

November 22, 2016

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

Re: **Notice of Exempt Modification – Facility Modification
399 West Road, Salem, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) antennas at 177-foot level of the existing 180-foot tower at 399 West Road in Salem, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of this tower in 2001 (Docket No. 198). Cellco now intends to modify its facility by replacing nine (9) of its existing antennas with three (6) model LPA-171063-12CF, 1900 MHz antennas; three (3) model SBNHH-1D65A, 700/1900 MHz antennas; and three (3) model SBNHH-1D65A, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to replace three (3) remote radio heads (“RRHs”) and install six (6) new RRHS and two (2) HYBRIFLEX™ antenna cables. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cables.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Kevin T. Lyden, First Selectman of the Town of Salem. A copy of this letter is also being sent to Claire and Willis Clark, the owners of the Property and ATC, the tower owner.

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

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1. The proposed modifications will not result in an increase in the height of the existing structure. Cellco's new antennas and RRHs will be installed on its existing platform at the 177-foot level of the 180-foot tower.

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

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

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


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

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

A copy of the Town Assessor's Parcel Map and property owner information is included in Attachment 4.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Kevin T. Lyden, Salem First Selectman
Claire and Willis Clark
ATC
Tim Parks

ATTACHMENT 1

LPA-171063-12CF-EDIN-X

V-Pol | Log Periodic | 63° | 18.5-19.0 dBi

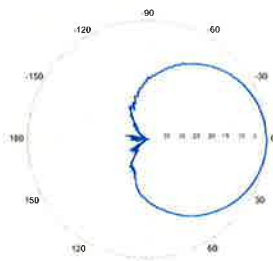
Replace "X" with desired electrical downtilt.

Antenna is available with NE connector(s).
Replace "EDIN" with "NE" in the model number when ordering.

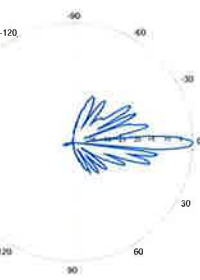
Electrical Characteristics		1710-2170 MHz			
Frequency bands	1710-1755 MHz	1850-1990 MHz	1920-2170 MHz		
Polarization	Vertical				
Horizontal beamwidth	60°	63°	65°		
Vertical beamwidth	3°	4°	3°		
Gain	16.4 dBd (18.5 dBi)	16.9 dBd (19.0 dBi)	16.4 dBd (18.5 dBi)		
Electrical downtilt (X)	0, 2				
Impedance	50Ω				
VSWR	≤ 1.5:1				
Null fill	5-10% (-26.02 to -20.0dB)				
Input power	250 W				
Lightning protection	Direct Ground				
Connector(s)	1 Port / EDIN or NE / Female / Center (Back)				
Mechanical Characteristics					
Dimensions Length x Width x Depth	1876 x 200 x 202 mm		73.9 x 7.9 x 8.0 in		
Weight without mounting brackets	5.2 kg		11.5 lbs		
Survival wind speed	>201 km/hr		>125 mph		
Wind area	Front: 0,31 m ² Side: 0,38 m ²	Front: 4.0 ft ² Side: 4.1 ft ²			
Wind load @ 161 km/hr (100 mph)	Front: 182 N Side: 586 N	Front: 41 lbf Side: 132 lbf			
Mounting Options		Part Number	Fits Pipe Diameter		Weight
2-Point Mounting Bracket Kit		26799997	50-102 mm	2.0-4.0 in	2.3 kg 5.0 lbs
2-Point Mounting and Downtilt Bracket Kit		26799999	50-102 mm	2.0-4.0 in	2.3 kg 5.0 lbs



1710-1880 MHz

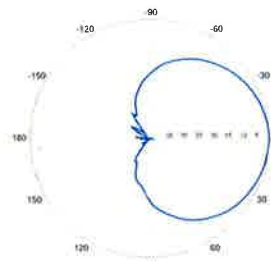


Horizontal

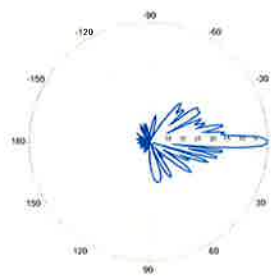


0° | Vertical

1850-1990 MHz

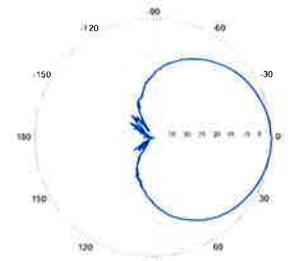


Horizontal

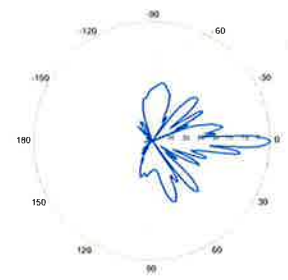


0° | Vertical

1920-2170 MHz



Horizontal

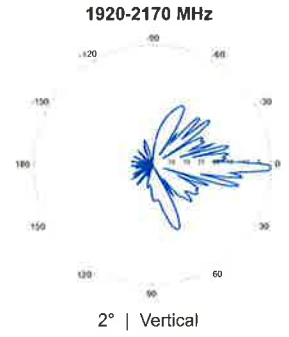
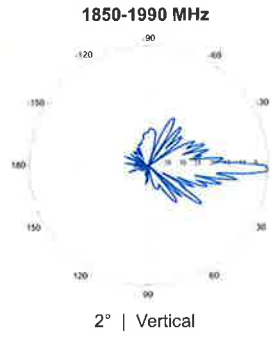
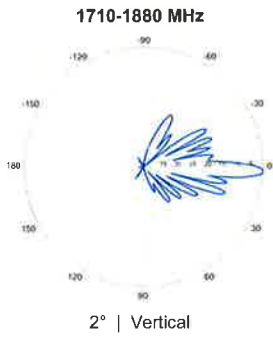


0° | Vertical

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

LPA-171063-12CF-EDIN-X

V-Pol | Log Periodic | 63° | 18.5-19.0 dBi



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



SBNHH-1D65A

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

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

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	13.4	13.5	16.5	16.7	17.2	17.5
Beamwidth, Horizontal, degrees	66	61	70	65	62	61
Beamwidth, Vertical, degrees	17.6	15.9	7.1	6.6	6.2	5.5
Beam Tilt, degrees	0–18	0–18	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	16	13	13	13	12	12
Front-to-Back Ratio at 180°, dB	25	27	28	28	27	29
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR Return Loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	13.1	13.1	16.1	16.5	16.7	17.2
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.5	±0.5	±0.3	±0.5	±0.4
	0° 13.4	0° 13.4	0° 16.0	0° 16.3	0° 16.5	0° 17.0
Gain by Beam Tilt, average, dBi	9° 13.1	9° 13.1	5° 16.2	5° 16.5	5° 16.8	5° 17.3
	18° 12.7	18° 12.7	10° 16.1	10° 16.5	10° 16.6	10° 16.9
Beamwidth, Horizontal Tolerance, degrees	±3.1	±5.4	±2.8	±4	±6.6	±4.6
Beamwidth, Vertical Tolerance, degrees	±1.8	±1.4	±0.3	±0.4	±0.5	±0.3
USLS, beampeak to 20° above beampeak, dB	15	14	15	15	15	14
Front-to-Back Total Power at 180° ± 30°, dB	22	21	26	26	24	25
CPR at Boresight, dB	22	16	22	25	21	22
CPR at Sector, dB	10	6	12	8	5	4

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

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

SBNHH-1D65A

Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	445.0 N @ 150 km/h 100.0 lbf @ 150 km/h
Wind Loading, lateral	145.0 N @ 150 km/h 32.6 lbf @ 150 km/h
Wind Loading, rear	523.0 N @ 150 km/h 117.6 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Depth	180.0 mm 7.1 in
Length	1413.0 mm 55.6 in
Width	301.0 mm 11.9 in
Net Weight, without mounting kit	15.2 kg 33.5 lb

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

Depth	296.0 mm 11.7 in
Length	1589.0 mm 62.6 in
Width	390.0 mm 15.4 in
Shipping Weight	26.1 kg 57.5 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



Included Products

SBNHH-1D65A

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

* **Footnotes**

Performance Note Severe environmental conditions may degrade optimum performance

ALCATEL-LUCENT B13 RRH4X30-4R

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

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

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

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

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

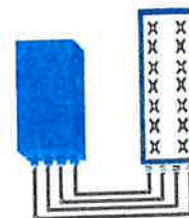


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity schema	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)
Wind load (@130km/h or 93mph)	IP65 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.

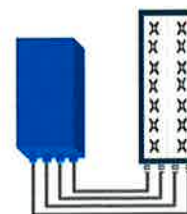
Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the 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) RX Diversity scheme	2.0 dB typ. (<2.5 dB max) 2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.) Volume (w/ solar shield) in L. Weight (w/ solar shield) in kg (lb)	538 x 304 x 182 (21.2" x 12.0" x 7.2") 30 24 (53)
DC voltage range DC power consumption	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 580W typical @100% RF load
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG Interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

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ALCATEL-LUCENT B66A RRH4X45

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

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

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



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

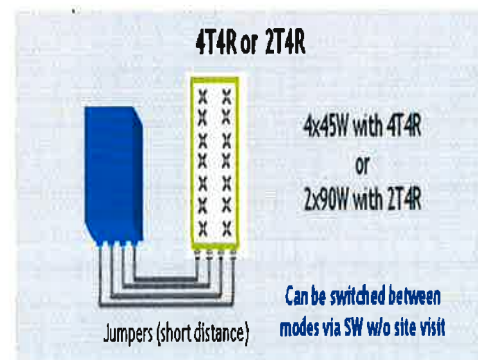
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



TECHNICAL SPECIFICATIONS

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

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

Product Description

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

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

Features/Benefits

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



Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	(mm (in))	46.5 (1.83)
Jacket	Polyethylene, PE	(mm (in))	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight			
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)
DC-Resistance			
DC-Resistance Outer Conductor Armor		(Ω/km (Ω/1000ft))	068 (0.205)
DC-Resistance Power Cable, 8 4mm ² (8AWG)		(Ω/km (Ω/1000ft))	2.1 (0.307)
Optical Fiber			
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
Power			
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
Temperature			
Installation Temperature		(°C (°F))	-40 to +65 (-40 to 149)
Operation Temperature		(°C (°F))	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

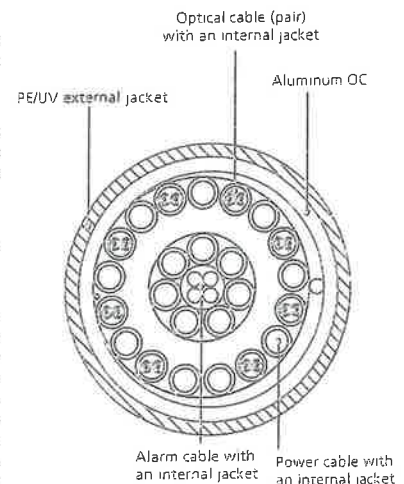


Figure 2: Construction Detail

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

ATTACHMENT 2

General Power Density

Site Name: Salem, CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	11	276	3032.304	177	0.0348	1.0	3.48%
VZW Cellular	869	9	351	3155.306	177	0.0362	0.5793333333	6.25%
VZW AWS	2145	1	4958	4958	177	0.0569	1.0	5.69%
VZW 700	746	1	1154	1154	177	0.0132	0.4973333333	2.66%

Total Percentage of Maximum Permissible Exposure

18.09%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 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.

ATTACHMENT 3



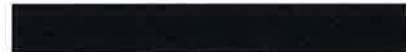
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 177.5 ft Monopole
ATC Site Name : Salem CT SQA, CT
ATC Site Number : 411184
Engineering Number : OAA636849_C3_09
Proposed Carrier : Verizon Wireless
Carrier Site Name : Salem CT
Carrier Site Number : 117851
Site Location : 399 West Road
Salem, CT 06420-3507
41.487836,-72.313214
County : New London
Date : November 18, 2016
Max Usage : 68%
Result : Pass

Prepared By:
Aaron Black
Structural Engineer I

Reviewed By:



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 177.5 ft monopole to reflect the change in loading by Verizon Wireless.

Supporting Documents

Tower Drawings	EEl Project #11200, dated October 9, 2002
Foundation Drawing	EEl Project #11200, dated November 14, 2002
Geotechnical Report	Clarence Welti Associates, dated November 1, 2002

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:	105 mph (3-Second Gust, V_{ASD}) / 135 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Spectral Response:	$S_s = 0.17, S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
177.0	180.0	6	Andrew DB846H80E-SX	Low Profile Platform	(12) 1 5/8" Coax	Verizon Wireless
		1	VZW Unused Reserve: 16,940 sq in			

Equipment to be Removed

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

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
177.0	180.0	3	Alcatel-Lucent RRH2x60 700	Low Profile Platform	(3) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon Wireless
		3	Alcatel-Lucent RRH 2X60-1900			
		3	Alcatel-Lucent B4 RRH 4X45-4R			
		2	RFS DB-T1-6Z-8AB-0Z			
		6	Commscope SBNHH-1D65A			
		3	Antel LPA-171063-12CF-EDIN-X			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	54%	Pass
Shaft	63%	Pass
Base Plate	68%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,741.2	6,400.6	3,712.7	58%
Shear (Kips)	36.1	48.7	28.4	58%

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

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

Deflection and Sway*

Antenna Elevation (ft)	Carrier	Deflection (ft)	Sway (Rotation) (°)
177.0	Verizon Wireless	1.997	1.419

*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.

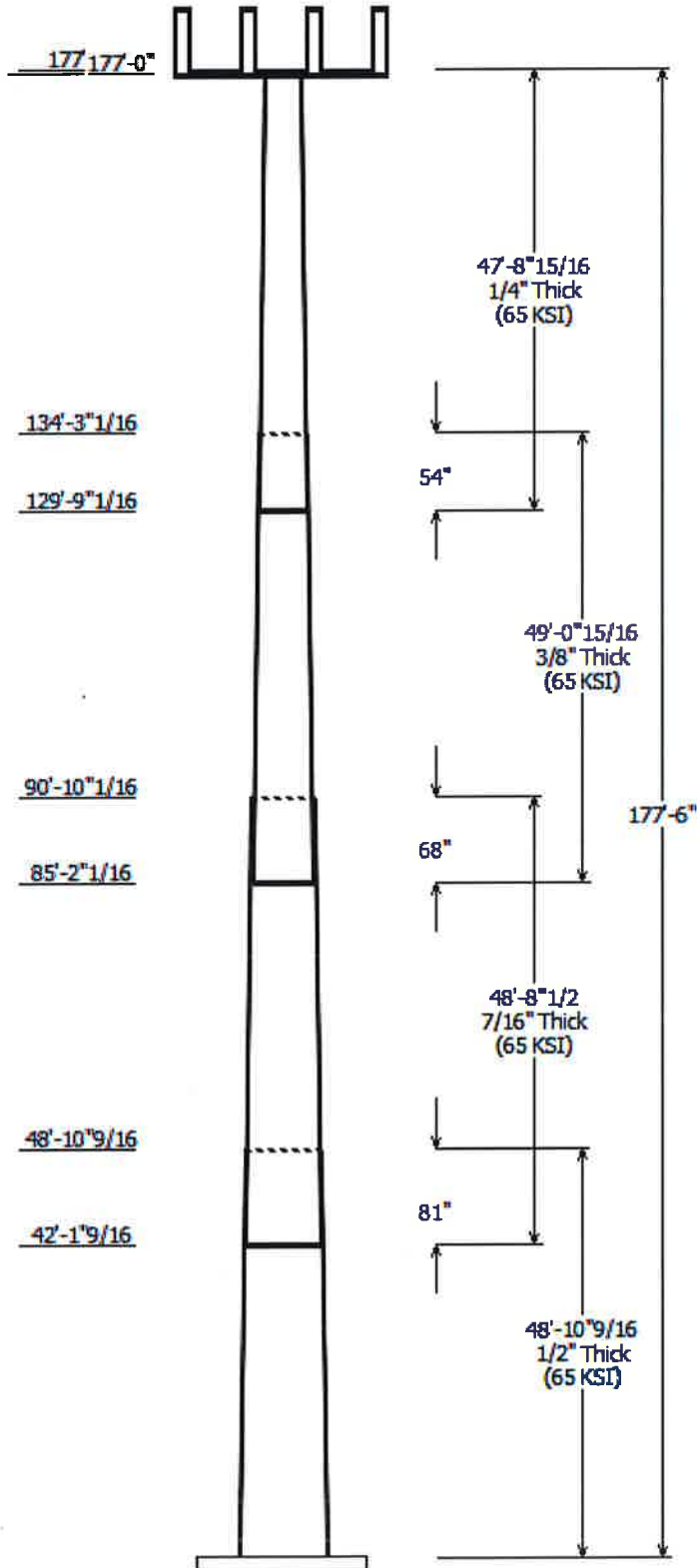
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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 :	411184
Code:	ANSI/TIA-222-G
Description :	178 ft Monopole
Client :	Verizon Wireless
Struct Class :	II
Location :	Salem CT SQA, CT
Shape :	18 Sides
Exposure :	B
Height :	177.50 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.22041 in/ft

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Taper (in/ft)	Steel Grade (ksi)
		Across Top	Across Bottom					
1	48.880	47.22	58.00	0.500		0.000	0.220400	65
2	48.710	38.85	49.58	0.438	Slip Joint	81.000	0.220400	65
3	49.080	30.03	40.85	0.375	Slip Joint	68.000	0.220400	65
4	47.747	21.00	31.52	0.250	Slip Joint	54.000	0.220400	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
177.000	180.000	3	Alcatel-Lucent RRH 2X60-1900
177.000	180.000	1	VZW Unused Reserve: 16,940
177.000	177.000	1	Flat Low Profile Platform
177.000	180.000	6	Andrew DB846H80E-SX
177.000	180.000	6	Commscope SBNHH-1D65A
177.000	180.000	3	Amphenol Antel LPA-171063-
177.000	180.000	3	Alcatel-Lucent RRH2x60 700
177.000	180.000	3	Alcatel-Lucent B4 RRH 4X45-4R
177.000	180.000	2	RFS DB-T1-6Z-8AB-0Z

