

February 3, 2017

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

Re: **Notice of Exempt Modification – Facility Modification
36 Ritch Avenue, Greenwich, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 57-foot level on the existing 77-foot “tree” tower at 36 Ritch Avenue in Greenwich (the “Property”). The tower is owned by American Tower Corporation (“ATC”). Cellco’s shared use of this tower was approved by the Council in 2011 (Docket No. 414). Cellco now intends to modify its facility by replacing six (6) of its existing antennas with two (2) model SBNHH-1D45A, 700/1900 MHz antenna; two (2) model SBNHH-1D45A, 2100 MHz antennas; one (1) model SBNHH-1D65A, 700/1900 MHz antenna; and one (1) model SBNHH-1D65A, 2100 MHz antenna, all at the same level on the tower. Cellco also intends to replace three (3) remote radio heads (“RRHs”) with three (3) newer model RRHs and install six (6) additional RRHs. Cellco also intends to install one (1) HYBRIFLEX™ antenna cable inside the monopole tower. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs, cable diplexers 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 Peter Tesei, First Selectman for the Town of Greenwich, Katie Deluca, Greenwich Planning Director, 36 Ritch Avenue LLC, the owner of the Property and ATC, the tower owner.

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

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-arms at the 57-foot level of the 77-foot tree 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. Far Field Approximation tables for RF emissions at each of Cellco's operating frequencies, as modified, are included behind Attachment 2. These tables demonstrate that Cellco's modified facility will comply with the RF emissions standards established by the FCC.

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 Report¹ included in Attachment 3*).

A copy of the Greenwich 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-057-160729, but not yet completed and the new modifications described above.

Robinson+Cole

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Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Peter Tesei, Greenwich First Selectman
Katie Deluca, Greenwich Planning Director
36 Ritch Avenue LLC
ATC
Tim Parks

ATTACHMENT 1

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.

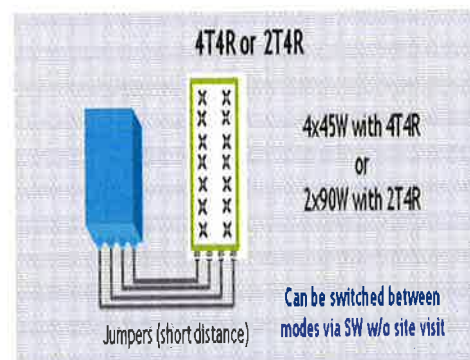
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the 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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ATTACHMENT 2

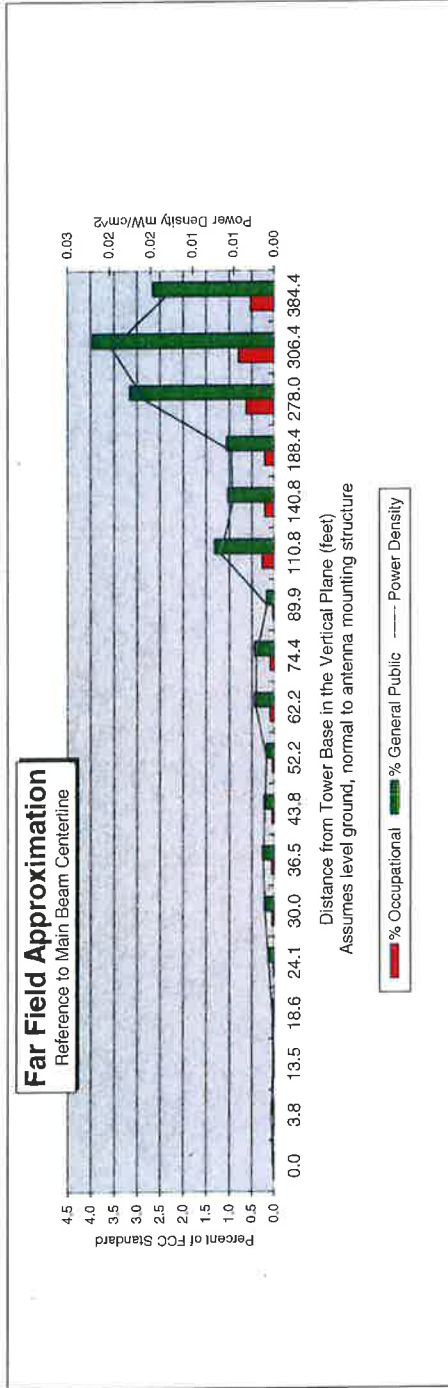
Far Field Approximation
with downtilt variation

Estimated Radiated Emission
Single Emitter Far Field Model
Dipole / Wire/ Yagi Antenna Types



Location:	BYRAM PARK, CT
Site #:	5-0008
Date:	07/18/16
Name:	Ryan Ulanday
File Name:	BYRAM PARK, CT - FF Power

Operating Freq. (MHz)	746.0
Antenna Height (ft):	57.0
Antenna Gain (dBi):	13.3
Antenna Size (in.):	55.0
Downtilt (degrees):	6.0
Feedline Loss (dB):	0.0
Power @ J4 (W):	422.0



This approximation is only valid in the far field, which begins at: **37.6 Feet**

Enter Main Beam
Distance in feet below:

Calc Angle	90.0	86.0	76.0	71.0	66.0	61.0	56.0	51.0	46.0	41.0	36.0	31.0	26.0	21.0	16.0	11.0	10.0	8.0
Solve for r, dx to antenna	54.0	54.1	55.7	57.1	59.1	61.8	65.2	69.5	75.1	82.3	91.9	104.9	123.2	150.8	196.0	263.1	311.1	388.2
Distance from Antenna Structure Base in Horizontal plane	0.0	3.8	13.5	18.6	24.1	30.0	36.5	43.8	52.2	62.2	74.4	89.9	110.8	140.8	188.4	278.0	306.4	384.4
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Power Density (mW/cm²)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	#NUM!
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.3	0.2	0.2	0.6	0.8	#NUM!
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.4	0.4	0.2	1.3	1.0	1.1	3.2	4.0	2.7

Antenna Type: SBHH-1D65A
Max%: 3.95%

Instructions:

- 1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to be saved as.
- 2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
- 3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power Density (mW/cm²).
- 4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
- 5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
- 6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
- 7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

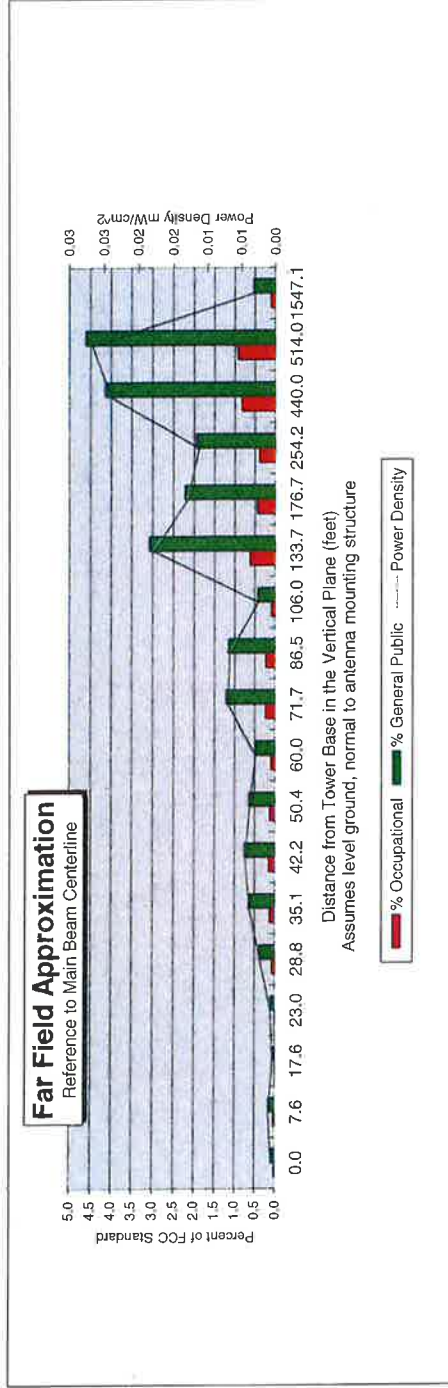
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types



Location:	BYRAM PARK, CT
Site #:	5-0008
Date:	07/18/16
Name:	Ryan Ulanday
File Name:	BYRAM PARK, CT - FF Power
Operating Freq. (MHz)	869.0
Antenna Height (ft):	57.0
Antenna Gain (dBi):	16.7
Antenna Size (in.):	70.9
Downtilt (degrees):	2.0
Feedline Loss (dB):	0.0
Power @ J4 (w):	443.0



This approximation is only valid in the far field, which begins at: 62.4 Feet

Enter Main Beam
Distance in feet below:

Distance from Antenna Structure Base in Horizontal plane	0.0	7.6	17.6	23.0	28.8	35.1	42.2	50.4	60.0	71.7	86.5	106.0	133.7	176.7	254.2	440.0	514.0	1547.1	#NUM!
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	0	0
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0	0
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Power Density (mW/cm²)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.01	0.01	0.02	0.03	0.00	#NUM!
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.6	0.4	0.4	0.8	0.9	0.1	#NUM!
Percent of General Population Standard	0.1	0.2	0.1	0.1	0.4	0.6	0.8	0.6	0.5	1.2	1.2	0.4	3.1	2.2	1.9	4.1	4.6	0.5	#NUM!

Antenna Type LPA-80063/6CF
4.61%

Instructions:

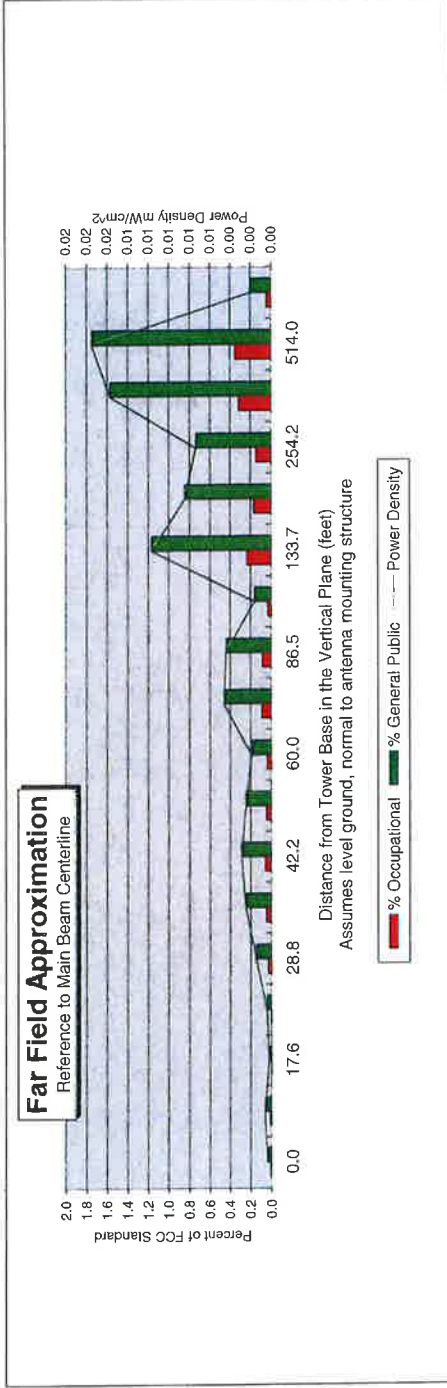
- 1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to be saved as.
- 2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
- 3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power Density.
- 4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
- 5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
- 6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
- 7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

**Estimated Radiated Emission
Single Emmitter Far Field Model
Dipole / Wire/ Yagi Antenna Types**



Location:	BYRAM PARK, CT
Site #:	5-0008
Date:	07/18/16
Name:	Ryan Ulanday
File Name:	BYRAM PARK, CT - FF Power
Operating Freq. (MHz)	1971.0
Antenna Height (ft):	57.0
Antenna Gain (dBi):	14.8
Antenna Size (in.):	55.0
Downtilt (degrees):	2.0
Feedline Loss (dB):	0.0
Power @ J4 (w):	1637.0



This approximation is only valid in the far field, which begins at: **37.6 Feet**

Enter Main Beam
Distance in feet below:

Distance from Antenna Structure Base in Horizontal plane	0.0	7.6	17.6	23.0	28.8	35.1	42.2	50.4	60.0	71.7	86.5	106.0	133.7	176.7	254.2	440.0	514.0	1547.1	#NUM!
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	0	0
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0	0
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Power Density (mW/cm ²)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.00	#NUM!
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.3	0.3	0.0	#NUM!
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.5	0.4	0.2	1.2	0.8	0.7	1.6	1.7	0.2	#NUM!

Antenna Type SBNHH-1D65A
1.75%

Instructions:

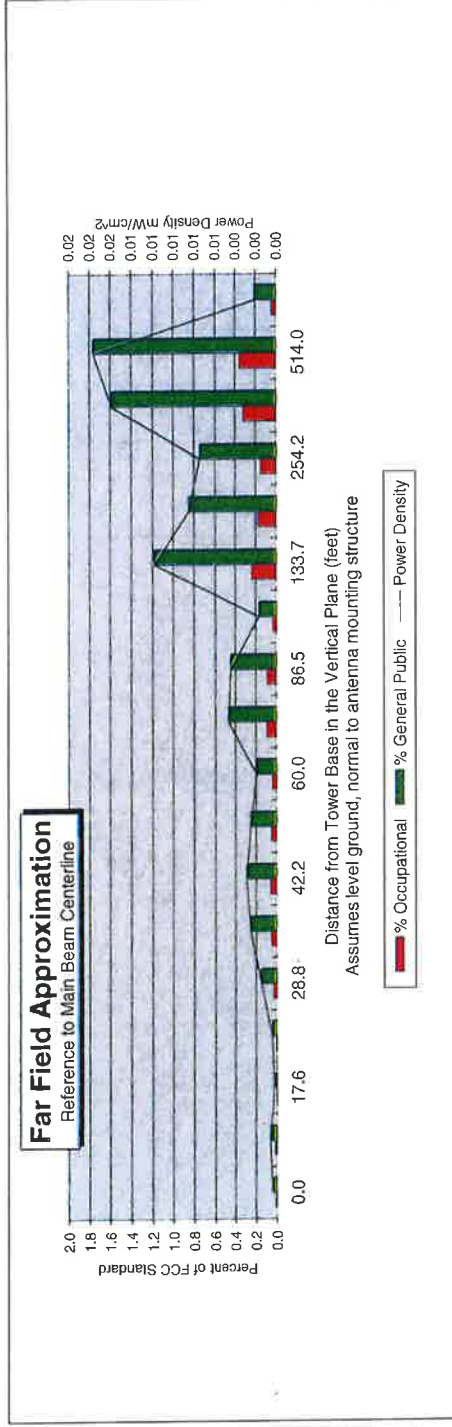
- 1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to be saved as.
- 2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
- 3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBi to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power Density (mW/cm²).
- 4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
- 5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
- 6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
- 7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

Estimated Radiated Emission
Single Emitter Far Field Model
Dipole / Wire/ Yagi Antenna Types



Location:	BYRAM PARK, CT
Site #:	5-0008
Date:	07/18/16
Name:	Ryan Ulanday
File Name:	BYRAM PARK, CT - FF Power
Operating Freq. (MHz)	2110.0
Antenna Height (ft):	57.0
Antenna Gain (dBi):	14.9
Antenna Size (in.):	55.0
Downtilt (degrees):	2.0
Feedline Loss (dB):	0.0
Power @ J4 (W):	1653.0



This approximation is only valid in the far field, which begins at: 37.6 Feet

Enter Main Beam
Distance in feet below:

Distance from Antenna Structure Base in Horizontal plane	0.0	7.6	17.6	23.0	28.8	35.1	42.2	50.4	60.0	71.7	86.5	106.0	133.7	176.7	254.2	440.0	514.0	1547.1
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	0
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Power Density (mW/cm²)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.00
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.3	0.4	0.0
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.5	0.4	0.2	1.2	0.9	0.7	1.6	1.8	0.2

Antenna Type SBNHH-1D65A
1.76%

Instructions:

- 1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to be saved as.
- 2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
- 3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power Density (mW/cm²).
- 4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
- 5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
- 6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
- 7) An odd distance may be entered in the rightmost column of the lower table.

