

March 16, 2017

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

Re: **Notice of Exempt Modification – Facility Modification
811 Blue Hills Avenue, Bloomfield, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) antennas at the top of the existing 108.7-foot tower at 811 Blue Hills Avenue in Bloomfield, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). Cellco’s shared use of this tower was approved by the Council in 2007 (Docket No. 336). Cellco now intends to modify its facility by replacing twelve (12) of its existing antennas with four (4) model LNX-6514DS-VTM, 700 MHz antennas; two (2) model X7C-FRO-660, 700 MHz antennas; three (3) model SBNHH-1D65B, 1900 MHz antennas; and three (3) model SBNHH-1D65B, 2100 MHz antennas. Cellco also intends to replace six (6) of its existing remote radio heads (“RRHs”) and install three (3) new RRHs behind its antennas. Cellco also intends to install one (1) HYBRIFLEX™ antenna cable inside the tower shaft. 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 Philip K. Schenck, Jr., Town Manager for the Town of Bloomfield; Jose Giner, Director of Planning and Zoning; Samo Realty LLC, 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).

16254471-v1

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1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be installed on its existing T-arm supports at the top of the tower.

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

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

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

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

6. The tower and its foundation can support Cellco's proposed modifications. (*See Structural Analysis Report*¹ included in Attachment 3).

A copy of the Bloomfield 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).

¹ The attached Structural Analysis Report reflects work previously approved by the Council in EM-VER-011-160804, but not yet completed and the new modifications described above.

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Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Philip K. Schenck, Jr., Bloomfield Town Manager
Jose Giner, Director of Planning and Zoning
Samo Realty LLC
ATC
Tim Parks

ATTACHMENT 1



LNX-6514DS-VTM | LNX-6514DS-A1M

Single Band Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

- Great solution to maximize network coverage and capacity
- Excellent gain, VSWR, front-to-back ratio, and PIM specifications for robust network performance
- Ideal choice for site collocations and tough zoning restrictions
- Excellent solution for site sharing and maximizing capacity
- Fully compatible with Andrew remote electrical tilt system for greater OpEx savings
- The RF connectors are designed for IP67 rating and the radome for IP56 rating

Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.8	15.9
Beamwidth, Horizontal, degrees	65	64
Beamwidth, Vertical, degrees	12.4	11.2
Beam Tilt, degrees	0–10	0–10
USLS (First Lobe), dB	17	18
Front-to-Back Ratio at 180°, dB	32	30
CPR at Boresight, dB	23	23
CPR at Sector, dB	12	10
Isolation, dB	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°
Impedance	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896
Gain by all Beam Tilts, average, dBi	15.6	15.7
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.5
	0° 15.7	0° 15.9
Gain by Beam Tilt, average, dBi	5° 15.7	5° 15.8
	10° 15.3	10° 15.3
Beamwidth, Horizontal Tolerance, degrees	±0.9	±1.4
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.6
USLS, beampeak to 20° above beampeak, dB	18	20
Front-to-Back Total Power at 180° ± 30°, dB	25	23
CPR at Boresight, dB	25	24
CPR at Sector, dB	15	12

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

General Specifications

Antenna Type	Sector
Band	Single band
Brand	DualPol®
Operating Frequency Band	698 – 896 MHz

LNX-6514DS-VTM | LNX-6514DS-A1M

Performance Note

Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	2
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	726.0 N @ 150 km/h 163.2 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Depth	180.5 mm 7.1 in
Length	1851.0 mm 72.9 in
Width	301.0 mm 11.9 in
Net Weight, without mounting kit	14.2 kg 31.3 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator LNX-6514DS-A1M

Packed Dimensions

Depth	295.0 mm 11.6 in
Length	2048.0 mm 80.6 in
Width	392.0 mm 15.4 in
Shipping Weight	29.2 kg 64.4 lb

Regulatory Compliance/Certifications

Agency

RoHS 2011/65/EU
China RoHS SJ/T 11364-2006
ISO 9001:2008

Classification

Compliant by Exemption
Above Maximum Concentration Value (MCV)
Designed, manufactured and/or distributed under this quality management system



Included Products

DB380 — Pipe Mounting Kit for 2.4"-4.5" (60-115mm) OD round members on wide panel antennas. Includes 2 clamp sets

INX-6514DS-VTM | INX-6514DS-A1M

and double nuts.

DB5083 — Downtilt Mounting Kit for 2.4"-4.5" (60 - 115 mm) OD round members. Includes a heavy-duty, galvanized steel downtilt mounting bracket assembly and associated hardware. This kit is compatible with the DB380 pipe mount kit for panel antennas that are equipped with two mounting brackets.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance



X7C-FRO-660

Xpol, 58° H-Beam

698-896 MHz

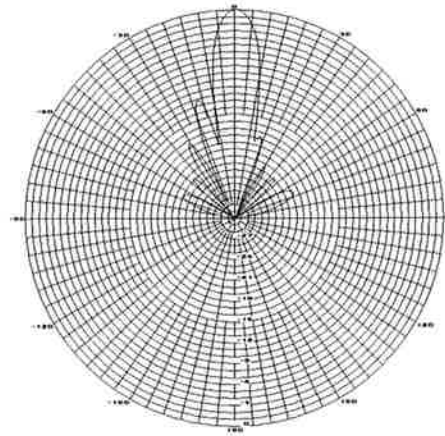
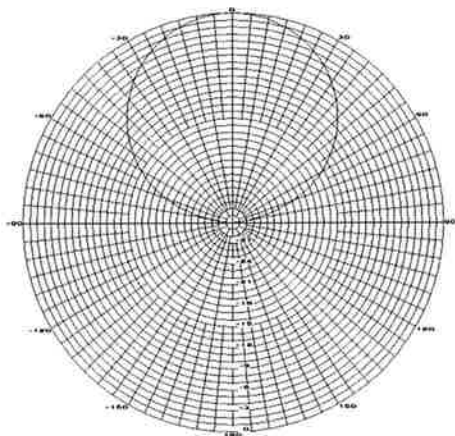
[Link to Mechanical Drawing](#)

Electrical Specifications

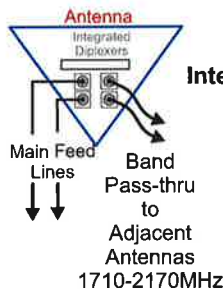
Frequency	698-896 MHz
Polarization	Slant +/- 45
Gain @ 698 MHz	16.1 dBi
Gain @ 782 MHz	16.6 dBi
Gain @ 896 MHz	17.2 dBi
Horizontal Beam (3dB Points)	58°
Vertical Beam (3dB Points)	11°
Elect. Downtilt Range, 2° Increments	0-10°
VSWR / Return Loss	≤1.35:1 / 16.5 dB
VSWR w/ip	<1.50:1 / 14.0 dB
Front-to-Back at Horizon	>30 dB
Upper Side Lobe Suppression	<-18 dB
Impedance	50 Ohms
Power Input Per Connector	500 CW at 800 MHz
Isolation	< -27 dB
Intermodulation (2x20W)	<-150 dBc

Mechanical Specifications

Input Connector (female)	Back 7/16 DIN or w/bot. opt.
Antenna Dimensions (LxWxD)	72.0 x 14.6 x 8.0 in. (1829 x 372 x 203mm)
*Antenna Weight	32.2 lbs
Bracket Weight	13.2 lbs
RF Distribution	Printed Microstrip Substrate
Radome	Ultra High-Strength Luran
Weatherability	UV Stabilized, ASTM D1925
Radome Water Absorption	ASTM D570, 0.45%
Environmental	MIL-STD-810E
Wind Survival	150 mph
Front Wind Load @100mph	208 lbf
Equivalent Flat Plate @100mph	4.23 sq-ft. (c=2)
Mounting Brackets	Fits 3.5 Inch Max. O.D. Pipe
Mechanical Downtilt Range	0-12°
Clamps/Bolts	Galvanized Steel/Stainless Steel



Available with
Integrated Pass-Thru Diplexers
to reduce mainline cables
and eliminate separate
external devices



Integrated Pass-Thru Diplexers will work with TMA's

Recommended Connector Coupling Torque
7/16 DIN: 220-265 lbf-in (25-30 N-m)

Return Loss at pass-thru port
into 50Ω load ≥17.7 dB

Ordering Information & Options

- X7C-FRO-660-x "-x" is a placeholder for the built-in fixed electrical downtilt in degrees, set to 0, 2, 4, 6, 8 or 10
- X7C-FRO-660-xip "ip" option includes pass-thru integrated diplexer(s) which pass DC to the diplexer port(s)
- X7C-FRO-660-xip-bot for bottom mounted connectors, add "-bot" (otherwise antenna comes standard with back mounted connectors)

*Antenna Weight may vary slightly with options.



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*

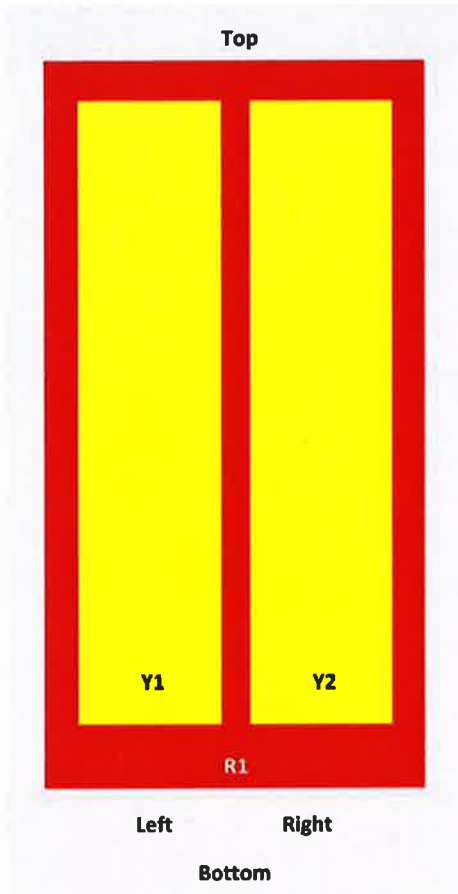
Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
	7° 14.6	7° 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 (MRET)	AISG RET UID
R1	698-896	1-2	1	ANXXXXXXXXXXXXXXXXX.1
Y1	1695-2360	3-4	2	ANXXXXXXXXXXXXXXXXX.2
Y2	1695-2360	5-6		

View from the front of the antenna

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

General Specifications

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

Mechanical Specifications

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

SBNHH-1D65B

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

Dimensions

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

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

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

Regulatory Compliance/Certifications

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



SBNHH-1D65B

Included Products

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

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance

ALCATEL-LUCENT B13 RRH4X30-4R

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

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

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

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

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

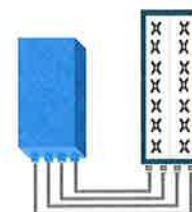


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

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

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ALCATEL-LUCENT B25 RRH4X30

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

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

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

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

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

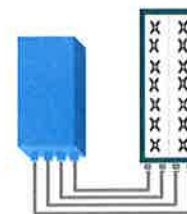


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

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

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ALCATEL-LUCENT B66A RRH4X45

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

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

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



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

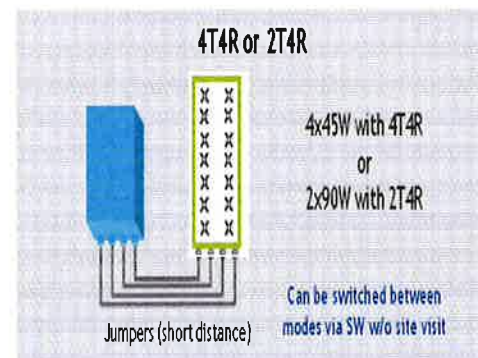
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



TECHNICAL SPECIFICATIONS

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

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

Product Description

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

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

Features/Benefits

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

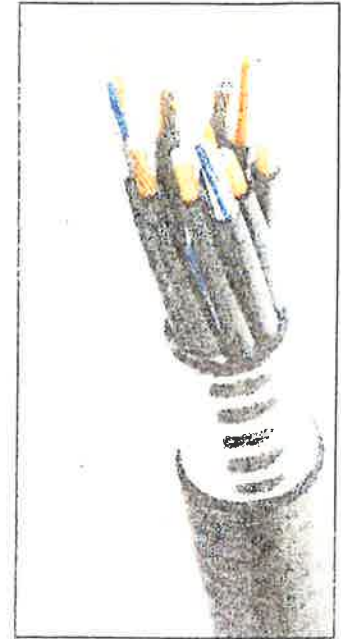


Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC Resistance			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm ² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Optical Specifications			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Power Specifications			
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 Temperature			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