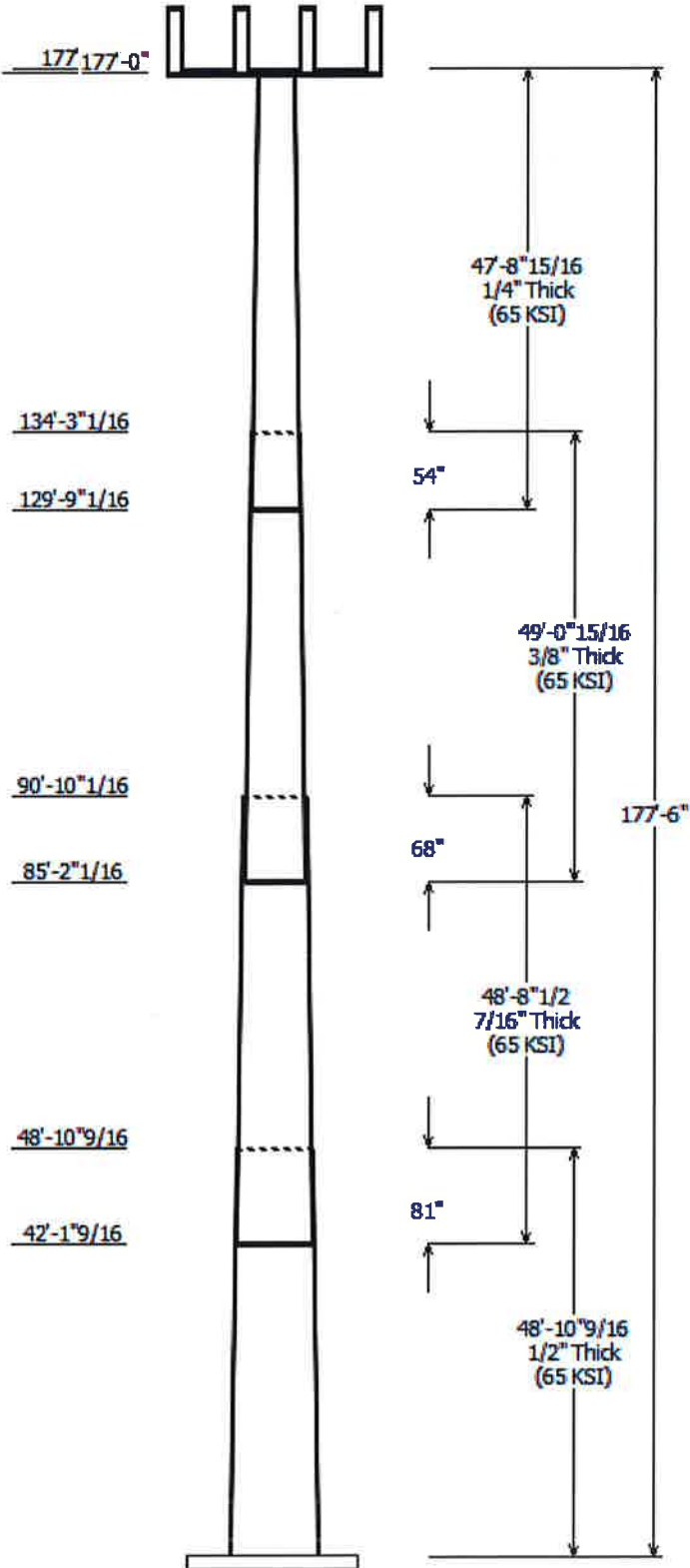
Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	177.0	1 5/8" Coax	No
0.000	177.0	1 5/8" Hybriflex	No

Load Cases	
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 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

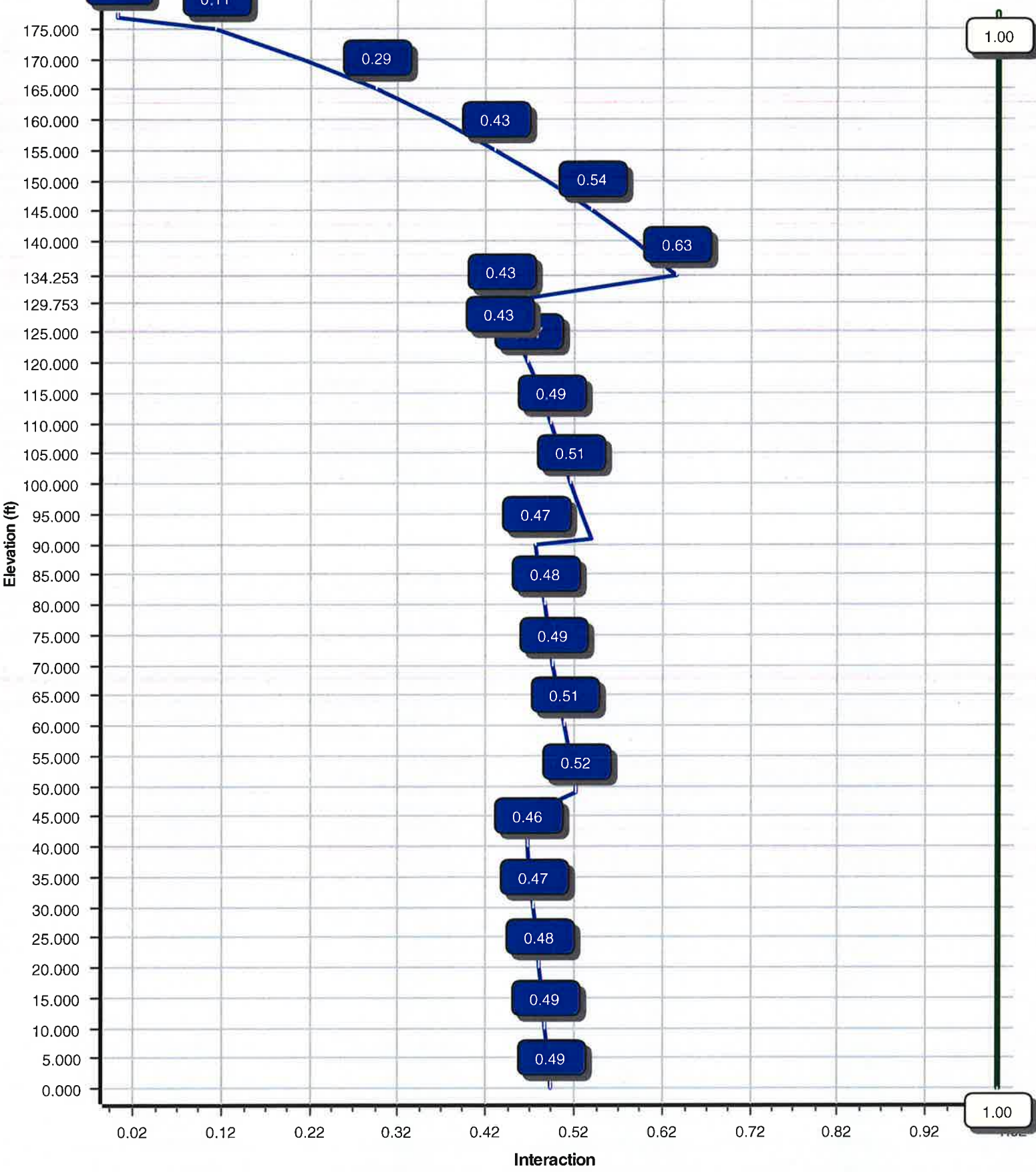
Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3712.69	28.45	48.92
0.9D + 1.6W	3678.07	28.43	36.68
1.2D + 1.0Di + 1.0Wi	638.13	5.76	66.15
(1.2 + 0.2Sds) * DL + E ELFM	219.66	1.59	48.45
(1.2 + 0.2Sds) * DL + E EMAM	306.10	2.29	48.45
(0.9 - 0.2Sds) * DL + E ELFM	217.24	1.59	33.83
(0.9 - 0.2Sds) * DL + E EMAM	302.61	2.29	33.83
1.0D + 1.0W	754.16	5.80	40.79

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 63.30% at 134.3 ft



Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:45 AM

Customer: Verizon Wireless

Analysis Parameters

Location:	New London County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	177.
Shape:	18 Sides	Base Diameter (in):	58.00
Pole Type:	Taper	Top Diameter (in):	21.00
Pole Manufacturer:		Taper (in/ft) :	0.220

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.22		
T _L (sec):	6	p:	1.3
S _s :	0.171	S ₁ :	0.061
F _a :	1.600	F _v :	2.400
S _{ds} :	0.182	S _{d1} :	0.098
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 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: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:45 AM

Customer: Verizon Wireless

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	48.880	0.5000	65		0.00	13,755	58.00	0.00	91.25	38116.9	19.04	116.00	47.22	48.88	74.15	20454.5	15.24	94.45	0.220418
2-18	48.710	0.4375	65	Slip	81.00	10,077	49.58	42.13	68.25	20831.8	18.58	113.35	38.85	90.84	53.34	9945.2	14.25	88.81	0.220418
3-18	49.080	0.3750	65	Slip	68.00	6,970	40.85	85.17	48.18	9971.9	17.80	108.94	30.03	134.25	35.30	3922.9	12.71	80.09	0.220418
4-18	47.747	0.2500	65	Slip	54.00	3,353	31.52	129.75	24.82	3066.7	20.82	126.10	21.00	177.50	16.47	895.7	13.40	84.00	0.220418
Shaft Weight						34,156													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
177.00	Alcatel-Lucent B4 RRH 4X45-	3	60.00	3.620	0.67	178.23	4.981	0.67	0.000	3.000
177.00	Alcatel-Lucent RRH 2X60-	3	39.60	1.880	0.50	108.27	2.483	0.50	0.000	3.000
177.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	126.00	3.170	0.67	0.000	3.000
177.00	Amphenol Antel LPA-171063-	3	11.50	6.050	1.00	64.60	8.174	1.00	0.000	3.000
177.00	Andrew DB846H80E-SX	6	16.00	5.870	0.93	178.68	6.246	0.93	0.000	3.000
177.00	Commscope SBNHH-1D65A	6	33.50	5.880	0.83	173.01	7.920	0.83	0.000	3.000
177.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,159.68	45.539	1.00	0.000	0.000
177.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	4.800	0.67	172.15	6.247	0.67	0.000	3.000
177.00	VZW Unused Reserve:	1	1611.60	117.74	1.00	1,866.07	6.295	1.00	0.000	3.000
Totals		28	4000.00			7,911.48			Number of Loadings : 9	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width (in)	Exposed To Wind	Carrier	
0.00	177.00	15	1 5/8" Coax	1.98	0.82	N	1.98	N	Verizon
0.00	177.00	2	1 5/8" Hybriflex	1.98	1.30	N	1.98	N	Verizon

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:46 AM

Customer: Verizon Wireless

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5000	58.000	91.249	38,116.9	19.04	116.00	79.0	1294.	0.0	0.0
5.00		0.5000	56.898	89.500	35,966.9	18.65	113.80	79.5	1245.	0.0	1,537.6
10.00		0.5000	55.796	87.751	33,899.3	18.27	111.59	79.9	1196.	0.0	1,507.9
15.00		0.5000	54.694	86.002	31,912.5	17.88	109.39	80.4	1149.	0.0	1,478.1
20.00		0.5000	53.592	84.253	30,004.9	17.49	107.18	80.8	1102.	0.0	1,448.4
25.00		0.5000	52.490	82.504	28,174.9	17.10	104.98	81.3	1057.	0.0	1,418.6
30.00		0.5000	51.387	80.755	26,420.8	16.71	102.77	81.7	1012.	0.0	1,388.8
35.00		0.5000	50.285	79.007	24,741.1	16.32	100.57	82.2	969.1	0.0	1,359.1
40.00		0.5000	49.183	77.258	23,134.1	15.93	98.37	82.6	926.4	0.0	1,329.3
42.13	Bot - Section 2	0.5000	48.714	76.512	22,471.3	15.77	97.43	82.6	908.6	0.0	557.3
45.00		0.5000	48.081	75.509	21,598.3	15.55	96.16	82.6	884.8	0.0	1,404.6
48.88	Top - Section 1	0.4375	48.101	66.184	18,996.7	17.98	109.95	80.3	777.9	0.0	1,869.6
50.00		0.4375	47.854	65.841	18,703.1	17.88	109.38	80.4	769.8	0.0	251.6
55.00		0.4375	46.752	64.311	17,429.0	17.43	106.86	80.9	734.3	0.0	1,107.2
60.00		0.4375	45.650	62.781	16,214.2	16.99	104.34	81.4	699.6	0.0	1,081.2
65.00		0.4375	44.548	61.250	15,057.1	16.54	101.82	81.9	665.7	0.0	1,055.1
70.00		0.4375	43.446	59.720	13,956.5	16.10	99.30	82.5	632.7	0.0	1,029.1
75.00		0.4375	42.344	58.190	12,910.8	15.66	96.79	82.6	600.5	0.0	1,003.1
80.00		0.4375	41.242	56.659	11,918.8	15.21	94.27	82.6	569.2	0.0	977.0
85.00		0.4375	40.139	55.129	10,978.9	14.77	91.75	82.6	538.7	0.0	951.0
85.17	Bot - Section 3	0.4375	40.101	55.076	10,947.2	14.75	91.66	82.6	537.7	0.0	32.5
90.00		0.4375	39.037	53.599	10,089.7	14.32	89.23	82.6	509.1	0.0	1,673.3
90.84	Top - Section 2	0.3750	39.602	46.688	9,076.9	17.21	105.61	81.2	451.4	0.0	286.6
95.00		0.3750	38.685	45.597	8,455.1	16.78	103.16	81.7	430.5	0.0	653.2
100.00		0.3750	37.583	44.285	7,746.2	16.26	100.22	82.3	406.0	0.0	764.6
105.0		0.3750	36.481	42.974	7,078.1	15.74	97.28	82.6	382.1	0.0	742.3
110.0		0.3750	35.379	41.662	6,449.5	15.22	94.34	82.6	359.1	0.0	720.0
115.0		0.3750	34.277	40.350	5,859.3	14.71	91.41	82.6	336.7	0.0	697.7
120.0		0.3750	33.175	39.039	5,306.3	14.19	88.47	82.6	315.0	0.0	675.4
125.0		0.3750	32.073	37.727	4,789.2	13.67	85.53	82.6	294.1	0.0	653.0
129.7	Bot - Section 4	0.3750	31.025	36.480	4,329.8	13.18	82.73	82.6	274.9	0.0	600.1
130.0		0.3750	30.971	36.415	4,306.8	13.15	82.59	82.6	273.9	0.0	51.4
134.2	Top - Section 3	0.2500	30.533	24.029	2,784.1	20.12	122.13	77.7	179.6	0.0	872.1
135.0		0.2500	30.369	23.898	2,739.0	20.01	121.47	77.9	177.6	0.0	60.9
140.0		0.2500	29.266	23.024	2,449.2	19.23	117.07	78.8	164.8	0.0	399.2
145.0		0.2500	28.164	22.149	2,180.6	18.45	112.66	79.7	152.5	0.0	384.3
150.0		0.2500	27.062	21.275	1,932.3	17.68	108.25	80.6	140.6	0.0	369.4
155.0		0.2500	25.960	20.400	1,703.7	16.90	103.84	81.5	129.3	0.0	354.5
160.0		0.2500	24.858	19.526	1,493.9	16.12	99.43	82.4	118.4	0.0	339.6
165.0		0.2500	23.756	18.651	1,302.0	15.34	95.02	82.6	108.0	0.0	324.8
170.0		0.2500	22.654	17.777	1,127.3	14.57	90.62	82.6	98.0	0.0	309.9
175.0		0.2500	21.552	16.902	969.0	13.79	86.21	82.6	88.6	0.0	295.0
177.0		0.2500	21.111	16.553	910.1	13.48	84.44	82.6	84.9	0.0	113.8
177.5		0.2500	21.001	16.465	895.7	13.40	84.00	82.6	84.0	0.0	28.1
34,156.2											

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:46 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

105 mph with No Ice

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Shaft Segment Forces (Factored)

Seg Top															
Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load (lb)	Ice Load (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.64	431.15	0.650	0.000	0.00	0.000	0.00	260.9	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.64	427.05	0.650	0.000	5.00	24.306	15.80	516.9	0.0	0.0	1,845.2
10.00		1.00	0.70	18.769	20.64	418.86	0.650	0.000	5.00	23.840	15.50	506.9	0.0	0.0	1,809.4
15.00		1.00	0.70	18.769	20.64	410.67	0.650	0.000	5.00	23.374	15.19	496.9	0.0	0.0	1,773.7
20.00		1.00	0.70	18.769	20.64	402.48	0.650	0.000	5.00	22.907	14.89	486.9	0.0	0.0	1,738.0
25.00		1.00	0.70	18.769	20.64	394.28	0.650	0.000	5.00	22.441	14.59	476.8	0.0	0.0	1,702.3
30.00		1.00	0.70	18.769	20.64	386.09	0.650	0.000	5.00	21.975	14.28	472.4	0.0	0.0	1,666.6
35.00		1.00	0.71	19.219	21.14	382.41	0.650	0.000	5.00	21.509	13.98	477.4	0.0	0.0	1,630.9
40.00		1.00	0.74	20.021	22.02	381.84	0.650	0.000	5.00	21.042	13.68	344.7	0.0	0.0	1,595.2
42.13	Bot - Section 2	1.00	0.76	20.548	22.60	380.72	0.650	0.000	2.13	8.822	5.73	246.7	0.0	0.0	668.7
45.00		1.00	0.77	20.898	22.98	379.62	0.650	0.000	2.87	11.966	7.78	337.6	0.0	0.0	1,685.5
48.88	Top - Section 1	1.00	0.79	21.348	23.48	377.79	0.650	0.000	3.88	15.933	10.36	250.9	0.0	0.0	2,243.5
50.00		1.00	0.80	21.667	23.83	383.19	0.650	0.000	1.12	4.547	2.96	308.7	0.0	0.0	301.9
55.00		1.00	0.82	22.042	24.24	381.06	0.650	0.000	5.00	20.014	13.01	505.3	0.0	0.0	1,328.6
60.00		1.00	0.84	22.622	24.88	377.05	0.650	0.000	5.00	19.547	12.71	505.8	0.0	0.0	1,297.4
65.00		1.00	0.86	23.168	25.48	372.47	0.650	0.000	5.00	19.081	12.40	505.0	0.0	0.0	1,266.2
70.00		1.00	0.88	23.683	26.05	367.38	0.650	0.000	5.00	18.615	12.10	503.1	0.0	0.0	1,234.9
75.00		1.00	0.90	24.171	26.58	361.85	0.650	0.000	5.00	18.148	11.80	500.1	0.0	0.0	1,203.7
80.00		1.00	0.91	24.636	27.10	355.93	0.650	0.000	5.00	17.682	11.49	496.2	0.0	0.0	1,172.4
85.00		1.00	0.93	25.080	27.58	349.65	0.650	0.000	5.00	17.216	11.19	255.5	0.0	0.0	1,141.2
85.17	Bot - Section 3	1.00	0.94	25.302	27.83	346.28	0.650	0.000	0.17	0.588	0.38	248.8	0.0	0.0	39.0
90.00		1.00	0.95	25.513	28.06	342.94	0.650	0.000	4.83	16.468	10.70	281.9	0.0	0.0	2,007.9
90.84	Top - Section 2	1.00	0.96	25.746	28.32	339.06	0.650	0.000	0.84	2.821	1.83	246.1	0.0	0.0	343.9
95.00		1.00	0.96	25.947	28.54	342.13	0.650	0.000	4.16	13.779	8.96	447.3	0.0	0.0	783.8
100.0		1.00	0.98	26.306	28.93	335.60	0.650	0.000	5.00	16.134	10.49	481.9	0.0	0.0	917.6
105.0		1.00	0.99	26.685	29.35	328.24	0.650	0.000	5.00	15.668	10.18	474.4	0.0	0.0	890.8
110.0		1.00	1.00	27.050	29.75	320.64	0.650	0.000	5.00	15.202	9.88	466.2	0.0	0.0	864.0
115.0		1.00	1.02	27.404	30.14	312.83	0.650	0.000	5.00	14.736	9.58	457.4	0.0	0.0	837.2
120.0		1.00	1.03	27.747	30.52	304.82	0.650	0.000	5.00	14.269	9.27	448.2	0.0	0.0	810.4
125.0		1.00	1.04	28.079	30.88	296.62	0.650	0.000	5.00	13.803	8.97	427.8	0.0	0.0	783.6
129.7	Bot - Section 4	1.00	1.05	28.394	31.23	288.45	0.650	0.000	4.75	12.690	8.25	216.8	0.0	0.0	720.2
130.0		1.00	1.06	28.552	31.40	284.20	0.650	0.000	0.25	0.657	0.43	193.9	0.0	0.0	61.7
134.2	Top - Section 3	1.00	1.07	28.693	31.56	280.34	0.650	0.000	4.25	11.158	7.25	214.9	0.0	0.0	1,046.5
135.0		1.00	1.07	28.847	31.73	280.62	0.650	0.000	0.75	1.924	1.25	241.2	0.0	0.0	73.1
140.0		1.00	1.08	29.021	31.92	275.62	0.650	0.000	5.00	12.616	8.20	413.2	0.0	0.0	479.0
145.0		1.00	1.09	29.319	32.25	266.79	0.650	0.000	5.00	12.149	7.90	401.6	0.0	0.0	461.1
150.0		1.00	1.10	29.609	32.57	257.82	0.650	0.000	5.00	11.683	7.59	389.7	0.0	0.0	443.3
155.0		1.00	1.11	29.893	32.88	248.71	0.650	0.000	5.00	11.217	7.29	377.3	0.0	0.0	425.4
160.0		1.00	1.12	30.169	33.18	239.47	0.650	0.000	5.00	10.750	6.99	364.6	0.0	0.0	407.6
165.0		1.00	1.13	30.440	33.48	230.11	0.650	0.000	5.00	10.284	6.68	351.5	0.0	0.0	389.7
170.0		1.00	1.14	30.705	33.77	220.63	0.650	0.000	5.00	9.818	6.38	338.1	0.0	0.0	371.9
175.0		1.00	1.15	30.964	34.06	211.03	0.650	0.000	5.00	9.352	6.08	229.9	0.0	0.0	354.0
177.0	Appertunance(s)	1.00	1.16	31.142	34.25	204.25	0.650	0.000	2.00	3.610	2.35	80.2	0.0	0.0	136.6
177.5		1.00	1.16	31.205	34.32	201.82	0.650	0.000	0.50	0.891	0.58	15.9	0.0	0.0	33.7
Totals:									177.50			16,263.2	0.0	40,987.4	