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 76.7 ft Monopine
ATC Site Name : Byram Park CT, CT
ATC Site Number : 414240
Engineering Number : OAA693059_C3_01
Proposed Carrier : Verizon
Carrier Site Name : Byram Park
Carrier Site Number : N/A
Site Location : 48 Ritch Avenue West
Greenwich, CT 06830-9992
41.005064,-73.648311
County : Fairfield
Date : January 17, 2017
Max Usage : 40%
Result : Pass

Prepared By:
Annika A. Venning, E.I.
Structural Engineer I

Reviewed By:



Date & Time: Jan 17 2017 5:23 PM

cosign

COA: PEC.0001553



Table of Contents

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 76.7 ft monopine to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	EI Project #16733 Rev. 3, dated December 9, 2011
Foundation Drawing	Centek Engineering Job #09129 Rev. 0, dated February 14, 2012
Geotechnical Report	DET Job #2010.14, dated October 4, 2010

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:	93 mph (3-Second Gust, Vasd) / 120 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.26, S_1 = 0.07$
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					
76.6	77.0	3	Ericsson RRUS 32 w/ Solar Shield (52.9 lbs)	T-Arms	(2) 1 5/8" Fiber	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Commscope LNX-6512DS-A1M (28.7 lbs)			
		3	Ericsson AIR-32 B2A/B66Aa			
		3	RFS APX16DWV-16DWVS-E-A20			
67.0	67.0	6	Powerwave TT19-08BP111-001	Sector Frames	(12) 1 5/8" Coax (4) 0.63" Cable (2) 5/8" Hybriflex (1) 3" Conduit	AT&T Mobility
		2	Raycap DC6-48-60-18-8F(32.8 lbs)			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS-32 (77 lbs)			
		6	Ericsson RRUS-11			
		3	Powerwave P65-16-XLH-RR			
		3	Quintel QS66512-2			
		3	CCI OPA-65R-LCUU-H6			
57.0	56.0	3	Alcatel-Lucent RRH 2X60-1900	T-Arms	(16) 1 5/8" Coax (1) 1 5/8" Hybriflex (1) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		2	Commscope RC2DC-4750-PF-48			
		3	Antel BXA-171063-12CF			
		2	Commscope SBNHH-1D65A			
		4	Commscope SBNHH-1D45A			
		6	Antel LPA-80063-6CF-EDIN-X			
		1	VZW Unused Reserve: 14,138 sq in			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
57.0	56.0	3	Alcatel-Lucent RRH2X60-AWS	-	-	Verizon

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
57.0	56.0	3	Alcatel-Lucent B66 RRH4x45	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	39%	Pass
Shaft	37%	Pass
Base Plate	40%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,555.2	2,324.8	51%
Shear (Kips)	74.4	44.7	60%

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) (°)
57.0	Alcatel-Lucent B66 RRH4x45	Verizon	0.158	0.287

*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:

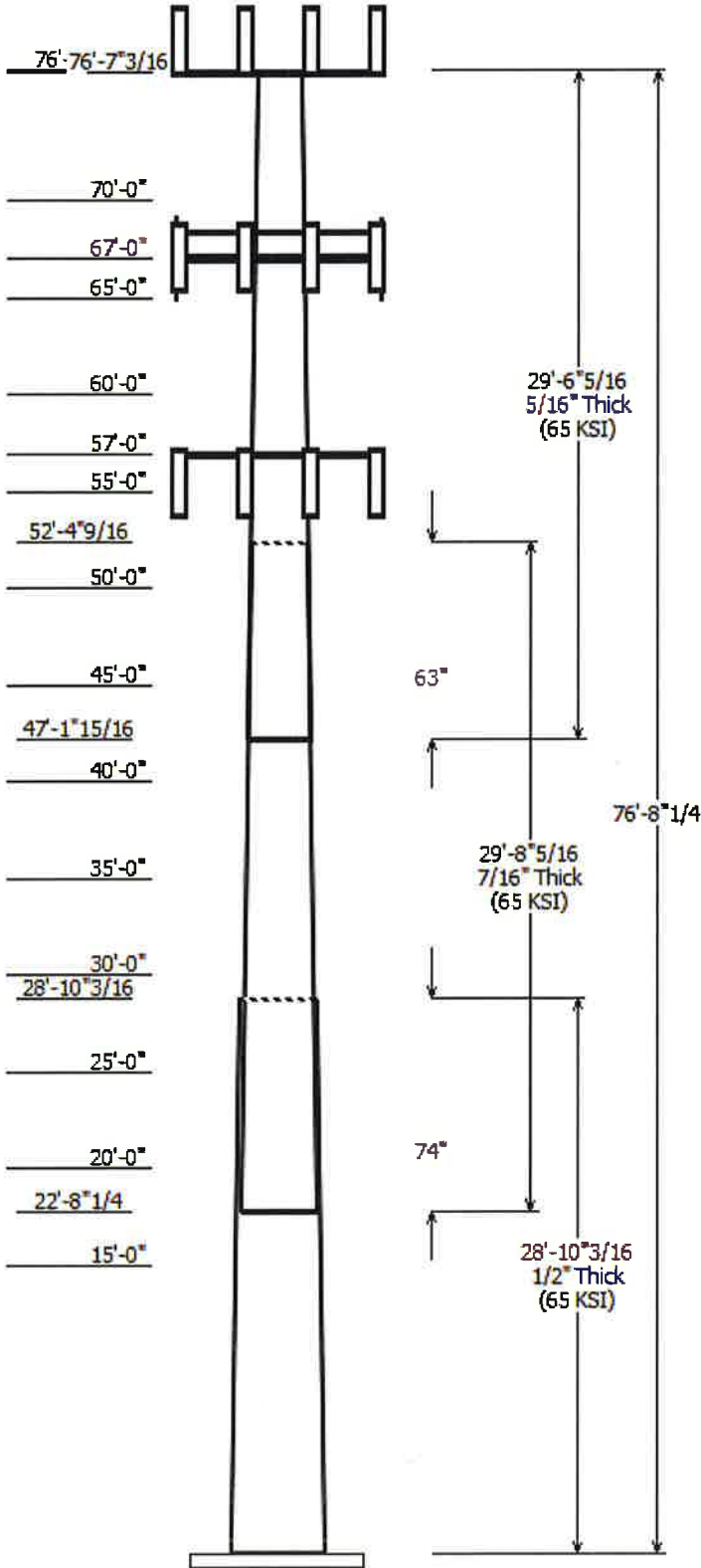
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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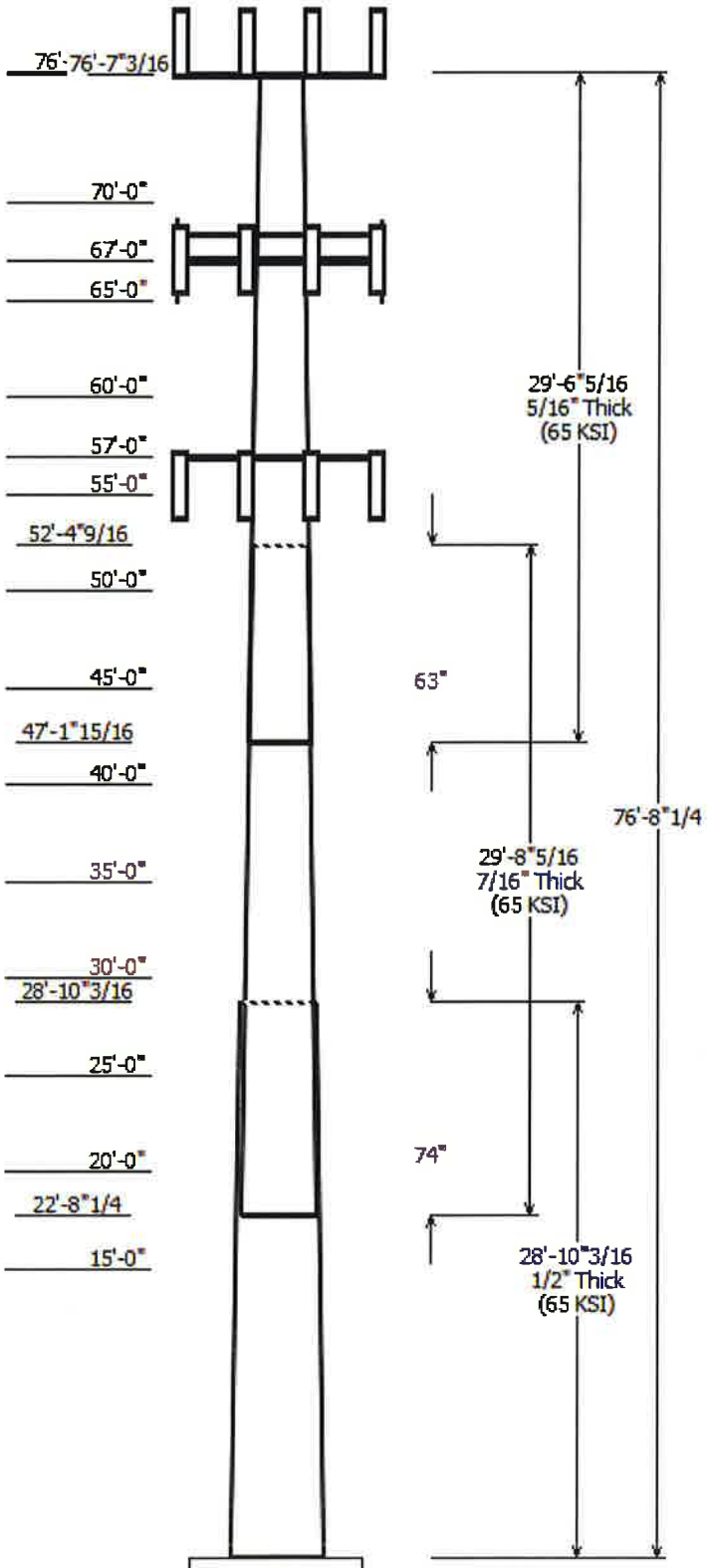


Job Information			
Pole :	414240	Code:	ANSI/TIA-222-G
Description :	Client : Verizon Wireless	Struct Class :	II
	Location : Byram Park CT, CT	Exposure :	C
	Shape : 18 Sides	Topo :	1
	Height : 76.69 (ft)		
Base Elev (ft):	0.00		
Taper:	0.33579@in/ft)		

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Steel Taper (in/ft)	Steel Grade (ksi)
		Accross Top	Flats Bottom					
1	28.852	42.31	52.00	0.500		0.000	0.335800	65
2	29.693	35.28	45.25	0.438	Slip Joint	73.969	0.335800	65
3	29.529	27.75	37.66	0.313	Slip Joint	62.656	0.335800	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
76.690	77.090	1	Pine Branches	
76.600	76.600	3	Flat T-Arms	
76.600	77.000	3	RFS APX16DWV-16DWVS-E-A20	
76.600	77.000	3	Ericsson AIR-32 B2A/B66Aa	
76.600	77.000	3	Commscope LNX-6512DS-A1M	
76.600	77.000	3	Ericsson RRUS 11 B12	
76.600	77.000	3	Ericsson RRUS 32 w/ Solar Shie	
70.000	70.000	1	Pine Branches	
67.000	67.000	3	Quintel QS66512-2	
67.000	67.000	3	Ericsson RRUS-32 (77 lbs)	
67.000	67.000	3	Round Sector Frames	
67.000	67.000	3	Powerwave Allgon P65-16-	
67.000	67.000	6	Ericsson RRUS-11	
67.000	67.000	2	Raycap DC6-48-60-18-8F(32.8 lb	
67.000	67.000	6	Powerwave Allgon TT19-	
67.000	67.000	3	CCI OPA-65R-LCUU-H6	
67.000	67.000	3	Ericsson RRUS 32 B2	
65.000	65.000	1	Pine Branches	
60.000	60.000	1	Pine Branches	
57.000	56.000	3	Alcatel-Lucent B66 RRH4x45	
57.000	56.000	4	Commscope SBNHH-1D45A	
57.000	56.000	2	Commscope SBNHH-1D65A	
57.000	56.000	2	Commscope RC2DC-4750-PF-	
57.000	56.000	3	Alcatel-Lucent RRH2x60 700	
57.000	56.000	3	Alcatel-Lucent RRH 2X60-1900	
57.000	56.000	6	Amphenol Antel LPA-80063-	
57.000	56.000	3	Amphenol Antel BXA-171063-	
57.000	56.000	1	VZW Unused Reserve: 14,138	
57.000	57.000	3	Flat T-Arms	
55.000	55.000	1	Pine Branches	
50.000	50.000	1	Pine Branches	
45.000	45.000	1	Pine Branches	
40.000	40.000	1	Pine Branches	
35.000	35.000	1	Pine Branches	
30.000	30.000	1	Pine Branches	
25.000	25.000	1	Pine Branches	
20.000	20.000	1	Pine Branches	
15.000	15.000	1	Pine Branches	