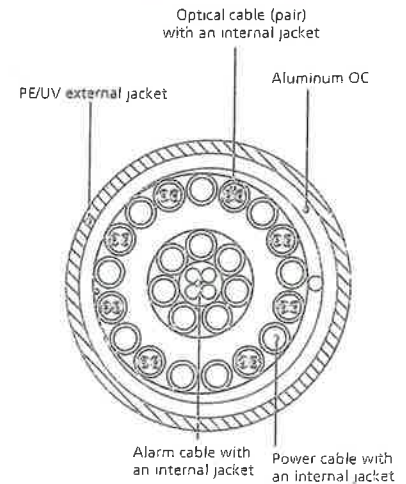


Figure 2: Construction Detail

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

ATTACHMENT 2

General Power Density

Site Name: Bloomfield Blue Hills, CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	1	5000	5000	107	0.1571	1.0	15.71%
VZW Cellular	869	9	389	3501	107	0.1100	0.5793333333	18.98%
VZW AWS	2145	1	7400	7400	107	0.2324	1.0	23.24%
VZW 700	746	1	2200	2200	107	0.0691	0.4973333333	13.89%

Total Percentage of Maximum Permissible Exposure

71.83%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
 mW/cm² = milliwatts per square centimeter
 ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 108.7 ft Monopole
ATC Site Name : Hartford North 2 CT, CT
ATC Site Number : 411187
Engineering Number : OAA694289_C3_01
Proposed Carrier : Verizon
Carrier Site Name : Hartford North 2
Carrier Site Number : N/A
Site Location : 811 Blue Hills Avenue
Bloomfield, CT 06002-3612
41.809722, -72.696667
County : Hartford
Date : January 25, 2017
Max Usage : 57%
Result : Pass

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

Reviewed By:



Date & Time: Jan 25 2017 5:28 PM

cosign

COA: PEC.0001553



Table of Contents

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



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 108.7 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EI Drawing #GS56960, dated November 19, 2007
Foundation Drawing	EI Drawing #15165D-118.0, dated November 19, 2007
Geotechnical Report	Clarence Welti Assoc Tower #411187, dated October 16, 2007

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					
102.0	105.0	3	Alcatel-Lucent RRH2X60-1900A-4R	T-Arms	(9) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
	102.0	2	RFS DB-T1-6Z-8AB-OZ			
		6	Commscope SBNHH-1D65B (40.6 lbs)			
		5	Andrew LNX-6514DS-A1M			
		2	Commscope LNX-6514DS-A1M			
		1	CSS X7C-FRO-660-0			
		1	CSS X7C-FRO-660-4			
	1	VZW Unused Reserve: 13,174 sq in				

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
102.0	105.0	3	Alcatel-Lucent RRH2X60-AWS	-	-	Verizon

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
102.0	105.0	3	Alcatel-Lucent B66A RRH 4x45	T-Arms	-	Verizon

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



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	24%	Pass
Shaft	57%	Pass
Base Plate	34%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,644.8	3,570.5	1,134.6	32%
Shear (Kips)	32.3	43.5	14.2	33%

* 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) (°)
102.0	Alcatel-Lucent B66A RRH 4x45	Verizon	0.563	0.688

*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:

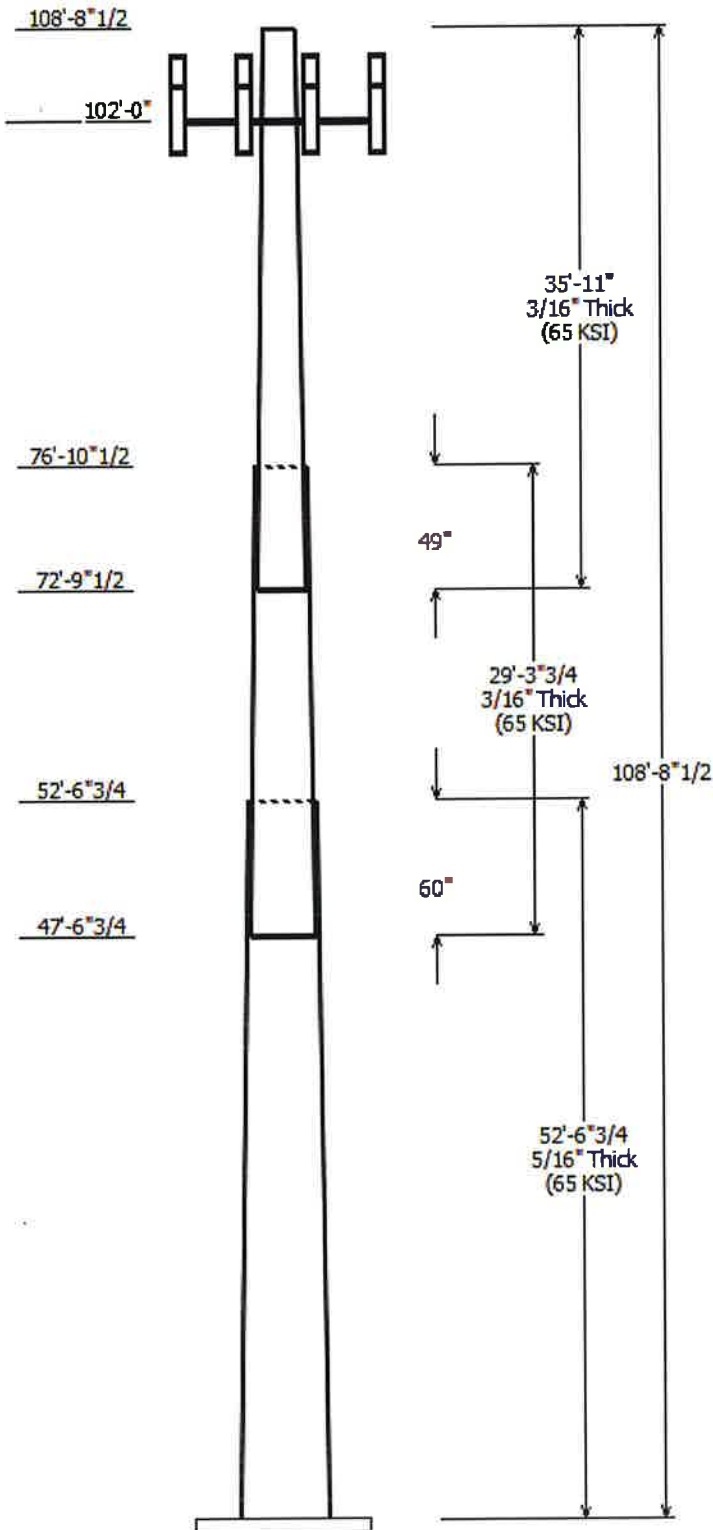
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements 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 :	411187	Code:	ANSI/TIA-222-G
Description :	108.7 ft EEI Monopole		
Client :	Verizon Wireless	Struct Class :	II
Location :	Hartford North 2 CT, CT		
Shape :	18 Sides	Exposure :	B
Height :	108.71 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.319663in/ft)		

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom					
1	52.563	34.19	51.00	0.313		0.000	0.319700	65
2	29.313	26.80	36.17	0.188	Slip Joint	60.000	0.319700	65
3	35.917	17.00	28.48	0.188	Slip Joint	49.000	0.319700	65

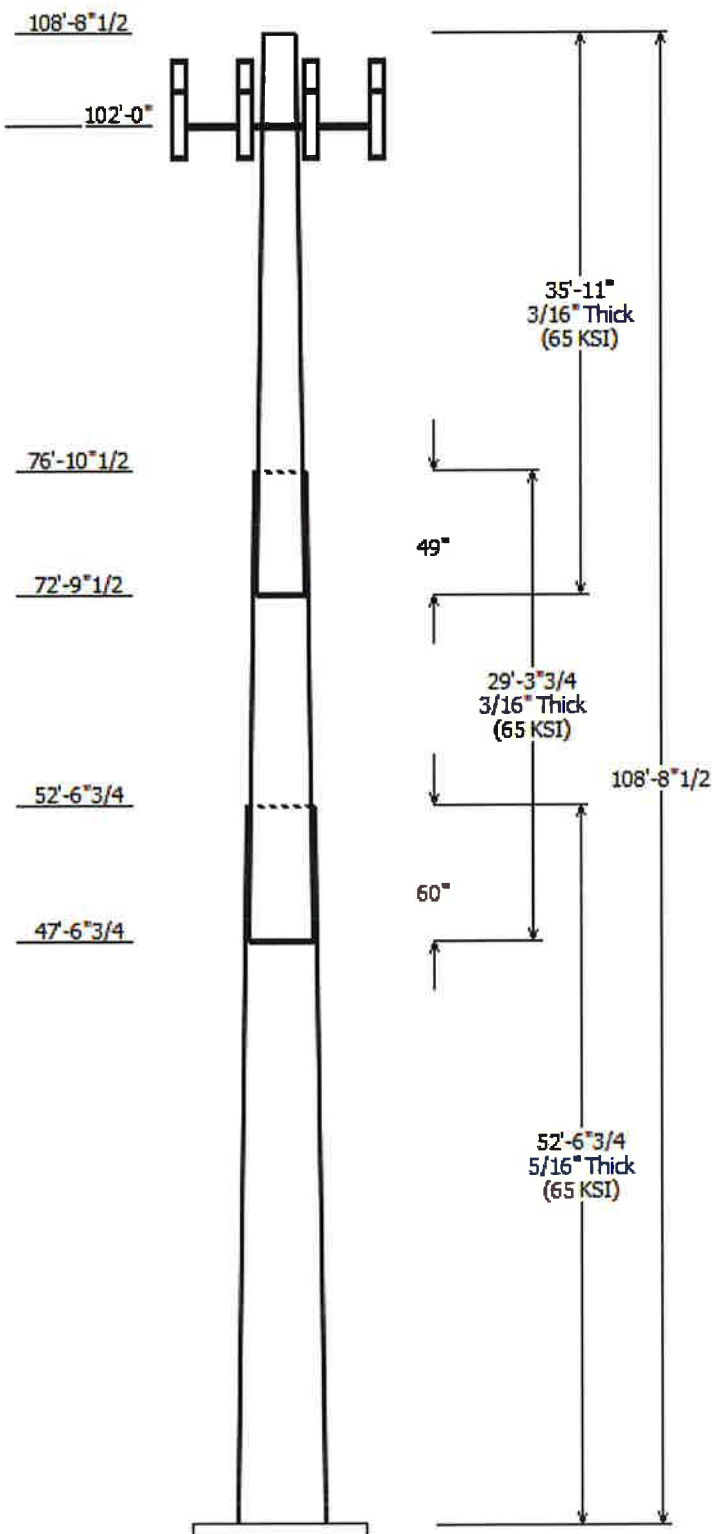
Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
102.000	102.000	1	VZW Unused Reserve: 13,174	
102.000	102.000	1	CSS X7C-FRO-660-4	
102.000	102.000	5	Andrew LNX-6514DS-A1M	
102.000	105.000	3	Alcatel-Lucent B66A RRH 4x45	
102.000	105.000	3	Alcatel-Lucent RRH2X60-1900A-	
102.000	102.000	6	Commscope SBNHH-1D65B	
102.000	102.000	1	CSS X7C-FRO-660-0	
102.000	102.000	3	Flat T-Arm	
102.000	102.000	2	RFS DB-T1-6Z-8AB-0Z	
102.000	102.000	2	Commscope LNX-6514DS-A1M	
102.000	105.000	3	Alcatel-Lucent RRH2x60 700	

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	102.0	1 5/8" Coax	No
0.000	102.0	1 5/8" Hybriflex	No

