

August 7, 2018

Melanie A. Bachman, Esq.  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification  
38 Maple Street, Kent, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the top of an existing 150-foot monopole tower at 38 Maple Street in Kent, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of this tower in 2008 (Docket No. 353). Cellco now intends to replace six (6) of its existing antennas with six (6) new antennas (three (3) model NHH-65B-R2B, 700 MHz antennas and three (3) model NHH-65B-R2B, 2100 MHz antennas) at the same level on the tower. Cellco also intends to install six (6) new remote radio heads (“RRHs”) on the existing antenna platform and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cables.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Kent’s First Selectman, Bruce K. Adams; Donna Hayes, Kent’s Land Use Administrator; and ATC, the tower owner. The Town is the owner of the Property.

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 new antennas and RRHs will be attached to its existing antenna platform at the top of the tower.

18285837-v1

Melanie A. Bachman, Esq.  
August 7, 2018  
Page 2

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

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

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

A copy of the parcel map and property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials is included in Attachment 5.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Bruce K. Adams, First Selectman  
Donna Hayes, Land Use Administrator  
ATC  
Tim Parks

# **ATTACHMENT 1**

# NHH-65B-R2B



6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One RET for low band and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO

## Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	15.0	17.7	17.9	18.4	18.7
Beamwidth, Horizontal, degrees	65	60	71	69	64	57
Beamwidth, Vertical, degrees	12.4	11.2	5.7	5.2	4.9	4.6
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	13	14	18	18	19	18
Front-to-Back Ratio at 180°, dB	30	29	31	30	29	31
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR   Return Loss, dB	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

## Electrical Specifications, BASTA\*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.5	17.3	17.7	18.1	18.5
Gain by all Beam Tilts Tolerance, dB	±0.6	±1.1	±0.4	±0.4	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0°   14.4 7°   14.6 14°   14.3	0°   14.7 7°   14.7 14°   14.1	0°   17.2 4°   17.3 7°   17.3	0°   17.6 4°   17.7 7°   17.7	0°   18.0 4°   18.2 7°   18.1	0°   18.3 4°   18.5 7°   18.6
Beamwidth, Horizontal Tolerance, degrees	±2	±2.1	±3	±4.1	±6.5	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.7	±0.7	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	13	14	16	16	17	15
Front-to-Back Total Power at 180° ± 30°, dB	23	22	27	27	25	25
CPR at Boresight, dB	22	21	23	23	22	19
CPR at Sector, dB	10	7	16	13	11	4

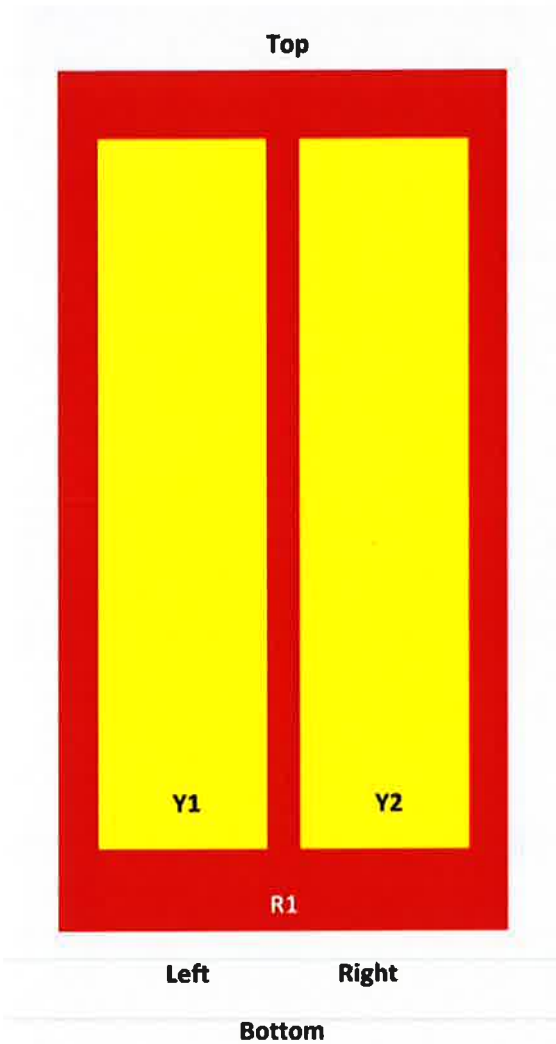
\* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

## Array Layout

# NHH-65B-R2B

**NHH**

Array	Freq (MHz)	Conas	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	ANXXXXXXXXXXXXXXXXX1
Y1	1695-2360	3-4	2	ANXXXXXXXXXXXXXXXXX2
Y2	1695-2360	5-6		



**View from the front of the antenna**  
 (Sizes of colored boxes are not true depictions of array sizes)

## General Specifications

**Operating Frequency Band**

1695 – 2360 MHz | 698 – 896 MHz

**Antenna Type**

Sector

# NHH-65B-R2B

---

<b>Band</b>	Multiband
<b>Performance Note</b>	Outdoor usage
<b>Total Input Power, maximum</b>	600 W @ 50 °C

## Mechanical Specifications

<b>RF Connector Quantity, total</b>	6
<b>RF Connector Quantity, low band</b>	2
<b>RF Connector Quantity, high band</b>	4
<b>RF Connector Interface</b>	7-16 DIN Female
<b>Color</b>	Light gray
<b>Grounding Type</b>	RF connector body grounded to reflector and mounting bracket
<b>Radiator Material</b>	Low loss circuit board
<b>Radome Material</b>	Fiberglass, UV resistant
<b>Reflector Material</b>	Aluminum
<b>RF Connector Location</b>	Bottom
<b>Wind Loading, frontal</b>	278.0 N @ 150 km/h 62.5 lbf @ 150 km/h
<b>Wind Loading, lateral</b>	230.0 N @ 150 km/h 51.7 lbf @ 150 km/h
<b>Wind Loading, maximum</b>	537.0 N @ 150 km/h 120.7 lbf @ 150 km/h
<b>Wind Speed, maximum</b>	241 km/h   150 mph

## Dimensions

<b>Length</b>	1828.0 mm   72.0 in
<b>Width</b>	301.0 mm   11.9 in
<b>Depth</b>	180.0 mm   7.1 in
<b>Net Weight, without mounting kit</b>	19.8 kg   43.7 lb

## Remote Electrical Tilt (RET) Information

<b>Input Voltage</b>	10–30 Vdc
<b>Internal Bias Tee</b>	Port 1   Port 3
<b>Internal RET</b>	High band (1)   Low band (1)
<b>Power Consumption, idle state, maximum</b>	2 W
<b>Power Consumption, normal conditions, maximum</b>	13 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	2 female   2 male