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	57.000	1 5/8" Coax	No



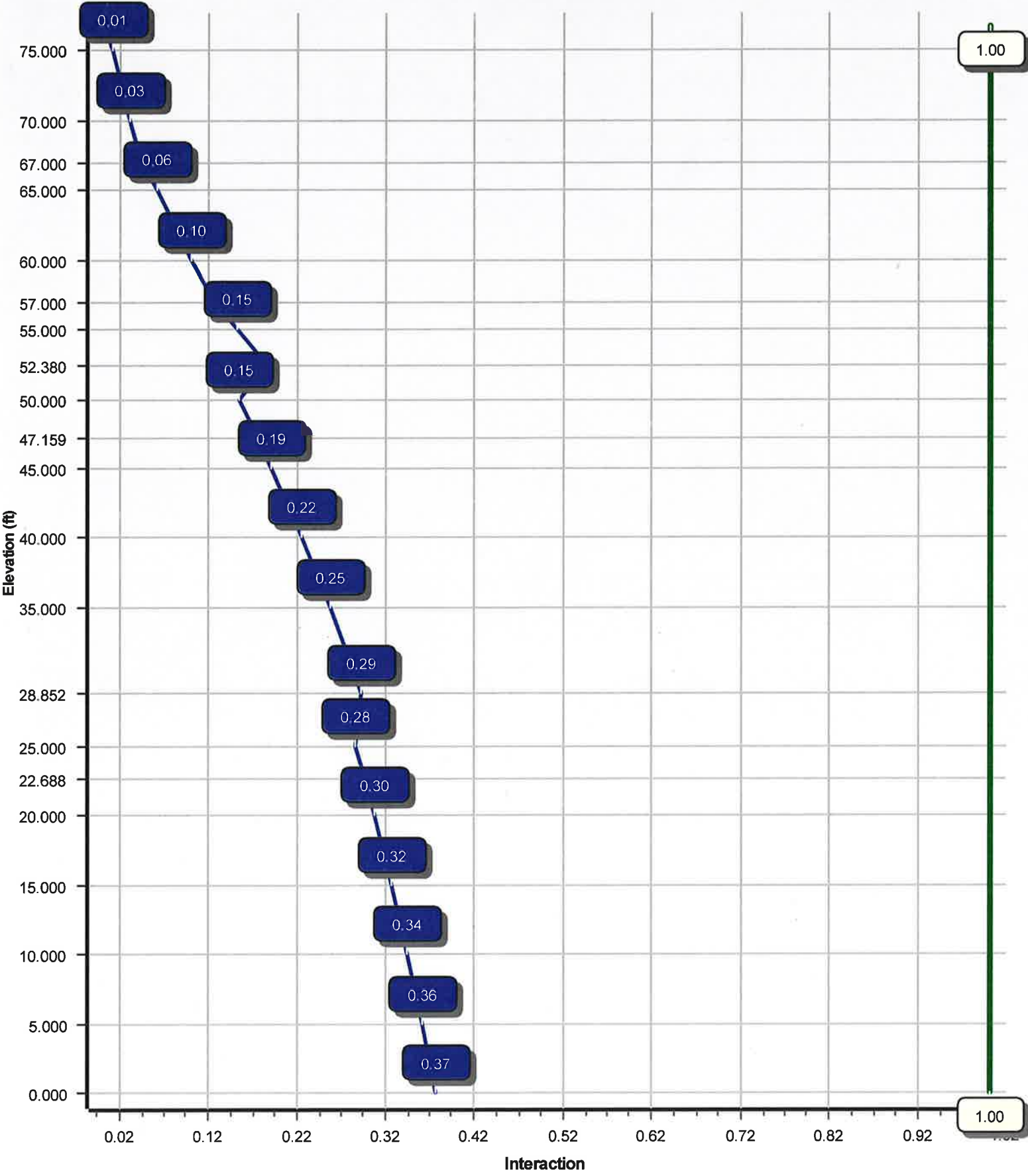
0.000	57.000	1 5/8" Fiber	No
0.000	57.000	1 5/8" Hybriflex	No
0.000	67.000	0.63" Cable	No
0.000	67.000	1 5/8" Coax	No
0.000	67.000	3" Conduit	No
0.000	67.000	5/8" Hybriflex	No
0.000	76.600	1 5/8" Fiber	No

Load Cases	
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions				
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)	
1.2D + 1.6W	2324.85	44.73	40.52	
0.9D + 1.6W	2320.50	44.72	30.38	
1.2D + 1.0Di + 1.0Wi	667.46	12.95	67.13	
(1.2 + 0.2Sds) * DL + E ELFM	261.16	4.84	40.48	
(1.2 + 0.2Sds) * DL + E EMAM	245.68	4.08	40.48	
(0.9 - 0.2Sds) * DL + E ELFM	260.52	4.84	27.22	
(0.9 - 0.2Sds) * DL + E EMAM	245.03	4.08	27.22	
1.0D + 1.0W	604.04	11.63	33.80	

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 37.37% at 0.0 ft



Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:22 AM

Customer: Verizon Wireless

Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	76.6
Code:	ANSI/TIA-222-G	Base Diameter (in):	52.00
Shape:	18 Sides	Top Diameter (in):	27.75
Pole Type:	Taper	Taper (in/ft) :	0.336
Pole Manufacturer:	EEL		

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	C	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.69		
T _L (sec):	6	p:	1.3
S _s :	0.263	S ₁ :	0.071
F _a :	1.590	F _v :	2.400
S _{ds} :	0.279	S _{d1} :	0.114
		C _s :	0.110
		C _s Max:	0.110
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 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: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:22 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	28.852	0.5000	65		0.00	7,269	52.00	0.00	81.73	27387.9	16.93	104.00	42.31	28.85	66.35	14656.9	13.51	84.63	0.335790
2-18	29.693	0.4375	65	Slip	73.97	5,589	45.25	22.69	62.24	15795.8	16.83	103.45	35.28	52.38	48.39	7425.4	12.81	80.66	0.335790
3-18	29.529	0.3125	65	Slip	62.66	3,228	37.66	47.16	37.05	6530.8	19.84	120.53	27.75	76.69	27.21	2588.4	14.25	88.80	0.335790
Shaft Weight						16,086													

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		
76.69	Pine Branches	1	600.00	45.000	1.00	991.65	74.374	1.00	0.000	0.400
76.60	Commscope LNX-6512DS-	3	28.70	5.090	0.83	159.31	6.008	0.83	0.000	0.400
76.60	Ericsson AIR-32 B2A/B66Aa	3	132.20	6.510	0.86	301.70	7.576	0.86	0.000	0.400
76.60	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	130.19	3.421	0.67	0.000	0.400
76.60	Ericsson RRUS 32 w/ Solar	3	52.90	2.740	0.67	133.90	3.422	0.67	0.000	0.400
76.60	Flat T-Arms	3	250.00	12.900	0.67	445.61	20.554	0.67	0.000	0.000
76.60	RFs APX16DWV-16DWVS-E-	3	41.90	7.010	0.67	154.02	9.177	0.67	0.000	0.400
70.00	Pine Branches	1	600.00	45.000	1.00	987.28	74.046	1.00	0.000	0.000
67.00	CCI OPA-65R-LCUU-H6	3	73.00	9.660	0.79	260.87	12.219	0.79	0.000	0.000
67.00	Ericsson RRUS 32 B2	3	53.00	2.740	0.67	132.64	3.412	0.67	0.000	0.000
67.00	Ericsson RRUS-11	6	55.00	3.790	0.67	137.87	4.975	0.67	0.000	0.000
67.00	Ericsson RRUS-32 (77 lbs)	3	77.00	3.310	0.67	166.77	4.494	0.67	0.000	0.000
67.00	Powerwave Allgon P65-16-	3	53.00	8.130	0.79	205.04	10.702	0.79	0.000	0.000
67.00	Powerwave Allgon TT19-	6	16.00	0.640	0.50	34.64	1.186	0.50	0.000	0.000
67.00	Quintel QS66512-2	3	111.00	8.130	0.92	317.49	9.321	0.92	0.000	0.000
67.00	Raycap DC6-48-60-18-	2	32.80	1.280	1.00	89.75	1.841	1.00	0.000	0.000
67.00	Round Sector Frames	3	300.00	14.400	0.75	639.54	29.679	0.75	0.000	0.000
65.00	Pine Branches	1	600.00	45.000	1.00	983.74	73.781	1.00	0.000	0.000
60.00	Pine Branches	1	600.00	45.000	1.00	981.21	73.591	1.00	0.000	0.000
57.00	Alcatel-Lucent B66 RRH4x45	3	67.00	2.580	0.67	142.67	3.210	0.67	0.000	-1.000
57.00	Alcatel-Lucent RRH 2X60-	3	39.60	1.880	0.50	99.06	2.412	0.50	0.000	-1.000
57.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	128.80	2.711	0.67	0.000	-1.000
57.00	Amphenol Antel BXA-171063-	3	12.80	4.800	0.88	99.75	6.947	0.88	0.000	-1.000
57.00	Amphenol Antel LPA-80063-	6	27.00	9.730	0.94	263.95	12.217	0.94	0.000	-1.000
57.00	Commscope RC2DC-4750-PF-	2	26.00	3.780	0.67	138.48	4.518	0.67	0.000	-1.000
57.00	Commscope SBNHH-1D45A	4	50.50	7.240	0.72	211.11	8.263	0.72	0.000	-1.000
57.00	Commscope SBNHH-1D65A	2	33.50	5.880	0.83	174.20	6.847	0.83	0.000	-1.000
57.00	Flat T-Arms	3	250.00	12.900	0.67	439.78	20.326	0.67	0.000	0.000
57.00	VZW Unused Reserve:	1	1488.70	98.260	1.00	2,430.43	160.418	1.00	0.000	-1.000
55.00	Pine Branches	1	600.00	45.000	1.00	977.96	73.347	1.00	0.000	0.000
50.00	Pine Branches	1	600.00	45.000	1.00	974.19	73.064	1.00	0.000	0.000
45.00	Pine Branches	1	600.00	45.000	1.00	969.22	72.692	1.00	0.000	0.000
40.00	Pine Branches	1	600.00	45.000	1.00	964.63	72.347	1.00	0.000	0.000
35.00	Pine Branches	1	600.00	45.000	1.00	959.45	71.959	1.00	0.000	0.000
30.00	Pine Branches	1	600.00	45.000	1.00	955.90	71.692	1.00	0.000	0.000
25.00	Pine Branches	1	600.00	45.000	1.00	948.49	71.137	1.00	0.000	0.000
20.00	Pine Branches	1	600.00	45.000	1.00	937.87	70.341	1.00	0.000	0.000
15.00	Pine Branches	1	600.00	45.000	1.00	926.69	69.502	1.00	0.000	0.000
Totals		93	15211.80			31,128.21			Number of Loadings : 38	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width Flat (in)	Exposed To Wind	Carrier	
0.00	76.60	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	T-Mobile

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

0.00	67.00	4	0.63" Cable	0.63	0.31	N	0.00	N	AT&T Mobility
0.00	67.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	67.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	67.00	2	5/8" Hybriflex	0.84	0.70	N	0.00	N	AT&T Mobility
0.00	57.00	16	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	57.00	1	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon
0.00	57.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon

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Customer: Verizon Wireless

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5000	52.001	81.729	27,387.9	16.93	104.00	81.5	1037.	0.0	0.0
5.00		0.5000	50.322	79.065	24,795.7	16.34	100.64	82.2	970.5	0.0	1,367.9
10.00		0.5000	48.643	76.400	22,372.4	15.74	97.29	82.6	905.9	0.0	1,322.5
15.00		0.5000	46.964	73.736	20,112.5	15.15	93.93	82.6	843.5	0.0	1,277.2
20.00		0.5000	45.285	71.071	18,010.0	14.56	90.57	82.6	783.3	0.0	1,231.9
22.69	Bot - Section 2	0.5000	44.383	69.639	16,943.1	14.24	88.77	82.6	751.9	0.0	643.4
25.00		0.5000	43.606	68.407	16,059.5	13.97	87.21	82.6	725.4	0.0	1,028.6
28.85	Top - Section 1	0.4375	43.188	59.362	13,706.9	16.00	98.72	82.6	625.1	0.0	1,672.9
30.00		0.4375	42.802	58.827	13,339.3	15.84	97.83	82.6	613.8	0.0	230.9
35.00		0.4375	41.123	56.495	11,815.4	15.16	94.00	82.6	565.9	0.0	981.0
40.00		0.4375	39.444	54.164	10,412.2	14.49	90.16	82.6	519.9	0.0	941.4
45.00		0.4375	37.765	51.833	9,124.8	13.81	86.32	82.6	475.9	0.0	901.7
47.16	Bot - Section 3	0.4375	37.040	50.826	8,603.4	13.52	84.66	82.6	457.5	0.0	377.1
50.00		0.4375	36.086	49.501	7,948.0	13.13	82.48	82.6	433.8	0.0	838.6
52.38	Top - Section 2	0.3125	35.912	35.309	5,653.7	18.85	114.92	79.2	310.1	0.0	685.6
55.00		0.3125	35.032	34.437	5,244.8	18.36	112.10	79.8	294.9	0.0	310.9
57.00		0.3125	34.361	33.771	4,946.3	17.98	109.95	80.3	283.5	0.0	232.1
60.00		0.3125	33.353	32.771	4,520.2	17.41	106.73	80.9	266.9	0.0	339.6
65.00		0.3125	31.675	31.106	3,865.5	16.46	101.36	82.0	240.4	0.0	543.4
67.00		0.3125	31.003	30.440	3,622.5	16.08	99.21	82.5	230.1	0.0	209.4
70.00		0.3125	29.996	29.441	3,277.3	15.51	95.99	82.6	215.2	0.0	305.6
75.00		0.3125	28.317	27.776	2,752.1	14.57	90.61	82.6	191.4	0.0	486.7
76.60		0.3125	27.779	27.243	2,596.7	14.26	88.89	82.6	184.1	0.0	149.8
76.69		0.3125	27.750	27.214	2,588.4	14.25	88.80	82.6	183.7	0.0	8.1
16,086.3											

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:22 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

