2P4SNM	1	0.000	0.000	8.30	1.370	1.00
140.00	Bird 432-83H-01-T	2	0.000	1.000	25.00	1.400	0.50
140.00	Decibel DB809K-XT	3	0.000	9.000	30.00	3.660	1.00
140.00	Round Side Arm	3	0.000	0.000	150.00	5.200	0.67
140.00	Sinclair SC432D-HF6LDF (I40-G0	1	0.000	9.000	34.00	5.030	1.00
140.00	Telewave ANT150D (5 lbs)	1	0.000	1.000	5.00	1.090	0.50
135.00	Alcatel-Lucent 1900MHz RRH	3	0.000	0.000	44.00	3.260	0.50
135.00	Alcatel-Lucent 800 MHz RRH w/	3	0.000	0.000	61.80	2.500	0.50
135.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	0.000	70.00	4.050	0.50
135.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	31.600	1.00
135.00	RFS APXVSP18-C-A20	3	0.000	0.000	57.00	8.020	0.69
135.00	RFS APXVTM14-C-I20	3	0.000	0.000	52.90	6.340	0.66
125.00	Alcatel-Lucent B25 RRH4x30	3	0.000	0.000	53.00	2.120	0.50
125.00	Alcatel-Lucent B66a RRH4x45 (A	3	0.000	0.000	67.00	2.660	0.50
125.00	Alcatel-Lucent RRH2x60 700	3	0.000	0.000	56.70	2.150	0.50
125.00	Antel LPA-80063/6CF	1	0.000	0.000	27.00	9.590	0.76
125.00	Antel LPA-80080/6CF	2	0.000	0.000	21.00	8.630	0.65
125.00	Commscope JAHH-65B-R3B	6	0.000	0.000	60.60	9.110	0.69
125.00	Nokia B5 RRH4x40-850	3	0.000	0.000	48.50	1.320	0.50
125.00	RFS DB-B1-6C-12AB-0Z	1	0.000	0.000	21.40	2.510	0.67
125.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
112.00	Decibel DB844H90E-XY	12	0.000	0.000	14.00	3.610	0.74
112.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
105.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.160	0.68
96.00	Andrew DB586	2	0.000	0.000	8.30	0.740	1.00
96.00	Bird 429-83H-01-T	1	0.000	0.000	20.00	0.920	0.50
96.00	Flat Side Arm	3	0.000	0.000	150.00	6.300	0.67
79.00	PCTEL GPS-TMG-HR-26N	1	0.000	0.000	0.60	0.090	1.00
30.00	GPS	1	0.000	0.000	10.00	1.000	1.00

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:07 AM

Customer: VERIZON WIRELESS

Totals Num Loadings:47 117 12356.20

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	180.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	180.00	1	0.40" Fiber Cable	0.40	0.09	N	0.00	N	AT&T Mobility
0.00	180.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	180.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	180.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	180.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	167.00	1	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	T-Mobile
112.50	167.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	T-Mobile
0.00	150.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	Litchfield County Dispatch
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	CT Police Dept.
0.00	140.00	1	1/2" Coax	0.63	0.15	N	0.00	N	CT Police Dept.
0.00	140.00	2	3/8" Coax	0.44	0.08	N	0.00	N	CT Police Dept.
0.00	140.00	1	7/8" Coax	1.09	0.33	N	0.00	N	CT Police Dept.
0.00	135.00	3	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	135.00	1	7/8" Fiber	0.88	0.70	N	0.00	N	Sprint Nextel
0.00	125.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon
112.50	125.00	6	1 5/8" Coax	1.98	0.82	N	3.96	Y	Verizon
0.00	112.50	12	1 5/8" Coax	1.98	0.82	N	0.00	Y	T-Mobile
0.00	112.50	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	Verizon
0.00	112.50	1	Reinforcement	9.27	43.00	N	3.35	Y	--
0.00	112.00	12	1 1/4" Coax	1.55	0.63	N	4.65	Y	Sprint Nextel
0.00	105.00	6	1 5/8" Coax	1.98	0.82	N	0.00	Y	Metro PCS
0.00	96.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Eversource Energy
0.00	96.00	2	7/8" Coax	1.09	0.33	N	0.00	N	Eversource Energy
0.00	79.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
0.00	30.00	1	7/8" Coax	1.09	0.33	N	0.00	Y	Verizon

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (In)	— Intermediate Connections —			Connectors	Continuation?
					Description	Spacing (in)	Len (in)			
0.00	103.7	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.13	5/8" A36 U-Bolt	No

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:07 AM

Customer: VERIZON WIRELESS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)	Additional Reinforcing		
												Area (in ²)	Ix (in ⁴)	Weight (lb)
0.00		0.4375	52.750	72.640	25,115.3	19.50	120.57	78.5	937.8	0.0	0.0	19.64	8,846	0.0
5.00		0.4375	51.653	71.116	23,567.9	19.05	118.06	79.0	898.7	0.0	1,222.9	19.64	8,521	334.0
10.00		0.4375	50.556	69.593	22,085.4	18.61	115.56	79.5	860.4	0.0	1,197.0	19.64	8,202	334.0
15.00		0.4375	49.458	68.069	20,666.4	18.17	113.05	80.0	823.0	0.0	1,171.1	19.64	7,889	334.0
20.00		0.4375	48.361	66.546	19,309.5	17.73	110.54	80.5	786.4	0.0	1,145.2	19.64	7,582	334.0
25.00		0.4375	47.264	65.022	18,013.3	17.29	108.03	81.1	750.7	0.0	1,119.2	19.64	7,281	334.0
30.00		0.4375	46.167	63.498	16,776.5	16.84	105.52	81.6	715.7	0.0	1,093.3	19.64	6,986	334.0
35.00		0.4375	45.069	61.975	15,597.7	16.40	103.02	82.1	681.6	0.0	1,067.4	19.64	6,698	334.0
40.00		0.4375	43.972	60.451	14,475.4	15.96	100.51	82.6	648.4	0.0	1,041.5	19.64	6,415	334.0
42.96	Bot - Section 2	0.4375	43.323	59.550	13,837.8	15.70	99.02	82.6	629.1	0.0	603.6	19.64	6,251	197.5
45.00		0.4375	42.875	58.928	13,408.2	15.52	98.00	82.6	616.0	0.0	771.7	19.64	6,327	136.5
49.04	Top - Section 1	0.3750	42.738	50.421	11,432.7	18.33	113.97	79.8	526.9	0.0	1,502.0	19.64	6,105	269.9
50.00		0.3750	42.528	50.171	11,263.0	18.23	113.41	80.0	521.6	0.0	164.3	19.64	6,053	64.1
55.00		0.3750	41.431	48.865	10,406.2	17.72	110.48	80.6	494.7	0.0	842.5	19.64	5,784	334.0
60.00		0.3750	40.333	47.559	9,594.0	17.20	107.56	81.2	468.5	0.0	820.3	19.64	5,522	334.0
65.00		0.3750	39.236	46.253	8,825.1	16.69	104.63	81.8	443.0	0.0	798.0	19.64	5,266	334.0
70.00		0.3750	38.139	44.947	8,098.5	16.17	101.70	82.4	418.2	0.0	775.8	19.64	5,015	334.0
75.00		0.3750	37.042	43.641	7,412.9	15.65	98.78	82.6	394.2	0.0	753.6	19.64	4,771	334.0
79.00		0.3750	36.164	42.596	6,893.2	15.24	96.44	82.6	375.4	0.0	586.9	19.64	4,581	267.2
80.00		0.3750	35.944	42.335	6,767.2	15.14	95.85	82.6	370.8	0.0	144.5	19.64	4,533	66.8
85.00		0.3750	34.847	41.029	6,160.0	14.62	92.93	82.6	348.2	0.0	709.2	19.64	4,302	334.0
87.54	Bot - Section 3	0.3750	34.290	40.366	5,866.0	14.36	91.44	82.6	336.9	0.0	351.7	19.64	4,186	169.7
90.00		0.3750	33.750	39.723	5,590.4	14.11	90.00	82.6	326.2	0.0	620.3	19.64	4,204	164.3
92.46	Top - Section 2	0.3125	33.836	33.250	4,721.1	17.33	108.27	81.0	274.8	0.0	609.5	19.64	4,093	164.1
95.00		0.3125	33.278	32.696	4,489.2	17.01	106.49	81.4	265.7	0.0	285.4	19.64	3,981	169.9
96.00		0.3125	33.058	32.479	4,400.1	16.89	105.79	81.5	262.2	0.0	110.9	19.64	3,937	66.8
100.0		0.3125	32.181	31.608	4,055.7	16.39	102.98	82.1	248.2	0.0	436.1	19.64	3,764	267.2
103.7	Reinf. Top	0.3125	31.358	30.792	3,749.5	15.93	100.34	82.6	235.5	0.0	398.1	19.64	3,605	250.5
105.0		0.3125	31.083	30.520	3,651.0	15.78	99.47	82.6	231.3	0.0	130.4			
110.0		0.3125	29.986	29.431	3,274.2	15.16	95.96	82.6	215.1	0.0	510.0			
112.0		0.3125	29.547	28.996	3,131.1	14.91	94.55	82.6	208.7	0.0	198.8			
115.0		0.3125	28.889	28.343	2,924.3	14.54	92.44	82.6	199.4	0.0	292.7			
120.0		0.3125	27.792	27.255	2,600.2	13.92	88.93	82.6	184.3	0.0	473.0			
125.0		0.3125	26.694	26.167	2,301.0	13.30	85.42	82.6	169.8	0.0	454.5			
130.0		0.3125	25.597	25.078	2,025.7	12.68	81.91	82.6	155.9	0.0	435.9			
132.1	Bot - Section 4	0.3125	25.132	24.617	1,915.9	12.42	80.42	82.6	150.2	0.0	179.2			
135.0		0.3125	24.500	23.990	1,773.2	12.06	78.40	82.6	142.6	0.0	384.0			
135.8	Top - Section 3	0.1875	24.684	14.578	1,105.3	21.45	131.65	76.2	88.2	0.0	114.0			
140.0		0.1875	23.778	14.039	987.1	20.60	126.81	77.2	81.8	0.0	201.1			
145.0		0.1875	22.681	13.386	855.6	19.57	120.96	78.4	74.3	0.0	233.3			
150.0		0.1875	21.583	12.733	736.4	18.53	115.11	79.6	67.2	0.0	222.2			
155.0		0.1875	20.486	12.080	628.8	17.50	109.26	80.8	60.5	0.0	211.1			
160.0		0.1875	19.389	11.427	532.3	16.47	103.41	82.0	54.1	0.0	200.0			
165.0		0.1875	18.292	10.774	446.2	15.44	97.56	82.6	48.0	0.0	188.9			
167.0		0.1875	17.853	10.513	414.5	15.03	95.21	82.6	45.7	0.0	72.4			
170.0		0.1875	17.194	10.121	369.8	14.41	91.70	82.6	42.4	0.0	105.3			
175.0		0.1875	16.097	9.468	302.8	13.37	85.85	82.6	37.0	0.0	166.6			
180.0		0.1875	15.000	8.815	244.4	12.34	80.00	82.6	32.1	0.0	155.5			
											25,271.1			6,930.5

Site Number: 302506

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:07 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

90 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.15

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		230.9	0.0					0.0	0.0	230.9	0.0	0.0	0.0
5.00		458.9	1,467.5					0.0	1,023.8	458.9	2,491.3	0.0	0.0
10.00		453.0	1,436.4					0.0	1,023.8	453.0	2,460.2	0.0	0.0
15.00		447.1	1,405.3					0.0	1,023.8	447.1	2,429.1	0.0	0.0
20.00		441.3	1,374.2					0.0	1,023.8	441.3	2,398.0	0.0	0.0
25.00		435.4	1,343.1					0.0	1,023.8	435.4	2,366.9	0.0	0.0
30.00	Appurtenance(s)	434.6	1,312.0	27.9	0.0	0.0	12.0	0.0	1,023.8	462.5	2,347.8	0.0	0.0
35.00		442.7	1,280.9					0.0	1,021.8	442.7	2,302.7	0.0	0.0
40.00		359.4	1,249.8					0.0	1,021.8	359.4	2,271.6	0.0	0.0
42.96	Bot - Section 2	230.9	724.4					0.0	604.2	230.9	1,328.6	0.0	0.0
45.00		287.4	926.0					0.0	417.6	287.4	1,343.6	0.0	0.0
49.04	Top - Section 1	237.1	1,802.4					0.0	825.6	237.1	2,628.0	0.0	0.0
50.00		284.5	197.2					0.0	196.2	284.5	393.4	0.0	0.0
55.00		480.7	1,011.0					0.0	1,021.8	480.7	2,032.8	0.0	0.0
60.00		485.6	984.3					0.0	1,021.8	485.6	2,006.1	0.0	0.0
65.00		589.8	957.7					0.0	1,021.8	589.8	1,979.5	0.0	0.0
70.00		688.9	931.0					133.5	1,021.8	822.4	1,952.8	0.0	0.0
75.00		614.8	904.3					135.5	1,021.8	750.3	1,926.2	0.0	0.0
79.00	Appurtenance(s)	339.4	704.3	3.3	0.0	0.0	0.7	109.8	817.5	452.5	1,522.5	0.0	0.0
80.00		402.7	173.4					27.6	204.2	430.3	377.6	0.0	0.0
85.00		503.5	851.0					139.2	1,020.9	642.7	1,871.9	0.0	0.0
87.54	Bot - Section 3	333.2	422.1					71.4	518.6	404.5	940.7	0.0	0.0
90.00		328.1	744.3					69.5	502.3	397.6	1,246.6	0.0	0.0
92.46	Top - Section 2	330.9	731.5					69.8	501.6	400.7	1,233.0	0.0	0.0
95.00		233.1	342.4					72.7	519.3	305.8	861.8	0.0	0.0
96.00	Appurtenance(s)	325.0	133.1	565.1	0.0	0.0	583.9	28.7	204.2	918.8	921.2	0.0	0.0
100.00		499.1	523.4					115.4	812.9	614.5	1,336.2	0.0	0.0
103.75	Reinf. Top	318.6	477.7					109.1	762.0	427.7	1,239.8	0.0	0.0
105.00	Appurtenance(s)	390.8	156.5	420.6	0.0	0.0	95.0	36.5	153.8	847.9	405.3	0.0	0.0
110.00		434.5	612.0					147.0	585.8	581.5	1,197.8	0.0	0.0
112.00	Appurtenance(s)	304.5	238.6	1,926.9	0.0	0.0	2,001.6	59.2	234.3	2,290.6	2,474.5	0.0	0.0
115.00		478.7	351.2					87.1	195.2	565.8	546.4	0.0	0.0
120.00		585.6	567.6					161.4	282.4	747.0	850.0	0.0	0.0
125.00	Appurtenance(s)	463.0	545.3	3,272.5	0.0	0.0	3,155.5	162.3	282.4	3,897.8	3,983.3	0.0	0.0
130.00		247.3	523.1					0.0	245.1	247.3	768.2	0.0	0.0
132.12	Bot - Section 4	173.1	215.1					0.0	103.9	173.1	319.0	0.0	0.0
135.00	Appurtenance(s)	130.1	460.8	2,769.0	0.0	0.0	3,428.5	0.0	141.2	2,899.1	4,030.5	0.0	0.0
135.87	Top - Section 3	170.7	136.8					0.0	38.8	170.7	175.6	0.0	0.0
140.00	Appurtenance(s)	308.2	241.3	1,131.0	0.0	5,557.5	754.8	0.0	184.1	1,439.2	1,180.2	0.0	0.0
145.00		332.2	280.0					0.0	189.5	332.2	469.5	0.0	0.0
150.00	Appurtenance(s)	326.1	266.6	202.6	0.0	0.0	190.0	0.0	189.5	528.8	646.1	0.0	0.0
155.00		319.8	253.3					0.0	184.6	319.8	437.9	0.0	0.0
160.00		374.8	240.0					0.0	184.6	374.8	424.6	0.0	0.0
165.00		300.1	226.6					84.5	184.6	384.6	411.2	0.0	0.0
167.00	Appurtenance(s)	149.7	86.9	1,626.6	0.0	0.0	1,531.8	33.9	73.8	1,810.2	1,692.6	0.0	0.0
170.00		171.5	126.4					0.0	71.7	171.5	198.1	0.0	0.0
175.00		204.6	200.0					0.0	119.6	204.6	319.5	0.0	0.0
180.00	Appurtenance(s)	99.2	186.6	3,892.5	0.0	7,554.8	3,073.6	0.0	119.6	3,991.7	3,379.8	0.0	0.0

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:20 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

90 mph with No Ice

26 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Totals: 34,873.1 70,120.0 0.00 0.00