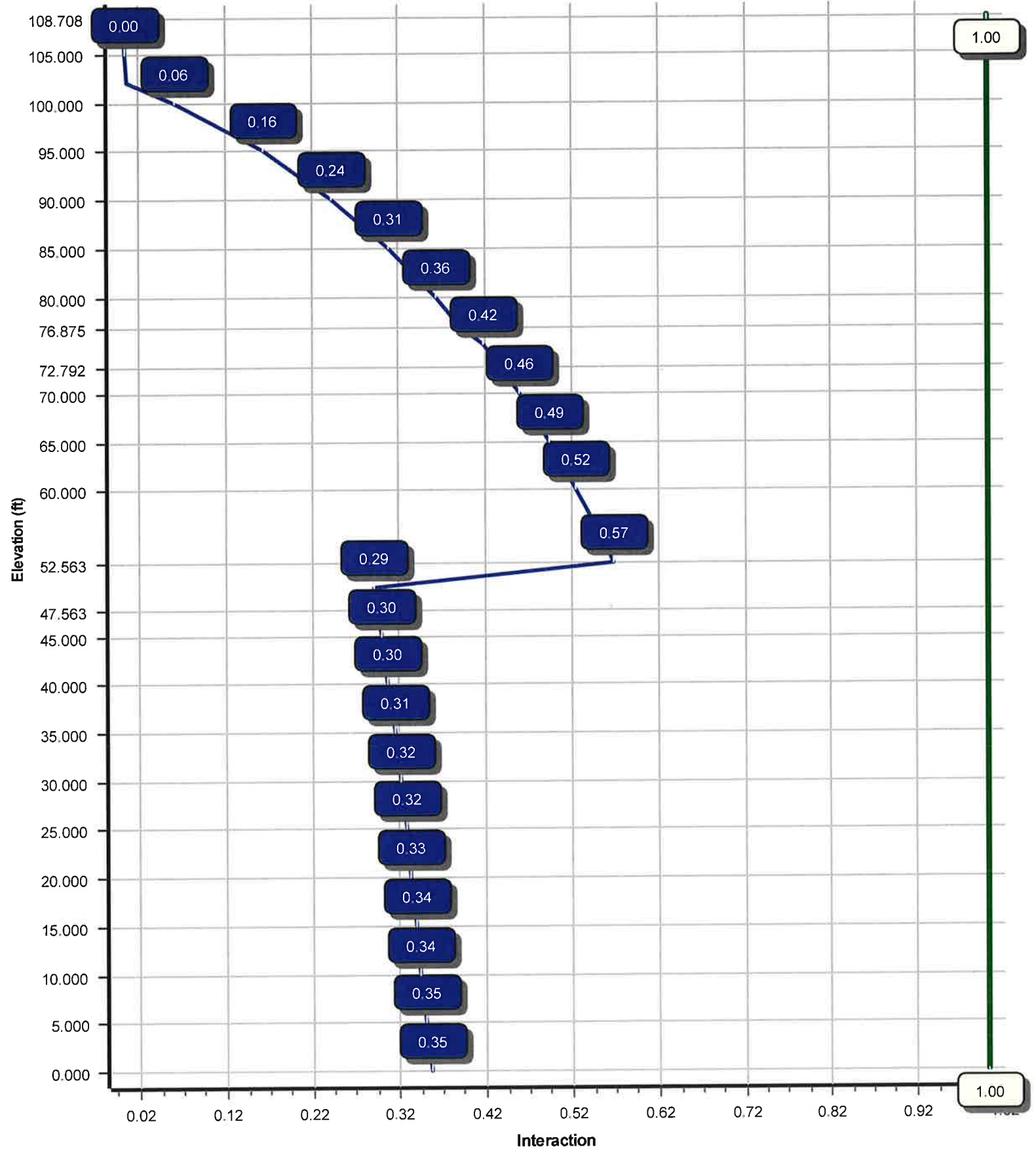
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (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	1134.57	14.15	18.31
0.9D + 1.6W	1130.24	14.15	13.73
1.2D + 1.0Di + 1.0Wi	347.21	4.36	35.99
(1.2 + 0.2Sds) * DL + E ELFM	94.27	1.15	17.80
(1.2 + 0.2Sds) * DL + E EMAM	104.69	1.21	17.80
(0.9 - 0.2Sds) * DL + E ELFM	93.86	1.15	12.39
(0.9 - 0.2Sds) * DL + E EMAM	104.20	1.21	12.39
1.0D + 1.0W	270.68	3.38	15.27

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



Load Case : 1.2D + 1.6W
Max Ratio 56.62% at 52.6 ft



Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:35 AM

Customer: Verizon Wireless

Analysis Parameters

Location:	Hartford County, CT	Height (ft):	108.
Code:	ANSI/TIA-222-G	Base Diameter (in):	51.00
Shape:	18 Sides	Top Diameter (in):	17.00
Pole Type:	Taper	Taper (in/ft) :	0.320
Pole Manufacturer:	EEL	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):	1.17		
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 :	0.058
		C _s Max:	0.058
		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: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:35 AM

Customer: Verizon Wireless

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	52.563	0.3125	65		0.00	7,502	51.00	0.00	50.27	16319.1	27.37	163.20	34.19	52.56	33.61	4875.6	17.89	109.43	0.319663
2-18	29.313	0.1875	65	Slip	60.00	1,858	36.17	47.56	21.41	3503.1	32.61	192.91	26.80	76.88	15.84	1417.3	23.79	142.94	0.319663
3-18	35.917	0.1875	65	Slip	49.00	1,640	28.48	72.79	16.84	1703.0	25.37	151.90	17.00	108.71	10.01	357.3	14.58	90.67	0.319663
Shaft Weight						11,000													

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		
102.00	Alcatel-Lucent B66A RRH	3	67.00	2.580	0.67	184.04	3.499	0.67	0.000	3.000
102.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	150.55	3.425	0.67	0.000	3.000
102.00	Alcatel-Lucent RRH2X60-	3	46.00	1.870	0.50	118.85	3.071	0.50	0.000	3.000
102.00	Andrew LNX-6514DS-A1M	5	38.80	8.170	0.69	284.71	11.313	0.69	0.000	0.000
102.00	Commscope LNX-6514DS-	2	38.80	8.170	0.69	284.71	11.313	0.69	0.000	0.000
102.00	Commscope SBNHH-1D65B	6	40.60	8.080	0.69	264.36	11.658	0.69	0.000	0.000
102.00	CSS X7C-FRO-660-0	1	32.20	9.550	0.68	349.28	11.325	0.68	0.000	0.000
102.00	CSS X7C-FRO-660-4	1	32.20	9.550	0.68	349.28	11.325	0.68	0.000	0.000
102.00	Flat T-Arm	3	250.00	12.900	0.67	518.41	23.403	0.67	0.000	0.000
102.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	4.800	0.67	237.61	5.941	0.67	0.000	0.000
102.00	VZW Unused Reserve:	1	1323.30	91.560	1.00	2,507.24	173.477	1.00	0.000	0.000
Totals		30	3250.00			10,175.66			Number of Loadings : 11	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	102.00	9	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	102.00	2	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:35 AM

Customer: Verizon Wireless

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3125	51.000	50.274	16,319.1	27.37	163.20	69.2	630.2	0.0	0.0
5.00		0.3125	49.402	48.689	14,823.5	26.46	158.09	70.3	591.0	0.0	841.9
10.00		0.3125	47.803	47.103	13,422.2	25.56	152.97	71.3	553.0	0.0	814.9
15.00		0.3125	46.205	45.518	12,112.1	24.66	147.86	72.4	516.3	0.0	787.9
20.00		0.3125	44.607	43.933	10,890.2	23.76	142.74	73.5	480.9	0.0	761.0
25.00		0.3125	43.008	42.347	9,753.4	22.86	137.63	74.5	446.7	0.0	734.0
30.00		0.3125	41.410	40.762	8,698.5	21.95	132.51	75.6	413.7	0.0	707.0
35.00		0.3125	39.812	39.177	7,722.6	21.05	127.40	76.6	382.1	0.0	680.0
40.00		0.3125	38.213	37.592	6,822.5	20.15	122.28	77.7	351.7	0.0	653.1
45.00		0.3125	36.615	36.006	5,995.3	19.25	117.17	78.8	322.5	0.0	626.1
47.56	Bot - Section 2	0.3125	35.796	35.194	5,598.5	18.79	114.55	79.3	308.1	0.0	310.4
50.00		0.3125	35.017	34.421	5,237.8	18.35	112.05	79.8	294.6	0.0	464.4
52.56	Top - Section 1	0.1875	34.573	20.463	3,056.8	31.10	184.39	64.8	174.1	0.0	477.1
55.00		0.1875	33.794	19.999	2,853.6	30.37	180.23	65.7	166.3	0.0	167.8
60.00		0.1875	32.195	19.048	2,465.5	28.87	171.71	67.4	150.8	0.0	332.2
65.00		0.1875	30.597	18.097	2,114.3	27.36	163.18	69.2	136.1	0.0	316.0
70.00		0.1875	28.999	17.146	1,798.1	25.86	154.66	71.0	122.1	0.0	299.8
72.79	Bot - Section 3	0.1875	28.106	16.615	1,636.2	25.02	149.90	72.0	114.7	0.0	160.4
75.00		0.1875	27.400	16.194	1,515.2	24.36	146.13	72.8	108.9	0.0	248.2
76.88	Top - Section 2	0.1875	27.176	16.061	1,478.0	24.15	144.94	73.0	107.1	0.0	205.8
80.00		0.1875	26.177	15.466	1,319.9	23.21	139.61	74.1	99.3	0.0	167.6
85.00		0.1875	24.579	14.515	1,091.0	21.70	131.09	75.9	87.4	0.0	255.1
90.00		0.1875	22.980	13.564	890.3	20.20	122.56	77.6	76.3	0.0	238.9
95.00		0.1875	21.382	12.613	715.8	18.70	114.04	79.4	65.9	0.0	222.7
100.00		0.1875	19.784	11.662	565.8	17.19	105.51	81.2	56.3	0.0	206.5
102.0		0.1875	19.144	11.281	512.2	16.59	102.10	81.9	52.7	0.0	78.1
105.0		0.1875	18.185	10.711	438.3	15.69	96.99	82.6	47.5	0.0	112.3
108.7		0.1875	17.000	10.005	357.3	14.58	90.67	82.6	41.4	0.0	130.7
											10,999.7

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:35 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

97 mph with No Ice

20 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		194.6	0.0					0.0	0.0	194.6	0.0	0.0	0.0
5.00		383.0	1,010.2					0.0	59.9	383.0	1,070.1	0.0	0.0
10.00		370.6	977.9					0.0	59.9	370.6	1,037.8	0.0	0.0
15.00		358.2	945.5					0.0	59.9	358.2	1,005.4	0.0	0.0
20.00		345.8	913.1					0.0	59.9	345.8	973.0	0.0	0.0
25.00		333.4	880.8					0.0	59.9	333.4	940.7	0.0	0.0
30.00		324.8	848.4					0.0	59.9	324.8	908.3	0.0	0.0
35.00		322.5	816.0					0.0	59.9	322.5	875.9	0.0	0.0
40.00		321.7	783.7					0.0	59.9	321.7	843.6	0.0	0.0
45.00		241.8	751.3					0.0	59.9	241.8	811.2	0.0	0.0
47.56	Bot - Section 2	159.2	372.5					0.0	30.7	159.2	403.2	0.0	0.0
50.00		158.8	557.3					0.0	29.2	158.8	586.5	0.0	0.0
52.56	Top - Section 1	157.5	572.6					0.0	30.7	157.5	603.3	0.0	0.0
55.00		230.5	201.4					0.0	29.2	230.5	230.6	0.0	0.0
60.00		304.4	398.6					0.0	59.9	304.4	458.5	0.0	0.0
65.00		296.0	379.2					0.0	59.9	296.0	439.1	0.0	0.0
70.00		225.0	359.8					0.0	59.9	225.0	419.6	0.0	0.0
72.79	Bot - Section 3	141.6	192.4					0.0	33.4	141.6	225.9	0.0	0.0
75.00		114.5	297.9					0.0	26.4	114.5	324.3	0.0	0.0
76.88	Top - Section 2	137.2	247.0					0.0	22.5	137.2	269.4	0.0	0.0
80.00		216.6	201.2					0.0	37.4	216.6	238.6	0.0	0.0
85.00		256.7	306.1					0.0	59.9	256.7	365.9	0.0	0.0
90.00		244.0	286.6					0.0	59.9	244.0	346.5	0.0	0.0
95.00		230.5	267.2					0.0	59.9	230.5	327.1	0.0	0.0
100.00		154.6	247.8					0.0	59.9	154.6	307.7	0.0	0.0
102.00	Appertunance(s)	104.6	93.7	7,797.1	0.0	1,192.6	3,900.0	0.0	24.0	7,901.7	4,017.6	0.0	0.0
105.00		134.7	134.7					0.0	0.0	134.7	134.7	0.0	0.0
108.71		72.8	156.8					0.0	0.0	72.8	156.8	0.0	0.0
Totals:										14,332.9	18,321.1	0.00	0.00

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:36 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

