



Alex Murshteyn, Site Acquisition Consultant
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December 14, 2017

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

**RE: Notice of Exempt Modification // Site: Naugatuck West CT (ATC: 283423)
0 (aka 880) Andrew Mountain Road, Naugatuck, CT 06473
N 41.48445 // W -73.08984**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains twelve (12) antennas at the 106-foot level on the existing 119-foot monopole tower, located at (880) Andrew Mountain Road, Naugatuck, CT. The tower is owned by American Tower. The property is owned by Russell B. Andrew, Sr. The Council approved Verizon Wireless use of the existing tower in 2013. Verizon Wireless now intends remove nine (9) of its antennas and replace with six (6) newer models installed in pairs on side-by-side mounts, including (3) JAHH-65B-R3B and (3) JAHH-45B-R3B (700/850/1900/2100 MHz) replacements for its PCS/AWS/LTE upgrade, all at the same level on the tower. Additionally, Verizon Wireless will replace all six (6) of its existing remote radio head units (RRHs) and install six (6) additional RRHs, plus deploy two (2) reserved fiber cables by installing two (2) HYBRIFLEX lines; altogether updating certain leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby. Note that additional existing or reserved (leased) cable equipment rights may be removed or deployed, although any such additional cable rights are already reflected in the structural analysis.

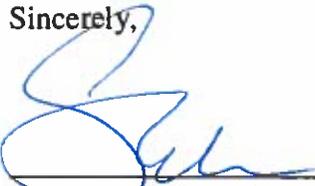
Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor N. Warren "Pete" Hess III, for the Town and Borough of Naugatuck, to its Land Use Office, including for Planning & Zoning, to American Tower, the tower owner, and to the ground owner, Russell B. Andrew, Sr.

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 new and replacement Verizon Wireless equipment, a structural analysis dated October 25, 2017 by Tower Engineering Professionals, Inc. 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. Verizon Wireless replacement antennas and all RRHs will be installed on its existing antenna platform at the 106-foot level on the tower.
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 Tower Engineering Professionals, Inc., dated October 25, 2017.

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,

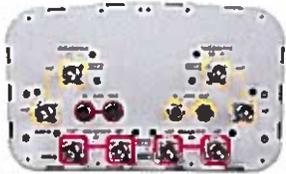


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Attachments



cc: Pete Hess III, Mayor, Town and Borough of Naugatuck - as elected official - 1Z9Y45030339955295
Land Use/Planning/Zoning Employees, Land Use Office - as P&Z officials - 1Z9Y45030321851902
American Tower Corporation - as tower owner - 1Z9Y45030329341510
Russell B. Andrew, Sr. - as property owner - 1Z9Y4503033324129



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					

Electrical Specifications, BASTA*

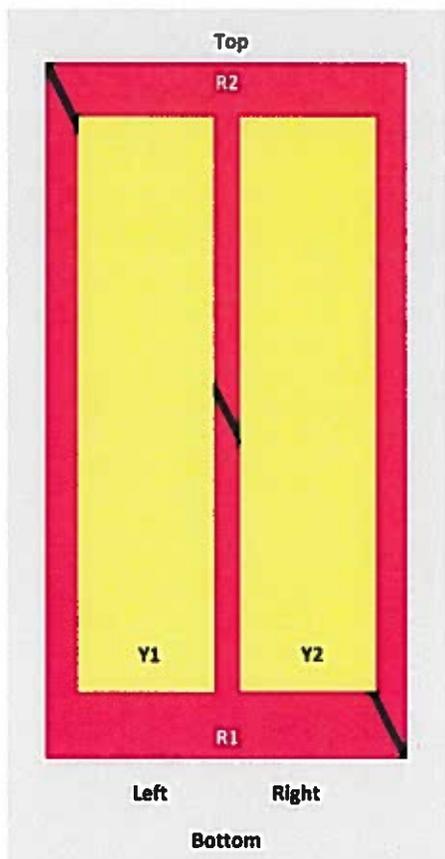
Frequency Band, MHz	698-787	824-894	1695-1880	1850-1990	1920-2200	2300-2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2 ° 14.3	2 ° 15.0	0 ° 17.2	0 ° 17.6	0 ° 17.7	0 ° 17.9
Gain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

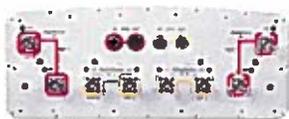
Regulatory Compliance/Certifications

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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JAHH-45B-R3B

8-port sector antenna, 2x 698–798, 2x 824–894 and 4x 1695–2360 MHz, 45° HPBW, low bands each have a RET and the high bands share a RET. Two internal SBTs.



- 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
- Narrow beamwidth capacity antenna for higher level of densification and enhanced data throughput

Electrical Specifications

Frequency Band, MHz	698–798	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	16.5	17.2	19.4	20.2	20.5	21.1
Beamwidth, Horizontal, degrees	48	43	44	43	41	38
Beamwidth, Vertical, degrees	12.6	11.2	5.8	5.4	5.0	4.5
Beam Tilt, degrees	2–14	2–14	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	16	21	18	18	18	18
Front-to-Back Ratio at 180°, dB	32	36	37	37	38	41
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	28	28	28	28
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	200	200	300	300	300	250
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm					

Electrical Specifications, BASTA*

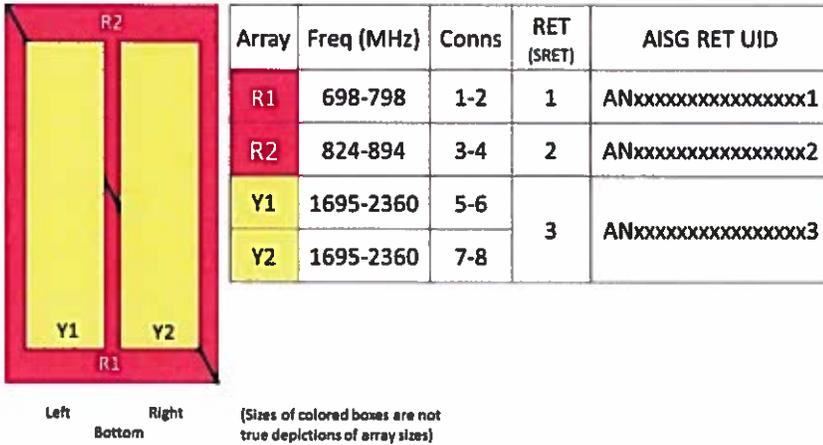
Frequency Band, MHz	698–798	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	16.3	17.0	19.1	19.9	20.2	20.9
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.3	±0.5	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	2° 16.3	2° 17.1	0° 19.1	0° 19.8	0° 20.1	0° 20.7
	8° 16.3	8° 17.1	4° 19.2	4° 19.9	4° 20.2	4° 21.0
	14° 16.1	14° 16.7	8° 19.0	8° 19.8	8° 20.1	8° 20.7
Beamwidth, Horizontal Tolerance, degrees	±1.1	±2.4	±2	±2.7	±2.9	±1.5
Beamwidth, Vertical Tolerance, degrees	±0.7	±0.6	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	16	21	17	17	17	17
Front-to-Back Total Power at 180° ± 30°, dB	23	24	29	31	33	34
CPR at Boresight, dB	25	26	20	21	20	20
CPR at Sector, dB	16	18	14	15	15	16

* 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

Product Specifications

JAHH-45BR3B



Port Configuration



General Specifications

Operating Frequency Band	1695 – 2360 MHz 698 – 798 MHz 824 – 894 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage
Total Input Power, maximum	800 W @ 50 °C

Mechanical Specifications

RF Connector Quantity, total	8
RF Connector Quantity, low band	4

JAHH-45BR3B

RF Connector Quantity, high band	4
RF Connector Interface	4.3-10 Female
Color	Light gray
Grounding Type	RF connector body grounded to reflector and mounting bracket
Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	1038.0 N @ 150 km/h 233.4 lbf @ 150 km/h
Wind Loading, lateral	234.0 N @ 150 km/h 52.6 lbf @ 150 km/h
Wind Loading, rear	1091.0 N @ 150 km/h 245.3 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Length	1829.0 mm 72.0 in
Width	457.0 mm 18.0 in
Depth	178.0 mm 7.0 in
Net Weight, without mounting kit	41.5 kg 91.5 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	1 W
Power Consumption, normal conditions, maximum	8 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	1970.0 mm 77.6 in
Width	608.0 mm 23.9 in
Depth	346.0 mm 13.6 in
Shipping Weight	71.5 kg 157.6 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-45BR3B



Included Products

BSAMNT-3 — 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.

BSAMNT-M — Middle Downtilt Mounting Kit for Long Antennas for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor bracket set.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance



BSAMNT-3

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	6.2 kg 13.7 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-M

Middle Downtilt Mounting Kit for Long Antennas for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor 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	4.5 kg 9.9 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





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 B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

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

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

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

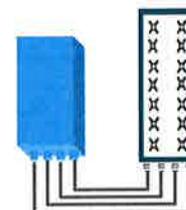


FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R
Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

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

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ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

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

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

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

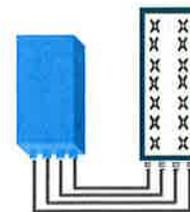


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) 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

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

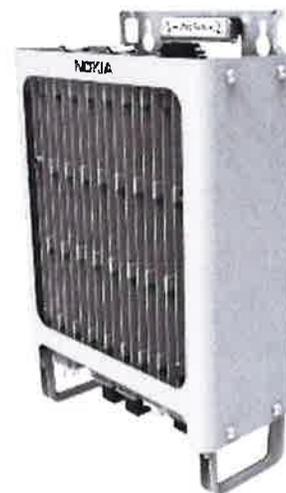
AirScale RRH 4T4R delivers 160 W (4x40 W) transmit power and can support 2x2 MIMO, 4x2 MIMO and 4x4 MIMO. The radio supports 256 QAM modulation in the downlink (DL) for up to 30 percent higher throughput. The Virtual Spectrum Analyzer feature enables both uplink and downlink spectrum to be analyzed.

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 B66A RRH4X45

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

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

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



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

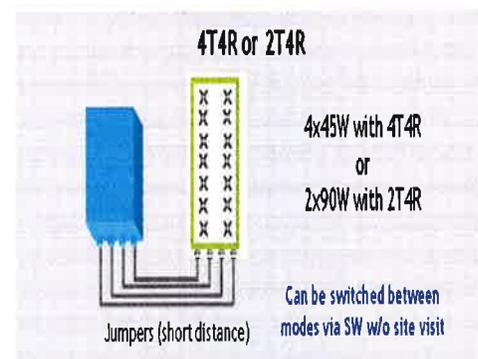
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



TECHNICAL SPECIFICATIONS

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz – 4 LTE MIMO carriers (In 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure – RX Diversity scheme Receiver Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mm (in.)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) UL50E Type 4 Enclosure
Wind load (@150km/h or 93mph)	250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

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HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

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

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

Features/Benefits

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

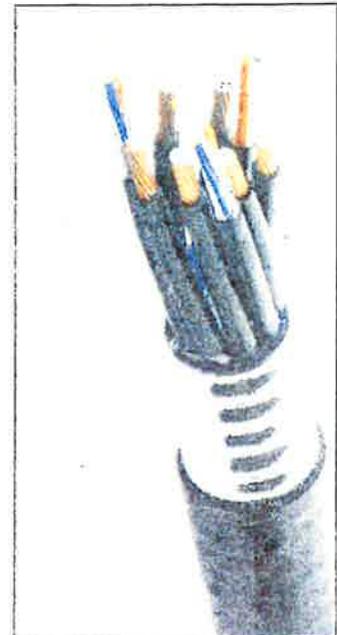


Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
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
Dimensions and Cable Properties			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Environmental			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

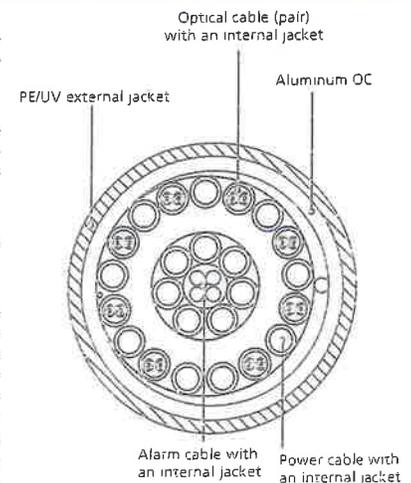


Figure 2: Construction Detail

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



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This report was prepared for American Tower Corporation by



T O W E R
E N G I N E E R I N G
P R O F E S S I O N A L S

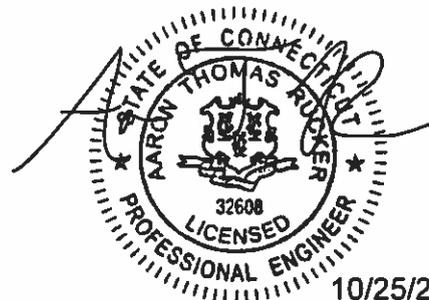
Structural Analysis Report

Structure : 119 ft Monopole
ATC Site Name : Naugatuck CT, CT
ATC Site Number : 283423
Engineering Number : OAA715143_C3_01
Proposed Carrier : Verizon Wireless
Carrier Site Name : Naugatuck_West_CT
Carrier Site Number : 469151
Site Location : 880 Andrew Mountain Road
Naugatuck, CT 06770-3656
41.484500,-73.089800
County : New Haven
Date : October 25, 2017
Max Usage : 43%
Result : Pass

Prepared By:
Michael Dugan
TEP

Michael Dugan

Reviewed By:



10/25/2017

COA: PEC.0001553



Table of Contents

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



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 120 ft monopole to reflect the change in loading by Verizon Wireless.