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

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90 mph with No Ice

26 Iterations

Gust Response Factor : 1.10

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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	-70.07	-34.75	0.00	-4,116.76	0.00	4,116.76	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.563
5.00	-67.47	-34.48	0.00	-3,943.02	0.00	3,943.02	5,055.67	2,527.83	10,632.1	5,323.99	0.09	-0.17	0.555
10.00	-64.91	-34.22	0.00	-3,770.60	0.00	3,770.60	4,979.93	2,489.97	10,246.6	5,130.93	0.36	-0.34	0.546
15.00	-62.39	-33.94	0.00	-3,599.53	0.00	3,599.53	4,902.77	2,451.39	9,865.10	4,939.88	0.81	-0.51	0.537
20.00	-59.89	-33.66	0.00	-3,429.83	0.00	3,429.83	4,824.18	2,412.09	9,487.79	4,750.94	1.44	-0.69	0.528
25.00	-57.43	-33.37	0.00	-3,261.54	0.00	3,261.54	4,744.17	2,372.08	9,114.87	4,564.21	2.26	-0.86	0.518
30.00	-54.98	-33.04	0.00	-3,094.70	0.00	3,094.70	4,662.73	2,331.36	8,746.54	4,379.77	3.26	-1.04	0.508
35.00	-52.59	-32.72	0.00	-2,929.51	0.00	2,929.51	4,579.86	2,289.93	8,383.01	4,197.74	4.45	-1.22	0.497
40.00	-50.24	-32.43	0.00	-2,765.92	0.00	2,765.92	4,491.22	2,245.61	8,016.71	4,014.31	5.83	-1.41	0.486
42.96	-48.87	-32.25	0.00	-2,670.03	0.00	2,670.03	4,424.29	2,212.15	7,778.37	3,894.97	6.73	-1.52	0.481
45.00	-47.47	-32.02	0.00	-2,604.13	0.00	2,604.13	4,378.03	2,189.01	7,615.75	3,813.53	7.40	-1.59	0.472
49.04	-44.80	-31.78	0.00	-2,474.79	0.00	2,474.79	3,622.99	1,811.50	6,300.42	3,154.89	8.81	-1.74	0.521
50.00	-44.35	-31.57	0.00	-2,444.28	0.00	2,444.28	3,610.23	1,805.12	6,246.74	3,128.01	9.16	-1.78	0.517
55.00	-42.23	-31.17	0.00	-2,286.43	0.00	2,286.43	3,542.95	1,771.47	5,969.33	2,989.10	11.13	-1.97	0.500
60.00	-40.14	-30.74	0.00	-2,130.61	0.00	2,130.61	3,474.23	1,737.12	5,695.71	2,852.09	13.30	-2.16	0.483
65.00	-38.08	-30.21	0.00	-1,976.89	0.00	1,976.89	3,404.09	1,702.05	5,426.05	2,717.06	15.67	-2.36	0.464
70.00	-36.07	-29.42	0.00	-1,825.87	0.00	1,825.87	3,332.53	1,666.26	5,160.56	2,584.12	18.24	-2.55	0.444
75.00	-34.09	-28.68	0.00	-1,678.77	0.00	1,678.77	3,242.30	1,621.15	4,873.54	2,440.39	21.01	-2.74	0.426
79.00	-32.55	-28.21	0.00	-1,564.04	0.00	1,564.04	3,164.68	1,582.34	4,641.84	2,324.37	23.37	-2.89	0.412
80.00	-32.14	-27.82	0.00	-1,535.83	0.00	1,535.83	3,145.28	1,572.64	4,584.79	2,295.80	23.98	-2.93	0.408
85.00	-30.24	-27.16	0.00	-1,396.71	0.00	1,396.71	3,048.26	1,524.13	4,304.87	2,155.63	27.15	-3.11	0.389
87.54	-29.28	-26.75	0.00	-1,327.74	0.00	1,327.74	2,998.97	1,499.48	4,166.05	2,086.12	28.83	-3.21	0.378
90.00	-28.01	-26.32	0.00	-1,261.94	0.00	1,261.94	2,951.23	1,475.62	4,033.76	2,019.88	30.50	-3.30	0.363
92.46	-26.77	-25.89	0.00	-1,197.27	0.00	1,197.27	2,424.49	1,212.24	3,334.85	1,669.90	32.22	-3.39	0.391
95.00	-25.90	-25.57	0.00	-1,131.41	0.00	1,131.41	2,395.02	1,197.51	3,238.97	1,621.89	34.05	-3.47	0.377
96.00	-24.99	-24.63	0.00	-1,105.85	0.00	1,105.85	2,383.33	1,191.67	3,201.50	1,603.13	34.78	-3.51	0.371
100.00	-23.64	-23.99	0.00	-1,007.32	0.00	1,007.32	2,336.02	1,168.01	3,053.03	1,528.79	37.79	-3.66	0.348
103.75	-22.40	-23.52	0.00	-917.35	0.00	917.35	2,287.68	1,143.84	2,911.90	1,458.11	40.71	-3.79	0.327
103.75	-22.40	-23.52	0.00	-917.35	0.00	917.35	2,287.68	1,143.84	2,911.90	1,458.11	40.71	-3.79	0.639
105.00	-21.97	-22.72	0.00	-887.95	0.00	887.95	2,267.46	1,133.73	2,860.42	1,432.33	41.71	-3.83	0.630
110.00	-20.73	-22.14	0.00	-774.37	0.00	774.37	2,186.61	1,093.30	2,659.07	1,331.51	45.89	-4.16	0.591
112.00	-18.38	-19.72	0.00	-730.10	0.00	730.10	2,154.27	1,077.13	2,580.59	1,292.21	47.66	-4.29	0.574
115.00	-17.79	-19.19	0.00	-670.94	0.00	670.94	2,105.76	1,052.88	2,465.08	1,234.37	50.42	-4.48	0.552
120.00	-16.91	-18.47	0.00	-574.98	0.00	574.98	2,024.90	1,012.45	2,278.43	1,140.91	55.26	-4.78	0.513
125.00	-13.21	-14.31	0.00	-482.65	0.00	482.65	1,944.05	972.03	2,099.13	1,051.12	60.42	-5.07	0.466
130.00	-12.42	-14.03	0.00	-411.12	0.00	411.12	1,863.20	931.60	1,927.17	965.02	65.87	-5.35	0.433
132.12	-12.08	-13.86	0.00	-381.37	0.00	381.37	1,828.92	914.46	1,856.49	929.62	68.27	-5.46	0.417
135.00	-8.33	-10.60	0.00	-341.46	0.00	341.46	1,782.35	891.17	1,762.57	882.59	71.61	-5.62	0.392
135.87	-8.15	-10.43	0.00	-332.24	0.00	332.24	999.39	499.70	1,006.16	503.83	72.64	-5.67	0.668
140.00	-7.08	-8.92	0.00	-283.60	0.00	283.60	975.08	487.54	945.09	473.25	77.62	-5.88	0.607
145.00	-6.59	-8.58	0.00	-239.03	0.00	239.03	944.35	472.17	872.40	436.85	83.97	-6.25	0.554
150.00	-5.96	-8.02	0.00	-196.13	0.00	196.13	912.19	456.09	801.24	401.22	90.70	-6.61	0.496
155.00	-5.52	-7.68	0.00	-156.04	0.00	156.04	878.60	439.30	731.82	366.45	97.80	-6.95	0.432
160.00	-5.11	-7.28	0.00	-117.65	0.00	117.65	843.59	421.80	664.33	332.66	105.23	-7.26	0.360
165.00	-4.73	-6.86	0.00	-81.24	0.00	81.24	800.44	400.22	593.98	297.43	112.97	-7.53	0.279
167.00	-3.28	-4.85	0.00	-67.52	0.00	67.52	781.04	390.52	565.39	283.11	116.14	-7.62	0.243
170.00	-3.09	-4.66	0.00	-52.97	0.00	52.97	751.93	375.97	523.82	262.30	120.95	-7.75	0.206
175.00	-2.79	-4.42	0.00	-29.66	0.00	29.66	703.42	351.71	458.07	229.37	129.14	-7.91	0.133
180.00	0.00	-3.99	0.00	-7.55	0.00	7.55	654.91	327.45	396.72	198.65	137.45	-8.00	0.038

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:20 AM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

90 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

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		200.3	0.0					0.0	0.0	200.3	0.0	0.0	0.0
5.00		396.5	1,100.6					0.0	767.9	396.5	1,868.5	0.0	0.0
10.00		388.0	1,077.3					0.0	767.9	388.0	1,845.2	0.0	0.0
15.00		379.6	1,054.0					0.0	767.9	379.6	1,821.8	0.0	0.0
20.00		371.2	1,030.6					0.0	767.9	371.2	1,798.5	0.0	0.0
25.00		362.8	1,007.3					0.0	767.9	362.8	1,775.2	0.0	0.0
30.00	Appurtenance(s)	358.6	984.0	27.9	0.0	0.0	9.0	0.0	767.9	386.5	1,760.8	0.0	0.0
35.00		361.5	960.7					0.0	766.4	361.5	1,727.0	0.0	0.0
40.00		291.0	937.3					0.0	766.4	291.0	1,703.7	0.0	0.0
42.96	Bot - Section 2	185.5	543.3					0.0	453.2	185.5	996.4	0.0	0.0
45.00		229.2	694.5					0.0	313.2	229.2	1,007.7	0.0	0.0
49.04	Top - Section 1	188.7	1,351.8					0.0	619.2	188.7	1,971.0	0.0	0.0
50.00		225.5	147.9					0.0	147.2	225.5	295.0	0.0	0.0
55.00		378.3	758.2					0.0	766.4	378.3	1,524.6	0.0	0.0
60.00		377.6	738.2					0.0	766.4	377.6	1,504.6	0.0	0.0
65.00		534.3	718.2					0.0	766.4	534.3	1,484.6	0.0	0.0
70.00		688.9	698.2					133.5	766.4	822.4	1,464.6	0.0	0.0
75.00		614.8	678.3					135.5	766.4	750.3	1,444.6	0.0	0.0
79.00	Appurtenance(s)	339.4	528.2	3.3	0.0	0.0	0.5	109.8	613.1	452.5	1,141.8	0.0	0.0
80.00		402.7	130.1					27.6	153.1	430.3	283.2	0.0	0.0
85.00		503.5	638.3					139.2	765.7	642.7	1,404.0	0.0	0.0
87.54	Bot - Section 3	333.2	316.6					71.4	389.0	404.5	705.5	0.0	0.0
90.00		328.1	558.2					69.5	376.7	397.6	935.0	0.0	0.0
92.46	Top - Section 2	330.9	548.6					69.8	376.2	400.7	924.8	0.0	0.0
95.00		233.1	256.8					72.7	389.5	305.8	646.3	0.0	0.0
96.00	Appurtenance(s)	325.0	99.8	565.1	0.0	0.0	437.9	28.7	153.1	918.8	690.9	0.0	0.0
100.00		499.1	392.5					115.4	609.6	614.5	1,002.2	0.0	0.0
103.75	Reinf. Top	318.6	358.3					109.1	571.5	427.7	929.8	0.0	0.0
105.00	Appurtenance(s)	390.8	117.4	420.6	0.0	0.0	71.3	36.5	115.4	847.9	304.0	0.0	0.0
110.00		434.5	459.0					147.0	439.3	581.5	898.3	0.0	0.0
112.00	Appurtenance(s)	304.5	178.9	1,926.9	0.0	0.0	1,501.2	59.2	175.7	2,290.6	1,855.9	0.0	0.0
115.00		478.7	263.4					87.1	146.4	565.8	409.8	0.0	0.0
120.00		585.6	425.7					161.4	211.8	747.0	637.5	0.0	0.0
125.00	Appurtenance(s)	440.6	409.0	3,272.5	0.0	0.0	2,366.6	162.3	211.8	3,875.4	2,987.4	0.0	0.0
130.00		214.8	392.3					0.0	183.8	214.8	576.2	0.0	0.0
132.12	Bot - Section 4	148.3	161.3					0.0	77.9	148.3	239.2	0.0	0.0
135.00	Appurtenance(s)	110.9	345.6	2,769.0	0.0	0.0	2,571.4	0.0	105.9	2,879.9	3,022.9	0.0	0.0
135.87	Top - Section 3	144.4	102.6					0.0	29.1	144.4	131.7	0.0	0.0
140.00	Appurtenance(s)	258.1	181.0	1,131.0	0.0	5,557.5	566.1	0.0	138.1	1,389.1	885.2	0.0	0.0
145.00		273.3	210.0					0.0	142.1	273.3	352.1	0.0	0.0
150.00	Appurtenance(s)	262.6	200.0	202.6	0.0	0.0	142.5	0.0	142.1	465.2	484.6	0.0	0.0
155.00		251.6	190.0					0.0	138.5	251.6	328.4	0.0	0.0
160.00		339.5	180.0					0.0	138.5	339.5	318.4	0.0	0.0
165.00		300.1	170.0					84.5	138.5	384.6	308.4	0.0	0.0
167.00	Appurtenance(s)	149.7	65.2	1,626.6	0.0	0.0	1,148.8	33.9	55.4	1,810.2	1,269.4	0.0	0.0
170.00		171.5	94.8					0.0	53.8	171.5	148.6	0.0	0.0
175.00		204.6	150.0					0.0	89.7	204.6	239.7	0.0	0.0
180.00	Appurtenance(s)	99.2	140.0	3,892.5	0.0	7,554.8	2,305.2	0.0	89.7	3,991.7	2,534.8	0.0	0.0

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:32 AM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

90 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Totals: 33,401.1 52,590.0 0.00 0.00

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

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Wind Importance Factor : 1.15

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	-52.54	-33.28	0.00	-3,962.17	0.00	3,962.17	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.539
5.00	-50.58	-33.02	0.00	-3,795.79	0.00	3,795.79	5,055.67	2,527.83	10,632.1	5,323.99	0.09	-0.16	0.532
10.00	-48.64	-32.77	0.00	-3,630.68	0.00	3,630.68	4,979.93	2,489.97	10,246.6	5,130.93	0.35	-0.33	0.524
15.00	-46.73	-32.51	0.00	-3,466.85	0.00	3,466.85	4,902.77	2,451.39	9,865.10	4,939.88	0.78	-0.49	0.515
20.00	-44.84	-32.25	0.00	-3,304.30	0.00	3,304.30	4,824.18	2,412.09	9,487.79	4,750.94	1.39	-0.66	0.507
25.00	-42.97	-32.00	0.00	-3,143.03	0.00	3,143.03	4,744.17	2,372.08	9,114.87	4,564.21	2.17	-0.83	0.498
30.00	-41.12	-31.71	0.00	-2,983.05	0.00	2,983.05	4,662.73	2,331.36	8,746.54	4,379.77	3.14	-1.01	0.488
35.00	-39.31	-31.43	0.00	-2,824.52	0.00	2,824.52	4,579.86	2,289.93	8,383.01	4,197.74	4.28	-1.18	0.477
40.00	-37.53	-31.20	0.00	-2,667.36	0.00	2,667.36	4,491.22	2,245.61	8,016.71	4,014.31	5.61	-1.35	0.467
42.96	-36.49	-31.04	0.00	-2,575.13	0.00	2,575.13	4,424.29	2,212.15	7,778.37	3,894.97	6.49	-1.46	0.462
45.00	-35.43	-30.85	0.00	-2,511.70	0.00	2,511.70	4,378.03	2,189.01	7,615.75	3,813.53	7.13	-1.53	0.454
49.04	-33.42	-30.66	0.00	-2,387.05	0.00	2,387.05	4,322.99	1,811.50	6,300.42	3,154.89	8.49	-1.68	0.500
50.00	-33.07	-30.49	0.00	-2,357.61	0.00	2,357.61	3,610.23	1,805.12	6,246.74	3,128.01	8.83	-1.71	0.497
55.00	-31.46	-30.17	0.00	-2,205.16	0.00	2,205.16	3,542.95	1,771.47	5,969.33	2,989.10	10.72	-1.90	0.481
60.00	-29.88	-29.84	0.00	-2,054.31	0.00	2,054.31	3,474.23	1,737.12	5,695.71	2,852.09	12.81	-2.09	0.464
65.00	-28.32	-29.34	0.00	-1,905.13	0.00	1,905.13	3,404.09	1,702.05	5,426.05	2,717.06	15.09	-2.27	0.445
70.00	-26.80	-28.54	0.00	-1,758.44	0.00	1,758.44	3,332.53	1,666.26	5,160.56	2,584.12	17.57	-2.46	0.426
75.00	-25.31	-27.80	0.00	-1,615.73	0.00	1,615.73	3,242.30	1,621.15	4,873.54	2,440.39	20.24	-2.64	0.408
79.00	-24.15	-27.33	0.00	-1,504.52	0.00	1,504.52	3,164.68	1,582.34	4,641.84	2,324.37	22.52	-2.79	0.394
80.00	-23.83	-26.94	0.00	-1,477.19	0.00	1,477.19	3,145.28	1,572.64	4,584.79	2,295.80	23.11	-2.82	0.391
85.00	-22.40	-26.27	0.00	-1,342.52	0.00	1,342.52	3,048.26	1,524.13	4,304.87	2,155.63	26.16	-3.00	0.372
87.54	-21.68	-25.87	0.00	-1,275.78	0.00	1,275.78	2,998.97	1,499.48	4,166.05	2,086.12	27.78	-3.09	0.362
90.00	-20.73	-25.45	0.00	-1,212.15	0.00	1,212.15	2,951.23	1,475.62	4,033.76	2,019.88	29.39	-3.18	0.348
92.46	-19.79	-25.03	0.00	-1,149.64	0.00	1,149.64	2,424.49	1,212.24	3,334.85	1,669.90	31.05	-3.26	0.374
95.00	-19.14	-24.70	0.00	-1,085.99	0.00	1,085.99	2,395.02	1,197.51	3,238.97	1,621.89	32.81	-3.35	0.360
96.00	-18.47	-23.77	0.00	-1,061.28	0.00	1,061.28	2,383.33	1,191.67	3,201.50	1,603.13	33.51	-3.38	0.355
100.00	-17.45	-23.14	0.00	-966.18	0.00	966.18	2,336.02	1,168.01	3,053.03	1,528.79	36.41	-3.52	0.333
103.75	-16.51	-22.68	0.00	-879.41	0.00	879.41	2,287.68	1,143.84	2,911.90	1,458.11	39.22	-3.65	0.312
103.75	-16.51	-22.68	0.00	-879.41	0.00	879.41	2,287.68	1,143.84	2,911.90	1,458.11	39.22	-3.65	0.611
105.00	-16.20	-21.87	0.00	-851.06	0.00	851.06	2,267.46	1,133.73	2,860.42	1,432.33	40.18	-3.69	0.602
110.00	-15.26	-21.28	0.00	-741.73	0.00	741.73	2,186.61	1,093.30	2,659.07	1,331.51	44.21	-4.00	0.564
112.00	-13.52	-18.90	0.00	-699.17	0.00	699.17	2,154.27	1,077.13	2,580.59	1,292.21	45.91	-4.12	0.548
115.00	-13.08	-18.36	0.00	-642.46	0.00	642.46	2,105.76	1,052.88	2,465.08	1,234.37	48.56	-4.31	0.527
120.00	-12.41	-17.63	0.00	-550.65	0.00	550.65	2,024.90	1,012.45	2,278.43	1,140.91	53.23	-4.60	0.489
125.00	-9.69	-13.57	0.00	-462.51	0.00	462.51	1,944.05	972.03	2,099.13	1,051.12	58.19	-4.87	0.445
130.00	-9.09	-13.33	0.00	-394.67	0.00	394.67	1,863.20	931.60	1,927.17	965.02	63.43	-5.14	0.414
132.12	-8.84	-13.18	0.00	-366.41	0.00	366.41	1,828.92	914.46	1,856.49	929.62	65.74	-5.25	0.399
135.00	-6.08	-10.04	0.00	-328.44	0.00	328.44	1,782.35	891.17	1,762.57	882.59	68.95	-5.40	0.376
135.87	-5.94	-9.90	0.00	-319.71	0.00	319.71	999.39	499.70	1,006.16	503.83	69.93	-5.45	0.641
140.00	-5.15	-8.46	0.00	-273.25	0.00	273.25	975.08	487.54	945.09	473.25	74.73	-5.65	0.583
145.00	-4.78	-8.18	0.00	-230.96	0.00	230.96	944.35	472.17	872.40	436.85	80.83	-6.01	0.534
150.00	-4.30	-7.69	0.00	-190.05	0.00	190.05	912.19	456.09	801.24	401.22	87.31	-6.36	0.479
155.00	-3.96	-7.43	0.00	-151.58	0.00	151.58	878.60	439.30	731.82	366.45	94.14	-6.69	0.418
160.00	-3.65	-7.07	0.00	-114.45	0.00	114.45	843.59	421.80	664.33	332.66	101.30	-6.99	0.349
165.00	-3.37	-6.66	0.00	-79.09	0.00	79.09	800.44	400.22	593.98	297.43	108.75	-7.25	0.270
167.00	-2.34	-4.71	0.00	-65.77	0.00	65.77	781.04	390.52	565.39	283.11	111.80	-7.34	0.235
170.00	-2.20	-4.52	0.00	-51.65	0.00	51.65	751.93	375.97	523.82	262.30	116.44	-7.47	0.200
175.00	-1.98	-4.29	0.00	-29.03	0.00	29.03	703.42	351.71	458.07	229.37	124.33	-7.62	0.130
180.00	0.00	-3.99	0.00	-7.55	0.00	7.55	654.91	327.45	396.72	198.65	132.34	-7.71	0.038

