

February 8, 2016

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

Re: **Notice of Exempt Modification – Facility Modification
148 Roberts Street, East Hartford, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) antennas at the 119.7 foot level of the existing 130-foot tower at 148 Roberts Street in East Hartford, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of this tower in 2002. Cellco now intends to modify its facility by replacing six (6) of its existing antennas with three (3) model SBNHH-1D65B, 700/2100 MHz antennas and three (3) model SBNHH-1D65B, 1900 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 one (1) HYBRIFLEX™ antenna cable. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cable.

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 Marcia A. Leclerc, Mayor of the Town of East Hartford, Eileen Buckheit, East Hartford’s Development Director, the Greater Hartford Transit District, the owner of the Property and ATC, the tower owner.

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

Robinson+Cole

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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 119.7 foot level of the 130-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 Evaluation included in Attachment 3).

A copy of the East Hartford 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,



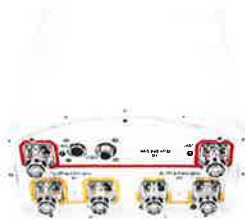
Kenneth C. Baldwin

Enclosures

Copy to:

Marcia A. Leclerc, East Hartford Mayor
Eileen Buckheit, East Hartford Development Director
Greater Hartford Transit District
ATC
Tim Parks

ATTACHMENT 1



SBNHH-1D65B

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

Electrical Specifications, BASTA*

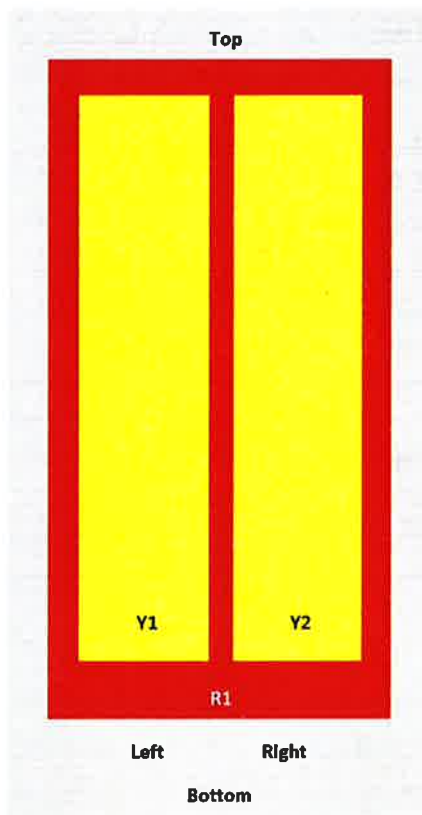
Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
	7° 14.6	7°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

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

Array Layout

SBNHH-1D65B

SBNHH 65



Array	Freq (MHz)	Conns	RET (AIRET)	AISG RET UID
R1	698-896	1-2	1	ARXXXXXXXXXXXXXXXXX 1
V1	1695-2360	3-4	2	ARXXXXXXXXXXXXXXXXX 2
V2	1695-2360	5-6		

View from the front of the antenna

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

General Specifications

Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

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

SBNHH-1D65B

Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

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

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

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

Regulatory Compliance/Certifications

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



Included Products

SBNHH-1D65B

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

* **Footnotes**

Performance Note Severe environmental conditions may degrade optimum performance

ALCATEL-LUCENT B13 RRH4X30-4R

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

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

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

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

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

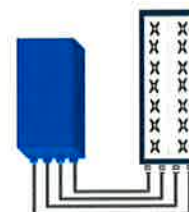


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

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

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ALCATEL-LUCENT B25 RRH4X30

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

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

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

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

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

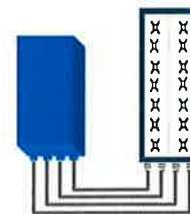


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (In 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2) 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.

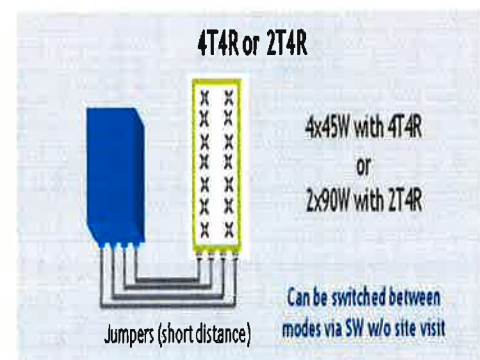
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the 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 Sensitivity (PRC 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)
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 Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		(μm)	50/125
Primary Coating (Acrylate)		(μm)	245
Buffer Diameter, Nominal		(μm)	900
Secondary Protection, Jacket, Nominal		(mm (in))	2.0 (0.08)
Minimum Bending Radius		(mm (in))	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL34-V0, UL1666 RoHS Compliant
DC Properties, Alarm & 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
Operating Range			
Installation Temperature		(°C (°F))	-40 to +65 (-40 to 149)
Operation Temperature		(°C (°F))	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

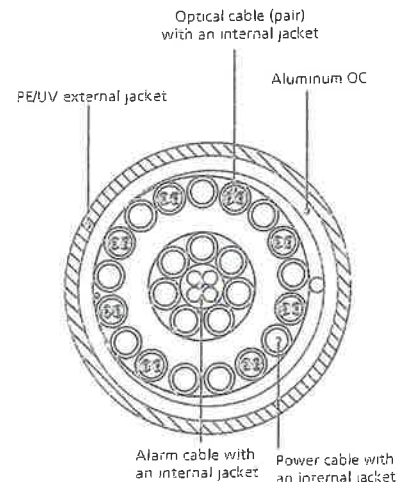


Figure 2: Construction Detail

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

ATTACHMENT 2

Site Name: East Hartford 3 Tower Height: 130ft	General		Power		Density					
	CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total	
*T-Mobile	2	2334	100	2100	0.1900	1.0000	1.90%			
*T-Mobile	2	2344	100	1900	0.1908	1.0000	1.91%			
*T-Mobile	2	1167	100	2100	0.0950	1.0000	0.95%			
*T-Mobile	2	1167	100	1950	0.0950	1.0000	0.95%			
*T-Mobile	2	1167	100	1950	0.0950	1.0000	0.95%			
*Clearwire	2	153	128	2496	0.0074	1.0000	0.07%			
*Clearwire	1	211	128	11 GHZ	0.0051	1.0000	0.05%			
*AT&T	1	500	90	700	0.0255	0.4667	0.55%			
*AT&T	1	500	90	1900	0.0255	1.0000	0.25%			
*AT&T	1	500	90	2300	0.0255	1.0000	0.25%			
*AT&T	2	500	90	880	0.0510	0.5867	0.87%			
*AT&T	1	500	90	1900	0.0255	1.0000	0.25%			
Sprint	11	309	110	1962.5	0.1128	1.0000	1.13%			
Verizon PCS	1	5025	119.7	0.1261	1970	1.0000	12.61%			
Verizon Cellular	9	403	119.7	0.0910	869	0.5793	15.71%			
Verizon AWS	1	4940	119.7	0.1240	2145	1.0000	12.40%			
Verizon 700	1	2200	119.7	0.0552	746	0.497333	11.10%		61.91%	
* Source: Siting Council										

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 130 ft Monopole
ATC Site Name : East Hartford, CT
ATC Site Number : 370626
Engineering Number : OAA631448_C3_05
Proposed Carrier : Verizon
Carrier Site Name : East Hartford 3 CT
Carrier Site Number : 119677
Site Location : 148 Roberts St.
East Hartford, CT 06108-0000
41.773305, -72.613416
County : Hartford
Date : February 3, 2017
Max Usage : 85%
Result : Pass

Prepared By:
Vivian Chung, E.I.
Structural Engineer I

Reviewed By:



Feb 6 2017 9:52 AM **cosign**

COA: PEC.0001553



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Analysis	1
Conclusion.....	1
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Standard Conditions	4
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 130 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	Glen Martin Engineering Drawing #MP1400800-0001, dated August 20, 2003
Foundation Drawing	Glen Martin Engineering Drawing #GME-03309, dated August 26, 2003
Geotechnical Report	Geotechnical Engineering Project Name: The Marcus Group, dated April 25, 2003

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:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.18$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
128.0	128.0	3	DragonWave Horizon Compact	Side Arms	(3) 1 5/8" Fiber (3) 1/2" Coax (3) 5/8" Coax (2) 2" Conduit	Clearwire
		3	BTS			
		3	Argus LLPX310R			
		3	DragonWave A-ANT-18G-2-C			
119.7	119.7	1	RFS DB-T1-6Z-8AB-OZ	Low Profile Platform	(6) 1 5/8" Coax	Verizon
		6	Andrew DB844G65ZAXY			
		3	Antel BXA-70063-6CF-EDIN-X			
110.0	110.0	9	48" x 12" Panel	Low Profile Platform	(9) 1 5/8" Coax	Sprint Nextel
100.0	100.0	3	Ericsson AIR 21, 1.3M, B2A B4P	T-Arms	(12) 7/8" Coax (2) 1 5/8" Hybriflex	Metro PCS
		3	Ericsson AIR-32 B2A/B66Aa			
90.0	90.0	6	14" x 9" TTA	Platform w/ Handrails	(3) 1/2" Coax (12) 1 5/8" Coax (8) 0.76" 8 AWG 6 (2) 0.35" Fiber	AT&T Mobility
		4	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS A2 Module (15.1" Height)			
		9	Ericsson RRUS 12 w/ Solar Shield			
		3	Ericsson RRUS-32 (77 lbs)			
		9	Ericsson RRUS-11			
		12	CCI HPA-65R-BUU-H8			
70.0	70.0	1	2' Std. Dish	Leg	(1) 1 5/8" Coax	Sprint Nextel
50.0	50.0	1	GPS	Side Arm	(1) 1/2" Coax	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
119.7	119.7	3	Antel BXA-185063/8CF	-	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Antel BXA-171063-8CF-EDIN-X			
		3	Alcatel-Lucent RRH2x40-AWS			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
119.7	119.7	3	Alcatel-Lucent PCS B25 RRH2x60/4x30	Low Profile Platform	(2) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH4X45-B66 w/ Solar Shield			
		1	RFS DB-T1-6Z-8AB-OZ			
		6	Andrew SBNHH-1D65B			
119.0	119.0	3	Alcatel-Lucent RRH2x60 700	Flush	-	

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	56%	Pass
Shaft	72%	Pass
Base Plate	47%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,740.2	3,699.3	2,799.5	76%
Shear (Kips)	28.5	38.4	32.7	85%

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

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
119.7	Alcatel-Lucent PCS B25 RRH2x60/4x30	Verizon	1.306	1.100
	Alcatel-Lucent RRH4X45-B66 w/ Solar Shield			
	RFS DB-T1-6Z-8AB-0Z			
	Andrew SBNHH-1D65B			
119.0	Alcatel-Lucent RRH2x60 700		1.293	1.099
70.0	2' Std. Dish	Sprint Nextel	0.462	0.768

*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.

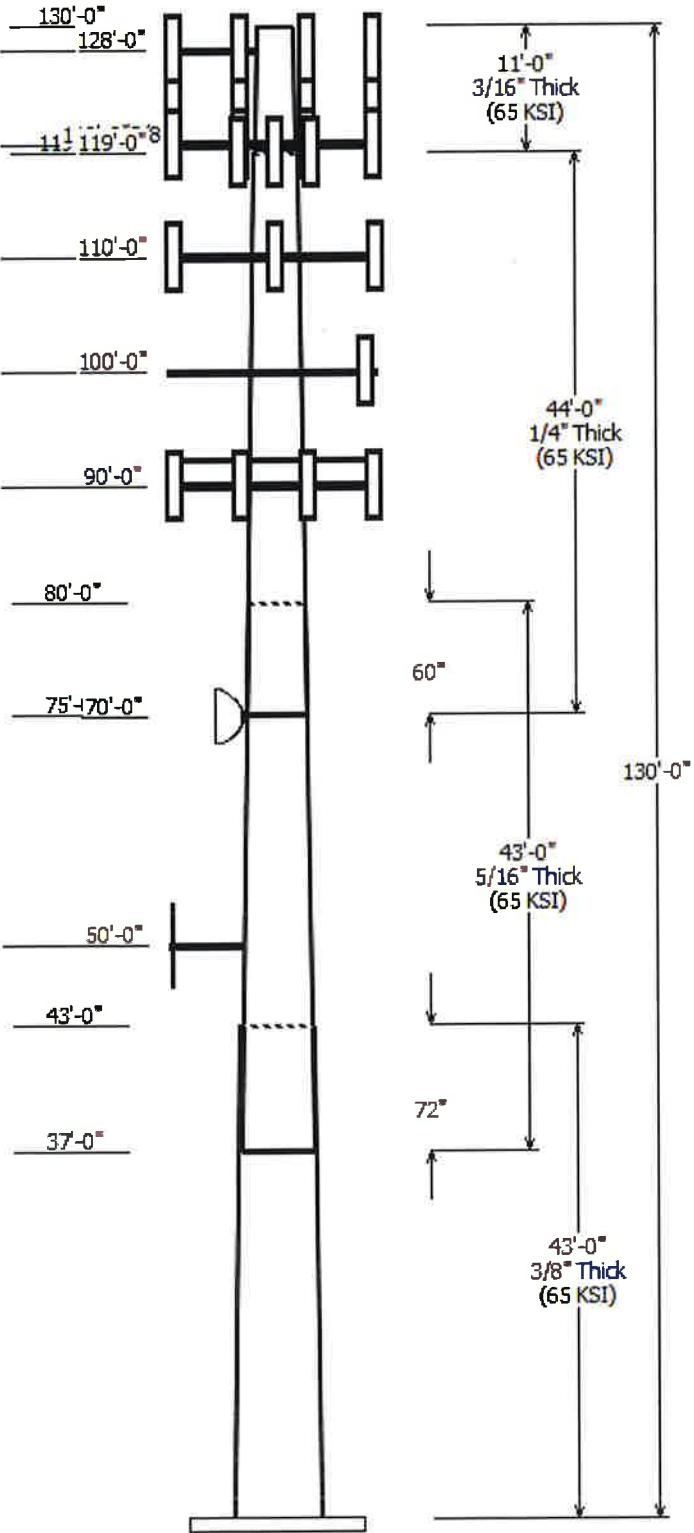
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Job Information	
Pole : 370626	Code: ANSI/TIA-222-G
Description : 130 ft. Monopole	
Client : Verizon Wireless	Struct Class : II
Location : East Hartford, CT	
Shape : 16 Sides	Exposure : B
Height : 130.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.233192in/ft)	