## Packed Dimensions

# NHH-65B-R2B

---

<b>Length</b>	1952.0 mm   76.9 in
<b>Width</b>	409.0 mm   16.1 in
<b>Depth</b>	299.0 mm   11.8 in
<b>Shipping Weight</b>	32.3 kg   71.2 lb

## Regulatory Compliance/Certifications

### Agency

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

### Classification

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



## Included Products

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

## \* Footnotes

**Performance Note** Severe environmental conditions may degrade optimum performance

# **Verizon Samsung RRH & CDU30 Specification October 2017**

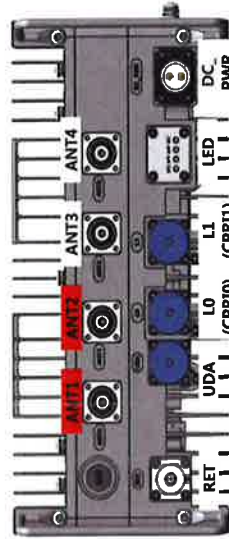
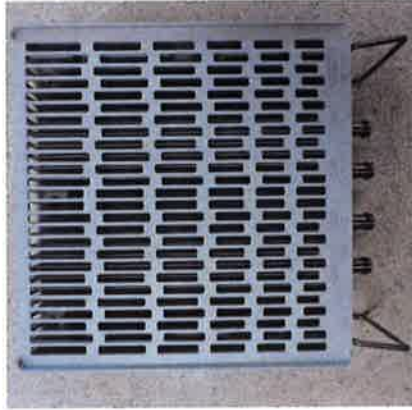
**Samsung Electronics Co. LTD.**



# Disclaimer

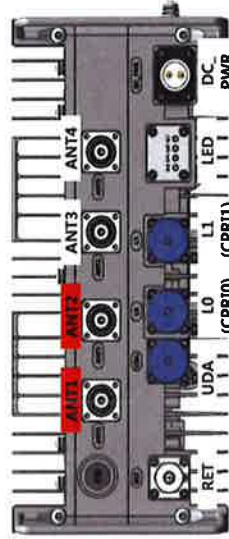
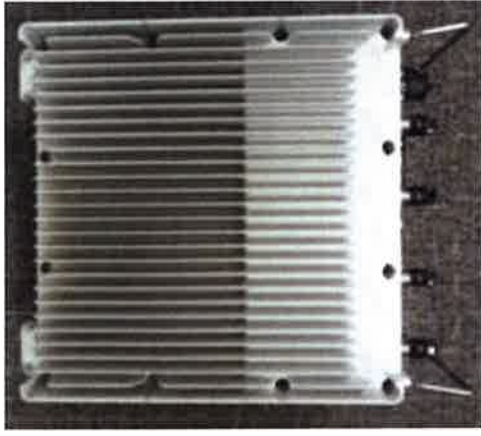
This document contains confidential and proprietary information of Samsung Electronics Co. Ltd. ("Samsung"), and all rights therein are expressly reserved. By accepting or using this document, the recipient agrees to hold it and the information contained therein in strict confidence. The document may not be used, copied, reproduced, in whole or in part, nor its contents revealed in any manner to others without the expressed written permission of Samsung. Information in this document is preliminary and subject to change, and this document does not represent any commitment or warranty on the part of Samsung.

# 700MHz Single Band RRH



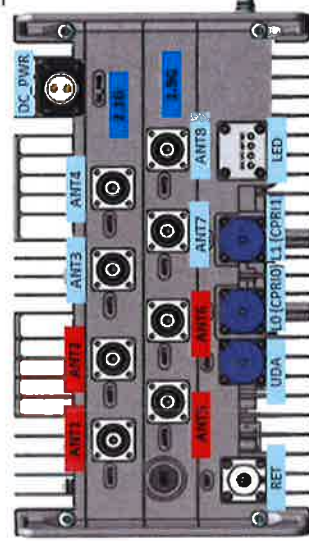
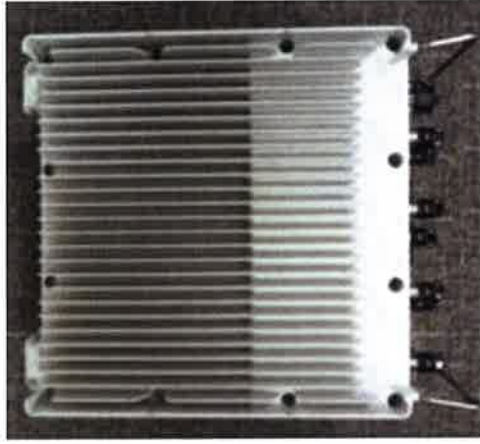
Item	Specification
Band	Band13 (700MHz)
Frequency	DL : 746~756MHz UL : 777~787MHz
IBW	10MHz
OBW	10MHz
Carrier Bandwidth	10MHz
# of carriers	1 carrier
Total # of carriers	1 carrier
RF Chain	4T4R, 2T4R, 2T2R SW configurable Total : 160W
RF Output Power	4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support
Noise Figure	Less than 3.0 dB
RX Sensitivity	Typical : -105dBm @1Rx (25RBs,5MHz)
Modulation	256QAM support
Input Power	-48VDC (-38VDC to -57VDC)
Power Consumption	About 620 Watt @ 100% RF load, typical conditions + TMA/RET
Size (WHD)	320 x 320 x 151 mm (12.6" x 12.6" x 6.0")
Volume	15.5 L
Weight	17 kg (37.5 lb)
(W/o Solar Shield & finger guard)	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A, FCC 47 CFR 27.53 c), f)
CPRI Cascade	Supported up to three B13 single band RRHs
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex
RET & TMA Interface	AISG 2.2
Bias-T	2 ports (Max. 30W)
Mounting Options	Pole, wall, tower, side by side, back to back
NB-IoT	Support
PIM Cancellation	Not supported
# of antenna port	4
External Alarm	4