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:33 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 1.00 in Radial Ice

26 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 : 1.25

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		42.6	0.0					0.0	0.0	42.6	0.0	0.0	0.0
5.00		84.7	2,115.7					0.0	1,822.6	84.7	3,938.3	0.0	0.0
10.00		83.5	2,148.0					0.0	1,922.9	83.5	4,071.0	0.0	0.0
15.00		82.2	2,140.2					0.0	1,974.9	82.2	4,115.1	0.0	0.0
20.00		80.7	2,119.3					0.0	2,011.1	80.7	4,130.3	0.0	0.0
25.00		79.2	2,091.5					0.0	2,039.2	79.2	4,130.7	0.0	0.0
30.00	Appurtenance(s)	78.6	2,059.4	6.0	0.0	0.0	45.0	0.0	2,062.4	84.6	4,166.8	0.0	0.0
35.00		79.5	2,024.3					0.0	2,031.1	79.5	4,055.5	0.0	0.0
40.00		64.2	1,987.1					0.0	2,047.2	64.2	4,034.3	0.0	0.0
42.96	Bot - Section 2	41.0	1,158.9					0.0	1,217.3	41.0	2,376.2	0.0	0.0
45.00		50.7	1,230.2					0.0	844.1	50.7	2,074.3	0.0	0.0
49.04	Top - Section 1	41.8	2,396.3					0.0	1,675.1	41.8	4,071.5	0.0	0.0
50.00		50.2	338.4					0.0	399.3	50.2	737.7	0.0	0.0
55.00		84.4	1,733.2					0.0	2,086.2	84.4	3,819.5	0.0	0.0
60.00		84.5	1,695.4					0.0	2,097.1	84.5	3,792.5	0.0	0.0
65.00		84.5	1,656.7					0.0	2,107.2	84.5	3,763.9	0.0	0.0
70.00		84.2	1,617.3					35.4	2,116.6	119.7	3,733.9	0.0	0.0
75.00		75.5	1,577.3					36.3	2,125.4	111.8	3,702.7	0.0	0.0
79.00	Appurtenance(s)	41.8	1,234.2	1.5	0.0	0.0	7.0	29.7	1,706.3	72.9	2,947.4	0.0	0.0
80.00		49.8	305.6					7.5	427.2	57.3	732.8	0.0	0.0
85.00		62.4	1,495.7					38.0	2,140.6	100.3	3,636.3	0.0	0.0
87.54	Bot - Section 3	41.4	746.2					19.6	1,090.3	61.0	1,836.5	0.0	0.0
90.00		40.8	1,060.0					19.2	1,057.8	59.9	2,117.8	0.0	0.0
92.46	Top - Section 2	41.3	1,043.0					19.3	1,058.0	60.6	2,101.0	0.0	0.0
95.00		29.1	661.0					20.2	1,097.2	49.3	1,758.2	0.0	0.0
96.00	Appurtenance(s)	40.7	257.8	111.9	0.0	0.0	936.1	8.0	431.9	160.6	1,625.8	0.0	0.0
100.00		62.7	1,011.4					32.2	1,726.2	94.9	2,737.7	0.0	0.0
103.75	Reinf. Top	40.2	926.4					30.6	1,622.1	70.8	2,548.5	0.0	0.0
105.00	Appurtenance(s)	49.5	305.2	78.5	0.0	0.0	462.7	10.3	441.3	138.3	1,209.2	0.0	0.0
110.00		55.2	1,189.5					41.6	1,551.3	96.8	2,740.9	0.0	0.0
112.00	Appurtenance(s)	38.9	467.3	371.5	0.0	0.0	5,338.0	16.8	621.9	427.2	6,427.2	0.0	0.0
115.00		61.4	688.1					23.1	525.5	84.5	1,213.6	0.0	0.0
120.00		75.5	1,111.6					42.7	803.7	118.2	1,915.3	0.0	0.0
125.00	Appurtenance(s)	74.0	1,072.3	595.1	0.0	0.0	9,306.7	43.3	806.2	712.4	11,185.2	0.0	0.0
130.00		51.8	1,032.7					0.0	579.2	51.8	1,611.9	0.0	0.0
132.12	Bot - Section 4	36.0	428.2					0.0	246.0	36.0	674.2	0.0	0.0
135.00	Appurtenance(s)	26.9	748.4	504.2	0.0	0.0	7,794.8	0.0	334.6	531.1	8,877.8	0.0	0.0
135.87	Top - Section 3	35.3	223.2					0.0	97.3	35.3	320.5	0.0	0.0
140.00	Appurtenance(s)	63.5	638.8	287.0	0.0	1,654.0	2,566.1	0.0	462.5	350.5	3,667.3	0.0	0.0
145.00		67.8	742.9					0.0	527.7	67.8	1,270.6	0.0	0.0
150.00	Appurtenance(s)	65.9	711.4	64.9	0.0	0.0	332.7	0.0	529.0	130.8	1,573.1	0.0	0.0
155.00		63.8	679.7					0.0	525.3	63.8	1,205.0	0.0	0.0
160.00		61.8	647.8					0.0	526.5	61.8	1,174.3	0.0	0.0
165.00		42.2	615.8					23.9	527.7	66.1	1,143.5	0.0	0.0
167.00	Appurtenance(s)	29.3	239.7	342.5	0.0	0.0	3,613.7	9.6	211.4	381.4	4,064.8	0.0	0.0
170.00		45.6	348.7					0.0	71.7	45.6	420.4	0.0	0.0
175.00		55.2	551.2					0.0	119.6	55.2	670.8	0.0	0.0
180.00	Appurtenance(s)	27.0	518.7	957.8	0.0	1,099.3	8,836.4	0.0	119.6	984.8	9,474.7	0.0	0.0

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:45 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 1.00 in Radial Ice

26 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 : 1.25

Wind Load Factor : 1.00

Totals: 6,576.70 143,596. 0.00 0.00

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

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Ice Dead Load Factor : 1.00

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Dead Load Factor : 1.20

Ice Importance Factor : 1.25

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	-143.59	-6.58	0.00	-888.66	0.00	888.66	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.141
5.00	-139.65	-6.58	0.00	-855.76	0.00	855.76	5,055.67	2,527.83	10,632.1	5,323.99	0.02	-0.04	0.140
10.00	-135.58	-6.59	0.00	-822.84	0.00	822.84	4,979.93	2,489.97	10,246.6	5,130.93	0.08	-0.07	0.138
15.00	-131.46	-6.58	0.00	-789.92	0.00	789.92	4,902.77	2,451.39	9,865.10	4,939.88	0.18	-0.11	0.137
20.00	-127.32	-6.58	0.00	-756.99	0.00	756.99	4,824.18	2,412.09	9,487.79	4,750.94	0.31	-0.15	0.135
25.00	-123.19	-6.57	0.00	-724.09	0.00	724.09	4,744.17	2,372.08	9,114.87	4,564.21	0.49	-0.19	0.133
30.00	-119.02	-6.56	0.00	-691.22	0.00	691.22	4,662.73	2,331.36	8,746.54	4,379.77	0.71	-0.23	0.131
35.00	-114.96	-6.54	0.00	-658.43	0.00	658.43	4,579.86	2,289.93	8,383.01	4,197.74	0.97	-0.27	0.129
40.00	-110.92	-6.52	0.00	-625.72	0.00	625.72	4,491.22	2,245.61	8,016.71	4,014.31	1.28	-0.31	0.127
42.96	-108.54	-6.51	0.00	-606.44	0.00	606.44	4,424.29	2,212.15	7,778.37	3,894.97	1.48	-0.34	0.126
45.00	-106.46	-6.49	0.00	-593.15	0.00	593.15	4,378.03	2,189.01	7,615.75	3,813.53	1.62	-0.35	0.124
49.04	-102.39	-6.46	0.00	-566.92	0.00	566.92	3,622.99	1,811.50	6,300.42	3,154.89	1.94	-0.39	0.137
50.00	-101.65	-6.45	0.00	-560.72	0.00	560.72	3,610.23	1,805.12	6,246.74	3,128.01	2.02	-0.39	0.137
55.00	-97.83	-6.42	0.00	-528.46	0.00	528.46	3,542.95	1,771.47	5,969.33	2,989.10	2.45	-0.44	0.133
60.00	-94.03	-6.38	0.00	-496.38	0.00	496.38	3,474.23	1,737.12	5,695.71	2,852.09	2.94	-0.48	0.130
65.00	-90.26	-6.33	0.00	-464.50	0.00	464.50	3,404.09	1,702.05	5,426.05	2,717.06	3.47	-0.53	0.126
70.00	-86.52	-6.24	0.00	-432.85	0.00	432.85	3,332.53	1,666.26	5,160.56	2,584.12	4.05	-0.57	0.122
75.00	-82.82	-6.15	0.00	-401.64	0.00	401.64	3,242.30	1,621.15	4,873.54	2,440.39	4.68	-0.62	0.118
79.00	-79.87	-6.08	0.00	-377.04	0.00	377.04	3,164.68	1,582.34	4,641.84	2,324.37	5.21	-0.66	0.115
80.00	-79.14	-6.05	0.00	-370.96	0.00	370.96	3,145.28	1,572.64	4,584.79	2,295.80	5.35	-0.67	0.114
85.00	-75.50	-5.95	0.00	-340.72	0.00	340.72	3,048.26	1,524.13	4,304.87	2,155.63	6.07	-0.71	0.110
87.54	-73.66	-5.89	0.00	-325.61	0.00	325.61	2,998.97	1,499.48	4,166.05	2,086.12	6.46	-0.73	0.108
90.00	-71.54	-5.83	0.00	-311.12	0.00	311.12	2,951.23	1,475.62	4,033.76	2,019.88	6.84	-0.76	0.104
92.46	-69.44	-5.77	0.00	-296.79	0.00	296.79	2,424.49	1,212.24	3,334.85	1,669.90	7.23	-0.78	0.113
95.00	-67.68	-5.72	0.00	-282.11	0.00	282.11	2,395.02	1,197.51	3,238.97	1,621.89	7.65	-0.80	0.110
96.00	-66.05	-5.56	0.00	-276.39	0.00	276.39	2,383.33	1,191.67	3,201.50	1,603.13	7.82	-0.81	0.108
100.00	-63.31	-5.46	0.00	-254.15	0.00	254.15	2,336.02	1,168.01	3,053.03	1,528.79	8.52	-0.85	0.103
103.75	-60.76	-5.38	0.00	-233.66	0.00	233.66	2,287.68	1,143.84	2,911.90	1,458.11	9.19	-0.88	0.098
103.75	-60.76	-5.38	0.00	-233.66	0.00	233.66	2,287.68	1,143.84	2,911.90	1,458.11	9.19	-0.88	0.187
105.00	-59.55	-5.27	0.00	-226.94	0.00	226.94	2,267.46	1,133.73	2,860.42	1,432.33	9.43	-0.89	0.185
110.00	-56.81	-5.19	0.00	-200.59	0.00	200.59	2,186.61	1,093.30	2,659.07	1,331.51	10.40	-0.97	0.177
112.00	-50.39	-4.69	0.00	-190.21	0.00	190.21	2,154.27	1,077.13	2,580.59	1,292.21	10.82	-1.01	0.171
115.00	-49.17	-4.64	0.00	-176.16	0.00	176.16	2,105.76	1,052.88	2,465.08	1,234.37	11.47	-1.06	0.166
120.00	-47.25	-4.55	0.00	-152.98	0.00	152.98	2,024.90	1,012.45	2,278.43	1,140.91	12.62	-1.14	0.157
125.00	-36.08	-3.65	0.00	-130.25	0.00	130.25	1,944.05	972.03	2,099.13	1,051.12	13.85	-1.21	0.142
130.00	-34.46	-3.60	0.00	-111.99	0.00	111.99	1,863.20	931.60	1,927.17	965.02	15.16	-1.29	0.135
132.12	-33.79	-3.57	0.00	-104.37	0.00	104.37	1,828.92	914.46	1,856.49	929.62	15.74	-1.32	0.131
135.00	-24.92	-2.84	0.00	-94.10	0.00	94.10	1,782.35	891.17	1,762.57	882.59	16.55	-1.36	0.121
135.87	-24.60	-2.81	0.00	-91.63	0.00	91.63	999.39	499.70	1,006.16	503.83	16.80	-1.38	0.207
140.00	-20.94	-2.40	0.00	-78.36	0.00	78.36	975.08	487.54	945.09	473.25	18.02	-1.44	0.187
145.00	-19.67	-2.34	0.00	-66.35	0.00	66.35	944.35	472.17	872.40	436.85	19.58	-1.54	0.173
150.00	-18.10	-2.19	0.00	-54.66	0.00	54.66	912.19	456.09	801.24	401.22	21.25	-1.64	0.156
155.00	-16.89	-2.12	0.00	-43.70	0.00	43.70	878.60	439.30	731.82	366.45	23.02	-1.74	0.138
160.00	-15.72	-2.04	0.00	-33.10	0.00	33.10	843.59	421.80	664.33	332.66	24.88	-1.82	0.118
165.00	-14.57	-1.95	0.00	-22.87	0.00	22.87	800.44	400.22	593.98	297.43	26.83	-1.90	0.095
167.00	-10.52	-1.44	0.00	-18.96	0.00	18.96	781.04	390.52	565.39	283.11	27.63	-1.92	0.080
170.00	-10.10	-1.39	0.00	-14.64	0.00	14.64	751.93	375.97	523.82	262.30	28.85	-1.96	0.069
175.00	-9.43	-1.32	0.00	-7.69	0.00	7.69	703.42	351.71	458.07	229.37	30.93	-2.00	0.047
180.00	0.00	-0.98	0.00	-1.10	0.00	1.10	654.91	327.45	396.72	198.65	33.03	-2.02	0.006

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:45 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