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Steel Taper (in/ft)	Grade (ksi)
		Top	Bottom					
1	43.000	39.16	49.19	0.375		0.000	0.233200	65
2	43.000	31.16	41.18	0.313	Slip Joint	72.000	0.233200	65
3	44.000	22.56	32.82	0.250	Slip Joint	60.000	0.233200	65
4	11.000	20.00	22.56	0.188	Butt Joint	0.000	0.233200	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
128.000	128.000	3	Argus LLPX310R	
128.000	128.000	3	DragonWave A-ANT-18G-2-C	
128.000	128.000	3	BTS	
128.000	128.000	3	DragonWave Horizon Compact	
128.000	128.000	1	Side Arms	
119.700	120.000	1	RFS DB-T1-6Z-8AB-0Z	
119.700	120.000	1	RFS DB-T1-6Z-8AB-0Z	
119.700	119.700	6	Andrew SBNHH-1D65B	
119.700	120.000	3	Alcatel-Lucent RRH4X45-B66	
119.700	120.000	3	Alcatel-Lucent PCS B25	
119.700	119.700	3	Antel BXA-70063-6CF-EDIN-X	
119.700	119.700	6	Andrew DB844G65ZAXY	
119.700	119.700	1	Flat Low Profile Platform	
119.000	119.000	3	Alcatel-Lucent RRH2x60 700	
110.000	110.000	9	48" x 12" Panel	
110.000	110.000	1	Round Low Profile Platform	
100.000	100.000	3	Ericsson AIR-32 B2A/B66Aa	
100.000	100.000	3	Ericsson AIR 21, 1.3M, B2A B4P	
100.000	100.000	3	Round T-Arm	
90.000	90.000	1	Round Platform w/ Handrails	
90.000	90.000	12	CCI HPA-65R-BUU-H8	
90.000	90.000	9	Ericsson RRUS-11	
90.000	90.000	3	Ericsson RRUS-32 (77 lbs)	
90.000	90.000	9	Ericsson RRUS 12 w/ Solar Shie	
90.000	90.000	6	Ericsson RRUS A2 Module	
90.000	90.000	4	Raycap DC6-48-60-18-8F	
90.000	90.000	6	14" x 9" TTA	
70.000	70.000	1	2' Std. Dish	
50.000	50.000	1	GPS	
50.000	50.000	1	Flat Side Arm	

Linear Appurtenance			
Elev From	Elev To	Description	Exposed To Wind
0.000	50.000	1/2" Coax	No
0.000	70.000	1 5/8" Coax	No
0.000	90.000	0.35" Fiber	No
0.000	90.000	0.76" 8 AWG 6	No
0.000	90.000	1 5/8" Coax	No
0.000	90.000	1/2" Coax	No
0.000	100.0	1 5/8" Hybriflex	Yes

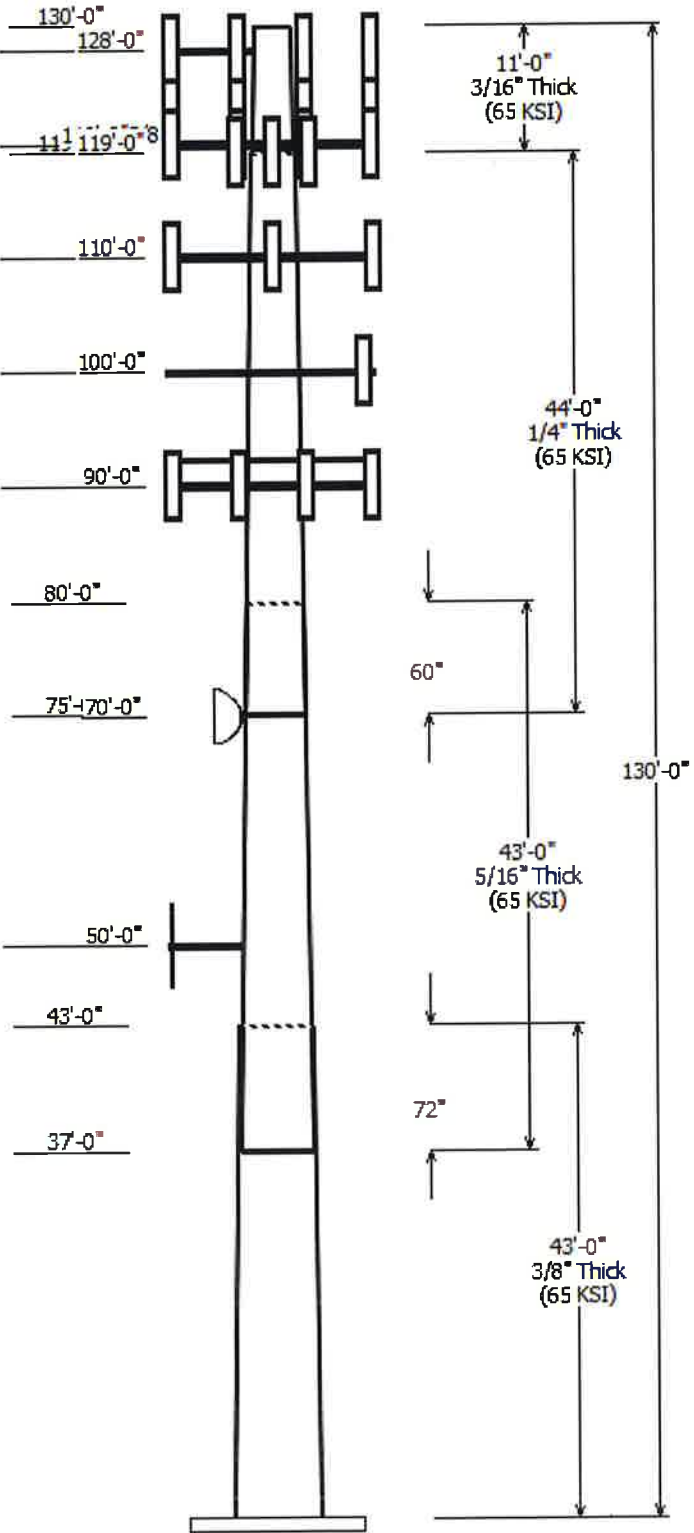


0.000	100.0	1 5/8" Hybriflex	Yes
0.000	100.0	7/8" Coax	No
0.000	100.0	7/8" Coax	Yes
0.000	110.0	1 5/8" Coax	No
0.000	119.7	1 5/8" Coax	Yes
0.000	119.7	1 5/8" Fiber	Yes
0.000	128.0	1 5/8" Fiber	No
0.000	128.0	1/2" Coax	No
0.000	128.0	2" Conduit	No
0.000	128.0	5/8" Coax	No

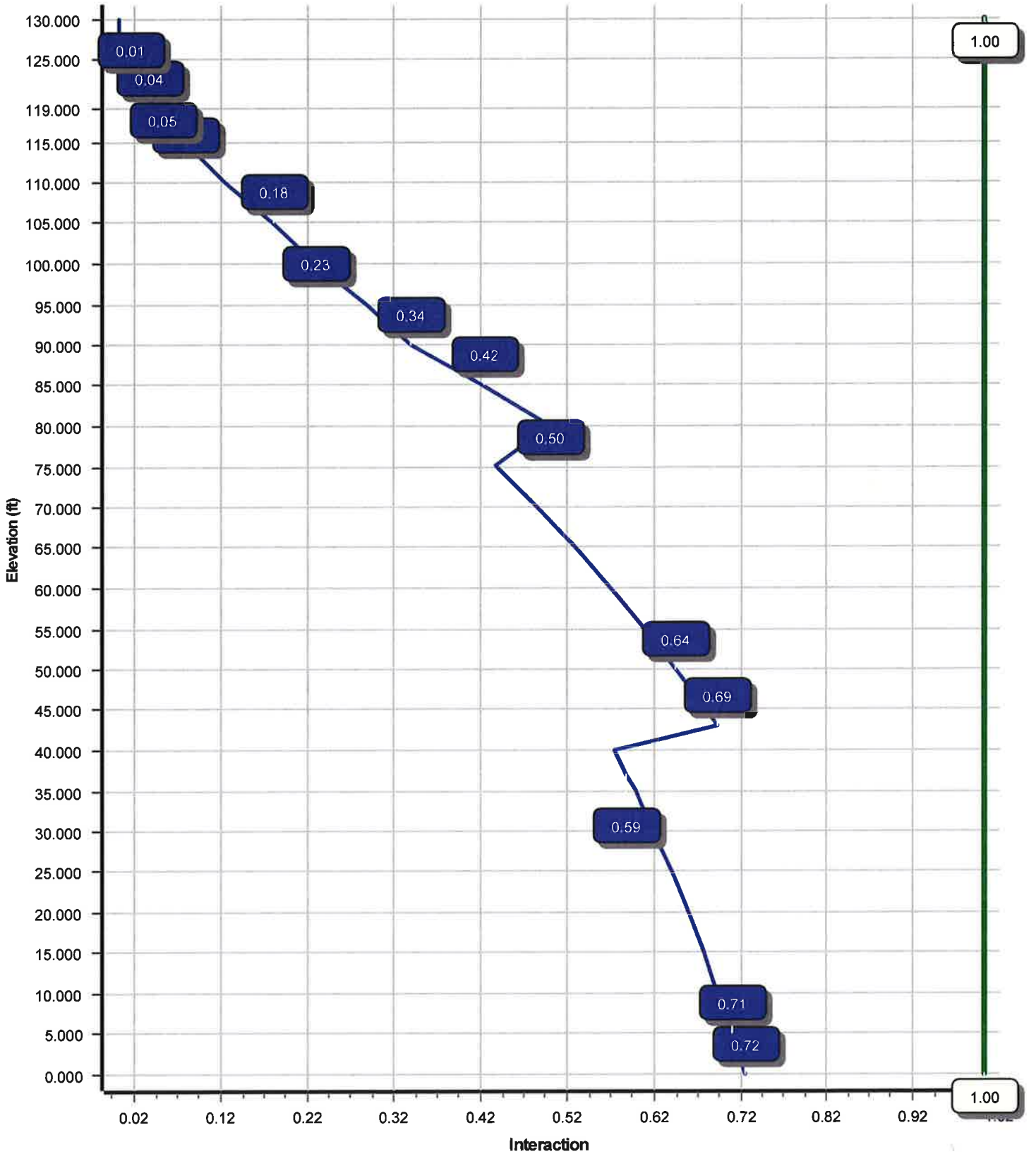
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions				
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)	
1.2D + 1.6W	2799.53	32.66	39.78	
0.9D + 1.6W	2744.61	32.03	29.82	
1.2D + 1.0Di + 1.0Wi	734.23	8.01	81.26	
(1.2 + 0.2Sds) * DL + E ELFM	150.40	1.52	39.59	
(1.2 + 0.2Sds) * DL + E EMAM	136.93	1.42	39.59	
(0.9 - 0.2Sds) * DL + E ELFM	148.59	1.51	27.54	
(0.9 - 0.2Sds) * DL + E EMAM	135.14	1.42	27.54	
1.0D + 1.0W	658.92	7.66	33.20	

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	70.00	5.543	0.768



Load Case : 1.2D + 1.6W
Max Ratio 72.18% at 0.0 ft



Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Analysis Parameters

Location:	Hartford County, CT	Height (ft):	130
Code:	ANSI/TIA-222-G	Base Diameter (in):	49.19
Shape:	16 Sides	Top Diameter (in):	20.00
Pole Type:	Taper	Taper (in/ft) :	0.233
Pole Manufacturer:	Glen Martin	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 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:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	1.95		
T _L (sec):	6	p:	1.3
S _s :	0.180	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.192	S _{d1} :	0.102
		C _s :	0.035
		C _s Max:	0.035
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-16	43.000	0.3750	65		0.00	7,667	49.19	0.00	58.39	17579.1	24.50	131.17	39.16	43.00	46.40	8819.0	19.18	104.43	0.233192
2-16	43.000	0.3125	65	Slip	72.00	5,231	41.18	37.00	40.75	8600.2	24.62	131.80	31.16	80.00	30.75	3696.6	18.24	99.71	0.233192
3-16	44.000	0.2500	65	Slip	60.00	3,277	32.82	75.00	25.98	3482.7	24.53	131.30	22.56	119.00	17.80	1119.5	16.36	90.26	0.233192
4-16	11.000	0.1875	65	Butt	0.00	472	22.56	119.00	13.38	846.7	22.35	120.35	20.00	130.00	11.85	587.7	19.63	106.67	0.233192
Shaft Weight						16,647													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
128.00	Argus LLPX310R	3	28.60	4.290	0.73	180.63	5.495	0.73	0.000	0.000
128.00	BTS	3	20.00	1.800	0.50	106.24	2.569	0.50	0.000	0.000
128.00	DragonWave A-ANT-18G-2-C	3	27.10	4.690	1.00	155.28	6.364	1.00	0.000	0.000
128.00	DragonWave Horizon	3	11.50	0.840	0.50	56.36	1.242	0.50	0.000	0.000
128.00	Side Arms	1	560.00	8.500	1.00	1,174.92	17.834	1.00	0.000	0.000
119.70	Alcatel-Lucent PCS B25	3	55.00	2.200	0.67	147.57	3.527	0.67	0.000	0.300
119.70	Alcatel-Lucent RRH4X45-B66	3	64.00	2.660	0.67	183.38	3.619	0.67	0.000	0.300
119.70	Andrew DB844G65ZAXY	6	12.00	4.340	0.94	198.46	5.597	0.94	0.000	0.000
119.70	Andrew SBNHH-1D65B	6	50.70	8.170	0.83	331.38	9.908	0.83	0.000	0.000
119.70	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.570	0.77	259.01	9.254	0.77	0.000	0.000
119.70	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,346.07	51.032	1.00	0.000	0.000
119.70	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	241.61	5.962	0.67	0.000	0.300
119.70	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	241.61	5.962	0.67	0.000	0.300
119.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	170.36	2.987	0.67	0.000	0.000
110.00	48" x 12" Panel	9	30.00	5.070	0.78	212.84	6.363	0.78	0.000	0.000
110.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,337.26	46.511	1.00	0.000	0.000
100.00	Ericsson AIR 21, 1.3M, B2A	3	91.50	6.040	0.85	316.60	7.461	0.85	0.000	0.000
100.00	Ericsson AIR-32 B2A/B66Aa	3	132.20	6.510	0.86	378.86	7.992	0.86	0.000	0.000
100.00	Round T-Arm	3	250.00	9.700	0.67	517.46	20.250	0.67	0.000	0.000
90.00	14" x 9" TTA	6	10.00	1.050	0.50	60.95	1.638	0.50	0.000	0.000
90.00	CCI HPA-65R-BUU-H8	12	68.00	12.980	0.79	451.79	15.053	0.79	0.000	0.000
90.00	Ericsson RRUS 12 w/ Solar	9	57.90	3.150	0.67	184.93	4.073	0.67	0.000	0.000
90.00	Ericsson RRUS A2 Module	6	22.00	2.060	0.67	97.02	2.837	0.67	0.000	0.000
90.00	Ericsson RRUS-11	9	55.00	3.790	0.67	195.59	4.812	0.67	0.000	0.000
90.00	Ericsson RRUS-32 (77 lbs)	3	77.00	3.310	0.67	228.39	4.332	0.67	0.000	0.000
90.00	Raycap DC6-48-60-18-8F	4	20.00	1.110	1.00	128.40	2.705	1.00	0.000	0.000
90.00	Round Platform w/ Handrails	1	2000.00	27.200	1.00	3,640.41	58.145	1.00	0.000	0.000
70.00	2' Std. Dish	1	14.00	5.230	1.00	82.35	7.140	1.00	0.000	0.000
50.00	Flat Side Arm	1	150.00	6.300	1.00	237.12	9.227	1.00	0.000	0.000
50.00	GPS	1	10.00	1.000	1.00	58.83	1.032	1.00	0.000	0.000
Totals		112	11064.10			33,862.79			Number of Loadings : 30	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	128.00	3	1 5/8" Fiber	1.63	1.61	N	0.00	N	Clearwire
0.00	128.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
0.00	128.00	2	2" Conduit	2.38	3.65	N	0.00	N	Clearwire
0.00	128.00	3	5/8" Coax	0.87	0.15	N	0.00	N	Clearwire
0.00	119.70	6	1 5/8" Coax	1.98	0.82	N	3.96	Y	Verizon
0.00	119.70	2	1 5/8" Fiber	1.63	1.61	N	0.00	Y	Verizon