97 mph with No Ice

20 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	-18.31	-14.15	0.00	-1,134.57	0.00	1,134.57	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.353
5.00	-17.22	-13.80	0.00	-1,063.80	0.00	1,063.80	3,079.40	1,539.70	6,220.63	3,114.94	0.05	-0.10	0.347
10.00	-16.16	-13.45	0.00	-994.81	0.00	994.81	3,024.10	1,512.05	5,908.76	2,958.77	0.21	-0.19	0.342
15.00	-15.13	-13.12	0.00	-927.54	0.00	927.54	2,965.78	1,482.89	5,598.51	2,803.41	0.46	-0.30	0.336
20.00	-14.13	-12.79	0.00	-861.94	0.00	861.94	2,904.43	1,452.21	5,290.46	2,649.16	0.83	-0.40	0.330
25.00	-13.17	-12.48	0.00	-797.98	0.00	797.98	2,840.05	1,420.03	4,985.22	2,496.31	1.31	-0.51	0.324
30.00	-12.24	-12.17	0.00	-735.59	0.00	735.59	2,772.65	1,386.32	4,683.38	2,345.17	1.91	-0.62	0.318
35.00	-11.35	-11.86	0.00	-674.74	0.00	674.74	2,702.22	1,351.11	4,385.56	2,196.04	2.62	-0.74	0.312
40.00	-10.48	-11.55	0.00	-615.45	0.00	615.45	2,628.76	1,314.38	4,092.36	2,049.22	3.46	-0.86	0.304
45.00	-9.66	-11.31	0.00	-557.71	0.00	557.71	2,552.28	1,276.14	3,804.36	1,905.01	4.42	-0.98	0.297
47.56	-9.24	-11.15	0.00	-528.74	0.00	528.74	2,511.91	1,255.95	3,658.98	1,832.21	4.96	-1.04	0.292
50.00	-8.65	-10.99	0.00	-501.55	0.00	501.55	2,472.77	1,236.38	3,522.18	1,763.71	5.51	-1.11	0.288
52.56	-8.04	-10.83	0.00	-473.38	0.00	473.38	1,193.75	596.87	1,690.68	846.60	6.13	-1.18	0.566
55.00	-7.78	-10.62	0.00	-446.98	0.00	446.98	1,182.21	591.10	1,636.19	819.31	6.74	-1.24	0.552
60.00	-7.29	-10.33	0.00	-393.90	0.00	393.90	1,156.29	578.14	1,523.78	763.02	8.16	-1.45	0.523
65.00	-6.83	-10.05	0.00	-342.26	0.00	342.26	1,127.34	563.67	1,411.02	706.56	9.79	-1.66	0.491
70.00	-6.39	-9.83	0.00	-292.03	0.00	292.03	1,095.37	547.68	1,298.50	650.21	11.65	-1.88	0.455
72.79	-6.15	-9.69	0.00	-264.60	0.00	264.60	1,076.20	538.10	1,236.00	618.92	12.79	-2.00	0.434
75.00	-5.81	-9.57	0.00	-243.20	0.00	243.20	1,060.37	530.18	1,186.82	594.29	13.73	-2.10	0.415
76.88	-5.53	-9.44	0.00	-225.25	0.00	225.25	1,055.21	527.61	1,171.25	586.50	14.58	-2.18	0.390
80.00	-5.27	-9.22	0.00	-195.77	0.00	195.77	1,031.54	515.77	1,102.30	551.97	16.05	-2.31	0.360
85.00	-4.89	-8.97	0.00	-149.64	0.00	149.64	991.19	495.60	993.58	497.53	18.57	-2.50	0.306
90.00	-4.53	-8.72	0.00	-104.80	0.00	104.80	947.82	473.91	887.37	444.35	21.28	-2.66	0.241
95.00	-4.20	-8.48	0.00	-61.20	0.00	61.20	901.43	450.71	784.27	392.72	24.15	-2.80	0.161
100.00	-3.90	-8.32	0.00	-18.79	0.00	18.79	852.00	426.00	684.88	342.95	27.13	-2.88	0.060
102.00	-0.28	-0.22	0.00	-0.96	0.00	0.96	831.39	415.69	646.30	323.63	28.33	-2.89	0.003
105.00	-0.15	-0.08	0.00	-0.30	0.00	0.30	795.75	397.87	586.99	293.93	30.15	-2.89	0.001
108.71	0.00	-0.07	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	32.39	-2.89	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:36 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

20 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		194.6	0.0					0.0	0.0	194.6	0.0	0.0	0.0
5.00		383.0	757.7					0.0	44.9	383.0	802.6	0.0	0.0
10.00		370.6	733.4					0.0	44.9	370.6	778.3	0.0	0.0
15.00		358.2	709.1					0.0	44.9	358.2	754.0	0.0	0.0
20.00		345.8	684.9					0.0	44.9	345.8	729.8	0.0	0.0
25.00		333.4	660.6					0.0	44.9	333.4	705.5	0.0	0.0
30.00		324.8	636.3					0.0	44.9	324.8	681.2	0.0	0.0
35.00		322.5	612.0					0.0	44.9	322.5	656.9	0.0	0.0
40.00		321.7	587.8					0.0	44.9	321.7	632.7	0.0	0.0
45.00		241.8	563.5					0.0	44.9	241.8	608.4	0.0	0.0
47.56	Bot - Section 2	159.2	279.4					0.0	23.0	159.2	302.4	0.0	0.0
50.00		158.8	418.0					0.0	21.9	158.8	439.8	0.0	0.0
52.56	Top - Section 1	157.5	429.4					0.0	23.0	157.5	452.5	0.0	0.0
55.00		230.5	151.0					0.0	21.9	230.5	172.9	0.0	0.0
60.00		304.4	299.0					0.0	44.9	304.4	343.9	0.0	0.0
65.00		296.0	284.4					0.0	44.9	296.0	329.3	0.0	0.0
70.00		225.0	269.8					0.0	44.9	225.0	314.7	0.0	0.0
72.79	Bot - Section 3	141.6	144.3					0.0	25.1	141.6	169.4	0.0	0.0
75.00		114.5	223.4					0.0	19.8	114.5	243.2	0.0	0.0
76.88	Top - Section 2	137.2	185.2					0.0	16.8	137.2	202.1	0.0	0.0
80.00		216.6	150.9					0.0	28.1	216.6	178.9	0.0	0.0
85.00		256.7	229.5					0.0	44.9	256.7	274.5	0.0	0.0
90.00		244.0	215.0					0.0	44.9	244.0	259.9	0.0	0.0
95.00		230.5	200.4					0.0	44.9	230.5	245.3	0.0	0.0
100.00		154.6	185.9					0.0	44.9	154.6	230.8	0.0	0.0
102.00	Appertunance(s)	104.6	70.3	7,797.1	0.0	1,192.6	2,925.0	0.0	18.0	7,901.7	3,013.2	0.0	0.0
105.00		134.7	101.0					0.0	0.0	134.7	101.0	0.0	0.0
108.71		72.8	117.6					0.0	0.0	72.8	117.6	0.0	0.0
Totals:										14,332.9	13,740.8	0.00	0.00

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:36 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W	97 mph with No Ice (Reduced DL)	20 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	-13.73	-14.15	0.00	-1,130.24	0.00	1,130.24	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.350
5.00	-12.90	-13.79	0.00	-1,059.49	0.00	1,059.49	3,079.40	1,539.70	6,220.63	3,114.94	0.05	-0.10	0.344
10.00	-12.10	-13.44	0.00	-990.55	0.00	990.55	3,024.10	1,512.05	5,908.76	2,958.77	0.20	-0.19	0.339
15.00	-11.33	-13.10	0.00	-923.37	0.00	923.37	2,965.78	1,482.89	5,598.51	2,803.41	0.46	-0.30	0.333
20.00	-10.57	-12.76	0.00	-857.89	0.00	857.89	2,904.43	1,452.21	5,290.46	2,649.16	0.83	-0.40	0.328
25.00	-9.85	-12.44	0.00	-794.07	0.00	794.07	2,840.05	1,420.03	4,985.22	2,496.31	1.31	-0.51	0.322
30.00	-9.15	-12.13	0.00	-731.84	0.00	731.84	2,772.65	1,386.32	4,683.38	2,345.17	1.90	-0.62	0.315
35.00	-8.47	-11.82	0.00	-671.19	0.00	671.19	2,702.22	1,351.11	4,385.56	2,196.04	2.61	-0.73	0.309
40.00	-7.82	-11.50	0.00	-612.10	0.00	612.10	2,628.76	1,314.38	4,092.36	2,049.22	3.44	-0.85	0.302
45.00	-7.19	-11.26	0.00	-554.58	0.00	554.58	2,552.28	1,276.14	3,804.36	1,905.01	4.40	-0.97	0.294
47.56	-6.88	-11.11	0.00	-525.71	0.00	525.71	2,511.91	1,255.95	3,658.98	1,832.21	4.94	-1.04	0.290
50.00	-6.43	-10.95	0.00	-498.64	0.00	498.64	2,472.77	1,236.38	3,522.18	1,763.71	5.49	-1.10	0.285
52.56	-5.97	-10.79	0.00	-470.59	0.00	470.59	1,193.75	596.87	1,690.68	846.60	6.10	-1.17	0.561
55.00	-5.78	-10.57	0.00	-444.29	0.00	444.29	1,182.21	591.10	1,636.19	819.31	6.71	-1.24	0.547
60.00	-5.40	-10.28	0.00	-391.45	0.00	391.45	1,156.29	578.14	1,523.78	763.02	8.12	-1.44	0.518
65.00	-5.05	-9.99	0.00	-340.07	0.00	340.07	1,127.34	563.67	1,411.02	706.56	9.75	-1.65	0.486
70.00	-4.71	-9.77	0.00	-290.12	0.00	290.12	1,095.37	547.68	1,298.50	650.21	11.59	-1.87	0.451
72.79	-4.53	-9.63	0.00	-262.85	0.00	262.85	1,076.20	538.10	1,236.00	618.92	12.72	-1.99	0.429
75.00	-4.27	-9.51	0.00	-241.58	0.00	241.58	1,060.37	530.18	1,186.82	594.29	13.67	-2.09	0.411
76.88	-4.06	-9.38	0.00	-223.74	0.00	223.74	1,055.21	527.61	1,171.25	586.50	14.50	-2.17	0.386
80.00	-3.86	-9.16	0.00	-194.44	0.00	194.44	1,031.54	515.77	1,102.30	551.97	15.97	-2.30	0.356
85.00	-3.57	-8.91	0.00	-148.62	0.00	148.62	991.19	495.60	993.58	497.53	18.48	-2.48	0.303
90.00	-3.30	-8.66	0.00	-104.08	0.00	104.08	947.82	473.91	887.37	444.35	21.17	-2.65	0.238
95.00	-3.05	-8.42	0.00	-60.78	0.00	60.78	901.43	450.71	784.27	392.72	24.02	-2.78	0.159
100.00	-2.82	-8.26	0.00	-18.66	0.00	18.66	852.00	426.00	684.88	342.95	26.98	-2.86	0.058
102.00	-0.21	-0.22	0.00	-0.95	0.00	0.95	831.39	415.69	646.30	323.63	28.18	-2.87	0.003
105.00	-0.11	-0.08	0.00	-0.29	0.00	0.29	795.75	397.87	586.99	293.93	29.98	-2.87	0.001
108.71	0.00	-0.07	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	32.21	-2.87	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:37 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	19 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		63.3	0.0					0.0	0.0	63.3	0.0	0.0	0.0
5.00		125.1	1,503.3					0.0	59.9	125.1	1,563.2	0.0	0.0
10.00		121.9	1,512.9					0.0	59.9	121.9	1,572.7	0.0	0.0
15.00		118.5	1,491.4					0.0	59.9	118.5	1,551.2	0.0	0.0
20.00		114.9	1,459.6					0.0	59.9	114.9	1,519.5	0.0	0.0
25.00		111.3	1,422.4					0.0	59.9	111.3	1,482.3	0.0	0.0
30.00		109.0	1,381.8					0.0	59.9	109.0	1,441.7	0.0	0.0
35.00		108.7	1,338.9					0.0	59.9	108.7	1,398.7	0.0	0.0
40.00		109.0	1,294.1					0.0	59.9	109.0	1,354.0	0.0	0.0
45.00		82.3	1,247.9					0.0	59.9	82.3	1,307.8	0.0	0.0
47.56	Bot - Section 2	54.4	623.9					0.0	30.7	54.4	654.6	0.0	0.0
50.00		54.3	795.1					0.0	29.2	54.3	824.3	0.0	0.0
52.56	Top - Section 1	54.0	818.5					0.0	30.7	54.0	849.2	0.0	0.0
55.00		79.5	431.4					0.0	29.2	79.5	460.6	0.0	0.0
60.00		105.4	852.7					0.0	59.9	105.4	912.6	0.0	0.0
65.00		103.2	816.0					0.0	59.9	103.2	875.9	0.0	0.0
70.00		78.9	778.7					0.0	59.9	78.9	838.5	0.0	0.0
72.79	Bot - Section 3	49.9	421.0					0.0	33.4	49.9	454.4	0.0	0.0
75.00		40.5	477.3					0.0	26.4	40.5	503.8	0.0	0.0
76.88	Top - Section 2	48.8	396.7					0.0	22.5	48.8	419.2	0.0	0.0
80.00		77.5	443.1					0.0	37.4	77.5	480.5	0.0	0.0
85.00		92.6	673.3					0.0	59.9	92.6	733.2	0.0	0.0
90.00		89.0	634.2					0.0	59.9	89.0	694.0	0.0	0.0
95.00		85.2	594.6					0.0	59.9	85.2	654.5	0.0	0.0
100.00		57.7	554.8					0.0	59.9	57.7	614.7	0.0	0.0
102.00	Appertunance(s)	39.5	213.4	2,158.3	0.0	298.0	11,930.9	0.0	24.0	2,197.9	12,168.2	0.0	0.0
105.00		51.4	306.6					0.0	0.0	51.4	306.6	0.0	0.0
108.71		27.9	357.7					0.0	0.0	27.9	357.7	0.0	0.0
Totals:										4,412.00	35,993.9	0.00	0.00