25 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

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		55.6	0.0					0.0	0.0	55.6	0.0	0.0	0.0
5.00		110.1	1,222.9					0.0	853.2	110.1	2,076.1	0.0	0.0
10.00		107.8	1,197.0					0.0	853.2	107.8	2,050.2	0.0	0.0
15.00		105.4	1,171.1					0.0	853.2	105.4	2,024.3	0.0	0.0
20.00		103.1	1,145.2					0.0	853.2	103.1	1,998.3	0.0	0.0
25.00		100.8	1,119.2					0.0	853.2	100.8	1,972.4	0.0	0.0
30.00	Appurtenance(s)	99.6	1,093.3	7.8	0.0	0.0	10.0	0.0	853.2	107.4	1,956.5	0.0	0.0
35.00		100.4	1,067.4					0.0	851.5	100.4	1,918.9	0.0	0.0
40.00		80.8	1,041.5					0.0	851.5	80.8	1,893.0	0.0	0.0
42.96	Bot - Section 2	51.5	603.6					0.0	503.5	51.5	1,107.2	0.0	0.0
45.00		63.7	771.7					0.0	348.0	63.7	1,119.7	0.0	0.0
49.04	Top - Section 1	52.4	1,502.0					0.0	688.0	52.4	2,190.0	0.0	0.0
50.00		62.6	164.3					0.0	163.5	62.6	327.8	0.0	0.0
55.00		105.1	842.5					0.0	851.5	105.1	1,694.0	0.0	0.0
60.00		104.9	820.3					0.0	851.5	104.9	1,671.8	0.0	0.0
65.00		148.4	798.0					0.0	851.5	148.4	1,649.6	0.0	0.0
70.00		191.3	775.8					39.1	851.5	230.5	1,627.4	0.0	0.0
75.00		170.8	753.6					39.9	851.5	210.7	1,605.1	0.0	0.0
79.00	Appurtenance(s)	94.3	586.9	0.9	0.0	0.0	0.6	32.5	681.2	127.7	1,268.7	0.0	0.0
80.00		111.9	144.5					8.2	170.2	120.1	314.7	0.0	0.0
85.00		139.9	709.2					41.4	850.8	181.3	1,559.9	0.0	0.0
87.54	Bot - Section 3	92.6	351.7					21.3	432.2	113.9	783.9	0.0	0.0
90.00		91.1	620.3					20.8	418.6	111.9	1,038.9	0.0	0.0
92.46	Top - Section 2	91.9	609.5					21.0	418.0	112.9	1,027.5	0.0	0.0
95.00		64.7	285.4					21.9	432.8	86.6	718.1	0.0	0.0
96.00	Appurtenance(s)	90.3	110.9	157.0	0.0	0.0	486.6	8.6	170.2	255.9	767.6	0.0	0.0
100.00		138.6	436.1					34.8	677.4	173.5	1,113.5	0.0	0.0
103.75	Reinf. Top	88.5	398.1					33.0	635.0	121.5	1,033.2	0.0	0.0
105.00	Appurtenance(s)	108.6	130.4	116.8	0.0	0.0	79.2	11.1	128.2	236.5	337.8	0.0	0.0
110.00		120.7	510.0					44.7	488.1	165.4	998.1	0.0	0.0
112.00	Appurtenance(s)	84.6	198.8	535.2	0.0	0.0	1,668.0	18.0	195.3	637.9	2,062.1	0.0	0.0
115.00		133.0	292.7					24.4	162.7	157.3	455.4	0.0	0.0
120.00		162.7	473.0					45.4	235.3	208.1	708.3	0.0	0.0
125.00	Appurtenance(s)	122.4	454.5	909.0	0.0	0.0	2,629.6	45.9	235.3	1,077.3	3,319.4	0.0	0.0
130.00		59.7	435.9					0.0	204.2	59.7	640.2	0.0	0.0
132.12	Bot - Section 4	41.2	179.2					0.0	86.6	41.2	265.8	0.0	0.0
135.00	Appurtenance(s)	30.8	384.0	769.2	0.0	0.0	2,857.1	0.0	117.6	800.0	3,358.8	0.0	0.0
135.87	Top - Section 3	40.1	114.0					0.0	32.3	40.1	146.3	0.0	0.0
140.00	Appurtenance(s)	71.7	201.1	314.2	0.0	1,543.7	629.0	0.0	153.4	385.9	983.5	0.0	0.0
145.00		75.9	233.3					0.0	157.9	75.9	391.2	0.0	0.0
150.00	Appurtenance(s)	72.9	222.2	56.3	0.0	0.0	158.3	0.0	157.9	129.2	538.4	0.0	0.0
155.00		69.9	211.1					0.0	153.8	69.9	364.9	0.0	0.0
160.00		94.3	200.0					0.0	153.8	94.3	353.8	0.0	0.0
165.00		83.4	188.9					24.9	153.8	108.2	342.7	0.0	0.0
167.00	Appurtenance(s)	41.6	72.4	451.8	0.0	0.0	1,276.5	10.0	61.5	503.4	1,410.5	0.0	0.0
170.00		47.6	105.3					0.0	59.8	47.6	165.1	0.0	0.0
175.00		56.8	166.6					0.0	99.6	56.8	266.3	0.0	0.0
180.00	Appurtenance(s)	27.6	155.5	1,081.2	0.0	2,098.6	2,561.3	0.0	99.6	1,108.8	2,816.5	0.0	0.0

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:56 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

25 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Totals: 9,310.09 58,433.3 0.00 0.00

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:56 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

25 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.15

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	-58.43	-9.28	0.00	-1,110.30	0.00	1,110.30	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.158
5.00	-56.35	-9.21	0.00	-1,063.92	0.00	1,063.92	5,055.67	2,527.83	10,632.1	5,323.99	0.02	-0.05	0.156
10.00	-54.29	-9.15	0.00	-1,017.86	0.00	1,017.86	4,979.93	2,489.97	10,246.6	5,130.93	0.10	-0.09	0.153
15.00	-52.26	-9.08	0.00	-972.13	0.00	972.13	4,902.77	2,451.39	9,865.10	4,939.88	0.22	-0.14	0.151
20.00	-50.25	-9.01	0.00	-926.74	0.00	926.74	4,824.18	2,412.09	9,487.79	4,750.94	0.39	-0.19	0.148
25.00	-48.27	-8.94	0.00	-881.68	0.00	881.68	4,744.17	2,372.08	9,114.87	4,564.21	0.61	-0.23	0.145
30.00	-46.31	-8.87	0.00	-836.96	0.00	836.96	4,662.73	2,331.36	8,746.54	4,379.77	0.88	-0.28	0.143
35.00	-44.38	-8.79	0.00	-792.63	0.00	792.63	4,579.86	2,289.93	8,383.01	4,197.74	1.20	-0.33	0.139
40.00	-42.48	-8.73	0.00	-748.66	0.00	748.66	4,491.22	2,245.61	8,016.71	4,014.31	1.57	-0.38	0.136
42.96	-41.37	-8.69	0.00	-722.84	0.00	722.84	4,424.29	2,212.15	7,778.37	3,894.97	1.82	-0.41	0.135
45.00	-40.25	-8.64	0.00	-705.09	0.00	705.09	4,378.03	2,189.01	7,615.75	3,813.53	2.00	-0.43	0.133
49.04	-38.06	-8.59	0.00	-670.18	0.00	670.18	3,622.99	1,811.50	6,300.42	3,154.89	2.38	-0.47	0.146
50.00	-37.72	-8.54	0.00	-661.94	0.00	661.94	3,610.23	1,805.12	6,246.74	3,128.01	2.48	-0.48	0.145
55.00	-36.02	-8.45	0.00	-619.23	0.00	619.23	3,542.95	1,771.47	5,969.33	2,989.10	3.01	-0.53	0.140
60.00	-34.35	-8.37	0.00	-576.96	0.00	576.96	3,474.23	1,737.12	5,695.71	2,852.09	3.59	-0.59	0.135
65.00	-32.69	-8.23	0.00	-535.14	0.00	535.14	3,404.09	1,702.05	5,426.05	2,717.06	4.23	-0.64	0.130
70.00	-31.06	-8.01	0.00	-493.99	0.00	493.99	3,332.53	1,666.26	5,160.56	2,584.12	4.93	-0.69	0.125
75.00	-29.45	-7.80	0.00	-453.96	0.00	453.96	3,242.30	1,621.15	4,873.54	2,440.39	5.68	-0.74	0.119
79.00	-28.18	-7.67	0.00	-422.76	0.00	422.76	3,164.68	1,582.34	4,641.84	2,324.37	6.32	-0.78	0.115
80.00	-27.86	-7.56	0.00	-415.09	0.00	415.09	3,145.28	1,572.64	4,584.79	2,295.80	6.48	-0.79	0.114
85.00	-26.30	-7.37	0.00	-377.29	0.00	377.29	3,048.26	1,524.13	4,304.87	2,155.63	7.34	-0.84	0.109
87.54	-25.52	-7.26	0.00	-358.57	0.00	358.57	2,998.97	1,499.48	4,166.05	2,086.12	7.79	-0.87	0.106
90.00	-24.48	-7.14	0.00	-340.71	0.00	340.71	2,951.23	1,475.62	4,033.76	2,019.88	8.25	-0.89	0.102
92.46	-23.45	-7.02	0.00	-323.17	0.00	323.17	2,424.49	1,212.24	3,334.85	1,669.90	8.71	-0.92	0.110
95.00	-22.73	-6.93	0.00	-305.32	0.00	305.32	2,395.02	1,197.51	3,238.97	1,621.89	9.21	-0.94	0.106
96.00	-21.96	-6.67	0.00	-298.39	0.00	298.39	2,383.33	1,191.67	3,201.50	1,603.13	9.41	-0.95	0.104
100.00	-20.85	-6.49	0.00	-271.70	0.00	271.70	2,336.02	1,168.01	3,053.03	1,528.79	10.22	-0.99	0.098
103.75	-19.81	-6.36	0.00	-247.36	0.00	247.36	2,287.68	1,143.84	2,911.90	1,458.11	11.01	-1.02	0.092
103.75	-19.81	-6.36	0.00	-247.36	0.00	247.36	2,287.68	1,143.84	2,911.90	1,458.11	11.01	-1.02	0.178
105.00	-19.48	-6.13	0.00	-239.41	0.00	239.41	2,267.46	1,133.73	2,860.42	1,432.33	11.28	-1.04	0.176
110.00	-18.47	-5.97	0.00	-208.74	0.00	208.74	2,186.61	1,093.30	2,659.07	1,331.51	12.41	-1.12	0.165
112.00	-16.42	-5.30	0.00	-196.80	0.00	196.80	2,154.27	1,077.13	2,580.59	1,292.21	12.89	-1.16	0.160
115.00	-15.96	-5.16	0.00	-180.88	0.00	180.88	2,105.76	1,052.88	2,465.08	1,234.37	13.63	-1.21	0.154
120.00	-15.25	-4.95	0.00	-155.10	0.00	155.10	2,024.90	1,012.45	2,278.43	1,140.91	14.95	-1.29	0.144
125.00	-11.95	-3.82	0.00	-130.34	0.00	130.34	1,944.05	972.03	2,099.13	1,051.12	16.34	-1.37	0.130
130.00	-11.31	-3.75	0.00	-111.26	0.00	111.26	1,863.20	931.60	1,927.17	965.02	17.82	-1.44	0.121
132.12	-11.04	-3.71	0.00	-103.31	0.00	103.31	1,828.92	914.46	1,856.49	929.62	18.46	-1.48	0.117
135.00	-7.71	-2.83	0.00	-92.62	0.00	92.62	1,782.35	891.17	1,762.57	882.59	19.37	-1.52	0.109
135.87	-7.56	-2.79	0.00	-90.17	0.00	90.17	999.39	499.70	1,006.16	503.83	19.65	-1.53	0.187
140.00	-6.58	-2.38	0.00	-77.11	0.00	77.11	975.08	487.54	945.09	473.25	21.00	-1.59	0.170
145.00	-6.19	-2.31	0.00	-65.20	0.00	65.20	944.35	472.17	872.40	436.85	22.71	-1.69	0.156
150.00	-5.65	-2.17	0.00	-53.66	0.00	53.66	912.19	456.09	801.24	401.22	24.54	-1.79	0.140
155.00	-5.29	-2.10	0.00	-42.80	0.00	42.80	878.60	439.30	731.82	366.45	26.46	-1.88	0.123
160.00	-4.93	-2.00	0.00	-32.31	0.00	32.31	843.59	421.80	664.33	332.66	28.48	-1.97	0.103
165.00	-4.59	-1.88	0.00	-22.32	0.00	22.32	800.44	400.22	593.98	297.43	30.58	-2.04	0.081
167.00	-3.20	-1.33	0.00	-18.56	0.00	18.56	781.04	390.52	565.39	283.11	31.44	-2.07	0.070
170.00	-3.04	-1.28	0.00	-14.56	0.00	14.56	751.93	375.97	523.82	262.30	32.75	-2.10	0.060
175.00	-2.77	-1.21	0.00	-8.17	0.00	8.17	703.42	351.71	458.07	229.37	34.98	-2.14	0.040
180.00	0.00	-1.11	0.00	-2.10	0.00	2.10	654.91	327.45	396.72	198.65	37.24	-2.17	0.011

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:56 AM

Customer: VERIZON WIRELESS

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_d):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.50
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}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s :	0.04
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	2.66
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	58.43 k
Seismic Base Shear (E):	2.96 k

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

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.50	255	8,040	0.015	46	316
46	172.50	266	7,924	0.015	45	330
45	168.50	165	4,688	0.009	27	204
44	166.00	134	3,692	0.007	21	166
43	162.50	343	9,049	0.017	51	424
42	157.50	354	8,777	0.017	50	438
41	152.50	365	8,487	0.016	48	452
40	147.50	380	8,270	0.016	47	471
39	142.50	391	7,945	0.015	45	484
38	137.93	355	6,745	0.013	38	439
37	135.43	146	2,684	0.005	15	181
36	133.56	502	8,949	0.017	51	621
35	131.06	266	4,566	0.009	26	329
34	127.50	640	10,407	0.020	59	792
33	122.50	690	10,351	0.020	59	854
32	117.50	708	9,779	0.019	55	877
31	113.50	455	5,866	0.011	33	564
30	111.00	394	4,855	0.009	28	488
29	107.50	998	11,535	0.022	65	1,235
28	104.38	259	2,817	0.005	16	320
27	101.88	1,033	10,723	0.021	61	1,279
26	98.00	1,114	10,694	0.020	61	1,378
25	95.50	281	2,563	0.005	15	348

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

24	93.73	718	6,309	0.012	36	889
23	91.23	1,028	8,552	0.016	49	1,272
22	88.77	1,039	8,186	0.016	46	1,286
21	86.27	784	5,834	0.011	33	970
20	82.50	1,560	10,617	0.020	60	1,931
19	79.50	315	1,989	0.004	11	389
18	77.00	1,268	7,519	0.014	43	1,570
17	72.50	1,605	8,437	0.016	48	1,987
16	67.50	1,627	7,415	0.014	42	2,014
15	62.50	1,650	6,444	0.012	37	2,042
14	57.50	1,672	5,527	0.011	31	2,069
13	52.50	1,694	4,669	0.009	26	2,097
12	49.52	328	804	0.002	5	406
11	47.02	2,190	4,842	0.009	27	2,711
10	43.98	1,120	2,166	0.004	12	1,386
9	41.48	1,107	1,905	0.004	11	1,370
8	37.50	1,893	2,662	0.005	15	2,343
7	32.50	1,919	2,027	0.004	11	2,375
6	27.50	1,946	1,472	0.003	8	2,409
5	22.50	1,972	999	0.002	6	2,441
4	17.50	1,998	612	0.001	3	2,473
3	12.50	2,024	316	0.001	2	2,506
2	7.50	2,050	115	0.000	1	2,538
1	2.50	2,076	13	0.000	0	2,570
Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
Powerwave Allgon TT1	180.00	48	1,555	0.003	9	59
4' Omni	180.00	10	324	0.001	2	12
Powerwave Allgon LGP	180.00	42	1,371	0.003	8	52
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	7	50
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	28	186
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	28	189
Ericsson RRUS-12 B2	180.00	174	5,638	0.011	32	215
2' x 4' Rectangular	180.00	40	1,296	0.002	7	50
Powerwave Allgon 777	180.00	105	3,402	0.007	19	130
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	27	180
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	28	189
Flat Low Profile Pla	180.00	1,500	48,600	0.093	276	1,857
Ericsson KRY 112 144	167.00	33	920	0.002	5	41
Ericsson AIR 21, 1.3	167.00	249	6,944	0.013	39	308
Ericsson AIR 21, 1.3	167.00	244	6,819	0.013	39	303
Round T-Arm	167.00	750	20,917	0.040	119	928
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	10
Round Side Arm	150.00	150	3,375	0.006	19	186
Telewave ANT150D (5	140.00	5	98	0.000	1	6
Bird 432-83H-01-T	140.00	50	980	0.002	6	62
Decibel DB809K-XT	140.00	90	1,764	0.003	10	111
Sinclair SC432D-HF6L	140.00	34	666	0.001	4	42
Round Side Arm	140.00	450	8,820	0.017	50	557
Alcatel-Lucent 800 M	135.00	185	3,379	0.006	19	229
Alcatel-Lucent 1900M	135.00	132	2,406	0.005	14	163
Alcatel-Lucent TD-RR	135.00	210	3,827	0.007	22	260
RFS APXVTM14-C-I20	135.00	159	2,892	0.006	16	196
RFS APXVSP18-C-A20	135.00	171	3,116	0.006	18	212
Flat Platform w/ Han	135.00	2,000	36,450	0.070	207	2,476
Nokia B5 RRH4x40-850	125.00	146	2,273	0.004	13	180
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	14	197
Alcatel-Lucent RRH2x	125.00	170	2,658	0.005	15	211
RFS DB-B1-6C-12AB-0Z	125.00	21	334	0.001	2	26
Alcatel-Lucent B66a	125.00	201	3,141	0.006	18	249
Antel LPA-80080/6CF	125.00	42	656	0.001	4	52
CommScope JAHH-65B-R	125.00	364	5,681	0.011	32	450
Antel LPA-80063/6CF	125.00	27	422	0.001	2	33
Round Low Profile PI	125.00	1,500	23,438	0.045	133	1,857
Decibel DB844H90E-XY	112.00	168	2,107	0.004	12	208

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

Round Low Profile PI	112.00	1,500	18,816	0.036	107	1,857
RFS APXV18-206517S-C	105.00	79	873	0.002	5	98
Andrew DB586	96.00	17	153	0.000	1	21
Bird 429-83H-01-T	96.00	20	184	0.000	1	25
Flat Side Arm	96.00	450	4,147	0.008	24	557
PCTEL GPS-TMG-HR-26N	79.00	1	4	0.000	0	1
GPS	30.00	10	9	0.000	0	12
		58,433	522,763	1.000	2,965	72,326