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

0.00	110.00	9	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
0.00	100.00	1	1 5/8" Hybriflex	1.98	1.30	N	1.98	Y	Metro PCS
0.00	100.00	1	1 5/8" Hybriflex	1.98	1.30	N	1.98	Y	Metro PCS
0.00	100.00	6	7/8" Coax	1.09	0.33	N	0.00	N	Metro PCS
0.00	100.00	6	7/8" Coax	1.09	0.33	N	1.09	Y	Metro PCS
0.00	90.00	2	0.35" Fiber	0.35	0.05	N	0.00	N	AT&T Mobility
0.00	90.00	8	0.76" 8 AWG 6	0.76	0.53	N	0.00	N	AT&T Mobility
0.00	90.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	90.00	3	1/2" Coax	0.63	0.15	N	0.00	N	AT&T Mobility
0.00	70.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
0.00	50.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:33 PM

Customer: Verizon Wireless

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	49.190	58.395	17,579.1	24.50	131.17	74.8	701.0	0.0	0.0
5.00		0.3750	48.024	57.000	16,349.3	23.88	128.06	75.5	667.8	0.0	981.7
10.00		0.3750	46.858	55.605	15,178.2	23.26	124.95	76.2	635.4	0.0	957.9
15.00		0.3750	45.692	54.211	14,064.5	22.65	121.85	76.9	603.8	0.0	934.2
20.00		0.3750	44.526	52.816	13,006.6	22.03	118.74	77.6	573.0	0.0	910.5
25.00		0.3750	43.360	51.421	12,003.1	21.41	115.63	78.3	543.0	0.0	886.7
30.00		0.3750	42.194	50.026	11,052.6	20.79	112.52	79.0	513.8	0.0	863.0
35.00		0.3750	41.028	48.631	10,153.7	20.17	109.41	79.7	485.4	0.0	839.3
37.00	Bot - Section 2	0.3750	40.562	48.074	9,808.2	19.92	108.17	80.0	474.3	0.0	329.1
40.00		0.3750	39.862	47.237	9,304.8	19.55	106.30	80.4	457.9	0.0	898.9
43.00	Top - Section 1	0.3125	39.788	39.352	7,746.9	23.73	127.32	75.7	381.9	0.0	883.2
45.00		0.3125	39.321	38.887	7,475.6	23.44	125.83	76.1	372.9	0.0	266.2
50.00		0.3125	38.155	37.725	6,825.1	22.70	122.10	76.9	350.9	0.0	651.7
55.00		0.3125	36.989	36.562	6,213.5	21.95	118.37	77.7	329.5	0.0	632.0
60.00		0.3125	35.823	35.400	5,639.5	21.21	114.64	78.6	308.8	0.0	612.2
65.00		0.3125	34.657	34.238	5,102.1	20.47	110.90	79.4	288.8	0.0	592.4
70.00		0.3125	33.492	33.075	4,599.9	19.73	107.17	80.3	269.4	0.0	572.6
75.00	Bot - Section 3	0.3125	32.326	31.913	4,131.8	18.98	103.44	81.1	250.7	0.0	552.9
80.00	Top - Section 2	0.2500	31.660	25.049	3,122.0	23.60	126.64	75.9	193.4	0.0	967.2
85.00		0.2500	30.494	24.119	2,787.1	22.67	121.97	76.9	179.3	0.0	418.3
90.00		0.2500	29.328	23.189	2,477.0	21.74	117.31	78.0	165.7	0.0	402.5
95.00		0.2500	28.162	22.260	2,190.8	20.82	112.65	79.0	152.6	0.0	386.6
100.0		0.2500	26.996	21.330	1,927.6	19.89	107.98	80.1	140.1	0.0	370.8
105.0		0.2500	25.830	20.400	1,686.3	18.96	103.32	81.1	128.1	0.0	355.0
110.0		0.2500	24.664	19.470	1,466.1	18.03	98.66	82.2	116.6	0.0	339.2
115.0		0.2500	23.498	18.540	1,265.9	17.10	93.99	82.6	105.7	0.0	323.4
119.0	Top - Section 3	0.2500	22.565	17.796	1,119.5	16.36	90.26	82.6	97.3	0.0	247.3
119.0	Bot - Section 4	0.1875	22.565	13.385	846.7	22.35	120.35	77.3	73.6	0.0	
119.7		0.1875	22.402	13.287	828.3	22.17	119.48	77.5	72.5	0.0	31.8
120.0		0.1875	22.332	13.245	820.5	22.10	119.10	77.6	72.1	0.0	13.5
125.0		0.1875	21.166	12.548	697.6	20.86	112.89	79.0	64.7	0.0	219.4
128.0		0.1875	20.466	12.129	630.1	20.12	109.15	79.8	60.4	0.0	126.0
130.0		0.1875	20.000	11.850	587.7	19.63	106.67	80.4	57.6	0.0	81.6
											16,646.8

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:33 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W	97 mph with No Ice	23 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)	Torsion MY (lb-ft)	Moment MZ (lb)		
0.00		271.9	0.0					0.0	0.0	271.9	0.0	0.0	0.0
5.00		540.1	1,178.0					0.0	304.3	540.1	1,482.3	0.0	0.0
10.00		532.8	1,149.5					0.0	304.3	532.8	1,453.8	0.0	0.0
15.00		525.4	1,121.0					0.0	304.3	525.4	1,425.3	0.0	0.0
20.00		576.7	1,092.6					0.0	304.3	576.7	1,396.8	0.0	0.0
25.00		623.2	1,064.1					127.0	304.3	750.2	1,368.3	0.0	0.0
30.00		613.6	1,035.6					127.0	304.3	740.6	1,339.9	0.0	0.0
35.00		429.8	1,007.1					130.1	304.3	559.9	1,311.4	0.0	0.0
37.00	Bot - Section 2	312.9	394.9					53.6	121.7	366.4	516.6	0.0	0.0
40.00		379.3	1,078.7					81.9	182.6	461.2	1,261.2	0.0	0.0
43.00	Top - Section 1	317.0	1,059.9					83.7	182.6	400.7	1,242.4	0.0	0.0
45.00		444.6	319.5					56.7	121.7	501.4	441.2	0.0	0.0
50.00	Appertunance(s)	634.8	782.1	238.3	0.0	0.0	192.0	144.9	304.3	1,018.1	1,278.3	0.0	0.0
55.00		632.4	758.3					149.1	303.4	781.5	1,061.7	0.0	0.0
60.00		627.9	734.6					153.1	303.4	781.0	1,038.0	0.0	0.0
65.00		621.5	710.9					156.8	303.4	778.3	1,014.2	0.0	0.0
70.00	Appertunance(s)	613.5	687.2	188.0	0.0	0.0	16.8	160.3	303.4	961.7	1,007.3	0.0	0.0
75.00	Bot - Section 3	608.7	663.4					163.6	298.4	772.2	961.9	0.0	0.0
80.00	Top - Section 2	602.5	1,160.6					166.7	298.4	769.2	1,459.0	0.0	0.0
85.00		590.5	501.9					169.7	298.4	760.2	800.4	0.0	0.0
90.00	Appertunance(s)	577.3	482.9	6,479.1	0.0	0.0	5,202.1	172.6	298.4	7,228.9	5,983.5	0.0	0.0
95.00		563.0	464.0					175.3	210.7	738.3	674.6	0.0	0.0
100.00	Appertunance(s)	470.2	445.0	1,607.1	0.0	0.0	1,705.3	178.0	210.7	2,255.4	2,361.0	0.0	0.0
105.00		382.3	426.0					0.0	171.3	382.3	597.3	0.0	0.0
110.00	Appertunance(s)	376.8	407.0	2,052.0	0.0	0.0	2,124.0	0.0	171.3	2,428.7	2,702.3	0.0	0.0
115.00		334.3	388.0					0.0	127.0	334.3	515.0	0.0	0.0
119.00	Top - Section 3	172.9	296.7	144.6	0.0	0.0	204.1	0.0	101.6	317.5	602.5	0.0	0.0
119.70		34.5	38.1					0.0	17.8	34.5	55.9	0.0	0.0
120.00		155.1	16.3					0.0	4.7	155.1	20.9	0.0	0.0
125.00		230.8	263.3					0.0	78.2	230.8	341.5	0.0	0.0
128.00	Appertunance(s)	139.9	151.1	1,300.0	0.0	0.0	985.9	0.0	46.9	1,439.9	1,184.0	0.0	0.0
130.00		55.2	97.9					0.0	0.0	55.2	97.9	0.0	0.0
Totals:										28,450.3	36,996.4	0.00	0.00

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:35 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W	97 mph with No Ice	23 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.78	-32.66	0.00	-2,799.53	0.00	2,799.53	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.722
5.00	-38.17	-32.27	0.00	-2,636.21	0.00	2,636.21	3,875.65	1,937.83	7,621.89	3,783.83	0.12	-0.22	0.707
10.00	-36.60	-31.87	0.00	-2,474.87	0.00	2,474.87	3,815.83	1,907.92	7,319.19	3,633.55	0.47	-0.44	0.691
15.00	-35.05	-31.47	0.00	-2,315.53	0.00	2,315.53	3,754.26	1,877.13	7,019.01	3,484.53	1.05	-0.67	0.674
20.00	-33.54	-31.01	0.00	-2,158.18	0.00	2,158.18	3,690.93	1,845.46	6,721.61	3,336.89	1.87	-0.89	0.656
25.00	-32.07	-30.36	0.00	-2,003.15	0.00	2,003.15	3,625.84	1,812.92	6,427.23	3,190.75	2.93	-1.12	0.637
30.00	-30.63	-29.71	0.00	-1,851.36	0.00	1,851.36	3,559.00	1,779.50	6,136.14	3,046.24	4.23	-1.35	0.617
35.00	-29.25	-29.20	0.00	-1,702.79	0.00	1,702.79	3,490.40	1,745.20	5,848.59	2,903.48	5.77	-1.58	0.595
37.00	-28.68	-28.88	0.00	-1,644.39	0.00	1,644.39	3,462.46	1,731.23	5,734.61	2,846.90	6.45	-1.67	0.586
40.00	-27.37	-28.45	0.00	-1,557.75	0.00	1,557.75	3,420.04	1,710.02	5,564.83	2,762.62	7.54	-1.81	0.572
43.00	-26.08	-28.06	0.00	-1,472.41	0.00	1,472.41	2,681.60	1,340.80	4,368.81	2,168.86	8.73	-1.95	0.689
45.00	-25.57	-27.62	0.00	-1,416.30	0.00	1,416.30	2,661.68	1,330.84	4,284.71	2,127.11	9.56	-2.04	0.676
50.00	-24.22	-26.66	0.00	-1,278.20	0.00	1,278.20	2,610.63	1,305.32	4,075.93	2,023.46	11.84	-2.30	0.641
55.00	-23.08	-25.94	0.00	-1,144.88	0.00	1,144.88	2,557.83	1,278.91	3,869.44	1,920.95	14.39	-2.55	0.605
60.00	-21.97	-25.20	0.00	-1,015.20	0.00	1,015.20	2,503.27	1,251.63	3,665.50	1,819.71	17.19	-2.80	0.567
65.00	-20.89	-24.46	0.00	-889.18	0.00	889.18	2,446.95	1,223.47	3,464.36	1,719.85	20.25	-3.04	0.526
70.00	-19.85	-23.52	0.00	-766.88	0.00	766.88	2,388.88	1,194.44	3,266.29	1,621.52	23.56	-3.27	0.482
75.00	-18.85	-22.76	0.00	-649.27	0.00	649.27	2,329.04	1,164.52	3,071.53	1,524.84	27.10	-3.49	0.434
80.00	-17.37	-21.96	0.00	-535.45	0.00	535.45	1,710.42	855.21	2,217.13	1,100.67	30.87	-3.69	0.497
85.00	-16.55	-21.21	0.00	-425.63	0.00	425.63	1,669.71	834.86	2,083.38	1,034.28	34.84	-3.88	0.422
90.00	-11.04	-13.61	0.00	-319.59	0.00	319.59	1,627.25	813.62	1,951.48	968.80	39.00	-4.07	0.337
95.00	-10.39	-12.86	0.00	-251.52	0.00	251.52	1,583.02	791.51	1,821.67	904.36	43.35	-4.23	0.285
100.00	-8.18	-10.45	0.00	-187.23	0.00	187.23	1,537.05	768.52	1,694.22	841.08	47.86	-4.37	0.228
105.00	-7.60	-10.04	0.00	-134.98	0.00	134.98	1,489.31	744.66	1,569.38	779.10	52.50	-4.49	0.179
110.00	-5.08	-7.41	0.00	-84.80	0.00	84.80	1,439.82	719.91	1,447.40	718.55	57.26	-4.59	0.122
115.00	-4.59	-7.04	0.00	-47.76	0.00	47.76	1,377.44	688.72	1,317.89	654.26	62.09	-4.65	0.076
119.00	-4.02	-6.67	0.00	-19.61	0.00	19.61	1,322.18	661.09	1,213.72	602.54	66.00	-4.68	0.036
119.00	-4.02	-6.67	0.00	-19.61	0.00	19.61	930.99	465.49	859.42	426.65	66.00	-4.68	0.050
119.70	-1.49	-2.01	0.00	-14.78	0.00	14.78	926.54	463.27	849.02	421.49	66.69	-4.68	0.037
120.00	-1.48	-1.85	0.00	-14.18	0.00	14.18	924.62	462.31	844.57	419.28	66.98	-4.69	0.035
125.00	-1.15	-1.60	0.00	-4.91	0.00	4.91	891.75	445.87	771.29	382.90	71.89	-4.70	0.014
128.00	-0.09	-0.06	0.00	-0.13	0.00	0.13	871.17	435.59	728.15	361.48	74.84	-4.70	0.000
130.00	0.00	-0.06	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	76.81	-4.71	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:35 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W	97 mph with No Ice (Reduced DL)	23 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		218.3	0.0					0.0	0.0	218.3	0.0	0.0	0.0
5.00		431.4	883.5					0.0	228.2	431.4	1,111.7	0.0	0.0
10.00		420.9	862.1					0.0	228.2	420.9	1,090.3	0.0	0.0
15.00		410.4	840.8					0.0	228.2	410.4	1,069.0	0.0	0.0
20.00		518.4	819.4					0.0	228.2	518.4	1,047.6	0.0	0.0
25.00		623.2	798.1					127.0	228.2	750.2	1,026.3	0.0	0.0
30.00		613.6	776.7					127.0	228.2	740.6	1,004.9	0.0	0.0
35.00		429.8	755.3					130.1	228.2	559.9	983.5	0.0	0.0
37.00	Bot - Section 2	312.9	296.2					53.6	91.3	366.4	387.4	0.0	0.0
40.00		379.3	809.0					81.9	136.9	461.2	945.9	0.0	0.0
43.00	Top - Section 1	317.0	794.9					83.7	136.9	400.7	931.8	0.0	0.0
45.00		444.6	239.6					56.7	91.3	501.4	330.9	0.0	0.0
50.00	Appertunance(s)	634.8	586.6	238.3	0.0	0.0	144.0	144.9	228.2	1,018.1	958.8	0.0	0.0
55.00		632.4	568.8					149.1	227.5	781.5	796.3	0.0	0.0
60.00		627.9	551.0					153.1	227.5	781.0	778.5	0.0	0.0
65.00		621.5	533.2					156.8	227.5	778.3	760.7	0.0	0.0
70.00	Appertunance(s)	613.5	515.4	188.0	0.0	0.0	12.6	160.3	227.5	961.7	755.5	0.0	0.0
75.00	Bot - Section 3	608.7	497.6					163.6	223.8	772.2	721.4	0.0	0.0
80.00	Top - Section 2	602.5	870.5					166.7	223.8	769.2	1,094.3	0.0	0.0
85.00		590.5	376.4					169.7	223.8	760.2	600.3	0.0	0.0
90.00	Appertunance(s)	577.3	362.2	6,479.1	0.0	0.0	3,901.6	172.6	223.8	7,228.9	4,487.6	0.0	0.0
95.00		563.0	348.0					175.3	158.0	738.3	506.0	0.0	0.0
100.00	Appertunance(s)	446.4	333.7	1,607.1	0.0	0.0	1,279.0	178.0	158.0	2,231.6	1,770.7	0.0	0.0
105.00		332.1	319.5					0.0	128.5	332.1	448.0	0.0	0.0
110.00	Appertunance(s)	321.3	305.3	2,052.0	0.0	0.0	1,593.0	0.0	128.5	2,373.3	2,026.7	0.0	0.0
115.00		280.1	291.0					0.0	95.3	280.1	386.3	0.0	0.0
119.00	Top - Section 3	143.2	222.6	144.6	0.0	0.0	153.1	0.0	76.2	287.8	451.9	0.0	0.0
119.70		30.0	28.6					0.0	13.3	30.0	41.9	0.0	0.0
120.00		155.1	12.2					0.0	3.5	155.1	15.7	0.0	0.0
125.00		230.8	197.5					0.0	58.6	230.8	256.1	0.0	0.0
128.00	Appertunance(s)	139.9	113.4	1,300.0	0.0	0.0	739.4	0.0	35.2	1,439.9	888.0	0.0	0.0
130.00		55.2	73.4					0.0	0.0	55.2	73.4	0.0	0.0
Totals:										27,784.9	27,747.3	0.00	0.00