93 mph with No Ice

14 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		221.4	0.0					0.0	0.0	221.4	0.0	0.0	0.0
5.00		435.5	1,641.4					0.0	235.9	435.5	1,877.3	0.0	0.0
10.00		421.0	1,587.0					0.0	235.9	421.0	1,822.9	0.0	0.0
15.00	Appertunance(s)	412.7	1,532.6	1,416.0	0.0	0.0	720.0	0.0	235.9	1,828.8	2,488.5	0.0	0.0
20.00	Appertunance(s)	318.1	1,478.2	1,502.5	0.0	0.0	720.0	0.0	235.9	1,820.5	2,434.1	0.0	0.0
22.69	Bot - Section 2	211.0	772.1					0.0	126.8	211.0	898.9	0.0	0.0
25.00	Appertunance(s)	263.9	1,234.4	1,574.7	0.0	0.0	720.0	0.0	109.1	1,838.6	2,063.4	0.0	0.0
28.85	Top - Section 1	214.2	2,007.4					0.0	181.7	214.2	2,189.1	0.0	0.0
30.00	Appertunance(s)	262.6	277.1	1,636.4	0.0	0.0	720.0	0.0	54.2	1,898.9	1,051.3	0.0	0.0
35.00	Appertunance(s)	424.5	1,177.2	1,690.3	0.0	0.0	720.0	0.0	235.9	2,114.8	2,133.1	0.0	0.0
40.00	Appertunance(s)	418.8	1,129.6	1,738.5	0.0	0.0	720.0	0.0	235.9	2,157.4	2,085.5	0.0	0.0
45.00	Appertunance(s)	296.1	1,082.0	1,782.2	0.0	0.0	720.0	0.0	235.9	2,078.3	2,037.9	0.0	0.0
47.16	Bot - Section 3	205.3	452.5					0.0	101.8	205.3	554.3	0.0	0.0
50.00	Appertunance(s)	213.7	1,006.3	1,822.1	0.0	0.0	720.0	0.0	134.0	2,035.8	1,860.3	0.0	0.0
52.38	Top - Section 2	201.8	822.7					0.0	112.3	201.8	935.0	0.0	0.0
55.00	Appertunance(s)	184.2	373.1	1,859.1	0.0	0.0	720.0	0.0	123.6	2,043.3	1,216.6	0.0	0.0
57.00	Appertunance(s)	196.0	278.5	8,717.9	0.0	-7,908.4	3,900.0	0.0	94.3	8,913.9	4,272.9	0.0	0.0
60.00	Appertunance(s)	306.7	407.6	1,893.4	0.0	0.0	720.0	0.0	83.8	2,200.1	1,211.4	0.0	0.0
65.00	Appertunance(s)	263.7	652.1	1,925.6	0.0	0.0	720.0	0.0	139.7	2,189.4	1,511.8	0.0	0.0
67.00	Appertunance(s)	182.9	251.3	4,370.4	0.0	0.0	2,991.1	0.0	55.9	4,553.2	3,298.3	0.0	0.0
70.00	Appertunance(s)	284.4	366.8	1,955.9	0.0	0.0	720.0	0.0	11.6	2,240.3	1,098.4	0.0	0.0
75.00		230.1	584.1					0.0	19.3	230.1	603.4	0.0	0.0
76.60		57.5	179.7					0.0	6.2	57.5	185.9	0.0	0.0
76.69		3.0	9.7					0.0	0.0	3.0	9.7	0.0	0.0
Totals:										40,114.0	37,839.9	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:22 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

93 mph with No Ice

14 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	-40.52	-44.73	0.00	-2,324.85	0.00	2,324.85	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.374
5.00	-38.55	-44.37	0.00	-2,101.19	0.00	2,101.19	5,848.26	2,924.13	11,946.7	5,982.24	0.06	-0.11	0.358
10.00	-36.64	-44.02	0.00	-1,879.33	0.00	1,879.33	5,676.15	2,838.07	11,200.5	5,608.58	0.25	-0.23	0.342
15.00	-34.08	-42.24	0.00	-1,659.24	0.00	1,659.24	5,478.20	2,739.10	10,429.0	5,222.27	0.55	-0.34	0.324
20.00	-31.60	-40.45	0.00	-1,448.03	0.00	1,448.03	5,280.25	2,640.12	9,685.10	4,849.75	0.97	-0.45	0.305
22.69	-30.66	-40.26	0.00	-1,339.32	0.00	1,339.32	5,173.85	2,586.92	9,296.61	4,655.21	1.24	-0.51	0.294
25.00	-28.57	-38.44	0.00	-1,246.21	0.00	1,246.21	5,082.30	2,541.15	8,968.69	4,491.01	1.50	-0.56	0.283
28.85	-26.35	-38.22	0.00	-1,098.17	0.00	1,098.17	4,410.30	2,205.15	7,729.01	3,870.25	1.99	-0.64	0.290
30.00	-25.28	-36.34	0.00	-1,054.27	0.00	1,054.27	4,370.52	2,185.26	7,589.50	3,800.39	2.15	-0.66	0.283
35.00	-23.12	-34.24	0.00	-872.57	0.00	872.57	4,197.31	2,098.66	6,996.91	3,503.66	2.90	-0.77	0.255
40.00	-21.01	-32.09	0.00	-701.37	0.00	701.37	4,024.10	2,012.05	6,428.41	3,218.98	3.76	-0.86	0.223
45.00	-18.98	-30.00	0.00	-540.94	0.00	540.94	3,850.90	1,925.45	5,884.00	2,946.37	4.71	-0.95	0.189
47.16	-18.41	-29.79	0.00	-476.19	0.00	476.19	3,776.11	1,888.05	5,656.38	2,832.39	5.15	-0.98	0.173
50.00	-16.57	-27.73	0.00	-391.55	0.00	391.55	3,677.69	1,838.84	5,363.67	2,685.82	5.74	-1.02	0.151
52.38	-15.62	-27.52	0.00	-325.53	0.00	325.53	2,517.68	1,258.84	3,679.49	1,842.48	6.26	-1.05	0.183
55.00	-14.43	-25.47	0.00	-253.43	0.00	253.43	2,473.56	1,236.78	3,524.91	1,765.07	6.85	-1.08	0.150
57.00	-10.32	-16.48	0.00	-202.49	0.00	202.49	2,439.26	1,219.63	3,408.19	1,706.63	7.31	-1.11	0.123
60.00	-9.14	-14.26	0.00	-153.07	0.00	153.07	2,386.80	1,193.40	3,235.34	1,620.07	8.02	-1.14	0.098
65.00	-7.67	-12.04	0.00	-81.78	0.00	81.78	2,296.71	1,148.36	2,953.54	1,478.97	9.23	-1.17	0.059
67.00	-4.47	-7.42	0.00	-57.69	0.00	57.69	2,259.74	1,129.87	2,843.16	1,423.69	9.73	-1.18	0.043
70.00	-3.41	-5.16	0.00	-35.43	0.00	35.43	2,187.31	1,093.65	2,660.78	1,332.37	10.47	-1.20	0.028
75.00	-2.82	-4.92	0.00	-9.62	0.00	9.62	2,063.59	1,031.79	2,366.81	1,185.17	11.73	-1.21	0.010
76.60	-0.69	-2.01	0.00	-0.98	0.00	0.98	2,024.00	1,012.00	2,276.38	1,139.88	12.14	-1.21	0.001
76.69	0.00	-2.00	0.00	-0.80	0.00	0.80	2,021.83	1,010.92	2,271.48	1,137.43	12.16	-1.21	0.001

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:23 AM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

14 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		221.4	0.0					0.0	0.0	221.4	0.0	0.0	0.0
5.00		435.5	1,231.1					0.0	176.9	435.5	1,408.0	0.0	0.0
10.00		421.0	1,190.3					0.0	176.9	421.0	1,367.2	0.0	0.0
15.00	Appertunance(s)	412.7	1,149.5	1,416.0	0.0	0.0	540.0	0.0	176.9	1,828.8	1,866.4	0.0	0.0
20.00	Appertunance(s)	318.1	1,108.7	1,502.5	0.0	0.0	540.0	0.0	176.9	1,820.5	1,825.6	0.0	0.0
22.69	Bot - Section 2	211.0	579.1					0.0	95.1	211.0	674.1	0.0	0.0
25.00	Appertunance(s)	263.9	925.8	1,574.7	0.0	0.0	540.0	0.0	81.8	1,838.6	1,547.6	0.0	0.0
28.85	Top - Section 1	214.2	1,505.6					0.0	136.3	214.2	1,641.8	0.0	0.0
30.00	Appertunance(s)	262.6	207.8	1,636.4	0.0	0.0	540.0	0.0	40.6	1,898.9	788.5	0.0	0.0
35.00	Appertunance(s)	424.5	882.9	1,690.3	0.0	0.0	540.0	0.0	176.9	2,114.8	1,599.8	0.0	0.0
40.00	Appertunance(s)	418.8	847.2	1,738.5	0.0	0.0	540.0	0.0	176.9	2,157.4	1,564.1	0.0	0.0
45.00	Appertunance(s)	296.1	811.5	1,782.2	0.0	0.0	540.0	0.0	176.9	2,078.3	1,528.4	0.0	0.0
47.16	Bot - Section 3	205.3	339.4					0.0	76.4	205.3	415.7	0.0	0.0
50.00	Appertunance(s)	213.7	754.7	1,822.1	0.0	0.0	540.0	0.0	100.5	2,035.8	1,395.2	0.0	0.0
52.38	Top - Section 2	201.8	617.1					0.0	84.2	201.8	701.3	0.0	0.0
55.00	Appertunance(s)	184.2	279.8	1,859.1	0.0	0.0	540.0	0.0	92.7	2,043.3	912.5	0.0	0.0
57.00	Appertunance(s)	196.0	208.9	8,717.9	0.0	-7,908.4	2,925.0	0.0	70.8	8,913.9	3,204.6	0.0	0.0
60.00	Appertunance(s)	306.7	305.7	1,893.4	0.0	0.0	540.0	0.0	62.9	2,200.1	908.5	0.0	0.0
65.00	Appertunance(s)	263.7	489.1	1,925.6	0.0	0.0	540.0	0.0	104.8	2,189.4	1,133.8	0.0	0.0
67.00	Appertunance(s)	182.9	188.5	4,370.4	0.0	0.0	2,243.3	0.0	41.9	4,553.2	2,473.7	0.0	0.0
70.00	Appertunance(s)	284.4	275.1	1,955.9	0.0	0.0	540.0	0.0	8.7	2,240.3	823.8	0.0	0.0
75.00		230.1	438.1					0.0	14.5	230.1	452.6	0.0	0.0
76.60		57.5	134.8					0.0	4.6	57.5	139.4	0.0	0.0
76.69		3.0	7.3					0.0	0.0	3.0	7.3	0.0	0.0
Totals:										40,114.0	28,379.9	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

14 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	-30.38	-44.72	0.00	-2,320.50	0.00	2,320.50	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.371
5.00	-28.88	-44.34	0.00	-2,096.90	0.00	2,096.90	5,848.26	2,924.13	11,946.7	5,982.24	0.06	-0.11	0.356
10.00	-27.43	-43.97	0.00	-1,875.19	0.00	1,875.19	5,676.15	2,838.07	11,200.5	5,608.58	0.25	-0.23	0.339
15.00	-25.49	-42.18	0.00	-1,655.33	0.00	1,655.33	5,478.20	2,739.10	10,429.0	5,222.27	0.55	-0.34	0.322
20.00	-23.62	-40.38	0.00	-1,444.42	0.00	1,444.42	5,280.25	2,640.12	9,685.10	4,849.75	0.97	-0.45	0.303
22.69	-22.91	-40.19	0.00	-1,335.89	0.00	1,335.89	5,173.85	2,586.92	9,296.61	4,655.21	1.24	-0.51	0.292
25.00	-21.33	-38.36	0.00	-1,242.96	0.00	1,242.96	5,082.30	2,541.15	8,968.69	4,491.01	1.50	-0.56	0.281
28.85	-19.66	-38.15	0.00	-1,095.21	0.00	1,095.21	4,410.30	2,205.15	7,729.01	3,870.25	1.98	-0.64	0.288
30.00	-18.85	-36.26	0.00	-1,051.40	0.00	1,051.40	4,370.52	2,185.26	7,589.50	3,800.39	2.14	-0.66	0.281
35.00	-17.22	-34.16	0.00	-870.10	0.00	870.10	4,197.31	2,098.66	6,996.91	3,503.66	2.89	-0.77	0.253
40.00	-15.63	-32.00	0.00	-699.33	0.00	699.33	4,024.10	2,012.05	6,428.41	3,218.98	3.75	-0.86	0.221
45.00	-14.11	-29.91	0.00	-539.33	0.00	539.33	3,850.90	1,925.45	5,884.00	2,946.37	4.70	-0.94	0.187
47.16	-13.68	-29.71	0.00	-474.75	0.00	474.75	3,776.11	1,888.05	5,656.38	2,832.39	5.14	-0.98	0.171
50.00	-12.30	-27.66	0.00	-390.35	0.00	390.35	3,677.69	1,838.84	5,363.67	2,685.82	5.73	-1.02	0.149
52.38	-11.59	-27.45	0.00	-324.52	0.00	324.52	2,517.68	1,258.84	3,679.49	1,842.48	6.25	-1.05	0.181
55.00	-10.70	-25.39	0.00	-252.61	0.00	252.61	2,473.56	1,236.78	3,524.91	1,765.07	6.83	-1.08	0.148
57.00	-7.66	-16.42	0.00	-201.82	0.00	201.82	2,439.26	1,219.63	3,408.19	1,706.63	7.29	-1.10	0.122
60.00	-6.79	-14.21	0.00	-152.55	0.00	152.55	2,386.80	1,193.40	3,235.34	1,620.07	8.00	-1.13	0.097
65.00	-5.69	-12.00	0.00	-81.50	0.00	81.50	2,296.71	1,148.36	2,953.54	1,478.97	9.21	-1.17	0.058
67.00	-3.31	-7.40	0.00	-57.50	0.00	57.50	2,259.74	1,129.87	2,843.16	1,423.69	9.70	-1.18	0.042
70.00	-2.53	-5.14	0.00	-35.31	0.00	35.31	2,187.31	1,093.65	2,660.78	1,332.37	10.45	-1.19	0.028
75.00	-2.09	-4.90	0.00	-9.60	0.00	9.60	2,063.59	1,031.79	2,366.81	1,185.17	11.70	-1.20	0.009
76.60	-0.51	-2.01	0.00	-0.98	0.00	0.98	2,024.00	1,012.00	2,276.38	1,139.88	12.11	-1.20	0.001
76.69	0.00	-2.00	0.00	-0.80	0.00	0.80	2,021.83	1,010.92	2,271.48	1,137.43	12.13	-1.20	0.001

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:23 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