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:46 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

105 mph with No Ice

25 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		260.9	0.0					0.0	0.0	260.9	0.0	0.0	0.0
5.00		516.9	1,845.2					0.0	89.4	516.9	1,934.6	0.0	0.0
10.00		506.9	1,809.4					0.0	89.4	506.9	1,898.8	0.0	0.0
15.00		496.9	1,773.7					0.0	89.4	496.9	1,863.1	0.0	0.0
20.00		486.9	1,738.0					0.0	89.4	486.9	1,827.4	0.0	0.0
25.00		476.8	1,702.3					0.0	89.4	476.8	1,791.7	0.0	0.0
30.00		472.4	1,666.6					0.0	89.4	472.4	1,756.0	0.0	0.0
35.00		477.4	1,630.9					0.0	89.4	477.4	1,720.3	0.0	0.0
40.00		344.7	1,595.2					0.0	89.4	344.7	1,684.6	0.0	0.0
42.13	Bot - Section 2	246.7	668.7					0.0	38.1	246.7	706.8	0.0	0.0
45.00		337.6	1,685.5					0.0	51.3	337.6	1,736.8	0.0	0.0
48.88	Top - Section 1	250.9	2,243.5					0.0	69.4	250.9	2,312.9	0.0	0.0
50.00		308.7	301.9					0.0	20.0	308.7	321.9	0.0	0.0
55.00		505.3	1,328.6					0.0	89.4	505.3	1,418.0	0.0	0.0
60.00		505.8	1,297.4					0.0	89.4	505.8	1,386.8	0.0	0.0
65.00		505.0	1,266.2					0.0	89.4	505.0	1,355.6	0.0	0.0
70.00		503.1	1,234.9					0.0	89.4	503.1	1,324.3	0.0	0.0
75.00		500.1	1,203.7					0.0	89.4	500.1	1,293.1	0.0	0.0
80.00		496.2	1,172.4					0.0	89.4	496.2	1,261.8	0.0	0.0
85.00		255.5	1,141.2					0.0	89.4	255.5	1,230.6	0.0	0.0
85.17	Bot - Section 3	248.8	39.0					0.0	3.1	248.8	42.1	0.0	0.0
90.00		281.9	2,007.9					0.0	86.3	281.9	2,094.2	0.0	0.0
90.84	Top - Section 2	246.1	343.9					0.0	15.0	246.1	358.9	0.0	0.0
95.00		447.3	783.8					0.0	74.4	447.3	858.2	0.0	0.0
100.00		481.9	917.6					0.0	89.4	481.9	1,007.0	0.0	0.0
105.00		474.4	890.8					0.0	89.4	474.4	980.2	0.0	0.0
110.00		466.2	864.0					0.0	89.4	466.2	953.4	0.0	0.0
115.00		457.4	837.2					0.0	89.4	457.4	926.6	0.0	0.0
120.00		448.2	810.4					0.0	89.4	448.2	899.8	0.0	0.0
125.00		427.8	783.6					0.0	89.4	427.8	873.0	0.0	0.0
129.75	Bot - Section 4	216.8	720.2					0.0	85.0	216.8	805.1	0.0	0.0
130.00		193.9	61.7					0.0	4.4	193.9	66.1	0.0	0.0
134.25	Top - Section 3	214.9	1,046.5					0.0	76.0	214.9	1,122.6	0.0	0.0
135.00		241.2	73.1					0.0	13.4	241.2	86.4	0.0	0.0
140.00		413.2	479.0					0.0	89.4	413.2	568.4	0.0	0.0
145.00		401.6	461.1					0.0	89.4	401.6	550.5	0.0	0.0
150.00		389.7	443.3					0.0	89.4	389.7	532.7	0.0	0.0
155.00		377.3	425.4					0.0	89.4	377.3	514.8	0.0	0.0
160.00		364.6	407.6					0.0	89.4	364.6	497.0	0.0	0.0
165.00		351.5	389.7					0.0	89.4	351.5	479.1	0.0	0.0
170.00		338.1	371.9					0.0	89.4	338.1	461.3	0.0	0.0
175.00		229.9	354.0					0.0	89.4	229.9	443.4	0.0	0.0
177.00	Appertunance(s)	80.2	136.6	12,386.6	0.0	32,861.1	4,800.0	0.0	35.8	12,466.8	4,972.4	0.0	0.0
177.50		15.9	33.7					0.0	0.0	15.9	33.7	0.0	0.0
Totals:										28,649.7	48,952.1	0.00	0.00

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:46 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

105 mph with No Ice

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total	Rotation	Ratio
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	(deg)	
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)		
0.00	-48.92	-28.45	0.00	-3,712.69	0.00	3,712.69	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.492
5.00	-46.92	-28.04	0.00	-3,570.46	0.00	3,570.46	6,400.47	3,200.24	14,817.6	7,419.85	0.07	-0.14	0.489
10.00	-44.95	-27.64	0.00	-3,430.26	0.00	3,430.26	6,311.50	3,155.75	14,323.6	7,172.47	0.29	-0.27	0.485
15.00	-43.02	-27.24	0.00	-3,292.08	0.00	3,292.08	6,221.09	3,110.54	13,834.5	6,927.56	0.65	-0.42	0.482
20.00	-41.13	-26.84	0.00	-3,155.90	0.00	3,155.90	6,129.24	3,064.62	13,350.5	6,685.21	1.16	-0.56	0.479
25.00	-39.28	-26.44	0.00	-3,021.72	0.00	3,021.72	6,035.95	3,017.97	12,871.9	6,445.52	1.83	-0.71	0.475
30.00	-37.46	-26.04	0.00	-2,889.51	0.00	2,889.51	5,941.22	2,970.61	12,398.7	6,208.59	2.65	-0.85	0.472
35.00	-35.68	-25.63	0.00	-2,759.29	0.00	2,759.29	5,845.05	2,922.52	11,931.3	5,974.52	3.62	-1.01	0.468
40.00	-33.95	-25.32	0.00	-2,631.12	0.00	2,631.12	5,739.85	2,869.93	11,454.6	5,735.83	4.76	-1.16	0.465
42.13	-33.22	-25.11	0.00	-2,577.18	0.00	2,577.18	5,684.50	2,842.25	11,233.6	5,625.17	5.30	-1.23	0.464
45.00	-31.44	-24.79	0.00	-2,505.11	0.00	2,505.11	5,609.91	2,804.96	10,939.3	5,477.78	6.06	-1.32	0.463
48.88	-29.10	-24.53	0.00	-2,408.92	0.00	2,408.92	4,780.63	2,390.32	9,350.63	4,682.27	7.19	-1.45	0.521
50.00	-28.74	-24.26	0.00	-2,381.45	0.00	2,381.45	4,762.81	2,381.40	9,267.08	4,640.43	7.53	-1.49	0.519
55.00	-27.26	-23.81	0.00	-2,260.13	0.00	2,260.13	4,682.34	2,341.17	8,896.83	4,455.03	9.18	-1.66	0.513
60.00	-25.82	-23.34	0.00	-2,141.10	0.00	2,141.10	4,600.44	2,300.22	8,531.26	4,271.97	11.02	-1.84	0.507
65.00	-24.41	-22.87	0.00	-2,024.40	0.00	2,024.40	4,517.10	2,258.55	8,170.56	4,091.35	13.05	-2.02	0.500
70.00	-23.03	-22.39	0.00	-1,910.07	0.00	1,910.07	4,432.32	2,216.16	7,814.93	3,913.27	15.27	-2.21	0.493
75.00	-21.69	-21.91	0.00	-1,798.11	0.00	1,798.11	4,323.21	2,161.61	7,425.26	3,718.15	17.68	-2.40	0.489
80.00	-20.37	-21.43	0.00	-1,688.56	0.00	1,688.56	4,209.51	2,104.76	7,037.87	3,524.17	20.30	-2.59	0.484
85.00	-19.12	-21.15	0.00	-1,581.41	0.00	1,581.41	4,095.82	2,047.91	6,660.87	3,335.39	23.11	-2.79	0.479
85.17	-19.05	-20.93	0.00	-1,577.74	0.00	1,577.74	4,091.88	2,045.94	6,647.99	3,328.93	23.21	-2.79	0.479
90.00	-16.94	-20.58	0.00	-1,476.70	0.00	1,476.70	3,982.12	1,991.06	6,294.24	3,151.80	26.14	-2.98	0.473
90.84	-16.55	-20.34	0.00	-1,459.42	0.00	1,459.42	3,410.22	1,705.11	5,487.52	2,747.84	26.66	-3.02	0.536
95.00	-15.65	-19.91	0.00	-1,374.78	0.00	1,374.78	3,351.32	1,675.66	5,265.49	2,636.66	29.37	-3.19	0.526
100.00	-14.60	-19.42	0.00	-1,275.26	0.00	1,275.26	3,279.20	1,639.60	5,002.53	2,504.98	32.83	-3.41	0.514
105.00	-13.58	-18.94	0.00	-1,178.14	0.00	1,178.14	3,192.73	1,596.37	4,724.91	2,365.97	36.52	-3.64	0.502
110.00	-12.58	-18.47	0.00	-1,083.43	0.00	1,083.43	3,095.28	1,547.64	4,439.43	2,223.01	40.44	-3.86	0.492
115.00	-11.62	-17.99	0.00	-991.10	0.00	991.10	2,997.82	1,498.91	4,162.85	2,084.52	44.61	-4.09	0.479
120.00	-10.68	-17.52	0.00	-901.14	0.00	901.14	2,900.37	1,450.18	3,895.16	1,950.48	49.02	-4.32	0.466
125.00	-9.78	-17.07	0.00	-813.53	0.00	813.53	2,802.91	1,401.46	3,636.37	1,820.89	53.66	-4.55	0.450
129.75	-8.96	-16.80	0.00	-732.41	0.00	732.41	2,710.27	1,355.13	3,398.59	1,701.82	58.30	-4.77	0.434
130.00	-8.88	-16.62	0.00	-728.26	0.00	728.26	2,705.46	1,352.73	3,386.47	1,695.75	58.55	-4.78	0.433
134.25	-7.75	-16.33	0.00	-657.57	0.00	657.57	1,680.99	840.50	2,090.90	1,047.00	62.89	-4.98	0.633
135.00	-7.63	-16.10	0.00	-645.38	0.00	645.38	1,674.79	837.40	2,071.78	1,037.43	63.67	-5.01	0.627
140.00	-7.02	-15.68	0.00	-564.87	0.00	564.87	1,632.45	816.23	1,944.90	973.89	69.08	-5.33	0.585
145.00	-6.43	-15.26	0.00	-486.48	0.00	486.48	1,588.67	794.34	1,820.24	911.47	74.82	-5.63	0.538
150.00	-5.86	-14.85	0.00	-410.19	0.00	410.19	1,543.46	771.73	1,697.99	850.26	80.87	-5.92	0.487
155.00	-5.33	-14.44	0.00	-335.95	0.00	335.95	1,496.80	748.40	1,578.35	790.35	87.21	-6.20	0.429
160.00	-4.82	-14.04	0.00	-263.75	0.00	263.75	1,448.70	724.35	1,461.52	731.85	93.83	-6.45	0.364
165.00	-4.33	-13.66	0.00	-193.52	0.00	193.52	1,385.70	692.85	1,334.72	668.35	100.69	-6.67	0.293
170.00	-3.88	-13.28	0.00	-125.24	0.00	125.24	1,320.73	660.36	1,211.87	606.84	107.75	-6.84	0.210
175.00	-3.45	-13.00	0.00	-58.87	0.00	58.87	1,255.76	627.88	1,094.95	548.29	114.97	-6.96	0.111
177.00	-0.03	-0.02	0.00	-0.01	0.00	0.01	1,229.77	614.89	1,049.84	525.70	117.89	-6.98	0.000
177.50	0.00	-0.02	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	118.62	-6.98	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:46 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Shaft Segment Forces (Factored)

Seg Top														
Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.64	431.15	0.650	0.000	0.00	0.000	0.00	260.9	0.0	0.0
5.00		1.00	0.70	18.769	20.64	427.05	0.650	0.000	5.00	24.306	15.80	516.9	0.0	1,383.9
10.00		1.00	0.70	18.769	20.64	418.86	0.650	0.000	5.00	23.840	15.50	506.9	0.0	1,357.1
15.00		1.00	0.70	18.769	20.64	410.67	0.650	0.000	5.00	23.374	15.19	496.9	0.0	1,330.3
20.00		1.00	0.70	18.769	20.64	402.48	0.650	0.000	5.00	22.907	14.89	486.9	0.0	1,303.5
25.00		1.00	0.70	18.769	20.64	394.28	0.650	0.000	5.00	22.441	14.59	476.8	0.0	1,276.7
30.00		1.00	0.70	18.769	20.64	386.09	0.650	0.000	5.00	21.975	14.28	472.4	0.0	1,250.0
35.00		1.00	0.71	19.219	21.14	382.41	0.650	0.000	5.00	21.509	13.98	477.4	0.0	1,223.2
40.00		1.00	0.74	20.021	22.02	381.84	0.650	0.000	5.00	21.042	13.68	344.7	0.0	1,196.4
42.13	Bot - Section 2	1.00	0.76	20.548	22.60	380.72	0.650	0.000	2.13	8.822	5.73	246.7	0.0	501.5
45.00		1.00	0.77	20.898	22.98	379.62	0.650	0.000	2.87	11.966	7.78	337.6	0.0	1,264.1
48.88	Top - Section 1	1.00	0.79	21.348	23.48	377.79	0.650	0.000	3.88	15.933	10.36	250.9	0.0	1,682.7
50.00		1.00	0.80	21.667	23.83	383.19	0.650	0.000	1.12	4.547	2.96	308.7	0.0	226.4
55.00		1.00	0.82	22.042	24.24	381.06	0.650	0.000	5.00	20.014	13.01	505.3	0.0	996.5
60.00		1.00	0.84	22.622	24.88	377.05	0.650	0.000	5.00	19.547	12.71	505.8	0.0	973.0
65.00		1.00	0.86	23.168	25.48	372.47	0.650	0.000	5.00	19.081	12.40	505.0	0.0	949.6
70.00		1.00	0.88	23.683	26.05	367.38	0.650	0.000	5.00	18.615	12.10	503.1	0.0	926.2
75.00		1.00	0.90	24.171	26.58	361.85	0.650	0.000	5.00	18.148	11.80	500.1	0.0	902.7
80.00		1.00	0.91	24.636	27.10	355.93	0.650	0.000	5.00	17.682	11.49	496.2	0.0	879.3
85.00		1.00	0.93	25.080	27.58	349.65	0.650	0.000	5.00	17.216	11.19	255.5	0.0	855.9
85.17	Bot - Section 3	1.00	0.94	25.302	27.83	346.28	0.650	0.000	0.17	0.588	0.38	248.8	0.0	29.2
90.00		1.00	0.95	25.513	28.06	342.94	0.650	0.000	4.83	16.468	10.70	281.9	0.0	1,505.9
90.84	Top - Section 2	1.00	0.96	25.746	28.32	339.06	0.650	0.000	0.84	2.821	1.83	246.1	0.0	257.9
95.00		1.00	0.96	25.947	28.54	342.13	0.650	0.000	4.16	13.779	8.96	447.3	0.0	587.9
100.0		1.00	0.98	26.306	28.93	335.60	0.650	0.000	5.00	16.134	10.49	481.9	0.0	688.2
105.0		1.00	0.99	26.685	29.35	328.24	0.650	0.000	5.00	15.668	10.18	474.4	0.0	668.1
110.0		1.00	1.00	27.050	29.75	320.64	0.650	0.000	5.00	15.202	9.88	466.2	0.0	648.0
115.0		1.00	1.02	27.404	30.14	312.83	0.650	0.000	5.00	14.736	9.58	457.4	0.0	627.9
120.0		1.00	1.03	27.747	30.52	304.82	0.650	0.000	5.00	14.269	9.27	448.2	0.0	607.8
125.0		1.00	1.04	28.079	30.88	296.62	0.650	0.000	5.00	13.803	8.97	427.8	0.0	587.7
129.7	Bot - Section 4	1.00	1.05	28.394	31.23	288.45	0.650	0.000	4.75	12.690	8.25	216.8	0.0	540.1
130.0		1.00	1.06	28.552	31.40	284.20	0.650	0.000	0.25	0.657	0.43	193.9	0.0	46.3
134.2	Top - Section 3	1.00	1.07	28.693	31.56	280.34	0.650	0.000	4.25	11.158	7.25	214.9	0.0	784.9
135.0		1.00	1.07	28.847	31.73	280.62	0.650	0.000	0.75	1.924	1.25	241.2	0.0	54.8
140.0		1.00	1.08	29.021	31.92	275.62	0.650	0.000	5.00	12.616	8.20	413.2	0.0	359.2
145.0		1.00	1.09	29.319	32.25	266.79	0.650	0.000	5.00	12.149	7.90	401.6	0.0	345.9
150.0		1.00	1.10	29.609	32.57	257.82	0.650	0.000	5.00	11.683	7.59	389.7	0.0	332.5
155.0		1.00	1.11	29.893	32.88	248.71	0.650	0.000	5.00	11.217	7.29	377.3	0.0	319.1
160.0		1.00	1.12	30.169	33.18	239.47	0.650	0.000	5.00	10.750	6.99	364.6	0.0	305.7
165.0		1.00	1.13	30.440	33.48	230.11	0.650	0.000	5.00	10.284	6.68	351.5	0.0	292.3
170.0		1.00	1.14	30.705	33.77	220.63	0.650	0.000	5.00	9.818	6.38	338.1	0.0	278.9
175.0		1.00	1.15	30.964	34.06	211.03	0.650	0.000	5.00	9.352	6.08	229.9	0.0	265.5
177.0	Appertunance(s)	1.00	1.16	31.142	34.25	204.25	0.650	0.000	2.00	3.610	2.35	80.2	0.0	102.5
177.5		1.00	1.16	31.205	34.32	201.82	0.650	0.000	0.50	0.891	0.58	15.9	0.0	25.3
Totals:									177.50			16,263.2	0.0	30,740.6