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:37 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W	97 mph with No Ice (Reduced DL)	23 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.82	-32.03	0.00	-2,744.61	0.00	2,744.61	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.705
5.00	-28.59	-31.71	0.00	-2,584.45	0.00	2,584.45	3,875.65	1,937.83	7,621.89	3,783.83	0.12	-0.22	0.691
10.00	-27.38	-31.38	0.00	-2,425.92	0.00	2,425.92	3,815.83	1,907.92	7,319.19	3,633.55	0.46	-0.43	0.675
15.00	-26.20	-31.06	0.00	-2,269.01	0.00	2,269.01	3,754.26	1,877.13	7,019.01	3,484.53	1.03	-0.65	0.658
20.00	-25.04	-30.63	0.00	-2,113.68	0.00	2,113.68	3,690.93	1,845.46	6,721.61	3,336.89	1.84	-0.88	0.640
25.00	-23.91	-29.96	0.00	-1,960.54	0.00	1,960.54	3,625.84	1,812.92	6,427.23	3,190.75	2.87	-1.10	0.621
30.00	-22.81	-29.28	0.00	-1,810.77	0.00	1,810.77	3,559.00	1,779.50	6,136.14	3,046.24	4.14	-1.32	0.601
35.00	-21.76	-28.76	0.00	-1,664.35	0.00	1,664.35	3,490.40	1,745.20	5,848.59	2,903.48	5.65	-1.55	0.580
37.00	-21.32	-28.42	0.00	-1,606.84	0.00	1,606.84	3,462.46	1,731.23	5,734.61	2,846.90	6.32	-1.64	0.571
40.00	-20.33	-27.98	0.00	-1,521.57	0.00	1,521.57	3,420.04	1,710.02	5,564.83	2,762.62	7.39	-1.77	0.557
43.00	-19.35	-27.59	0.00	-1,437.62	0.00	1,437.62	2,681.60	1,340.80	4,368.81	2,168.86	8.55	-1.91	0.670
45.00	-18.96	-27.14	0.00	-1,382.44	0.00	1,382.44	2,661.68	1,330.84	4,284.71	2,127.11	9.37	-2.00	0.657
50.00	-17.92	-26.16	0.00	-1,246.77	0.00	1,246.77	2,610.63	1,305.32	4,075.93	2,023.46	11.60	-2.25	0.623
55.00	-17.05	-25.42	0.00	-1,115.97	0.00	1,115.97	2,557.83	1,278.91	3,869.44	1,920.95	14.09	-2.50	0.588
60.00	-16.21	-24.67	0.00	-988.88	0.00	988.88	2,503.27	1,251.63	3,665.50	1,819.71	16.83	-2.74	0.550
65.00	-15.39	-23.92	0.00	-865.52	0.00	865.52	2,446.95	1,223.47	3,464.36	1,719.85	19.82	-2.97	0.510
70.00	-14.60	-22.97	0.00	-745.94	0.00	745.94	2,388.88	1,194.44	3,266.29	1,621.52	23.06	-3.20	0.467
75.00	-13.85	-22.21	0.00	-631.08	0.00	631.08	2,329.04	1,164.52	3,071.53	1,524.84	26.52	-3.41	0.420
80.00	-12.73	-21.42	0.00	-520.03	0.00	520.03	1,710.42	855.21	2,217.13	1,100.67	30.19	-3.61	0.481
85.00	-12.12	-20.66	0.00	-412.95	0.00	412.95	1,669.71	834.86	2,083.38	1,034.28	34.07	-3.79	0.407
90.00	-8.09	-13.17	0.00	-309.66	0.00	309.66	1,627.25	813.62	1,951.48	968.80	38.14	-3.97	0.325
95.00	-7.60	-12.41	0.00	-243.83	0.00	243.83	1,583.02	791.51	1,821.67	904.36	42.38	-4.13	0.275
100.00	-5.98	-10.07	0.00	-181.76	0.00	181.76	1,537.05	768.52	1,694.22	841.08	46.78	-4.27	0.220
105.00	-5.54	-9.72	0.00	-131.41	0.00	131.41	1,489.31	744.66	1,569.38	779.10	51.31	-4.38	0.173
110.00	-3.69	-7.20	0.00	-82.82	0.00	82.82	1,439.82	719.91	1,447.40	718.55	55.95	-4.47	0.118
115.00	-3.33	-6.89	0.00	-46.83	0.00	46.83	1,377.44	688.72	1,317.89	654.26	60.66	-4.54	0.074
119.00	-2.90	-6.57	0.00	-19.26	0.00	19.26	1,322.18	661.09	1,213.72	602.54	64.47	-4.57	0.034
119.00	-2.90	-6.57	0.00	-19.26	0.00	19.26	930.99	465.49	859.42	426.65	64.47	-4.57	0.048
119.70	-1.08	-1.97	0.00	-14.50	0.00	14.50	926.54	463.27	849.02	421.49	65.14	-4.57	0.036
120.00	-1.08	-1.82	0.00	-13.91	0.00	13.91	924.62	462.31	844.57	419.28	65.43	-4.57	0.034
125.00	-0.84	-1.57	0.00	-4.82	0.00	4.82	891.75	445.87	771.29	382.90	70.22	-4.59	0.014
128.00	-0.07	-0.06	0.00	-0.12	0.00	0.12	871.17	435.59	728.15	361.48	73.10	-4.59	0.000
130.00	0.00	-0.06	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	75.02	-4.59	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:38 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	22 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		61.6	0.0					0.0	0.0	61.6	0.0	0.0	0.0
5.00		122.3	1,662.1					0.0	549.5	122.3	2,211.6	0.0	0.0
10.00		120.1	1,679.0					0.0	585.3	120.1	2,264.4	0.0	0.0
15.00		117.7	1,665.9					0.0	604.1	117.7	2,270.1	0.0	0.0
20.00		115.2	1,643.0					0.0	617.3	115.2	2,260.3	0.0	0.0
25.00		112.6	1,614.9					57.1	627.6	169.7	2,242.5	0.0	0.0
30.00		111.3	1,583.6					57.9	636.2	169.1	2,219.7	0.0	0.0
35.00		78.2	1,550.0					59.9	643.5	138.0	2,193.5	0.0	0.0
37.00	Bot - Section 2	57.0	612.0					24.8	259.2	81.8	871.2	0.0	0.0
40.00		69.2	1,406.0					38.1	390.6	107.3	1,796.7	0.0	0.0
43.00	Top - Section 1	57.9	1,384.4					39.1	392.7	97.1	1,777.1	0.0	0.0
45.00		81.5	534.7					26.6	262.9	108.2	797.6	0.0	0.0
50.00	Appertunance(s)	116.7	1,309.3	55.6	0.0	0.0	247.9	68.4	660.8	240.7	2,218.0	0.0	0.0
55.00		116.7	1,275.7					70.8	664.6	187.6	1,940.3	0.0	0.0
60.00		116.4	1,241.3					73.1	669.0	189.5	1,910.3	0.0	0.0
65.00		115.7	1,206.4					75.3	673.0	191.0	1,879.4	0.0	0.0
70.00	Appertunance(s)	114.7	1,170.8	42.6	0.0	0.0	69.2	77.4	676.8	234.7	1,916.9	0.0	0.0
75.00	Bot - Section 3	114.3	1,134.8					79.3	675.5	193.6	1,810.3	0.0	0.0
80.00	Top - Section 2	113.6	1,626.2					81.2	678.8	194.8	2,305.0	0.0	0.0
85.00		111.9	954.4					83.0	682.0	195.0	1,636.5	0.0	0.0
90.00	Appertunance(s)	110.0	922.0	1,489.4	0.0	0.0	15,100.2	84.8	685.0	1,684.2	16,707.3	0.0	0.0
95.00		108.0	889.3					86.4	600.2	194.4	1,489.5	0.0	0.0
100.00	Appertunance(s)	105.7	856.3	411.4	0.0	0.0	3,731.0	88.1	602.9	605.1	5,190.2	0.0	0.0
105.00		103.3	823.0					0.0	376.5	103.3	1,199.6	0.0	0.0
110.00	Appertunance(s)	100.7	789.5	558.6	0.0	0.0	4,406.8	0.0	377.7	659.3	5,574.0	0.0	0.0
115.00		88.4	755.7					0.0	334.6	88.4	1,090.4	0.0	0.0
119.00	Top - Section 3	45.4	581.5	33.4	0.0	0.0	545.1	0.0	268.5	78.8	1,395.1	0.0	0.0
119.70		9.5	87.7					0.0	47.1	9.5	134.8	0.0	0.0
120.00		49.7	37.5					0.0	4.7	49.7	42.1	0.0	0.0
125.00		74.2	600.8					0.0	78.2	74.2	679.0	0.0	0.0
128.00	Appertunance(s)	45.3	348.3	335.5	0.0	0.0	2,630.8	0.0	46.9	380.8	3,026.0	0.0	0.0
130.00		17.9	226.9					0.0	0.0	17.9	226.9	0.0	0.0
Totals:										6,980.95	73,276.1	0.00	0.00