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:37 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

19 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	-35.99	-4.36	0.00	-347.21	0.00	347.21	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.118
5.00	-34.43	-4.25	0.00	-325.42	0.00	325.42	3,079.40	1,539.70	6,220.63	3,114.94	0.02	-0.03	0.116
10.00	-32.85	-4.14	0.00	-304.17	0.00	304.17	3,024.10	1,512.05	5,908.76	2,958.77	0.06	-0.06	0.114
15.00	-31.30	-4.04	0.00	-283.45	0.00	283.45	2,965.78	1,482.89	5,598.51	2,803.41	0.14	-0.09	0.112
20.00	-29.78	-3.94	0.00	-263.24	0.00	263.24	2,904.43	1,452.21	5,290.46	2,649.16	0.25	-0.12	0.110
25.00	-28.29	-3.84	0.00	-243.54	0.00	243.54	2,840.05	1,420.03	4,985.22	2,496.31	0.40	-0.16	0.108
30.00	-26.85	-3.75	0.00	-224.33	0.00	224.33	2,772.65	1,386.32	4,683.38	2,345.17	0.58	-0.19	0.105
35.00	-25.45	-3.65	0.00	-205.60	0.00	205.60	2,702.22	1,351.11	4,385.56	2,196.04	0.80	-0.23	0.103
40.00	-24.09	-3.55	0.00	-187.37	0.00	187.37	2,628.76	1,314.38	4,092.36	2,049.22	1.06	-0.26	0.101
45.00	-22.78	-3.47	0.00	-169.63	0.00	169.63	2,552.28	1,276.14	3,804.36	1,905.01	1.35	-0.30	0.098
47.56	-22.13	-3.42	0.00	-160.74	0.00	160.74	2,511.91	1,255.95	3,658.98	1,832.21	1.52	-0.32	0.097
50.00	-21.30	-3.37	0.00	-152.40	0.00	152.40	2,472.77	1,236.38	3,522.18	1,763.71	1.68	-0.34	0.095
52.56	-20.45	-3.32	0.00	-143.77	0.00	143.77	1,193.75	596.87	1,690.68	846.60	1.87	-0.36	0.187
55.00	-19.99	-3.25	0.00	-135.68	0.00	135.68	1,182.21	591.10	1,636.19	819.31	2.06	-0.38	0.183
60.00	-19.08	-3.16	0.00	-119.44	0.00	119.44	1,156.29	578.14	1,523.78	763.02	2.49	-0.44	0.173
65.00	-18.20	-3.07	0.00	-103.65	0.00	103.65	1,127.34	563.67	1,411.02	706.56	2.99	-0.51	0.163
70.00	-17.36	-3.00	0.00	-88.31	0.00	88.31	1,095.37	547.68	1,298.50	650.21	3.55	-0.57	0.152
72.79	-16.90	-2.95	0.00	-79.94	0.00	79.94	1,076.20	538.10	1,236.00	618.92	3.90	-0.61	0.145
75.00	-16.40	-2.91	0.00	-73.42	0.00	73.42	1,060.37	530.18	1,186.82	594.29	4.19	-0.64	0.139
76.88	-15.98	-2.87	0.00	-67.96	0.00	67.96	1,055.21	527.61	1,171.25	586.50	4.44	-0.66	0.131
80.00	-15.49	-2.80	0.00	-58.99	0.00	58.99	1,031.54	515.77	1,102.30	551.97	4.89	-0.70	0.122
85.00	-14.76	-2.71	0.00	-44.99	0.00	44.99	991.19	495.60	993.58	497.53	5.66	-0.76	0.105
90.00	-14.07	-2.62	0.00	-31.44	0.00	31.44	947.82	473.91	887.37	444.35	6.48	-0.81	0.086
95.00	-13.41	-2.54	0.00	-18.32	0.00	18.32	901.43	450.71	784.27	392.72	7.35	-0.85	0.062
100.00	-12.80	-2.47	0.00	-5.63	0.00	5.63	852.00	426.00	684.88	342.95	8.25	-0.87	0.031
102.00	-0.66	-0.09	0.00	-0.39	0.00	0.39	831.39	415.69	646.30	323.63	8.62	-0.87	0.002
105.00	-0.36	-0.03	0.00	-0.12	0.00	0.12	795.75	397.87	586.99	293.93	9.17	-0.88	0.001
108.71	0.00	-0.03	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	9.85	-0.88	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:37 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

19 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		46.5	0.0					0.0	0.0	46.5	0.0	0.0	0.0
5.00		91.6	841.9					0.0	49.9	91.6	891.8	0.0	0.0
10.00		88.6	814.9					0.0	49.9	88.6	864.8	0.0	0.0
15.00		85.7	787.9					0.0	49.9	85.7	837.8	0.0	0.0
20.00		82.7	761.0					0.0	49.9	82.7	810.9	0.0	0.0
25.00		79.7	734.0					0.0	49.9	79.7	783.9	0.0	0.0
30.00		77.7	707.0					0.0	49.9	77.7	756.9	0.0	0.0
35.00		77.1	680.0					0.0	49.9	77.1	729.9	0.0	0.0
40.00		76.9	653.1					0.0	49.9	76.9	703.0	0.0	0.0
45.00		57.8	626.1					0.0	49.9	57.8	676.0	0.0	0.0
47.56	Bot - Section 2	38.1	310.4					0.0	25.6	38.1	336.0	0.0	0.0
50.00		38.0	464.4					0.0	24.3	38.0	488.7	0.0	0.0
52.56	Top - Section 1	37.7	477.1					0.0	25.6	37.7	502.7	0.0	0.0
55.00		55.1	167.8					0.0	24.3	55.1	192.1	0.0	0.0
60.00		72.8	332.2					0.0	49.9	72.8	382.1	0.0	0.0
65.00		70.8	316.0					0.0	49.9	70.8	365.9	0.0	0.0
70.00		53.8	299.8					0.0	49.9	53.8	349.7	0.0	0.0
72.79	Bot - Section 3	33.9	160.4					0.0	27.9	33.9	188.2	0.0	0.0
75.00		27.4	248.2					0.0	22.0	27.4	270.3	0.0	0.0
76.88	Top - Section 2	32.8	205.8					0.0	18.7	32.8	224.5	0.0	0.0
80.00		51.8	167.6					0.0	31.2	51.8	198.8	0.0	0.0
85.00		61.4	255.1					0.0	49.9	61.4	305.0	0.0	0.0
90.00		58.3	238.9					0.0	49.9	58.3	288.8	0.0	0.0
95.00		55.1	222.7					0.0	49.9	55.1	272.6	0.0	0.0
100.00		37.0	206.5					0.0	49.9	37.0	256.4	0.0	0.0
102.00	Appertunance(s)	25.0	78.1	1,864.5	0.0	285.2	3,250.0	0.0	20.0	1,889.6	3,348.0	0.0	0.0
105.00		32.2	112.3					0.0	0.0	32.2	112.3	0.0	0.0
108.71		17.4	130.7					0.0	0.0	17.4	130.7	0.0	0.0
Totals:										3,427.48	15,267.6	0.00	0.00

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

19 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	-15.27	-3.38	0.00	-270.68	0.00	270.68	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.088
5.00	-14.37	-3.30	0.00	-253.76	0.00	253.76	3,079.40	1,539.70	6,220.63	3,114.94	0.01	-0.02	0.086
10.00	-13.51	-3.21	0.00	-237.27	0.00	237.27	3,024.10	1,512.05	5,908.76	2,958.77	0.05	-0.05	0.085
15.00	-12.67	-3.13	0.00	-221.20	0.00	221.20	2,965.78	1,482.89	5,598.51	2,803.41	0.11	-0.07	0.083
20.00	-11.86	-3.05	0.00	-205.54	0.00	205.54	2,904.43	1,452.21	5,290.46	2,649.16	0.20	-0.10	0.082
25.00	-11.07	-2.98	0.00	-190.26	0.00	190.26	2,840.05	1,420.03	4,985.22	2,496.31	0.31	-0.12	0.080
30.00	-10.31	-2.90	0.00	-175.37	0.00	175.37	2,772.65	1,386.32	4,683.38	2,345.17	0.45	-0.15	0.079
35.00	-9.58	-2.83	0.00	-160.85	0.00	160.85	2,702.22	1,351.11	4,385.56	2,196.04	0.62	-0.18	0.077
40.00	-8.88	-2.75	0.00	-146.71	0.00	146.71	2,628.76	1,314.38	4,092.36	2,049.22	0.82	-0.20	0.075
45.00	-8.20	-2.70	0.00	-132.93	0.00	132.93	2,552.28	1,276.14	3,804.36	1,905.01	1.05	-0.23	0.073
47.56	-7.86	-2.66	0.00	-126.02	0.00	126.02	2,511.91	1,255.95	3,658.98	1,832.21	1.18	-0.25	0.072
50.00	-7.38	-2.62	0.00	-119.54	0.00	119.54	2,472.77	1,236.38	3,522.18	1,763.71	1.31	-0.26	0.071
52.56	-6.87	-2.58	0.00	-112.82	0.00	112.82	1,193.75	596.87	1,690.68	846.60	1.46	-0.28	0.139
55.00	-6.68	-2.53	0.00	-106.52	0.00	106.52	1,182.21	591.10	1,636.19	819.31	1.61	-0.30	0.136
60.00	-6.30	-2.46	0.00	-93.87	0.00	93.87	1,156.29	578.14	1,523.78	763.02	1.95	-0.35	0.128
65.00	-5.93	-2.39	0.00	-81.56	0.00	81.56	1,127.34	563.67	1,411.02	706.56	2.34	-0.40	0.121
70.00	-5.58	-2.34	0.00	-69.58	0.00	69.58	1,095.37	547.68	1,298.50	650.21	2.78	-0.45	0.112
72.79	-5.39	-2.31	0.00	-63.05	0.00	63.05	1,076.20	538.10	1,236.00	618.92	3.05	-0.48	0.107
75.00	-5.12	-2.28	0.00	-57.95	0.00	57.95	1,060.37	530.18	1,186.82	594.29	3.28	-0.50	0.102
76.88	-4.89	-2.25	0.00	-53.67	0.00	53.67	1,055.21	527.61	1,171.25	586.50	3.48	-0.52	0.096
80.00	-4.69	-2.20	0.00	-46.65	0.00	46.65	1,031.54	515.77	1,102.30	551.97	3.83	-0.55	0.089
85.00	-4.39	-2.14	0.00	-35.66	0.00	35.66	991.19	495.60	993.58	497.53	4.43	-0.60	0.076
90.00	-4.10	-2.08	0.00	-24.97	0.00	24.97	947.82	473.91	887.37	444.35	5.07	-0.63	0.061
95.00	-3.82	-2.02	0.00	-14.58	0.00	14.58	901.43	450.71	784.27	392.72	5.76	-0.67	0.041
100.00	-3.57	-1.98	0.00	-4.48	0.00	4.48	852.00	426.00	684.88	342.95	6.47	-0.69	0.017
102.00	-0.24	-0.05	0.00	-0.23	0.00	0.23	831.39	415.69	646.30	323.63	6.76	-0.69	0.001
105.00	-0.13	-0.02	0.00	-0.07	0.00	0.07	795.75	397.87	586.99	293.93	7.19	-0.69	0.000
108.71	0.00	-0.02	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	7.72	-0.69	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
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):	0.06
Upper Limit C_s	0.06
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.17
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.34
Total Unfactored Dead Load:	15.27 k
Seismic Base Shear (E):	1.15 k