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:47 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

25 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		260.9	0.0					0.0	0.0	260.9	0.0	0.0	0.0
5.00		516.9	1,383.9					0.0	67.0	516.9	1,450.9	0.0	0.0
10.00		506.9	1,357.1					0.0	67.0	506.9	1,424.1	0.0	0.0
15.00		496.9	1,330.3					0.0	67.0	496.9	1,397.4	0.0	0.0
20.00		486.9	1,303.5					0.0	67.0	486.9	1,370.6	0.0	0.0
25.00		476.8	1,276.7					0.0	67.0	476.8	1,343.8	0.0	0.0
30.00		472.4	1,250.0					0.0	67.0	472.4	1,317.0	0.0	0.0
35.00		477.4	1,223.2					0.0	67.0	477.4	1,290.2	0.0	0.0
40.00		344.7	1,196.4					0.0	67.0	344.7	1,263.4	0.0	0.0
42.13	Bot - Section 2	246.7	501.5					0.0	28.6	246.7	530.1	0.0	0.0
45.00		337.6	1,264.1					0.0	38.5	337.6	1,302.6	0.0	0.0
48.88	Top - Section 1	250.9	1,682.7					0.0	52.0	250.9	1,734.7	0.0	0.0
50.00		308.7	226.4					0.0	15.0	308.7	241.4	0.0	0.0
55.00		505.3	996.5					0.0	67.0	505.3	1,063.5	0.0	0.0
60.00		505.8	973.0					0.0	67.0	505.8	1,040.1	0.0	0.0
65.00		505.0	949.6					0.0	67.0	505.0	1,016.7	0.0	0.0
70.00		503.1	926.2					0.0	67.0	503.1	993.2	0.0	0.0
75.00		500.1	902.7					0.0	67.0	500.1	969.8	0.0	0.0
80.00		496.2	879.3					0.0	67.0	496.2	946.4	0.0	0.0
85.00		255.5	855.9					0.0	67.0	255.5	922.9	0.0	0.0
85.17	Bot - Section 3	248.8	29.2					0.0	2.3	248.8	31.6	0.0	0.0
90.00		281.9	1,505.9					0.0	64.7	281.9	1,570.7	0.0	0.0
90.84	Top - Section 2	246.1	257.9					0.0	11.3	246.1	269.2	0.0	0.0
95.00		447.3	587.9					0.0	55.8	447.3	643.6	0.0	0.0
100.00		481.9	688.2					0.0	67.0	481.9	755.2	0.0	0.0
105.00		474.4	668.1					0.0	67.0	474.4	735.1	0.0	0.0
110.00		466.2	648.0					0.0	67.0	466.2	715.0	0.0	0.0
115.00		457.4	627.9					0.0	67.0	457.4	695.0	0.0	0.0
120.00		448.2	607.8					0.0	67.0	448.2	674.9	0.0	0.0
125.00		427.8	587.7					0.0	67.0	427.8	654.8	0.0	0.0
129.75	Bot - Section 4	216.8	540.1					0.0	63.7	216.8	603.9	0.0	0.0
130.00		193.9	46.3					0.0	3.3	193.9	49.6	0.0	0.0
134.25	Top - Section 3	214.9	784.9					0.0	57.0	214.9	841.9	0.0	0.0
135.00		241.2	54.8					0.0	10.0	241.2	64.8	0.0	0.0
140.00		413.2	359.2					0.0	67.0	413.2	426.3	0.0	0.0
145.00		401.6	345.9					0.0	67.0	401.6	412.9	0.0	0.0
150.00		389.7	332.5					0.0	67.0	389.7	399.5	0.0	0.0
155.00		377.3	319.1					0.0	67.0	377.3	386.1	0.0	0.0
160.00		364.6	305.7					0.0	67.0	364.6	372.7	0.0	0.0
165.00		351.5	292.3					0.0	67.0	351.5	359.3	0.0	0.0
170.00		338.1	278.9					0.0	67.0	338.1	346.0	0.0	0.0
175.00		229.9	265.5					0.0	67.0	229.9	332.6	0.0	0.0
177.00	Appertunance(s)	80.2	102.5	12,386.6	0.0	32,861.1	3,600.0	0.0	26.8	12,466.8	3,729.3	0.0	0.0
177.50		15.9	25.3					0.0	0.0	15.9	25.3	0.0	0.0
Totals:										28,649.7	36,714.1	0.00	0.00

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:47 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

25 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	-36.68	-28.43	0.00	-3,678.07	0.00	3,678.07	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.485
5.00	-35.16	-28.00	0.00	-3,535.91	0.00	3,535.91	6,400.47	3,200.24	14,817.6	7,419.85	0.07	-0.13	0.482
10.00	-33.67	-27.57	0.00	-3,395.93	0.00	3,395.93	6,311.50	3,155.75	14,323.6	7,172.47	0.29	-0.27	0.479
15.00	-32.21	-27.14	0.00	-3,258.10	0.00	3,258.10	6,221.09	3,110.54	13,834.5	6,927.56	0.65	-0.41	0.476
20.00	-30.78	-26.72	0.00	-3,122.40	0.00	3,122.40	6,129.24	3,064.62	13,350.5	6,685.21	1.15	-0.55	0.472
25.00	-29.37	-26.30	0.00	-2,988.80	0.00	2,988.80	6,035.95	3,017.97	12,871.9	6,445.52	1.81	-0.70	0.469
30.00	-28.00	-25.89	0.00	-2,857.29	0.00	2,857.29	5,941.22	2,970.61	12,398.7	6,208.59	2.62	-0.85	0.465
35.00	-26.65	-25.46	0.00	-2,727.86	0.00	2,727.86	5,845.05	2,922.52	11,931.3	5,974.52	3.59	-1.00	0.461
40.00	-25.34	-25.14	0.00	-2,600.57	0.00	2,600.57	5,739.85	2,869.93	11,454.6	5,735.83	4.71	-1.15	0.458
42.13	-24.78	-24.92	0.00	-2,547.03	0.00	2,547.03	5,684.50	2,842.25	11,233.6	5,625.17	5.24	-1.22	0.457
45.00	-23.44	-24.59	0.00	-2,475.52	0.00	2,475.52	5,609.91	2,804.96	10,939.3	5,477.78	6.00	-1.31	0.456
48.88	-21.68	-24.33	0.00	-2,380.10	0.00	2,380.10	4,780.63	2,390.32	9,350.63	4,682.27	7.12	-1.43	0.513
50.00	-21.40	-24.06	0.00	-2,352.85	0.00	2,352.85	4,762.81	2,381.40	9,267.08	4,640.43	7.46	-1.47	0.512
55.00	-20.28	-23.58	0.00	-2,232.57	0.00	2,232.57	4,682.34	2,341.17	8,896.83	4,455.03	9.09	-1.64	0.506
60.00	-19.18	-23.11	0.00	-2,114.65	0.00	2,114.65	4,600.44	2,300.22	8,531.26	4,271.97	10.90	-1.82	0.499
65.00	-18.11	-22.63	0.00	-1,999.11	0.00	1,999.11	4,517.10	2,258.55	8,170.56	4,091.35	12.91	-2.00	0.493
70.00	-17.07	-22.14	0.00	-1,885.98	0.00	1,885.98	4,432.32	2,216.16	7,814.93	3,913.27	15.10	-2.18	0.486
75.00	-16.05	-21.66	0.00	-1,775.27	0.00	1,775.27	4,323.21	2,161.61	7,425.26	3,718.15	17.49	-2.37	0.481
80.00	-15.05	-21.17	0.00	-1,666.98	0.00	1,666.98	4,209.51	2,104.76	7,037.87	3,524.17	20.07	-2.56	0.477
85.00	-14.11	-20.90	0.00	-1,561.13	0.00	1,561.13	4,095.82	2,047.91	6,660.87	3,335.39	22.86	-2.75	0.472
85.17	-14.05	-20.67	0.00	-1,557.50	0.00	1,557.50	4,091.88	2,045.94	6,647.99	3,328.93	22.96	-2.76	0.471
90.00	-12.46	-20.34	0.00	-1,457.73	0.00	1,457.73	3,982.12	1,991.06	6,294.24	3,151.80	25.85	-2.95	0.466
90.84	-12.17	-20.10	0.00	-1,440.65	0.00	1,440.65	3,410.22	1,705.11	5,487.52	2,747.84	26.37	-2.98	0.528
95.00	-11.48	-19.66	0.00	-1,357.04	0.00	1,357.04	3,351.32	1,675.66	5,265.49	2,636.66	29.04	-3.15	0.518
100.00	-10.68	-19.17	0.00	-1,258.76	0.00	1,258.76	3,279.20	1,639.60	5,002.53	2,504.98	32.46	-3.37	0.506
105.00	-9.90	-18.69	0.00	-1,162.89	0.00	1,162.89	3,192.73	1,596.37	4,724.91	2,365.97	36.10	-3.59	0.495
110.00	-9.15	-18.22	0.00	-1,069.43	0.00	1,069.43	3,095.28	1,547.64	4,439.43	2,223.01	39.98	-3.82	0.484
115.00	-8.41	-17.75	0.00	-978.34	0.00	978.34	2,997.82	1,498.91	4,162.85	2,084.52	44.10	-4.04	0.472
120.00	-7.71	-17.28	0.00	-889.60	0.00	889.60	2,900.37	1,450.18	3,895.16	1,950.48	48.45	-4.27	0.459
125.00	-7.02	-16.83	0.00	-803.18	0.00	803.18	2,802.91	1,401.46	3,636.37	1,820.89	53.04	-4.50	0.444
129.75	-6.40	-16.58	0.00	-723.17	0.00	723.17	2,710.27	1,355.13	3,398.59	1,701.82	57.63	-4.71	0.427
130.00	-6.34	-16.40	0.00	-719.08	0.00	719.08	2,705.46	1,352.73	3,386.47	1,695.75	57.87	-4.72	0.427
134.25	-5.49	-16.12	0.00	-649.35	0.00	649.35	1,680.99	840.50	2,090.90	1,047.00	62.16	-4.92	0.624
135.00	-5.40	-15.89	0.00	-637.31	0.00	637.31	1,674.79	837.40	2,071.78	1,037.43	62.93	-4.95	0.618
140.00	-4.92	-15.47	0.00	-557.85	0.00	557.85	1,632.45	816.23	1,944.90	973.89	68.28	-5.26	0.576
145.00	-4.47	-15.05	0.00	-480.51	0.00	480.51	1,588.67	794.34	1,820.24	911.47	73.94	-5.56	0.530
150.00	-4.04	-14.65	0.00	-405.24	0.00	405.24	1,543.46	771.73	1,697.99	850.26	79.92	-5.85	0.480
155.00	-3.63	-14.25	0.00	-332.01	0.00	332.01	1,496.80	748.40	1,578.35	790.35	86.18	-6.12	0.423
160.00	-3.25	-13.86	0.00	-260.77	0.00	260.77	1,448.70	724.35	1,461.52	731.85	92.72	-6.37	0.359
165.00	-2.88	-13.48	0.00	-191.48	0.00	191.48	1,385.70	692.85	1,334.72	668.35	99.50	-6.59	0.289
170.00	-2.55	-13.11	0.00	-124.10	0.00	124.10	1,320.73	660.36	1,211.87	606.84	106.48	-6.76	0.207
175.00	-2.23	-12.84	0.00	-58.56	0.00	58.56	1,255.76	627.88	1,094.95	548.29	113.61	-6.87	0.109
177.00	-0.02	-0.02	0.00	-0.01	0.00	0.01	1,229.77	614.89	1,049.84	525.70	116.49	-6.90	0.000
177.50	0.00	-0.02	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	117.21	-6.90	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:47 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

24 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

Shaft Segment Forces (Factored)

Seg Top														
Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	71.0	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.159	5.00	25.272	30.33	141.0	421.5	2,266.6
10.00		1.00	0.70	4.256	4.682	0.000	1.200	1.293	5.00	24.918	29.90	138.8	462.6	2,272.0
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.361	5.00	24.508	29.41	136.5	478.0	2,251.7
20.00		1.00	0.70	4.256	4.682	0.000	1.200	1.408	5.00	24.081	28.90	134.1	485.0	2,223.1
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.444	5.00	23.644	28.37	131.6	487.7	2,190.0
30.00		1.00	0.70	4.256	4.682	0.000	1.200	1.473	5.00	23.202	27.84	130.6	487.7	2,154.3
35.00		1.00	0.71	4.358	4.794	0.000	1.200	1.498	5.00	22.757	27.31	132.3	485.8	2,116.7
40.00		1.00	0.74	4.540	4.994	0.000	1.200	1.519	5.00	22.308	26.77	95.6	482.5	2,077.7
42.13	Bot - Section 2	1.00	0.76	4.659	5.125	0.000	1.200	1.533	2.13	9.367	11.24	68.5	205.6	874.3
45.00		1.00	0.77	4.739	5.213	0.000	1.200	1.542	2.87	12.704	15.24	93.8	280.0	1,965.5
48.88	Top - Section 1	1.00	0.79	4.841	5.325	0.000	1.200	1.554	3.88	16.938	20.33	69.8	375.0	2,618.6
50.00		1.00	0.80	4.913	5.404	0.000	1.200	1.562	1.12	4.839	5.81	86.0	108.3	410.2
55.00		1.00	0.82	4.998	5.498	0.000	1.200	1.571	5.00	21.323	25.59	141.0	475.6	1,804.2
60.00		1.00	0.84	5.130	5.643	0.000	1.200	1.586	5.00	20.869	25.04	141.4	469.1	1,766.5
65.00		1.00	0.86	5.253	5.779	0.000	1.200	1.599	5.00	20.414	24.50	141.5	462.1	1,728.3
70.00		1.00	0.88	5.370	5.907	0.000	1.200	1.611	5.00	19.958	23.95	141.3	454.7	1,689.6
75.00		1.00	0.90	5.481	6.029	0.000	1.200	1.623	5.00	19.501	23.40	140.8	446.9	1,650.5
80.00		1.00	0.91	5.586	6.145	0.000	1.200	1.634	5.00	19.044	22.85	140.0	438.7	1,611.1
85.00		1.00	0.93	5.687	6.256	0.000	1.200	1.644	5.00	18.586	22.30	72.2	430.2	1,571.4
85.17	Bot - Section 3	1.00	0.94	5.737	6.311	0.000	1.200	1.649	0.17	0.636	0.76	70.4	14.9	53.9
90.00		1.00	0.95	5.785	6.364	0.000	1.200	1.654	4.83	17.798	21.36	79.7	414.3	2,422.3
90.84	Top - Section 2	1.00	0.96	5.838	6.422	0.000	1.200	1.659	0.84	3.054	3.66	69.8	72.0	415.9
95.00		1.00	0.96	5.884	6.472	0.000	1.200	1.664	4.16	14.933	17.92	127.0	349.8	1,133.6
100.0		1.00	0.98	5.965	6.562	0.000	1.200	1.672	5.00	17.527	21.03	137.2	410.9	1,328.5
105.0		1.00	0.99	6.051	6.656	0.000	1.200	1.680	5.00	17.068	20.48	135.4	401.5	1,292.3
110.0		1.00	1.00	6.134	6.747	0.000	1.200	1.688	5.00	16.608	19.93	133.5	391.8	1,255.8
115.0		1.00	1.02	6.214	6.835	0.000	1.200	1.696	5.00	16.149	19.38	131.4	382.0	1,219.2
120.0		1.00	1.03	6.292	6.921	0.000	1.200	1.703	5.00	15.688	18.83	129.1	372.0	1,182.4
125.0		1.00	1.04	6.367	7.004	0.000	1.200	1.710	5.00	15.228	18.27	123.7	361.8	1,145.4
129.7	Bot - Section 4	1.00	1.05	6.439	7.082	0.000	1.200	1.717	4.75	14.050	16.86	62.8	334.6	1,054.8
130.0		1.00	1.06	6.474	7.122	0.000	1.200	1.720	0.25	0.728	0.87	56.3	17.6	79.3
134.2	Top - Section 3	1.00	1.07	6.506	7.157	0.000	1.200	1.723	4.25	12.379	14.86	62.4	296.1	1,342.6
135.0		1.00	1.07	6.541	7.195	0.000	1.200	1.726	0.75	2.139	2.57	70.3	51.8	124.9
140.0		1.00	1.08	6.581	7.239	0.000	1.200	1.730	5.00	14.057	16.87	120.7	335.8	814.8
145.0		1.00	1.09	6.648	7.313	0.000	1.200	1.736	5.00	13.596	16.32	117.9	325.1	786.2
150.0		1.00	1.10	6.714	7.386	0.000	1.200	1.742	5.00	13.135	15.76	114.9	314.2	757.5
155.0		1.00	1.11	6.778	7.456	0.000	1.200	1.748	5.00	12.673	15.21	111.8	303.2	728.7
160.0		1.00	1.12	6.841	7.525	0.000	1.200	1.754	5.00	12.212	14.65	108.7	292.2	699.8
165.0		1.00	1.13	6.902	7.593	0.000	1.200	1.759	5.00	11.750	14.10	105.4	281.0	670.7
170.0		1.00	1.14	6.963	7.659	0.000	1.200	1.765	5.00	11.288	13.55	102.0	269.7	641.6
175.0		1.00	1.15	7.021	7.723	0.000	1.200	1.770	5.00	10.826	12.99	69.8	258.4	612.4
177.0	Appertunance(s)	1.00	1.16	7.062	7.768	0.000	1.200	1.773	2.00	4.201	5.04	24.4	101.6	238.2
177.5		1.00	1.16	7.076	7.784	0.000	1.200	1.775	0.50	1.039	1.25	4.9	25.3	59.0
Totals:								177.50			4,617.2	14,314.7	55,302.2	

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:48 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