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor 1.00

Wind Importance Factor 1.00

Dead Load Factor :1.20

Ice Importance Factor 1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-81.26	-8.01	0.00	-734.23	0.00	734.23	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.207
5.00	-79.04	-7.97	0.00	-694.19	0.00	694.19	3,875.65	1,937.83	7,621.89	3,783.83	0.03	-0.06	0.204
10.00	-76.77	-7.92	0.00	-654.36	0.00	654.36	3,815.83	1,907.92	7,319.19	3,633.55	0.12	-0.12	0.200
15.00	-74.49	-7.88	0.00	-614.75	0.00	614.75	3,754.26	1,877.13	7,019.01	3,484.53	0.28	-0.18	0.196
20.00	-72.23	-7.83	0.00	-575.37	0.00	575.37	3,690.93	1,845.46	6,721.61	3,336.89	0.49	-0.24	0.192
25.00	-69.98	-7.72	0.00	-536.22	0.00	536.22	3,625.84	1,812.92	6,427.23	3,190.75	0.77	-0.30	0.187
30.00	-67.75	-7.61	0.00	-497.60	0.00	497.60	3,559.00	1,779.50	6,136.14	3,046.24	1.12	-0.36	0.182
35.00	-65.55	-7.51	0.00	-459.53	0.00	459.53	3,490.40	1,745.20	5,848.59	2,903.48	1.53	-0.42	0.177
37.00	-64.68	-7.46	0.00	-444.51	0.00	444.51	3,462.46	1,731.23	5,734.61	2,846.90	1.71	-0.45	0.175
40.00	-62.88	-7.38	0.00	-422.14	0.00	422.14	3,420.04	1,710.02	5,564.83	2,762.62	2.00	-0.48	0.171
43.00	-61.10	-7.30	0.00	-400.00	0.00	400.00	2,681.60	1,340.80	4,368.81	2,168.86	2.32	-0.52	0.207
45.00	-60.29	-7.23	0.00	-385.41	0.00	385.41	2,661.68	1,330.84	4,284.71	2,127.11	2.54	-0.55	0.204
50.00	-58.07	-7.04	0.00	-349.24	0.00	349.24	2,610.63	1,305.32	4,075.93	2,023.46	3.15	-0.62	0.195
55.00	-56.12	-6.90	0.00	-314.04	0.00	314.04	2,557.83	1,278.91	3,869.44	1,920.95	3.83	-0.68	0.185
60.00	-54.21	-6.75	0.00	-279.54	0.00	279.54	2,503.27	1,251.63	3,665.50	1,819.71	4.59	-0.75	0.175
65.00	-52.32	-6.59	0.00	-245.80	0.00	245.80	2,446.95	1,223.47	3,464.36	1,719.85	5.41	-0.82	0.164
70.00	-50.40	-6.38	0.00	-212.85	0.00	212.85	2,388.88	1,194.44	3,266.29	1,621.52	6.30	-0.88	0.152
75.00	-48.59	-6.21	0.00	-180.93	0.00	180.93	2,329.04	1,164.52	3,071.53	1,524.84	7.26	-0.94	0.140
80.00	-46.28	-6.02	0.00	-149.88	0.00	149.88	1,710.42	855.21	2,217.13	1,100.67	8.28	-1.00	0.163
85.00	-44.64	-5.84	0.00	-119.78	0.00	119.78	1,669.71	834.86	2,083.38	1,034.28	9.36	-1.05	0.143
90.00	-27.97	-3.86	0.00	-90.59	0.00	90.59	1,627.25	813.62	1,951.48	968.80	10.49	-1.11	0.111
95.00	-26.48	-3.66	0.00	-71.28	0.00	71.28	1,583.02	791.51	1,821.67	904.36	11.67	-1.15	0.096
100.00	-21.30	-2.96	0.00	-52.99	0.00	52.99	1,537.05	768.52	1,694.22	841.08	12.90	-1.19	0.077
105.00	-20.10	-2.84	0.00	-38.18	0.00	38.18	1,489.31	744.66	1,569.38	779.10	14.17	-1.23	0.063
110.00	-14.54	-2.07	0.00	-23.96	0.00	23.96	1,439.82	719.91	1,447.40	718.55	15.47	-1.25	0.043
115.00	-13.46	-1.96	0.00	-13.62	0.00	13.62	1,377.44	688.72	1,317.89	654.26	16.80	-1.27	0.031
119.00	-12.06	-1.85	0.00	-5.78	0.00	5.78	1,322.18	661.09	1,213.72	602.54	17.87	-1.28	0.019
119.00	-12.06	-1.85	0.00	-5.78	0.00	5.78	930.99	465.49	859.42	426.65	17.87	-1.28	0.027
119.70	-3.96	-0.61	0.00	-4.45	0.00	4.45	926.54	463.27	849.02	421.49	18.05	-1.28	0.015
120.00	-3.92	-0.56	0.00	-4.26	0.00	4.26	924.62	462.31	844.57	419.28	18.13	-1.28	0.014
125.00	-3.24	-0.47	0.00	-1.46	0.00	1.46	891.75	445.87	771.29	382.90	19.48	-1.29	0.007
128.00	-0.23	-0.02	0.00	-0.05	0.00	0.05	871.17	435.59	728.15	361.48	20.29	-1.29	0.000
130.00	0.00	-0.02	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	20.83	-1.29	0.000

Site Number: 370626
 Site Name: East Hartford, CT
 Customer: Verizon Wireless

Code: ANSI/TIA-222-G
 Engineering Number: OAA631448_C3_05

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Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations
 Gust Response Factor :1.10 Wind Importance Factor 1.00
 Dead Load Factor :1.00
 Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		52.2	0.0					0.0	0.0	52.2	0.0	0.0	0.0
5.00		103.2	981.7					0.0	253.6	103.2	1,235.2	0.0	0.0
10.00		100.7	957.9					0.0	253.6	100.7	1,211.5	0.0	0.0
15.00		98.1	934.2					0.0	253.6	98.1	1,187.7	0.0	0.0
20.00		124.0	910.5					0.0	253.6	124.0	1,164.0	0.0	0.0
25.00		149.0	886.7					30.4	253.6	179.4	1,140.3	0.0	0.0
30.00		146.7	863.0					30.4	253.6	177.1	1,116.6	0.0	0.0
35.00		102.8	839.3					31.1	253.6	133.9	1,092.8	0.0	0.0
37.00	Bot - Section 2	74.8	329.1					12.8	101.4	87.6	430.5	0.0	0.0
40.00		90.7	898.9					19.6	152.1	110.3	1,051.0	0.0	0.0
43.00	Top - Section 1	75.8	883.2					20.0	152.1	95.8	1,035.3	0.0	0.0
45.00		106.3	266.2					13.6	101.4	119.9	367.6	0.0	0.0
50.00	Appertunance(s)	151.8	651.7	57.0	0.0	0.0	160.0	34.7	253.6	243.4	1,065.3	0.0	0.0
55.00		151.2	632.0					35.7	252.8	186.9	884.8	0.0	0.0
60.00		150.2	612.2					36.6	252.8	186.8	865.0	0.0	0.0
65.00		148.6	592.4					37.5	252.8	186.1	845.2	0.0	0.0
70.00	Appertunance(s)	146.7	572.6	45.0	0.0	0.0	14.0	38.3	252.8	230.0	839.4	0.0	0.0
75.00	Bot - Section 3	145.6	552.9					39.1	248.7	184.7	801.6	0.0	0.0
80.00	Top - Section 2	144.1	967.2					39.9	248.7	183.9	1,215.9	0.0	0.0
85.00		141.2	418.3					40.6	248.7	181.8	667.0	0.0	0.0
90.00	Appertunance(s)	138.0	402.5	1,549.4	0.0	0.0	4,335.1	41.3	248.7	1,728.7	4,986.3	0.0	0.0
95.00		134.6	386.6					41.9	175.6	176.6	562.2	0.0	0.0
100.00	Appertunance(s)	106.8	370.8	384.3	0.0	0.0	1,421.1	42.6	175.6	533.6	1,967.5	0.0	0.0
105.00		79.4	355.0					0.0	142.8	79.4	497.7	0.0	0.0
110.00	Appertunance(s)	76.8	339.2	490.7	0.0	0.0	1,770.0	0.0	142.8	567.5	2,251.9	0.0	0.0
115.00		67.0	323.4					0.0	105.9	67.0	429.2	0.0	0.0
119.00	Top - Section 3	34.2	247.3	34.6	0.0	0.0	170.1	0.0	84.7	68.8	502.1	0.0	0.0
119.70		7.2	31.8					0.0	14.8	7.2	46.6	0.0	0.0
120.00		37.1	13.5					0.0	3.9	37.1	17.5	0.0	0.0
125.00		55.2	219.4					0.0	65.1	55.2	284.6	0.0	0.0
128.00	Appertunance(s)	33.5	126.0	310.9	0.0	0.0	821.6	0.0	39.1	344.3	986.6	0.0	0.0
130.00		13.2	81.6					0.0	0.0	13.2	81.6	0.0	0.0
Totals:										6,644.29	30,830.3	0.00	0.00

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.20	-7.66	0.00	-658.92	0.00	658.92	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.176
5.00	-31.96	-7.59	0.00	-620.62	0.00	620.62	3,875.65	1,937.83	7,621.89	3,783.83	0.03	-0.05	0.172
10.00	-30.74	-7.51	0.00	-582.68	0.00	582.68	3,815.83	1,907.92	7,319.19	3,633.55	0.11	-0.10	0.168
15.00	-29.54	-7.44	0.00	-545.12	0.00	545.12	3,754.26	1,877.13	7,019.01	3,484.53	0.25	-0.16	0.164
20.00	-28.37	-7.34	0.00	-507.93	0.00	507.93	3,690.93	1,845.46	6,721.61	3,336.89	0.44	-0.21	0.160
25.00	-27.23	-7.18	0.00	-471.24	0.00	471.24	3,625.84	1,812.92	6,427.23	3,190.75	0.69	-0.26	0.155
30.00	-26.11	-7.02	0.00	-435.35	0.00	435.35	3,559.00	1,779.50	6,136.14	3,046.24	1.00	-0.32	0.150
35.00	-25.01	-6.90	0.00	-400.25	0.00	400.25	3,490.40	1,745.20	5,848.59	2,903.48	1.36	-0.37	0.145
37.00	-24.58	-6.82	0.00	-386.45	0.00	386.45	3,462.46	1,731.23	5,734.61	2,846.90	1.52	-0.39	0.143
40.00	-23.52	-6.71	0.00	-366.00	0.00	366.00	3,420.04	1,710.02	5,564.83	2,762.62	1.78	-0.43	0.139
43.00	-22.48	-6.62	0.00	-345.86	0.00	345.86	2,681.60	1,340.80	4,368.81	2,168.86	2.05	-0.46	0.168
45.00	-22.11	-6.51	0.00	-332.62	0.00	332.62	2,661.68	1,330.84	4,284.71	2,127.11	2.25	-0.48	0.165
50.00	-21.04	-6.28	0.00	-300.05	0.00	300.05	2,610.63	1,305.32	4,075.93	2,023.46	2.79	-0.54	0.156
55.00	-20.15	-6.11	0.00	-268.64	0.00	268.64	2,557.83	1,278.91	3,869.44	1,920.95	3.39	-0.60	0.148
60.00	-19.29	-5.93	0.00	-238.10	0.00	238.10	2,503.27	1,251.63	3,665.50	1,819.71	4.05	-0.66	0.139
65.00	-18.44	-5.75	0.00	-208.45	0.00	208.45	2,446.95	1,223.47	3,464.36	1,719.85	4.77	-0.71	0.129
70.00	-17.60	-5.53	0.00	-179.69	0.00	179.69	2,388.88	1,194.44	3,266.29	1,621.52	5.54	-0.77	0.118
75.00	-16.79	-5.35	0.00	-152.06	0.00	152.06	2,329.04	1,164.52	3,071.53	1,524.84	6.38	-0.82	0.107
80.00	-15.57	-5.16	0.00	-125.33	0.00	125.33	1,710.42	855.21	2,217.13	1,100.67	7.26	-0.87	0.123
85.00	-14.91	-4.98	0.00	-99.54	0.00	99.54	1,669.71	834.86	2,083.38	1,034.28	8.19	-0.91	0.105
90.00	-9.95	-3.17	0.00	-74.66	0.00	74.66	1,627.25	813.62	1,951.48	968.80	9.17	-0.96	0.083
95.00	-9.39	-2.99	0.00	-58.80	0.00	58.80	1,583.02	791.51	1,821.67	904.36	10.19	-0.99	0.071
100.00	-7.43	-2.43	0.00	-43.83	0.00	43.83	1,537.05	768.52	1,694.22	841.08	11.25	-1.03	0.057
105.00	-6.93	-2.34	0.00	-31.69	0.00	31.69	1,489.31	744.66	1,569.38	779.10	12.34	-1.05	0.045
110.00	-4.69	-1.74	0.00	-19.97	0.00	19.97	1,439.82	719.91	1,447.40	718.55	13.46	-1.08	0.031
115.00	-4.26	-1.66	0.00	-11.29	0.00	11.29	1,377.44	688.72	1,317.89	654.26	14.60	-1.09	0.020
119.00	-3.76	-1.58	0.00	-4.65	0.00	4.65	1,322.18	661.09	1,213.72	602.54	15.52	-1.10	0.011
119.00	-3.76	-1.58	0.00	-4.65	0.00	4.65	930.99	465.49	859.42	426.65	15.52	-1.10	0.015
119.70	-1.36	-0.48	0.00	-3.50	0.00	3.50	926.54	463.27	849.02	421.49	15.68	-1.10	0.010
120.00	-1.34	-0.44	0.00	-3.36	0.00	3.36	924.62	462.31	844.57	419.28	15.75	-1.10	0.009
125.00	-1.06	-0.38	0.00	-1.16	0.00	1.16	891.75	445.87	771.29	382.90	16.90	-1.10	0.004
128.00	-0.08	-0.01	0.00	-0.03	0.00	0.03	871.17	435.59	728.15	361.48	17.59	-1.10	0.000
130.00	0.00	-0.01	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	18.06	-1.10	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_g):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.95
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.72
Total Unfactored Dead Load:	33.20 k
Seismic Base Shear (E):	1.51 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)
31	129.00	82	355	0.006	9	101
30	126.50	165	695	0.012	18	204
29	122.50	285	1,133	0.019	29	352
28	119.85	17	67	0.001	2	22
27	119.35	47	177	0.003	5	58
26	117.00	332	1,221	0.021	32	411
25	112.50	429	1,475	0.025	38	532
24	107.50	482	1,532	0.026	40	597
23	102.50	498	1,457	0.025	38	616
22	97.50	546	1,468	0.025	38	677
21	92.50	562	1,379	0.024	36	696
20	87.50	651	1,451	0.025	38	806
19	82.50	667	1,343	0.023	35	826
18	77.50	1,216	2,198	0.038	57	1,506
17	72.50	802	1,292	0.022	34	993
16	67.50	825	1,176	0.020	31	1,022
15	62.50	845	1,055	0.018	27	1,047
14	57.50	865	935	0.016	24	1,071
13	52.50	885	817	0.014	21	1,096
12	47.50	905	704	0.012	18	1,121
11	44.00	368	250	0.004	6	455
10	41.50	1,035	638	0.011	17	1,282
9	38.50	1,051	569	0.010	15	1,302

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

8	36.00	430	208	0.004	5	533
7	32.50	1,093	442	0.008	11	1,353
6	27.50	1,117	338	0.006	9	1,383
5	22.50	1,140	244	0.004	6	1,412
4	17.50	1,164	162	0.003	4	1,442
3	12.50	1,188	92	0.002	2	1,471
2	7.50	1,211	39	0.001	1	1,500
1	2.50	1,235	6	0.000	0	1,530
DragonWave Horizon C	128.00	34	148	0.003	4	43
BTS	128.00	60	258	0.004	7	74
Argus LLPX310R	128.00	86	368	0.006	10	106
DragonWave A-ANT-18G	128.00	81	349	0.006	9	101
Side Arms	128.00	560	2,405	0.041	62	694
Alcatel-Lucent PCS B	119.70	165	631	0.011	16	204
Alcatel-Lucent RRH4X	119.70	192	735	0.013	19	238
Andrew DB844G65ZAXY	119.70	72	275	0.005	7	89
RFS DB-T1-6Z-8AB-0Z	119.70	44	168	0.003	4	54
RFS DB-T1-6Z-8AB-0Z	119.70	44	168	0.003	4	54
Antel BXA-70063-6CF-	119.70	51	195	0.003	5	63
Andrew SBNHH-1D65B	119.70	304	1,164	0.020	30	377
Flat Low Profile Pla	119.70	1,500	5,738	0.098	149	1,858
Alcatel-Lucent RRH2x	119.00	170	644	0.011	17	211
48" x 12" Panel	110.00	270	893	0.015	23	334
Round Low Profile PI	110.00	1,500	4,960	0.085	129	1,858
Ericsson AIR 21, 1.3	100.00	275	770	0.013	20	340
Ericsson AIR-32 B2A/	100.00	397	1,113	0.019	29	491
Round T-Arm	100.00	750	2,104	0.036	55	929
14" x 9" TTA	90.00	60	140	0.002	4	74
Raycap DC6-48-60-18-	90.00	80	187	0.003	5	99
Ericsson RRUS A2 Mod	90.00	132	309	0.005	8	163
Ericsson RRUS 12 w/	90.00	521	1,219	0.021	32	645
Ericsson RRUS-32 (77	90.00	231	540	0.009	14	286
Ericsson RRUS-11	90.00	495	1,158	0.020	30	613
CCI HPA-65R-BUU-H8	90.00	816	1,909	0.033	50	1,011
Round Platform w/ Ha	90.00	2,000	4,680	0.080	121	2,477
2' Std. Dish	70.00	14	21	0.000	1	17
GPS	50.00	10	8	0.000	0	12
Flat Side Arm	50.00	150	127	0.002	3	186
		33,203	58,307	1.000	1,513	41,118