Supporting Documents

Tower Drawings	TransAmerican DaVinci Job #11235-1298, dated June 14, 2011
Foundation Drawing	TransAmerican DaVinci Job #11235-1298, dated June 14, 2011
Geotechnical Report	Terracon Project #J2115128, dated May 10, 2011

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:	94 mph (3-Second Gust, Vasd) / 121 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.19$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
118.0	118.0	4	Raycap DC6-48-60-18-8F	Platform w/ Handrails	(3) 1/2" Coax (8) 0.63" Cable (2) 0.40" Fiber	AT&T Mobility
		6	Ericsson RRUS A2 B2			
		3	Ericsson RRUS 32 (50.8 lbs)			
		9	Ericsson RRUS 12			
		9	Ericsson RRUS-11			
		12	CCI HPA-65R-BUU-H8			
106.0	106.0	3	Alcatel-Lucent B66 RRH4x45	Low Profile Platform	(6) 1 5/8" Coax	Verizon
		3	Antel BXA-70063-6CF-EDIN-X			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
106.0	106.0	4	Andrew SBNHH-1D65B	-	(12) 1 5/8" Coax (2) 0.40" Fiber	Verizon
		2	Andrew SBNHH-1D45B			
		3	Antel BXA-171063/12CF			
		3	Alcatel-Lucent RRH2x60 700			
		2	RFS DB-T1-6Z-8AB-OZ			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
106.0	106.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(2) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH4x30W-B25			
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		4	Commscope JAHH-65B-R3B			
		2	Commscope JAHH-45B-R3B			

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	39%	Pass
Shaft	41%	Pass
Base Plate	43%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,850.0	1,529.2	40%
Shear (Kips)	42.0	17.3	41%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
106.0	Nokia B5 RRH4x40-850	Verizon Wireless	0.466	0.481
	Alcatel-Lucent RRH4x30W-B25			
	Alcatel-Lucent B13 RRH4x30-4R 700U			
	Commscope JAHH-65B-R3B			
	Commscope JAHH-45B-R3B			

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



Standard Conditions

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

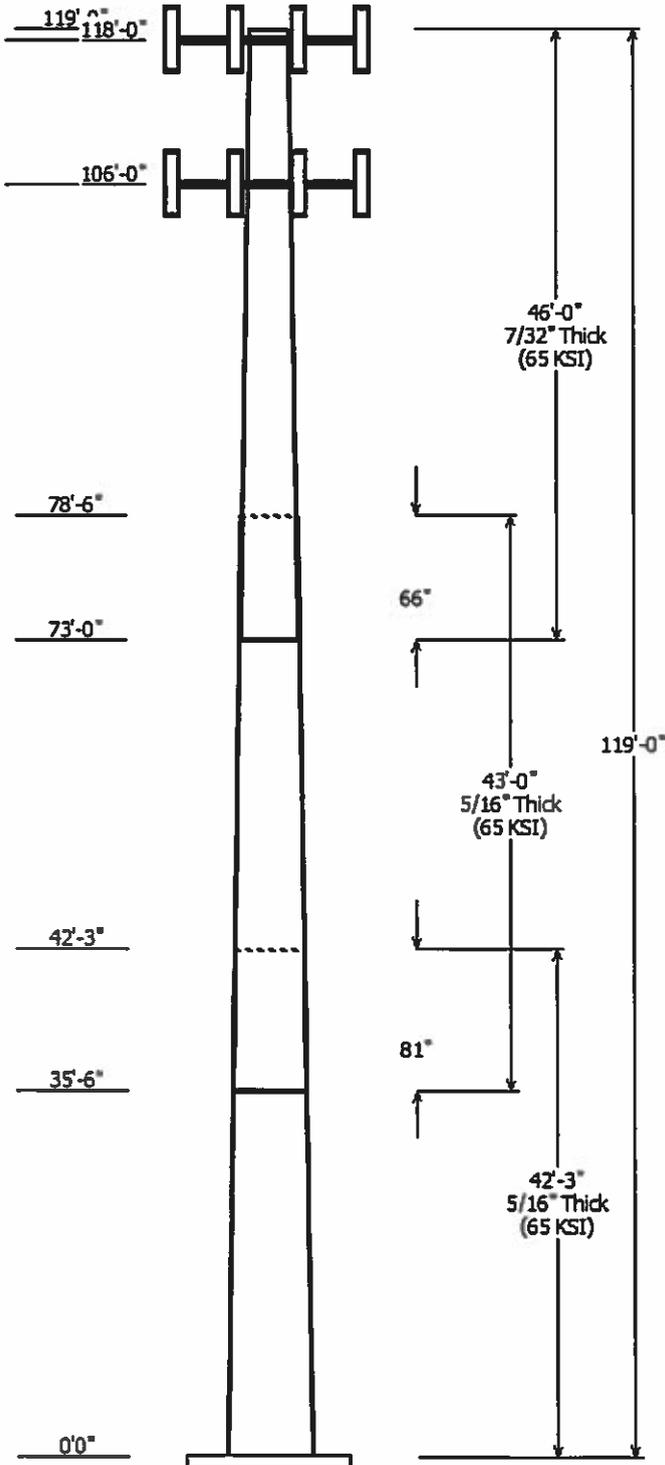
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

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

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

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Job Information	
Pole : 283423	Code: ANSI/TIA-222-G
Description :	
Client : VERIZON WIRELESS	Struct Class : II
Location : NAUGATUCK CT, CT	
Shape : 18 Sides	Exposure : B
Height : 119.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.257187in/ft)	

Sections Properties								
Shaft Section	Length (ft)	Diameter (In)		Thick (In)	Joint Type	Overlap Length (In)		Steel Taper (ksi)
		Top	Bottom					
1	42.250	46.13	57.00	0.313		0.000	0.257200	65
2	43.000	37.43	48.49	0.313	Slip Joint	81.000	0.257200	65
3	46.000	27.45	39.28	0.219	Slip Joint	66.000	0.257200	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
118.000	118.000	1	Round Platform w/ Handrails
118.000	118.000	12	CCI HPA-65R-BUU-H8
118.000	118.000	9	Ericsson RRUS-11
118.000	118.000	9	Ericsson RRUS 12
118.000	118.000	3	Ericsson RRUS 32 (50.8 lbs)
118.000	118.000	6	Ericsson RRUS A2 B2
118.000	118.000	4	Raycap DC6-48-60-18-8F
106.000	106.000	3	Nokia B5 RRH4x40-850
106.000	106.000	3	Alcatel-Lucent RRH4x30W-B25
106.000	106.000	3	Alcatel-Lucent B13 RRH4x30-
106.000	106.000	2	Commscope JAHH-45B-R3B
106.000	106.000	4	Commscope JAHH-65B-R3B
106.000	106.000	3	Alcatel-Lucent B66 RRH4x45
106.000	106.000	1	Round Low Profile Platform
106.000	106.000	3	Antel BXA-70063-6CF-EDIN-X

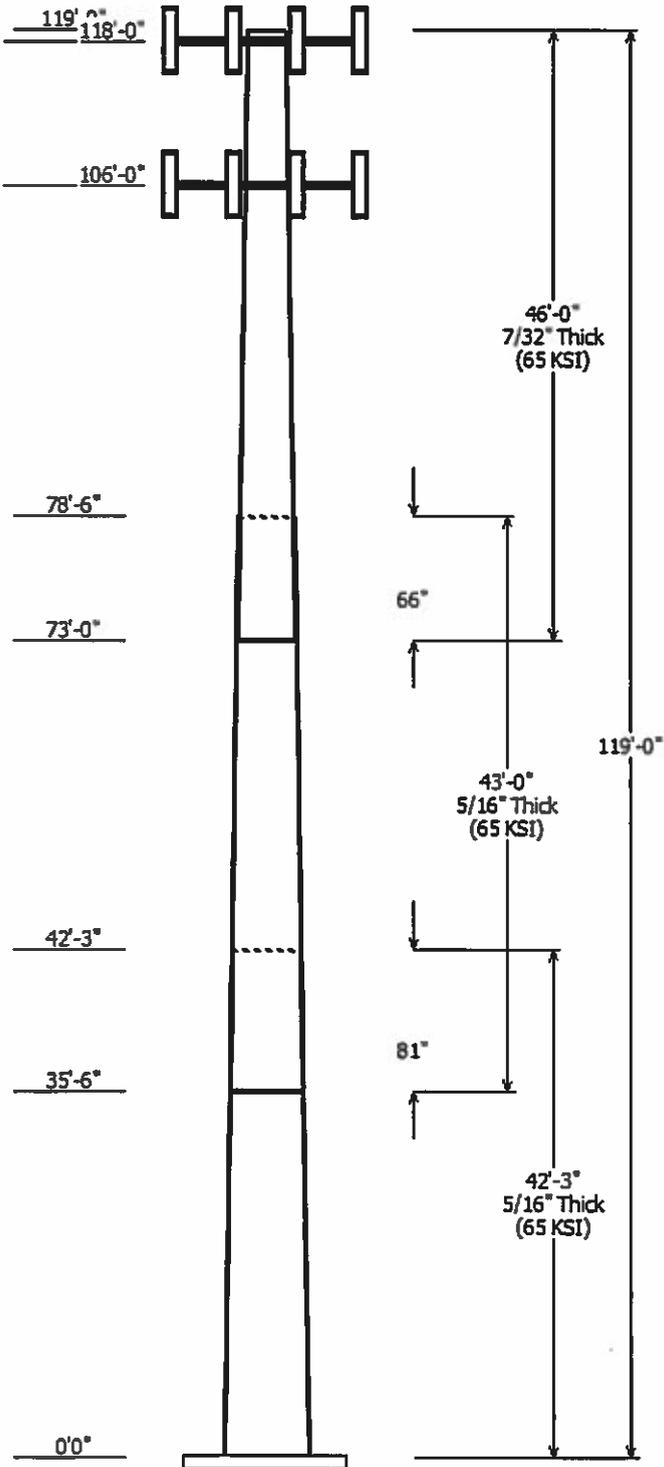
Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	106.0	1 5/8" Coax	No
0.000	106.0	1 5/8" Fiber	No
0.000	118.0	0.40" Fiber Cable	No
0.000	118.0	0.63" (15.9mm)	No
0.000	118.0	1/2" Coax	No

Load Cases	
1.2D + 1.6W	94 mph with No Ice
0.9D + 1.6W	94 mph with No Ice (Reduced DL)
1.2D + 1.0DI + 1.0WI	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

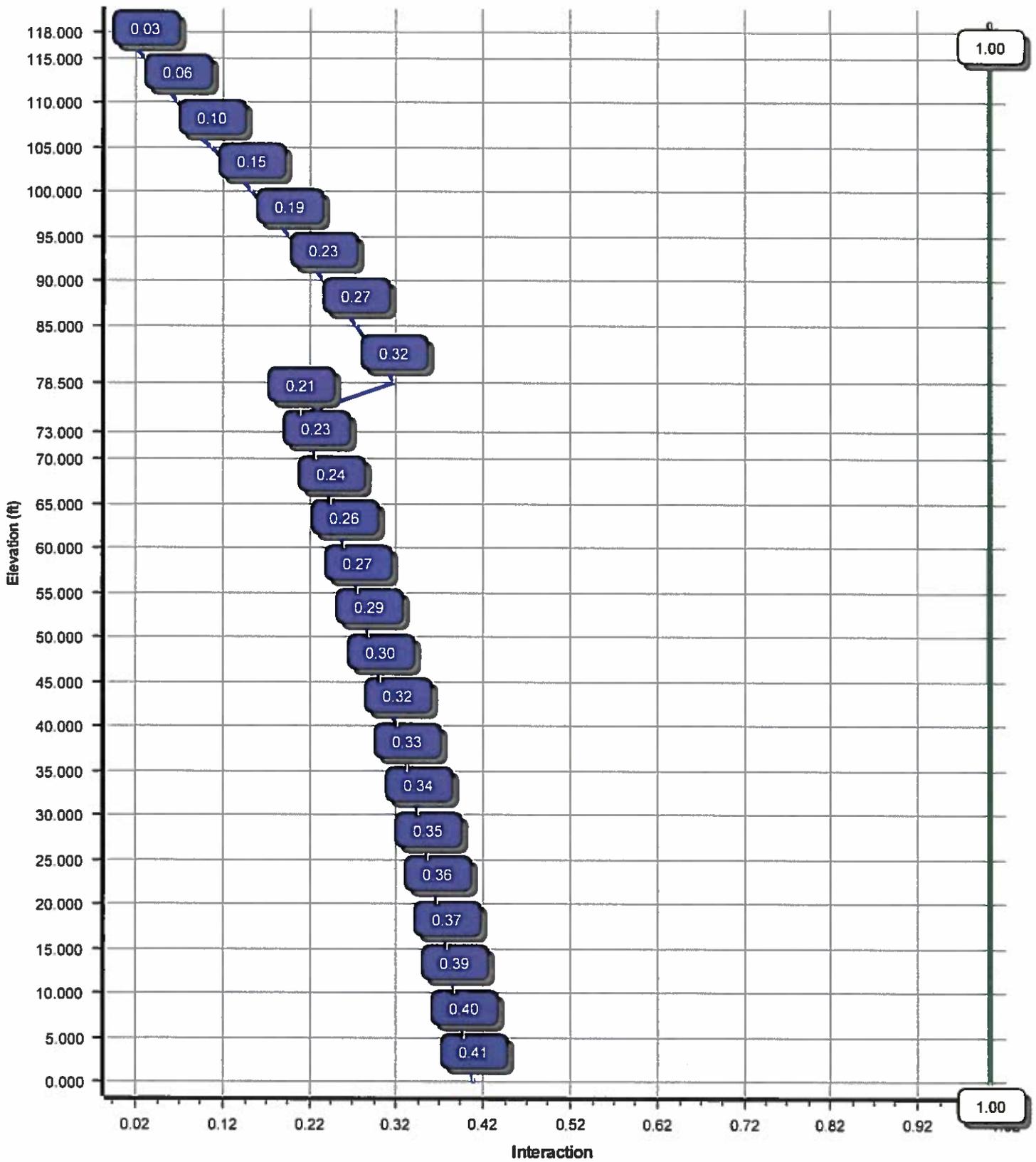
Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1529.22	17.26	30.11

0.9D + 1.6W	1521.59	17.26	22.58
1.2D + 1.0DI + 1.0WI	427.57	5.04	49.99
(1.2 + 0.2Sds) * DL + E ELFM	150.16	1.57	29.91
(1.2 + 0.2Sds) * DL + E EMAM	255.38	2.48	29.91
(0.9 - 0.2Sds) * DL + E ELFM	149.26	1.56	20.70
(0.9 - 0.2Sds) * DL + E EMAM	253.73	2.48	20.70
1.0D + 1.0W	388.11	4.39	25.10

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 40.55% at 0.0 ft



Site Number: 283423

Code: ANSI/TIA-222-G © 2007 - 2017 by ATC IP LLC. All rights reserved.

Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:53 PM

Customer: VERIZON WIRELESS

Analysis Parameters

Location:	NEW HAVEN County, CT	Height (ft):	119
Code:	ANSI/TIA-222-G	Base Diameter (in):	57.00
Shape:	18 Sides	Top Diameter (in):	27.46
Pole Type:	Taper	Taper (in/ft) :	0.257
Pole Manufacturer:	TransAmerican	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	94 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	1.42		
T _L (sec):	6	p:	1.3
S _s :	0.192	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.205	S _{d1} :	0.102
		C _s :	0.048
		C _s Max:	0.048
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	94 mph with No Ice
0.9D + 1.6W	94 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:53 PM

Customer: VERIZON WIRELESS

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	42.250	0.3125	65		0.00	7,309	57.00	0.00	56.22	22827.4	30.75	182.40	46.13	42.25	45.45	12056.0	24.62	147.63	0.257182
2-18	43.000	0.3125	65	Slip	81.00	6,190	48.49	35.50	47.79	14017.3	25.95	155.18	37.43	78.50	36.82	6411.4	19.71	119.80	0.257182
3-18	46.000	0.2188	65	Slip	66.00	3,604	39.28	73.00	27.13	5232.5	30.25	179.56	27.45	119.00	18.92	1773.3	20.72	125.49	0.257182
Shaft Weight						17,103													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
118.00	CCI HPA-65R-BUU-H8	12	68.00	12.980	0.67	350.61	14.552	0.67	0.000	0.000
118.00	Ericsson RRUS 12	9	50.00	3.150	0.67	142.50	3.845	0.67	0.000	0.000
118.00	Ericsson RRUS 32 (50.8 lbs)	3	50.80	2.690	0.67	133.61	3.398	0.67	0.000	0.000
118.00	Ericsson RRUS A2 B2	6	22.00	2.060	0.67	75.60	2.647	0.67	0.000	0.000
118.00	Ericsson RRUS-11	9	55.00	3.790	0.67	157.10	4.562	0.67	0.000	0.000
118.00	Raycap DC6-48-60-18-8F	4	20.00	1.110	1.00	98.03	2.505	1.00	0.000	0.000
118.00	Round Platform w/ Handrails	1	2000.00	27.200	1.00	3,266.03	51.083	1.00	0.000	0.000
106.00	Alcatel-Lucent B13 RRH4x30-	3	57.20	2.170	0.67	135.76	2.780	0.67	0.000	0.000
106.00	Alcatel-Lucent B66 RRH4x45	3	67.00	2.580	0.67	148.78	3.254	0.67	0.000	0.000
106.00	Alcatel-Lucent RRH4x30W-	3	55.10	1.970	0.50	118.46	2.554	0.50	0.000	0.000
106.00	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.570	0.66	184.01	8.789	0.66	0.000	0.000
106.00	Commscope JAHH-45B-R3B	2	83.80	11.400	0.63	331.06	12.790	0.63	0.000	0.000
106.00	Commscope JAHH-65B-R3B	4	60.60	9.110	0.69	281.77	10.408	0.69	0.000	0.000
106.00	Nokia B5 RRH4x40-850	3	48.50	1.320	0.50	97.76	1.785	0.50	0.000	0.000
106.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,126.77	40.273	1.00	0.000	0.000
Totals		66	6769.80			17,386.62			Number of Loadings : 15	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	118.00	2	0.40" Fiber Cable	0.40	0.09	N	0.00	N	AT&T Mobility
0.00	118.00	8	0.63" (15.9mm) Cable	0.63	0.31	N	0.00	N	AT&T Mobility
0.00	118.00	3	1/2" Coax	0.63	0.15	N	0.00	N	AT&T Mobility
0.00	106.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon Wireless
0.00	106.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon Wireless

Site Number: 283423

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10/25/2017 1:55:53 PM

Customer: VERIZON WIRELESS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3125	57.000	56.225	22,827.4	30.75	182.40	65.2	788.8	0.0	0.0
5.00		0.3125	55.714	54.949	21,308.9	30.03	178.29	66.1	753.3	0.0	945.8
10.00		0.3125	54.428	53.674	19,859.3	29.30	174.17	66.9	718.7	0.0	924.1
15.00		0.3125	53.142	52.399	18,477.0	28.57	170.06	67.8	684.8	0.0	902.4
20.00		0.3125	51.856	51.123	17,160.3	27.85	165.94	68.6	651.8	0.0	880.7
25.00		0.3125	50.570	49.848	15,907.8	27.12	161.83	69.5	619.6	0.0	859.0
30.00		0.3125	49.285	48.572	14,717.7	26.40	157.71	70.4	588.2	0.0	837.3
35.00		0.3125	47.999	47.297	13,588.5	25.67	153.60	71.2	557.6	0.0	815.6
35.50	Bot - Section 2	0.3125	47.870	47.169	13,478.9	25.60	153.18	71.3	554.6	0.0	80.4
40.00		0.3125	46.713	46.022	12,518.6	24.95	149.48	72.1	527.8	0.0	1,436.5
42.25	Top - Section 1	0.3125	46.759	46.068	12,556.1	24.97	149.63	72.0	528.9	0.0	705.1
45.00		0.3125	46.052	45.366	11,991.2	24.57	147.37	72.5	512.9	0.0	427.8
50.00		0.3125	44.766	44.091	11,008.0	23.85	143.25	73.4	484.3	0.0	761.0
55.00		0.3125	43.480	42.815	10,080.1	23.12	139.14	74.2	456.6	0.0	739.3
60.00		0.3125	42.194	41.540	9,205.9	22.40	135.02	75.1	429.7	0.0	717.6
65.00		0.3125	40.908	40.264	8,383.7	21.67	130.91	75.9	403.7	0.0	695.9
70.00		0.3125	39.622	38.989	7,612.0	20.95	126.79	76.8	378.4	0.0	674.2
73.00	Bot - Section 3	0.3125	38.851	38.224	7,172.5	20.51	124.32	77.3	363.6	0.0	394.1
75.00		0.3125	38.336	37.714	6,889.1	20.22	122.68	77.6	353.9	0.0	441.8
78.50	Top - Section 2	0.2188	37.874	26.149	4,684.5	29.11	173.10	67.2	243.6	0.0	759.0
80.00		0.2188	37.488	25.882	4,542.0	28.80	171.33	67.5	238.6	0.0	132.8
85.00		0.2188	36.202	24.989	4,087.9	27.76	165.46	68.7	222.4	0.0	432.7
90.00		0.2188	34.916	24.096	3,665.1	26.73	159.58	70.0	206.7	0.0	417.6
95.00		0.2188	33.630	23.203	3,272.5	25.69	153.70	71.2	191.7	0.0	402.4
100.0		0.2188	32.344	22.310	2,909.0	24.66	147.83	72.4	177.1	0.0	387.2
105.0		0.2188	31.059	21.417	2,573.5	23.62	141.95	73.6	163.2	0.0	372.0
106.0		0.2188	30.801	21.238	2,509.6	23.41	140.77	73.9	160.5	0.0	72.6
110.0		0.2188	29.773	20.524	2,264.8	22.58	136.07	74.8	149.8	0.0	284.2
115.0		0.2188	28.487	19.631	1,981.9	21.55	130.20	76.1	137.0	0.0	341.6
118.0		0.2188	27.715	19.095	1,824.0	20.92	126.67	76.8	129.6	0.0	197.7
119.0		0.2188	27.458	18.916	1,773.3	20.72	125.49	77.0	127.2	0.0	64.7

17,102.5

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10/25/2017 1:55:53 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W	94 mph with No Ice	19 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		205.2	0.0					0.0	0.0	205.2	0.0	0.0	0.0
5.00		405.6	1,134.9					0.0	67.5	405.6	1,202.4	0.0	0.0
10.00		396.3	1,108.9					0.0	67.5	396.3	1,176.4	0.0	0.0
15.00		386.9	1,082.8					0.0	67.5	386.9	1,150.3	0.0	0.0
20.00		377.6	1,056.8					0.0	67.5	377.6	1,124.3	0.0	0.0
25.00		368.2	1,030.7					0.0	67.5	368.2	1,098.2	0.0	0.0
30.00		363.1	1,004.7					0.0	67.5	363.1	1,072.2	0.0	0.0
35.00		199.6	978.7					0.0	67.5	199.6	1,046.2	0.0	0.0
35.50	Bot - Section 2	186.1	96.4					0.0	6.8	186.1	103.2	0.0	0.0
40.00		252.2	1,723.8					0.0	60.8	252.2	1,784.5	0.0	0.0
42.25	Top - Section 1	187.9	846.1					0.0	30.4	187.9	876.4	0.0	0.0
45.00		292.2	513.4					0.0	37.1	292.2	550.5	0.0	0.0
50.00		377.3	913.2					0.0	67.5	377.3	980.7	0.0	0.0
55.00		376.6	887.2					0.0	67.5	376.6	954.7	0.0	0.0
60.00		374.7	861.1					0.0	67.5	374.7	928.6	0.0	0.0
65.00		371.7	835.1					0.0	67.5	371.7	902.6	0.0	0.0
70.00		294.9	809.0					0.0	67.5	294.9	876.5	0.0	0.0
73.00	Bot - Section 3	183.6	472.9					0.0	40.5	183.6	513.4	0.0	0.0
75.00		201.5	530.2					0.0	27.0	201.5	557.2	0.0	0.0
78.50	Top - Section 2	182.2	910.8					0.0	47.3	182.2	958.0	0.0	0.0
80.00		233.6	159.3					0.0	20.3	233.6	179.6	0.0	0.0
85.00		355.1	519.3					0.0	67.5	355.1	586.8	0.0	0.0
90.00		348.2	501.1					0.0	67.5	348.2	568.6	0.0	0.0
95.00		340.6	482.8					0.0	67.5	340.6	550.3	0.0	0.0
100.00		332.4	464.6					0.0	67.5	332.4	532.1	0.0	0.0
105.00		196.4	446.4					0.0	67.5	196.4	513.9	0.0	0.0
106.00	Appertunance(s)	159.6	87.1	2,921.8	0.0	0.0	3,173.3	0.0	13.5	3,081.4	3,273.9	0.0	0.0
110.00		282.1	341.1					0.0	14.9	282.1	356.0	0.0	0.0
115.00		245.4	409.9					0.0	18.7	245.4	428.6	0.0	0.0
118.00	Appertunance(s)	120.3	237.2	5,895.6	0.0	0.0	4,950.5	0.0	11.2	6,015.8	5,198.9	0.0	0.0
119.00		29.8	77.6					0.0	0.0	29.8	77.6	0.0	0.0
Totals:										17,443.8	30,122.5	0.00	0.00