24 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		71.0	0.0					0.0	0.0	71.0	0.0	0.0	0.0
5.00		141.0	2,266.6					0.0	89.4	141.0	2,356.0	0.0	0.0
10.00		138.8	2,272.0					0.0	89.4	138.8	2,361.4	0.0	0.0
15.00		136.5	2,251.7					0.0	89.4	136.5	2,341.1	0.0	0.0
20.00		134.1	2,223.1					0.0	89.4	134.1	2,312.5	0.0	0.0
25.00		131.6	2,190.0					0.0	89.4	131.6	2,279.4	0.0	0.0
30.00		130.6	2,154.3					0.0	89.4	130.6	2,243.7	0.0	0.0
35.00		132.3	2,116.7					0.0	89.4	132.3	2,206.1	0.0	0.0
40.00		95.6	2,077.7					0.0	89.4	95.6	2,167.1	0.0	0.0
42.13	Bot - Section 2	68.5	874.3					0.0	38.1	68.5	912.4	0.0	0.0
45.00		93.8	1,965.5					0.0	51.3	93.8	2,016.8	0.0	0.0
48.88	Top - Section 1	69.8	2,618.6					0.0	69.4	69.8	2,687.9	0.0	0.0
50.00		86.0	410.2					0.0	20.0	86.0	430.2	0.0	0.0
55.00		141.0	1,804.2					0.0	89.4	141.0	1,893.6	0.0	0.0
60.00		141.4	1,766.5					0.0	89.4	141.4	1,855.9	0.0	0.0
65.00		141.5	1,728.3					0.0	89.4	141.5	1,817.7	0.0	0.0
70.00		141.3	1,689.6					0.0	89.4	141.3	1,779.0	0.0	0.0
75.00		140.8	1,650.5					0.0	89.4	140.8	1,739.9	0.0	0.0
80.00		140.0	1,611.1					0.0	89.4	140.0	1,700.5	0.0	0.0
85.00		72.2	1,571.4					0.0	89.4	72.2	1,660.8	0.0	0.0
85.17	Bot - Section 3	70.4	53.9					0.0	3.1	70.4	57.0	0.0	0.0
90.00		79.7	2,422.3					0.0	86.3	79.7	2,508.6	0.0	0.0
90.84	Top - Section 2	69.8	415.9					0.0	15.0	69.8	431.0	0.0	0.0
95.00		127.0	1,133.6					0.0	74.4	127.0	1,208.0	0.0	0.0
100.00		137.2	1,328.5					0.0	89.4	137.2	1,417.9	0.0	0.0
105.00		135.4	1,292.3					0.0	89.4	135.4	1,381.7	0.0	0.0
110.00		133.5	1,255.8					0.0	89.4	133.5	1,345.2	0.0	0.0
115.00		131.4	1,219.2					0.0	89.4	131.4	1,308.6	0.0	0.0
120.00		129.1	1,182.4					0.0	89.4	129.1	1,271.8	0.0	0.0
125.00		123.7	1,145.4					0.0	89.4	123.7	1,234.8	0.0	0.0
129.75	Bot - Section 4	62.8	1,054.8					0.0	85.0	62.8	1,139.8	0.0	0.0
130.00		56.3	79.3					0.0	4.4	56.3	83.7	0.0	0.0
134.25	Top - Section 3	62.4	1,342.6					0.0	76.0	62.4	1,418.7	0.0	0.0
135.00		70.3	124.9					0.0	13.4	70.3	138.2	0.0	0.0
140.00		120.7	814.8					0.0	89.4	120.7	904.2	0.0	0.0
145.00		117.9	786.2					0.0	89.4	117.9	875.6	0.0	0.0
150.00		114.9	757.5					0.0	89.4	114.9	846.9	0.0	0.0
155.00		111.8	728.7					0.0	89.4	111.8	818.1	0.0	0.0
160.00		108.7	699.8					0.0	89.4	108.7	789.2	0.0	0.0
165.00		105.4	670.7					0.0	89.4	105.4	760.1	0.0	0.0
170.00		102.0	641.6					0.0	89.4	102.0	731.0	0.0	0.0
175.00		69.8	612.4					0.0	89.4	69.8	701.8	0.0	0.0
177.00	Appertunance(s)	24.4	238.2	1,199.7	0.0	2,536.1	7,687.8	0.0	35.8	1,224.1	7,961.8	0.0	0.0
177.50		4.9	59.0					0.0	0.0	4.9	59.0	0.0	0.0
Totals:										5,816.86	66,154.6	0.00	0.00

Site Number: 411184

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Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.15	-5.76	0.00	-638.13	0.00	638.13	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.093
5.00	-63.80	-5.64	0.00	-609.33	0.00	609.33	6,400.47	3,200.24	14,817.6	7,419.85	0.01	-0.02	0.092
10.00	-61.43	-5.53	0.00	-581.11	0.00	581.11	6,311.50	3,155.75	14,323.6	7,172.47	0.05	-0.05	0.091
15.00	-59.09	-5.41	0.00	-553.47	0.00	553.47	6,221.09	3,110.54	13,834.5	6,927.56	0.11	-0.07	0.089
20.00	-56.77	-5.30	0.00	-526.40	0.00	526.40	6,129.24	3,064.62	13,350.5	6,685.21	0.20	-0.09	0.088
25.00	-54.49	-5.19	0.00	-499.89	0.00	499.89	6,035.95	3,017.97	12,871.9	6,445.52	0.31	-0.12	0.087
30.00	-52.25	-5.08	0.00	-473.95	0.00	473.95	5,941.22	2,970.61	12,398.7	6,208.59	0.45	-0.14	0.085
35.00	-50.04	-4.96	0.00	-448.57	0.00	448.57	5,845.05	2,922.52	11,931.3	5,974.52	0.61	-0.17	0.084
40.00	-47.87	-4.87	0.00	-423.78	0.00	423.78	5,739.85	2,869.93	11,454.6	5,735.83	0.80	-0.19	0.082
42.13	-46.96	-4.81	0.00	-413.40	0.00	413.40	5,684.50	2,842.25	11,233.6	5,625.17	0.89	-0.20	0.082
45.00	-44.94	-4.72	0.00	-399.60	0.00	399.60	5,609.91	2,804.96	10,939.3	5,477.78	1.02	-0.22	0.081
48.88	-42.25	-4.65	0.00	-381.27	0.00	381.27	4,780.63	2,390.32	9,350.63	4,682.27	1.21	-0.24	0.090
50.00	-41.82	-4.58	0.00	-376.06	0.00	376.06	4,762.81	2,381.40	9,267.08	4,640.43	1.26	-0.25	0.090
55.00	-39.92	-4.45	0.00	-353.18	0.00	353.18	4,682.34	2,341.17	8,896.83	4,455.03	1.53	-0.27	0.088
60.00	-38.07	-4.31	0.00	-330.96	0.00	330.96	4,600.44	2,300.22	8,531.26	4,271.97	1.83	-0.30	0.086
65.00	-36.25	-4.18	0.00	-309.39	0.00	309.39	4,517.10	2,258.55	8,170.56	4,091.35	2.16	-0.33	0.084
70.00	-34.47	-4.05	0.00	-288.49	0.00	288.49	4,432.32	2,216.16	7,814.93	3,913.27	2.52	-0.36	0.082
75.00	-32.73	-3.91	0.00	-268.26	0.00	268.26	4,323.21	2,161.61	7,425.26	3,718.15	2.91	-0.39	0.080
80.00	-31.03	-3.77	0.00	-248.72	0.00	248.72	4,209.51	2,104.76	7,037.87	3,524.17	3.33	-0.41	0.078
85.00	-29.36	-3.70	0.00	-229.85	0.00	229.85	4,095.82	2,047.91	6,660.87	3,335.39	3.78	-0.44	0.076
85.17	-29.31	-3.63	0.00	-229.21	0.00	229.21	4,091.88	2,045.94	6,647.99	3,328.93	3.80	-0.44	0.076
90.00	-26.80	-3.54	0.00	-211.68	0.00	211.68	3,982.12	1,991.06	6,294.24	3,151.80	4.26	-0.47	0.074
90.84	-26.37	-3.47	0.00	-208.70	0.00	208.70	3,410.22	1,705.11	5,487.52	2,747.84	4.34	-0.48	0.084
95.00	-25.16	-3.35	0.00	-194.25	0.00	194.25	3,351.32	1,675.66	5,265.49	2,636.66	4.77	-0.50	0.081
100.00	-23.74	-3.21	0.00	-177.51	0.00	177.51	3,279.20	1,639.60	5,002.53	2,504.98	5.31	-0.53	0.078
105.00	-22.36	-3.08	0.00	-161.45	0.00	161.45	3,192.73	1,596.37	4,724.91	2,365.97	5.88	-0.56	0.075
110.00	-21.01	-2.94	0.00	-146.08	0.00	146.08	3,095.28	1,547.64	4,439.43	2,223.01	6.49	-0.59	0.073
115.00	-19.70	-2.80	0.00	-131.38	0.00	131.38	2,997.82	1,498.91	4,162.85	2,084.52	7.13	-0.62	0.070
120.00	-18.43	-2.67	0.00	-117.36	0.00	117.36	2,900.37	1,450.18	3,895.16	1,950.48	7.80	-0.65	0.067
125.00	-17.20	-2.54	0.00	-104.00	0.00	104.00	2,802.91	1,401.46	3,636.37	1,820.89	8.50	-0.68	0.063
129.75	-16.06	-2.47	0.00	-91.93	0.00	91.93	2,710.27	1,355.13	3,398.59	1,701.82	9.19	-0.71	0.060
130.00	-15.98	-2.42	0.00	-91.32	0.00	91.32	2,705.46	1,352.73	3,386.47	1,695.75	9.23	-0.71	0.060
134.25	-14.56	-2.34	0.00	-81.04	0.00	81.04	1,680.99	840.50	2,090.90	1,047.00	9.88	-0.74	0.086
135.00	-14.42	-2.27	0.00	-79.30	0.00	79.30	1,674.79	837.40	2,071.78	1,037.43	9.99	-0.74	0.085
140.00	-13.51	-2.15	0.00	-67.94	0.00	67.94	1,632.45	816.23	1,944.90	973.89	10.79	-0.78	0.078
145.00	-12.64	-2.03	0.00	-57.20	0.00	57.20	1,588.67	794.34	1,820.24	911.47	11.63	-0.82	0.071
150.00	-11.79	-1.91	0.00	-47.07	0.00	47.07	1,543.46	771.73	1,697.99	850.26	12.50	-0.85	0.063
155.00	-10.98	-1.79	0.00	-37.55	0.00	37.55	1,496.80	748.40	1,578.35	790.35	13.41	-0.88	0.055
160.00	-10.19	-1.67	0.00	-28.62	0.00	28.62	1,448.70	724.35	1,461.52	731.85	14.35	-0.91	0.046
165.00	-9.43	-1.56	0.00	-20.27	0.00	20.27	1,385.70	692.85	1,334.72	668.35	15.31	-0.93	0.037
170.00	-8.70	-1.44	0.00	-12.49	0.00	12.49	1,320.73	660.36	1,211.87	606.84	16.30	-0.95	0.027
175.00	-8.00	-1.36	0.00	-5.27	0.00	5.27	1,255.76	627.88	1,094.95	548.29	17.30	-0.96	0.016
177.00	-0.06	-0.01	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	17.70	-0.96	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	17.80	-0.96	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:48 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	246.37	0.650	0.000	0.00	0.000	0.00	53.3	0.0	0.0
5.00		1.00	0.70	6.129	6.742	244.03	0.650	0.000	5.00	24.306	15.80	105.5	0.0	1,537.6
10.00		1.00	0.70	6.129	6.742	239.35	0.650	0.000	5.00	23.840	15.50	103.4	0.0	1,507.9
15.00		1.00	0.70	6.129	6.742	234.67	0.650	0.000	5.00	23.374	15.19	101.4	0.0	1,478.1
20.00		1.00	0.70	6.129	6.742	229.98	0.650	0.000	5.00	22.907	14.89	99.4	0.0	1,448.4
25.00		1.00	0.70	6.129	6.742	225.30	0.650	0.000	5.00	22.441	14.59	97.3	0.0	1,418.6
30.00		1.00	0.70	6.129	6.742	220.62	0.650	0.000	5.00	21.975	14.28	96.4	0.0	1,388.8
35.00		1.00	0.71	6.276	6.903	218.52	0.650	0.000	5.00	21.509	13.98	97.4	0.0	1,359.1
40.00		1.00	0.74	6.538	7.191	218.19	0.650	0.000	5.00	21.042	13.68	70.3	0.0	1,329.3
42.13	Bot - Section 2	1.00	0.76	6.709	7.380	217.55	0.650	0.000	2.13	8.822	5.73	50.4	0.0	557.3
45.00		1.00	0.77	6.824	7.506	216.93	0.650	0.000	2.87	11.966	7.78	68.9	0.0	1,404.6
48.88	Top - Section 1	1.00	0.79	6.971	7.668	215.88	0.650	0.000	3.88	15.933	10.36	51.2	0.0	1,869.6
50.00		1.00	0.80	7.075	7.782	218.96	0.650	0.000	1.12	4.547	2.96	63.0	0.0	251.6
55.00		1.00	0.82	7.197	7.917	217.75	0.650	0.000	5.00	20.014	13.01	103.1	0.0	1,107.2
60.00		1.00	0.84	7.387	8.126	215.45	0.650	0.000	5.00	19.547	12.71	103.2	0.0	1,081.2
65.00		1.00	0.86	7.565	8.321	212.84	0.650	0.000	5.00	19.081	12.40	103.1	0.0	1,055.1
70.00		1.00	0.88	7.733	8.506	209.93	0.650	0.000	5.00	18.615	12.10	102.7	0.0	1,029.1
75.00		1.00	0.90	7.893	8.682	206.77	0.650	0.000	5.00	18.148	11.80	102.1	0.0	1,003.1
80.00		1.00	0.91	8.044	8.849	203.39	0.650	0.000	5.00	17.682	11.49	101.3	0.0	977.0
85.00		1.00	0.93	8.189	9.008	199.80	0.650	0.000	5.00	17.216	11.19	52.1	0.0	951.0
85.17	Bot - Section 3	1.00	0.94	8.262	9.088	197.87	0.650	0.000	0.17	0.588	0.38	50.8	0.0	32.5
90.00		1.00	0.95	8.331	9.164	195.96	0.650	0.000	4.83	16.468	10.70	57.5	0.0	1,673.3
90.84	Top - Section 2	1.00	0.96	8.407	9.247	193.75	0.650	0.000	0.84	2.821	1.83	50.2	0.0	286.6
95.00		1.00	0.96	8.473	9.320	195.50	0.650	0.000	4.16	13.779	8.96	91.3	0.0	653.2
100.0		1.00	0.98	8.590	9.449	191.77	0.650	0.000	5.00	16.134	10.49	98.4	0.0	764.6
105.0		1.00	0.99	8.713	9.585	187.56	0.650	0.000	5.00	15.668	10.18	96.8	0.0	742.3
110.0		1.00	1.00	8.833	9.716	183.22	0.650	0.000	5.00	15.202	9.88	95.1	0.0	720.0
115.0		1.00	1.02	8.948	9.843	178.76	0.650	0.000	5.00	14.736	9.58	93.4	0.0	697.7
120.0		1.00	1.03	9.060	9.966	174.18	0.650	0.000	5.00	14.269	9.27	91.5	0.0	675.4
125.0		1.00	1.04	9.169	10.08	169.50	0.650	0.000	5.00	13.803	8.97	87.3	0.0	653.0
129.7	Bot - Section 4	1.00	1.05	9.272	10.19	164.83	0.650	0.000	4.75	12.690	8.25	44.3	0.0	600.1
130.0		1.00	1.06	9.323	10.25	162.40	0.650	0.000	0.25	0.657	0.43	39.6	0.0	51.4
134.2	Top - Section 3	1.00	1.07	9.369	10.30	160.19	0.650	0.000	4.25	11.158	7.25	43.9	0.0	872.1
135.0		1.00	1.07	9.419	10.36	160.35	0.650	0.000	0.75	1.924	1.25	49.2	0.0	60.9
140.0		1.00	1.08	9.476	10.42	157.49	0.650	0.000	5.00	12.616	8.20	84.3	0.0	399.2
145.0		1.00	1.09	9.574	10.53	152.45	0.650	0.000	5.00	12.149	7.90	82.0	0.0	384.3
150.0		1.00	1.10	9.668	10.63	147.32	0.650	0.000	5.00	11.683	7.59	79.5	0.0	369.4
155.0		1.00	1.11	9.761	10.73	142.12	0.650	0.000	5.00	11.217	7.29	77.0	0.0	354.5
160.0		1.00	1.12	9.851	10.83	136.84	0.650	0.000	5.00	10.750	6.99	74.4	0.0	339.6
165.0		1.00	1.13	9.940	10.93	131.49	0.650	0.000	5.00	10.284	6.68	71.7	0.0	324.8
170.0		1.00	1.14	10.026	11.02	126.07	0.650	0.000	5.00	9.818	6.38	69.0	0.0	309.9
175.0		1.00	1.15	10.111	11.12	120.59	0.650	0.000	5.00	9.352	6.08	46.9	0.0	295.0
177.0	Appertunance(s)	1.00	1.16	10.169	11.18	116.71	0.650	0.000	2.00	3.610	2.35	16.4	0.0	113.8
177.5		1.00	1.16	10.189	11.20	115.32	0.650	0.000	0.50	0.891	0.58	3.2	0.0	28.1
Totals:								177.50				3,319.0	0.0	34,156.2

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 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		53.3	0.0					0.0	0.0	53.3	0.0	0.0	0.0
5.00		105.5	1,537.6					0.0	74.5	105.5	1,612.1	0.0	0.0
10.00		103.4	1,507.9					0.0	74.5	103.4	1,582.4	0.0	0.0
15.00		101.4	1,478.1					0.0	74.5	101.4	1,552.6	0.0	0.0
20.00		99.4	1,448.4					0.0	74.5	99.4	1,522.9	0.0	0.0
25.00		97.3	1,418.6					0.0	74.5	97.3	1,493.1	0.0	0.0
30.00		96.4	1,388.8					0.0	74.5	96.4	1,463.3	0.0	0.0
35.00		97.4	1,359.1					0.0	74.5	97.4	1,433.6	0.0	0.0
40.00		70.3	1,329.3					0.0	74.5	70.3	1,403.8	0.0	0.0
42.13	Bot - Section 2	50.4	557.3					0.0	31.7	50.4	589.0	0.0	0.0
45.00		68.9	1,404.6					0.0	42.8	68.9	1,447.3	0.0	0.0
48.88	Top - Section 1	51.2	1,869.6					0.0	57.8	51.2	1,927.4	0.0	0.0
50.00		63.0	251.6					0.0	16.7	63.0	268.3	0.0	0.0
55.00		103.1	1,107.2					0.0	74.5	103.1	1,181.7	0.0	0.0
60.00		103.2	1,081.2					0.0	74.5	103.2	1,155.7	0.0	0.0
65.00		103.1	1,055.1					0.0	74.5	103.1	1,129.6	0.0	0.0
70.00		102.7	1,029.1					0.0	74.5	102.7	1,103.6	0.0	0.0
75.00		102.1	1,003.1					0.0	74.5	102.1	1,077.6	0.0	0.0
80.00		101.3	977.0					0.0	74.5	101.3	1,051.5	0.0	0.0
85.00		52.1	951.0					0.0	74.5	52.1	1,025.5	0.0	0.0
85.17	Bot - Section 3	50.8	32.5					0.0	2.6	50.8	35.1	0.0	0.0
90.00		57.5	1,673.3					0.0	71.9	57.5	1,745.2	0.0	0.0
90.84	Top - Section 2	50.2	286.6					0.0	12.5	50.2	299.1	0.0	0.0
95.00		91.3	653.2					0.0	62.0	91.3	715.2	0.0	0.0
100.00		98.4	764.6					0.0	74.5	98.4	839.1	0.0	0.0
105.00		96.8	742.3					0.0	74.5	96.8	816.8	0.0	0.0
110.00		95.1	720.0					0.0	74.5	95.1	794.5	0.0	0.0
115.00		93.4	697.7					0.0	74.5	93.4	772.2	0.0	0.0
120.00		91.5	675.4					0.0	74.5	91.5	749.9	0.0	0.0
125.00		87.3	653.0					0.0	74.5	87.3	727.5	0.0	0.0
129.75	Bot - Section 4	44.3	600.1					0.0	70.8	44.3	671.0	0.0	0.0
130.00		39.6	51.4					0.0	3.7	39.6	55.1	0.0	0.0
134.25	Top - Section 3	43.9	872.1					0.0	63.4	43.9	935.5	0.0	0.0
135.00		49.2	60.9					0.0	11.1	49.2	72.0	0.0	0.0
140.00		84.3	399.2					0.0	74.5	84.3	473.7	0.0	0.0
145.00		82.0	384.3					0.0	74.5	82.0	458.8	0.0	0.0
150.00		79.5	369.4					0.0	74.5	79.5	443.9	0.0	0.0
155.00		77.0	354.5					0.0	74.5	77.0	429.0	0.0	0.0
160.00		74.4	339.6					0.0	74.5	74.4	414.1	0.0	0.0
165.00		71.7	324.8					0.0	74.5	71.7	399.3	0.0	0.0
170.00		69.0	309.9					0.0	74.5	69.0	384.4	0.0	0.0
175.00		46.9	295.0					0.0	74.5	46.9	369.5	0.0	0.0
177.00	Appertunance(s)	16.4	113.8	2,527.9	0.0	6,706.3	4,000.0	0.0	29.8	2,544.2	4,143.6	0.0	0.0
177.50		3.2	28.1					0.0	0.0	3.2	28.1	0.0	0.0
Totals:										5,846.89	40,793.4	0.00	0.00