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

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
27	106.85	131	68	0.019	22	162
26	103.50	112	56	0.016	18	139
25	101.00	98	47	0.013	15	121
24	97.50	256	117	0.033	39	318
23	92.50	273	116	0.033	38	338
22	87.50	289	114	0.033	38	358
21	82.50	305	111	0.032	37	378
20	78.44	199	68	0.019	22	246
19	75.94	225	73	0.021	24	278
18	73.90	270	85	0.024	28	335
17	71.40	188	57	0.016	19	233
16	67.50	350	98	0.028	32	433
15	62.50	366	92	0.026	30	453
14	57.50	382	86	0.025	28	473
13	53.78	192	40	0.011	13	238
12	51.28	503	97	0.028	32	623
11	48.78	489	88	0.025	29	605
10	46.28	336	57	0.016	19	416
9	42.50	676	102	0.029	33	837
8	37.50	703	90	0.026	29	871
7	32.50	730	77	0.022	25	904
6	27.50	757	64	0.018	21	937
5	22.50	784	50	0.014	17	971

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

4	17.50	811	37	0.011	12	1,004
3	12.50	838	25	0.007	8	1,038
2	7.50	865	13	0.004	4	1,071
1	2.50	892	3	0.001	1	1,104
Alcatel-Lucent RRH2X	102.00	138	67	0.019	22	171
Alcatel-Lucent RRH2x	102.00	170	83	0.024	27	211
Alcatel-Lucent B66A	102.00	201	98	0.028	32	249
RFS DB-T1-6Z-8AB-0Z	102.00	88	43	0.012	14	109
Commscope SBNHH-1D65	102.00	244	118	0.034	39	302
Commscope LNX-6514DS	102.00	78	38	0.011	12	96
Andrew LNX-6514DS-A1	102.00	194	94	0.027	31	240
CSS X7C-FRO-660-4	102.00	32	16	0.004	5	40
CSS X7C-FRO-660-0	102.00	32	16	0.004	5	40
Flat T-Arm	102.00	750	364	0.104	120	929
VZW Unused Reserve:	102.00	1,323	642	0.183	211	1,639
		15,268	3,508	1.000	1,153	18,907

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)
27	106.85	131	68	0.019	22	113
26	103.50	112	56	0.016	18	97
25	101.00	98	47	0.013	15	84
24	97.50	256	117	0.033	39	221
23	92.50	273	116	0.033	38	235
22	87.50	289	114	0.033	38	249
21	82.50	305	111	0.032	37	263
20	78.44	199	68	0.019	22	171
19	75.94	225	73	0.021	24	193
18	73.90	270	85	0.024	28	233
17	71.40	188	57	0.016	19	162
16	67.50	350	98	0.028	32	301
15	62.50	366	92	0.026	30	315
14	57.50	382	86	0.025	28	329
13	53.78	192	40	0.011	13	166
12	51.28	503	97	0.028	32	433
11	48.78	489	88	0.025	29	421
10	46.28	336	57	0.016	19	289
9	42.50	676	102	0.029	33	582
8	37.50	703	90	0.026	29	606
7	32.50	730	77	0.022	25	629
6	27.50	757	64	0.018	21	652
5	22.50	784	50	0.014	17	675
4	17.50	811	37	0.011	12	699
3	12.50	838	25	0.007	8	722
2	7.50	865	13	0.004	4	745
1	2.50	892	3	0.001	1	768
Alcatel-Lucent RRH2X	102.00	138	67	0.019	22	119
Alcatel-Lucent RRH2x	102.00	170	83	0.024	27	147
Alcatel-Lucent B66A	102.00	201	98	0.028	32	173
RFS DB-T1-6Z-8AB-0Z	102.00	88	43	0.012	14	76
Commscope SBNHH-1D65	102.00	244	118	0.034	39	210
Commscope LNX-6514DS	102.00	78	38	0.011	12	67
Andrew LNX-6514DS-A1	102.00	194	94	0.027	31	167
CSS X7C-FRO-660-4	102.00	32	16	0.004	5	28
CSS X7C-FRO-660-0	102.00	32	16	0.004	5	28
Flat T-Arm	102.00	750	364	0.104	120	646
VZW Unused Reserve:	102.00	1,323	642	0.183	211	1,140

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

15,268

3,508

1,000

1,153

13,155

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

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

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-17.80	-1.15	0.00	-94.27	0.00	94.27	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.035
5.00	-16.73	-1.15	0.00	-88.51	0.00	88.51	3,079.40	1,539.70	6,220.63	3,114.94	0.00	-0.01	0.034
10.00	-15.69	-1.15	0.00	-82.75	0.00	82.75	3,024.10	1,512.05	5,908.76	2,958.77	0.02	-0.02	0.033
15.00	-14.69	-1.13	0.00	-77.02	0.00	77.02	2,965.78	1,482.89	5,598.51	2,803.41	0.04	-0.02	0.032
20.00	-13.72	-1.12	0.00	-71.35	0.00	71.35	2,904.43	1,452.21	5,290.46	2,649.16	0.07	-0.03	0.032
25.00	-12.78	-1.10	0.00	-65.75	0.00	65.75	2,840.05	1,420.03	4,985.22	2,496.31	0.11	-0.04	0.031
30.00	-11.88	-1.08	0.00	-60.25	0.00	60.25	2,772.65	1,386.32	4,683.38	2,345.17	0.16	-0.05	0.030
35.00	-11.01	-1.05	0.00	-54.86	0.00	54.86	2,702.22	1,351.11	4,385.56	2,196.04	0.22	-0.06	0.029
40.00	-10.17	-1.02	0.00	-49.63	0.00	49.63	2,628.76	1,314.38	4,092.36	2,049.22	0.29	-0.07	0.028
45.00	-9.75	-1.00	0.00	-44.55	0.00	44.55	2,552.28	1,276.14	3,804.36	1,905.01	0.37	-0.08	0.027
47.56	-9.15	-0.97	0.00	-41.99	0.00	41.99	2,511.91	1,255.95	3,658.98	1,832.21	0.41	-0.09	0.027
50.00	-8.53	-0.94	0.00	-39.63	0.00	39.63	2,472.77	1,236.38	3,522.18	1,763.71	0.46	-0.09	0.026
52.56	-8.29	-0.92	0.00	-37.23	0.00	37.23	1,193.75	596.87	1,690.68	846.60	0.51	-0.10	0.051
55.00	-7.81	-0.90	0.00	-34.98	0.00	34.98	1,182.21	591.10	1,636.19	819.31	0.56	-0.10	0.049
60.00	-7.36	-0.87	0.00	-30.51	0.00	30.51	1,156.29	578.14	1,523.78	763.02	0.67	-0.12	0.046
65.00	-6.93	-0.84	0.00	-26.17	0.00	26.17	1,127.34	563.67	1,411.02	706.56	0.80	-0.13	0.043
70.00	-6.69	-0.82	0.00	-21.99	0.00	21.99	1,095.37	547.68	1,298.50	650.21	0.95	-0.15	0.040
72.79	-6.36	-0.79	0.00	-19.71	0.00	19.71	1,076.20	538.10	1,236.00	618.92	1.04	-0.16	0.038
75.00	-6.08	-0.77	0.00	-17.97	0.00	17.97	1,060.37	530.18	1,186.82	594.29	1.12	-0.17	0.036
76.88	-5.84	-0.74	0.00	-16.53	0.00	16.53	1,055.21	527.61	1,171.25	586.50	1.18	-0.17	0.034
80.00	-5.46	-0.71	0.00	-14.21	0.00	14.21	1,031.54	515.77	1,102.30	551.97	1.30	-0.18	0.031
85.00	-5.10	-0.67	0.00	-10.68	0.00	10.68	991.19	495.60	993.58	497.53	1.50	-0.20	0.027
90.00	-4.76	-0.63	0.00	-7.33	0.00	7.33	947.82	473.91	887.37	444.35	1.71	-0.21	0.022
95.00	-4.44	-0.59	0.00	-4.18	0.00	4.18	901.43	450.71	784.27	392.72	1.93	-0.22	0.016
100.00	-4.32	-0.58	0.00	-1.22	0.00	1.22	852.00	426.00	684.88	342.95	2.16	-0.22	0.009
102.00	-0.16	-0.02	0.00	-0.07	0.00	0.07	831.39	415.69	646.30	323.63	2.26	-0.22	0.000
105.00	0.00	0.00	0.00	0.00	0.00	0.00	795.75	397.87	586.99	293.93	2.40	-0.22	0.000
108.71	0.00	0.00	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	2.57	-0.22	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-12.39	-1.15	0.00	-93.86	0.00	93.86	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.033
5.00	-11.64	-1.15	0.00	-88.10	0.00	88.10	3,079.40	1,539.70	6,220.63	3,114.94	0.00	-0.01	0.032
10.00	-10.92	-1.14	0.00	-82.35	0.00	82.35	3,024.10	1,512.05	5,908.76	2,958.77	0.02	-0.02	0.031
15.00	-10.22	-1.13	0.00	-76.63	0.00	76.63	2,965.78	1,482.89	5,598.51	2,803.41	0.04	-0.02	0.031
20.00	-9.54	-1.12	0.00	-70.97	0.00	70.97	2,904.43	1,452.21	5,290.46	2,649.16	0.07	-0.03	0.030
25.00	-8.89	-1.10	0.00	-65.38	0.00	65.38	2,840.05	1,420.03	4,985.22	2,496.31	0.11	-0.04	0.029
30.00	-8.26	-1.07	0.00	-59.90	0.00	59.90	2,772.65	1,386.32	4,683.38	2,345.17	0.16	-0.05	0.029
35.00	-7.66	-1.04	0.00	-54.53	0.00	54.53	2,702.22	1,351.11	4,385.56	2,196.04	0.22	-0.06	0.028
40.00	-7.07	-1.01	0.00	-49.31	0.00	49.31	2,628.76	1,314.38	4,092.36	2,049.22	0.28	-0.07	0.027
45.00	-6.79	-0.99	0.00	-44.26	0.00	44.26	2,552.28	1,276.14	3,804.36	1,905.01	0.36	-0.08	0.026
47.56	-6.36	-0.96	0.00	-41.71	0.00	41.71	2,511.91	1,255.95	3,658.98	1,832.21	0.41	-0.09	0.025
50.00	-5.93	-0.93	0.00	-39.36	0.00	39.36	2,472.77	1,236.38	3,522.18	1,763.71	0.45	-0.09	0.025
52.56	-5.77	-0.92	0.00	-36.97	0.00	36.97	1,193.75	596.87	1,690.68	846.60	0.50	-0.10	0.049
55.00	-5.44	-0.89	0.00	-34.73	0.00	34.73	1,182.21	591.10	1,636.19	819.31	0.55	-0.10	0.047
60.00	-5.12	-0.86	0.00	-30.28	0.00	30.28	1,156.29	578.14	1,523.78	763.02	0.67	-0.12	0.044
65.00	-4.82	-0.83	0.00	-25.97	0.00	25.97	1,127.34	563.67	1,411.02	706.56	0.80	-0.13	0.041
70.00	-4.66	-0.81	0.00	-21.82	0.00	21.82	1,095.37	547.68	1,298.50	650.21	0.95	-0.15	0.038
72.79	-4.42	-0.78	0.00	-19.55	0.00	19.55	1,076.20	538.10	1,236.00	618.92	1.04	-0.16	0.036
75.00	-4.23	-0.76	0.00	-17.82	0.00	17.82	1,060.37	530.18	1,186.82	594.29	1.11	-0.17	0.034
76.88	-4.06	-0.74	0.00	-16.39	0.00	16.39	1,055.21	527.61	1,171.25	586.50	1.18	-0.17	0.032
80.00	-3.80	-0.70	0.00	-14.09	0.00	14.09	1,031.54	515.77	1,102.30	551.97	1.29	-0.18	0.029
85.00	-3.55	-0.66	0.00	-10.58	0.00	10.58	991.19	495.60	993.58	497.53	1.49	-0.19	0.025
90.00	-3.31	-0.63	0.00	-7.27	0.00	7.27	947.82	473.91	887.37	444.35	1.70	-0.21	0.020
95.00	-3.09	-0.59	0.00	-4.14	0.00	4.14	901.43	450.71	784.27	392.72	1.92	-0.22	0.014
100.00	-3.01	-0.57	0.00	-1.21	0.00	1.21	852.00	426.00	684.88	342.95	2.15	-0.22	0.007
102.00	-0.11	-0.02	0.00	-0.07	0.00	0.07	831.39	415.69	646.30	323.63	2.24	-0.22	0.000
105.00	0.00	0.00	0.00	0.00	0.00	0.00	795.75	397.87	586.99	293.93	2.38	-0.22	0.000
108.71	0.00	0.00	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	2.55	-0.22	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	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):	1.17
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)
27	106.85	131	1.826	1.660	1.023	0.353	40	162
26	103.50	112	1.713	1.173	0.835	0.287	28	139
25	101.00	98	1.631	0.879	0.714	0.243	21	121
24	97.50	256	1.520	0.552	0.567	0.189	42	318
23	92.50	273	1.368	0.227	0.400	0.125	30	338
22	87.50	289	1.224	0.029	0.273	0.078	20	358
21	82.50	305	1.089	-0.076	0.180	0.046	12	378
20	78.44	199	0.984	-0.114	0.124	0.030	5	246
19	75.94	225	0.922	-0.121	0.096	0.024	5	278
18	73.90	270	0.873	-0.121	0.077	0.021	5	335
17	71.40	188	0.815	-0.115	0.058	0.020	3	233
16	67.50	350	0.729	-0.095	0.036	0.021	7	433
15	62.50	366	0.625	-0.062	0.018	0.027	9	453
14	57.50	382	0.529	-0.027	0.008	0.034	11	473
13	53.78	192	0.463	-0.003	0.006	0.039	6	238
12	51.28	503	0.421	0.012	0.006	0.041	18	623
11	48.78	489	0.381	0.024	0.007	0.043	18	605
10	46.28	336	0.343	0.035	0.009	0.044	13	416
9	42.50	676	0.289	0.048	0.013	0.044	26	837
8	37.50	703	0.225	0.059	0.020	0.043	26	871
7	32.50	730	0.169	0.066	0.027	0.040	25	904
6	27.50	757	0.121	0.070	0.034	0.037	24	937
5	22.50	784	0.081	0.072	0.039	0.034	23	971
4	17.50	811	0.049	0.071	0.042	0.031	22	1,004
3	12.50	838	0.025	0.066	0.039	0.028	20	1,038
2	7.50	865	0.009	0.053	0.031	0.022	16	1,071
1	2.50	892	0.001	0.024	0.013	0.010	8	1,104
Alcatel-Lucent RRH2X	102.00	138	1.664	0.990	0.760	0.260	31	171
Alcatel-Lucent RRH2x	102.00	170	1.664	0.990	0.760	0.260	38	211
Alcatel-Lucent B66A	102.00	201	1.664	0.990	0.760	0.260	45	249
RFS DB-T1-6Z-8AB-0Z	102.00	88	1.664	0.990	0.760	0.260	20	109
Commscope SBNHH-	102.00	244	1.664	0.990	0.760	0.260	55	302
Commscope LNX-	102.00	78	1.664	0.990	0.760	0.260	18	96
Andrew LNX-6514DS-A1	102.00	194	1.664	0.990	0.760	0.260	44	240