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Load Case: 1.2D + 1.6W

94 mph with No Ice

19 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.11	-17.26	0.00	-1,529.22	0.00	1,529.22	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.405
5.00	-28.88	-16.90	0.00	-1,442.91	0.00	1,442.91	3,268.21	1,634.11	7,456.37	3,733.73	0.05	-0.09	0.395
10.00	-27.68	-16.55	0.00	-1,358.39	0.00	1,358.39	3,233.58	1,616.79	7,205.16	3,607.94	0.20	-0.19	0.385
15.00	-26.50	-16.20	0.00	-1,275.64	0.00	1,275.64	3,196.98	1,598.49	6,953.38	3,481.86	0.44	-0.28	0.375
20.00	-25.35	-15.86	0.00	-1,194.63	0.00	1,194.63	3,158.43	1,579.22	6,701.34	3,355.65	0.79	-0.38	0.364
25.00	-24.23	-15.52	0.00	-1,115.34	0.00	1,115.34	3,117.92	1,558.96	6,449.35	3,229.47	1.23	-0.47	0.353
30.00	-23.14	-15.19	0.00	-1,037.71	0.00	1,037.71	3,075.45	1,537.73	6,197.73	3,103.47	1.78	-0.57	0.342
35.00	-22.08	-15.00	0.00	-961.76	0.00	961.76	3,031.02	1,515.51	5,946.79	2,977.82	2.43	-0.66	0.330
35.50	-21.96	-14.83	0.00	-954.26	0.00	954.26	3,026.47	1,513.24	5,921.75	2,965.28	2.50	-0.67	0.329
40.00	-20.17	-14.58	0.00	-887.52	0.00	887.52	2,984.63	1,492.32	5,696.84	2,852.66	3.18	-0.76	0.318
42.25	-19.28	-14.40	0.00	-854.72	0.00	854.72	2,986.34	1,493.17	5,705.83	2,857.16	3.55	-0.81	0.306
45.00	-18.72	-14.12	0.00	-815.13	0.00	815.13	2,960.03	1,480.01	5,568.87	2,788.57	4.03	-0.86	0.299
50.00	-17.72	-13.76	0.00	-744.52	0.00	744.52	2,910.67	1,455.34	5,321.02	2,664.46	4.98	-0.95	0.286
55.00	-16.75	-13.39	0.00	-675.74	0.00	675.74	2,859.36	1,429.68	5,074.95	2,541.25	6.03	-1.04	0.272
60.00	-15.81	-13.02	0.00	-608.79	0.00	608.79	2,806.09	1,403.04	4,830.97	2,419.08	7.17	-1.14	0.257
65.00	-14.89	-12.66	0.00	-543.68	0.00	543.68	2,750.86	1,375.43	4,589.40	2,298.11	8.41	-1.22	0.242
70.00	-14.01	-12.36	0.00	-480.40	0.00	480.40	2,693.67	1,346.83	4,350.55	2,178.51	9.74	-1.31	0.226
73.00	-13.49	-12.17	0.00	-443.33	0.00	443.33	2,658.41	1,329.21	4,208.67	2,107.46	10.58	-1.36	0.216
75.00	-12.93	-11.97	0.00	-418.98	0.00	418.98	2,634.52	1,317.26	4,114.73	2,060.42	11.16	-1.40	0.208
78.50	-11.97	-11.77	0.00	-377.09	0.00	377.09	1,580.60	790.30	2,450.56	1,227.10	12.20	-1.45	0.315
80.00	-11.78	-11.55	0.00	-359.44	0.00	359.44	1,572.92	786.46	2,413.53	1,208.56	12.66	-1.48	0.305
85.00	-11.19	-11.19	0.00	-301.71	0.00	301.71	1,546.06	773.03	2,289.99	1,146.70	14.27	-1.58	0.271
90.00	-10.61	-10.85	0.00	-245.73	0.00	245.73	1,517.24	758.62	2,166.51	1,084.86	15.98	-1.68	0.234
95.00	-10.06	-10.50	0.00	-191.50	0.00	191.50	1,486.46	743.23	2,043.40	1,023.22	17.79	-1.76	0.194
100.00	-9.52	-10.17	0.00	-138.97	0.00	138.97	1,453.73	726.86	1,920.99	961.92	19.67	-1.83	0.151
105.00	-9.01	-9.96	0.00	-88.15	0.00	88.15	1,419.03	709.52	1,799.58	901.13	21.63	-1.89	0.104
106.00	-5.84	-6.77	0.00	-78.19	0.00	78.19	1,411.86	705.93	1,775.44	889.04	22.02	-1.90	0.092
110.00	-5.49	-6.48	0.00	-51.10	0.00	51.10	1,382.37	691.19	1,679.48	840.99	23.63	-1.93	0.065
115.00	-5.07	-6.22	0.00	-18.70	0.00	18.70	1,343.76	671.88	1,561.01	781.66	25.66	-1.95	0.028
118.00	-0.08	-0.03	0.00	-0.03	0.00	0.03	1,319.65	659.83	1,490.84	746.53	26.89	-1.95	0.000
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	27.30	-1.95	0.000

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Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W	94 mph with No Ice (Reduced DL)	19 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		205.2	0.0					0.0	0.0	205.2	0.0	0.0	0.0
5.00		405.6	851.2					0.0	50.6	405.6	901.8	0.0	0.0
10.00		396.3	831.6					0.0	50.6	396.3	882.3	0.0	0.0
15.00		386.9	812.1					0.0	50.6	386.9	862.7	0.0	0.0
20.00		377.6	792.6					0.0	50.6	377.6	843.2	0.0	0.0
25.00		368.2	773.1					0.0	50.6	368.2	823.7	0.0	0.0
30.00		363.1	753.5					0.0	50.6	363.1	804.2	0.0	0.0
35.00		199.6	734.0					0.0	50.6	199.6	784.6	0.0	0.0
35.50	Bot - Section 2	186.1	72.3					0.0	5.1	186.1	77.4	0.0	0.0
40.00		252.2	1,292.8					0.0	45.6	252.2	1,338.4	0.0	0.0
42.25	Top - Section 1	187.9	634.6					0.0	22.8	187.9	657.3	0.0	0.0
45.00		292.2	385.0					0.0	27.8	292.2	412.9	0.0	0.0
50.00		377.3	684.9					0.0	50.6	377.3	735.5	0.0	0.0
55.00		376.6	665.4					0.0	50.6	376.6	716.0	0.0	0.0
60.00		374.7	645.8					0.0	50.6	374.7	696.5	0.0	0.0
65.00		371.7	626.3					0.0	50.6	371.7	676.9	0.0	0.0
70.00		294.9	606.8					0.0	50.6	294.9	657.4	0.0	0.0
73.00	Bot - Section 3	183.6	354.7					0.0	30.4	183.6	385.1	0.0	0.0
75.00		201.5	397.6					0.0	20.2	201.5	417.9	0.0	0.0
78.50	Top - Section 2	182.2	683.1					0.0	35.4	182.2	718.5	0.0	0.0
80.00		233.6	119.5					0.0	15.2	233.6	134.7	0.0	0.0
85.00		355.1	389.5					0.0	50.6	355.1	440.1	0.0	0.0
90.00		348.2	375.8					0.0	50.6	348.2	426.4	0.0	0.0
95.00		340.6	362.1					0.0	50.6	340.6	412.8	0.0	0.0
100.00		332.4	348.5					0.0	50.6	332.4	399.1	0.0	0.0
105.00		196.4	334.8					0.0	50.6	196.4	385.4	0.0	0.0
106.00	Appertunance(s)	159.6	65.3	2,921.8	0.0	0.0	2,380.0	0.0	10.1	3,081.4	2,455.4	0.0	0.0
110.00		282.1	255.8					0.0	11.2	282.1	267.0	0.0	0.0
115.00		245.4	307.4					0.0	14.0	245.4	321.4	0.0	0.0
118.00	Appertunance(s)	120.3	177.9	5,895.6	0.0	0.0	3,712.9	0.0	8.4	6,015.8	3,899.2	0.0	0.0
119.00		29.8	58.2					0.0	0.0	29.8	58.2	0.0	0.0
Totals:										17,443.8	22,591.9	0.00	0.00

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:54 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

94 mph with No Ice (Reduced DL)

19 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-22.58	-17.26	0.00	-1,521.59	0.00	1,521.59	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.401
5.00	-21.65	-16.89	0.00	-1,435.31	0.00	1,435.31	3,268.21	1,634.11	7,456.37	3,733.73	0.05	-0.09	0.391
10.00	-20.74	-16.52	0.00	-1,350.88	0.00	1,350.88	3,233.58	1,616.79	7,205.16	3,607.94	0.20	-0.19	0.381
15.00	-19.85	-16.16	0.00	-1,268.28	0.00	1,268.28	3,196.98	1,598.49	6,953.38	3,481.86	0.44	-0.28	0.371
20.00	-18.99	-15.81	0.00	-1,187.46	0.00	1,187.46	3,158.43	1,579.22	6,701.34	3,355.65	0.79	-0.37	0.360
25.00	-18.14	-15.47	0.00	-1,108.40	0.00	1,108.40	3,117.92	1,558.96	6,449.35	3,229.47	1.23	-0.47	0.349
30.00	-17.31	-15.13	0.00	-1,031.06	0.00	1,031.06	3,075.45	1,537.73	6,197.73	3,103.47	1.77	-0.56	0.338
35.00	-16.52	-14.93	0.00	-955.43	0.00	955.43	3,031.02	1,515.51	5,946.79	2,977.82	2.41	-0.66	0.326
35.50	-16.43	-14.76	0.00	-947.96	0.00	947.96	3,026.47	1,513.24	5,921.75	2,965.28	2.48	-0.67	0.325
40.00	-15.08	-14.51	0.00	-881.54	0.00	881.54	2,984.63	1,492.32	5,696.84	2,852.66	3.16	-0.76	0.314
42.25	-14.41	-14.32	0.00	-848.90	0.00	848.90	2,986.34	1,493.17	5,705.83	2,857.16	3.53	-0.80	0.302
45.00	-13.98	-14.04	0.00	-809.50	0.00	809.50	2,960.03	1,480.01	5,568.87	2,788.57	4.00	-0.86	0.295
50.00	-13.23	-13.68	0.00	-739.28	0.00	739.28	2,910.67	1,455.34	5,321.02	2,664.46	4.95	-0.95	0.282
55.00	-12.50	-13.31	0.00	-670.90	0.00	670.90	2,859.36	1,429.68	5,074.95	2,541.25	5.99	-1.04	0.268
60.00	-11.79	-12.94	0.00	-604.36	0.00	604.36	2,806.09	1,403.04	4,830.97	2,419.08	7.13	-1.13	0.254
65.00	-11.10	-12.57	0.00	-539.67	0.00	539.67	2,750.86	1,375.43	4,589.40	2,298.11	8.36	-1.22	0.239
70.00	-10.44	-12.27	0.00	-476.82	0.00	476.82	2,693.67	1,346.83	4,350.55	2,178.51	9.68	-1.30	0.223
73.00	-10.05	-12.09	0.00	-440.00	0.00	440.00	2,658.41	1,329.21	4,208.67	2,107.46	10.51	-1.35	0.213
75.00	-9.63	-11.88	0.00	-415.82	0.00	415.82	2,634.52	1,317.26	4,114.73	2,060.42	11.09	-1.39	0.206
78.50	-8.90	-11.69	0.00	-374.23	0.00	374.23	1,580.60	790.30	2,450.56	1,227.10	12.13	-1.45	0.311
80.00	-8.76	-11.46	0.00	-356.69	0.00	356.69	1,572.92	786.46	2,413.53	1,208.56	12.59	-1.47	0.301
85.00	-8.31	-11.11	0.00	-299.38	0.00	299.38	1,546.06	773.03	2,289.99	1,146.70	14.18	-1.57	0.267
90.00	-7.88	-10.76	0.00	-243.82	0.00	243.82	1,517.24	758.62	2,166.51	1,084.86	15.88	-1.67	0.230
95.00	-7.46	-10.42	0.00	-190.00	0.00	190.00	1,486.46	743.23	2,043.40	1,023.22	17.67	-1.75	0.191
100.00	-7.06	-10.08	0.00	-137.90	0.00	137.90	1,453.73	726.86	1,920.99	961.92	19.55	-1.82	0.148
105.00	-6.68	-9.88	0.00	-87.48	0.00	87.48	1,419.03	709.52	1,799.58	901.13	21.49	-1.88	0.102
106.00	-4.32	-6.72	0.00	-77.60	0.00	77.60	1,411.86	705.93	1,775.44	889.04	21.88	-1.89	0.090
110.00	-4.06	-6.43	0.00	-50.72	0.00	50.72	1,382.37	691.19	1,679.48	840.99	23.48	-1.92	0.063
115.00	-3.75	-6.18	0.00	-18.56	0.00	18.56	1,343.76	671.88	1,561.01	781.66	25.50	-1.94	0.027
118.00	-0.06	-0.03	0.00	-0.03	0.00	0.03	1,319.65	659.83	1,490.84	746.53	26.72	-1.94	0.000
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	27.12	-1.94	0.000

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:55 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 18 Iterations

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

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		69.7	0.0					0.0	0.0	69.7	0.0	0.0	0.0
5.00		138.2	1,547.8					0.0	67.5	138.2	1,615.3	0.0	0.0
10.00		135.6	1,560.4					0.0	67.5	135.6	1,627.9	0.0	0.0
15.00		132.8	1,547.6					0.0	67.5	132.8	1,615.1	0.0	0.0
20.00		129.9	1,526.5					0.0	67.5	129.9	1,594.0	0.0	0.0
25.00		127.0	1,501.1					0.0	67.5	127.0	1,568.6	0.0	0.0
30.00		125.6	1,473.0					0.0	67.5	125.6	1,540.5	0.0	0.0
35.00		69.1	1,443.0					0.0	67.5	69.1	1,510.5	0.0	0.0
35.50	Bot - Section 2	64.5	143.1					0.0	6.8	64.5	149.9	0.0	0.0
40.00		87.5	2,142.5					0.0	60.8	87.5	2,203.3	0.0	0.0
42.25	Top - Section 1	65.3	1,054.8					0.0	30.4	65.3	1,085.2	0.0	0.0
45.00		101.7	766.3					0.0	37.1	101.7	803.4	0.0	0.0
50.00		131.6	1,364.5					0.0	67.5	131.6	1,432.0	0.0	0.0
55.00		131.7	1,330.5					0.0	67.5	131.7	1,398.0	0.0	0.0
60.00		131.4	1,295.9					0.0	67.5	131.4	1,363.4	0.0	0.0
65.00		130.7	1,260.8					0.0	67.5	130.7	1,328.3	0.0	0.0
70.00		103.9	1,225.1					0.0	67.5	103.9	1,292.6	0.0	0.0
73.00	Bot - Section 3	64.8	719.4					0.0	40.5	64.8	759.9	0.0	0.0
75.00		71.2	694.8					0.0	27.0	71.2	721.8	0.0	0.0
78.50	Top - Section 2	64.5	1,193.5					0.0	47.3	64.5	1,240.7	0.0	0.0
80.00		82.9	279.7					0.0	20.3	82.9	300.0	0.0	0.0
85.00		126.3	908.9					0.0	67.5	126.3	976.4	0.0	0.0
90.00		124.3	879.8					0.0	67.5	124.3	947.3	0.0	0.0
95.00		122.0	850.3					0.0	67.5	122.0	917.8	0.0	0.0
100.00		119.6	820.7					0.0	67.5	119.6	888.2	0.0	0.0
105.00		70.8	790.8					0.0	67.5	70.8	858.3	0.0	0.0
106.00	Appertunance(s)	57.8	155.6	705.5	0.0	0.0	6,299.2	0.0	13.5	763.3	6,468.3	0.0	0.0
110.00		102.5	607.2					0.0	14.9	102.5	622.1	0.0	0.0
115.00		89.4	730.4					0.0	18.7	89.4	749.0	0.0	0.0
118.00	Appertunance(s)	44.0	425.2	1,368.3	0.0	0.0	11,841.4	0.0	11.2	1,412.3	12,277.8	0.0	0.0
119.00		10.9	139.9					0.0	0.0	10.9	139.9	0.0	0.0
Totals:										5,101.43	49,995.4	0.00	0.00