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total	Rotation	Ratio
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	(deg)	
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)		
0.00	-40.79	-5.80	0.00	-754.16	0.00	754.16	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.105
5.00	-39.18	-5.72	0.00	-725.15	0.00	725.15	6,400.47	3,200.24	14,817.6	7,419.85	0.01	-0.03	0.104
10.00	-37.59	-5.63	0.00	-696.57	0.00	696.57	6,311.50	3,155.75	14,323.6	7,172.47	0.06	-0.06	0.103
15.00	-36.04	-5.55	0.00	-668.41	0.00	668.41	6,221.09	3,110.54	13,834.5	6,927.56	0.13	-0.08	0.102
20.00	-34.51	-5.46	0.00	-640.69	0.00	640.69	6,129.24	3,064.62	13,350.5	6,685.21	0.24	-0.11	0.101
25.00	-33.02	-5.38	0.00	-613.38	0.00	613.38	6,035.95	3,017.97	12,871.9	6,445.52	0.37	-0.14	0.101
30.00	-31.55	-5.29	0.00	-586.50	0.00	586.50	5,941.22	2,970.61	12,398.7	6,208.59	0.54	-0.17	0.100
35.00	-30.11	-5.21	0.00	-560.03	0.00	560.03	5,845.05	2,922.52	11,931.3	5,974.52	0.74	-0.20	0.099
40.00	-28.71	-5.14	0.00	-533.99	0.00	533.99	5,739.85	2,869.93	11,454.6	5,735.83	0.97	-0.24	0.098
42.13	-28.12	-5.10	0.00	-523.03	0.00	523.03	5,684.50	2,842.25	11,233.6	5,625.17	1.08	-0.25	0.098
45.00	-26.67	-5.03	0.00	-508.40	0.00	508.40	5,609.91	2,804.96	10,939.3	5,477.78	1.23	-0.27	0.098
48.88	-24.74	-4.98	0.00	-488.87	0.00	488.87	4,780.63	2,390.32	9,350.63	4,682.27	1.46	-0.29	0.110
50.00	-24.47	-4.93	0.00	-483.29	0.00	483.29	4,762.81	2,381.40	9,267.08	4,640.43	1.53	-0.30	0.109
55.00	-23.29	-4.83	0.00	-458.66	0.00	458.66	4,682.34	2,341.17	8,896.83	4,455.03	1.86	-0.34	0.108
60.00	-22.13	-4.73	0.00	-434.51	0.00	434.51	4,600.44	2,300.22	8,531.26	4,271.97	2.24	-0.37	0.107
65.00	-21.00	-4.64	0.00	-410.84	0.00	410.84	4,517.10	2,258.55	8,170.56	4,091.35	2.65	-0.41	0.105
70.00	-19.89	-4.54	0.00	-387.66	0.00	387.66	4,432.32	2,216.16	7,814.93	3,913.27	3.10	-0.45	0.104
75.00	-18.81	-4.44	0.00	-364.96	0.00	364.96	4,323.21	2,161.61	7,425.26	3,718.15	3.59	-0.49	0.103
80.00	-17.76	-4.34	0.00	-342.76	0.00	342.76	4,209.51	2,104.76	7,037.87	3,524.17	4.12	-0.53	0.101
85.00	-16.73	-4.29	0.00	-321.05	0.00	321.05	4,095.82	2,047.91	6,660.87	3,335.39	4.69	-0.57	0.100
85.17	-16.69	-4.24	0.00	-320.30	0.00	320.30	4,091.88	2,045.94	6,647.99	3,328.93	4.71	-0.57	0.100
90.00	-14.95	-4.17	0.00	-299.83	0.00	299.83	3,982.12	1,991.06	6,294.24	3,151.80	5.31	-0.61	0.099
90.84	-14.65	-4.12	0.00	-296.33	0.00	296.33	3,410.22	1,705.11	5,487.52	2,747.84	5.41	-0.61	0.112
95.00	-13.93	-4.03	0.00	-279.17	0.00	279.17	3,351.32	1,675.66	5,265.49	2,636.66	5.96	-0.65	0.110
100.00	-13.09	-3.94	0.00	-259.00	0.00	259.00	3,279.20	1,639.60	5,002.53	2,504.98	6.67	-0.69	0.107
105.00	-12.27	-3.84	0.00	-239.32	0.00	239.32	3,192.73	1,596.37	4,724.91	2,365.97	7.41	-0.74	0.105
110.00	-11.48	-3.74	0.00	-220.12	0.00	220.12	3,095.28	1,547.64	4,439.43	2,223.01	8.21	-0.78	0.103
115.00	-10.70	-3.65	0.00	-201.40	0.00	201.40	2,997.82	1,498.91	4,162.85	2,084.52	9.06	-0.83	0.100
120.00	-9.95	-3.55	0.00	-183.16	0.00	183.16	2,900.37	1,450.18	3,895.16	1,950.48	9.95	-0.88	0.097
125.00	-9.22	-3.46	0.00	-165.40	0.00	165.40	2,802.91	1,401.46	3,636.37	1,820.89	10.90	-0.92	0.094
129.75	-8.55	-3.41	0.00	-148.94	0.00	148.94	2,710.27	1,355.13	3,398.59	1,701.82	11.84	-0.97	0.091
130.00	-8.49	-3.37	0.00	-148.10	0.00	148.10	2,705.46	1,352.73	3,386.47	1,695.75	11.89	-0.97	0.090
134.25	-7.56	-3.32	0.00	-133.76	0.00	133.76	1,680.99	840.50	2,090.90	1,047.00	12.77	-1.01	0.132
135.00	-7.49	-3.27	0.00	-131.28	0.00	131.28	1,674.79	837.40	2,071.78	1,037.43	12.93	-1.02	0.131
140.00	-7.01	-3.18	0.00	-114.93	0.00	114.93	1,632.45	816.23	1,944.90	973.89	14.03	-1.08	0.122
145.00	-6.55	-3.10	0.00	-99.01	0.00	99.01	1,588.67	794.34	1,820.24	911.47	15.20	-1.14	0.113
150.00	-6.10	-3.02	0.00	-83.50	0.00	83.50	1,543.46	771.73	1,697.99	850.26	16.43	-1.20	0.102
155.00	-5.67	-2.94	0.00	-68.41	0.00	68.41	1,496.80	748.40	1,578.35	790.35	17.72	-1.26	0.090
160.00	-5.26	-2.86	0.00	-53.73	0.00	53.73	1,448.70	724.35	1,461.52	731.85	19.07	-1.31	0.077
165.00	-4.86	-2.78	0.00	-39.43	0.00	39.43	1,385.70	692.85	1,334.72	668.35	20.47	-1.35	0.063
170.00	-4.48	-2.70	0.00	-25.53	0.00	25.53	1,320.73	660.36	1,211.87	606.84	21.91	-1.39	0.045
175.00	-4.11	-2.65	0.00	-12.01	0.00	12.01	1,255.76	627.88	1,094.95	548.29	23.38	-1.41	0.025
177.00	-0.03	0.00	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	23.97	-1.42	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	24.12	-1.42	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.22
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.86
Total Unfactored Dead Load:	40.79 k
Seismic Base Shear (E):	1.59 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)
43	177.25	28	422	0.002	4	35
42	176.00	144	2,131	0.011	18	178
41	172.50	370	5,282	0.028	45	457
40	167.50	384	5,203	0.028	45	475
39	162.50	399	5,108	0.028	44	494
38	157.50	414	5,000	0.027	43	512
37	152.50	429	4,878	0.026	42	530
36	147.50	444	4,744	0.026	41	549
35	142.50	459	4,599	0.025	39	567
34	137.50	474	4,443	0.024	38	586
33	134.63	72	650	0.003	6	89
32	132.13	935	8,149	0.044	70	1,157
31	129.88	55	465	0.003	4	68
30	127.38	671	5,460	0.029	47	830
29	122.50	728	5,507	0.030	47	900
28	117.50	750	5,253	0.028	45	927
27	112.50	772	4,990	0.027	43	955
26	107.50	794	4,718	0.025	40	982
25	102.50	817	4,440	0.024	38	1,010
24	97.50	839	4,156	0.022	36	1,038
23	92.92	715	3,240	0.017	28	884
22	90.42	299	1,288	0.007	11	370
21	87.59	1,745	7,083	0.038	61	2,158

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

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Customer: Verizon Wireless

20	85.09	35	135	0.001	1	43
19	82.50	1,025	3,724	0.020	32	1,268
18	77.50	1,052	3,400	0.018	29	1,300
17	72.50	1,078	3,078	0.017	26	1,332
16	67.50	1,104	2,761	0.015	24	1,365
15	62.50	1,130	2,449	0.013	21	1,397
14	57.50	1,156	2,146	0.012	18	1,429
13	52.50	1,182	1,853	0.010	16	1,461
12	49.44	268	376	0.002	3	332
11	46.94	1,927	2,455	0.013	21	2,383
10	43.56	1,447	1,605	0.009	14	1,790
9	41.06	589	585	0.003	5	728
8	37.50	1,404	1,178	0.006	10	1,736
7	32.50	1,434	923	0.005	8	1,773
6	27.50	1,463	690	0.004	6	1,809
5	22.50	1,493	485	0.003	4	1,846
4	17.50	1,523	310	0.002	3	1,883
3	12.50	1,553	169	0.001	1	1,920
2	7.50	1,582	67	0.000	1	1,957
1	2.50	1,612	9	0.000	0	1,993
Alcatel-Lucent RRH 2	177.00	119	1,781	0.010	15	147
Alcatel-Lucent RRH2x	177.00	170	2,551	0.014	22	210
Alcatel-Lucent B4 RR	177.00	180	2,699	0.015	23	223
RFS DB-T1-6Z-8AB-0Z	177.00	88	1,320	0.007	11	109
Andrew DB846H80E-SX	177.00	96	1,440	0.008	12	119
Commscope SBNHH-1D65	177.00	201	3,014	0.016	26	249
Amphenol Antel LPA-1	177.00	34	517	0.003	4	43
Flat Low Profile Pla	177.00	1,500	22,494	0.121	193	1,855
VZW Unused Reserve:	177.00	1,612	24,167	0.130	207	1,993
		40,793	185,595	1.000	1,591	50,440

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
43	177.25	28	422	0.002	4	24
42	176.00	144	2,131	0.011	18	124
41	172.50	370	5,282	0.028	45	319
40	167.50	384	5,203	0.028	45	332
39	162.50	399	5,108	0.028	44	345
38	157.50	414	5,000	0.027	43	358
37	152.50	429	4,878	0.026	42	370
36	147.50	444	4,744	0.026	41	383
35	142.50	459	4,599	0.025	39	396
34	137.50	474	4,443	0.024	38	409
33	134.63	72	650	0.003	6	62
32	132.13	935	8,149	0.044	70	808
31	129.88	55	465	0.003	4	48
30	127.38	671	5,460	0.029	47	579
29	122.50	728	5,507	0.030	47	628
28	117.50	750	5,253	0.028	45	648
27	112.50	772	4,990	0.027	43	667
26	107.50	794	4,718	0.025	40	686
25	102.50	817	4,440	0.024	38	705
24	97.50	839	4,156	0.022	36	725
23	92.92	715	3,240	0.017	28	618
22	90.42	299	1,288	0.007	11	258
21	87.59	1,745	7,083	0.038	61	1,507
20	85.09	35	135	0.001	1	30
19	82.50	1,025	3,724	0.020	32	886

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

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Customer: Verizon Wireless

18	77.50	1,052	3,400	0.018	29	908
17	72.50	1,078	3,078	0.017	26	930
16	67.50	1,104	2,761	0.015	24	953
15	62.50	1,130	2,449	0.013	21	975
14	57.50	1,156	2,146	0.012	18	998
13	52.50	1,182	1,853	0.010	16	1,020
12	49.44	268	376	0.002	3	232
11	46.94	1,927	2,455	0.013	21	1,664
10	43.56	1,447	1,605	0.009	14	1,250
9	41.06	589	585	0.003	5	509
8	37.50	1,404	1,178	0.006	10	1,212
7	32.50	1,434	923	0.005	8	1,238
6	27.50	1,463	690	0.004	6	1,264
5	22.50	1,493	485	0.003	4	1,289
4	17.50	1,523	310	0.002	3	1,315
3	12.50	1,553	169	0.001	1	1,341
2	7.50	1,582	67	0.000	1	1,366
1	2.50	1,612	9	0.000	0	1,392
Alcatel-Lucent RRH 2	177.00	119	1,781	0.010	15	103
Alcatel-Lucent RRH2x	177.00	170	2,551	0.014	22	147
Alcatel-Lucent B4 RR	177.00	180	2,699	0.015	23	155
RFS DB-T1-6Z-8AB-0Z	177.00	88	1,320	0.007	11	76
Andrew DB846H80E-SX	177.00	96	1,440	0.008	12	83
Commscope SBNHH-1D65	177.00	201	3,014	0.016	26	174
Amphenol Antel LPA-1	177.00	34	517	0.003	4	30
Flat Low Profile Pla	177.00	1,500	22,494	0.121	193	1,295
VZW Unused Reserve:	177.00	1,612	24,167	0.130	207	1,392
		40,793	185,595	1.000	1,591	35,226

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

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	-48.45	-1.59	0.00	-219.66	0.00	219.66	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.036
5.00	-46.49	-1.60	0.00	-211.69	0.00	211.69	6,400.47	3,200.24	14,817.6	7,419.85	0.00	-0.01	0.036
10.00	-44.57	-1.60	0.00	-203.69	0.00	203.69	6,311.50	3,155.75	14,323.6	7,172.47	0.02	-0.02	0.035
15.00	-42.69	-1.61	0.00	-195.67	0.00	195.67	6,221.09	3,110.54	13,834.5	6,927.56	0.04	-0.02	0.035
20.00	-40.84	-1.61	0.00	-187.64	0.00	187.64	6,129.24	3,064.62	13,350.5	6,685.21	0.07	-0.03	0.035
25.00	-39.03	-1.61	0.00	-179.59	0.00	179.59	6,035.95	3,017.97	12,871.9	6,445.52	0.11	-0.04	0.034
30.00	-37.26	-1.60	0.00	-171.56	0.00	171.56	5,941.22	2,970.61	12,398.7	6,208.59	0.16	-0.05	0.034
35.00	-35.52	-1.60	0.00	-163.54	0.00	163.54	5,845.05	2,922.52	11,931.3	5,974.52	0.22	-0.06	0.033
40.00	-34.79	-1.60	0.00	-155.55	0.00	155.55	5,739.85	2,869.93	11,454.6	5,735.83	0.28	-0.07	0.033
42.13	-33.00	-1.58	0.00	-152.15	0.00	152.15	5,684.50	2,842.25	11,233.6	5,625.17	0.31	-0.07	0.033
45.00	-30.62	-1.56	0.00	-147.61	0.00	147.61	5,609.91	2,804.96	10,939.3	5,477.78	0.36	-0.08	0.032
48.88	-30.29	-1.56	0.00	-141.55	0.00	141.55	4,780.63	2,390.32	9,350.63	4,622.27	0.43	-0.09	0.037
50.00	-28.83	-1.55	0.00	-139.80	0.00	139.80	4,762.81	2,381.40	9,267.08	4,640.43	0.45	-0.09	0.036
55.00	-27.40	-1.53	0.00	-132.07	0.00	132.07	4,682.34	2,341.17	8,896.83	4,455.03	0.54	-0.10	0.035
60.00	-26.00	-1.51	0.00	-124.42	0.00	124.42	4,600.44	2,300.22	8,531.26	4,271.97	0.65	-0.11	0.035
65.00	-24.64	-1.49	0.00	-116.87	0.00	116.87	4,517.10	2,258.55	8,170.56	4,091.35	0.77	-0.12	0.034
70.00	-23.30	-1.46	0.00	-109.42	0.00	109.42	4,432.32	2,216.16	7,814.93	3,913.27	0.90	-0.13	0.033
75.00	-22.00	-1.44	0.00	-102.10	0.00	102.10	4,323.21	2,161.61	7,425.26	3,718.15	1.05	-0.14	0.033
80.00	-20.74	-1.41	0.00	-94.92	0.00	94.92	4,209.51	2,104.76	7,037.87	3,524.17	1.20	-0.15	0.032
85.00	-20.69	-1.41	0.00	-87.89	0.00	87.89	4,095.82	2,047.91	6,660.87	3,335.39	1.36	-0.16	0.031
85.17	-18.53	-1.34	0.00	-87.65	0.00	87.65	4,091.88	2,045.94	6,647.99	3,328.93	1.37	-0.16	0.031
90.00	-18.16	-1.33	0.00	-81.18	0.00	81.18	3,982.12	1,991.06	6,294.24	3,151.80	1.54	-0.17	0.030
90.84	-17.28	-1.30	0.00	-80.06	0.00	80.06	3,410.22	1,705.11	5,487.52	2,747.84	1.57	-0.18	0.034
95.00	-16.24	-1.27	0.00	-74.64	0.00	74.64	3,351.32	1,675.66	5,265.49	2,636.66	1.73	-0.18	0.033
100.00	-15.23	-1.23	0.00	-68.31	0.00	68.31	3,279.20	1,639.60	5,002.53	2,504.98	1.93	-0.20	0.032
105.00	-14.25	-1.19	0.00	-62.17	0.00	62.17	3,192.73	1,596.37	4,724.91	2,365.97	2.14	-0.21	0.031
110.00	-13.29	-1.14	0.00	-56.24	0.00	56.24	3,095.28	1,547.64	4,439.43	2,223.01	2.37	-0.22	0.030
115.00	-12.37	-1.10	0.00	-50.52	0.00	50.52	2,997.82	1,498.91	4,162.85	2,084.52	2.60	-0.23	0.028
120.00	-11.47	-1.05	0.00	-45.04	0.00	45.04	2,900.37	1,450.18	3,895.16	1,950.48	2.85	-0.24	0.027
125.00	-10.64	-1.00	0.00	-39.80	0.00	39.80	2,802.91	1,401.46	3,636.37	1,820.89	3.11	-0.26	0.026
129.75	-10.57	-1.00	0.00	-35.04	0.00	35.04	2,710.27	1,355.13	3,398.59	1,701.82	3.37	-0.27	0.024
130.00	-9.41	-0.92	0.00	-34.80	0.00	34.80	2,705.46	1,352.73	3,386.47	1,695.75	3.39	-0.27	0.024
134.25	-9.32	-0.92	0.00	-30.87	0.00	30.87	1,680.99	840.50	2,090.90	1,047.00	3.63	-0.28	0.035
135.00	-8.74	-0.88	0.00	-30.19	0.00	30.19	1,674.79	837.40	2,071.78	1,037.43	3.67	-0.28	0.034
140.00	-8.17	-0.84	0.00	-25.80	0.00	25.80	1,632.45	816.23	1,944.90	973.89	3.97	-0.29	0.031
145.00	-7.62	-0.80	0.00	-21.61	0.00	21.61	1,588.67	794.34	1,820.24	911.47	4.28	-0.31	0.029
150.00	-7.09	-0.75	0.00	-17.63	0.00	17.63	1,543.46	771.73	1,697.99	850.26	4.61	-0.32	0.025
155.00	-6.58	-0.71	0.00	-13.87	0.00	13.87	1,496.80	748.40	1,578.35	790.35	4.95	-0.33	0.022
160.00	-6.09	-0.66	0.00	-10.33	0.00	10.33	1,448.70	724.35	1,461.52	731.85	5.30	-0.34	0.018
165.00	-5.61	-0.62	0.00	-7.02	0.00	7.02	1,385.70	692.85	1,334.72	668.35	5.66	-0.35	0.015
170.00	-5.15	-0.57	0.00	-3.94	0.00	3.94	1,320.73	660.36	1,211.87	606.84	6.03	-0.35	0.010
175.00	-4.98	-0.55	0.00	-1.10	0.00	1.10	1,255.76	627.88	1,094.95	548.29	6.41	-0.36	0.006
177.00	0.00	0.00	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	6.56	-0.36	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	6.59	-0.36	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