13 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		77.1	0.0					0.0	0.0	77.1	0.0	0.0	0.0
5.00		152.2	2,015.2					0.0	235.9	152.2	2,251.0	0.0	0.0
10.00		147.9	1,991.6					0.0	235.9	147.9	2,227.5	0.0	0.0
15.00	Appertunance(s)	145.7	1,944.7	395.1	0.0	0.0	1,646.7	0.0	235.9	540.8	3,827.2	0.0	0.0
20.00	Appertunance(s)	112.6	1,890.0	424.3	0.0	0.0	1,657.9	0.0	235.9	536.8	3,783.7	0.0	0.0
22.69	Bot - Section 2	74.8	993.6					0.0	126.8	74.8	1,120.4	0.0	0.0
25.00	Appertunance(s)	93.8	1,427.6	449.7	0.0	0.0	1,668.5	0.0	109.1	543.5	3,205.1	0.0	0.0
28.85	Top - Section 1	76.2	2,324.1					0.0	181.7	76.2	2,505.8	0.0	0.0
30.00	Appertunance(s)	93.7	371.6	471.0	0.0	0.0	1,675.9	0.0	54.2	564.7	2,101.7	0.0	0.0
35.00	Appertunance(s)	151.8	1,577.1	488.3	0.0	0.0	1,679.5	0.0	235.9	640.1	3,492.4	0.0	0.0
40.00	Appertunance(s)	150.4	1,519.4	504.9	0.0	0.0	1,684.6	0.0	235.9	655.3	3,439.9	0.0	0.0
45.00	Appertunance(s)	106.6	1,460.7	520.1	0.0	0.0	1,689.2	0.0	235.9	626.7	3,385.8	0.0	0.0
47.16	Bot - Section 3	74.1	614.3					0.0	101.8	74.1	716.2	0.0	0.0
50.00	Appertunance(s)	77.2	1,218.6	534.5	0.0	0.0	1,694.2	0.0	134.0	611.7	3,046.8	0.0	0.0
52.38	Top - Section 2	73.1	997.9					0.0	112.3	73.1	1,110.2	0.0	0.0
55.00	Appertunance(s)	66.9	562.2	547.4	0.0	0.0	1,698.0	0.0	123.6	614.3	2,383.8	0.0	0.0
57.00	Appertunance(s)	71.4	420.9	2,295.2	0.0	-2,064.8	7,236.2	0.0	94.3	2,366.5	7,751.4	0.0	0.0
60.00	Appertunance(s)	112.0	616.1	559.4	0.0	0.0	1,701.2	0.0	83.8	671.4	2,401.1	0.0	0.0
65.00	Appertunance(s)	96.6	985.2	570.4	0.0	0.0	1,703.7	0.0	139.7	667.0	2,828.7	0.0	0.0
67.00	Appertunance(s)	67.3	382.6	1,156.3	0.0	0.0	5,910.3	0.0	55.9	1,223.6	6,348.8	0.0	0.0
70.00	Appertunance(s)	105.1	558.4	581.4	0.0	0.0	1,707.3	0.0	11.6	686.5	2,277.3	0.0	0.0
75.00		85.2	888.3					0.0	19.3	85.2	907.6	0.0	0.0
76.60		21.4	275.8					0.0	6.2	21.4	282.0	0.0	0.0
76.69		1.1	15.0					0.0	0.0	1.1	15.0	0.0	0.0
Totals:										11,732.0	61,409.3	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:24 AM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

13 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	-67.13	-12.95	0.00	-667.46	0.00	667.46	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.116
5.00	-64.87	-12.83	0.00	-602.73	0.00	602.73	5,848.26	2,924.13	11,946.7	5,982.24	0.02	-0.03	0.112
10.00	-62.63	-12.72	0.00	-538.58	0.00	538.58	5,676.15	2,838.07	11,200.5	5,608.58	0.07	-0.07	0.107
15.00	-58.80	-12.20	0.00	-475.00	0.00	475.00	5,478.20	2,739.10	10,429.0	5,222.27	0.16	-0.10	0.102
20.00	-55.01	-11.68	0.00	-414.00	0.00	414.00	5,280.25	2,640.12	9,685.10	4,849.75	0.28	-0.13	0.096
22.69	-53.89	-11.62	0.00	-382.60	0.00	382.60	5,173.85	2,586.92	9,296.61	4,655.21	0.36	-0.15	0.093
25.00	-50.68	-11.08	0.00	-355.74	0.00	355.74	5,082.30	2,541.15	8,968.69	4,491.01	0.43	-0.16	0.089
28.85	-48.17	-11.01	0.00	-313.05	0.00	313.05	4,410.30	2,205.15	7,729.01	3,870.25	0.57	-0.18	0.092
30.00	-46.07	-10.45	0.00	-300.41	0.00	300.41	4,370.52	2,185.26	7,589.50	3,800.39	0.62	-0.19	0.090
35.00	-42.58	-9.82	0.00	-248.14	0.00	248.14	4,197.31	2,098.66	6,996.91	3,503.66	0.83	-0.22	0.081
40.00	-39.14	-9.17	0.00	-199.03	0.00	199.03	4,024.10	2,012.05	6,428.41	3,218.98	1.08	-0.25	0.072
45.00	-35.75	-8.54	0.00	-153.18	0.00	153.18	3,850.90	1,925.45	5,884.00	2,946.37	1.35	-0.27	0.061
47.16	-35.03	-8.47	0.00	-134.74	0.00	134.74	3,776.11	1,888.05	5,656.38	2,832.39	1.47	-0.28	0.057
50.00	-31.99	-7.85	0.00	-110.68	0.00	110.68	3,677.69	1,838.84	5,363.67	2,685.82	1.64	-0.29	0.050
52.38	-30.88	-7.77	0.00	-92.01	0.00	92.01	2,517.68	1,258.84	3,679.49	1,842.48	1.79	-0.30	0.062
55.00	-28.50	-7.15	0.00	-71.65	0.00	71.65	2,473.56	1,236.78	3,524.91	1,765.07	1.96	-0.31	0.052
57.00	-20.76	-4.74	0.00	-57.35	0.00	57.35	2,439.26	1,219.63	3,408.19	1,706.63	2.09	-0.32	0.042
60.00	-18.36	-4.06	0.00	-43.12	0.00	43.12	2,386.80	1,193.40	3,235.34	1,620.07	2.29	-0.32	0.034
65.00	-15.53	-3.38	0.00	-22.81	0.00	22.81	2,296.71	1,148.36	2,953.54	1,478.97	2.64	-0.33	0.022
67.00	-9.19	-2.12	0.00	-16.05	0.00	16.05	2,259.74	1,129.87	2,843.16	1,423.69	2.78	-0.34	0.015
70.00	-6.92	-1.42	0.00	-9.69	0.00	9.69	2,187.31	1,093.65	2,660.78	1,332.37	2.99	-0.34	0.010
75.00	-6.01	-1.33	0.00	-2.59	0.00	2.59	2,063.59	1,031.79	2,366.81	1,185.17	3.35	-0.34	0.005
76.60	-1.72	-0.61	0.00	-0.29	0.00	0.29	2,024.00	1,012.00	2,276.38	1,139.88	3.47	-0.34	0.001
76.69	0.00	-0.60	0.00	-0.24	0.00	0.24	2,021.83	1,010.92	2,271.48	1,137.43	3.47	-0.34	0.000

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

13 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		57.6	0.0					0.0	0.0	57.6	0.0	0.0	0.0
5.00		113.3	1,367.9					0.0	196.6	113.3	1,564.4	0.0	0.0
10.00		109.5	1,322.5					0.0	196.6	109.5	1,519.1	0.0	0.0
15.00	Appertunance(s)	107.4	1,277.2	368.4	0.0	0.0	600.0	0.0	196.6	475.7	2,073.7	0.0	0.0
20.00	Appertunance(s)	82.7	1,231.9	390.9	0.0	0.0	600.0	0.0	196.6	473.6	2,028.4	0.0	0.0
22.69	Bot - Section 2	54.9	643.4					0.0	105.6	54.9	749.0	0.0	0.0
25.00	Appertunance(s)	68.7	1,028.6	409.7	0.0	0.0	600.0	0.0	90.9	478.3	1,719.5	0.0	0.0
28.85	Top - Section 1	55.7	1,672.9					0.0	151.4	55.7	1,824.3	0.0	0.0
30.00	Appertunance(s)	68.3	230.9	425.7	0.0	0.0	600.0	0.0	45.1	494.0	876.1	0.0	0.0
35.00	Appertunance(s)	110.4	981.0	439.7	0.0	0.0	600.0	0.0	196.6	550.2	1,777.6	0.0	0.0
40.00	Appertunance(s)	109.0	941.4	452.3	0.0	0.0	600.0	0.0	196.6	561.2	1,737.9	0.0	0.0
45.00	Appertunance(s)	77.0	901.7	463.6	0.0	0.0	600.0	0.0	196.6	540.7	1,698.3	0.0	0.0
47.16	Bot - Section 3	53.4	377.1					0.0	84.9	53.4	461.9	0.0	0.0
50.00	Appertunance(s)	55.6	838.6	474.0	0.0	0.0	600.0	0.0	111.7	529.6	1,550.3	0.0	0.0
52.38	Top - Section 2	52.5	685.6					0.0	93.6	52.5	779.2	0.0	0.0
55.00	Appertunance(s)	47.9	310.9	483.6	0.0	0.0	600.0	0.0	103.0	531.5	1,013.9	0.0	0.0
57.00	Appertunance(s)	51.0	232.1	2,267.9	0.0	-2,057.3	3,250.0	0.0	78.6	2,318.9	3,560.7	0.0	0.0
60.00	Appertunance(s)	79.8	339.6	492.6	0.0	0.0	600.0	0.0	69.8	572.3	1,009.5	0.0	0.0
65.00	Appertunance(s)	68.6	543.4	500.9	0.0	0.0	600.0	0.0	116.4	569.6	1,259.8	0.0	0.0
67.00	Appertunance(s)	47.6	209.4	1,136.9	0.0	0.0	2,492.6	0.0	46.6	1,184.5	2,748.6	0.0	0.0
70.00	Appertunance(s)	74.0	305.6	508.8	0.0	0.0	600.0	0.0	9.7	582.8	915.3	0.0	0.0
75.00		59.9	486.7					0.0	16.1	59.9	502.8	0.0	0.0
76.60		15.0	149.8					0.0	5.2	15.0	154.9	0.0	0.0
76.69		0.8	8.1					0.0	0.0	0.8	8.1	0.0	0.0
Totals:										10,435.5	31,533.3	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:24 AM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

13 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.80	-11.63	0.00	-604.04	0.00	604.04	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.101
5.00	-32.23	-11.54	0.00	-545.87	0.00	545.87	5,848.26	2,924.13	11,946.7	5,982.24	0.02	-0.03	0.097
10.00	-30.70	-11.44	0.00	-488.19	0.00	488.19	5,676.15	2,838.07	11,200.5	5,608.58	0.06	-0.06	0.092
15.00	-28.63	-10.98	0.00	-430.97	0.00	430.97	5,478.20	2,739.10	10,429.0	5,222.27	0.14	-0.09	0.088
20.00	-26.59	-10.51	0.00	-376.08	0.00	376.08	5,280.25	2,640.12	9,685.10	4,849.75	0.25	-0.12	0.083
22.69	-25.84	-10.46	0.00	-347.83	0.00	347.83	5,173.85	2,586.92	9,296.61	4,655.21	0.32	-0.13	0.080
25.00	-24.12	-9.99	0.00	-323.64	0.00	323.64	5,082.30	2,541.15	8,968.69	4,491.01	0.39	-0.15	0.077
28.85	-22.29	-9.93	0.00	-285.18	0.00	285.18	4,410.30	2,205.15	7,729.01	3,870.25	0.52	-0.17	0.079
30.00	-21.42	-9.44	0.00	-273.78	0.00	273.78	4,370.52	2,185.26	7,589.50	3,800.39	0.56	-0.17	0.077
35.00	-19.64	-8.89	0.00	-226.58	0.00	226.58	4,197.31	2,098.66	6,996.91	3,503.66	0.75	-0.20	0.069
40.00	-17.90	-8.33	0.00	-182.12	0.00	182.12	4,024.10	2,012.05	6,428.41	3,218.98	0.98	-0.22	0.061
45.00	-16.20	-7.79	0.00	-140.45	0.00	140.45	3,850.90	1,925.45	5,884.00	2,946.37	1.22	-0.25	0.052
47.16	-15.74	-7.74	0.00	-123.64	0.00	123.64	3,776.11	1,888.05	5,656.38	2,832.39	1.34	-0.25	0.048
50.00	-14.19	-7.20	0.00	-101.66	0.00	101.66	3,677.69	1,838.84	5,363.67	2,685.82	1.49	-0.27	0.042
52.38	-13.41	-7.15	0.00	-84.52	0.00	84.52	2,517.68	1,258.84	3,679.49	1,842.48	1.63	-0.27	0.051
55.00	-12.40	-6.61	0.00	-65.79	0.00	65.79	2,473.56	1,236.78	3,524.91	1,765.07	1.78	-0.28	0.042
57.00	-8.85	-4.28	0.00	-52.57	0.00	52.57	2,439.26	1,219.63	3,408.19	1,706.63	1.90	-0.29	0.034
60.00	-7.84	-3.70	0.00	-39.73	0.00	39.73	2,386.80	1,193.40	3,235.34	1,620.07	2.08	-0.30	0.028
65.00	-6.58	-3.13	0.00	-21.23	0.00	21.23	2,296.71	1,148.36	2,953.54	1,478.97	2.40	-0.30	0.017
67.00	-3.84	-1.93	0.00	-14.98	0.00	14.98	2,259.74	1,129.87	2,843.16	1,423.69	2.53	-0.31	0.012
70.00	-2.93	-1.34	0.00	-9.20	0.00	9.20	2,187.31	1,093.65	2,660.78	1,332.37	2.72	-0.31	0.008
75.00	-2.43	-1.28	0.00	-2.50	0.00	2.50	2,063.59	1,031.79	2,366.81	1,185.17	3.05	-0.31	0.003
76.60	-0.61	-0.52	0.00	-0.25	0.00	0.25	2,024.00	1,012.00	2,276.38	1,139.88	3.15	-0.31	0.001
76.69	0.00	-0.52	0.00	-0.21	0.00	0.21	2,021.83	1,010.92	2,271.48	1,137.43	3.16	-0.31	0.000

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 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):	0.26
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.07
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.59
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.28
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.11
Upper Limit C_s	0.11
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	0.69
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.09
Total Unfactored Dead Load:	33.80 k
Seismic Base Shear (E):	4.84 k

Load Case (1.2 + 0.2S_{ds}) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
23	76.64	8	1	0.000	2	10
22	75.80	155	18	0.009	42	195
21	72.50	503	54	0.027	129	631
20	68.50	315	32	0.016	76	396
19	66.00	256	25	0.012	59	321
18	62.50	660	61	0.030	144	829
17	58.50	409	35	0.017	83	514
16	56.00	311	25	0.012	60	390
15	53.69	414	32	0.016	76	520
14	51.19	779	58	0.028	137	978
13	48.58	950	66	0.032	157	1,193
12	46.08	462	30	0.015	72	580
11	42.50	1,098	66	0.032	157	1,379
10	37.50	1,138	60	0.029	142	1,429
9	32.50	1,178	53	0.026	126	1,479
8	29.43	276	11	0.005	26	347
7	26.93	1,824	67	0.033	158	2,291
6	23.84	1,120	36	0.018	85	1,406
5	21.34	749	21	0.010	50	941
4	17.50	1,428	33	0.016	77	1,794
3	12.50	1,474	23	0.011	55	1,851
2	7.50	1,519	14	0.007	33	1,908
1	2.50	1,564	4	0.002	10	1,964