# 700+850MHz Dual Band RRH



Item	Specification
Band	Band13 (700MHz) Band5 (850MHz)
Frequency	DL : 746~756MHz UL : 777~787MHz
IBW	10MHz
OBW	10MHz
Carrier Bandwidth	10MHz
# of carriers	1 carrier
Total # of carriers	4C
RF Chain	4T4R, 2T4R, 2T2R (SW configurable) Total : 320W
RF Output Power	4 x 40W or 2 x 60W 4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support
Noise Figure	Less than 3.0 dB
RX Sensitivity	Typical : -105dBm @1Rx (25RBs 5MHz)
Modulation	256QAM support
Input Power	-48VDC (-38VDC to -57VDC)
Power Consumption	About 1.106Watt @ 100% RF load, typical conditions + TMA/RET
Size (WHD)	380 x 380 x 207 mm (15.0" x 15.0" x 8.1")
Volume	29.9 L
Weight	31.9 kg(70.3 lb)
(W/o Solar Shield & finger guard)	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A, 3GPP 36.104 Category A FCC 47 CFR 27.53 c), f) FCC 47 CFR 22.917
CPRI Cascade	Not supported
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex
RET & TMA Interface	AISG 2.2
Bias-T	2 ports (Max. 49W)
Mounting Options	Pole, wall, tower, side by side, back to back
NB-IoT	Support
PIM Cancellation	Support
# of antenna port	4
External Alarm	4

# PCS+AWS Dual Band RRH



8 port Dual Band

Item	Specification
Band	Band2 (1.9GHz) Band66 (2.1GHz)
Frequency	DL : 1930~1990MHz UL : 1850~1910MHz
IBW	60MHz
OBW	20MHz
Carrier Bandwidth	5MHz, 10MHz, 15MHz, 20MHz
# of carriers	2 carriers
Total # of carriers	3 carriers
RF Chain	4 carriers
RF Chain	4T4R, 2T4R, 2T2R (SW configurable)
RF Output Power	Total : 320W (for OBW 40MHz) 4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support
Noise Figure	Less than 3.0 dB
RX Sensitivity	Typical : -105dBm @1Rx (25RBs 5MHz)
Modulation	256QAM support
Input Power	-48VDC (-38VDC to -57VDC)
Power Consumption	About 1.270 Watt @ 100% RF load, typical conditions (w/ BAS OOBEx)+TMA/RET
Size (WHD)	380 x 380 x 255 mm (15.0" x 15.0" x 10.0") (w/ BAS OOBEx)
Volume	36.8 L
Weight	38.3 kg( 84.4lb)
(W/o Solar Shield & finger guard)	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A [B2] : FCC 47 CFR 24.238 [B66] : FCC 47 CFR 27.53 h)
CPRI Cascade	Not supported
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex
RET & TMA Interface	AISG 2.2
Bias-T	4 ports (2 ports per band) (Max. 49W)
Mounting Options	Pole, wall, tower, side by side, back to back
NB-IoT	Support
PIM Cancellation	Support
# of antenna port	4
External Alarm	4

# Dual-band RRH Power consumption

RRH type	Output power	Temp.	Load condition	Power consumption	Remark
700 single band	4T 40W*4 port (160W)	25 degC	100% load + TMA/RET	620W	
			100% load	1057W	
700/850 dual band	4T 80W*4 port(320W )	25degC	50% load	650W	
			100% load + TMA/RET	1106W	
			100% load	798W	
			50% load	497W	
PCS/AWS dual band	4T 90W*2port, 60W*2port (300W)	25degC	100% load + TMA/RET	847W	
			100% load	1221W	
			50% load	769W	with BAS filter
			100% load + TMA/RET	1270W	
PCS/AWS dual band	8T 40W*8 port(320W )	25degC	100% load	1067W	
			50% load	666W	with BAS filter
			100% load + TMA/RET	1116W	

# CDU30 - BBU Specification



**LCC: LTE Channel Card**

**LMD: LTE Main Card**

Category	Specification
No. of CPRI Port	36
Backhaul	100/1000Base-T (RJ-45) 1port 1000Base-LX/SX (SFP) 1port 1000Base-LX/SX or 10GBase-SR (SFP) 1port
Clock	GPS, IEEE1588v2
Size (W x D x H, mm)	434 x 385 x 88 (19" rack mountable)
Weight (kg)	Under 16kg
Operating temperature	0°C ~ 50°C
Power consumption	LMD + LCC x 1 : 357W@ 25°C , 460W@ 50°C LMD + LCC x 3 : 857W@ 25°C , 1054W@ 50°C



**Copyright and Confidentiality**

Copyright © 2012 © SAMSUNG Electronics Co., Ltd. SAMSUNG Electronics reserves the right to make changes to the specifications of the products detailed in this document at any time without notice and obligation to notify any person of such changes. Information in this document is proprietary to SAMSUNG Electronics Co., Ltd. No information contained here may be copied, translated, transcribed or duplicated by any form without the prior written consent of SAMSUNG Electronics.



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

**Product Description**

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

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

**Features/Benefits**

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

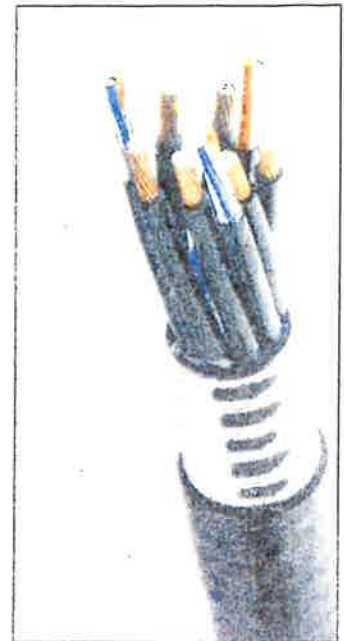


Figure 1: HYBRIFLEX Series

**Technical Specifications**

<b>Construction</b>			
Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
<b>Mechanical Properties</b>			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
<b>Electrical Properties</b>			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm <sup>2</sup> (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
<b>Optical Properties</b>			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
<b>DC Power Cable Properties</b>			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.3 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
<b>Environment</b>			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