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)
31	129.00	82	355	0.006	9	70
30	126.50	165	695	0.012	18	142
29	122.50	285	1,133	0.019	29	245
28	119.85	17	67	0.001	2	15
27	119.35	47	177	0.003	5	40
26	117.00	332	1,221	0.021	32	286
25	112.50	429	1,475	0.025	38	370
24	107.50	482	1,532	0.026	40	415
23	102.50	498	1,457	0.025	38	429
22	97.50	546	1,468	0.025	38	471
21	92.50	562	1,379	0.024	36	484
20	87.50	651	1,451	0.025	38	561
19	82.50	667	1,343	0.023	35	575
18	77.50	1,216	2,198	0.038	57	1,048
17	72.50	802	1,292	0.022	34	691
16	67.50	825	1,176	0.020	31	711

Site Number: 370626

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

15	62.50	845	1,055	0.018	27	728
14	57.50	865	935	0.016	24	745
13	52.50	885	817	0.014	21	762
12	47.50	905	704	0.012	18	780
11	44.00	368	250	0.004	6	317
10	41.50	1,035	638	0.011	17	892
9	38.50	1,051	569	0.010	15	906
8	36.00	430	208	0.004	5	371
7	32.50	1,093	442	0.008	11	942
6	27.50	1,117	338	0.006	9	962
5	22.50	1,140	244	0.004	6	982
4	17.50	1,164	162	0.003	4	1,003
3	12.50	1,188	92	0.002	2	1,023
2	7.50	1,211	39	0.001	1	1,044
1	2.50	1,235	6	0.000	0	1,064
DragonWave Horizon C	128.00	34	148	0.003	4	30
BTS	128.00	60	258	0.004	7	52
Argus LLPX310R	128.00	86	368	0.006	10	74
DragonWave A-ANT-18G	128.00	81	349	0.006	9	70
Side Arms	128.00	560	2,405	0.041	62	482
Alcatel-Lucent PCS B	119.70	165	631	0.011	16	142
Alcatel-Lucent RRH4X	119.70	192	735	0.013	19	165
Andrew DB844G65ZAXY	119.70	72	275	0.005	7	62
RFS DB-T1-6Z-8AB-0Z	119.70	44	168	0.003	4	38
RFS DB-T1-6Z-8AB-0Z	119.70	44	168	0.003	4	38
Antel BXA-70063-6CF-	119.70	51	195	0.003	5	44
Andrew SBNHH-1D65B	119.70	304	1,164	0.020	30	262
Flat Low Profile Pla	119.70	1,500	5,738	0.098	149	1,292
Alcatel-Lucent RRH2x	119.00	170	644	0.011	17	147
48" x 12" Panel	110.00	270	893	0.015	23	233
Round Low Profile Pl	110.00	1,500	4,960	0.085	129	1,292
Ericsson AIR 21, 1.3	100.00	275	770	0.013	20	237
Ericsson AIR-32 B2A/	100.00	397	1,113	0.019	29	342
Round T-Arm	100.00	750	2,104	0.036	55	646
14" x 9" TTA	90.00	60	140	0.002	4	52
Raycap DC6-48-60-18-	90.00	80	187	0.003	5	69
Ericsson RRUS A2 Mod	90.00	132	309	0.005	8	114
Ericsson RRUS 12 w/	90.00	521	1,219	0.021	32	449
Ericsson RRUS-32 (77	90.00	231	540	0.009	14	199
Ericsson RRUS-11	90.00	495	1,158	0.020	30	426
CCI HPA-65R-BUU-H8	90.00	816	1,909	0.033	50	703
Round Platform w/ Ha	90.00	2,000	4,680	0.080	121	1,723
2' Std. Dish	70.00	14	21	0.000	1	12
GPS	50.00	10	8	0.000	0	9
Flat Side Arm	50.00	150	127	0.002	3	129
		33,203	58,307	1.000	1,513	28,607

Site Number: 370626

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

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

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.59	-1.52	0.00	-150.40	0.00	150.40	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.048
5.00	-38.09	-1.52	0.00	-142.82	0.00	142.82	3,875.65	1,937.83	7,621.89	3,783.83	0.01	-0.01	0.048
10.00	-36.62	-1.53	0.00	-135.21	0.00	135.21	3,815.83	1,907.92	7,319.19	3,633.55	0.03	-0.02	0.047
15.00	-35.17	-1.53	0.00	-127.57	0.00	127.57	3,754.26	1,877.13	7,019.01	3,484.53	0.06	-0.04	0.046
20.00	-33.76	-1.53	0.00	-119.91	0.00	119.91	3,690.93	1,845.46	6,721.61	3,336.89	0.10	-0.05	0.045
25.00	-32.38	-1.53	0.00	-112.26	0.00	112.26	3,625.84	1,812.92	6,427.23	3,190.75	0.16	-0.06	0.044
30.00	-31.03	-1.52	0.00	-104.62	0.00	104.62	3,559.00	1,779.50	6,136.14	3,046.24	0.23	-0.07	0.043
35.00	-30.49	-1.52	0.00	-97.01	0.00	97.01	3,490.40	1,745.20	5,848.59	2,903.48	0.32	-0.09	0.042
37.00	-29.19	-1.51	0.00	-93.97	0.00	93.97	3,462.46	1,731.23	5,734.61	2,846.90	0.35	-0.09	0.041
40.00	-27.91	-1.49	0.00	-89.45	0.00	89.45	3,420.04	1,710.02	5,564.83	2,762.62	0.41	-0.10	0.041
43.00	-27.45	-1.49	0.00	-84.97	0.00	84.97	2,681.60	1,340.80	4,368.81	2,168.86	0.48	-0.11	0.049
45.00	-26.33	-1.47	0.00	-82.00	0.00	82.00	2,661.68	1,330.84	4,284.71	2,127.11	0.53	-0.11	0.048
50.00	-25.04	-1.45	0.00	-74.64	0.00	74.64	2,610.63	1,305.32	4,075.93	2,023.46	0.65	-0.13	0.046
55.00	-23.97	-1.43	0.00	-67.38	0.00	67.38	2,557.83	1,278.91	3,869.44	1,920.95	0.80	-0.14	0.044
60.00	-22.92	-1.41	0.00	-60.22	0.00	60.22	2,503.27	1,251.63	3,665.50	1,819.71	0.96	-0.16	0.042
65.00	-21.90	-1.38	0.00	-53.19	0.00	53.19	2,446.95	1,223.47	3,464.36	1,719.85	1.13	-0.17	0.040
70.00	-20.89	-1.35	0.00	-46.30	0.00	46.30	2,388.88	1,194.44	3,266.29	1,621.52	1.32	-0.19	0.037
75.00	-19.38	-1.29	0.00	-39.57	0.00	39.57	2,329.04	1,164.52	3,071.53	1,524.84	1.52	-0.20	0.034
80.00	-18.55	-1.25	0.00	-33.13	0.00	33.13	1,710.42	855.21	2,217.13	1,100.67	1.74	-0.21	0.041
85.00	-17.75	-1.22	0.00	-26.86	0.00	26.86	1,669.71	834.86	2,083.38	1,034.28	1.97	-0.22	0.037
90.00	-11.68	-0.90	0.00	-20.77	0.00	20.77	1,627.25	813.62	1,951.48	968.80	2.21	-0.24	0.029
95.00	-11.01	-0.86	0.00	-16.29	0.00	16.29	1,583.02	791.51	1,821.67	904.36	2.46	-0.25	0.025
100.00	-8.63	-0.71	0.00	-12.00	0.00	12.00	1,537.05	768.52	1,694.22	841.08	2.72	-0.26	0.020
105.00	-8.03	-0.67	0.00	-8.46	0.00	8.46	1,489.31	744.66	1,569.38	779.10	3.00	-0.26	0.016
110.00	-5.31	-0.46	0.00	-5.14	0.00	5.14	1,439.82	719.91	1,447.40	718.55	3.27	-0.27	0.011
115.00	-4.90	-0.43	0.00	-2.82	0.00	2.82	1,377.44	688.72	1,317.89	654.26	3.56	-0.27	0.008
119.00	-1.70	-0.16	0.00	-1.10	0.00	1.10	1,322.18	661.09	1,213.72	602.54	3.79	-0.27	0.003
119.00	-1.70	-0.16	0.00	-1.10	0.00	1.10	930.99	465.49	859.42	426.65	3.79	-0.27	0.004
119.70	-1.67	-0.16	0.00	-0.99	0.00	0.99	926.54	463.27	849.02	421.49	3.83	-0.27	0.004
120.00	-1.32	-0.13	0.00	-0.94	0.00	0.94	924.62	462.31	844.57	419.28	3.85	-0.28	0.004
125.00	-1.12	-0.11	0.00	-0.32	0.00	0.32	891.75	445.87	771.29	382.90	4.13	-0.28	0.002
128.00	0.00	0.00	0.00	0.00	0.00	0.00	871.17	435.59	728.15	361.48	4.31	-0.28	0.000
130.00	0.00	0.00	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	4.42	-0.28	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.54	-1.51	0.00	-148.59	0.00	148.59	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.045
5.00	-26.50	-1.52	0.00	-141.02	0.00	141.02	3,875.65	1,937.83	7,621.89	3,783.83	0.01	-0.01	0.044
10.00	-25.48	-1.52	0.00	-133.42	0.00	133.42	3,815.83	1,907.92	7,319.19	3,633.55	0.02	-0.02	0.043
15.00	-24.47	-1.52	0.00	-125.82	0.00	125.82	3,754.26	1,877.13	7,019.01	3,484.53	0.06	-0.04	0.043
20.00	-23.49	-1.52	0.00	-118.21	0.00	118.21	3,690.93	1,845.46	6,721.61	3,336.89	0.10	-0.05	0.042
25.00	-22.53	-1.52	0.00	-110.61	0.00	110.61	3,625.84	1,812.92	6,427.23	3,190.75	0.16	-0.06	0.041
30.00	-21.58	-1.51	0.00	-103.04	0.00	103.04	3,559.00	1,779.50	6,136.14	3,046.24	0.23	-0.07	0.040
35.00	-21.21	-1.50	0.00	-95.50	0.00	95.50	3,490.40	1,745.20	5,848.59	2,903.48	0.31	-0.09	0.039
37.00	-20.31	-1.49	0.00	-92.49	0.00	92.49	3,462.46	1,731.23	5,734.61	2,846.90	0.35	-0.09	0.038
40.00	-19.42	-1.48	0.00	-88.02	0.00	88.02	3,420.04	1,710.02	5,564.83	2,762.62	0.41	-0.10	0.038
43.00	-19.10	-1.47	0.00	-83.59	0.00	83.59	2,681.60	1,340.80	4,368.81	2,168.86	0.47	-0.11	0.046
45.00	-18.32	-1.45	0.00	-80.65	0.00	80.65	2,661.68	1,330.84	4,284.71	2,127.11	0.52	-0.11	0.045
50.00	-17.42	-1.43	0.00	-73.38	0.00	73.38	2,610.63	1,305.32	4,075.93	2,023.46	0.65	-0.13	0.043
55.00	-16.67	-1.41	0.00	-66.22	0.00	66.22	2,557.83	1,278.91	3,869.44	1,920.95	0.79	-0.14	0.041
60.00	-15.94	-1.38	0.00	-59.17	0.00	59.17	2,503.27	1,251.63	3,665.50	1,819.71	0.94	-0.16	0.039
65.00	-15.23	-1.36	0.00	-52.25	0.00	52.25	2,446.95	1,223.47	3,464.36	1,719.85	1.11	-0.17	0.037
70.00	-14.53	-1.32	0.00	-45.47	0.00	45.47	2,388.88	1,194.44	3,266.29	1,621.52	1.30	-0.18	0.034
75.00	-13.48	-1.27	0.00	-38.85	0.00	38.85	2,329.04	1,164.52	3,071.53	1,524.84	1.50	-0.20	0.031
80.00	-12.91	-1.23	0.00	-32.52	0.00	32.52	1,710.42	855.21	2,217.13	1,100.67	1.71	-0.21	0.037
85.00	-12.35	-1.19	0.00	-26.36	0.00	26.36	1,669.71	834.86	2,083.38	1,034.28	1.94	-0.22	0.033
90.00	-8.13	-0.88	0.00	-20.39	0.00	20.39	1,627.25	813.62	1,951.48	968.80	2.17	-0.23	0.026
95.00	-7.66	-0.84	0.00	-15.99	0.00	15.99	1,583.02	791.51	1,821.67	904.36	2.42	-0.24	0.023
100.00	-6.00	-0.69	0.00	-11.78	0.00	11.78	1,537.05	768.52	1,694.22	841.08	2.68	-0.25	0.018
105.00	-5.59	-0.65	0.00	-8.31	0.00	8.31	1,489.31	744.66	1,569.38	779.10	2.95	-0.26	0.014
110.00	-3.70	-0.45	0.00	-5.04	0.00	5.04	1,439.82	719.91	1,447.40	718.55	3.22	-0.26	0.010
115.00	-3.41	-0.42	0.00	-2.77	0.00	2.77	1,377.44	688.72	1,317.89	654.26	3.50	-0.27	0.007
119.00	-1.18	-0.16	0.00	-1.08	0.00	1.08	1,322.18	661.09	1,213.72	602.54	3.73	-0.27	0.003
119.00	-1.18	-0.16	0.00	-1.08	0.00	1.08	930.99	465.49	859.42	426.65	3.73	-0.27	0.004
119.70	-1.16	-0.15	0.00	-0.97	0.00	0.97	926.54	463.27	849.02	421.49	3.77	-0.27	0.004
120.00	-0.92	-0.12	0.00	-0.93	0.00	0.93	924.62	462.31	844.57	419.28	3.79	-0.27	0.003
125.00	-0.78	-0.10	0.00	-0.31	0.00	0.31	891.75	445.87	771.29	382.90	4.07	-0.27	0.002
128.00	0.00	0.00	0.00	0.00	0.00	0.00	871.17	435.59	728.15	361.48	4.24	-0.27	0.000
130.00	0.00	0.00	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	4.35	-0.27	0.000