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:55 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W	Serviceability 60 mph	18 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		52.2	0.0					0.0	0.0	52.2	0.0	0.0	0.0
5.00		103.3	945.8					0.0	56.3	103.3	1,002.0	0.0	0.0
10.00		100.9	924.1					0.0	56.3	100.9	980.3	0.0	0.0
15.00		98.5	902.4					0.0	56.3	98.5	958.6	0.0	0.0
20.00		96.1	880.7					0.0	56.3	96.1	936.9	0.0	0.0
25.00		93.8	859.0					0.0	56.3	93.8	915.2	0.0	0.0
30.00		92.5	837.3					0.0	56.3	92.5	893.5	0.0	0.0
35.00		50.8	815.6					0.0	56.3	50.8	871.8	0.0	0.0
35.50	Bot - Section 2	47.4	80.4					0.0	5.6	47.4	86.0	0.0	0.0
40.00		64.2	1,436.5					0.0	50.6	64.2	1,487.1	0.0	0.0
42.25	Top - Section 1	47.8	705.1					0.0	25.3	47.8	730.4	0.0	0.0
45.00		74.4	427.8					0.0	30.9	74.4	458.7	0.0	0.0
50.00		96.1	761.0					0.0	56.3	96.1	817.3	0.0	0.0
55.00		95.9	739.3					0.0	56.3	95.9	795.6	0.0	0.0
60.00		95.4	717.6					0.0	56.3	95.4	773.9	0.0	0.0
65.00		94.6	695.9					0.0	56.3	94.6	752.2	0.0	0.0
70.00		75.1	674.2					0.0	56.3	75.1	730.5	0.0	0.0
73.00	Bot - Section 3	46.7	394.1					0.0	33.8	46.7	427.9	0.0	0.0
75.00		51.3	441.8					0.0	22.5	51.3	464.3	0.0	0.0
78.50	Top - Section 2	46.4	759.0					0.0	39.4	46.4	798.4	0.0	0.0
80.00		59.5	132.8					0.0	16.9	59.5	149.7	0.0	0.0
85.00		90.4	432.7					0.0	56.3	90.4	489.0	0.0	0.0
90.00		88.7	417.6					0.0	56.3	88.7	473.8	0.0	0.0
95.00		86.7	402.4					0.0	56.3	86.7	458.6	0.0	0.0
100.00		84.6	387.2					0.0	56.3	84.6	443.4	0.0	0.0
105.00		50.0	372.0					0.0	56.3	50.0	428.2	0.0	0.0
106.00	Appertunance(s)	40.6	72.6	744.0	0.0	0.0	2,644.4	0.0	11.3	784.6	2,728.2	0.0	0.0
110.00		71.8	284.2					0.0	12.4	71.8	296.7	0.0	0.0
115.00		62.5	341.6					0.0	15.5	62.5	357.1	0.0	0.0
118.00	Appertunance(s)	30.6	197.7	1,501.2	0.0	0.0	4,125.4	0.0	9.3	1,531.9	4,332.4	0.0	0.0
119.00		7.6	64.7					0.0	0.0	7.6	64.7	0.0	0.0
Totals:										4,441.90	25,102.1	0.00	0.00

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

18 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.10	-4.39	0.00	-388.11	0.00	388.11	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.108
5.00	-24.10	-4.30	0.00	-366.14	0.00	366.14	3,268.21	1,634.11	7,456.37	3,733.73	0.01	-0.02	0.105
10.00	-23.12	-4.21	0.00	-344.64	0.00	344.64	3,233.58	1,616.79	7,205.16	3,607.94	0.05	-0.05	0.103
15.00	-22.16	-4.12	0.00	-323.60	0.00	323.60	3,196.98	1,598.49	6,953.38	3,481.86	0.11	-0.07	0.100
20.00	-21.22	-4.03	0.00	-303.00	0.00	303.00	3,158.43	1,579.22	6,701.34	3,355.65	0.20	-0.10	0.097
25.00	-20.30	-3.94	0.00	-282.86	0.00	282.86	3,117.92	1,558.96	6,449.35	3,229.47	0.31	-0.12	0.094
30.00	-19.41	-3.86	0.00	-263.14	0.00	263.14	3,075.45	1,537.73	6,197.73	3,103.47	0.45	-0.14	0.091
35.00	-18.53	-3.81	0.00	-243.86	0.00	243.86	3,031.02	1,515.51	5,946.79	2,977.82	0.62	-0.17	0.088
35.50	-18.45	-3.76	0.00	-241.95	0.00	241.95	3,026.47	1,513.24	5,921.75	2,965.28	0.63	-0.17	0.088
40.00	-16.96	-3.70	0.00	-225.01	0.00	225.01	2,984.63	1,492.32	5,696.84	2,852.66	0.81	-0.19	0.085
42.25	-16.23	-3.65	0.00	-216.69	0.00	216.69	2,986.34	1,493.17	5,705.83	2,857.16	0.90	-0.20	0.081
45.00	-15.77	-3.58	0.00	-206.64	0.00	206.64	2,960.03	1,480.01	5,568.87	2,788.57	1.02	-0.22	0.079
50.00	-14.95	-3.49	0.00	-188.73	0.00	188.73	2,910.67	1,455.34	5,321.02	2,664.46	1.26	-0.24	0.076
55.00	-14.15	-3.40	0.00	-171.28	0.00	171.28	2,859.36	1,429.68	5,074.95	2,541.25	1.53	-0.26	0.072
60.00	-13.38	-3.30	0.00	-154.30	0.00	154.30	2,806.09	1,403.04	4,830.97	2,419.08	1.82	-0.29	0.069
65.00	-12.62	-3.21	0.00	-137.79	0.00	137.79	2,750.86	1,375.43	4,589.40	2,298.11	2.13	-0.31	0.065
70.00	-11.89	-3.13	0.00	-121.75	0.00	121.75	2,693.67	1,346.83	4,350.55	2,178.51	2.47	-0.33	0.060
73.00	-11.47	-3.09	0.00	-112.35	0.00	112.35	2,658.41	1,329.21	4,208.67	2,107.46	2.68	-0.35	0.058
75.00	-11.00	-3.03	0.00	-106.18	0.00	106.18	2,634.52	1,317.26	4,114.73	2,060.42	2.83	-0.35	0.056
78.50	-10.20	-2.98	0.00	-95.57	0.00	95.57	1,580.60	790.30	2,450.56	1,227.10	3.10	-0.37	0.084
80.00	-10.05	-2.93	0.00	-91.09	0.00	91.09	1,572.92	786.46	2,413.53	1,208.56	3.21	-0.38	0.082
85.00	-9.56	-2.84	0.00	-76.46	0.00	76.46	1,546.06	773.03	2,289.99	1,146.70	3.62	-0.40	0.073
90.00	-9.09	-2.75	0.00	-62.27	0.00	62.27	1,517.24	758.62	2,166.51	1,084.86	4.05	-0.43	0.063
95.00	-8.63	-2.66	0.00	-48.53	0.00	48.53	1,486.46	743.23	2,043.40	1,023.22	4.51	-0.45	0.053
100.00	-8.19	-2.58	0.00	-35.22	0.00	35.22	1,453.73	726.86	1,920.99	961.92	4.99	-0.47	0.042
105.00	-7.76	-2.52	0.00	-22.34	0.00	22.34	1,419.03	709.52	1,799.58	901.13	5.48	-0.48	0.030
106.00	-5.04	-1.72	0.00	-19.82	0.00	19.82	1,411.86	705.93	1,775.44	889.04	5.59	-0.48	0.026
110.00	-4.74	-1.64	0.00	-12.95	0.00	12.95	1,382.37	691.19	1,679.48	840.99	5.99	-0.49	0.019
115.00	-4.38	-1.58	0.00	-4.74	0.00	4.74	1,343.76	671.88	1,561.01	781.66	6.51	-0.49	0.009
118.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	1,319.65	659.83	1,490.84	746.53	6.82	-0.50	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	6.92	-0.50	0.000

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_{ps}):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_{p1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.05
Upper Limit C_s	0.05
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.42
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.46
Total Unfactored Dead Load:	25.10 k
Seismic Base Shear (E):	1.56 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
30	118.50	65	70	0.005	8	80
29	116.50	207	218	0.017	26	257
28	112.50	357	357	0.027	43	443
27	108.00	297	279	0.021	33	368
26	105.50	84	76	0.006	9	104
25	102.50	428	373	0.029	45	531
24	97.50	443	359	0.027	43	550
23	92.50	459	344	0.026	41	569
22	87.50	474	328	0.025	39	588
21	82.50	489	310	0.024	37	607
20	79.25	150	90	0.007	11	186
19	76.75	798	456	0.035	54	991
18	74.00	464	251	0.019	30	576
17	71.50	428	220	0.017	26	531
16	67.50	730	346	0.026	41	906
15	62.50	752	318	0.024	38	933
14	57.50	774	290	0.022	35	960
13	52.50	796	261	0.020	31	987
12	47.50	817	231	0.018	28	1,014
11	43.63	459	115	0.009	14	569
10	41.13	730	167	0.013	20	906
9	37.75	1,487	301	0.023	36	1,845
8	35.25	86	16	0.001	2	107

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

7	32.50	872	142	0.011	17	1,082
6	27.50	894	114	0.009	14	1,109
5	22.50	915	87	0.007	10	1,136
4	17.50	937	62	0.005	7	1,163
3	12.50	959	39	0.003	5	1,190
2	7.50	980	19	0.001	2	1,217
1	2.50	1,002	4	0.000	0	1,243
Raycap DC6-48-60-18-	118.00	80	86	0.007	10	99
Ericsson RRUS A2 B2	118.00	132	141	0.011	17	164
Ericsson RRUS 32 (50	118.00	152	163	0.012	20	189
Ericsson RRUS 12	118.00	450	482	0.037	58	558
Ericsson RRUS-11	118.00	495	530	0.041	63	614
CCI HPA-65R-BUU-H8	118.00	816	874	0.067	104	1,013
Round Platform w/ Ha	118.00	2,000	2,143	0.164	256	2,482
Nokia B5 RRH4x40-850	106.00	146	133	0.010	16	181
Alcatel-Lucent RRH4x	106.00	165	151	0.012	18	205
Alcatel-Lucent B13 R	106.00	172	157	0.012	19	213
Alcatel-Lucent B66 R	106.00	201	184	0.014	22	249
Antel BXA-70063-6CF-	106.00	51	47	0.004	6	63
Commscope JAHH-65B-R	106.00	242	222	0.017	27	301
Commscope JAHH-45B-R	106.00	168	153	0.012	18	208
Round Low Profile PI	106.00	1,500	1,374	0.105	164	1,861
		25,102	13,082	1.000	1,564	31,151

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

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)
30	118.50	65	70	0.005	8	56
29	116.50	207	218	0.017	26	178
28	112.50	357	357	0.027	43	307
27	108.00	297	279	0.021	33	255
26	105.50	84	76	0.006	9	72
25	102.50	428	373	0.029	45	368
24	97.50	443	359	0.027	43	381
23	92.50	459	344	0.026	41	394
22	87.50	474	328	0.025	39	407
21	82.50	489	310	0.024	37	420
20	79.25	150	90	0.007	11	129
19	76.75	798	456	0.035	54	686
18	74.00	464	251	0.019	30	399
17	71.50	428	220	0.017	26	368
16	67.50	730	346	0.026	41	627
15	62.50	752	318	0.024	38	646
14	57.50	774	290	0.022	35	665
13	52.50	796	261	0.020	31	683
12	47.50	817	231	0.018	28	702
11	43.63	459	115	0.009	14	394
10	41.13	730	167	0.013	20	627
9	37.75	1,487	301	0.023	36	1,277
8	35.25	86	16	0.001	2	74
7	32.50	872	142	0.011	17	749
6	27.50	894	114	0.009	14	768
5	22.50	915	87	0.007	10	786
4	17.50	937	62	0.005	7	805
3	12.50	959	39	0.003	5	823
2	7.50	980	19	0.001	2	842
1	2.50	1,002	4	0.000	0	861
Raycap DC6-48-60-18-	118.00	80	86	0.007	10	69
Ericsson RRUS A2 B2	118.00	132	141	0.011	17	113

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number:OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Ericsson RRUS 32 (50	118.00	152	163	0.012	20	131
Ericsson RRUS 12	118.00	450	482	0.037	58	387
Ericsson RRUS-11	118.00	495	530	0.041	63	425
CCI HPA-65R-BUU-H8	118.00	816	874	0.067	104	701
Round Platform w/ Ha	118.00	2,000	2,143	0.164	256	1,718
Nokia B5 RRH4x40-850	106.00	146	133	0.010	16	125
Alcatel-Lucent RRH4x	106.00	165	151	0.012	18	142
Alcatel-Lucent B13 R	106.00	172	157	0.012	19	147
Alcatel-Lucent B66 R	106.00	201	184	0.014	22	173
Antel BXA-70063-6CF-	106.00	51	47	0.004	6	44
Commscope JAHH-65B-R	106.00	242	222	0.017	27	208
Commscope JAHH-45B-R	106.00	168	153	0.012	18	144
Round Low Profile PI	106.00	1,500	1,374	0.105	164	1,289
		25,102	13,082	1.000	1,564	21,564

Site Number: 283423

Code: ANSI/TIA-222-G

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Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