\* This data is provisional and subject to change

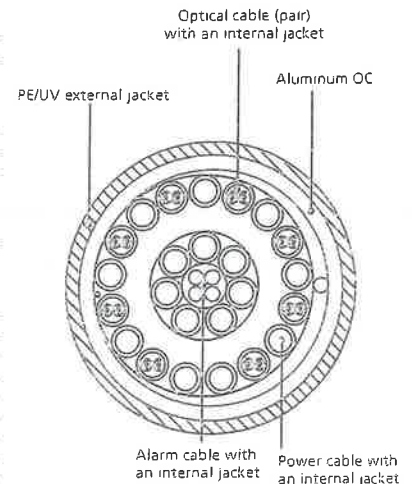


Figure 2: Construction Detail

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



# **ATTACHMENT 2**

Site Name: Kent Tower Height: 150Ft		General		Power		Density							
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*T-Mobile-AWS-LTE	2	2559	110	2100	0.1702	1.0000	1.70%						
*T-Mobile-PCS-LTE	2	2559	110	1900	0.1702	1.0000	1.70%						
*T-Mobile-AWS-UMTS	2	1280	110	2100	0.0851	1.0000	0.85%						
*T-Mobile-PCS-UMTS	2	1280	110	1950	0.0851	1.0000	0.85%						
*T-Mobile-PCS-GSM	2	1280	110	1950	0.0851	1.0000	0.85%						
*T-Mobile-LTE	1	865	110	700	0.0288	0.4667	0.62%						
*AT&T	1	325	140	880	0.0065	0.5867	0.11%						
*AT&T	2	325	140	880	0.0130	0.5867	0.22%						
*AT&T	1	425	140	1900	0.0085	1.0000	0.09%						
*AT&T	1	1476	140	700	0.0296	0.4667	0.63%						
*AT&T	1	2421	140	1900	0.0485	1.0000	0.48%						
<b>VZW PCS</b>	<b>0</b>	<b>1802</b>	<b>147</b>	<b>0.0000</b>	<b>1970</b>	<b>1.0000</b>	<b>0.00%</b>						
<b>VZW Cellular</b>	<b>0</b>	<b>347</b>	<b>147</b>	<b>0.0000</b>	<b>869</b>	<b>0.5793</b>	<b>0.00%</b>						
<b>VZW AWS</b>	<b>1</b>	<b>7770</b>	<b>147</b>	<b>0.1293</b>	<b>2145</b>	<b>1.0000</b>	<b>12.93%</b>						
<b>VZW 700</b>	<b>1</b>	<b>2062</b>	<b>147</b>	<b>0.0343</b>	<b>746</b>	<b>0.4973</b>	<b>6.90%</b>						<b>27.94%</b>
* Source: Siting Council													

# **ATTACHMENT 3**



**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 149 ft Monopole  
**ATC Site Name** : Kent Pcs CT, CT  
**ATC Site Number** : 413783  
**Engineering Number** : OAA731824\_C3\_02  
**Proposed Carrier** : Verizon  
**Carrier Site Name** : Kent  
**Carrier Site Number** : N/A  
**Site Location** : S Kent Rd  
Kent, CT 06757-1709  
41.721900,-73.475000  
**County** : Litchfield  
**Date** : May 23, 2018  
**Max Usage** : 65%  
**Result** : Pass

Prepared By:  
Parvin NikpoorParizi  
Structural Engineer I

*Parvin NikpoorParizi*

Reviewed By:



Authorized by "EOR"  
May 24 2018 5:18 PM

cosign

**COA: PEC.0001553**



**Table of Contents**

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



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by Verizon.

## Supporting Documents

<b>Tower Drawings</b>	EEl Project #15320, dated March 18, 2008
<b>Foundation Drawing</b>	EEl Project #15320, dated March 14, 2008
<b>Geotechnical Report</b>	Dr. Clarence Welti Report #15320, dated January 22, 2007

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	90 mph (3-Second Gust, $V_{ASD}$ ) / 115 mph (3-Second Gust, $V_{ULT}$ )
<b>Basic Wind Speed w/ Ice:</b>	40 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	C
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.19$ , $S_1 = 0.06$
<b>Site Class:</b>	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](mailto: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 <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152	159.0	2	RFS Celwave PD220	Low Profile Platform	(3) 7/8" Coax	Other
		1	3' Yagi			
	152.0	6	Antel LPA-80080/6CF	Low Profile Platform	(12) 1 5/8" Coax	Verizon
	1	VZW Unused Reserve: 17,440 sq in				
140.0	140.0	1	Andrew ABT-DFDM-ADB		(18) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 2" Carflex Non-Metallic Conduit	AT&T Mobility
		6	Powerwave TT19-08BP111-001			
		3	Powerwave TT08-19DB111-001			
		1	Raycap DC6-48-60-18-8F (23.5" Height)			
		3	Ericsson RRUS A2 Module			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS-11			
		1	Raycap DC6-48-60-18			
		2	Andrew SBNHH-1D65A (33.5 lbs)			
		6	Powerwave P90-15-XLH-RR			
		1	CCI HPA-65R-BUU-H6			
117.0	124.0	2	Decibel DB222	Stand Offs	(3) 7/8" Coax	Other
	118.0	1	3' Yagi			
110.0	110.0	1	Symmetricom 58532A	T-Arms	(2) 1 5/8" Fiber (1) 1/2" Coax	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson RRUS 11 B2			
		3	Ericsson RRUS 11 B4			
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Commscope LNX-6515DS-A1M (50.3 lb)			

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	152.0	3	Antel BXA-70063/6CF	-	-	Verizon
		3	Antel LPA-185080/12CF			

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	152.0	3	Samsung 700+850MHZ Dual Band RRH	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon
		3	Samsung PCS/AWS Dual Band RRH			
		1	Raycap RVZDC-6627-PF-48			
		6	Commscope NHH-65B-R2B			

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

Install proposed coax inside the pole shaft.



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	46%	Pass
Shaft	65%	Pass
Base Plate	31%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,897.9	3,585.7	73%
Shear (Kips)	39.5	31.1	79%

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) (°)
152.0	Samsung PCS/AWS Dual Band RRH	Verizon	1.744	1.246
	Samsung 700+850MHZ Dual Band RRH			
	Raycap RVZDC-6627-PF-48			
	Commscope NHH-65B-R2B			

\*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 performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