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)
47	177.50	255	8,040	0.015	46	220
46	172.50	266	7,924	0.015	45	230
45	168.50	165	4,688	0.009	27	142
44	166.00	134	3,692	0.007	21	116
43	162.50	343	9,049	0.017	51	295
42	157.50	354	8,777	0.017	50	305
41	152.50	365	8,487	0.016	48	315
40	147.50	380	8,270	0.016	47	328
39	142.50	391	7,945	0.015	45	337
38	137.93	355	6,745	0.013	38	306
37	135.43	146	2,684	0.005	15	126
36	133.56	502	8,949	0.017	51	433
35	131.06	266	4,566	0.009	26	229
34	127.50	640	10,407	0.020	59	552
33	122.50	690	10,351	0.020	59	595
32	117.50	708	9,779	0.019	55	611
31	113.50	455	5,866	0.011	33	393
30	111.00	394	4,855	0.009	28	340
29	107.50	998	11,535	0.022	65	861
28	104.38	259	2,817	0.005	16	223
27	101.88	1,033	10,723	0.021	61	891
26	98.00	1,114	10,694	0.020	61	960
25	95.50	281	2,563	0.005	15	242
24	93.73	718	6,309	0.012	36	619
23	91.23	1,028	8,552	0.016	49	886
22	88.77	1,039	8,186	0.016	46	896
21	86.27	784	5,834	0.011	33	676
20	82.50	1,560	10,617	0.020	60	1,345
19	79.50	315	1,989	0.004	11	271
18	77.00	1,268	7,519	0.014	43	1,093
17	72.50	1,605	8,437	0.016	48	1,384
16	67.50	1,627	7,415	0.014	42	1,403
15	62.50	1,650	6,444	0.012	37	1,422
14	57.50	1,672	5,527	0.011	31	1,441
13	52.50	1,694	4,669	0.009	26	1,461
12	49.52	328	804	0.002	5	283
11	47.02	2,190	4,842	0.009	27	1,888
10	43.98	1,120	2,166	0.004	12	965
9	41.48	1,107	1,905	0.004	11	955
8	37.50	1,893	2,662	0.005	15	1,632
7	32.50	1,919	2,027	0.004	11	1,655
6	27.50	1,946	1,472	0.003	8	1,678
5	22.50	1,972	999	0.002	6	1,701
4	17.50	1,998	612	0.001	3	1,723
3	12.50	2,024	316	0.001	2	1,745
2	7.50	2,050	115	0.000	1	1,768
1	2.50	2,076	13	0.000	0	1,790

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
Powerwave Allgon TT1	180.00	48	1,555	0.003	9	41
4' Omni	180.00	10	324	0.001	2	9
Powerwave Allgon LGP	180.00	42	1,371	0.003	8	36
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	7	34
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	28	129
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	28	131
Ericsson RRUS-12 B2	180.00	174	5,638	0.011	32	150
2' x 4' Rectangular	180.00	40	1,296	0.002	7	34
Powerwave Allgon 777	180.00	105	3,402	0.007	19	91
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	27	125
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	28	132
Flat Low Profile Pla	180.00	1,500	48,600	0.093	276	1,293
Ericsson KRY 112 144	167.00	33	920	0.002	5	28
Ericsson AIR 21, 1.3	167.00	249	6,944	0.013	39	215
Ericsson AIR 21, 1.3	167.00	244	6,819	0.013	39	211
Round T-Arm	167.00	750	20,917	0.040	119	647
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	7
Round Side Arm	150.00	150	3,375	0.006	19	129
Telewave ANT150D (5	140.00	5	98	0.000	1	4
Bird 432-83H-01-T	140.00	50	980	0.002	6	43
Decibel DB809K-XT	140.00	90	1,764	0.003	10	78
Sinclair SC432D-HF6L	140.00	34	666	0.001	4	29
Round Side Arm	140.00	450	8,820	0.017	50	388
Alcatel-Lucent 800 M	135.00	185	3,379	0.006	19	160
Alcatel-Lucent 1900M	135.00	132	2,406	0.005	14	114
Alcatel-Lucent TD-RR	135.00	210	3,827	0.007	22	181
RFS APXVTM14-C-I20	135.00	159	2,892	0.006	16	137
RFS APXVSP18-C-A20	135.00	171	3,116	0.006	18	147
Flat Platform w/ Han	135.00	2,000	36,450	0.070	207	1,724
Nokia B5 RRH4x40-850	125.00	146	2,273	0.004	13	125
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	14	137
Alcatel-Lucent RRH2x	125.00	170	2,658	0.005	15	147
RFS DB-B1-6C-12AB-0Z	125.00	21	334	0.001	2	18
Alcatel-Lucent B66a	125.00	201	3,141	0.006	18	173
Antel LPA-80080/6CF	125.00	42	656	0.001	4	36
Commscope JAHH-65B-R	125.00	364	5,681	0.011	32	314
Antel LPA-80063/6CF	125.00	27	422	0.001	2	23
Round Low Profile PI	125.00	1,500	23,438	0.045	133	1,293
Decibel DB844H90E-XY	112.00	168	2,107	0.004	12	145
Round Low Profile PI	112.00	1,500	18,816	0.036	107	1,293
RFS APXV18-206517S-C	105.00	79	873	0.002	5	68
Andrew DB586	96.00	17	153	0.000	1	14
Bird 429-83H-01-T	96.00	20	184	0.000	1	17
Flat Side Arm	96.00	450	4,147	0.008	24	388
PCTEL GPS-TMG-HR-26N	79.00	1	4	0.000	0	1
GPS	30.00	10	9	0.000	0	9
		58,433	522,763	1.000	2,965	50,384

Site Number: 302506

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Site Name: Winchester CT 3, CT

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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	-69.76	-2.97	0.00	-402.86	0.00	402.86	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.065
5.00	-67.22	-2.99	0.00	-387.99	0.00	387.99	5,055.67	2,527.83	10,632.1	5,323.99	0.01	-0.02	0.064
10.00	-64.71	-3.01	0.00	-373.03	0.00	373.03	4,979.93	2,489.97	10,246.6	5,130.93	0.04	-0.03	0.063
15.00	-62.24	-3.02	0.00	-357.98	0.00	357.98	4,902.77	2,451.39	9,865.10	4,939.88	0.08	-0.05	0.062
20.00	-59.79	-3.03	0.00	-342.87	0.00	342.87	4,824.18	2,412.09	9,487.79	4,750.94	0.14	-0.07	0.061
25.00	-57.38	-3.04	0.00	-327.71	0.00	327.71	4,744.17	2,372.08	9,114.87	4,564.21	0.22	-0.09	0.060
30.00	-55.00	-3.04	0.00	-312.51	0.00	312.51	4,662.73	2,331.36	8,746.54	4,379.77	0.32	-0.10	0.059
35.00	-52.65	-3.04	0.00	-297.31	0.00	297.31	4,579.86	2,289.93	8,383.01	4,197.74	0.44	-0.12	0.058
40.00	-51.28	-3.04	0.00	-282.12	0.00	282.12	4,491.22	2,245.61	8,016.71	4,014.31	0.58	-0.14	0.057
42.96	-49.89	-3.03	0.00	-273.14	0.00	273.14	4,424.29	2,212.15	7,778.37	3,894.97	0.67	-0.15	0.057
45.00	-47.18	-3.00	0.00	-266.95	0.00	266.95	4,378.03	2,189.01	7,615.75	3,813.53	0.74	-0.16	0.056
49.04	-46.78	-3.01	0.00	-254.81	0.00	254.81	3,622.99	1,811.50	6,300.42	3,154.89	0.88	-0.17	0.062
50.00	-44.68	-2.98	0.00	-251.92	0.00	251.92	3,610.23	1,805.12	6,246.74	3,128.01	0.91	-0.18	0.061
55.00	-42.61	-2.96	0.00	-237.01	0.00	237.01	3,542.95	1,771.47	5,969.33	2,989.10	1.11	-0.20	0.060
60.00	-40.57	-2.93	0.00	-222.21	0.00	222.21	3,474.23	1,737.12	5,695.71	2,852.09	1.33	-0.22	0.058
65.00	-38.55	-2.89	0.00	-207.56	0.00	207.56	3,404.09	1,702.05	5,426.05	2,717.06	1.57	-0.24	0.056
70.00	-36.56	-2.85	0.00	-193.10	0.00	193.10	3,332.53	1,666.26	5,160.56	2,584.12	1.83	-0.26	0.054
75.00	-34.99	-2.81	0.00	-178.85	0.00	178.85	3,242.30	1,621.15	4,873.54	2,440.39	2.11	-0.28	0.052
79.00	-34.60	-2.80	0.00	-167.60	0.00	167.60	3,164.68	1,582.34	4,641.84	2,324.37	2.35	-0.30	0.051
80.00	-32.67	-2.74	0.00	-164.80	0.00	164.80	3,145.28	1,572.64	4,584.79	2,295.80	2.42	-0.30	0.050
85.00	-31.70	-2.71	0.00	-151.10	0.00	151.10	3,048.26	1,524.13	4,304.87	2,155.63	2.74	-0.32	0.048
87.54	-30.42	-2.66	0.00	-144.21	0.00	144.21	2,998.97	1,499.48	4,166.05	2,086.12	2.91	-0.33	0.047
90.00	-29.14	-2.61	0.00	-137.66	0.00	137.66	2,951.23	1,475.62	4,033.76	2,019.88	3.09	-0.34	0.046
92.46	-28.25	-2.57	0.00	-131.25	0.00	131.25	2,424.49	1,212.24	3,334.85	1,669.90	3.26	-0.35	0.049
95.00	-27.91	-2.56	0.00	-124.70	0.00	124.70	2,395.02	1,197.51	3,238.97	1,621.89	3.45	-0.36	0.048
96.00	-25.93	-2.47	0.00	-122.14	0.00	122.14	2,383.33	1,191.67	3,201.50	1,603.13	3.53	-0.36	0.047
100.00	-24.65	-2.41	0.00	-112.27	0.00	112.27	2,336.02	1,168.01	3,053.03	1,528.79	3.84	-0.38	0.045
103.75	-24.33	-2.39	0.00	-103.25	0.00	103.25	2,287.68	1,143.84	2,911.90	1,458.11	4.14	-0.39	0.043
103.75	-24.33	-2.39	0.00	-103.25	0.00	103.25	2,287.68	1,143.84	2,911.90	1,458.11	4.14	-0.39	0.081
105.00	-22.99	-2.32	0.00	-100.26	0.00	100.26	2,267.46	1,133.73	2,860.42	1,432.33	4.25	-0.40	0.080
110.00	-22.50	-2.30	0.00	-88.66	0.00	88.66	2,186.61	1,093.30	2,659.07	1,331.51	4.68	-0.44	0.077
112.00	-19.88	-2.13	0.00	-84.07	0.00	84.07	2,154.27	1,077.13	2,580.59	1,292.21	4.87	-0.45	0.074
115.00	-19.00	-2.08	0.00	-77.67	0.00	77.67	2,105.76	1,052.88	2,465.08	1,234.37	5.16	-0.47	0.072
120.00	-18.14	-2.03	0.00	-67.27	0.00	67.27	2,024.90	1,012.45	2,278.43	1,140.91	5.67	-0.51	0.068
125.00	-14.10	-1.70	0.00	-57.14	0.00	57.14	1,944.05	972.03	2,099.13	1,051.12	6.22	-0.54	0.062
130.00	-13.77	-1.68	0.00	-48.62	0.00	48.62	1,863.20	931.60	1,927.17	965.02	6.81	-0.57	0.058
132.12	-13.15	-1.63	0.00	-45.06	0.00	45.06	1,828.92	914.46	1,856.49	929.62	7.07	-0.59	0.056
135.00	-9.43	-1.28	0.00	-40.37	0.00	40.37	1,782.35	891.17	1,762.57	882.59	7.43	-0.61	0.051
135.87	-9.00	-1.24	0.00	-39.26	0.00	39.26	999.39	499.70	1,006.16	503.83	7.54	-0.61	0.087
140.00	-7.73	-1.12	0.00	-34.14	0.00	34.14	975.08	487.54	945.09	473.25	8.08	-0.64	0.080
145.00	-7.26	-1.07	0.00	-28.56	0.00	28.56	944.35	472.17	872.40	436.85	8.77	-0.68	0.073
150.00	-6.62	-1.00	0.00	-23.21	0.00	23.21	912.19	456.09	801.24	401.22	9.51	-0.73	0.065
155.00	-6.18	-0.95	0.00	-18.23	0.00	18.23	878.60	439.30	731.82	366.45	10.29	-0.77	0.057
160.00	-5.75	-0.89	0.00	-13.49	0.00	13.49	843.59	421.80	664.33	332.66	11.11	-0.80	0.047
165.00	-5.59	-0.87	0.00	-9.03	0.00	9.03	800.44	400.22	593.98	297.43	11.97	-0.83	0.037
167.00	-3.81	-0.62	0.00	-7.29	0.00	7.29	781.04	390.52	565.39	283.11	12.32	-0.84	0.031
170.00	-3.48	-0.57	0.00	-5.44	0.00	5.44	751.93	375.97	523.82	262.30	12.85	-0.85	0.025
175.00	-3.16	-0.52	0.00	-2.59	0.00	2.59	703.42	351.71	458.07	229.37	13.76	-0.87	0.016
180.00	0.00	-0.47	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	14.67	-0.88	0.000

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

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	-48.59	-2.97	0.00	-396.01	0.00	396.01	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.061
5.00	-46.82	-2.98	0.00	-381.15	0.00	381.15	5,055.67	2,527.83	10,632.1	5,323.99	0.01	-0.02	0.060
10.00	-45.08	-2.99	0.00	-366.24	0.00	366.24	4,979.93	2,489.97	10,246.6	5,130.93	0.03	-0.03	0.059
15.00	-43.35	-3.00	0.00	-351.27	0.00	351.27	4,902.77	2,451.39	9,865.10	4,939.88	0.08	-0.05	0.058
20.00	-41.65	-3.01	0.00	-336.25	0.00	336.25	4,824.18	2,412.09	9,487.79	4,750.94	0.14	-0.07	0.057
25.00	-39.97	-3.01	0.00	-321.22	0.00	321.22	4,744.17	2,372.08	9,114.87	4,564.21	0.22	-0.08	0.057
30.00	-38.31	-3.01	0.00	-306.17	0.00	306.17	4,662.73	2,331.36	8,746.54	4,379.77	0.32	-0.10	0.056
35.00	-36.68	-3.00	0.00	-291.14	0.00	291.14	4,579.86	2,289.93	8,383.01	4,197.74	0.43	-0.12	0.055
40.00	-35.72	-3.00	0.00	-276.14	0.00	276.14	4,491.22	2,245.61	8,016.71	4,014.31	0.57	-0.14	0.054
42.96	-34.75	-2.99	0.00	-267.28	0.00	267.28	4,424.29	2,212.15	7,778.37	3,894.97	0.66	-0.15	0.053
45.00	-32.87	-2.96	0.00	-261.18	0.00	261.18	4,378.03	2,189.01	7,615.75	3,813.53	0.72	-0.16	0.052
49.04	-32.58	-2.96	0.00	-249.22	0.00	249.22	3,622.99	1,811.50	6,300.42	3,154.89	0.86	-0.17	0.058
50.00	-31.12	-2.94	0.00	-246.38	0.00	246.38	3,610.23	1,805.12	6,246.74	3,128.01	0.90	-0.17	0.057
55.00	-29.68	-2.91	0.00	-231.70	0.00	231.70	3,542.95	1,771.47	5,969.33	2,989.10	1.09	-0.19	0.056
60.00	-28.26	-2.88	0.00	-217.14	0.00	217.14	3,474.23	1,737.12	5,695.71	2,852.09	1.30	-0.21	0.054
65.00	-26.85	-2.84	0.00	-202.75	0.00	202.75	3,404.09	1,702.05	5,426.05	2,717.06	1.54	-0.23	0.052
70.00	-25.47	-2.80	0.00	-188.55	0.00	188.55	3,332.53	1,666.26	5,160.56	2,584.12	1.79	-0.25	0.050
75.00	-24.37	-2.76	0.00	-174.57	0.00	174.57	3,242.95	1,621.15	4,873.54	2,440.39	2.07	-0.27	0.049
79.00	-24.10	-2.75	0.00	-163.55	0.00	163.55	3,164.68	1,582.34	4,641.84	2,324.37	2.31	-0.29	0.047
80.00	-22.76	-2.68	0.00	-160.81	0.00	160.81	3,145.28	1,572.64	4,584.79	2,295.80	2.37	-0.29	0.047
85.00	-22.08	-2.65	0.00	-147.39	0.00	147.39	3,048.26	1,524.13	4,304.87	2,155.63	2.69	-0.31	0.045
87.54	-21.18	-2.61	0.00	-140.65	0.00	140.65	2,998.97	1,499.48	4,166.05	2,086.12	2.86	-0.32	0.044
90.00	-20.30	-2.56	0.00	-134.24	0.00	134.24	2,951.23	1,475.62	4,033.76	2,019.88	3.02	-0.33	0.043
92.46	-19.68	-2.52	0.00	-127.96	0.00	127.96	2,424.49	1,212.24	3,334.85	1,669.90	3.20	-0.34	0.046
95.00	-19.44	-2.51	0.00	-121.55	0.00	121.55	2,395.02	1,197.51	3,238.97	1,621.89	3.38	-0.35	0.045
96.00	-18.06	-2.41	0.00	-119.05	0.00	119.05	2,383.33	1,191.67	3,201.50	1,603.13	3.46	-0.36	0.044
100.00	-17.17	-2.35	0.00	-109.39	0.00	109.39	2,336.02	1,168.01	3,053.03	1,528.79	3.76	-0.37	0.042
103.75	-16.94	-2.34	0.00	-100.57	0.00	100.57	2,287.68	1,143.84	2,911.90	1,458.11	4.06	-0.39	0.040
103.75	-16.94	-2.34	0.00	-100.57	0.00	100.57	2,287.68	1,143.84	2,911.90	1,458.11	4.06	-0.39	0.076
105.00	-16.01	-2.27	0.00	-97.65	0.00	97.65	2,267.46	1,133.73	2,860.42	1,432.33	4.16	-0.39	0.075
110.00	-15.67	-2.24	0.00	-86.32	0.00	86.32	2,186.61	1,093.30	2,659.07	1,331.51	4.59	-0.43	0.072
112.00	-13.84	-2.08	0.00	-81.83	0.00	81.83	2,154.27	1,077.13	2,580.59	1,292.21	4.77	-0.44	0.070
115.00	-13.23	-2.03	0.00	-75.58	0.00	75.58	2,105.76	1,052.88	2,465.08	1,234.37	5.05	-0.46	0.068
120.00	-12.64	-1.97	0.00	-65.44	0.00	65.44	2,024.90	1,012.45	2,278.43	1,140.91	5.55	-0.50	0.064
125.00	-9.82	-1.66	0.00	-55.58	0.00	55.58	1,944.05	972.03	2,099.13	1,051.12	6.09	-0.53	0.058
130.00	-9.59	-1.64	0.00	-47.28	0.00	47.28	1,863.20	931.60	1,927.17	965.02	6.66	-0.56	0.054
132.12	-9.16	-1.58	0.00	-43.81	0.00	43.81	1,828.92	914.46	1,856.49	929.62	6.92	-0.57	0.052
135.00	-6.57	-1.25	0.00	-39.25	0.00	39.25	1,782.35	891.17	1,762.57	882.59	7.27	-0.59	0.048
135.87	-6.26	-1.21	0.00	-38.17	0.00	38.17	999.39	499.70	1,006.16	503.83	7.38	-0.60	0.082
140.00	-5.38	-1.09	0.00	-33.18	0.00	33.18	975.08	487.54	945.09	473.25	7.90	-0.62	0.076
145.00	-5.06	-1.04	0.00	-27.74	0.00	27.74	944.35	472.17	872.40	436.85	8.58	-0.67	0.069
150.00	-4.61	-0.97	0.00	-22.54	0.00	22.54	912.19	456.09	801.24	401.22	9.30	-0.71	0.061
155.00	-4.30	-0.92	0.00	-17.69	0.00	17.69	878.60	439.30	731.82	366.45	10.06	-0.75	0.053
160.00	-4.00	-0.87	0.00	-13.09	0.00	13.09	843.59	421.80	664.33	332.66	10.86	-0.78	0.044
165.00	-3.89	-0.84	0.00	-8.76	0.00	8.76	800.44	400.22	593.98	297.43	11.70	-0.81	0.034
167.00	-2.65	-0.60	0.00	-7.07	0.00	7.07	781.04	390.52	565.39	283.11	12.04	-0.82	0.028
170.00	-2.42	-0.55	0.00	-5.28	0.00	5.28	751.93	375.97	523.82	262.30	12.56	-0.83	0.023
175.00	-2.20	-0.50	0.00	-2.52	0.00	2.52	703.42	351.71	458.07	229.37	13.44	-0.85	0.014
180.00	0.00	-0.47	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	14.33	-0.85	0.000