Site Number: 370626

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
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}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.95
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
31	129.00	82	1.861	1.831	1.086	0.351	25	101
30	126.50	165	1.790	1.492	0.959	0.307	44	204
29	122.50	285	1.678	1.041	0.782	0.242	60	352
28	119.85	17	1.606	0.798	0.679	0.203	3	22
27	119.35	47	1.593	0.757	0.661	0.196	8	58
26	117.00	332	1.531	0.580	0.580	0.165	47	411
25	112.50	429	1.415	0.314	0.448	0.111	41	532
24	107.50	482	1.292	0.110	0.329	0.062	26	597
23	102.50	498	1.175	-0.018	0.237	0.024	10	616
22	97.50	546	1.063	-0.088	0.165	-0.003	-2	677
21	92.50	562	0.957	-0.118	0.111	-0.021	-10	696
20	87.50	651	0.856	-0.120	0.071	-0.028	-16	806
19	82.50	667	0.761	-0.104	0.043	-0.026	-15	826
18	77.50	1,216	0.672	-0.078	0.025	-0.017	-18	1,506
17	72.50	802	0.588	-0.049	0.013	-0.003	-2	993
16	67.50	825	0.510	-0.020	0.007	0.012	9	1,022
15	62.50	845	0.437	0.006	0.006	0.026	19	1,047
14	57.50	865	0.370	0.027	0.008	0.037	28	1,071
13	52.50	885	0.308	0.043	0.012	0.043	33	1,096
12	47.50	905	0.252	0.055	0.017	0.047	37	1,121
11	44.00	368	0.217	0.061	0.021	0.048	15	455
10	41.50	1,035	0.193	0.064	0.024	0.048	43	1,282
9	38.50	1,051	0.166	0.067	0.028	0.047	43	1,302
8	36.00	430	0.145	0.068	0.031	0.047	17	533
7	32.50	1,093	0.118	0.070	0.035	0.046	43	1,353
6	27.50	1,117	0.085	0.071	0.039	0.044	43	1,383
5	22.50	1,140	0.057	0.071	0.042	0.043	42	1,412
4	17.50	1,164	0.034	0.069	0.041	0.040	41	1,442
3	12.50	1,188	0.017	0.062	0.037	0.037	38	1,471
2	7.50	1,211	0.006	0.048	0.027	0.029	31	1,500
1	2.50	1,235	0.001	0.021	0.011	0.014	14	1,530
DragonWave Horizon C	128.00	34	1.832	1.689	1.034	0.333	10	43
BTS	128.00	60	1.832	1.689	1.034	0.333	17	74
Argus LLPX310R	128.00	86	1.832	1.689	1.034	0.333	25	106

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Customer: Verizon Wireless

DragonWave A-ANT-18G	128.00	81	1.832	1.689	1.034	0.333	23	101
Side Arms	128.00	560	1.832	1.689	1.034	0.333	162	694
Alcatel-Lucent PCS B	119.70	165	1.602	0.786	0.673	0.201	29	204
Alcatel-Lucent RRH4X	119.70	192	1.602	0.786	0.673	0.201	33	238
Andrew DB844G65ZAXY	119.70	72	1.602	0.786	0.673	0.201	13	89
RFS DB-T1-6Z-8AB-0Z	119.70	44	1.602	0.786	0.673	0.201	8	54
RFS DB-T1-6Z-8AB-0Z	119.70	44	1.602	0.786	0.673	0.201	8	54
Antel BXA-70063-6CF-	119.70	51	1.602	0.786	0.673	0.201	9	63
Andrew SBNHH-1D65B	119.70	304	1.602	0.786	0.673	0.201	53	377
Flat Low Profile Pla	119.70	1,500	1.602	0.786	0.673	0.201	261	1,858
Alcatel-Lucent RRH2x	119.00	170	1.584	0.729	0.648	0.191	28	211
48" x 12" Panel	110.00	270	1.353	0.201	0.385	0.086	20	334
Round Low Profile PI	110.00	1,500	1.353	0.201	0.385	0.086	111	1,858
Ericsson AIR 21, 1.3	100.00	275	1.118	-0.059	0.198	0.009	2	340
Ericsson AIR-32 B2A/	100.00	397	1.118	-0.059	0.198	0.009	3	491
Round T-Arm	100.00	750	1.118	-0.059	0.198	0.009	6	929
14" x 9" TTA	90.00	60	0.906	-0.122	0.090	-0.025	-1	74
Raycap DC6-48-60-18-	90.00	80	0.906	-0.122	0.090	-0.025	-2	99
Ericsson RRUS A2 Mod	90.00	132	0.906	-0.122	0.090	-0.025	-3	163
Ericsson RRUS 12 w/	90.00	521	0.906	-0.122	0.090	-0.025	-12	645
Ericsson RRUS-32 (77	90.00	231	0.906	-0.122	0.090	-0.025	-5	286
Ericsson RRUS-11	90.00	495	0.906	-0.122	0.090	-0.025	-11	613
CCI HPA-65R-BUU-H8	90.00	816	0.906	-0.122	0.090	-0.025	-18	1,011
Round Platform w/ Ha	90.00	2,000	0.906	-0.122	0.090	-0.025	-44	2,477
2' Std. Dish	70.00	14	0.548	-0.034	0.010	0.005	0	17
GPS	50.00	10	0.280	0.050	0.014	0.045	0	12
Flat Side Arm	50.00	150	0.280	0.050	0.014	0.045	6	186
		33,203	59.733	21.913	19.898	5.728	1,431	41,118

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)
31	129.00	82	1.861	1.831	1.086	0.351	25	70
30	126.50	165	1.790	1.492	0.959	0.307	44	142
29	122.50	285	1.678	1.041	0.782	0.242	60	245
28	119.85	17	1.606	0.798	0.679	0.203	3	15
27	119.35	47	1.593	0.757	0.661	0.196	8	40
26	117.00	332	1.531	0.580	0.580	0.165	47	286
25	112.50	429	1.415	0.314	0.448	0.111	41	370
24	107.50	482	1.292	0.110	0.329	0.062	26	415
23	102.50	498	1.175	-0.018	0.237	0.024	10	429
22	97.50	546	1.063	-0.088	0.165	-0.003	-2	471
21	92.50	562	0.957	-0.118	0.111	-0.021	-10	484
20	87.50	651	0.856	-0.120	0.071	-0.028	-16	561
19	82.50	667	0.761	-0.104	0.043	-0.026	-15	575
18	77.50	1,216	0.672	-0.078	0.025	-0.017	-18	1,048
17	72.50	802	0.588	-0.049	0.013	-0.003	-2	691
16	67.50	825	0.510	-0.020	0.007	0.012	9	711
15	62.50	845	0.437	0.006	0.006	0.026	19	728
14	57.50	865	0.370	0.027	0.008	0.037	28	745
13	52.50	885	0.308	0.043	0.012	0.043	33	762
12	47.50	905	0.252	0.055	0.017	0.047	37	780
11	44.00	368	0.217	0.061	0.021	0.048	15	317
10	41.50	1,035	0.193	0.064	0.024	0.048	43	892
9	38.50	1,051	0.166	0.067	0.028	0.047	43	906
8	36.00	430	0.145	0.068	0.031	0.047	17	371
7	32.50	1,093	0.118	0.070	0.035	0.046	43	942
6	27.50	1,117	0.085	0.071	0.039	0.044	43	962

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Customer: Verizon Wireless

5	22.50	1,140	0.057	0.071	0.042	0.043	42	982
4	17.50	1,164	0.034	0.069	0.041	0.040	41	1,003
3	12.50	1,188	0.017	0.062	0.037	0.037	38	1,023
2	7.50	1,211	0.006	0.048	0.027	0.029	31	1,044
1	2.50	1,235	0.001	0.021	0.011	0.014	14	1,064
DragonWave Horizon C	128.00	34	1.832	1.689	1.034	0.333	10	30
BTS	128.00	60	1.832	1.689	1.034	0.333	17	52
Argus LLPX310R	128.00	86	1.832	1.689	1.034	0.333	25	74
DragonWave A-ANT-18G	128.00	81	1.832	1.689	1.034	0.333	23	70
Side Arms	128.00	560	1.832	1.689	1.034	0.333	162	482
Alcatel-Lucent PCS B	119.70	165	1.602	0.786	0.673	0.201	29	142
Alcatel-Lucent RRH4X	119.70	192	1.602	0.786	0.673	0.201	33	165
Andrew DB844G65ZAXY	119.70	72	1.602	0.786	0.673	0.201	13	62
RFS DB-T1-6Z-8AB-0Z	119.70	44	1.602	0.786	0.673	0.201	8	38
RFS DB-T1-6Z-8AB-0Z	119.70	44	1.602	0.786	0.673	0.201	8	38
Antel BXA-70063-6CF-	119.70	51	1.602	0.786	0.673	0.201	9	44
Andrew SBNHH-1D65B	119.70	304	1.602	0.786	0.673	0.201	53	262
Flat Low Profile Pla	119.70	1,500	1.602	0.786	0.673	0.201	261	1,292
Alcatel-Lucent RRH2x	119.00	170	1.584	0.729	0.648	0.191	28	147
48" x 12" Panel	110.00	270	1.353	0.201	0.385	0.086	20	233
Round Low Profile PI	110.00	1,500	1.353	0.201	0.385	0.086	111	1,292
Ericsson AIR 21, 1.3	100.00	275	1.118	-0.059	0.198	0.009	2	237
Ericsson AIR-32 B2A/	100.00	397	1.118	-0.059	0.198	0.009	3	342
Round T-Arm	100.00	750	1.118	-0.059	0.198	0.009	6	646
14" x 9" TTA	90.00	60	0.906	-0.122	0.090	-0.025	-1	52
Raycap DC6-48-60-18-	90.00	80	0.906	-0.122	0.090	-0.025	-2	69
Ericsson RRUS A2 Mod	90.00	132	0.906	-0.122	0.090	-0.025	-3	114
Ericsson RRUS 12 w/	90.00	521	0.906	-0.122	0.090	-0.025	-12	449
Ericsson RRUS-32 (77	90.00	231	0.906	-0.122	0.090	-0.025	-5	199
Ericsson RRUS-11	90.00	495	0.906	-0.122	0.090	-0.025	-11	426
CCI HPA-65R-BUU-H8	90.00	816	0.906	-0.122	0.090	-0.025	-18	703
Round Platform w/ Ha	90.00	2,000	0.906	-0.122	0.090	-0.025	-44	1,723
2' Std. Dish	70.00	14	0.548	-0.034	0.010	0.005	0	12
GPS	50.00	10	0.280	0.050	0.014	0.045	0	9
Flat Side Arm	50.00	150	0.280	0.050	0.014	0.045	6	129
		33,203	59.733	21.913	19.898	5.728	1,431	28,607

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:43 PM

Customer: Verizon Wireless

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.59	-1.42	0.00	-136.93	0.00	136.93	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.045
5.00	-38.09	-1.40	0.00	-129.83	0.00	129.83	3,875.65	1,937.83	7,621.89	3,783.83	0.01	-0.01	0.044
10.00	-36.62	-1.37	0.00	-122.85	0.00	122.85	3,815.83	1,907.92	7,319.19	3,633.55	0.02	-0.02	0.043
15.00	-35.17	-1.33	0.00	-116.03	0.00	116.03	3,754.26	1,877.13	7,019.01	3,484.53	0.05	-0.03	0.043
20.00	-33.76	-1.29	0.00	-109.37	0.00	109.37	3,690.93	1,845.46	6,721.61	3,336.89	0.09	-0.04	0.042
25.00	-32.38	-1.26	0.00	-102.90	0.00	102.90	3,625.84	1,812.92	6,427.23	3,190.75	0.15	-0.06	0.041
30.00	-31.03	-1.22	0.00	-96.62	0.00	96.62	3,559.00	1,779.50	6,136.14	3,046.24	0.21	-0.07	0.040
35.00	-30.49	-1.20	0.00	-90.53	0.00	90.53	3,490.40	1,745.20	5,848.59	2,903.48	0.29	-0.08	0.040
37.00	-29.19	-1.16	0.00	-88.12	0.00	88.12	3,462.46	1,731.23	5,734.61	2,846.90	0.32	-0.08	0.039
40.00	-27.91	-1.12	0.00	-84.63	0.00	84.63	3,420.04	1,710.02	5,564.83	2,762.62	0.38	-0.09	0.039
43.00	-27.45	-1.11	0.00	-81.26	0.00	81.26	2,681.60	1,340.80	4,368.81	2,168.86	0.44	-0.10	0.048
45.00	-26.33	-1.08	0.00	-79.04	0.00	79.04	2,661.68	1,330.84	4,284.71	2,127.11	0.48	-0.11	0.047
50.00	-25.04	-1.04	0.00	-73.67	0.00	73.67	2,610.63	1,305.32	4,075.93	2,023.46	0.60	-0.12	0.046
55.00	-23.97	-1.02	0.00	-68.47	0.00	68.47	2,557.83	1,278.91	3,869.44	1,920.95	0.73	-0.13	0.045
60.00	-22.92	-1.00	0.00	-63.39	0.00	63.39	2,503.27	1,251.63	3,665.50	1,819.71	0.88	-0.15	0.044
65.00	-21.90	-0.99	0.00	-58.39	0.00	58.39	2,446.95	1,223.47	3,464.36	1,719.85	1.05	-0.16	0.043
70.00	-20.89	-1.00	0.00	-53.42	0.00	53.42	2,388.88	1,194.44	3,266.29	1,621.52	1.23	-0.18	0.042
75.00	-19.38	-1.02	0.00	-48.42	0.00	48.42	2,329.04	1,164.52	3,071.53	1,524.84	1.43	-0.20	0.040
80.00	-18.55	-1.03	0.00	-43.34	0.00	43.34	1,710.42	855.21	2,217.13	1,100.67	1.64	-0.21	0.050
85.00	-17.75	-1.05	0.00	-38.17	0.00	38.17	1,669.71	834.86	2,083.38	1,034.28	1.87	-0.23	0.048
90.00	-11.68	-1.14	0.00	-32.91	0.00	32.91	1,627.25	813.62	1,951.48	968.80	2.12	-0.25	0.041
95.00	-11.01	-1.14	0.00	-27.23	0.00	27.23	1,583.02	791.51	1,821.67	904.36	2.39	-0.26	0.037
100.00	-8.63	-1.11	0.00	-21.54	0.00	21.54	1,537.05	768.52	1,694.22	841.08	2.67	-0.28	0.031
105.00	-8.03	-1.08	0.00	-16.00	0.00	16.00	1,489.31	744.66	1,569.38	779.10	2.97	-0.29	0.026
110.00	-5.31	-0.89	0.00	-10.60	0.00	10.60	1,439.82	719.91	1,447.40	718.55	3.28	-0.30	0.018
115.00	-4.90	-0.84	0.00	-6.13	0.00	6.13	1,377.44	688.72	1,317.89	654.26	3.61	-0.31	0.013
119.00	-1.69	-0.38	0.00	-2.75	0.00	2.75	1,322.18	661.09	1,213.72	602.54	3.87	-0.32	0.006
119.00	-1.69	-0.38	0.00	-2.75	0.00	2.75	930.99	465.49	859.42	426.65	3.87	-0.32	0.008
119.70	-1.67	-0.37	0.00	-2.48	0.00	2.48	926.54	463.27	849.02	421.49	3.92	-0.32	0.008
120.00	-1.32	-0.31	0.00	-2.37	0.00	2.37	924.62	462.31	844.57	419.28	3.94	-0.32	0.007
125.00	-1.12	-0.27	0.00	-0.80	0.00	0.80	891.75	445.87	771.29	382.90	4.27	-0.32	0.003
128.00	0.00	0.00	0.00	0.00	0.00	0.00	871.17	435.59	728.15	361.48	4.47	-0.32	0.000
130.00	0.00	0.00	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	4.60	-0.32	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:43 PM