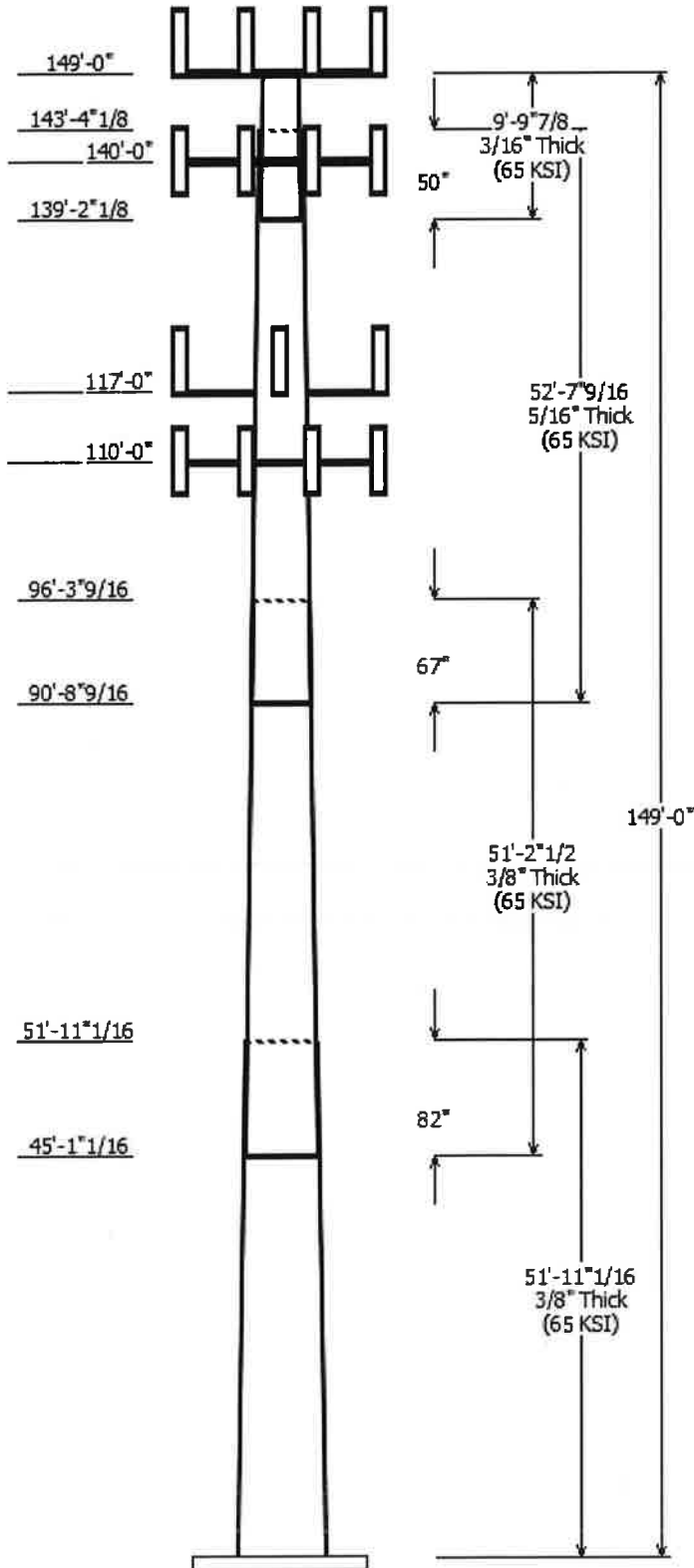
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.

© 2007 - 2018 by ATC IP LLC. All rights reserved.



Job Information	
Pole : 413783	Code: ANSI/TIA-222-G
Location : Kent Pcs CT, CT	
Description : ATC413783	
Client : VERIZON WIRELESS	Struct Class : II
Shape : 18 Sides	Exposure : C
Height : 149.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.241124in/ft)	

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Shape	Steel Grade (ksi)
		Across Top	Flats Bottom					
1	51.920	47.98	60.50	0.375		0.000	18 Sides	65
2	51.210	38.03	50.37	0.375	Slip Joint	82.000	18 Sides	65
3	52.630	27.31	40.00	0.313	Slip Joint	67.000	18 Sides	65
4	9.823	26.32	28.69	0.188	Slip Joint	50.000	18 Sides	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	152.000	6	Commscope NHH-65B-R2B
149.000	152.000	1	Raycap RVZDC-6627-PF-48
149.000	152.000	3	Samsung 700+850MHZ Dual
149.000	152.000	3	Samsung PCS/AWS Dual Band
149.000	152.000	1	VZW Unused Reserve: 17,440
149.000	159.000	2	RFS Celwave PD220
149.000	152.000	1	3' Yagi
149.000	152.000	6	Antel LPA-80080/6CF
149.000	149.000	1	Flat Low Profile Platform
140.000	140.000	2	Andrew SBNHH-1D65A (33.5
140.000	140.000	3	Ericsson RRUS 32 B2
140.000	140.000	6	Powerwave Allgon TT19-
140.000	140.000	1	CCI HPA-65R-BUU-H6
140.000	140.000	6	Powerwave Allgon P90-15-
140.000	140.000	1	Raycap DC6-48-60-18-8F (23.5"
140.000	140.000	3	Ericsson RRUS A2 Module
140.000	140.000	3	Ericsson RRUS-11
140.000	140.000	1	Round Low Profile Platform
140.000	140.000	3	Powerwave Allgon TT08-
140.000	140.000	1	Andrew ABT-DFDM-ADB
140.000	140.000	1	Raycap DC6-48-60-18
117.000	118.000	1	3' Yagi
117.000	117.000	2	Stand Off
117.000	124.000	2	Decibel DB222
110.000	110.000	3	Flat T-Arm
110.000	110.000	3	Commscope LNX-6515DS-A1M
110.000	110.000	3	RFS APX16DWV-16DWVS-E-A20
110.000	110.000	3	Ericsson RRUS 11 B2
110.000	110.000	3	Ericsson RRUS 11 B4
110.000	110.000	3	Ericsson RRUS 11 B12
110.000	110.000	1	Symmetricom 58532A