Site Number: 411187

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

CSS X7C-FRO-660-4	102.00	32	1.664	0.990	0.760	0.260	7	40
CSS X7C-FRO-660-0	102.00	32	1.664	0.990	0.760	0.260	7	40
Flat T-Arm	102.00	750	1.664	0.990	0.760	0.260	169	929
VZW Unused Reserve:	102.00	1,323	1.664	0.990	0.760	0.260	299	1,639
		15,268	36.728	15.280	13.061	4.818	1,216	18,907

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)
27	106.85	131	1.826	1.660	1.023	0.353	40	113
26	103.50	112	1.713	1.173	0.835	0.287	28	97
25	101.00	98	1.631	0.879	0.714	0.243	21	84
24	97.50	256	1.520	0.552	0.567	0.189	42	221
23	92.50	273	1.368	0.227	0.400	0.125	30	235
22	87.50	289	1.224	0.029	0.273	0.078	20	249
21	82.50	305	1.089	-0.076	0.180	0.046	12	263
20	78.44	199	0.984	-0.114	0.124	0.030	5	171
19	75.94	225	0.922	-0.121	0.096	0.024	5	193
18	73.90	270	0.873	-0.121	0.077	0.021	5	233
17	71.40	188	0.815	-0.115	0.058	0.020	3	162
16	67.50	350	0.729	-0.095	0.036	0.021	7	301
15	62.50	366	0.625	-0.062	0.018	0.027	9	315
14	57.50	382	0.529	-0.027	0.008	0.034	11	329
13	53.78	192	0.463	-0.003	0.006	0.039	6	166
12	51.28	503	0.421	0.012	0.006	0.041	18	433
11	48.78	489	0.381	0.024	0.007	0.043	18	421
10	46.28	336	0.343	0.035	0.009	0.044	13	289
9	42.50	676	0.289	0.048	0.013	0.044	26	582
8	37.50	703	0.225	0.059	0.020	0.043	26	606
7	32.50	730	0.169	0.066	0.027	0.040	25	629
6	27.50	757	0.121	0.070	0.034	0.037	24	652
5	22.50	784	0.081	0.072	0.039	0.034	23	675
4	17.50	811	0.049	0.071	0.042	0.031	22	699
3	12.50	838	0.025	0.066	0.039	0.028	20	722
2	7.50	865	0.009	0.053	0.031	0.022	16	745
1	2.50	892	0.001	0.024	0.013	0.010	8	768
Alcatel-Lucent RRH2X	102.00	138	1.664	0.990	0.760	0.260	31	119
Alcatel-Lucent RRH2x	102.00	170	1.664	0.990	0.760	0.260	38	147
Alcatel-Lucent B66A	102.00	201	1.664	0.990	0.760	0.260	45	173
RFS DB-T1-6Z-8AB-0Z	102.00	88	1.664	0.990	0.760	0.260	20	76
Commscope SBNHH-	102.00	244	1.664	0.990	0.760	0.260	55	210
Commscope LNX-	102.00	78	1.664	0.990	0.760	0.260	18	67
Andrew LNX-6514DS-A1	102.00	194	1.664	0.990	0.760	0.260	44	167
CSS X7C-FRO-660-4	102.00	32	1.664	0.990	0.760	0.260	7	28
CSS X7C-FRO-660-0	102.00	32	1.664	0.990	0.760	0.260	7	28
Flat T-Arm	102.00	750	1.664	0.990	0.760	0.260	169	646
VZW Unused Reserve:	102.00	1,323	1.664	0.990	0.760	0.260	299	1,140
		15,268	36.728	15.280	13.061	4.818	1,216	13,155

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-17.80	-1.21	0.00	-104.69	0.00	104.69	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.038
5.00	-16.73	-1.20	0.00	-98.64	0.00	98.64	3,079.40	1,539.70	6,220.63	3,114.94	0.00	-0.01	0.037
10.00	-15.69	-1.18	0.00	-92.67	0.00	92.67	3,024.10	1,512.05	5,908.76	2,958.77	0.02	-0.02	0.037
15.00	-14.69	-1.16	0.00	-86.78	0.00	86.78	2,965.78	1,482.89	5,598.51	2,803.41	0.04	-0.03	0.036
20.00	-13.72	-1.14	0.00	-80.99	0.00	80.99	2,904.43	1,452.21	5,290.46	2,649.16	0.08	-0.04	0.035
25.00	-12.78	-1.11	0.00	-75.32	0.00	75.32	2,840.05	1,420.03	4,985.22	2,496.31	0.12	-0.05	0.035
30.00	-11.88	-1.09	0.00	-69.75	0.00	69.75	2,772.65	1,386.32	4,683.38	2,345.17	0.18	-0.06	0.034
35.00	-11.01	-1.06	0.00	-64.30	0.00	64.30	2,702.22	1,351.11	4,385.56	2,196.04	0.24	-0.07	0.033
40.00	-10.17	-1.04	0.00	-58.98	0.00	58.98	2,628.76	1,314.38	4,092.36	2,049.22	0.32	-0.08	0.033
45.00	-9.75	-1.03	0.00	-53.78	0.00	53.78	2,552.28	1,276.14	3,804.36	1,905.01	0.41	-0.09	0.032
47.56	-9.15	-1.01	0.00	-51.15	0.00	51.15	2,511.91	1,255.95	3,658.98	1,832.21	0.46	-0.10	0.032
50.00	-8.52	-0.99	0.00	-48.69	0.00	48.69	2,472.77	1,236.38	3,522.18	1,763.71	0.52	-0.10	0.031
52.56	-8.29	-0.99	0.00	-46.15	0.00	46.15	1,193.75	596.87	1,690.68	846.60	0.57	-0.11	0.061
55.00	-7.81	-0.98	0.00	-43.74	0.00	43.74	1,182.21	591.10	1,636.19	819.31	0.63	-0.12	0.060
60.00	-7.36	-0.97	0.00	-38.87	0.00	38.87	1,156.29	578.14	1,523.78	763.02	0.77	-0.14	0.057
65.00	-6.93	-0.96	0.00	-34.02	0.00	34.02	1,127.34	563.67	1,411.02	706.56	0.92	-0.16	0.054
70.00	-6.69	-0.96	0.00	-29.21	0.00	29.21	1,095.37	547.68	1,298.50	650.21	1.10	-0.18	0.051
72.79	-6.36	-0.96	0.00	-26.52	0.00	26.52	1,076.20	538.10	1,236.00	618.92	1.21	-0.19	0.049
75.00	-6.08	-0.95	0.00	-24.41	0.00	24.41	1,060.37	530.18	1,186.82	594.29	1.30	-0.20	0.047
76.88	-5.83	-0.95	0.00	-22.63	0.00	22.63	1,055.21	527.61	1,171.25	586.50	1.39	-0.21	0.044
80.00	-5.46	-0.94	0.00	-19.67	0.00	19.67	1,031.54	515.77	1,102.30	551.97	1.53	-0.22	0.041
85.00	-5.10	-0.92	0.00	-14.99	0.00	14.99	991.19	495.60	993.58	497.53	1.77	-0.24	0.035
90.00	-4.76	-0.89	0.00	-10.41	0.00	10.41	947.82	473.91	887.37	444.35	2.04	-0.26	0.028
95.00	-4.44	-0.84	0.00	-5.98	0.00	5.98	901.43	450.71	784.27	392.72	2.32	-0.27	0.020
100.00	-4.32	-0.82	0.00	-1.77	0.00	1.77	852.00	426.00	684.88	342.95	2.61	-0.28	0.010
102.00	-0.16	-0.04	0.00	-0.12	0.00	0.12	831.39	415.69	646.30	323.63	2.73	-0.28	0.001
105.00	0.00	0.00	0.00	0.00	0.00	0.00	795.75	397.87	586.99	293.93	2.90	-0.28	0.000
108.71	0.00	0.00	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	3.12	-0.28	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-12.39	-1.21	0.00	-104.20	0.00	104.20	3,131.67	1,565.84	6,533.50	3,271.61	0.00	0.00	0.036
5.00	-11.64	-1.19	0.00	-98.16	0.00	98.16	3,079.40	1,539.70	6,220.63	3,114.94	0.00	-0.01	0.035
10.00	-10.92	-1.18	0.00	-92.19	0.00	92.19	3,024.10	1,512.05	5,908.76	2,958.77	0.02	-0.02	0.035
15.00	-10.22	-1.15	0.00	-86.31	0.00	86.31	2,965.78	1,482.89	5,598.51	2,803.41	0.04	-0.03	0.034
20.00	-9.54	-1.13	0.00	-80.54	0.00	80.54	2,904.43	1,452.21	5,290.46	2,649.16	0.08	-0.04	0.034
25.00	-8.89	-1.11	0.00	-74.87	0.00	74.87	2,840.05	1,420.03	4,985.22	2,496.31	0.12	-0.05	0.033
30.00	-8.26	-1.09	0.00	-69.33	0.00	69.33	2,772.65	1,386.32	4,683.38	2,345.17	0.18	-0.06	0.033
35.00	-7.66	-1.06	0.00	-63.90	0.00	63.90	2,702.22	1,351.11	4,385.56	2,196.04	0.24	-0.07	0.032
40.00	-7.07	-1.03	0.00	-58.60	0.00	58.60	2,628.76	1,314.38	4,092.36	2,049.22	0.32	-0.08	0.031
45.00	-6.78	-1.02	0.00	-53.43	0.00	53.43	2,552.28	1,276.14	3,804.36	1,905.01	0.41	-0.09	0.031
47.56	-6.36	-1.00	0.00	-50.81	0.00	50.81	2,511.91	1,255.95	3,658.98	1,832.21	0.46	-0.10	0.030
50.00	-5.93	-0.99	0.00	-48.36	0.00	48.36	2,472.77	1,236.38	3,522.18	1,763.71	0.51	-0.10	0.030
52.56	-5.76	-0.98	0.00	-45.83	0.00	45.83	1,193.75	596.87	1,690.68	846.60	0.57	-0.11	0.059
55.00	-5.44	-0.97	0.00	-43.44	0.00	43.44	1,182.21	591.10	1,636.19	819.31	0.63	-0.12	0.058
60.00	-5.12	-0.96	0.00	-38.59	0.00	38.59	1,156.29	578.14	1,523.78	763.02	0.76	-0.14	0.055
65.00	-4.82	-0.96	0.00	-33.78	0.00	33.78	1,127.34	563.67	1,411.02	706.56	0.92	-0.16	0.052
70.00	-4.66	-0.95	0.00	-28.99	0.00	28.99	1,095.37	547.68	1,298.50	650.21	1.10	-0.18	0.049
72.79	-4.42	-0.95	0.00	-26.32	0.00	26.32	1,076.20	538.10	1,236.00	618.92	1.21	-0.19	0.047
75.00	-4.23	-0.95	0.00	-24.23	0.00	24.23	1,060.37	530.18	1,186.82	594.29	1.30	-0.20	0.045
76.88	-4.06	-0.94	0.00	-22.45	0.00	22.45	1,055.21	527.61	1,171.25	586.50	1.38	-0.21	0.042
80.00	-3.79	-0.93	0.00	-19.52	0.00	19.52	1,031.54	515.77	1,102.30	551.97	1.52	-0.22	0.039
85.00	-3.55	-0.91	0.00	-14.87	0.00	14.87	991.19	495.60	993.58	497.53	1.76	-0.24	0.033
90.00	-3.31	-0.88	0.00	-10.33	0.00	10.33	947.82	473.91	887.37	444.35	2.03	-0.26	0.027
95.00	-3.09	-0.84	0.00	-5.94	0.00	5.94	901.43	450.71	784.27	392.72	2.30	-0.27	0.019
100.00	-3.01	-0.82	0.00	-1.75	0.00	1.75	852.00	426.00	684.88	342.95	2.59	-0.28	0.009
102.00	-0.11	-0.04	0.00	-0.12	0.00	0.12	831.39	415.69	646.30	323.63	2.71	-0.28	0.001
105.00	0.00	0.00	0.00	0.00	0.00	0.00	795.75	397.87	586.99	293.93	2.88	-0.28	0.000
108.71	0.00	0.00	0.00	0.00	0.00	0.00	743.33	371.67	511.84	256.30	3.10	-0.28	0.000