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

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_a):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.50
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}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.66
Redundancy Factor (ρ):	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)
47	177.50	255	1.838	1.716	1.044	0.325	108	316
46	172.50	266	1.736	1.263	0.871	0.264	91	330
45	168.50	165	1.656	0.963	0.749	0.219	47	204
44	166.00	134	1.607	0.802	0.680	0.193	34	166
43	162.50	343	1.540	0.605	0.592	0.159	71	424
42	157.50	354	1.447	0.379	0.482	0.115	53	438
41	152.50	365	1.357	0.207	0.388	0.076	36	452
40	147.50	380	1.269	0.080	0.309	0.043	21	471
39	142.50	391	1.185	-0.009	0.243	0.015	7	484
38	137.93	355	1.110	-0.064	0.193	-0.007	-3	439
37	135.43	146	1.070	-0.085	0.169	-0.016	-3	181
36	133.56	502	1.041	-0.097	0.152	-0.023	-15	621
35	131.06	266	1.002	-0.109	0.132	-0.030	-10	329
34	127.50	640	0.948	-0.119	0.107	-0.038	-32	792
33	122.50	690	0.875	-0.121	0.078	-0.045	-41	854
32	117.50	708	0.805	-0.113	0.055	-0.047	-44	877
31	113.50	455	0.751	-0.101	0.041	-0.045	-27	564
30	111.00	394	0.719	-0.092	0.034	-0.042	-22	488
29	107.50	998	0.674	-0.079	0.025	-0.036	-47	1,235
28	104.38	259	0.635	-0.066	0.019	-0.029	-10	320
27	101.88	1,033	0.605	-0.055	0.015	-0.023	-31	1,279
26	98.00	1,114	0.560	-0.038	0.011	-0.012	-17	1,378
25	95.50	281	0.532	-0.028	0.009	-0.004	-2	348
24	93.73	718	0.512	-0.021	0.008	0.001	1	889
23	91.23	1,028	0.485	-0.011	0.007	0.008	11	1,272
22	88.77	1,039	0.460	-0.002	0.006	0.015	21	1,286
21	86.27	784	0.434	0.007	0.006	0.022	22	970
20	82.50	1,560	0.397	0.019	0.007	0.031	62	1,931
19	79.50	315	0.369	0.028	0.008	0.036	15	389
18	77.00	1,268	0.346	0.034	0.009	0.040	67	1,570
17	72.50	1,605	0.307	0.044	0.012	0.046	96	1,987
16	67.50	1,627	0.266	0.052	0.015	0.050	106	2,014
15	62.50	1,650	0.228	0.059	0.020	0.052	111	2,042
14	57.50	1,672	0.193	0.064	0.024	0.052	114	2,069

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

13	52.50	1,694	0.161	0.067	0.029	0.052	115	2,097
12	49.52	328	0.143	0.068	0.031	0.052	22	406
11	47.02	2,190	0.129	0.069	0.033	0.051	146	2,711
10	43.98	1,120	0.113	0.070	0.035	0.051	74	1,386
9	41.48	1,107	0.100	0.071	0.037	0.050	72	1,370
8	37.50	1,893	0.082	0.072	0.039	0.049	122	2,343
7	32.50	1,919	0.062	0.072	0.041	0.048	121	2,375
6	27.50	1,946	0.044	0.071	0.042	0.047	119	2,409
5	22.50	1,972	0.030	0.068	0.040	0.045	116	2,441
4	17.50	1,998	0.018	0.063	0.037	0.042	110	2,473
3	12.50	2,024	0.009	0.054	0.031	0.038	99	2,506
2	7.50	2,050	0.003	0.039	0.022	0.029	77	2,538
1	2.50	2,076	0.000	0.015	0.008	0.013	35	2,570
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.358	1	1
Powerwave Allgon TT1	180.00	48	1.890	1.980	1.140	0.358	22	59
4' Omni	180.00	10	1.890	1.980	1.140	0.358	5	12
Powerwave Allgon LGP	180.00	42	1.890	1.980	1.140	0.358	20	52
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.358	19	50
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.358	70	186
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.358	71	189
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.358	81	215
2' x 4' Rectangular	180.00	40	1.890	1.980	1.140	0.358	19	50
Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.358	49	130
KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.358	68	180
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.358	71	189
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.358	698	1,857
Ericsson KRY 112 144	167.00	33	1.627	0.864	0.707	0.204	9	41
Ericsson AIR 21, 1.3	167.00	249	1.627	0.864	0.707	0.204	66	308
Ericsson AIR 21, 1.3	167.00	244	1.627	0.864	0.707	0.204	65	303
Round T-Arm	167.00	750	1.627	0.864	0.707	0.204	198	928
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.059	1	10
Round Side Arm	150.00	150	1.312	0.138	0.347	0.059	11	186
Telewave ANT150D (5	140.00	5	1.143	-0.042	0.215	0.002	0	6
Bird 432-83H-01-T	140.00	50	1.143	-0.042	0.215	0.002	0	62
Decibel DB809K-XT	140.00	90	1.143	-0.042	0.215	0.002	0	111
Sinclair SC432D-HF6L	140.00	34	1.143	-0.042	0.215	0.002	0	42
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.002	1	557
Alcatel-Lucent 800 M	135.00	185	1.063	-0.088	0.165	-0.018	-4	229
Alcatel-Lucent 1900M	135.00	132	1.063	-0.088	0.165	-0.018	-3	163
Alcatel-Lucent TD-RR	135.00	210	1.063	-0.088	0.165	-0.018	-5	260
RFS APXVTM14-C-120	135.00	159	1.063	-0.088	0.165	-0.018	-4	196
RFS APXVSP18-C-A20	135.00	171	1.063	-0.088	0.165	-0.018	-4	212
Flat Platform w/ Han	135.00	2,000	1.063	-0.088	0.165	-0.018	-46	2,476
Nokia B5 RRH4x40-850	125.00	146	0.911	-0.122	0.092	-0.043	-8	180
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.043	-9	197
Alcatel-Lucent RRH2x	125.00	170	0.911	-0.122	0.092	-0.043	-9	211
RFS DB-B1-6C-12AB-0Z	125.00	21	0.911	-0.122	0.092	-0.043	-1	26
Alcatel-Lucent B66a	125.00	201	0.911	-0.122	0.092	-0.043	-11	249
Antel LPA-80080/6CF	125.00	42	0.911	-0.122	0.092	-0.043	-2	52
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.043	-20	450
Antel LPA-80063/6CF	125.00	27	0.911	-0.122	0.092	-0.043	-1	33
Round Low Profile PI	125.00	1,500	0.911	-0.122	0.092	-0.043	-83	1,857
Decibel DB844H90E-XY	112.00	168	0.732	-0.096	0.036	-0.043	-9	208
Round Low Profile PI	112.00	1,500	0.732	-0.096	0.036	-0.043	-85	1,857
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.031	-3	98
Andrew DB586	96.00	17	0.538	-0.030	0.009	-0.006	0	21
Bird 429-83H-01-T	96.00	20	0.538	-0.030	0.009	-0.006	0	25
Flat Side Arm	96.00	450	0.538	-0.030	0.009	-0.006	-3	557
PCTEL GPS-TMG-HR-	79.00	1	0.364	0.029	0.008	0.037	0	1
GPS	30.00	10	0.053	0.071	0.042	0.048	1	12
		58,433	87.991	33.295	28.349	6.989	3,252	72,326

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

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)
47	177.50	255	1.838	1.716	1.044	0.325	108	220
46	172.50	266	1.736	1.263	0.871	0.264	91	230
45	168.50	165	1.656	0.963	0.749	0.219	47	142
44	166.00	134	1.607	0.802	0.680	0.193	34	116
43	162.50	343	1.540	0.605	0.592	0.159	71	295
42	157.50	354	1.447	0.379	0.482	0.115	53	305
41	152.50	365	1.357	0.207	0.388	0.076	36	315
40	147.50	380	1.269	0.080	0.309	0.043	21	328
39	142.50	391	1.185	-0.009	0.243	0.015	7	337
38	137.93	355	1.110	-0.064	0.193	-0.007	-3	306
37	135.43	146	1.070	-0.085	0.169	-0.016	-3	126
36	133.56	502	1.041	-0.097	0.152	-0.023	-15	433
35	131.06	266	1.002	-0.109	0.132	-0.030	-10	229
34	127.50	640	0.948	-0.119	0.107	-0.038	-32	552
33	122.50	690	0.875	-0.121	0.078	-0.045	-41	595
32	117.50	708	0.805	-0.113	0.055	-0.047	-44	611
31	113.50	455	0.751	-0.101	0.041	-0.045	-27	393
30	111.00	394	0.719	-0.092	0.034	-0.042	-22	340
29	107.50	998	0.674	-0.079	0.025	-0.036	-47	861
28	104.38	259	0.635	-0.066	0.019	-0.029	-10	223
27	101.88	1,033	0.605	-0.055	0.015	-0.023	-31	891
26	98.00	1,114	0.560	-0.038	0.011	-0.012	-17	960
25	95.50	281	0.532	-0.028	0.009	-0.004	-2	242
24	93.73	718	0.512	-0.021	0.008	0.001	1	619
23	91.23	1,028	0.485	-0.011	0.007	0.008	11	886
22	88.77	1,039	0.460	-0.002	0.006	0.015	21	896
21	86.27	784	0.434	0.007	0.006	0.022	22	676
20	82.50	1,560	0.397	0.019	0.007	0.031	62	1,345
19	79.50	315	0.369	0.028	0.008	0.036	15	271
18	77.00	1,268	0.346	0.034	0.009	0.040	67	1,093
17	72.50	1,605	0.307	0.044	0.012	0.046	96	1,384
16	67.50	1,627	0.266	0.052	0.015	0.050	106	1,403
15	62.50	1,650	0.228	0.059	0.020	0.052	111	1,422
14	57.50	1,672	0.193	0.064	0.024	0.052	114	1,441
13	52.50	1,694	0.161	0.067	0.029	0.052	115	1,461
12	49.52	328	0.143	0.068	0.031	0.052	22	283
11	47.02	2,190	0.129	0.069	0.033	0.051	146	1,888
10	43.98	1,120	0.113	0.070	0.035	0.051	74	965
9	41.48	1,107	0.100	0.071	0.037	0.050	72	955
8	37.50	1,893	0.082	0.072	0.039	0.049	122	1,632
7	32.50	1,919	0.062	0.072	0.041	0.048	121	1,655
6	27.50	1,946	0.044	0.071	0.042	0.047	119	1,678
5	22.50	1,972	0.030	0.068	0.040	0.045	116	1,701
4	17.50	1,998	0.018	0.063	0.037	0.042	110	1,723
3	12.50	2,024	0.009	0.054	0.031	0.038	99	1,745
2	7.50	2,050	0.003	0.039	0.022	0.029	77	1,768
1	2.50	2,076	0.000	0.015	0.008	0.013	35	1,790
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.358	1	1
Powerwave Allgon TT1	180.00	48	1.890	1.980	1.140	0.358	22	41
4' Omni	180.00	10	1.890	1.980	1.140	0.358	5	9
Powerwave Allgon LGP	180.00	42	1.890	1.980	1.140	0.358	20	36
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.358	19	34
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.358	70	129
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.358	71	131
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.358	81	150
2' x 4' Rectangular	180.00	40	1.890	1.980	1.140	0.358	19	34

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

Customer: VERIZON WIRELESS

Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.358	49	91
KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.358	68	125
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.358	71	132
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.358	698	1,293
Ericsson KRY 112 144	167.00	33	1.627	0.864	0.707	0.204	9	28
Ericsson AIR 21, 1.3	167.00	249	1.627	0.864	0.707	0.204	66	215
Ericsson AIR 21, 1.3	167.00	244	1.627	0.864	0.707	0.204	65	211
Round T-Arm	167.00	750	1.627	0.864	0.707	0.204	198	647
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.059	1	7
Round Side Arm	150.00	150	1.312	0.138	0.347	0.059	11	129
Telewave ANT150D (5	140.00	5	1.143	-0.042	0.215	0.002	0	4
Bird 432-83H-01-T	140.00	50	1.143	-0.042	0.215	0.002	0	43
Decibel DB809K-XT	140.00	90	1.143	-0.042	0.215	0.002	0	78
Sinclair SC432D-HF6L	140.00	34	1.143	-0.042	0.215	0.002	0	29
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.002	1	388
Alcatel-Lucent 800 M	135.00	185	1.063	-0.088	0.165	-0.018	-4	160
Alcatel-Lucent 1900M	135.00	132	1.063	-0.088	0.165	-0.018	-3	114
Alcatel-Lucent TD-RR	135.00	210	1.063	-0.088	0.165	-0.018	-5	181
RFS APXVTM14-C-I20	135.00	159	1.063	-0.088	0.165	-0.018	-4	137
RFS APXVSP18-C-A20	135.00	171	1.063	-0.088	0.165	-0.018	-4	147
Flat Platform w/ Han	135.00	2,000	1.063	-0.088	0.165	-0.018	-46	1,724
Nokia B5 RRH4x40-850	125.00	146	0.911	-0.122	0.092	-0.043	-8	125
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.043	-9	137
Alcatel-Lucent RRH2x	125.00	170	0.911	-0.122	0.092	-0.043	-9	147
RFS DB-B1-6C-12AB-0Z	125.00	21	0.911	-0.122	0.092	-0.043	-1	18
Alcatel-Lucent B66a	125.00	201	0.911	-0.122	0.092	-0.043	-11	173
Antel LPA-80080/6CF	125.00	42	0.911	-0.122	0.092	-0.043	-2	36
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.043	-20	314
Antel LPA-80063/6CF	125.00	27	0.911	-0.122	0.092	-0.043	-1	23
Round Low Profile PI	125.00	1,500	0.911	-0.122	0.092	-0.043	-83	1,293
Decibel DB844H90E-XY	112.00	168	0.732	-0.096	0.036	-0.043	-9	145
Round Low Profile PI	112.00	1,500	0.732	-0.096	0.036	-0.043	-85	1,293
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.031	-3	68
Andrew DB586	96.00	17	0.538	-0.030	0.009	-0.006	0	14
Bird 429-83H-01-T	96.00	20	0.538	-0.030	0.009	-0.006	0	17
Flat Side Arm	96.00	450	0.538	-0.030	0.009	-0.006	-3	388
PCTEL GPS-TMG-HR-	79.00	1	0.364	0.029	0.008	0.037	0	1
GPS	30.00	10	0.053	0.071	0.042	0.048	1	9
		58,433	87.991	33.295	28.349	6.989	3,252	50,384