Customer: Verizon Wireless

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.54	-1.42	0.00	-135.14	0.00	135.14	3,933.71	1,966.86	7,926.85	3,935.22	0.00	0.00	0.041
5.00	-26.50	-1.39	0.00	-128.06	0.00	128.06	3,875.65	1,937.83	7,621.89	3,783.83	0.01	-0.01	0.041
10.00	-25.48	-1.36	0.00	-121.10	0.00	121.10	3,815.83	1,907.92	7,319.19	3,633.55	0.02	-0.02	0.040
15.00	-24.47	-1.32	0.00	-114.30	0.00	114.30	3,754.26	1,877.13	7,019.01	3,484.53	0.05	-0.03	0.039
20.00	-23.49	-1.28	0.00	-107.69	0.00	107.69	3,690.93	1,845.46	6,721.61	3,336.89	0.09	-0.04	0.039
25.00	-22.53	-1.25	0.00	-101.27	0.00	101.27	3,625.84	1,812.92	6,427.23	3,190.75	0.14	-0.06	0.038
30.00	-21.59	-1.21	0.00	-95.04	0.00	95.04	3,559.00	1,779.50	6,136.14	3,046.24	0.21	-0.07	0.037
35.00	-21.21	-1.19	0.00	-89.02	0.00	89.02	3,490.40	1,745.20	5,848.59	2,903.48	0.28	-0.08	0.037
37.00	-20.31	-1.15	0.00	-86.64	0.00	86.64	3,462.46	1,731.23	5,734.61	2,846.90	0.32	-0.08	0.036
40.00	-19.42	-1.11	0.00	-83.19	0.00	83.19	3,420.04	1,710.02	5,564.83	2,762.62	0.37	-0.09	0.036
43.00	-19.10	-1.09	0.00	-79.87	0.00	79.87	2,681.60	1,340.80	4,368.81	2,168.86	0.43	-0.10	0.044
45.00	-18.32	-1.06	0.00	-77.69	0.00	77.69	2,661.68	1,330.84	4,284.71	2,127.11	0.47	-0.10	0.043
50.00	-17.42	-1.02	0.00	-72.40	0.00	72.40	2,610.63	1,305.32	4,075.93	2,023.46	0.59	-0.12	0.042
55.00	-16.67	-1.00	0.00	-67.29	0.00	67.29	2,557.83	1,278.91	3,869.44	1,920.95	0.72	-0.13	0.042
60.00	-15.95	-0.98	0.00	-62.31	0.00	62.31	2,503.27	1,251.63	3,665.50	1,819.71	0.87	-0.15	0.041
65.00	-15.23	-0.97	0.00	-57.41	0.00	57.41	2,446.95	1,223.47	3,464.36	1,719.85	1.03	-0.16	0.040
70.00	-14.53	-0.98	0.00	-52.55	0.00	52.55	2,388.88	1,194.44	3,266.29	1,621.52	1.21	-0.18	0.038
75.00	-13.48	-0.99	0.00	-47.67	0.00	47.67	2,329.04	1,164.52	3,071.53	1,524.84	1.40	-0.19	0.037
80.00	-12.91	-1.01	0.00	-42.69	0.00	42.69	1,710.42	855.21	2,217.13	1,100.67	1.61	-0.21	0.046
85.00	-12.35	-1.03	0.00	-37.64	0.00	37.64	1,669.71	834.86	2,083.38	1,034.28	1.84	-0.22	0.044
90.00	-8.13	-1.12	0.00	-32.50	0.00	32.50	1,627.25	813.62	1,951.48	968.80	2.09	-0.24	0.039
95.00	-7.66	-1.12	0.00	-26.90	0.00	26.90	1,583.02	791.51	1,821.67	904.36	2.35	-0.26	0.035
100.00	-6.00	-1.09	0.00	-21.29	0.00	21.29	1,537.05	768.52	1,694.22	841.08	2.63	-0.27	0.029
105.00	-5.59	-1.07	0.00	-15.83	0.00	15.83	1,489.31	744.66	1,569.38	779.10	2.92	-0.29	0.024
110.00	-3.69	-0.88	0.00	-10.49	0.00	10.49	1,439.82	719.91	1,447.40	718.55	3.23	-0.30	0.017
115.00	-3.41	-0.84	0.00	-6.07	0.00	6.07	1,377.44	688.72	1,317.89	654.26	3.55	-0.31	0.012
119.00	-1.18	-0.37	0.00	-2.73	0.00	2.73	1,322.18	661.09	1,213.72	602.54	3.81	-0.31	0.005
119.00	-1.18	-0.37	0.00	-2.73	0.00	2.73	930.99	465.49	859.42	426.65	3.81	-0.31	0.008
119.70	-1.16	-0.37	0.00	-2.46	0.00	2.46	926.54	463.27	849.02	421.49	3.86	-0.31	0.007
120.00	-0.92	-0.31	0.00	-2.35	0.00	2.35	924.62	462.31	844.57	419.28	3.88	-0.31	0.007
125.00	-0.78	-0.27	0.00	-0.80	0.00	0.80	891.75	445.87	771.29	382.90	4.20	-0.31	0.003
128.00	0.00	0.00	0.00	0.00	0.00	0.00	871.17	435.59	728.15	361.48	4.40	-0.32	0.000
130.00	0.00	0.00	0.00	0.00	0.00	0.00	857.11	428.55	699.77	347.39	4.53	-0.32	0.000

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

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Customer: Verizon Wireless

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	32.66	0.00	39.78	0.00	0.00	2799.53	0.00	0.72
0.9D + 1.6W	32.03	0.00	29.82	0.00	0.00	2744.61	0.00	0.71
1.2D + 1.0Di + 1.0Wi	8.01	0.00	81.26	0.00	0.00	734.23	0.00	0.21
(1.2 + 0.2Sds) * DL + E ELFM	1.52	0.00	39.59	0.00	0.00	150.40	43.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	1.42	0.00	39.59	0.00	0.00	136.93	80.00	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.51	0.00	27.54	0.00	0.00	148.59	43.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	1.42	0.00	27.54	0.00	0.00	135.14	80.00	0.05
1.0D + 1.0W	7.66	0.00	33.20	0.00	0.00	658.92	0.00	0.18

Site Number: 370626

Code: ANSI/TIA-222-G

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Site Name: East Hartford, CT

Engineering Number: OAA631448_C3_05

2/3/2017 5:37:43 PM

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 %
2,740.19	40.85	28.46	2,799.53	81.26	32.66	75.68

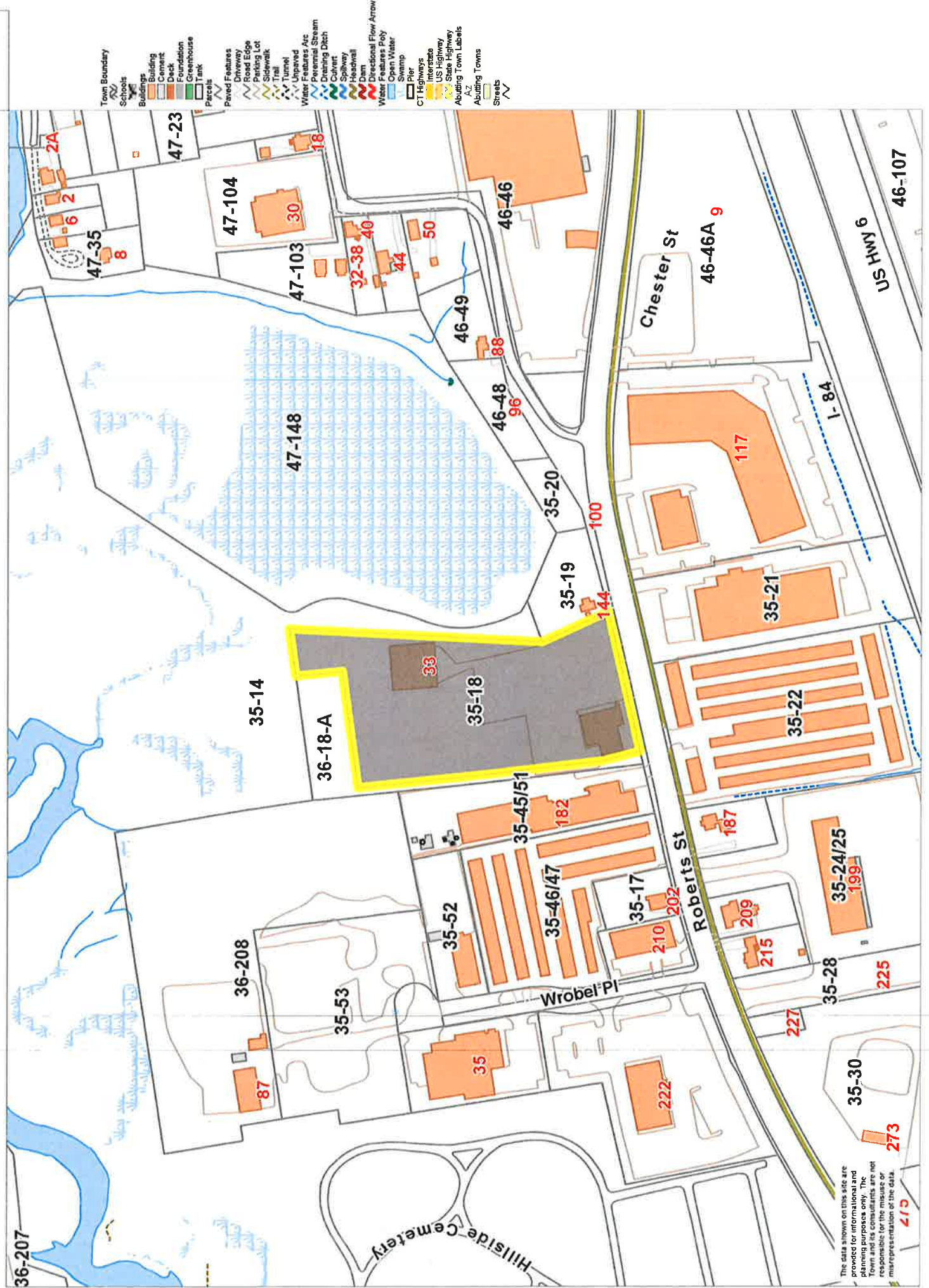
Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
55.0	2.500	67.000	Round	0	0.00	7.828	285.65	605.42	0.47

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
57.00	20	2.5" A572-55	2.50	55.00	70.00	Radial	0.00	0.0	121.94	224.00	0.56	113.81	224.00	0.52

ATTACHMENT 4



Town of East Hartford Property Summary Report

148 ROBERTS ST

MAP LOT:	35-18	CAMA PID:	12045
LOCATION:	148 ROBERTS ST		
OWNER NAME:	GREATER HARTFORD TRANSIT DISTRICT		

OWNER OF RECORD
GREATER HARTFORD TRANSIT DISTRICT
ONE UNION PLACE
HARTFORD, CT 06103



LIVING AREA:	37064	ZONING:	I2	ACREAGE:	5.37
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SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
GREATER HARTFORD TRANSIT DISTRICT	3394/ 102	05-Jun-2013	\$1,000,000.00
DOUBLE E PROPERTIES OF EAST HARTFORD LLC C/O CARMINE	3205/ 125	07-Oct-2010	\$0.00
THE MASTERS CLUB L L C	2969/ 212	04-Dec-2007	\$1,200,000.00
ELKS BENEVOLENT	365/ 358	01-Jan-1900	\$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	\$976,130.00	IMPROVEMENTS:	\$738,420.00	LAND:	\$237,710.00
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ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2015	\$303,730.00	\$66,020.00	\$237,710.00
2014	\$833,390.00	\$595,680.00	\$237,710.00
2013	\$833,390.00	\$595,680.00	\$237,710.00
2012	\$878,290.00	\$598,460.00	\$279,830.00
2011	\$878,290.00	\$598,460.00	\$279,830.00

Town of East Hartford Property Summary Report

148 ROBERTS ST

MAP LOT:	35-18	CAMA PID:	12045
LOCATION:	148 ROBERTS ST		
OWNER NAME:	GREATER HARTFORD TRANSIT DISTRICT		

BUILDING # 1

YEAR BUILT	2016	EXT WALL 1	Concr/Cinder
STYLE	Auto Service	INT WALLS 1	Typical
MODEL	Comm/Ind	HEAT FUEL	Other
STORIES	2	HEAT TYPE	Other
OCCUPANCY	Exempt	AC TYPE	Partial
ROOF	Flat	BEDROOMS	
ROOF COVER	Metal	FULL BATHS	
FLOOR COVER 1	Mixed	HALF BATHS	
% BSMT	null	TOTAL ROOMS	
% FIN BSMT	null	% REC RM	null
% SEMI FIN BSMT	null	% ATTIC FINISH	null
BSMT GARAGE	null	FIREPLACES	null

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Elevator Pass	ELV1	1 UNITS
Sprinklers-Wet	SPR1	23648 S.F.
Sprinklers-Dry	SPR3	13416 S.F.

OUTBUILDINGS

DESCRIPTION	CODE	UNITS
Concrete Slab-Reinforced	PAV3	6x14 (84 S.F.)
Concrete Slab-Reinforced	PAV3	12x35 (420 S.F.)
Paving	PAV1	154000 SF