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	14.15	0.00	18.31	0.00	0.00	1134.57	52.56	0.57
0.9D + 1.6W	14.15	0.00	13.73	0.00	0.00	1130.24	52.56	0.56
1.2D + 1.0Di + 1.0Wi	4.36	0.00	35.99	0.00	0.00	347.21	52.56	0.19
(1.2 + 0.2Sds) * DL + E ELFM	1.15	0.00	17.80	0.00	0.00	94.27	52.56	0.05
(1.2 + 0.2Sds) * DL + E EMAM	1.21	0.00	17.80	0.00	0.00	104.69	52.56	0.06
(0.9 - 0.2Sds) * DL + E ELFM	1.15	0.00	12.39	0.00	0.00	93.86	52.56	0.05
(0.9 - 0.2Sds) * DL + E EMAM	1.21	0.00	12.39	0.00	0.00	104.20	52.56	0.06
1.0D + 1.0W	3.38	0.00	15.27	0.00	0.00	270.68	52.56	0.14

Site Number: 411187

Code: ANSI/TIA-222-G

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Site Name: Hartford North 2 CT, CT

Engineering Number: OAA694289_C3_01

1/25/2017 11:46:38 AM

Customer: Verizon Wireless

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
2,644.84	18.20	32.25	1,134.57	35.99	14.15	31.78

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
50.0	2.500	65.000	Round	0	0.00	10.117	239.76	711.33	0.34

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
59.00	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	59.94	260.00	0.24	55.44	260.00	0.22

ATTACHMENT 4

Town of Windsor

CL&P
 Town of Bloomfield
 State of Connecticut

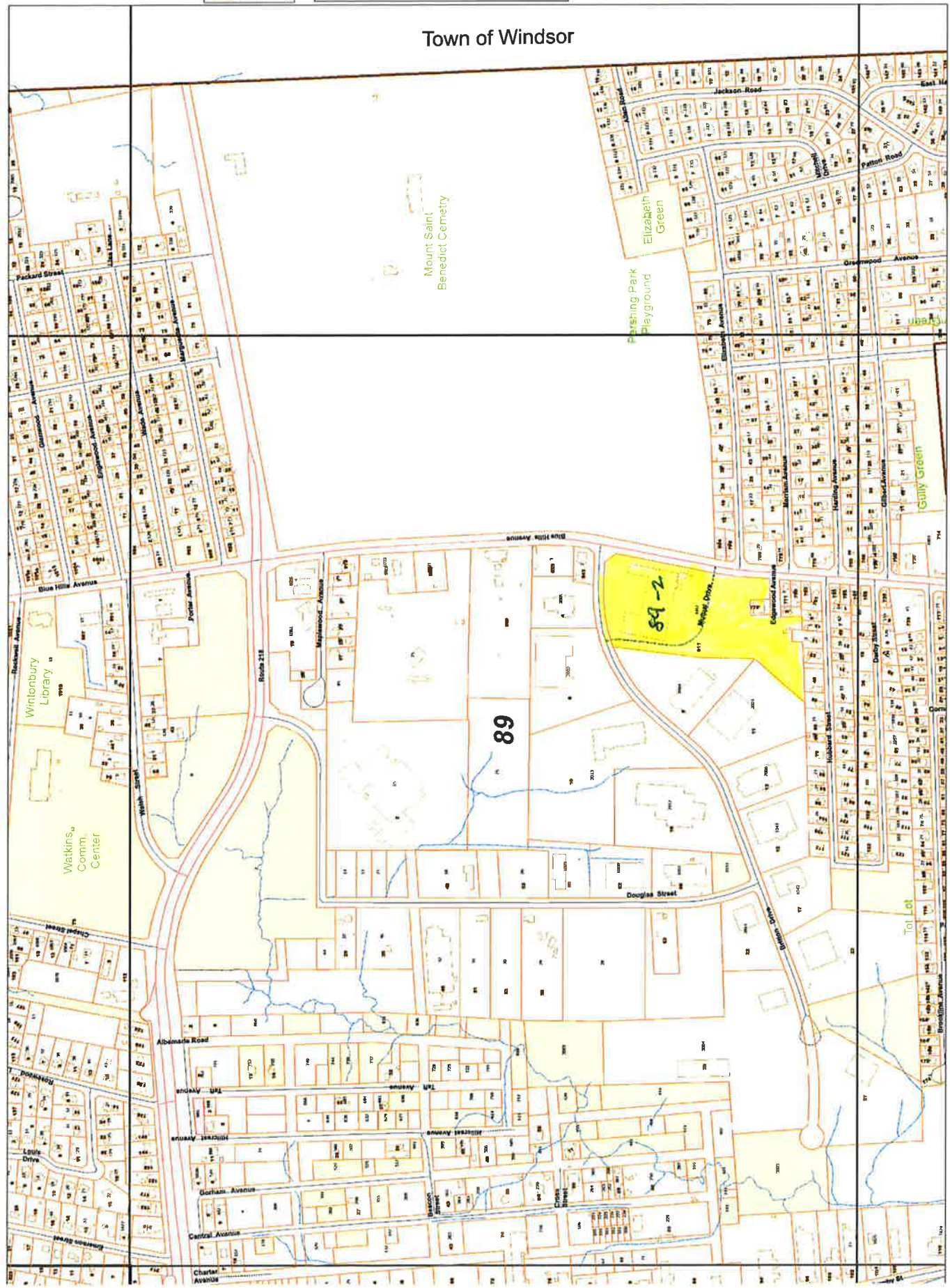


House Nos. in **Brown**
 Lot Nos. in **Black**

State Route
 Town Road (Paved)
 Town Road (Unpaved)
 Private Road

This map is for planning purposes only.
 The Town of Bloomfield makes no claims,
 representations or warranties, expressed or implied,
 concerning its validity, reliability or accuracy.
 Date Source: MDC CROCS
 Imagery: CIRCOC 2009

Scale 1:2400
 (1 Inch = 200 Feet)



The town of
Bloomfield
Assessor



Recent Sales in Neighborhood	Previous Parcel	Next Parcel	Field Definitions	Return to Main Search	Bloomfield Home
--	---------------------------------	-----------------------------	-----------------------------------	---------------------------------------	---------------------------------

Owner and Parcel Information

Owner Name	SAMO REALTY LLC	Today's Date	August 2, 2016
Mailing Address	811 BLUE HILLS AVE BLOOMFIELD, CT 06002	Parcel ID	545 (Account #: R00574)
Location Address	811 BLUE HILLS AVE	Fire District	B
Map / Lot	89-2 / 3002	Census Tract	4712
Use Class / Description	300 Industrial	Acreage	6.98
Assessing Neighborhood	0001A	Parcel Map	Show Parcel Map Owner List By Radius
		Utilities	

Current Appraised Value Information

Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
\$ 917,800	\$ 9,400	\$ 0	\$ 422,600		\$ 1,349,800	\$ 1,349,800	\$ 944,860

Assessment History

Year	Building	OB/Misc	Land	Total Assessment
Current	\$ 642,460	0	\$ 295,820	\$ 944,860
2013	\$ 663,390	0	\$ 365,120	\$ 1,034,390
2009	\$ 663,390	0	\$ 396,690	\$ 1,065,960

Land Information

Use	Class	Zoning	Area	Value
Industrial	I	GWB	4.17 AC	\$ 208,500
Industrial	I	GWB	2.81 AC	\$ 14,100
Com Cell Site	C	GWB	1 BL	\$ 200,000

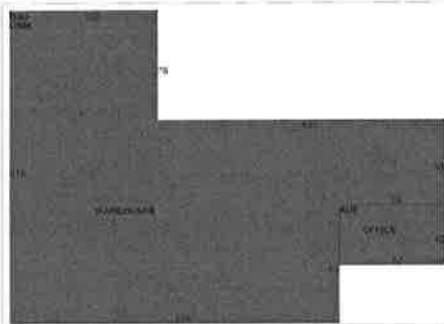
Commercial Building Information

Style	Year Built	Eff Year Built	Gross Area	Stories	Grade	Exterior Wall	Interior Wall	Wall Height	# Units
Warehouse - Storage	1985	1989	89,296	1	C	Concrete	Average	27	1
Roof Cover	Roof Structure	Floor Type	Heat Type	Heat Fuel	AC Type	Sprinkler	Construction	Plumbing	Comm Walls
Rolled Compos	Flat	Concrete	Gas	Hot Air-No Duc	None 27%	0%	Masonry	Average	0%

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
AOF	Office Area	3,024	3,024	
BAS	First Floor	43,136	43,136	
UBM	Basement	0	43,136	
Totals		46,160	89,296	56,753

Building Sketch [Enlarge](#)



Building Photo [Enlarge](#)



Out Buildings / Extra Features

Description	Sub Description	Area	Year Built	Value
Ovhd 8'		10 UNITS	1989	\$ 5,500
Ovhd 10'		2 UNITS	1989	\$ 1,700
Ovhd 12'		2 UNITS	1989	\$ 2,200

Sale Information

Sale Date	Sale Price	Deed Book / Page	Sale Qualification	Reason	Vacant or Improved	Owner
03/24/2005	\$ 1,800,000	1226/ 94	Qualified	00	Improved	SAMO REALTY LLC
12/19/1995		277/ 219	Unqualified	Old sale- Validity unknown	Improved	BERNIE'S ASSOCIATES C/O MILTON P ROSENBERG

Permit Information

Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
B-13-4521	09/25/2013	CM	Commercial	\$ 1,000		0	10/01/2013	SIGN
B-13-4291	07/23/2013	CM	Commercial	\$ 153,749		0	10/01/2013	SOLAR PANELS
B-13-4234	07/11/2013	CM	Commercial	\$ 10,000		0	10/01/2013	REPL 3 ANTENNAS
B-12-3495	10/30/2012	CM	Commercial	\$ 2,000		0	10/01/2013	SPRAY BOOTH

B-12-3170	07/24/2012	CM	Commercial	\$ 100,000	0	10/01/2012	WIRELESS ANTENNA FORMERLY #23036
B-12-3081	06/22/2012	CM	Commercial	\$ 15,000	0	10/01/2012	REPLACE 6 ANTENNAS
E-12-2706	03/09/2012	CM	Commercial	\$ 1,500	0	10/01/2012	TENANT FITUP
PL-12-2677	02/28/2012	CM	Commercial	\$ 1,500	0	10/01/2012	TENANT FITUP
B-12-2676	02/28/2012	CM	Commercial	\$ 4,000	0	10/01/2012	TENANT FITUP
B23971	02/24/2005			\$ 40,000	100		

[Recent Sales in Neighborhood](#)
 [Previous Parcel](#)
 [Next Parcel](#)
 [Field Definitions](#)
 [Return to Main Search Page](#)
 [Bloomfield Home](#)

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