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

Pine Branches	76.69	600	69	0.034	164	753
Ericsson RRUS 32 w/	76.60	159	18	0.009	43	199
Ericsson RRUS 11 B12	76.60	152	17	0.009	41	191
Commscope LNX-6512DS	76.60	86	10	0.005	23	108
Ericsson AIR-32 B2A/	76.60	397	46	0.022	108	498
RFS APX16DWV-16DWVS-	76.60	126	14	0.007	34	158
Flat T-Arms	76.60	750	86	0.042	204	942
Pine Branches	70.00	600	62	0.031	148	753
Powerwave Allgon TT1	67.00	96	10	0.005	23	121
Raycap DC6-48-60-18-	67.00	66	7	0.003	15	82
Ericsson RRUS 32 B2	67.00	159	16	0.008	37	200
Ericsson RRUS-32 (77	67.00	231	23	0.011	54	290
Ericsson RRUS-11	67.00	330	33	0.016	78	414
Powerwave Allgon P65	67.00	159	16	0.008	37	200
Quintel QS66512-2	67.00	333	33	0.016	78	418
CCI OPA-65R-LCUU-H6	67.00	219	22	0.011	52	275
Round Sector Frames	67.00	900	89	0.044	212	1,130
Pine Branches	65.00	600	58	0.028	137	753
Pine Branches	60.00	600	53	0.026	125	753
Alcatel-Lucent RRH 2	57.00	119	10	0.005	23	149
Alcatel-Lucent RRH2x	57.00	170	14	0.007	34	214
Alcatel-Lucent B66 R	57.00	201	17	0.008	40	252
Commscope RC2DC-4750	57.00	52	4	0.002	10	65
Amphenol Antel BXA-1	57.00	38	3	0.002	8	48
Commscope SBNHH-1D65	57.00	67	6	0.003	13	84
Commscope SBNHH-1D45	57.00	202	17	0.008	40	254
Amphenol Antel LPA-8	57.00	162	13	0.007	32	203
Flat T-Arms	57.00	750	62	0.031	148	942
VZW Unused Reserve:	57.00	1,489	124	0.061	294	1,869
Pine Branches	55.00	600	48	0.023	114	753
Pine Branches	50.00	600	43	0.021	103	753
Pine Branches	45.00	600	39	0.019	91	753
Pine Branches	40.00	600	34	0.017	80	753
Pine Branches	35.00	600	29	0.014	69	753
Pine Branches	30.00	600	25	0.012	59	753
Pine Branches	25.00	600	20	0.010	48	753
Pine Branches	20.00	600	16	0.008	38	753
Pine Branches	15.00	600	12	0.006	27	753
		33,803	2,044	1.000	4,843	42,447

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)
23	76.64	8	1	0.000	2	7
22	75.80	155	18	0.009	42	131
21	72.50	503	54	0.027	129	425
20	68.50	315	32	0.016	76	266
19	66.00	256	25	0.012	59	216
18	62.50	660	61	0.030	144	557
17	58.50	409	35	0.017	83	346
16	56.00	311	25	0.012	60	262
15	53.69	414	32	0.016	76	349
14	51.19	779	58	0.028	137	658
13	48.58	950	66	0.032	157	802
12	46.08	462	30	0.015	72	390
11	42.50	1,098	66	0.032	157	927
10	37.50	1,138	60	0.029	142	961
9	32.50	1,178	53	0.026	126	994
8	29.43	276	11	0.005	26	233

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

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Customer: Verizon Wireless

7	26.93	1,824	67	0.033	158	1,540
6	23.84	1,120	36	0.018	85	945
5	21.34	749	21	0.010	50	632
4	17.50	1,428	33	0.016	77	1,206
3	12.50	1,474	23	0.011	55	1,244
2	7.50	1,519	14	0.007	33	1,282
1	2.50	1,564	4	0.002	10	1,321
Pine Branches	76.69	600	69	0.034	164	507
Ericsson RRUS 32 w/	76.60	159	18	0.009	43	134
Ericsson RRUS 11 B12	76.60	152	17	0.009	41	128
Commscope LNX-6512DS	76.60	86	10	0.005	23	73
Ericsson AIR-32 B2A/	76.60	397	46	0.022	108	335
RFS APX16DWV-16DWVS-	76.60	126	14	0.007	34	106
Flat T-Arms	76.60	750	86	0.042	204	633
Pine Branches	70.00	600	62	0.031	148	507
Powerwave Allgon TT1	67.00	96	10	0.005	23	81
Raycap DC6-48-60-18-	67.00	66	7	0.003	15	55
Ericsson RRUS 32 B2	67.00	159	16	0.008	37	134
Ericsson RRUS-32 (77	67.00	231	23	0.011	54	195
Ericsson RRUS-11	67.00	330	33	0.016	78	279
Powerwave Allgon P65	67.00	159	16	0.008	37	134
Quintel QS66512-2	67.00	333	33	0.016	78	281
CCI OPA-65R-LCUU-H6	67.00	219	22	0.011	52	185
Round Sector Frames	67.00	900	89	0.044	212	760
Pine Branches	65.00	600	58	0.028	137	507
Pine Branches	60.00	600	53	0.026	125	507
Alcatel-Lucent RRH 2	57.00	119	10	0.005	23	100
Alcatel-Lucent RRH2x	57.00	170	14	0.007	34	144
Alcatel-Lucent B66 R	57.00	201	17	0.008	40	170
Commscope RC2DC-4750	57.00	52	4	0.002	10	44
Amphenol Antel BXA-1	57.00	38	3	0.002	8	32
Commscope SBNHH-1D65	57.00	67	6	0.003	13	57
Commscope SBNHH-1D45	57.00	202	17	0.008	40	171
Amphenol Antel LPA-8	57.00	162	13	0.007	32	137
Flat T-Arms	57.00	750	62	0.031	148	633
VZW Unused Reserve:	57.00	1,489	124	0.061	294	1,257
Pine Branches	55.00	600	48	0.023	114	507
Pine Branches	50.00	600	43	0.021	103	507
Pine Branches	45.00	600	39	0.019	91	507
Pine Branches	40.00	600	34	0.017	80	507
Pine Branches	35.00	600	29	0.014	69	507
Pine Branches	30.00	600	25	0.012	59	507
Pine Branches	25.00	600	20	0.010	48	507
Pine Branches	20.00	600	16	0.008	38	507
Pine Branches	15.00	600	12	0.006	27	507
		33,803	2,044	1.000	4,843	28,538

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

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

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.48	-4.84	0.00	-261.16	0.00	261.16	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.048
5.00	-38.57	-4.81	0.00	-236.97	0.00	236.97	5,848.26	2,924.13	11,946.7	5,982.24	0.01	-0.01	0.046
10.00	-36.72	-4.77	0.00	-212.91	0.00	212.91	5,676.15	2,838.07	11,200.5	5,608.58	0.03	-0.03	0.044
15.00	-34.17	-4.67	0.00	-189.08	0.00	189.08	5,478.20	2,739.10	10,429.0	5,222.27	0.06	-0.04	0.042
20.00	-32.48	-4.58	0.00	-165.74	0.00	165.74	5,280.25	2,640.12	9,685.10	4,849.75	0.11	-0.05	0.040
22.69	-31.07	-4.50	0.00	-153.43	0.00	153.43	5,173.85	2,586.92	9,296.61	4,655.21	0.14	-0.06	0.039
25.00	-28.03	-4.29	0.00	-143.02	0.00	143.02	5,082.30	2,541.15	8,968.69	4,491.01	0.17	-0.06	0.037
28.85	-27.68	-4.27	0.00	-126.48	0.00	126.48	4,410.30	2,205.15	7,729.01	3,870.25	0.23	-0.07	0.039
30.00	-25.45	-4.09	0.00	-121.58	0.00	121.58	4,370.52	2,185.26	7,589.50	3,800.39	0.24	-0.08	0.038
35.00	-23.27	-3.88	0.00	-101.15	0.00	101.15	4,197.31	2,098.66	6,996.91	3,503.66	0.33	-0.09	0.034
40.00	-21.13	-3.64	0.00	-81.77	0.00	81.77	4,024.10	2,012.05	6,428.41	3,218.98	0.43	-0.10	0.031
45.00	-19.80	-3.48	0.00	-63.57	0.00	63.57	3,850.90	1,925.45	5,884.00	2,946.37	0.54	-0.11	0.027
47.16	-18.61	-3.32	0.00	-56.07	0.00	56.07	3,776.11	1,888.05	5,656.38	2,832.39	0.59	-0.11	0.025
50.00	-16.87	-3.08	0.00	-46.64	0.00	46.64	3,677.69	1,838.84	5,363.67	2,685.82	0.65	-0.12	0.022
52.38	-16.35	-3.00	0.00	-39.32	0.00	39.32	2,517.68	1,258.84	3,679.49	1,842.48	0.71	-0.12	0.028
55.00	-15.21	-2.82	0.00	-31.46	0.00	31.46	2,473.56	1,236.78	3,524.91	1,765.07	0.78	-0.12	0.024
57.00	-10.62	-2.09	0.00	-25.81	0.00	25.81	2,439.26	1,219.63	3,408.19	1,706.63	0.83	-0.13	0.019
60.00	-9.04	-1.82	0.00	-19.54	0.00	19.54	2,386.80	1,193.40	3,235.34	1,620.07	0.92	-0.13	0.016
65.00	-7.96	-1.62	0.00	-10.44	0.00	10.44	2,296.71	1,148.36	2,953.54	1,478.97	1.06	-0.14	0.011
67.00	-4.44	-0.95	0.00	-7.20	0.00	7.20	2,259.74	1,129.87	2,843.16	1,423.69	1.11	-0.14	0.007
70.00	-3.05	-0.67	0.00	-4.35	0.00	4.35	2,187.31	1,093.65	2,660.78	1,332.37	1.20	-0.14	0.005
75.00	-2.86	-0.63	0.00	-1.00	0.00	1.00	2,063.59	1,031.79	2,366.81	1,185.17	1.35	-0.14	0.002
76.60	0.00	0.00	0.00	0.00	0.00	0.00	2,024.00	1,012.00	2,276.38	1,139.88	1.39	-0.14	0.000
76.69	0.00	0.00	0.00	0.00	0.00	0.00	2,021.83	1,010.92	2,271.48	1,137.43	1.40	-0.14	0.000

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.22	-4.84	0.00	-260.52	0.00	260.52	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.046
5.00	-25.93	-4.81	0.00	-236.34	0.00	236.34	5,848.26	2,924.13	11,946.7	5,982.24	0.01	-0.01	0.044
10.00	-24.69	-4.76	0.00	-212.29	0.00	212.29	5,676.15	2,838.07	11,200.5	5,608.58	0.03	-0.03	0.042
15.00	-22.97	-4.66	0.00	-188.50	0.00	188.50	5,478.20	2,739.10	10,429.0	5,222.27	0.06	-0.04	0.040
20.00	-21.83	-4.57	0.00	-165.21	0.00	165.21	5,280.25	2,640.12	9,685.10	4,849.75	0.11	-0.05	0.038
22.69	-20.89	-4.49	0.00	-152.92	0.00	152.92	5,173.85	2,586.92	9,296.61	4,655.21	0.14	-0.06	0.037
25.00	-18.84	-4.28	0.00	-142.54	0.00	142.54	5,082.30	2,541.15	8,968.69	4,491.01	0.17	-0.06	0.035
28.85	-18.61	-4.26	0.00	-126.04	0.00	126.04	4,410.30	2,205.15	7,729.01	3,870.25	0.22	-0.07	0.037
30.00	-17.11	-4.07	0.00	-121.15	0.00	121.15	4,370.52	2,185.26	7,589.50	3,800.39	0.24	-0.08	0.036
35.00	-15.64	-3.86	0.00	-100.78	0.00	100.78	4,197.31	2,098.66	6,996.91	3,503.66	0.33	-0.09	0.032
40.00	-14.21	-3.63	0.00	-81.46	0.00	81.46	4,024.10	2,012.05	6,428.41	3,218.98	0.43	-0.10	0.029
45.00	-13.31	-3.46	0.00	-63.33	0.00	63.33	3,850.90	1,925.45	5,884.00	2,946.37	0.53	-0.11	0.025
47.16	-12.51	-3.31	0.00	-55.85	0.00	55.85	3,776.11	1,888.05	5,656.38	2,832.39	0.58	-0.11	0.023
50.00	-11.34	-3.06	0.00	-46.46	0.00	46.46	3,677.69	1,838.84	5,363.67	2,685.82	0.65	-0.12	0.020
52.38	-10.99	-2.99	0.00	-39.17	0.00	39.17	2,517.68	1,258.84	3,679.49	1,842.48	0.71	-0.12	0.026
55.00	-10.22	-2.81	0.00	-31.34	0.00	31.34	2,473.56	1,236.78	3,524.91	1,765.07	0.78	-0.12	0.022
57.00	-7.14	-2.08	0.00	-25.71	0.00	25.71	2,439.26	1,219.63	3,408.19	1,706.63	0.83	-0.13	0.018
60.00	-6.07	-1.81	0.00	-19.46	0.00	19.46	2,386.80	1,193.40	3,235.34	1,620.07	0.91	-0.13	0.015
65.00	-5.35	-1.61	0.00	-10.41	0.00	10.41	2,296.71	1,148.36	2,953.54	1,478.97	1.05	-0.14	0.009
67.00	-2.98	-0.95	0.00	-7.18	0.00	7.18	2,259.74	1,129.87	2,843.16	1,423.69	1.11	-0.14	0.006
70.00	-2.05	-0.67	0.00	-4.34	0.00	4.34	2,187.31	1,093.65	2,660.78	1,332.37	1.20	-0.14	0.004
75.00	-1.92	-0.63	0.00	-1.00	0.00	1.00	2,063.59	1,031.79	2,366.81	1,185.17	1.34	-0.14	0.002
76.60	0.00	0.00	0.00	0.00	0.00	0.00	2,024.00	1,012.00	2,276.38	1,139.88	1.39	-0.14	0.000
76.69	0.00	0.00	0.00	0.00	0.00	0.00	2,021.83	1,010.92	2,271.48	1,137.43	1.39	-0.14	0.000