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

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	-69.76	-3.23	0.00	-378.33	0.00	378.33	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.061
5.00	-67.22	-3.17	0.00	-362.21	0.00	362.21	5,055.67	2,527.83	10,632.1	5,323.99	0.01	-0.02	0.060
10.00	-64.71	-3.08	0.00	-346.38	0.00	346.38	4,979.93	2,489.97	10,246.6	5,130.93	0.03	-0.03	0.059
15.00	-62.24	-2.99	0.00	-330.95	0.00	330.95	4,902.77	2,451.39	9,865.10	4,939.88	0.07	-0.05	0.058
20.00	-59.80	-2.89	0.00	-316.00	0.00	316.00	4,824.18	2,412.09	9,487.79	4,750.94	0.13	-0.06	0.057
25.00	-57.39	-2.78	0.00	-301.56	0.00	301.56	4,744.17	2,372.08	9,114.87	4,564.21	0.21	-0.08	0.056
30.00	-55.00	-2.67	0.00	-287.65	0.00	287.65	4,662.73	2,331.36	8,746.54	4,379.77	0.30	-0.10	0.055
35.00	-52.65	-2.56	0.00	-274.29	0.00	274.29	4,579.86	2,289.93	8,383.01	4,197.74	0.41	-0.11	0.054
40.00	-51.28	-2.50	0.00	-261.47	0.00	261.47	4,491.22	2,245.61	8,016.71	4,014.31	0.54	-0.13	0.054
42.96	-49.90	-2.43	0.00	-254.08	0.00	254.08	4,424.29	2,212.15	7,778.37	3,894.97	0.62	-0.14	0.053
45.00	-47.19	-2.29	0.00	-249.11	0.00	249.11	4,378.03	2,189.01	7,615.75	3,813.53	0.68	-0.15	0.052
49.04	-46.78	-2.27	0.00	-239.87	0.00	239.87	3,622.99	1,811.50	6,300.42	3,154.89	0.81	-0.16	0.059
50.00	-44.68	-2.16	0.00	-237.70	0.00	237.70	3,610.23	1,805.12	6,246.74	3,128.01	0.85	-0.17	0.058
55.00	-42.61	-2.05	0.00	-226.90	0.00	226.90	3,542.95	1,771.47	5,969.33	2,989.10	1.03	-0.18	0.057
60.00	-40.57	-1.95	0.00	-216.64	0.00	216.64	3,474.23	1,737.12	5,695.71	2,852.09	1.23	-0.20	0.056
65.00	-38.56	-1.85	0.00	-206.90	0.00	206.90	3,404.09	1,702.05	5,426.05	2,717.06	1.46	-0.22	0.056
70.00	-36.57	-1.76	0.00	-197.66	0.00	197.66	3,332.53	1,666.26	5,160.56	2,584.12	1.70	-0.24	0.055
75.00	-35.00	-1.70	0.00	-188.87	0.00	188.87	3,242.95	1,621.15	4,873.54	2,440.39	1.97	-0.27	0.055
79.00	-34.61	-1.69	0.00	-182.09	0.00	182.09	3,164.68	1,582.34	4,641.84	2,324.37	2.20	-0.28	0.055
80.00	-32.68	-1.62	0.00	-180.40	0.00	180.40	3,145.28	1,572.64	4,584.79	2,295.80	2.26	-0.29	0.054
85.00	-31.71	-1.60	0.00	-172.30	0.00	172.30	3,048.26	1,524.13	4,304.87	2,155.63	2.57	-0.31	0.054
87.54	-30.42	-1.58	0.00	-168.22	0.00	168.22	2,998.97	1,499.48	4,166.05	2,086.12	2.74	-0.32	0.054
90.00	-29.15	-1.57	0.00	-164.33	0.00	164.33	2,951.23	1,475.62	4,033.76	2,019.88	2.91	-0.33	0.053
92.46	-28.26	-1.57	0.00	-160.48	0.00	160.48	2,424.49	1,212.24	3,334.85	1,669.90	3.08	-0.34	0.059
95.00	-27.91	-1.57	0.00	-156.49	0.00	156.49	2,395.02	1,197.51	3,238.97	1,621.89	3.27	-0.36	0.058
96.00	-25.93	-1.59	0.00	-154.91	0.00	154.91	2,383.33	1,191.67	3,201.50	1,603.13	3.34	-0.36	0.058
100.00	-24.65	-1.62	0.00	-148.57	0.00	148.57	2,336.02	1,168.01	3,053.03	1,528.79	3.66	-0.38	0.057
103.75	-24.33	-1.63	0.00	-142.50	0.00	142.50	2,287.68	1,143.84	2,911.90	1,458.11	3.97	-0.40	0.056
103.75	-24.33	-1.63	0.00	-142.50	0.00	142.50	2,287.68	1,143.84	2,911.90	1,458.11	3.97	-0.40	0.108
105.00	-23.00	-1.68	0.00	-140.46	0.00	140.46	2,267.46	1,133.73	2,860.42	1,432.33	4.07	-0.41	0.108
110.00	-22.51	-1.72	0.00	-132.04	0.00	132.04	2,186.61	1,093.30	2,659.07	1,331.51	4.53	-0.46	0.109
112.00	-19.88	-1.83	0.00	-128.61	0.00	128.61	2,154.27	1,077.13	2,580.59	1,292.21	4.73	-0.48	0.109
115.00	-19.00	-1.88	0.00	-123.13	0.00	123.13	2,105.76	1,052.88	2,465.08	1,234.37	5.04	-0.52	0.109
120.00	-18.14	-1.93	0.00	-113.74	0.00	113.74	2,024.90	1,012.45	2,278.43	1,140.91	5.62	-0.58	0.109
125.00	-14.09	-2.08	0.00	-104.10	0.00	104.10	1,944.05	972.03	2,099.13	1,051.12	6.25	-0.64	0.106
130.00	-13.76	-2.09	0.00	-93.71	0.00	93.71	1,863.20	931.60	1,927.17	965.02	6.95	-0.70	0.105
132.12	-13.14	-2.11	0.00	-89.27	0.00	89.27	1,828.92	914.46	1,856.49	929.62	7.27	-0.72	0.103
135.00	-9.42	-2.13	0.00	-83.20	0.00	83.20	1,782.35	891.17	1,762.57	882.59	7.72	-0.76	0.100
135.87	-8.98	-2.14	0.00	-81.34	0.00	81.34	999.39	499.70	1,006.16	503.83	7.86	-0.77	0.170
140.00	-7.71	-2.12	0.00	-72.52	0.00	72.52	975.08	487.54	945.09	473.25	8.55	-0.83	0.161
145.00	-7.24	-2.10	0.00	-61.92	0.00	61.92	944.35	472.17	872.40	436.85	9.46	-0.92	0.149
150.00	-6.59	-2.05	0.00	-51.40	0.00	51.40	912.19	456.09	801.24	401.22	10.48	-1.02	0.135
155.00	-6.15	-2.00	0.00	-41.13	0.00	41.13	878.60	439.30	731.82	366.45	11.60	-1.11	0.119
160.00	-5.73	-1.93	0.00	-31.11	0.00	31.11	843.59	421.80	664.33	332.66	12.80	-1.19	0.100
165.00	-5.56	-1.90	0.00	-21.46	0.00	21.46	800.44	400.22	593.98	297.43	14.08	-1.26	0.079
167.00	-3.78	-1.48	0.00	-17.66	0.00	17.66	781.04	390.52	565.39	283.11	14.61	-1.28	0.067
170.00	-3.45	-1.38	0.00	-13.23	0.00	13.23	751.93	375.97	523.82	262.30	15.43	-1.31	0.055
175.00	-3.14	-1.27	0.00	-6.33	0.00	6.33	703.42	351.71	458.07	229.37	16.83	-1.35	0.032
180.00	0.00	-1.19	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	18.26	-1.37	0.000

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_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	-48.59	-3.22	0.00	-370.99	0.00	370.99	5,129.98	2,564.99	11,021.5	5,518.96	0.00	0.00	0.057
5.00	-46.82	-3.16	0.00	-354.88	0.00	354.88	5,055.67	2,527.83	10,632.1	5,323.99	0.01	-0.02	0.056
10.00	-45.08	-3.07	0.00	-339.09	0.00	339.09	4,979.93	2,489.97	10,246.6	5,130.93	0.03	-0.03	0.055
15.00	-43.35	-2.97	0.00	-323.74	0.00	323.74	4,902.77	2,451.39	9,865.10	4,939.88	0.07	-0.05	0.054
20.00	-41.65	-2.86	0.00	-308.89	0.00	308.89	4,824.18	2,412.09	9,487.79	4,750.94	0.13	-0.06	0.053
25.00	-39.97	-2.75	0.00	-294.56	0.00	294.56	4,744.17	2,372.08	9,114.87	4,564.21	0.20	-0.08	0.052
30.00	-38.31	-2.64	0.00	-280.79	0.00	280.79	4,662.73	2,331.36	8,746.54	4,379.77	0.29	-0.09	0.052
35.00	-36.68	-2.53	0.00	-267.58	0.00	267.58	4,579.86	2,289.93	8,383.01	4,197.74	0.40	-0.11	0.051
40.00	-35.72	-2.46	0.00	-254.95	0.00	254.95	4,491.22	2,245.61	8,016.71	4,014.31	0.53	-0.13	0.050
42.96	-34.76	-2.39	0.00	-247.67	0.00	247.67	4,424.29	2,212.15	7,778.37	3,894.97	0.61	-0.14	0.050
45.00	-32.87	-2.25	0.00	-242.78	0.00	242.78	4,378.03	2,189.01	7,615.75	3,813.53	0.67	-0.14	0.049
49.04	-32.59	-2.23	0.00	-233.71	0.00	233.71	3,622.99	1,811.50	6,300.42	3,154.89	0.80	-0.16	0.055
50.00	-31.13	-2.11	0.00	-231.57	0.00	231.57	3,610.23	1,805.12	6,246.74	3,128.01	0.83	-0.16	0.054
55.00	-29.68	-2.01	0.00	-221.00	0.00	221.00	3,542.95	1,771.47	5,969.33	2,989.10	1.01	-0.18	0.053
60.00	-28.26	-1.90	0.00	-210.97	0.00	210.97	3,474.23	1,737.12	5,695.71	2,852.09	1.21	-0.20	0.053
65.00	-26.86	-1.80	0.00	-201.47	0.00	201.47	3,404.09	1,702.05	5,426.05	2,717.06	1.43	-0.22	0.052
70.00	-25.47	-1.71	0.00	-192.48	0.00	192.48	3,332.53	1,666.26	5,160.56	2,584.12	1.66	-0.24	0.051
75.00	-24.38	-1.64	0.00	-183.95	0.00	183.95	3,242.30	1,621.15	4,873.54	2,440.39	1.93	-0.26	0.051
79.00	-24.11	-1.63	0.00	-177.38	0.00	177.38	3,164.68	1,582.34	4,641.84	2,324.37	2.15	-0.28	0.051
80.00	-22.76	-1.57	0.00	-175.75	0.00	175.75	3,145.28	1,572.64	4,584.79	2,295.80	2.21	-0.28	0.051
85.00	-22.09	-1.55	0.00	-167.92	0.00	167.92	3,048.26	1,524.13	4,304.87	2,155.63	2.51	-0.30	0.051
87.54	-21.19	-1.53	0.00	-163.99	0.00	163.99	2,998.97	1,499.48	4,166.05	2,086.12	2.68	-0.31	0.051
90.00	-20.30	-1.51	0.00	-160.23	0.00	160.23	2,951.23	1,475.62	4,033.76	2,019.88	2.84	-0.32	0.050
92.46	-19.68	-1.51	0.00	-156.51	0.00	156.51	2,424.49	1,212.24	3,334.85	1,669.90	3.01	-0.34	0.055
95.00	-19.44	-1.52	0.00	-152.66	0.00	152.66	2,395.02	1,197.51	3,238.97	1,621.89	3.19	-0.35	0.055
96.00	-18.06	-1.53	0.00	-151.14	0.00	151.14	2,383.33	1,191.67	3,201.50	1,603.13	3.27	-0.35	0.054
100.00	-17.17	-1.56	0.00	-145.01	0.00	145.01	2,336.02	1,168.01	3,053.03	1,528.79	3.57	-0.37	0.054
103.75	-16.95	-1.58	0.00	-139.15	0.00	139.15	2,287.68	1,143.84	2,911.90	1,458.11	3.87	-0.39	0.053
103.75	-16.95	-1.58	0.00	-139.15	0.00	139.15	2,287.68	1,143.84	2,911.90	1,458.11	3.87	-0.39	0.103
105.00	-16.02	-1.63	0.00	-137.18	0.00	137.18	2,267.46	1,133.73	2,860.42	1,432.33	3.97	-0.40	0.103
110.00	-15.68	-1.66	0.00	-129.04	0.00	129.04	2,186.61	1,093.30	2,659.07	1,331.51	4.42	-0.45	0.104
112.00	-13.84	-1.77	0.00	-125.72	0.00	125.72	2,154.27	1,077.13	2,580.59	1,292.21	4.61	-0.47	0.104
115.00	-13.23	-1.82	0.00	-120.41	0.00	120.41	2,105.76	1,052.88	2,465.08	1,234.37	4.92	-0.51	0.104
120.00	-12.63	-1.87	0.00	-111.32	0.00	111.32	2,024.90	1,012.45	2,278.43	1,140.91	5.48	-0.56	0.104
125.00	-9.81	-2.03	0.00	-101.98	0.00	101.98	1,944.05	972.03	2,099.13	1,051.12	6.10	-0.62	0.102
130.00	-9.58	-2.04	0.00	-91.86	0.00	91.86	1,863.20	931.60	1,927.17	965.02	6.79	-0.68	0.100
132.12	-9.15	-2.05	0.00	-87.53	0.00	87.53	1,828.92	914.46	1,856.49	929.62	7.09	-0.71	0.099
135.00	-6.55	-2.09	0.00	-81.61	0.00	81.61	1,782.35	891.17	1,762.57	882.59	7.53	-0.74	0.096
135.87	-6.25	-2.10	0.00	-79.79	0.00	79.79	999.39	499.70	1,006.16	503.83	7.67	-0.76	0.165
140.00	-5.37	-2.08	0.00	-71.13	0.00	71.13	975.08	487.54	945.09	473.25	8.35	-0.81	0.156
145.00	-5.03	-2.06	0.00	-60.73	0.00	60.73	944.35	472.17	872.40	436.85	9.24	-0.90	0.144
150.00	-4.58	-2.02	0.00	-50.40	0.00	50.40	912.19	456.09	801.24	401.22	10.24	-0.99	0.131
155.00	-4.27	-1.96	0.00	-40.33	0.00	40.33	878.60	439.30	731.82	366.45	11.33	-1.08	0.115
160.00	-3.98	-1.89	0.00	-30.51	0.00	30.51	843.59	421.80	664.33	332.66	12.50	-1.16	0.096
165.00	-3.86	-1.86	0.00	-21.05	0.00	21.05	800.44	400.22	593.98	297.43	13.76	-1.23	0.076
167.00	-2.63	-1.45	0.00	-17.33	0.00	17.33	781.04	390.52	565.39	283.11	14.28	-1.26	0.065
170.00	-2.40	-1.35	0.00	-12.98	0.00	12.98	751.93	375.97	523.82	262.30	15.08	-1.29	0.053
175.00	-2.18	-1.24	0.00	-6.21	0.00	6.21	703.42	351.71	458.07	229.37	16.45	-1.32	0.030
180.00	0.00	-1.19	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	17.84	-1.34	0.000

Site Number: 302506

Code: ANSI/TIA-222-G

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Site Name: Winchester CT 3, CT

Engineering Number: OAA721430_C3_01

1/19/2018 10:02:57 AM

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	34.75	0.00	70.07	0.00	0.00	4116.76	135.87	0.67
0.9D + 1.6W	33.28	0.00	52.54	0.00	0.00	3962.17	135.87	0.64
1.2D + 1.0Di + 1.0Wi	6.58	0.00	143.59	0.00	0.00	888.66	135.87	0.21
(1.2 + 0.2Sds) * DL + E ELFM	2.97	0.00	69.76	0.00	0.00	402.86	135.87	0.09
(1.2 + 0.2Sds) * DL + E EMAM	3.23	0.00	69.76	0.00	0.00	378.33	135.87	0.17
(0.9 - 0.2Sds) * DL + E ELFM	2.97	0.00	48.59	0.00	0.00	396.01	135.87	0.08
(0.9 - 0.2Sds) * DL + E EMAM	3.22	0.00	48.59	0.00	0.00	370.99	135.87	0.16
1.0D + 1.0W	9.28	0.00	58.43	0.00	0.00	1110.30	135.87	0.19

Additional Steel Summary

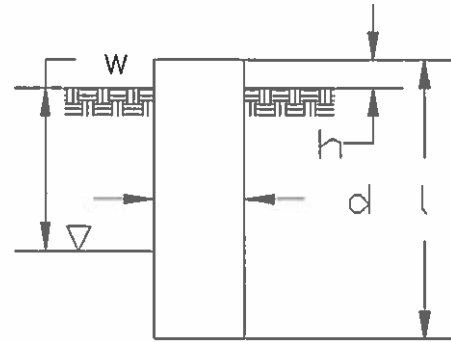
Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Upper Termination Connectors				Lower Termination Connectors				Max Member		
			VQ/I (lb/in)	Applied (kips)	phiVn (kips)	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Pu (kip)	phiPn (kip)	Ratio
0.00	103.00	(4) SOL-#20 All Thre	300.5	9.0	16.8	140.7	12.0	12	24	0.0	12.0	0	0	218.0	330.5	0.660

Site Name: Winchester CT 3, CT
 Site Number: 302506
 Engineer: Trevor.Ridilla
 Engineering Number: OAA721430
 Date: 01/19/18