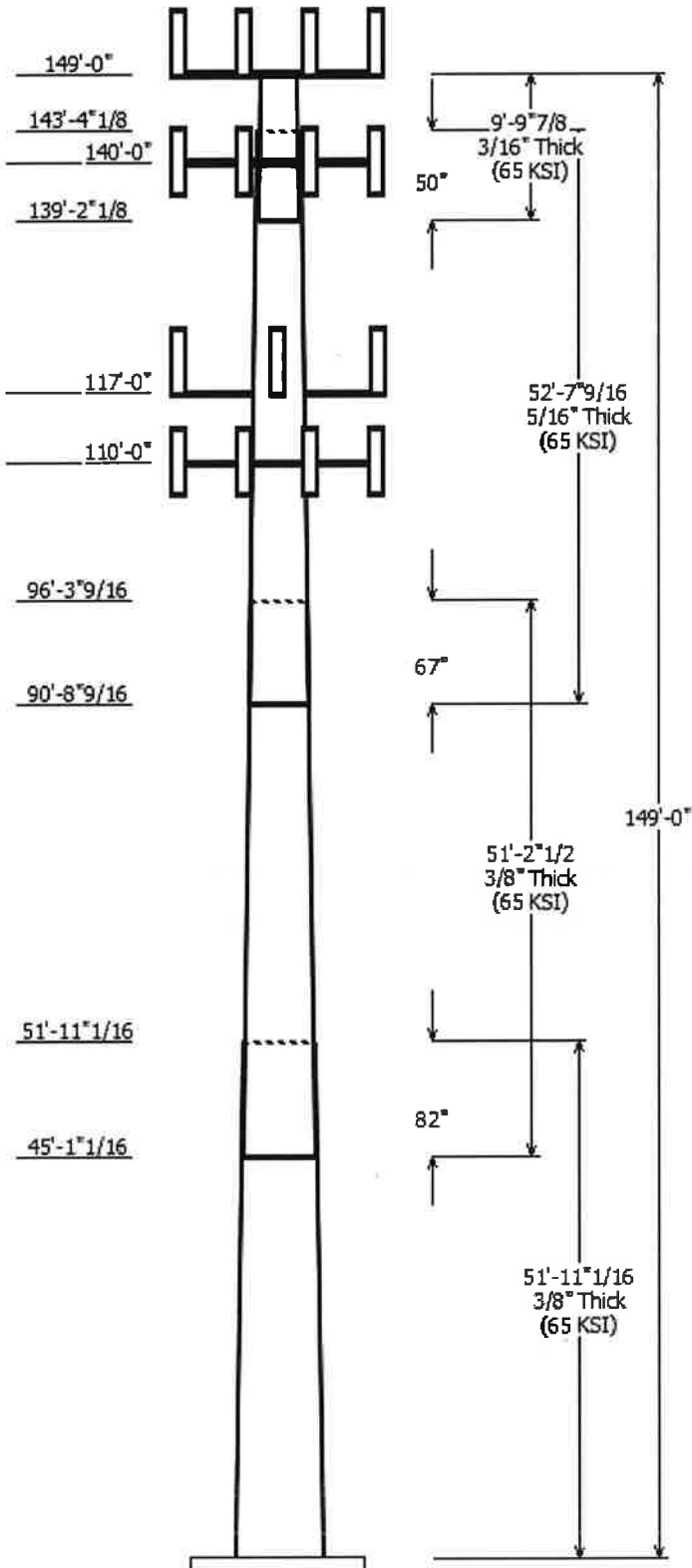
Linear Appurtenance				
Elev (ft)	From	To	Description	Exposed To Wind
0.000	110.0		1 5/8" Fiber	No
0.000	110.0		1/2" Coax	No
0.000	117.0		7/8" Coax	No
0.000	140.0		0.39" Fiber Trunk	No
0.000	140.0		0.78" 8 AWG 6	No
0.000	140.0		1 5/8" Coax	No

0.000	140.0	2" Carflex Non-	No
0.000	149.0	1 5/8" Coax	No
0.000	149.0	1 5/8" Hybriflex	No
0.000	149.0	7/8" Coax	No

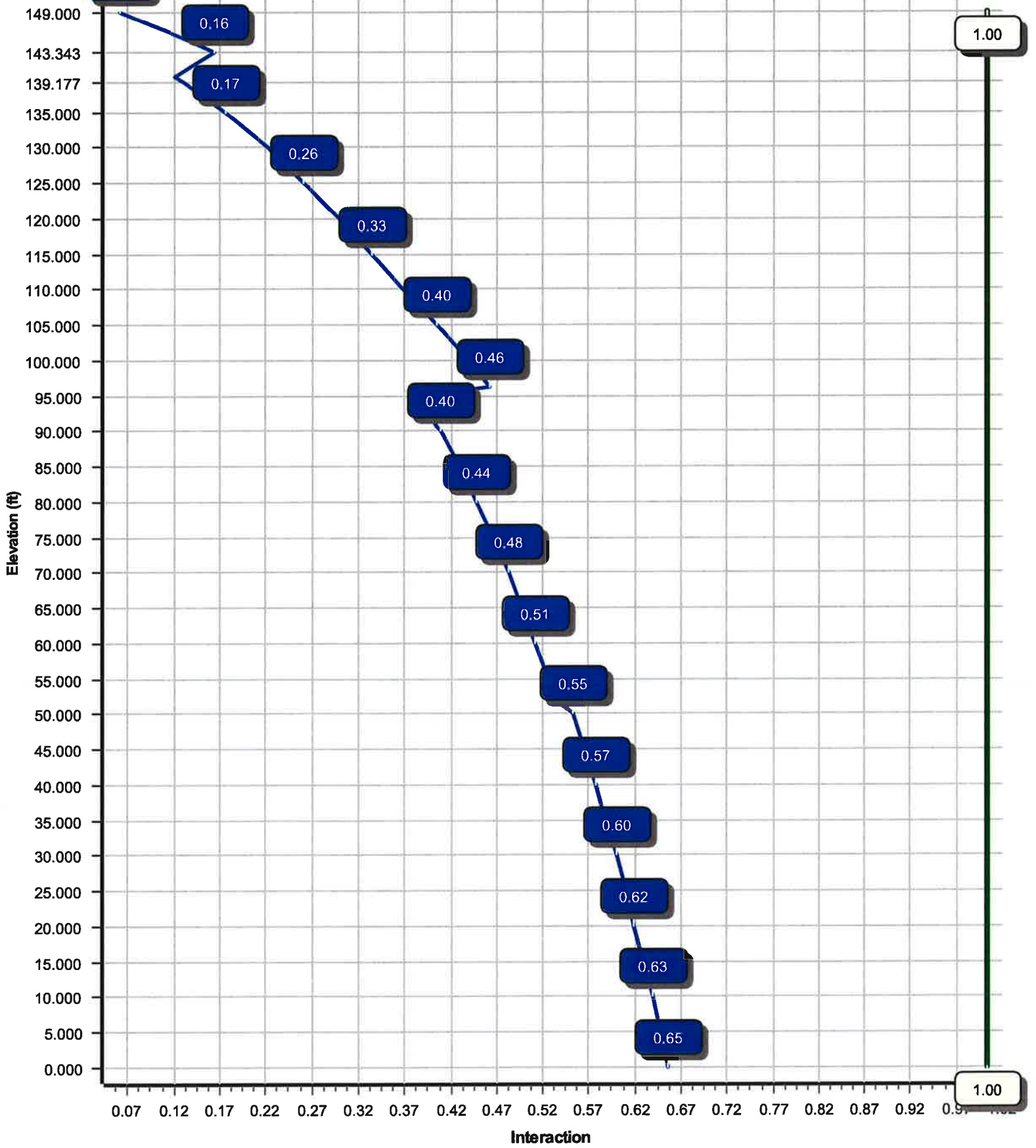
Load Cases	
1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (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	3585.71	31.14	47.93
0.9D + 1.6W	3555.06	31.12	35.93
1.2D + 1.0Di + 1.0Wi	756.51	6.61	73.63
(1.2 + 0.2Sds) * DL + E ELFM	217.55	1.80	47.87
(1.2 + 0.2Sds) * DL + E EMAM	379.10	3.02	47.87
(0.9 - 0.2Sds) * DL + E ELFM	215.35	1.80	33.18
(0.9 - 0.2Sds) * DL + E EMAM	374.98	3.02	33.18
1.0D + 1.0W	991.13	8.65	39.97