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.26
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.59
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.28
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	0.69
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)
23	76.64	8	1.888	1.969	1.136	0.602	4	10
22	75.80	155	1.847	1.758	1.059	0.565	76	195
21	72.50	503	1.689	1.082	0.798	0.436	190	631
20	68.50	315	1.508	0.521	0.552	0.308	84	396
19	66.00	256	1.400	0.284	0.432	0.244	54	321
18	62.50	660	1.255	0.063	0.298	0.175	100	829
17	58.50	409	1.100	-0.070	0.187	0.120	43	514
16	56.00	311	1.008	-0.108	0.135	0.099	27	390
15	53.69	414	0.926	-0.121	0.098	0.085	31	520
14	51.19	779	0.842	-0.118	0.067	0.077	52	978
13	48.58	950	0.758	-0.103	0.043	0.073	60	1,193
12	46.08	462	0.682	-0.081	0.027	0.072	29	580
11	42.50	1,098	0.580	-0.046	0.013	0.073	70	1,379
10	37.50	1,138	0.452	0.001	0.006	0.075	74	1,429
9	32.50	1,178	0.339	0.036	0.009	0.072	73	1,479
8	29.43	276	0.278	0.050	0.014	0.068	16	347
7	26.93	1,824	0.233	0.058	0.019	0.064	101	2,291
6	23.84	1,120	0.183	0.065	0.026	0.059	57	1,406
5	21.34	749	0.146	0.068	0.031	0.054	35	941
4	17.50	1,428	0.098	0.071	0.037	0.047	58	1,794
3	12.50	1,474	0.050	0.071	0.042	0.039	50	1,851
2	7.50	1,519	0.018	0.063	0.037	0.031	41	1,908
1	2.50	1,564	0.002	0.032	0.018	0.015	20	1,964
Pine Branches	76.69	600	1.890	1.981	1.140	0.604	314	753
Ericsson RRUS 32 w/	76.60	159	1.886	1.957	1.132	0.600	82	199
Ericsson RRUS 11 B12	76.60	152	1.886	1.957	1.132	0.600	79	191
Commscope LNX-	76.60	86	1.886	1.957	1.132	0.600	45	108
Ericsson AIR-32 B2A/	76.60	397	1.886	1.957	1.132	0.600	206	498
RFS APX16DWV-	76.60	126	1.886	1.957	1.132	0.600	65	158
Flat T-Arms	76.60	750	1.886	1.957	1.132	0.600	390	942
Pine Branches	70.00	600	1.575	0.702	0.636	0.352	183	753
Powerwave Allgon TT1	67.00	96	1.443	0.370	0.477	0.269	22	121
Raycap DC6-48-60-18-	67.00	66	1.443	0.370	0.477	0.269	15	82
Ericsson RRUS 32 B2	67.00	159	1.443	0.370	0.477	0.269	37	200

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

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Customer: Verizon Wireless

Ericsson RRUS-32 (77	67.00	231	1.443	0.370	0.477	0.269	54	290
Ericsson RRUS-11	67.00	330	1.443	0.370	0.477	0.269	77	414
Powerwave Allgon P65	67.00	159	1.443	0.370	0.477	0.269	37	200
Quintel QS66512-2	67.00	333	1.443	0.370	0.477	0.269	77	418
CCI OPA-65R-LCUU-H6	67.00	219	1.443	0.370	0.477	0.269	51	275
Round Sector Frames	67.00	900	1.443	0.370	0.477	0.269	209	1,130
Pine Branches	65.00	600	1.358	0.209	0.390	0.222	116	753
Pine Branches	60.00	600	1.157	-0.032	0.224	0.138	72	753
Alcatel-Lucent RRH 2	57.00	119	1.044	-0.096	0.154	0.106	11	149
Alcatel-Lucent RRH2x	57.00	170	1.044	-0.096	0.154	0.106	16	214
Alcatel-Lucent B66 R	57.00	201	1.044	-0.096	0.154	0.106	19	252
Commscope RC2DC-	57.00	52	1.044	-0.096	0.154	0.106	5	65
Amphenol Antel BXA-1	57.00	38	1.044	-0.096	0.154	0.106	4	48
Commscope SBNHH-	57.00	67	1.044	-0.096	0.154	0.106	6	84
Commscope SBNHH-	57.00	202	1.044	-0.096	0.154	0.106	19	254
Amphenol Antel LPA-8	57.00	162	1.044	-0.096	0.154	0.106	15	203
Flat T-Arms	57.00	750	1.044	-0.096	0.154	0.106	69	942
VZW Unused Reserve:	57.00	1,489	1.044	-0.096	0.154	0.106	137	1,869
Pine Branches	55.00	600	0.972	-0.116	0.118	0.092	48	753
Pine Branches	50.00	600	0.803	-0.113	0.055	0.074	39	753
Pine Branches	45.00	600	0.651	-0.071	0.021	0.072	38	753
Pine Branches	40.00	600	0.514	-0.021	0.008	0.074	39	753
Pine Branches	35.00	600	0.394	0.020	0.007	0.074	38	753
Pine Branches	30.00	600	0.289	0.048	0.013	0.069	36	753
Pine Branches	25.00	600	0.201	0.063	0.023	0.061	32	753
Pine Branches	20.00	600	0.129	0.069	0.033	0.052	27	753
Pine Branches	15.00	600	0.072	0.072	0.040	0.043	22	753
		33,803	62.029	22.464	20.420	12.456	4,093	42,447

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)
23	76.64	8	1.888	1.969	1.136	0.602	4	7
22	75.80	155	1.847	1.758	1.059	0.565	76	131
21	72.50	503	1.689	1.082	0.798	0.436	190	425
20	68.50	315	1.508	0.521	0.552	0.308	84	266
19	66.00	256	1.400	0.284	0.432	0.244	54	216
18	62.50	660	1.255	0.063	0.298	0.175	100	557
17	58.50	409	1.100	-0.070	0.187	0.120	43	346
16	56.00	311	1.008	-0.108	0.135	0.099	27	262
15	53.69	414	0.926	-0.121	0.098	0.085	31	349
14	51.19	779	0.842	-0.118	0.067	0.077	52	658
13	48.58	950	0.758	-0.103	0.043	0.073	60	802
12	46.08	462	0.682	-0.081	0.027	0.072	29	390
11	42.50	1,098	0.580	-0.046	0.013	0.073	70	927
10	37.50	1,138	0.452	0.001	0.006	0.075	74	961
9	32.50	1,178	0.339	0.036	0.009	0.072	73	994
8	29.43	276	0.278	0.050	0.014	0.068	16	233
7	26.93	1,824	0.233	0.058	0.019	0.064	101	1,540
6	23.84	1,120	0.183	0.065	0.026	0.059	57	945
5	21.34	749	0.146	0.068	0.031	0.054	35	632
4	17.50	1,428	0.098	0.071	0.037	0.047	58	1,206
3	12.50	1,474	0.050	0.071	0.042	0.039	50	1,244
2	7.50	1,519	0.018	0.063	0.037	0.031	41	1,282
1	2.50	1,564	0.002	0.032	0.018	0.015	20	1,321
Pine Branches	76.69	600	1.890	1.981	1.140	0.604	314	507
Ericsson RRUS 32 w/	76.60	159	1.886	1.957	1.132	0.600	82	134
Ericsson RRUS 11 B12	76.60	152	1.886	1.957	1.132	0.600	79	128

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 AM

Customer: Verizon Wireless

Commscope LNX-	76.60	86	1.886	1.957	1.132	0.600	45	73
Ericsson AIR-32 B2A/	76.60	397	1.886	1.957	1.132	0.600	206	335
RFS APX16DWW-	76.60	126	1.886	1.957	1.132	0.600	65	106
Flat T-Arms	76.60	750	1.886	1.957	1.132	0.600	390	633
Pine Branches	70.00	600	1.575	0.702	0.636	0.352	183	507
Powerwave Allgon TT1	67.00	96	1.443	0.370	0.477	0.269	22	81
Raycap DC6-48-60-18-	67.00	66	1.443	0.370	0.477	0.269	15	55
Ericsson RRUS 32 B2	67.00	159	1.443	0.370	0.477	0.269	37	134
Ericsson RRUS-32 (77	67.00	231	1.443	0.370	0.477	0.269	54	195
Ericsson RRUS-11	67.00	330	1.443	0.370	0.477	0.269	77	279
Powerwave Allgon P65	67.00	159	1.443	0.370	0.477	0.269	37	134
Quintel QS66512-2	67.00	333	1.443	0.370	0.477	0.269	77	281
CCI OPA-65R-LCUU-H6	67.00	219	1.443	0.370	0.477	0.269	51	185
Round Sector Frames	67.00	900	1.443	0.370	0.477	0.269	209	760
Pine Branches	65.00	600	1.358	0.209	0.390	0.222	116	507
Pine Branches	60.00	600	1.157	-0.032	0.224	0.138	72	507
Alcatel-Lucent RRH 2	57.00	119	1.044	-0.096	0.154	0.106	11	100
Alcatel-Lucent RRH2x	57.00	170	1.044	-0.096	0.154	0.106	16	144
Alcatel-Lucent B66 R	57.00	201	1.044	-0.096	0.154	0.106	19	170
Commscope RC2DC-	57.00	52	1.044	-0.096	0.154	0.106	5	44
Amphenol Antel BXA-1	57.00	38	1.044	-0.096	0.154	0.106	4	32
Commscope SBNHH-	57.00	67	1.044	-0.096	0.154	0.106	6	57
Commscope SBNHH-	57.00	202	1.044	-0.096	0.154	0.106	19	171
Amphenol Antel LPA-8	57.00	162	1.044	-0.096	0.154	0.106	15	137
Flat T-Arms	57.00	750	1.044	-0.096	0.154	0.106	69	633
VZW Unused Reserve:	57.00	1,489	1.044	-0.096	0.154	0.106	137	1,257
Pine Branches	55.00	600	0.972	-0.116	0.118	0.092	48	507
Pine Branches	50.00	600	0.803	-0.113	0.055	0.074	39	507
Pine Branches	45.00	600	0.651	-0.071	0.021	0.072	38	507
Pine Branches	40.00	600	0.514	-0.021	0.008	0.074	39	507
Pine Branches	35.00	600	0.394	0.020	0.007	0.074	38	507
Pine Branches	30.00	600	0.289	0.048	0.013	0.069	36	507
Pine Branches	25.00	600	0.201	0.063	0.023	0.061	32	507
Pine Branches	20.00	600	0.129	0.069	0.033	0.052	27	507
Pine Branches	15.00	600	0.072	0.072	0.040	0.043	22	507
		33,803	62.029	22.464	20.420	12.456	4,093	28,538

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 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	-40.48	-4.08	0.00	-245.68	0.00	245.68	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.046
5.00	-38.57	-4.04	0.00	-225.30	0.00	225.30	5,848.26	2,924.13	11,946.7	5,982.24	0.01	-0.01	0.044
10.00	-36.72	-4.00	0.00	-205.08	0.00	205.08	5,676.15	2,838.07	11,200.5	5,608.58	0.03	-0.02	0.043
15.00	-34.17	-3.93	0.00	-185.07	0.00	185.07	5,478.20	2,739.10	10,429.0	5,222.27	0.06	-0.04	0.042
20.00	-32.48	-3.87	0.00	-165.44	0.00	165.44	5,280.25	2,640.12	9,685.10	4,849.75	0.10	-0.05	0.040
22.69	-31.07	-3.81	0.00	-155.04	0.00	155.04	5,173.85	2,586.92	9,296.61	4,655.21	0.13	-0.06	0.039
25.00	-28.03	-3.68	0.00	-146.22	0.00	146.22	5,082.30	2,541.15	8,968.69	4,491.01	0.16	-0.06	0.038
28.85	-27.68	-3.67	0.00	-132.04	0.00	132.04	4,410.30	2,205.15	7,729.01	3,870.25	0.22	-0.07	0.040
30.00	-25.45	-3.56	0.00	-127.83	0.00	127.83	4,370.52	2,185.26	7,589.50	3,800.39	0.23	-0.07	0.039
35.00	-23.27	-3.45	0.00	-110.03	0.00	110.03	4,197.31	2,098.66	6,996.91	3,503.66	0.32	-0.09	0.037
40.00	-21.13	-3.34	0.00	-92.78	0.00	92.78	4,024.10	2,012.05	6,428.41	3,218.98	0.42	-0.10	0.034
45.00	-19.80	-3.28	0.00	-76.07	0.00	76.07	3,850.90	1,925.45	5,884.00	2,946.37	0.53	-0.11	0.031
47.16	-18.61	-3.22	0.00	-69.00	0.00	69.00	3,776.11	1,888.05	5,656.38	2,832.39	0.58	-0.12	0.029
50.00	-16.87	-3.12	0.00	-59.86	0.00	59.86	3,677.69	1,838.84	5,363.67	2,685.82	0.65	-0.12	0.027
52.38	-16.35	-3.09	0.00	-52.43	0.00	52.43	2,517.68	1,258.84	3,679.49	1,842.48	0.71	-0.13	0.035
55.00	-15.21	-3.02	0.00	-44.32	0.00	44.32	2,473.56	1,236.78	3,524.91	1,765.07	0.78	-0.13	0.031
57.00	-10.62	-2.67	0.00	-38.29	0.00	38.29	2,439.26	1,219.63	3,408.19	1,706.63	0.84	-0.14	0.027
60.00	-9.03	-2.49	0.00	-30.29	0.00	30.29	2,386.80	1,193.40	3,235.34	1,620.07	0.93	-0.14	0.022
65.00	-7.96	-2.32	0.00	-17.84	0.00	17.84	2,296.71	1,148.36	2,953.54	1,478.97	1.08	-0.15	0.016
67.00	-4.43	-1.65	0.00	-13.20	0.00	13.20	2,259.74	1,129.87	2,843.16	1,423.69	1.14	-0.15	0.011
70.00	-3.05	-1.27	0.00	-8.26	0.00	8.26	2,187.31	1,093.65	2,660.78	1,332.37	1.24	-0.15	0.008
75.00	-2.86	-1.19	0.00	-1.91	0.00	1.91	2,063.59	1,031.79	2,366.81	1,185.17	1.40	-0.16	0.003
76.60	0.00	0.00	0.00	0.00	0.00	0.00	2,024.00	1,012.00	2,276.38	1,139.88	1.46	-0.16	0.000
76.69	0.00	0.00	0.00	0.00	0.00	0.00	2,021.83	1,010.92	2,271.48	1,137.43	1.46	-0.16	0.000