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	-33.83	-1.59	0.00	-217.24	0.00	217.24	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.034
5.00	-32.47	-1.60	0.00	-209.28	0.00	209.28	6,400.47	3,200.24	14,817.6	7,419.85	0.00	-0.01	0.033
10.00	-31.13	-1.60	0.00	-201.30	0.00	201.30	6,311.50	3,155.75	14,323.6	7,172.47	0.02	-0.02	0.033
15.00	-29.81	-1.60	0.00	-193.30	0.00	193.30	6,221.09	3,110.54	13,834.5	6,927.56	0.04	-0.02	0.033
20.00	-28.52	-1.60	0.00	-185.31	0.00	185.31	6,129.24	3,064.62	13,350.5	6,685.21	0.07	-0.03	0.032
25.00	-27.26	-1.60	0.00	-177.31	0.00	177.31	6,035.95	3,017.97	12,871.9	6,445.52	0.11	-0.04	0.032
30.00	-26.02	-1.59	0.00	-169.33	0.00	169.33	5,941.22	2,970.61	12,398.7	6,208.59	0.16	-0.05	0.032
35.00	-24.81	-1.58	0.00	-161.37	0.00	161.37	5,845.05	2,922.52	11,931.3	5,974.52	0.21	-0.06	0.031
40.00	-24.30	-1.58	0.00	-153.45	0.00	153.45	5,739.85	2,869.93	11,454.6	5,735.83	0.28	-0.07	0.031
42.13	-23.05	-1.57	0.00	-150.08	0.00	150.08	5,684.50	2,842.25	11,233.6	5,625.17	0.31	-0.07	0.031
45.00	-21.38	-1.55	0.00	-145.58	0.00	145.58	5,609.91	2,804.96	10,939.3	5,477.78	0.36	-0.08	0.030
48.88	-21.15	-1.55	0.00	-139.57	0.00	139.57	4,780.63	2,390.32	9,350.63	4,682.27	0.42	-0.08	0.034
50.00	-20.13	-1.53	0.00	-137.84	0.00	137.84	4,762.81	2,381.40	9,267.08	4,640.43	0.44	-0.09	0.034
55.00	-19.13	-1.51	0.00	-130.19	0.00	130.19	4,682.34	2,341.17	8,896.83	4,455.03	0.54	-0.10	0.033
60.00	-18.16	-1.49	0.00	-122.62	0.00	122.62	4,600.44	2,300.22	8,531.26	4,271.97	0.65	-0.11	0.033
65.00	-17.20	-1.47	0.00	-115.15	0.00	115.15	4,517.10	2,258.55	8,170.56	4,091.35	0.76	-0.12	0.032
70.00	-16.27	-1.45	0.00	-107.79	0.00	107.79	4,432.32	2,216.16	7,814.93	3,913.27	0.89	-0.13	0.031
75.00	-15.37	-1.42	0.00	-100.56	0.00	100.56	4,323.21	2,161.61	7,425.26	3,718.15	1.03	-0.14	0.031
80.00	-14.48	-1.39	0.00	-93.47	0.00	93.47	4,209.51	2,104.76	7,037.87	3,524.17	1.18	-0.15	0.030
85.00	-14.45	-1.39	0.00	-86.54	0.00	86.54	4,095.82	2,047.91	6,660.87	3,335.39	1.35	-0.16	0.029
85.17	-12.94	-1.32	0.00	-86.30	0.00	86.30	4,091.88	2,045.94	6,647.99	3,328.93	1.35	-0.16	0.029
90.00	-12.68	-1.31	0.00	-79.91	0.00	79.91	3,982.12	1,991.06	6,294.24	3,151.80	1.52	-0.17	0.029
90.84	-12.07	-1.28	0.00	-78.81	0.00	78.81	3,410.22	1,705.11	5,487.52	2,747.84	1.55	-0.17	0.032
95.00	-11.34	-1.25	0.00	-73.46	0.00	73.46	3,351.32	1,675.66	5,265.49	2,636.66	1.71	-0.18	0.031
100.00	-10.64	-1.21	0.00	-67.22	0.00	67.22	3,279.20	1,639.60	5,002.53	2,504.98	1.90	-0.19	0.030
105.00	-9.95	-1.17	0.00	-61.17	0.00	61.17	3,192.73	1,596.37	4,724.91	2,365.97	2.11	-0.21	0.029
110.00	-9.28	-1.13	0.00	-55.32	0.00	55.32	3,095.28	1,547.64	4,439.43	2,223.01	2.33	-0.22	0.028
115.00	-8.64	-1.08	0.00	-49.69	0.00	49.69	2,997.82	1,498.91	4,162.85	2,084.52	2.57	-0.23	0.027
120.00	-8.01	-1.03	0.00	-44.29	0.00	44.29	2,900.37	1,450.18	3,895.16	1,950.48	2.81	-0.24	0.025
125.00	-7.43	-0.98	0.00	-39.13	0.00	39.13	2,802.91	1,401.46	3,636.37	1,820.89	3.07	-0.25	0.024
129.75	-7.38	-0.98	0.00	-34.45	0.00	34.45	2,710.27	1,355.13	3,398.59	1,701.82	3.33	-0.26	0.023
130.00	-6.57	-0.91	0.00	-34.21	0.00	34.21	2,705.46	1,352.73	3,386.47	1,695.75	3.34	-0.26	0.023
134.25	-6.51	-0.90	0.00	-30.34	0.00	30.34	1,680.99	840.50	2,090.90	1,047.00	3.58	-0.27	0.033
135.00	-6.10	-0.86	0.00	-29.67	0.00	29.67	1,674.79	837.40	2,071.78	1,037.43	3.62	-0.27	0.032
140.00	-5.71	-0.82	0.00	-25.35	0.00	25.35	1,632.45	816.23	1,944.90	973.89	3.92	-0.29	0.030
145.00	-5.32	-0.78	0.00	-21.23	0.00	21.23	1,588.67	794.34	1,820.24	911.47	4.22	-0.30	0.027
150.00	-4.95	-0.74	0.00	-17.32	0.00	17.32	1,543.46	771.73	1,697.99	850.26	4.55	-0.31	0.024
155.00	-4.59	-0.70	0.00	-13.62	0.00	13.62	1,496.80	748.40	1,578.35	790.35	4.88	-0.33	0.020
160.00	-4.25	-0.65	0.00	-10.14	0.00	10.14	1,448.70	724.35	1,461.52	731.85	5.23	-0.34	0.017
165.00	-3.92	-0.60	0.00	-6.89	0.00	6.89	1,385.70	692.85	1,334.72	668.35	5.58	-0.34	0.013
170.00	-3.60	-0.56	0.00	-3.87	0.00	3.87	1,320.73	660.36	1,211.87	606.84	5.95	-0.35	0.009
175.00	-3.48	-0.54	0.00	-1.08	0.00	1.08	1,255.76	627.88	1,094.95	548.29	6.31	-0.35	0.005
177.00	0.00	0.00	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	6.46	-0.35	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	6.50	-0.35	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

Equivalent Modal Forces Analysis

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

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

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

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
43	177.25	28	1.885	1.952	1.130	0.345	8	35
42	176.00	144	1.858	1.816	1.081	0.329	41	178
41	172.50	370	1.785	1.471	0.952	0.286	92	457
40	167.50	384	1.683	1.059	0.789	0.229	76	475
39	162.50	399	1.584	0.730	0.649	0.178	62	494
38	157.50	414	1.488	0.472	0.529	0.133	48	512
37	152.50	429	1.395	0.275	0.427	0.093	35	530
36	147.50	444	1.305	0.128	0.341	0.059	23	549
35	142.50	459	1.218	0.022	0.269	0.030	12	567
34	137.50	474	1.134	-0.049	0.209	0.006	3	586
33	134.63	72	1.087	-0.077	0.179	-0.005	0	89
32	132.13	935	1.047	-0.095	0.156	-0.013	-11	1,157
31	129.88	55	1.012	-0.107	0.137	-0.020	-1	68
30	127.38	671	0.973	-0.116	0.119	-0.025	-15	830
29	122.50	728	0.900	-0.122	0.087	-0.033	-21	900
28	117.50	750	0.828	-0.116	0.062	-0.036	-23	927
27	112.50	772	0.759	-0.103	0.043	-0.034	-23	955
26	107.50	794	0.693	-0.085	0.029	-0.027	-19	982
25	102.50	817	0.630	-0.064	0.018	-0.018	-13	1,010
24	97.50	839	0.570	-0.042	0.012	-0.006	-4	1,038
23	92.92	715	0.518	-0.023	0.008	0.005	3	884
22	90.42	299	0.490	-0.013	0.007	0.011	3	370
21	87.59	1,745	0.460	-0.002	0.006	0.018	27	2,158
20	85.09	35	0.434	0.007	0.006	0.023	1	43
19	82.50	1,025	0.408	0.015	0.006	0.028	25	1,268
18	77.50	1,052	0.360	0.030	0.008	0.036	33	1,300
17	72.50	1,078	0.315	0.042	0.011	0.042	39	1,332
16	67.50	1,104	0.273	0.051	0.015	0.045	43	1,365
15	62.50	1,130	0.234	0.058	0.019	0.047	46	1,397
14	57.50	1,156	0.198	0.063	0.023	0.048	48	1,429
13	52.50	1,182	0.165	0.067	0.028	0.047	48	1,461
12	49.44	268	0.147	0.068	0.031	0.047	11	332
11	46.94	1,927	0.132	0.069	0.033	0.047	78	2,383
10	43.56	1,447	0.114	0.070	0.035	0.046	58	1,790

Site Number: 411184

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

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Customer: Verizon Wireless

9	41.06	589	0.101	0.071	0.037	0.045	23	728
8	37.50	1,404	0.084	0.071	0.039	0.045	54	1,736
7	32.50	1,434	0.063	0.072	0.041	0.044	54	1,773
6	27.50	1,463	0.045	0.071	0.042	0.042	54	1,809
5	22.50	1,493	0.030	0.068	0.041	0.041	53	1,846
4	17.50	1,523	0.018	0.063	0.037	0.038	50	1,883
3	12.50	1,553	0.009	0.054	0.031	0.033	45	1,920
2	7.50	1,582	0.003	0.039	0.022	0.025	35	1,957
1	2.50	1,612	0.000	0.016	0.008	0.011	15	1,993
Alcatel-Lucent RRH 2	177.00	119	1.879	1.924	1.120	0.342	35	147
Alcatel-Lucent RRH2x	177.00	170	1.879	1.924	1.120	0.342	50	210
Alcatel-Lucent B4 RR	177.00	180	1.879	1.924	1.120	0.342	53	223
RFS DB-T1-6Z-8AB-OZ	177.00	88	1.879	1.924	1.120	0.342	26	109
Andrew DB846H80E-SX	177.00	96	1.879	1.924	1.120	0.342	28	119
Commscope SBNHH-	177.00	201	1.879	1.924	1.120	0.342	60	249
Amphenol Antel LPA-1	177.00	34	1.879	1.924	1.120	0.342	10	43
Flat Low Profile Pla	177.00	1,500	1.879	1.924	1.120	0.342	444	1,855
VZW Unused Reserve:	177.00	1,612	1.879	1.924	1.120	0.342	477	1,993
		40,793	45.358	25.298	17.828	5.361	2,299	50,440

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)
43	177.25	28	1.885	1.952	1.130	0.345	8	24
42	176.00	144	1.858	1.816	1.081	0.329	41	124
41	172.50	370	1.785	1.471	0.952	0.286	92	319
40	167.50	384	1.683	1.059	0.789	0.229	76	332
39	162.50	399	1.584	0.730	0.649	0.178	62	345
38	157.50	414	1.488	0.472	0.529	0.133	48	358
37	152.50	429	1.395	0.275	0.427	0.093	35	370
36	147.50	444	1.305	0.128	0.341	0.059	23	383
35	142.50	459	1.218	0.022	0.269	0.030	12	396
34	137.50	474	1.134	-0.049	0.209	0.006	3	409
33	134.63	72	1.087	-0.077	0.179	-0.005	0	62
32	132.13	935	1.047	-0.095	0.156	-0.013	-11	808
31	129.88	55	1.012	-0.107	0.137	-0.020	-1	48
30	127.38	671	0.973	-0.116	0.119	-0.025	-15	579
29	122.50	728	0.900	-0.122	0.087	-0.033	-21	628
28	117.50	750	0.828	-0.116	0.062	-0.036	-23	648
27	112.50	772	0.759	-0.103	0.043	-0.034	-23	667
26	107.50	794	0.693	-0.085	0.029	-0.027	-19	686
25	102.50	817	0.630	-0.064	0.018	-0.018	-13	705
24	97.50	839	0.570	-0.042	0.012	-0.006	-4	725
23	92.92	715	0.518	-0.023	0.008	0.005	3	618
22	90.42	299	0.490	-0.013	0.007	0.011	3	258
21	87.59	1,745	0.460	-0.002	0.006	0.018	27	1,507
20	85.09	35	0.434	0.007	0.006	0.023	1	30
19	82.50	1,025	0.408	0.015	0.006	0.028	25	886
18	77.50	1,052	0.360	0.030	0.008	0.036	33	908
17	72.50	1,078	0.315	0.042	0.011	0.042	39	930
16	67.50	1,104	0.273	0.051	0.015	0.045	43	953
15	62.50	1,130	0.234	0.058	0.019	0.047	46	975
14	57.50	1,156	0.198	0.063	0.023	0.048	48	998
13	52.50	1,182	0.165	0.067	0.028	0.047	48	1,020
12	49.44	268	0.147	0.068	0.031	0.047	11	232
11	46.94	1,927	0.132	0.069	0.033	0.047	78	1,664
10	43.56	1,447	0.114	0.070	0.035	0.046	58	1,250
9	41.06	589	0.101	0.071	0.037	0.045	23	509

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Customer: Verizon Wireless

8	37.50	1,404	0.084	0.071	0.039	0.045	54	1,212
7	32.50	1,434	0.063	0.072	0.041	0.044	54	1,238
6	27.50	1,463	0.045	0.071	0.042	0.042	54	1,264
5	22.50	1,493	0.030	0.068	0.041	0.041	53	1,289
4	17.50	1,523	0.018	0.063	0.037	0.038	50	1,315
3	12.50	1,553	0.009	0.054	0.031	0.033	45	1,341
2	7.50	1,582	0.003	0.039	0.022	0.025	35	1,366
1	2.50	1,612	0.000	0.016	0.008	0.011	15	1,392
Alcatel-Lucent RRH 2	177.00	119	1.879	1.924	1.120	0.342	35	103
Alcatel-Lucent RRH2x	177.00	170	1.879	1.924	1.120	0.342	50	147
Alcatel-Lucent B4 RR	177.00	180	1.879	1.924	1.120	0.342	53	155
RFS DB-T1-6Z-8AB-0Z	177.00	88	1.879	1.924	1.120	0.342	26	76
Andrew DB846H80E-SX	177.00	96	1.879	1.924	1.120	0.342	28	83
Commscope SBNHH-	177.00	201	1.879	1.924	1.120	0.342	60	174
Amphenol Antel LPA-1	177.00	34	1.879	1.924	1.120	0.342	10	30
Flat Low Profile Pla	177.00	1,500	1.879	1.924	1.120	0.342	444	1,295
VZW Unused Reserve:	177.00	1,612	1.879	1.924	1.120	0.342	477	1,392
		40,793	45.358	25.298	17.828	5.361	2,299	35,226