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 65.26% at 0.0 ft**



Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:41 AM

Customer: VERIZON WIRELESS

### Analysis Parameters

Location :	LITCHFIELD County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-G	Base Diameter (in) :	60.50
Shape :	18 Sides	Top Diameter (in) :	26.32
Pole Type :	Taper	Taper (in/ft) :	0.241
Pole Manufacturer :		Rotation (deg) :	0.00

### Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	90 mph
Exposure Category:	C	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

### Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.01		
T <sub>L</sub> (sec):	6	p:	1.3
S <sub>s</sub> :	0.189	S <sub>1</sub> :	0.065
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.202	S <sub>d1</sub> :	0.104
		C <sub>s</sub> :	0.035
		C <sub>s</sub> Max:	0.035
		C <sub>s</sub> Min:	0.030

### Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:41 AM

Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom					Top							
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	51.920	0.3750	65		0.00	11,327	60.50	0.00	71.56	32684.4	26.68	161.33	47.98	51.92	56.66	16223.9	20.80	127.95	0.241124
2-18	51.210	0.3750	65	Slip	82.00	9,090	50.37	45.09	59.51	18800.8	21.92	134.34	38.03	96.30	44.82	8029.0	16.12	101.41	0.241124
3-18	52.630	0.3125	65	Slip	67.00	5,923	40.00	90.71	39.37	7834.6	20.81	128.01	27.31	143.34	26.78	2466.2	13.65	87.40	0.241124
4-18	9.823	0.1875	65	Slip	50.00	543	28.69	139.18	16.96	1741.2	25.22	153.02	26.32	149.00	15.55	1342.2	22.99	140.39	0.241124
Shaft Weight						26,883													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
149.00	3' Yagi	1	0.000	3.000	10.00	2.980	1.00
149.00	Antel LPA-80080/6CF	6	0.000	3.000	21.00	8.630	0.65
149.00	Commscope NHH-65B-R2B	6	0.000	3.000	43.70	8.080	0.69
149.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
149.00	Raycap RVZDC-6627-PF-48	1	0.000	3.000	32.00	3.780	0.67
149.00	RFS Celwave PD220	2	0.000	10.000	25.00	5.500	1.00
149.00	Samsung 700+850MHZ Dual	3	0.000	3.000	82.00	1.880	0.50
149.00	Samsung PCS/AWS Dual Band	3	0.000	3.000	84.40	1.880	0.50
149.00	VZW Unused Reserve: 17,440 sq	1	0.000	3.000	1580.60	121.21	1.00
140.00	Andrew ABT-DFDM-ADB	1	0.000	0.000	1.10	0.050	0.50
140.00	Andrew SBNHH-1D65A (33.5 lbs)	2	0.000	0.000	33.50	5.880	0.69
140.00	CCI HPA-65R-BUU-H6	1	0.000	0.000	51.00	9.660	0.69
140.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	2.740	0.67
140.00	Ericsson RRUS A2 Module	3	0.000	0.000	21.20	1.600	0.50
140.00	Ericsson RRUS-11	3	0.000	0.000	55.00	3.790	0.67
140.00	Powerwave Allgon P90-15-XLH-	6	0.000	0.000	53.00	8.130	0.67
140.00	Powerwave Allgon TT08-	3	0.000	0.000	22.00	0.920	0.50
140.00	Powerwave Allgon TT19-	6	0.000	0.000	16.00	0.640	0.50
140.00	Raycap DC6-48-60-18	1	0.000	0.000	30.00	3.810	0.67
140.00	Raycap DC6-48-60-18-8F (23.5"	1	0.000	0.000	20.00	1.110	1.00
140.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
117.00	3' Yagi	1	0.000	1.000	10.00	2.980	1.00
117.00	Decibel DB222	2	0.000	7.000	16.00	2.250	1.00
117.00	Stand Off	2	0.000	0.000	75.00	2.500	0.90
110.00	Commscope LNX-6515DS-A1M	3	0.000	0.000	50.30	11.450	0.70
110.00	Ericsson RRUS 11 B12	3	0.000	0.000	50.70	2.790	0.67
110.00	Ericsson RRUS 11 B2	3	0.000	0.000	50.70	2.790	0.67
110.00	Ericsson RRUS 11 B4	3	0.000	0.000	50.70	2.790	0.67
110.00	Flat T-Arm	3	0.000	0.000	250.00	12.900	0.67
110.00	RFS APX16DWV-16DWVS-E-A20	3	0.000	0.000	40.70	6.590	0.60
110.00	Symmetricom 58532A	1	0.000	0.000	0.40	0.220	0.50
Totals	Num Loadings:31	79			8268.40		

**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	149.00	12	1 5/8" Coax	1.98	0.82	N 0.00	N	Verizon
0.00	149.00	2	1 5/8" Hybriflex	1.98	1.30	N 0.00	N	Verizon
0.00	149.00	3	7/8" Coax	1.09	0.33	N 0.00	N	Other
0.00	140.00	1	0.39" Fiber Trunk	0.39	0.06	N 0.00	N	AT&T Mobility
0.00	140.00	2	0.78" 8 AWG 6	0.78	0.59	N 0.00	N	AT&T Mobility

---

---

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:41 AM

Customer: VERIZON WIRELESS

---

---

0.00	140.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	140.00	1	2" Carflex Non-	2.36	0.68	N	0.00	N	AT&T Mobility
0.00	117.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Other
0.00	110.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	T-Mobile
0.00	110.00	1	1/2" Coax	0.63	0.15	N	0.00	N	T-Mobile