Site Number: 414240

Code: ANSI/TIA-222-G

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 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	-27.22	-4.08	0.00	-245.03	0.00	245.03	5,994.12	2,997.06	12,661.4	6,340.12	0.00	0.00	0.043
5.00	-25.93	-4.04	0.00	-224.66	0.00	224.66	5,848.26	2,924.13	11,946.7	5,982.24	0.01	-0.01	0.042
10.00	-24.69	-3.99	0.00	-204.45	0.00	204.45	5,676.15	2,838.07	11,200.5	5,608.58	0.03	-0.02	0.041
15.00	-22.98	-3.92	0.00	-184.48	0.00	184.48	5,478.20	2,739.10	10,429.0	5,222.27	0.06	-0.04	0.040
20.00	-21.84	-3.86	0.00	-164.89	0.00	164.89	5,280.25	2,640.12	9,685.10	4,849.75	0.10	-0.05	0.038
22.69	-20.89	-3.80	0.00	-154.52	0.00	154.52	5,173.85	2,586.92	9,296.61	4,655.21	0.13	-0.06	0.037
25.00	-18.84	-3.67	0.00	-145.72	0.00	145.72	5,082.30	2,541.15	8,968.69	4,491.01	0.16	-0.06	0.036
28.85	-18.61	-3.66	0.00	-131.59	0.00	131.59	4,410.30	2,205.15	7,729.01	3,870.25	0.22	-0.07	0.038
30.00	-17.11	-3.55	0.00	-127.39	0.00	127.39	4,370.52	2,185.26	7,589.50	3,800.39	0.23	-0.07	0.037
35.00	-15.64	-3.44	0.00	-109.65	0.00	109.65	4,197.31	2,098.66	6,996.91	3,503.66	0.32	-0.09	0.035
40.00	-14.21	-3.33	0.00	-92.46	0.00	92.46	4,024.10	2,012.05	6,428.41	3,218.98	0.42	-0.10	0.032
45.00	-13.31	-3.26	0.00	-75.82	0.00	75.82	3,850.90	1,925.45	5,884.00	2,946.37	0.53	-0.11	0.029
47.16	-12.51	-3.20	0.00	-68.77	0.00	68.77	3,776.11	1,888.05	5,656.38	2,832.39	0.58	-0.12	0.028
50.00	-11.34	-3.11	0.00	-59.67	0.00	59.67	3,677.69	1,838.84	5,363.67	2,685.82	0.65	-0.12	0.025
52.38	-10.99	-3.08	0.00	-52.27	0.00	52.27	2,517.68	1,258.84	3,679.49	1,842.48	0.71	-0.13	0.033
55.00	-10.22	-3.01	0.00	-44.19	0.00	44.19	2,473.56	1,236.78	3,524.91	1,765.07	0.78	-0.13	0.029
57.00	-7.13	-2.66	0.00	-38.18	0.00	38.18	2,439.26	1,219.63	3,408.19	1,706.63	0.84	-0.14	0.025
60.00	-6.07	-2.48	0.00	-30.21	0.00	30.21	2,386.80	1,193.40	3,235.34	1,620.07	0.92	-0.14	0.021
65.00	-5.35	-2.31	0.00	-17.79	0.00	17.79	2,296.71	1,148.36	2,953.54	1,478.97	1.08	-0.15	0.014
67.00	-2.98	-1.64	0.00	-13.17	0.00	13.17	2,259.74	1,129.87	2,843.16	1,423.69	1.14	-0.15	0.011
70.00	-2.05	-1.27	0.00	-8.24	0.00	8.24	2,187.31	1,093.65	2,660.78	1,332.37	1.24	-0.15	0.007
75.00	-1.92	-1.19	0.00	-1.91	0.00	1.91	2,063.59	1,031.79	2,366.81	1,185.17	1.40	-0.16	0.003
76.60	0.00	0.00	0.00	0.00	0.00	0.00	2,024.00	1,012.00	2,276.38	1,139.88	1.45	-0.16	0.000
76.69	0.00	0.00	0.00	0.00	0.00	0.00	2,021.83	1,010.92	2,271.48	1,137.43	1.45	-0.16	0.000

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 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	44.73	0.00	40.52	0.00	0.00	2324.85	0.00	0.37
0.9D + 1.6W	44.72	0.00	30.38	0.00	0.00	2320.50	0.00	0.37
1.2D + 1.0Di + 1.0Wi	12.95	0.00	67.13	0.00	0.00	667.46	0.00	0.12
(1.2 + 0.2Sds) * DL + E ELFM	4.84	0.00	40.48	0.00	0.00	261.16	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	4.08	0.00	40.48	0.00	0.00	245.68	0.00	0.05
(0.9 - 0.2Sds) * DL + E ELFM	4.84	0.00	27.22	0.00	0.00	260.52	0.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	4.08	0.00	27.22	0.00	0.00	245.03	0.00	0.04
1.0D + 1.0W	11.63	0.00	33.80	0.00	0.00	604.04	0.00	0.10

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Site Name: Byram Park CT, CT

Engineering Number: OAA693059_C3_01

1/17/2017 11:49:25 AM

Customer: Verizon Wireless

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
4,555.20	38.30	74.40	2,324.85	67.13	44.73	51.04

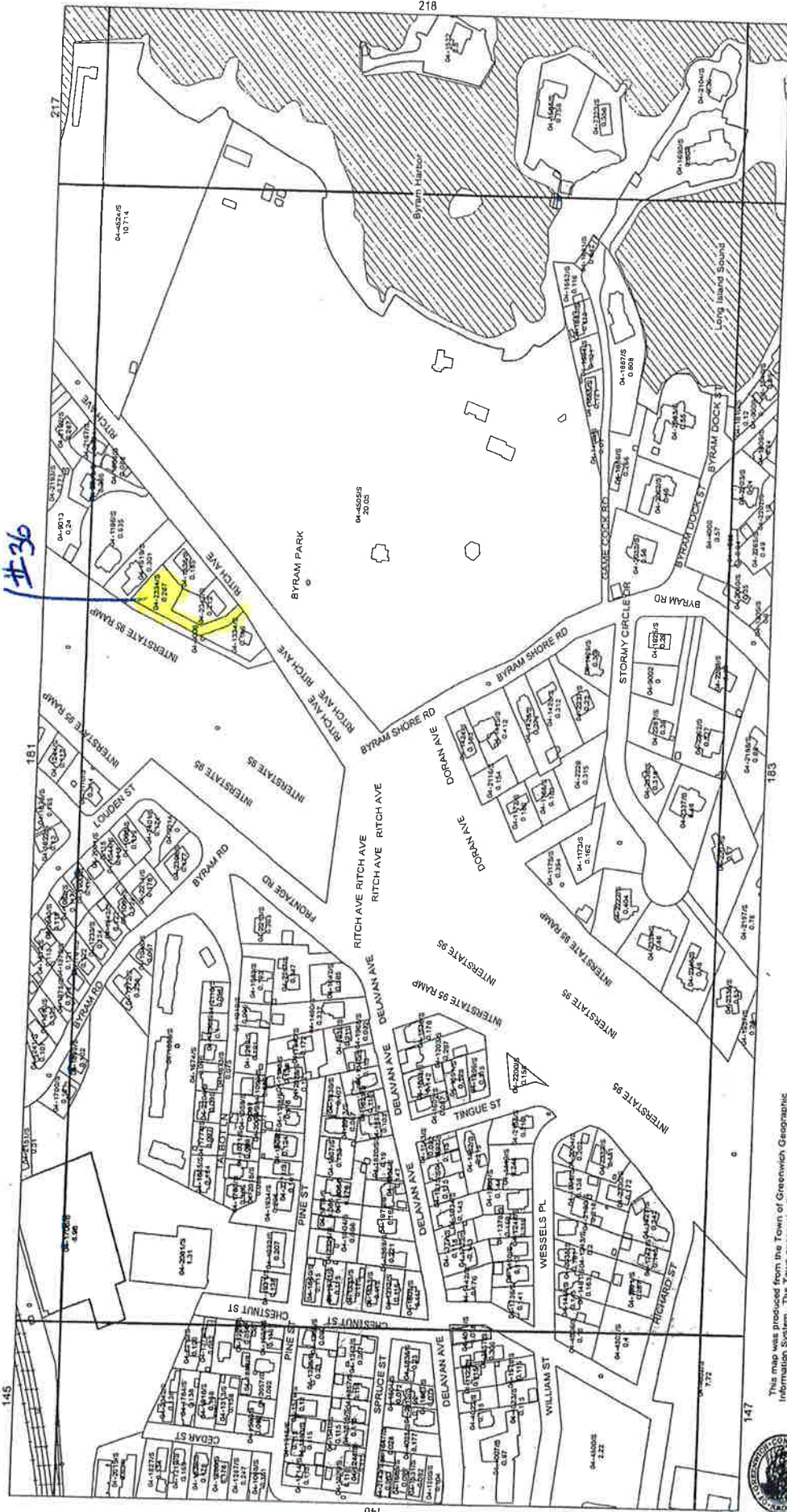
Base Plate

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	2.750	66.000	Round	0	0.00	8.252	277.46	702.09	0.40

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
60.00	20	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	96.35	260.00	0.39	89.64	260.00	0.36

ATTACHMENT 4



TOWN OF GREENWICH TAX MAP 182 VOL 3

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PARCEL NUMBER 04-2334/S
 Parent Parcel Number
 Property Address RITCH AVENUE 0036
 Neighborhood 2700 BYRAM
 Property Class 270 Telecommunications
 TAXING DISTRICT INFORMATION
 Jurisdiction 57 Greenwich, CT
 Area 001
 Corporation 057
 District 04
 Section & Plat 040
 Routing Number 7117N0001
 Site Description
 Topography:
 Public Utilities: Water, Sewer, Electric
 Street or Road:
 Neighborhood:
 Zoning: R-7 Single Family 7,5, J Primary Commercial
 Legal Acres: 0.2670

LOT NO P75 & P77A-1-1-3 R ITC AV N1B
 02/15/2002 KELLY BRIAN & LAURA W/S Bk/Pg: 3786, 114 50
 11/16/2000 CATALANO ANTHONY ETAL DBA CATALANO B Bk/Pg: 3492, 86 \$125000
 08/20/1986 NA Bk/Pg: 1611, 290 \$0

COMMERCIAL

VALUATION RECORD

Assessment Year	10/01/2005	11/30/2005	10/01/2010	10/01/2012	10/01/2015	10/01/2015	10/01/2015
Reason for Change	2005 Reval	2005 BAA	2010 Reval	2012 List	2015 Prelim	2015 Final	2015 BAA
VALUATION	622000	264400	605600	605600	664000	664000	664000
Market	0	0	101300	579000	2350700	2350700	2236000
	622000	264400	706900	1184600	3014700	3014700	2900000
VALUATION	435400	185080	423920	423920	464800	464800	464800
70% Assessed	0	0	70910	405300	1645490	1645490	1565200
	435400	185080	494830	829220	2110290	2110290	2030000

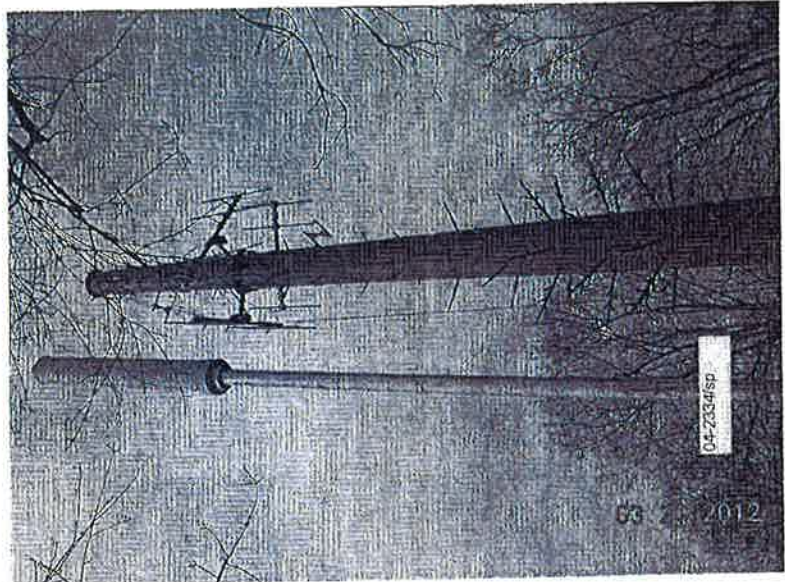
LAND DATA AND CALCULATIONS

Rating	Measured	Table	Prod. Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Value
Soil ID	Acres	Depth	Depth	Rate	Rate	Value	Factor	Value
-or- Actual Frontage	-or- Effective Frontage	-or- Effective Depth	-or- Effective Depth	57.09	57.09	664000		664000
116930.52	116930.52	57.09	57.09	57.09	57.09	664000		664000

Supplemental Cards
 TRUE TAX VALUE 664000
 Supplemental Cards
 TOTAL LAND VALUE 664000

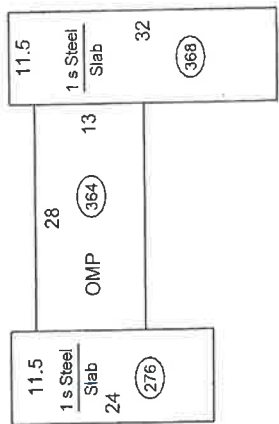
BA10: Sustained
 BA15: Decrease Total value by \$114,700
 BP12: 11-4098 Erection of 77' monopole to replc orig flagpole type mono pole cmplt. Construction of equip storage bldg. cmplt. Both poles strng and tied in as of 10/11/12 w/ orig. still operating. Add 2nd pole and misc site imprvmnts.
 BP15: 15-0972, 9 Antenna Panels, \$15,000
 CKMP: 8586
 DBA: Telecommunications site w/ a 70' flagpole monopole owned by Cingular (and carrier), and a 77' monopole (pole) owned by Verizon (w/ Verizon, ATT & Mobile carriers) both serviced by a custom utility bldg.
 LAND: See BP03 memo.

IMPROVEMENT DATA



PHYSICAL CHARACTERISTICS

Category	Code	Value	Code	Value	Code	Value
ROOFING	B	1	2	U		
Built-up						
WALLS						
Frame						
Brick						
Metal						
Guard						
FRAMING						
F Res	B	1	2	U		
		0	644		0	0
FINISH						
UF		SF	FO	FD		
1	0	0	0	644		
Total	0	0	0	644		
HEATING AND AIR CONDITIONING						
Heat	B	1	2	U		
Sprink		0	644		0	0
		0	644		0	0



01 02 03 04 05 06

SPECIAL FEATURES

Description	Value	ID	Use	Stry Hgt	Const Type	Grade	Year Const	Year Eff	Const Year	Cond	Base Rate	Feat- ures	Adj Rate	Size or Area	Computed Value	Phys Obsol	Market %	Depr Adj	Comp	Value
C	STGCA	0.00	Good	2012	2012	AV	0.00	N	0.00	644	0	0	0	150	100	163300				
01	TOWERMON	0.00	5PF	2003	2003	GD	1477	N	3323	70	232630	0	0	100	100	663000				
02	STNWALGS	8.00	Good	2012	2010	AV	125.00	N	281.25	9928	0	279000	3	0	100	771300				
03	PAVING	0.00	Avg	2012	2010	AV	5.20	N	7.80	2856	0	22280	3	0	100	61600				
04	RTWCBBREF	0.00	Good	2012	2010	AV	17.00	N	38.25	4x112	17140	3	0	100	100	47400				
05	TOWERMON	0.00	5PF	2012	2010	AV	0.00	N	0.00	77	200000	3	SV	100	100	552800				
06	CONCNPYH	0.00	Exe	2012	2012	AV	63.00	N	226.80	8x 18	32660	2	0	100	100	91200				

(LCM: 150.00)

SUMMARY OF IMPROVEMENTS

Supplemental Cards	Neighborhood	Appraiser/Date	Data Collector/Date	Year Const	Year Eff	Const Year	Cond	Base Rate	Feat- ures	Adj Rate	Size or Area	Computed Value	Phys Obsol	Market %	Depr Adj	Comp	Value
TOTAL IMPROVEMENT VALUE	Neigh 2700 AV	bd 10/01/2012	bd 10/11/2012	2012	2012	AV	0.00	63.00	N	226.80	8x 18	32660	2	0	100	100	91200

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