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	-29.91	-1.57	0.00	-150.16	0.00	150.16	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.048
5.00	-28.69	-1.57	0.00	-142.34	0.00	142.34	3,268.21	1,634.11	7,456.37	3,733.73	0.00	-0.01	0.047
10.00	-27.50	-1.57	0.00	-134.50	0.00	134.50	3,233.58	1,616.79	7,205.16	3,607.94	0.02	-0.02	0.046
15.00	-26.34	-1.56	0.00	-126.67	0.00	126.67	3,196.98	1,598.49	6,953.38	3,481.86	0.04	-0.03	0.045
20.00	-25.20	-1.56	0.00	-118.85	0.00	118.85	3,158.43	1,579.22	6,701.34	3,355.65	0.08	-0.04	0.043
25.00	-24.09	-1.55	0.00	-111.06	0.00	111.06	3,117.92	1,558.96	6,449.35	3,229.47	0.12	-0.05	0.042
30.00	-23.01	-1.53	0.00	-103.33	0.00	103.33	3,075.45	1,537.73	6,197.73	3,103.47	0.18	-0.06	0.041
35.00	-22.90	-1.53	0.00	-95.67	0.00	95.67	3,031.02	1,515.51	5,946.79	2,977.82	0.24	-0.07	0.040
35.50	-21.06	-1.50	0.00	-94.91	0.00	94.91	3,026.47	1,513.24	5,921.75	2,965.28	0.25	-0.07	0.039
40.00	-20.15	-1.48	0.00	-88.17	0.00	88.17	2,984.63	1,492.32	5,696.84	2,852.66	0.31	-0.08	0.038
42.25	-19.58	-1.46	0.00	-84.85	0.00	84.85	2,986.34	1,493.17	5,705.83	2,857.16	0.35	-0.08	0.036
45.00	-18.57	-1.44	0.00	-80.82	0.00	80.82	2,960.03	1,480.01	5,568.87	2,788.57	0.40	-0.09	0.035
50.00	-17.58	-1.41	0.00	-73.63	0.00	73.63	2,910.67	1,455.34	5,321.02	2,664.46	0.49	-0.09	0.034
55.00	-16.62	-1.37	0.00	-66.59	0.00	66.59	2,859.36	1,429.68	5,074.95	2,541.25	0.60	-0.10	0.032
60.00	-15.69	-1.34	0.00	-59.72	0.00	59.72	2,806.09	1,403.04	4,830.97	2,419.08	0.71	-0.11	0.030
65.00	-14.78	-1.30	0.00	-53.04	0.00	53.04	2,750.86	1,375.43	4,589.40	2,298.11	0.83	-0.12	0.028
70.00	-14.25	-1.27	0.00	-46.56	0.00	46.56	2,693.67	1,346.83	4,350.55	2,178.51	0.96	-0.13	0.027
73.00	-13.67	-1.24	0.00	-42.75	0.00	42.75	2,658.41	1,329.21	4,208.67	2,107.46	1.05	-0.13	0.025
75.00	-12.68	-1.18	0.00	-40.27	0.00	40.27	2,634.52	1,317.26	4,114.73	2,060.42	1.11	-0.14	0.024
78.50	-12.50	-1.17	0.00	-36.13	0.00	36.13	1,580.60	790.30	2,450.56	1,227.10	1.21	-0.14	0.037
80.00	-11.89	-1.14	0.00	-34.37	0.00	34.37	1,572.92	786.46	2,413.53	1,208.56	1.25	-0.15	0.036
85.00	-11.30	-1.10	0.00	-28.69	0.00	28.69	1,546.06	773.03	2,289.99	1,146.70	1.41	-0.16	0.032
90.00	-10.73	-1.06	0.00	-23.20	0.00	23.20	1,517.24	758.62	2,166.51	1,084.86	1.58	-0.16	0.028
95.00	-10.18	-1.01	0.00	-17.92	0.00	17.92	1,486.46	743.23	2,043.40	1,023.22	1.76	-0.17	0.024
100.00	-9.65	-0.97	0.00	-12.86	0.00	12.86	1,453.73	726.86	1,920.99	961.92	1.94	-0.18	0.020
105.00	-9.55	-0.96	0.00	-8.02	0.00	8.02	1,419.03	709.52	1,799.58	901.13	2.13	-0.18	0.016
106.00	-5.90	-0.62	0.00	-7.06	0.00	7.06	1,411.86	705.93	1,775.44	889.04	2.17	-0.19	0.012
110.00	-5.45	-0.58	0.00	-4.56	0.00	4.56	1,382.37	691.19	1,679.48	840.99	2.33	-0.19	0.009
115.00	-5.20	-0.55	0.00	-1.66	0.00	1.66	1,343.76	671.88	1,561.01	781.66	2.53	-0.19	0.006
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,319.65	659.83	1,490.84	746.53	2.65	-0.19	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	2.69	-0.19	0.000

Site Number: 283423

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Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Load Case (0.9 - 0.2Sds) * DL + E ELMF 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	-20.70	-1.56	0.00	-149.26	0.00	149.26	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.045
5.00	-19.86	-1.57	0.00	-141.44	0.00	141.44	3,268.21	1,634.11	7,456.37	3,733.73	0.00	-0.01	0.044
10.00	-19.04	-1.56	0.00	-133.61	0.00	133.61	3,233.58	1,616.79	7,205.16	3,607.94	0.02	-0.02	0.043
15.00	-18.23	-1.56	0.00	-125.79	0.00	125.79	3,196.98	1,598.49	6,953.38	3,481.86	0.04	-0.03	0.042
20.00	-17.45	-1.55	0.00	-118.00	0.00	118.00	3,158.43	1,579.22	6,701.34	3,355.65	0.08	-0.04	0.041
25.00	-16.68	-1.54	0.00	-110.24	0.00	110.24	3,117.92	1,558.96	6,449.35	3,229.47	0.12	-0.05	0.039
30.00	-15.93	-1.52	0.00	-102.54	0.00	102.54	3,075.45	1,537.73	6,197.73	3,103.47	0.17	-0.06	0.038
35.00	-15.85	-1.52	0.00	-94.92	0.00	94.92	3,031.02	1,515.51	5,946.79	2,977.82	0.24	-0.07	0.037
35.50	-14.58	-1.49	0.00	-94.16	0.00	94.16	3,026.47	1,513.24	5,921.75	2,965.28	0.25	-0.07	0.037
40.00	-13.95	-1.47	0.00	-87.46	0.00	87.46	2,984.63	1,492.32	5,696.84	2,852.66	0.31	-0.08	0.035
42.25	-13.55	-1.46	0.00	-84.16	0.00	84.16	2,986.34	1,493.17	5,705.83	2,857.16	0.35	-0.08	0.034
45.00	-12.85	-1.43	0.00	-80.16	0.00	80.16	2,960.03	1,480.01	5,568.87	2,788.57	0.40	-0.08	0.033
50.00	-12.17	-1.40	0.00	-73.01	0.00	73.01	2,910.67	1,455.34	5,321.02	2,664.46	0.49	-0.09	0.032
55.00	-11.50	-1.36	0.00	-66.02	0.00	66.02	2,859.36	1,429.68	5,074.95	2,541.25	0.59	-0.10	0.030
60.00	-10.86	-1.33	0.00	-59.20	0.00	59.20	2,806.09	1,403.04	4,830.97	2,419.08	0.71	-0.11	0.028
65.00	-10.23	-1.29	0.00	-52.57	0.00	52.57	2,750.86	1,375.43	4,589.40	2,298.11	0.83	-0.12	0.027
70.00	-9.86	-1.26	0.00	-46.14	0.00	46.14	2,693.67	1,346.83	4,350.55	2,178.51	0.96	-0.13	0.025
73.00	-9.46	-1.23	0.00	-42.36	0.00	42.36	2,658.41	1,329.21	4,208.67	2,107.46	1.04	-0.13	0.024
75.00	-8.78	-1.17	0.00	-39.90	0.00	39.90	2,634.52	1,317.26	4,114.73	2,060.42	1.10	-0.14	0.023
78.50	-8.65	-1.16	0.00	-35.79	0.00	35.79	1,580.60	790.30	2,450.56	1,227.10	1.20	-0.14	0.035
80.00	-8.23	-1.13	0.00	-34.05	0.00	34.05	1,572.92	786.46	2,413.53	1,208.56	1.24	-0.14	0.033
85.00	-7.82	-1.09	0.00	-28.41	0.00	28.41	1,546.06	773.03	2,289.99	1,146.70	1.40	-0.15	0.030
90.00	-7.43	-1.05	0.00	-22.98	0.00	22.98	1,517.24	758.62	2,166.51	1,084.86	1.57	-0.16	0.026
95.00	-7.05	-1.00	0.00	-17.75	0.00	17.75	1,486.46	743.23	2,043.40	1,023.22	1.74	-0.17	0.022
100.00	-6.68	-0.96	0.00	-12.73	0.00	12.73	1,453.73	726.86	1,920.99	961.92	1.93	-0.18	0.018
105.00	-6.61	-0.95	0.00	-7.94	0.00	7.94	1,419.03	709.52	1,799.58	901.13	2.12	-0.18	0.013
106.00	-4.08	-0.62	0.00	-6.99	0.00	6.99	1,411.86	705.93	1,775.44	889.04	2.16	-0.18	0.011
110.00	-3.78	-0.57	0.00	-4.52	0.00	4.52	1,382.37	691.19	1,679.48	840.99	2.31	-0.19	0.008
115.00	-3.60	-0.55	0.00	-1.64	0.00	1.64	1,343.76	671.88	1,561.01	781.66	2.51	-0.19	0.005
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,319.65	659.83	1,490.84	746.53	2.63	-0.19	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	2.67	-0.19	0.000

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.42
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
30	118.50	65	1.874	1.897	1.110	0.392	22	80
29	116.50	207	1.811	1.591	0.997	0.351	63	257
28	112.50	357	1.689	1.082	0.798	0.275	85	443
27	108.00	297	1.557	0.651	0.613	0.201	52	368
26	105.50	84	1.486	0.466	0.526	0.165	12	104
25	102.50	428	1.402	0.288	0.434	0.126	47	531
24	97.50	443	1.269	0.080	0.309	0.073	28	550
23	92.50	459	1.142	-0.043	0.214	0.034	14	569
22	87.50	474	1.022	-0.104	0.142	0.009	4	588
21	82.50	489	0.908	-0.122	0.091	-0.004	-2	607
20	79.25	150	0.838	-0.118	0.065	-0.007	-1	186
19	76.75	798	0.786	-0.109	0.050	-0.006	-4	991
18	74.00	464	0.731	-0.096	0.036	-0.003	-1	576
17	71.50	428	0.682	-0.081	0.027	0.001	1	531
16	67.50	730	0.608	-0.056	0.015	0.010	7	906
15	62.50	752	0.521	-0.024	0.008	0.023	15	933
14	57.50	774	0.441	0.005	0.006	0.034	23	960
13	52.50	796	0.368	0.028	0.008	0.041	29	987
12	47.50	817	0.301	0.045	0.012	0.046	32	1,014
11	43.63	459	0.254	0.055	0.017	0.047	19	569
10	41.13	730	0.226	0.059	0.020	0.047	30	906
9	37.75	1,487	0.190	0.064	0.024	0.047	60	1,845
8	35.25	86	0.166	0.067	0.028	0.046	3	107
7	32.50	872	0.141	0.069	0.031	0.045	34	1,082
6	27.50	894	0.101	0.071	0.037	0.043	33	1,109
5	22.50	915	0.068	0.072	0.041	0.040	32	1,136
4	17.50	937	0.041	0.070	0.042	0.038	31	1,163
3	12.50	959	0.021	0.065	0.038	0.034	28	1,190
2	7.50	980	0.008	0.051	0.029	0.027	23	1,217
1	2.50	1,002	0.001	0.022	0.012	0.012	11	1,243
Raycap DC6-48-60-18-	118.00	80	1.858	1.817	1.081	0.382	26	99
Ericsson RRUS A2 B2	118.00	132	1.858	1.817	1.081	0.382	44	164
Ericsson RRUS 32 (50	118.00	152	1.858	1.817	1.081	0.382	50	189
Ericsson RRUS 12	118.00	450	1.858	1.817	1.081	0.382	149	558

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Ericsson RRUS-11	118.00	495	1.858	1.817	1.081	0.382	164	614
CCI HPA-65R-BUU-H8	118.00	816	1.858	1.817	1.081	0.382	270	1,013
Round Platform w/ Ha	118.00	2,000	1.858	1.817	1.081	0.382	662	2,482
Nokia B5 RRH4x40-850	106.00	146	1.500	0.500	0.542	0.172	22	181
Alcatel-Lucent RRH4x	106.00	165	1.500	0.500	0.542	0.172	25	205
Alcatel-Lucent B13 R	106.00	172	1.500	0.500	0.542	0.172	26	213
Alcatel-Lucent B66 R	106.00	201	1.500	0.500	0.542	0.172	30	249
Antel BXA-70063-6CF-	106.00	51	1.500	0.500	0.542	0.172	8	63
Commscope JAHH-65B-	106.00	242	1.500	0.500	0.542	0.172	36	301
Commscope JAHH-45B-	106.00	168	1.500	0.500	0.542	0.172	25	208
Round Low Profile PI	106.00	1,500	1.500	0.500	0.542	0.172	224	1,861
		25,102	45.658	22.764	17.686	6.238	2,487	31,151