Program Last Updated: 5/13/2014
 American Tower Corporation

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

Analyze or Design a Foundation? Analyze
 Foundation Mapped: N
 Moment (M): 4116.8 k-ft
 Shear/Leg (V): 37.8 k
 Axial Load (P): 70.1 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP
 Diameter of Caisson (d):
 Caisson Embedment (L-h):
 Caisson Height Above Ground (h):
 Depth Below Ground Surface to Water Table (w):
 Unit Weight of Concrete:
 Unit Weight of Water:
 Tension Skin Friction/Compression Skin Friction:
 Pullout Angle:



7.0 ft
 17.0 ft
 1.0 ft
 99.0 ft
 150.0 pcf
 62.4 pcf
 1.00
 30.0 degrees

Engineer Notes

Soil Mechanical Properties

Depth (ft)		γ_{soil}	Cohesion	ϕ	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	3.5	165	0	0	0	0
3.5	7.5	165	6000	0	2700	0
7.5	18.0	165	6000	0	2700	11277

Required Embedment: 14.0 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 692.7 ft³ = 25.7 yd³
 Weight of Concrete (Buoyancy Effect Considered): 103.9 k
 Average Soil Unit Weight: 165.0 pcf
 Skin Friction Resistance: 801.6 k
 Compressive Bearing Resistance: 434.0 k
 Pullout Weight (Minus Concrete Weight): 585.7 k
 Nominal Uplift Capacity per Leg ($\phi_s T_n$): 439.3 k
 Nominal Compressive Capacity per Leg ($\phi_s P_n$): 926.7 k
 P_u : 58.3 k
 $T_u / \phi_s T_n$: 0.00 Result: OK
 $P_u / \phi_s P_n$: 0.06 Result: OK
 Total Lateral Resistance: 4082.8 k
 Inflection Point (Below Ground Surface): 10.8 ft
 Design Overturning Moment At Inflection Point (M_D): 4561.1 k-ft
 Nominal Moment Capacity ($\phi_s M_n$): 9851.4 k-ft
 $M_D / \phi_s M_n$: 0.46 Result: OK
 ϕ_s : 0.75

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
# of Vertical Steel Rebars:	42
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in ²
Design Horizontal Tie / Stirrup Spacing:	12.0 in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60 ksi
Rebar Cage Diameter:	76.0 in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_C):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	4164.5 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	10956.3 k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.38 Result: OK
Design Shear (V_u):	612.4 k
Nominal Shear Capacity ($\phi_V V_n$):	685.3 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.89 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	3538.1 k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	58.3 k
Nominal Compression Capacity ($\phi_P P_n$):	9682.0 k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01 Result: OK
Bending Reinforcement Ratio:	0.012 ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.38 Result: OK

Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	52.75 in
	Pole Thickness	0.4375 in
	Plate Diameter	68 in
	Plate Thickness	2 in
	Plate Fy	50 ksi
	Weld Length	0.375 in
	ϕ_s Resistance	1448.04 k-in
	Applied	435.00 k-in
	#	12 <i>Show</i>
Stiffeners	Thickness	0.75 in
	Length	6 in
	Height	15 in
	Chamfer	1 in
	Offset Angle	22.5°
	Fy	36 ksi

Bolts	#	16
	Bolt Circle (R)adial / (S)quare	62 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	151.30 k	
Reinforcement	#	4
	DYW. Circle	59.625 in
	Offset Angle	11.25°
	Type	#20
	Diameter	2.5 in
Fu	100 ksi	
ϕ_s Resistance	392.70 k	
Applied	212.73 k	

Extra Bolts O	#	0
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Code Rev. **G**

Date **1/19/2018**
 Engineer **Trevor.Ridilla**
 Site # **302506**
 Carrier **VERIZON WIRELESS**

Moment **4116.8 k-ft**
 Axial **70.1 k**

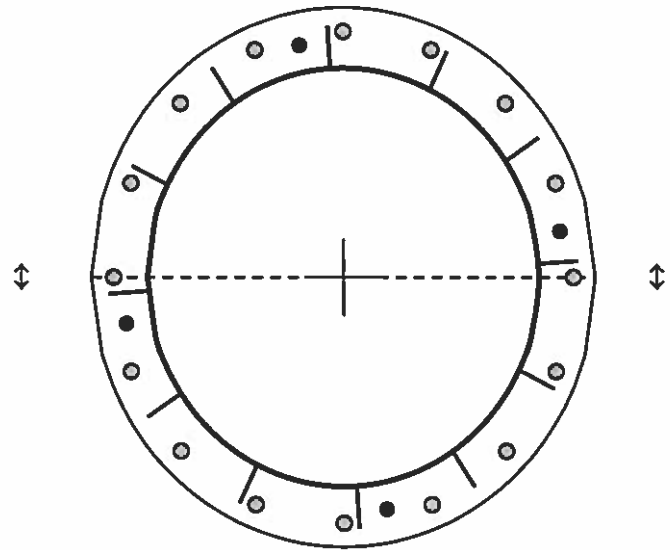


Plate Stress Ratio:
0.30 (Pass)

Bolt Stress Ratio:
0.58 (Pass)

Reinforcement Stress Ratio:
0.54 (Pass)

Site Name: Winchester East CT

Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm ²)	(mW/cm ²)	(%)
VZW PCS	1970	1	5062	5062	125	0.1165	1.0	11.65%
VZW Cellular	869	1	3709	3709	125	0.0854	0.5793333333	14.74%
VZW Cellular	880	3	498	1494	125	0.0344	0.586666667	5.86%
VZW AWS	2145	1	7770	7770	125	0.1788	1.0	17.88%
VZW 700	746	1	2062	2062	125	0.0475	0.4973333333	9.54%

Total Percentage of Maximum Permissible Exposure

59.67%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1991.

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:

1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.

108 OAKDALE AVE

Location 108 OAKDALE AVE

Mblu 028/ 151/ 002-1/ /

Acct# 103466

Owner STOW WILLIAM P
REVOCABLE TRUST

Assessment \$94,850

Appraisal \$135,500

PID 4991

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$25,900	\$109,600	\$135,500

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$18,130	\$76,720	\$94,850

Owner of Record

Owner STOW WILLIAM P REVOCABLE TRUST
Co-Owner C/O AMERICAN TOWER #302506

Sale Price \$0
Certificate
Book & Page 411/ 779
Sale Date 03/12/2013
Instrument 29

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
STOW WILLIAM P REVOCABLE TRUST	\$0		411/ 779	29	03/12/2013
STOW WILLIAM P & RICHARD D	\$0		00260/0171		11/16/1995

Building Information

Building 1 : Section 1

Year Built: 2004
Living Area: 360
Replacement Cost
Less Depreciation: \$13,500

Building Attributes	
Field	Description

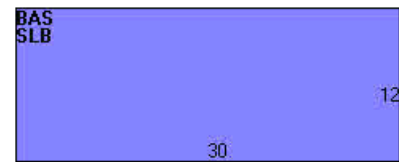
STYLE	Warehse Prefab
MODEL	Ind/Comm
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/Oil
Heating Type	Hot Air-no Duc
AC Type	None
Bldg Use	Tele Tower
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	12

Building Photo



(<http://images.vgsi.com/photos/WinchesterCTPhotos//\01\00\49>,

Building Layout



(<http://images.vgsi.com/photos/WinchesterCTPhotos//Sketches/>

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	360	360
SLB	Slab	360	0
		720	360

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use

Use Code 4310
Description Tele Tower

Land Line Valuation

Size (Acres) 3.39
Depth

Zone RR
Alt Land Appr No
Category

Assessed Value \$76,720
Appraised Value \$109,600

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD8	Shd Com Mas			252 S.F.	\$6,200	1
SHD8	Shd Com Mas			252 S.F.	\$6,200	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$25,900	\$109,600	\$135,500
2016	\$19,900	\$109,600	\$129,500
2012	\$13,700	\$109,600	\$123,300

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$18,130	\$76,720	\$94,850
2016	\$13,930	\$76,720	\$90,650
2012	\$9,590	\$76,720	\$86,310

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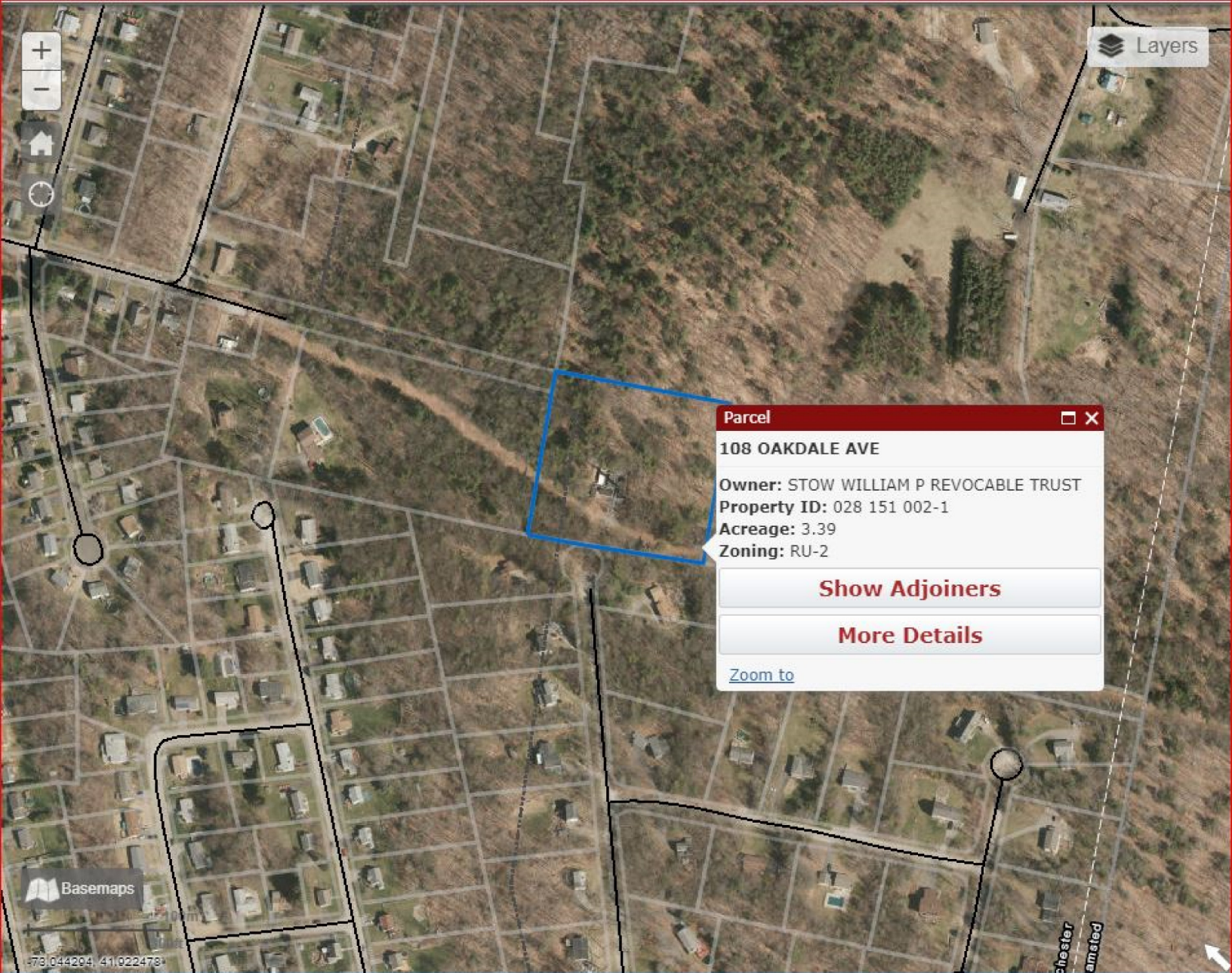
Search By Land Owner

Search By Property ID

Default

Advanced

Search



Layers



Parcel □ ×

108 OAKDALE AVE

Owner: STOW WILLIAM P REVOCABLE TRUST

Property ID: 028 151 002-1

Acreage: 3.39

Zoning: RU-2

Show Adjainers

More Details

[Zoom to](#)

Basemaps

781.044.204, 411.022.473

chester
amsled

CEED CORPORATION
 PROFESSIONAL ENGINEERS
 1700 WEST 10TH AVENUE
 DENVER, COLORADO 80202

PREPARED BY
 DATE
 CHECKED BY
 DATE

REVISIONS
 NO. DATE BY COMMENTS

NO.	DATE	BY	COMMENTS
1	11-07	CEED	ISSUE FOR RECORD
2	11-07	CEED	ISSUE FOR RECORD
3	11-07	CEED	ISSUE FOR RECORD
4	11-07	CEED	ISSUE FOR RECORD
5	11-07	CEED	ISSUE FOR RECORD
6	11-07	CEED	ISSUE FOR RECORD
7	11-07	CEED	ISSUE FOR RECORD
8	11-07	CEED	ISSUE FOR RECORD
9	11-07	CEED	ISSUE FOR RECORD
10	11-07	CEED	ISSUE FOR RECORD

GENERAL NOTES

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2. THE ORIGINAL MAP IS FILED IN THE PUBLIC RECORDS OF THE COUNTY OF DENVER, COLORADO, UNDER MAP NO. 112.
3. THE ORIGINAL MAP IS FILED IN THE PUBLIC RECORDS OF THE COUNTY OF DENVER, COLORADO, UNDER MAP NO. 112.
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LEGEND

- 1. BOUNDARY LINE
- 2. RIGHT-OF-WAY LINE
- 3. EASEMENT
- 4. ENCUMBRANCE
- 5. UNRECORDED INTEREST
- 6. UNRECORDED EASEMENT
- 7. UNRECORDED ENCUMBRANCE
- 8. UNRECORDED INTEREST
- 9. UNRECORDED EASEMENT
- 10. UNRECORDED ENCUMBRANCE

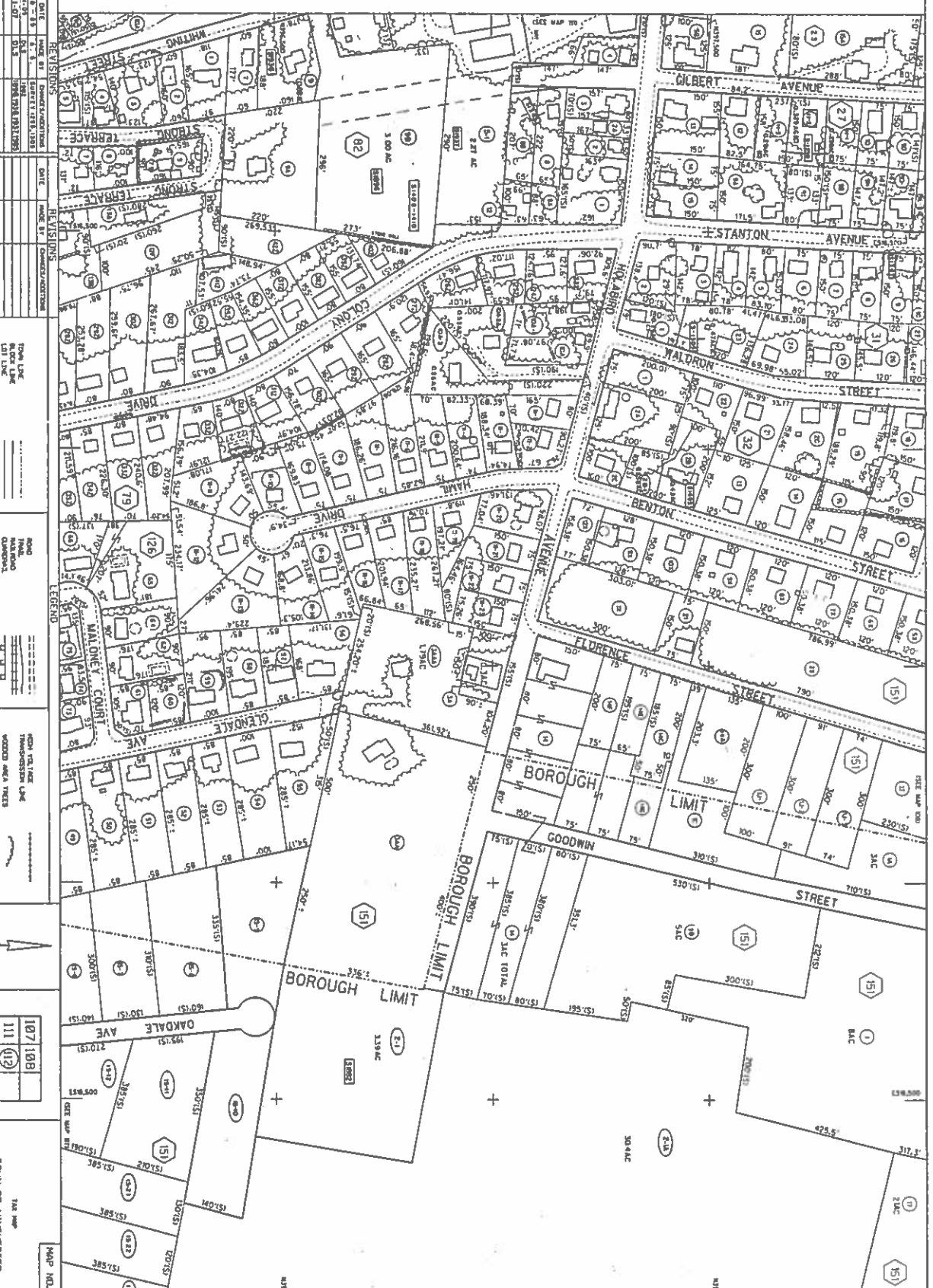
SCALE

1" = 100'

INDEX

107	108
111	112
116	117

TOWN OF WINCHESTER
 UNINCORPORATED
 MAP NO. 112



SEE MAP NO. 112

SEE MAP NO. 112

SEE MAP NO. 112

SEE MAP NO. 112

SEE MAP NO. 112