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

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

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total	Rotation	Ratio
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	(deg)	
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)		
0.00	-48.45	-2.29	0.00	-306.10	0.00	306.10	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.047
5.00	-46.49	-2.26	0.00	-294.66	0.00	294.66	6,400.47	3,200.24	14,817.6	7,419.85	0.01	-0.01	0.047
10.00	-44.57	-2.23	0.00	-283.36	0.00	283.36	6,311.50	3,155.75	14,323.6	7,172.47	0.02	-0.02	0.047
15.00	-42.69	-2.18	0.00	-272.23	0.00	272.23	6,221.09	3,110.54	13,834.5	6,927.56	0.05	-0.03	0.046
20.00	-40.84	-2.14	0.00	-261.31	0.00	261.31	6,129.24	3,064.62	13,350.5	6,685.21	0.10	-0.05	0.046
25.00	-39.03	-2.09	0.00	-250.62	0.00	250.62	6,035.95	3,017.97	12,871.9	6,445.52	0.15	-0.06	0.045
30.00	-37.26	-2.04	0.00	-240.17	0.00	240.17	5,941.22	2,970.61	12,398.7	6,208.59	0.22	-0.07	0.045
35.00	-35.52	-1.99	0.00	-229.95	0.00	229.95	5,845.05	2,922.52	11,931.3	5,974.52	0.30	-0.08	0.045
40.00	-34.79	-1.98	0.00	-219.98	0.00	219.98	5,739.85	2,869.93	11,454.6	5,735.83	0.39	-0.10	0.044
42.13	-33.00	-1.92	0.00	-215.77	0.00	215.77	5,684.50	2,842.25	11,233.6	5,625.17	0.44	-0.10	0.044
45.00	-30.62	-1.84	0.00	-210.26	0.00	210.26	5,609.91	2,804.96	10,939.3	5,477.78	0.50	-0.11	0.044
48.88	-30.29	-1.83	0.00	-203.12	0.00	203.12	4,780.63	2,390.32	9,350.63	4,682.27	0.60	-0.12	0.050
50.00	-28.83	-1.79	0.00	-201.06	0.00	201.06	4,762.81	2,381.40	9,267.08	4,640.43	0.62	-0.12	0.049
55.00	-27.40	-1.74	0.00	-192.13	0.00	192.13	4,682.34	2,341.17	8,896.83	4,455.03	0.76	-0.14	0.049
60.00	-26.00	-1.70	0.00	-183.41	0.00	183.41	4,600.44	2,300.22	8,531.26	4,271.97	0.91	-0.15	0.049
65.00	-24.63	-1.66	0.00	-174.91	0.00	174.91	4,517.10	2,258.55	8,170.56	4,091.35	1.08	-0.17	0.048
70.00	-23.30	-1.62	0.00	-166.61	0.00	166.61	4,432.32	2,216.16	7,814.93	3,913.27	1.27	-0.19	0.048
75.00	-22.00	-1.59	0.00	-158.49	0.00	158.49	4,323.21	2,161.61	7,425.26	3,718.15	1.47	-0.20	0.048
80.00	-20.73	-1.57	0.00	-150.52	0.00	150.52	4,209.51	2,104.76	7,037.87	3,524.17	1.69	-0.22	0.048
85.00	-20.69	-1.57	0.00	-142.67	0.00	142.67	4,095.82	2,047.91	6,660.87	3,335.39	1.93	-0.24	0.048
85.17	-18.53	-1.54	0.00	-142.40	0.00	142.40	4,091.88	2,045.94	6,647.99	3,328.93	1.94	-0.24	0.047
90.00	-18.16	-1.54	0.00	-134.97	0.00	134.97	3,982.12	1,991.06	6,294.24	3,151.80	2.19	-0.25	0.047
90.84	-17.28	-1.53	0.00	-133.68	0.00	133.68	3,410.22	1,705.11	5,487.52	2,747.84	2.24	-0.26	0.054
95.00	-16.24	-1.54	0.00	-127.30	0.00	127.30	3,351.32	1,675.66	5,265.49	2,636.66	2.47	-0.27	0.053
100.00	-15.23	-1.55	0.00	-119.61	0.00	119.61	3,279.20	1,639.60	5,002.53	2,504.98	2.76	-0.29	0.052
105.00	-14.24	-1.57	0.00	-111.85	0.00	111.85	3,192.73	1,596.37	4,724.91	2,365.97	3.08	-0.32	0.052
110.00	-13.29	-1.59	0.00	-104.00	0.00	104.00	3,095.28	1,547.64	4,439.43	2,223.01	3.43	-0.34	0.051
115.00	-12.36	-1.62	0.00	-96.04	0.00	96.04	2,997.82	1,498.91	4,162.85	2,084.52	3.79	-0.36	0.050
120.00	-11.46	-1.63	0.00	-87.96	0.00	87.96	2,900.37	1,450.18	3,895.16	1,950.48	4.18	-0.38	0.049
125.00	-10.63	-1.65	0.00	-79.79	0.00	79.79	2,802.91	1,401.46	3,636.37	1,820.89	4.59	-0.40	0.048
129.75	-10.56	-1.65	0.00	-71.95	0.00	71.95	2,710.27	1,355.13	3,398.59	1,701.82	5.00	-0.43	0.046
130.00	-9.41	-1.65	0.00	-71.55	0.00	71.55	2,705.46	1,352.73	3,386.47	1,695.75	5.03	-0.43	0.046
134.25	-9.32	-1.66	0.00	-64.51	0.00	64.51	1,680.99	840.50	2,090.90	1,047.00	5.41	-0.45	0.067
135.00	-8.73	-1.65	0.00	-63.28	0.00	63.28	1,674.79	837.40	2,071.78	1,037.43	5.48	-0.45	0.066
140.00	-8.16	-1.64	0.00	-55.02	0.00	55.02	1,632.45	816.23	1,944.90	973.89	5.97	-0.48	0.061
145.00	-7.61	-1.62	0.00	-46.82	0.00	46.82	1,588.67	794.34	1,820.24	911.47	6.49	-0.51	0.056
150.00	-7.08	-1.58	0.00	-38.74	0.00	38.74	1,543.46	771.73	1,697.99	850.26	7.04	-0.54	0.050
155.00	-6.57	-1.53	0.00	-30.85	0.00	30.85	1,496.80	748.40	1,578.35	790.35	7.62	-0.56	0.043
160.00	-6.08	-1.47	0.00	-23.20	0.00	23.20	1,448.70	724.35	1,461.52	731.85	8.22	-0.59	0.036
165.00	-5.60	-1.39	0.00	-15.87	0.00	15.87	1,385.70	692.85	1,334.72	668.35	8.84	-0.60	0.028
170.00	-5.14	-1.29	0.00	-8.94	0.00	8.94	1,320.73	660.36	1,211.87	606.84	9.48	-0.62	0.019
175.00	-4.97	-1.25	0.00	-2.49	0.00	2.49	1,255.76	627.88	1,094.95	548.29	10.13	-0.62	0.009
177.00	0.00	0.00	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	10.40	-0.63	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	10.46	-0.63	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

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	-33.83	-2.29	0.00	-302.61	0.00	302.61	6,488.00	3,244.00	15,316.4	7,669.59	0.00	0.00	0.045
5.00	-32.47	-2.26	0.00	-291.18	0.00	291.18	6,400.47	3,200.24	14,817.6	7,419.85	0.01	-0.01	0.044
10.00	-31.13	-2.22	0.00	-279.90	0.00	279.90	6,311.50	3,155.75	14,323.6	7,172.47	0.02	-0.02	0.044
15.00	-29.81	-2.17	0.00	-268.80	0.00	268.80	6,221.09	3,110.54	13,834.5	6,927.56	0.05	-0.03	0.044
20.00	-28.52	-2.13	0.00	-257.93	0.00	257.93	6,129.24	3,064.62	13,350.5	6,685.21	0.09	-0.05	0.043
25.00	-27.26	-2.08	0.00	-247.30	0.00	247.30	6,035.95	3,017.97	12,871.9	6,445.52	0.15	-0.06	0.043
30.00	-26.02	-2.03	0.00	-236.91	0.00	236.91	5,941.22	2,970.61	12,398.7	6,208.59	0.22	-0.07	0.043
35.00	-24.81	-1.98	0.00	-226.77	0.00	226.77	5,845.05	2,922.52	11,931.3	5,974.52	0.30	-0.08	0.042
40.00	-24.30	-1.96	0.00	-216.89	0.00	216.89	5,739.85	2,869.93	11,454.6	5,735.83	0.39	-0.10	0.042
42.13	-23.05	-1.90	0.00	-212.72	0.00	212.72	5,684.50	2,842.25	11,233.6	5,625.17	0.43	-0.10	0.042
45.00	-21.38	-1.82	0.00	-207.27	0.00	207.27	5,609.91	2,804.96	10,939.3	5,477.78	0.50	-0.11	0.042
48.88	-21.15	-1.81	0.00	-200.19	0.00	200.19	4,780.63	2,390.32	9,350.63	4,682.27	0.59	-0.12	0.047
50.00	-20.13	-1.77	0.00	-198.16	0.00	198.16	4,762.81	2,381.40	9,267.08	4,640.43	0.62	-0.12	0.047
55.00	-19.13	-1.72	0.00	-189.33	0.00	189.33	4,682.34	2,341.17	8,896.83	4,455.03	0.75	-0.14	0.047
60.00	-18.16	-1.68	0.00	-180.72	0.00	180.72	4,600.44	2,300.22	8,531.26	4,271.97	0.90	-0.15	0.046
65.00	-17.20	-1.64	0.00	-172.33	0.00	172.33	4,517.10	2,258.55	8,170.56	4,091.35	1.07	-0.17	0.046
70.00	-16.27	-1.60	0.00	-164.15	0.00	164.15	4,432.32	2,216.16	7,814.93	3,913.27	1.25	-0.18	0.046
75.00	-15.36	-1.57	0.00	-156.15	0.00	156.15	4,323.21	2,161.61	7,425.26	3,718.15	1.45	-0.20	0.046
80.00	-14.48	-1.54	0.00	-148.31	0.00	148.31	4,209.51	2,104.76	7,037.87	3,524.17	1.67	-0.22	0.046
85.00	-14.45	-1.55	0.00	-140.59	0.00	140.59	4,095.82	2,047.91	6,660.87	3,335.39	1.91	-0.23	0.046
85.17	-12.94	-1.51	0.00	-140.32	0.00	140.32	4,091.88	2,045.94	6,647.99	3,328.93	1.92	-0.23	0.045
90.00	-12.68	-1.51	0.00	-133.01	0.00	133.01	3,982.12	1,991.06	6,294.24	3,151.80	2.16	-0.25	0.045
90.84	-12.06	-1.51	0.00	-131.74	0.00	131.74	3,410.22	1,705.11	5,487.52	2,747.84	2.21	-0.25	0.051
95.00	-11.34	-1.51	0.00	-125.47	0.00	125.47	3,351.32	1,675.66	5,265.49	2,636.66	2.43	-0.27	0.051
100.00	-10.63	-1.53	0.00	-117.90	0.00	117.90	3,279.20	1,639.60	5,002.53	2,504.98	2.73	-0.29	0.050
105.00	-9.95	-1.55	0.00	-110.27	0.00	110.27	3,192.73	1,596.37	4,724.91	2,365.97	3.04	-0.31	0.050
110.00	-9.28	-1.57	0.00	-102.55	0.00	102.55	3,095.28	1,547.64	4,439.43	2,223.01	3.38	-0.33	0.049
115.00	-8.63	-1.59	0.00	-94.71	0.00	94.71	2,997.82	1,498.91	4,162.85	2,084.52	3.74	-0.35	0.048
120.00	-8.00	-1.61	0.00	-86.76	0.00	86.76	2,900.37	1,450.18	3,895.16	1,950.48	4.12	-0.38	0.047
125.00	-7.42	-1.62	0.00	-78.71	0.00	78.71	2,802.91	1,401.46	3,636.37	1,820.89	4.53	-0.40	0.046
129.75	-7.37	-1.63	0.00	-70.99	0.00	70.99	2,710.27	1,355.13	3,398.59	1,701.82	4.94	-0.42	0.044
130.00	-6.56	-1.63	0.00	-70.59	0.00	70.59	2,705.46	1,352.73	3,386.47	1,695.75	4.96	-0.42	0.044
134.25	-6.50	-1.63	0.00	-63.64	0.00	63.64	1,680.99	840.50	2,090.90	1,047.00	5.34	-0.44	0.065
135.00	-6.09	-1.63	0.00	-62.43	0.00	62.43	1,674.79	837.40	2,071.78	1,037.43	5.41	-0.44	0.064
140.00	-5.70	-1.62	0.00	-54.28	0.00	54.28	1,632.45	816.23	1,944.90	973.89	5.89	-0.47	0.059
145.00	-5.31	-1.59	0.00	-46.19	0.00	46.19	1,588.67	794.34	1,820.24	911.47	6.40	-0.50	0.054
150.00	-4.94	-1.56	0.00	-38.22	0.00	38.22	1,543.46	771.73	1,697.99	850.26	6.94	-0.53	0.048
155.00	-4.58	-1.51	0.00	-30.43	0.00	30.43	1,496.80	748.40	1,578.35	790.35	7.51	-0.56	0.042
160.00	-4.24	-1.45	0.00	-22.89	0.00	22.89	1,448.70	724.35	1,461.52	731.85	8.11	-0.58	0.034
165.00	-3.91	-1.37	0.00	-15.66	0.00	15.66	1,385.70	692.85	1,334.72	668.35	8.72	-0.60	0.026
170.00	-3.59	-1.27	0.00	-8.82	0.00	8.82	1,320.73	660.36	1,211.87	606.84	9.35	-0.61	0.017
175.00	-3.47	-1.23	0.00	-2.46	0.00	2.46	1,255.76	627.88	1,094.95	548.29	10.00	-0.62	0.007
177.00	0.00	0.00	0.00	0.00	0.00	0.00	1,229.77	614.89	1,049.84	525.70	10.25	-0.62	0.000
177.50	0.00	0.00	0.00	0.00	0.00	0.00	1,223.28	611.64	1,038.71	520.13	10.32	-0.62	0.000

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

Customer: Verizon Wireless

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	28.45	0.00	48.92	0.00	0.00	3712.69	134.25	0.63
0.9D + 1.6W	28.43	0.00	36.68	0.00	0.00	3678.07	134.25	0.62
1.2D + 1.0Di + 1.0Wi	5.76	0.00	66.15	0.00	0.00	638.13	0.00	0.09
(1.2 + 0.2Sds) * DL + E ELFM	1.59	0.00	48.45	0.00	0.00	219.66	48.88	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.29	0.00	48.45	0.00	0.00	306.10	134.25	0.07
(0.9 - 0.2Sds) * DL + E ELFM	1.59	0.00	33.83	0.00	0.00	217.24	48.88	0.03
(0.9 - 0.2Sds) * DL + E EMAM	2.29	0.00	33.83	0.00	0.00	302.61	134.25	0.06
1.0D + 1.0W	5.80	0.00	40.79	0.00	0.00	754.16	134.25	0.13

Site Number: 411184

Code: ANSI/TIA-222-G

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Site Name: Salem CT SQA, CT

Engineering Number: OAA636849_C3_09

11/18/2016 8:37:49 AM

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 %
4,741.20	48.30	36.10	3,712.69	66.15	28.45	58.01

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	2.250	73.000	Round	0	0.00	9.204	425.91	629.05	0.68

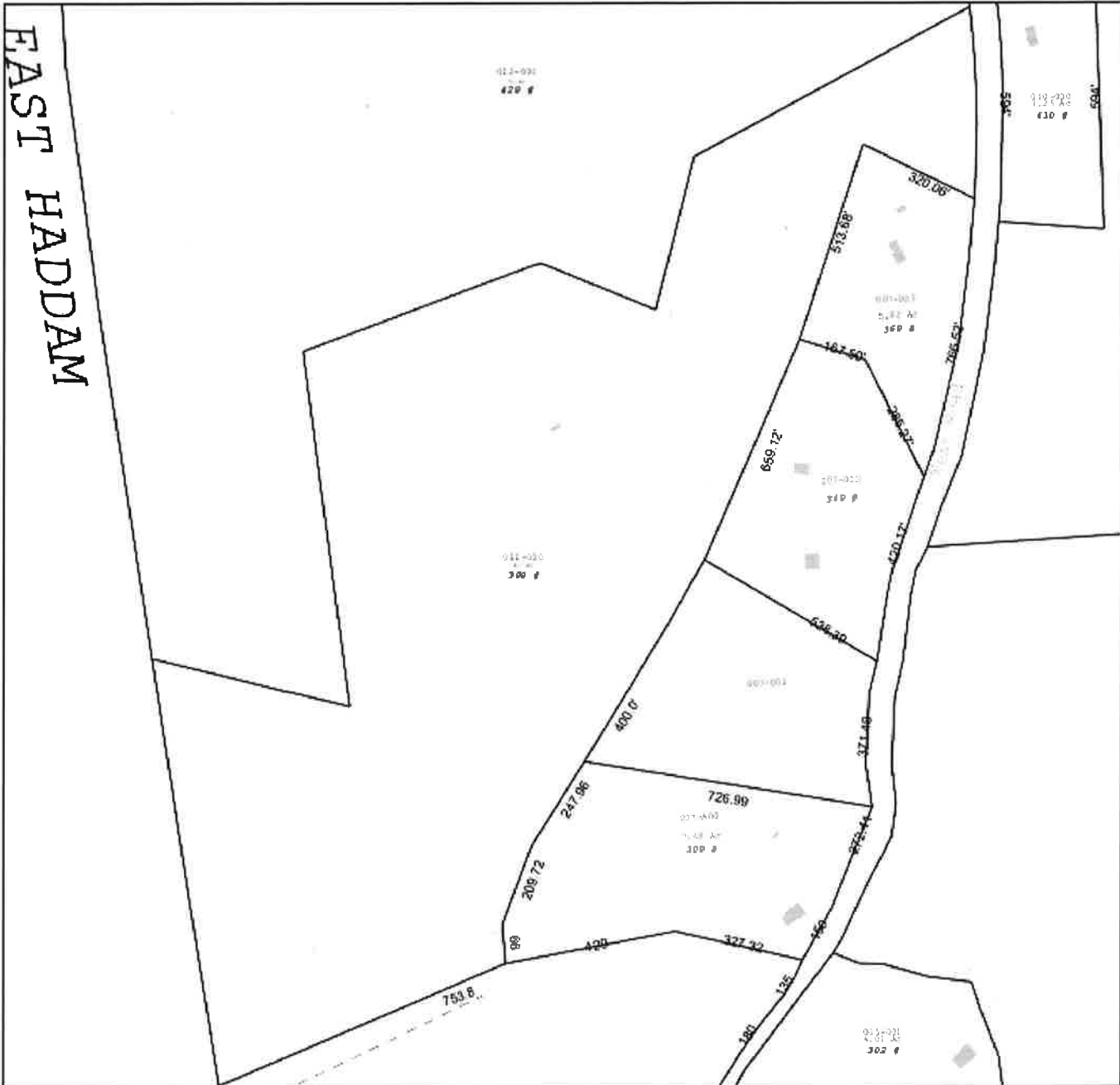
Anchor Bolts

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
67.00	20	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	136.30	260.00	0.54	129.68	260.00	0.51

ATTACHMENT 4



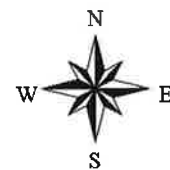
Date Printed: 11/21/2016



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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 Town of Salem and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 400 feet

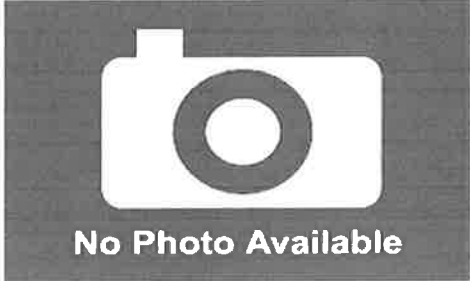




Property Information

Property Location	399 WEST RD
Owner	CLARK WILLIS & CLAIRE
Co-Owner	
Mailing Address	BOX 108 MONTVILLE CT 06353-0000
Land Use	106 Land W Ob'S
Land Class	R
Zoning Code	RUA
Census Tract	7151
Neighborhood	1100
Acreage	40
Utilities	
Lot Setting/Desc	
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	