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)
30	118.50	65	1.874	1.897	1.110	0.392	22	56
29	116.50	207	1.811	1.591	0.997	0.351	63	178
28	112.50	357	1.689	1.082	0.798	0.275	85	307
27	108.00	297	1.557	0.651	0.613	0.201	52	255
26	105.50	84	1.486	0.466	0.526	0.165	12	72
25	102.50	428	1.402	0.288	0.434	0.126	47	368
24	97.50	443	1.269	0.080	0.309	0.073	28	381
23	92.50	459	1.142	-0.043	0.214	0.034	14	394
22	87.50	474	1.022	-0.104	0.142	0.009	4	407
21	82.50	489	0.908	-0.122	0.091	-0.004	-2	420
20	79.25	150	0.838	-0.118	0.065	-0.007	-1	129
19	76.75	798	0.786	-0.109	0.050	-0.006	-4	686
18	74.00	464	0.731	-0.096	0.036	-0.003	-1	399
17	71.50	428	0.682	-0.081	0.027	0.001	1	368
16	67.50	730	0.608	-0.056	0.015	0.010	7	627
15	62.50	752	0.521	-0.024	0.008	0.023	15	646
14	57.50	774	0.441	0.005	0.006	0.034	23	665
13	52.50	796	0.368	0.028	0.008	0.041	29	683
12	47.50	817	0.301	0.045	0.012	0.046	32	702
11	43.63	459	0.254	0.055	0.017	0.047	19	394
10	41.13	730	0.226	0.059	0.020	0.047	30	627
9	37.75	1,487	0.190	0.064	0.024	0.047	60	1,277
8	35.25	86	0.166	0.067	0.028	0.046	3	74
7	32.50	872	0.141	0.069	0.031	0.045	34	749
6	27.50	894	0.101	0.071	0.037	0.043	33	768
5	22.50	915	0.068	0.072	0.041	0.040	32	786
4	17.50	937	0.041	0.070	0.042	0.038	31	805
3	12.50	959	0.021	0.065	0.038	0.034	28	823
2	7.50	980	0.008	0.051	0.029	0.027	23	842
1	2.50	1,002	0.001	0.022	0.012	0.012	11	861
Raycap DC6-48-60-18-	118.00	80	1.858	1.817	1.081	0.382	26	69
Ericsson RRUS A2 B2	118.00	132	1.858	1.817	1.081	0.382	44	113
Ericsson RRUS 32 (50	118.00	152	1.858	1.817	1.081	0.382	50	131
Ericsson RRUS 12	118.00	450	1.858	1.817	1.081	0.382	149	387
Ericsson RRUS-11	118.00	495	1.858	1.817	1.081	0.382	164	425
CCI HPA-65R-BUU-H8	118.00	816	1.858	1.817	1.081	0.382	270	701
Round Platform w/ Ha	118.00	2,000	1.858	1.817	1.081	0.382	662	1,718
Nokia B5 RRH4x40-850	106.00	146	1.500	0.500	0.542	0.172	22	125
Alcatel-Lucent RRH4x	106.00	165	1.500	0.500	0.542	0.172	25	142
Alcatel-Lucent B13 R	106.00	172	1.500	0.500	0.542	0.172	26	147
Alcatel-Lucent B66 R	106.00	201	1.500	0.500	0.542	0.172	30	173
Antel BXA-70063-6CF-	106.00	51	1.500	0.500	0.542	0.172	8	44

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

10/25/2017 1:55:56 PM

Customer: VERIZON WIRELESS

Commscope JAHH-65B-	106.00	242	1.500	0.500	0.542	0.172	36	208
Commscope JAHH-45B-	106.00	168	1.500	0.500	0.542	0.172	25	144
Round Low Profile PI	106.00	1,500	1.500	0.500	0.542	0.172	224	1,289
		25,102	45.658	22.764	17.686	6.238	2,487	21,564

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10/25/2017 1:55:56 PM

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	-29.91	-2.48	0.00	-255.38	0.00	255.38	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.075
5.00	-28.69	-2.46	0.00	-242.98	0.00	242.98	3,268.21	1,634.11	7,456.37	3,733.73	0.01	-0.02	0.074
10.00	-27.50	-2.44	0.00	-230.66	0.00	230.66	3,233.58	1,616.79	7,205.16	3,607.94	0.03	-0.03	0.072
15.00	-26.34	-2.42	0.00	-218.44	0.00	218.44	3,196.98	1,598.49	6,953.38	3,481.86	0.07	-0.05	0.071
20.00	-25.20	-2.39	0.00	-206.35	0.00	206.35	3,158.43	1,579.22	6,701.34	3,355.65	0.13	-0.06	0.069
25.00	-24.09	-2.37	0.00	-194.38	0.00	194.38	3,117.92	1,558.96	6,449.35	3,229.47	0.21	-0.08	0.068
30.00	-23.01	-2.34	0.00	-182.55	0.00	182.55	3,075.45	1,537.73	6,197.73	3,103.47	0.30	-0.10	0.066
35.00	-22.90	-2.34	0.00	-170.87	0.00	170.87	3,031.02	1,515.51	5,946.79	2,977.82	0.41	-0.11	0.065
35.50	-21.06	-2.28	0.00	-169.70	0.00	169.70	3,026.47	1,513.24	5,921.75	2,965.28	0.43	-0.12	0.064
40.00	-20.15	-2.25	0.00	-159.46	0.00	159.46	2,984.63	1,492.32	5,696.84	2,852.66	0.54	-0.13	0.063
42.25	-19.58	-2.23	0.00	-154.40	0.00	154.40	2,986.34	1,493.17	5,705.83	2,857.16	0.61	-0.14	0.061
45.00	-18.56	-2.20	0.00	-148.26	0.00	148.26	2,960.03	1,480.01	5,568.87	2,788.57	0.69	-0.15	0.059
50.00	-17.58	-2.18	0.00	-137.25	0.00	137.25	2,910.67	1,455.34	5,321.02	2,664.46	0.86	-0.17	0.058
55.00	-16.62	-2.15	0.00	-126.38	0.00	126.38	2,859.36	1,429.68	5,074.95	2,541.25	1.04	-0.18	0.056
60.00	-15.68	-2.14	0.00	-115.60	0.00	115.60	2,806.09	1,403.04	4,830.97	2,419.08	1.24	-0.20	0.053
65.00	-14.77	-2.14	0.00	-104.90	0.00	104.90	2,750.86	1,375.43	4,589.40	2,298.11	1.46	-0.22	0.051
70.00	-14.24	-2.14	0.00	-94.22	0.00	94.22	2,693.67	1,346.83	4,350.55	2,178.51	1.70	-0.23	0.049
73.00	-13.67	-2.14	0.00	-87.81	0.00	87.81	2,658.41	1,329.21	4,208.67	2,107.46	1.85	-0.24	0.047
75.00	-12.68	-2.14	0.00	-83.53	0.00	83.53	2,634.52	1,317.26	4,114.73	2,060.42	1.95	-0.25	0.045
78.50	-12.49	-2.14	0.00	-76.04	0.00	76.04	1,580.60	790.30	2,450.56	1,227.10	2.14	-0.26	0.070
80.00	-11.88	-2.14	0.00	-72.83	0.00	72.83	1,572.92	786.46	2,413.53	1,208.56	2.22	-0.27	0.068
85.00	-11.29	-2.14	0.00	-62.12	0.00	62.12	1,546.06	773.03	2,289.99	1,146.70	2.52	-0.29	0.061
90.00	-10.72	-2.13	0.00	-51.41	0.00	51.41	1,517.24	758.62	2,166.51	1,084.86	2.83	-0.31	0.054
95.00	-10.17	-2.10	0.00	-40.77	0.00	40.77	1,486.46	743.23	2,043.40	1,023.22	3.16	-0.33	0.047
100.00	-9.64	-2.05	0.00	-30.28	0.00	30.28	1,453.73	726.86	1,920.99	961.92	3.52	-0.34	0.038
105.00	-9.54	-2.04	0.00	-20.02	0.00	20.02	1,419.03	709.52	1,799.58	901.13	3.88	-0.35	0.029
106.00	-5.89	-1.57	0.00	-17.98	0.00	17.98	1,411.86	705.93	1,775.44	889.04	3.96	-0.36	0.024
110.00	-5.45	-1.49	0.00	-11.69	0.00	11.69	1,382.37	691.19	1,679.48	840.99	4.26	-0.36	0.018
115.00	-5.19	-1.42	0.00	-4.26	0.00	4.26	1,343.76	671.88	1,561.01	781.66	4.64	-0.37	0.009
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,319.65	659.83	1,490.84	746.53	4.87	-0.37	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	4.95	-0.37	0.000

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

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10/25/2017 1:55:56 PM

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	-20.70	-2.48	0.00	-253.73	0.00	253.73	3,300.89	1,650.44	7,706.70	3,859.08	0.00	0.00	0.072
5.00	-19.86	-2.46	0.00	-241.34	0.00	241.34	3,268.21	1,634.11	7,456.37	3,733.73	0.01	-0.02	0.071
10.00	-19.04	-2.44	0.00	-229.04	0.00	229.04	3,233.58	1,616.79	7,205.16	3,607.94	0.03	-0.03	0.069
15.00	-18.23	-2.41	0.00	-216.85	0.00	216.85	3,196.98	1,598.49	6,953.38	3,481.86	0.07	-0.05	0.068
20.00	-17.44	-2.38	0.00	-204.80	0.00	204.80	3,158.43	1,579.22	6,701.34	3,355.65	0.13	-0.06	0.067
25.00	-16.68	-2.35	0.00	-192.88	0.00	192.88	3,117.92	1,558.96	6,449.35	3,229.47	0.21	-0.08	0.065
30.00	-15.93	-2.32	0.00	-181.11	0.00	181.11	3,075.45	1,537.73	6,197.73	3,103.47	0.30	-0.10	0.064
35.00	-15.85	-2.32	0.00	-169.49	0.00	169.49	3,031.02	1,515.51	5,946.79	2,977.82	0.41	-0.11	0.062
35.50	-14.57	-2.26	0.00	-168.33	0.00	168.33	3,026.47	1,513.24	5,921.75	2,965.28	0.42	-0.12	0.062
40.00	-13.95	-2.23	0.00	-158.15	0.00	158.15	2,984.63	1,492.32	5,696.84	2,852.66	0.54	-0.13	0.060
42.25	-13.55	-2.22	0.00	-153.13	0.00	153.13	2,986.34	1,493.17	5,705.83	2,857.16	0.60	-0.14	0.058
45.00	-12.85	-2.19	0.00	-147.03	0.00	147.03	2,960.03	1,480.01	5,568.87	2,788.57	0.68	-0.15	0.057
50.00	-12.17	-2.16	0.00	-136.10	0.00	136.10	2,910.67	1,455.34	5,321.02	2,664.46	0.85	-0.17	0.055
55.00	-11.50	-2.14	0.00	-125.31	0.00	125.31	2,859.36	1,429.68	5,074.95	2,541.25	1.03	-0.18	0.053
60.00	-10.85	-2.12	0.00	-114.63	0.00	114.63	2,806.09	1,403.04	4,830.97	2,419.08	1.23	-0.20	0.051
65.00	-10.22	-2.12	0.00	-104.01	0.00	104.01	2,750.86	1,375.43	4,589.40	2,298.11	1.45	-0.22	0.049
70.00	-9.86	-2.12	0.00	-93.42	0.00	93.42	2,693.67	1,346.83	4,350.55	2,178.51	1.68	-0.23	0.047
73.00	-9.46	-2.12	0.00	-87.07	0.00	87.07	2,658.41	1,329.21	4,208.67	2,107.46	1.83	-0.24	0.045
75.00	-8.77	-2.12	0.00	-82.83	0.00	82.83	2,634.52	1,317.26	4,114.73	2,060.42	1.94	-0.25	0.044
78.50	-8.64	-2.12	0.00	-75.40	0.00	75.40	1,580.60	790.30	2,450.56	1,227.10	2.12	-0.26	0.067
80.00	-8.22	-2.13	0.00	-72.22	0.00	72.22	1,572.92	786.46	2,413.53	1,208.56	2.21	-0.27	0.065
85.00	-7.81	-2.12	0.00	-61.59	0.00	61.59	1,546.06	773.03	2,289.99	1,146.70	2.50	-0.29	0.059
90.00	-7.42	-2.11	0.00	-50.98	0.00	50.98	1,517.24	758.62	2,166.51	1,084.86	2.81	-0.31	0.052
95.00	-7.04	-2.08	0.00	-40.44	0.00	40.44	1,486.46	743.23	2,043.40	1,023.22	3.14	-0.32	0.044
100.00	-6.67	-2.03	0.00	-30.03	0.00	30.03	1,453.73	726.86	1,920.99	961.92	3.49	-0.34	0.036
105.00	-6.60	-2.02	0.00	-19.87	0.00	19.87	1,419.03	709.52	1,799.58	901.13	3.85	-0.35	0.027
106.00	-4.07	-1.56	0.00	-17.84	0.00	17.84	1,411.86	705.93	1,775.44	889.04	3.92	-0.35	0.023
110.00	-3.77	-1.47	0.00	-11.60	0.00	11.60	1,382.37	691.19	1,679.48	840.99	4.22	-0.36	0.017
115.00	-3.59	-1.41	0.00	-4.23	0.00	4.23	1,343.76	671.88	1,561.01	781.66	4.61	-0.37	0.008
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,319.65	659.83	1,490.84	746.53	4.84	-0.37	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,311.46	655.73	1,467.62	734.90	4.91	-0.37	0.000

Site Number: 283423

Code: ANSI/TIA-222-G © 2007 - 2017 by ATC IP LLC. All rights reserved.

Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

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Customer: VERIZON WIRELESS

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	17.26	0.00	30.11	0.00	0.00	1529.22	0.00	0.41
0.9D + 1.6W	17.26	0.00	22.58	0.00	0.00	1521.59	0.00	0.40
1.2D + 1.0Di + 1.0Wi	5.04	0.00	49.99	0.00	0.00	427.57	0.00	0.13
(1.2 + 0.2Sds) * DL + E ELFM	1.57	0.00	29.91	0.00	0.00	150.16	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.48	0.00	29.91	0.00	0.00	255.38	0.00	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.56	0.00	20.70	0.00	0.00	149.26	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.48	0.00	20.70	0.00	0.00	253.73	0.00	0.07
1.0D + 1.0W	4.39	0.00	25.10	0.00	0.00	388.11	0.00	0.11

Site Number: 283423

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA715143_C3_01

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Customer: VERIZON WIRELESS

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
3,850.00	42.00	42.00	1,529.22	49.99	17.26	39.72

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
60.0	2.000	70.000	Round	0	0.00	15.076	349.10	814.10	0.43

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
64.00	12	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	99.74	260.00	0.39	91.41	260.00	0.36

General Power Density

Site Name: Naugatuck West, 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	5000	5000	106	0.1600	1.0	16.00%
VZW Cellular LTE	869	1	3050	3050	106	0.0976	0.579333333	16.85%
VZW Cellular	869	3	403	1209	106	0.0387	0.579333333	6.68%
VZW AWS	2145	1	7400	7400	106	0.2368	1.0	23.68%
VZW 700	746	1	2200	2200	106	0.0704	0.497333333	14.16%

Total Percentage of Maximum Permissible Exposure 77.38%

*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 C95.1-1992

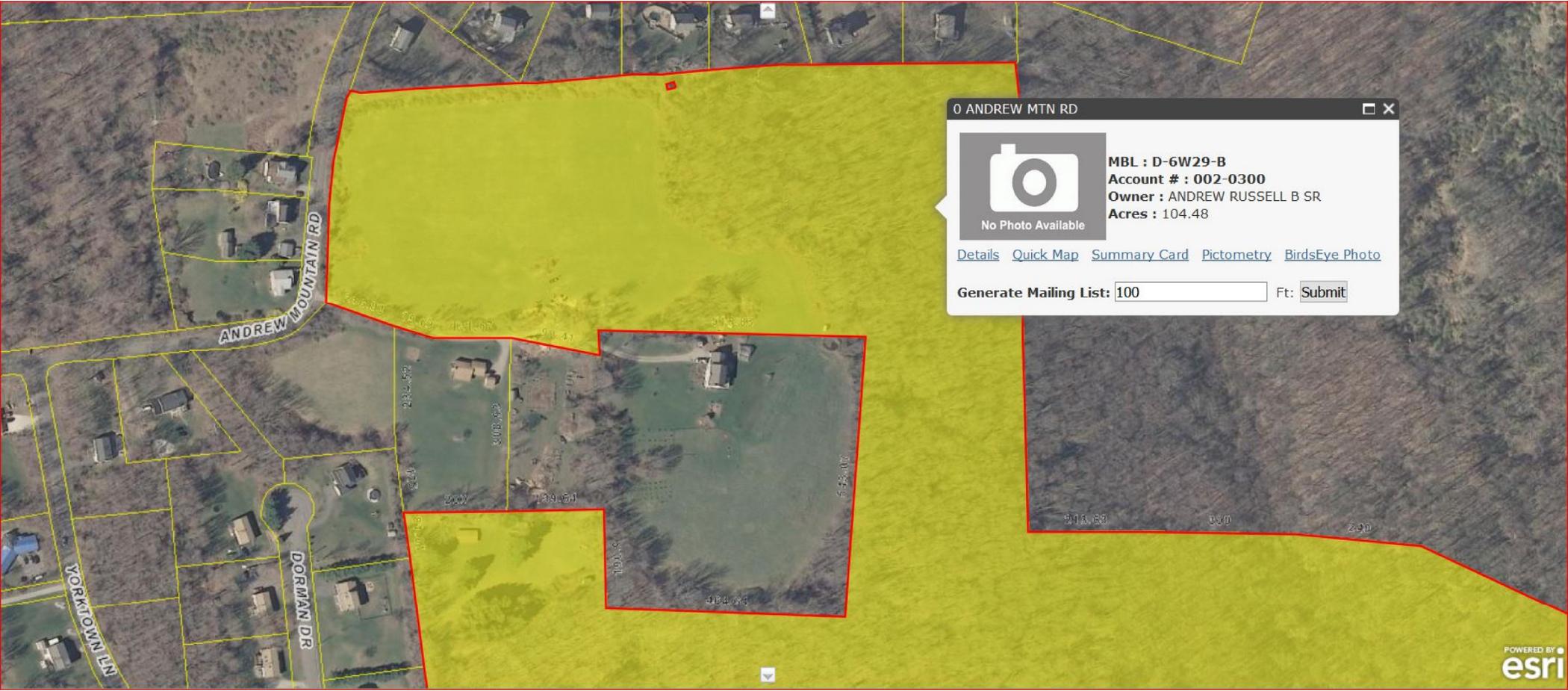
MHz = Megahertz

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.



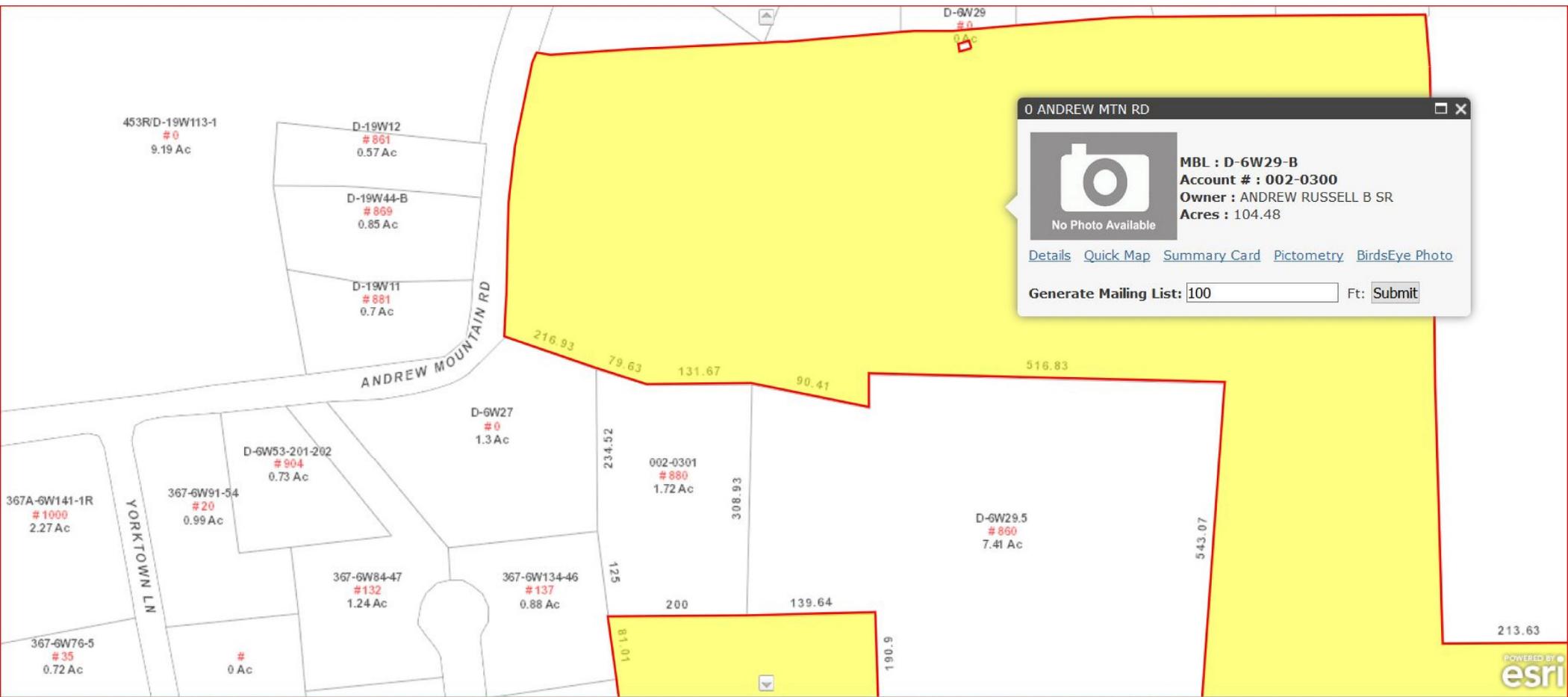
0 ANDREW MTN RD

 No Photo Available

MBL : D-6W29-B
Account # : 002-0300
Owner : ANDREW RUSSELL B SR
Acres : 104.48

[Details](#) [Quick Map](#) [Summary Card](#) [Pictometry](#) [BirdsEye Photo](#)

Generate Mailing List: Ft:



0 ANDREW MTN RD

No Photo Available

MBL : D-6W29-B
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[Details](#) [Quick Map](#) [Summary Card](#) [Pictometry](#) [BirdsEye Photo](#)

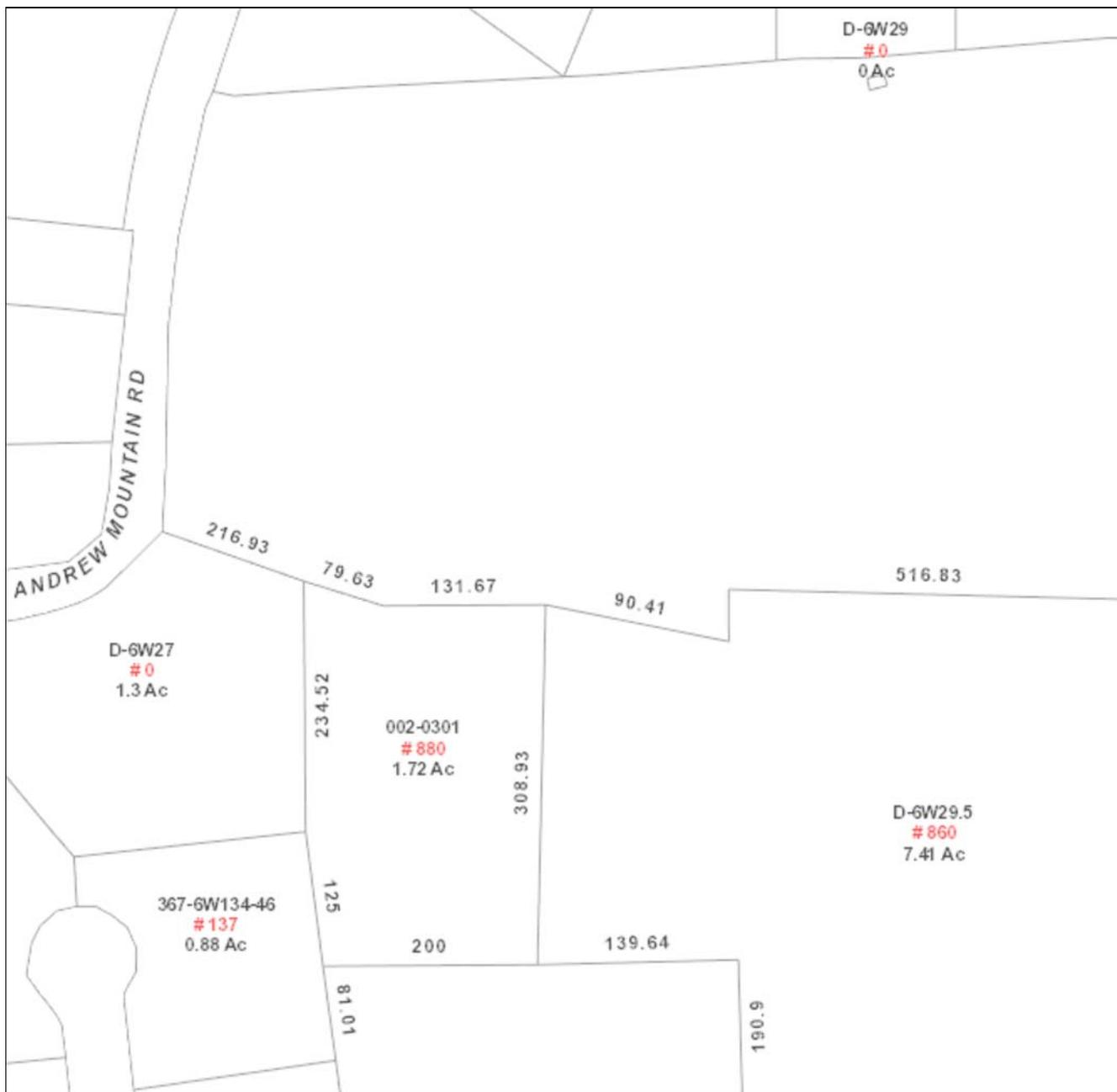
Generate Mailing List: Ft:

The Borough of Naugatuck

Geographic Information System (GIS)



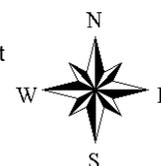
Date Printed: 12/14/2017



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Borough of Naugatuck and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 150 feet





Borough of Naugatuck, CT

Property Listing Report

Map Block Lot

D-6W29-B

Account

002-0300

Property Information

Property Location	0 ANDREW MTN RD
Owner	ANDREW RUSSELL B SR
Co-Owner	
Mailing Address	861 ANDREW MTN RD NAUGATUCK CT 06770
Land Use	6100 Forest 490
Land Class	S
Zoning Code	
Census Tract	
Sub Lot	
Neighborhood	7
Acreage	104.48
Utilities	
Lot Setting/Desc	
Survey Map	
Additional Info	

Photo



No Photo Available

Sketch

Primary Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	
Total Living Area	



Borough of Naugatuck, CT

Property Listing Report

Map Block Lot

002-0301

Account

002-0301

Property Information

Property Location	880 ANDREW MTN RD
Owner	PIERCE MARJORIE
Co-Owner	
Mailing Address	111 BIRCH LA NAUGATUCK CT 06770
Land Use	1010 Single Fam
Land Class	R
Zoning Code	
Census Tract	
Sub Lot	
Neighborhood	7
Acreage	1.72
Utilities	
Lot Setting/Desc	
Survey Map	
Additional Info	

Photo



Sketch



Primary Construction Details

Year Built	2000
Stories	1
Building Style	Ranch
Building Use	Residential
Building Condition	C
Floors	Hardwood
Total Rooms	3

Bedrooms	2 Bedrooms
Full Bathrooms	1
Half Bathrooms	
Bath Style	Average
Kitchen Style	Average
Roof Style	Gable
Roof Cover	Asphalt

Exterior Walls	Logs
Interior Walls	Drywall
Heating Type	Hot Water
Heating Fuel	Oil
AC Type	None
Gross Bldg Area	2424
Total Living Area	792