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:41 AM

Customer: VERIZON WIRELESS

**Segment Properties** (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3750	60.500	71.561	32,684.4	26.68	161.33	70.0	1064.	0.0	0.0
5.00		0.3750	59.294	70.126	30,757.4	26.12	158.12	70.7	1021.	0.0	1,205.3
10.00		0.3750	58.089	68.691	28,907.7	25.55	154.90	71.3	980.2	0.0	1,180.9
15.00		0.3750	56.883	67.256	27,133.7	24.98	151.69	72.0	939.5	0.0	1,156.5
20.00		0.3750	55.678	65.821	25,433.7	24.42	148.47	72.7	899.7	0.0	1,132.1
25.00		0.3750	54.472	64.387	23,806.3	23.85	145.26	73.3	860.8	0.0	1,107.7
30.00		0.3750	53.266	62.952	22,249.9	23.28	142.04	74.0	822.7	0.0	1,083.3
35.00		0.3750	52.061	61.517	20,762.8	22.72	138.83	74.7	785.5	0.0	1,058.8
40.00		0.3750	50.855	60.082	19,343.5	22.15	135.61	75.3	749.2	0.0	1,034.4
45.00		0.3750	49.649	58.647	17,990.4	21.58	132.40	76.0	713.7	0.0	1,010.0
45.09	Bot - Section 2	0.3750	49.629	58.622	17,967.5	21.57	132.34	76.0	713.1	0.0	17.3
50.00		0.3750	48.444	57.212	16,701.9	21.02	129.18	76.7	679.1	0.0	1,951.5
51.92	Top - Section 1	0.3750	48.731	57.553	17,002.9	21.15	129.95	76.5	687.2	0.0	749.8
55.00		0.3750	47.988	56.670	16,231.4	20.80	127.97	76.9	666.2	0.0	598.6
60.00		0.3750	46.783	55.235	15,029.4	20.23	124.75	77.6	632.8	0.0	952.0
65.00		0.3750	45.577	53.800	13,888.2	19.67	121.54	78.3	600.2	0.0	927.5
70.00		0.3750	44.371	52.365	12,806.3	19.10	118.32	78.9	568.5	0.0	903.1
75.00		0.3750	43.166	50.930	11,782.1	18.53	115.11	79.6	537.6	0.0	878.7
80.00		0.3750	41.960	49.495	10,814.0	17.97	111.89	80.3	507.6	0.0	854.3
85.00		0.3750	40.754	48.060	9,900.5	17.40	108.68	80.9	478.5	0.0	829.9
90.00		0.3750	39.549	46.625	9,039.9	16.83	105.46	81.6	450.2	0.0	805.5
90.71	Bot - Section 3	0.3750	39.377	46.420	8,921.3	16.75	105.00	81.7	446.2	0.0	112.9
95.00		0.3750	38.343	45.190	8,230.7	16.27	102.25	82.3	422.8	0.0	1,234.9
96.30	Top - Section 2	0.3125	38.656	38.030	7,064.1	20.05	123.70	77.8	359.9	0.0	367.1
100.0		0.3125	37.763	37.144	6,581.9	19.54	120.84	78.4	343.3	0.0	473.7
105.0		0.3125	36.557	35.949	5,966.5	18.86	116.98	79.2	321.5	0.0	621.8
110.0		0.3125	35.351	34.753	5,390.7	18.18	113.12	80.0	300.3	0.0	601.5
115.0		0.3125	34.146	33.557	4,853.2	17.50	109.27	80.8	279.9	0.0	581.1
117.0		0.3125	33.663	33.079	4,648.6	17.23	107.72	81.1	272.0	0.0	226.7
120.0		0.3125	32.940	32.361	4,352.6	16.82	105.41	81.6	260.3	0.0	334.0
125.0		0.3125	31.734	31.166	3,887.7	16.14	101.55	82.4	241.3	0.0	540.4
130.0		0.3125	30.529	29.970	3,457.2	15.46	97.69	82.6	223.0	0.0	520.1
135.0		0.3125	29.323	28.774	3,059.6	14.78	93.83	82.6	205.5	0.0	499.7
139.1	Bot - Section 4	0.3125	28.316	27.775	2,751.9	14.21	90.61	82.6	191.4	0.0	401.8
140.0		0.3125	28.118	27.578	2,693.8	14.10	89.98	82.6	188.7	0.0	124.9
143.3	Top - Section 3	0.1875	27.686	16.365	1,563.5	24.27	147.66	72.9	111.2	0.0	498.1
145.0		0.1875	27.287	16.127	1,496.3	23.90	145.53	73.3	108.0	0.0	91.6
149.0		0.1875	26.322	15.553	1,342.2	22.99	140.39	74.4	100.4	0.0	215.6
26,883.2											



Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:41 AM

Customer: VERIZON WIRELESS

**Load Case: 1.2D + 1.6W**

90 mph with No Ice

22 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		242.7	0.0					0.0	0.0	242.7	0.0	0.0	0.0
5.00		480.6	1,446.4					0.0	206.8	480.6	1,653.2	0.0	0.0
10.00		470.8	1,417.1					0.0	206.8	470.8	1,623.9	0.0	0.0
15.00		468.2	1,387.8					0.0	206.8	468.2	1,594.6	0.0	0.0
20.00		478.0	1,358.5					0.0	206.8	478.0	1,565.3	0.0	0.0
25.00		490.4	1,329.2					0.0	206.8	490.4	1,536.0	0.0	0.0
30.00		498.5	1,299.9					0.0	206.8	498.5	1,506.7	0.0	0.0
35.00		503.4	1,270.6					0.0	206.8	503.4	1,477.4	0.0	0.0
40.00		505.8	1,241.3					0.0	206.8	505.8	1,448.1	0.0	0.0
45.00		257.6	1,212.0					0.0	206.8	257.6	1,418.8	0.0	0.0
45.09	Bot - Section 2	256.8	20.7					0.0	3.6	256.8	24.3	0.0	0.0
50.00		350.9	2,341.9					0.0	203.2	350.9	2,545.1	0.0	0.0
51.92	Top - Section 1	256.0	899.8					0.0	79.4	256.0	979.2	0.0	0.0
55.00		412.0	718.3					0.0	127.4	412.0	845.7	0.0	0.0
60.00		506.9	1,142.4					0.0	206.8	506.9	1,349.2	0.0	0.0
65.00		502.2	1,113.1					0.0	206.8	502.2	1,319.9	0.0	0.0
70.00		496.6	1,083.8					0.0	206.8	496.6	1,290.6	0.0	0.0
75.00		490.2	1,054.5					0.0	206.8	490.2	1,261.3	0.0	0.0
80.00		483.0	1,025.2					0.0	206.8	483.0	1,232.0	0.0	0.0
85.00		475.2	995.9					0.0	206.8	475.2	1,202.7	0.0	0.0
90.00		268.8	966.6					0.0	206.8	268.8	1,173.4	0.0	0.0
90.71	Bot - Section 3	234.3	135.5					0.0	29.5	234.3	165.0	0.0	0.0
95.00		261.3	1,481.8					0.0	177.3	261.3	1,659.2	0.0	0.0
96.30	Top - Section 2	230.2	440.5					0.0	53.6	230.2	494.1	0.0	0.0
100.00		395.5	568.4					0.0	153.2	395.5	721.6	0.0	0.0
105.00		445.6	746.2					0.0	206.8	445.6	953.0	0.0	0.0
110.00	Appurtenance(s)	435.2	721.7	2,763.1	0.0	0.0	1,775.6	0.0	206.8	3,198.3	2,704.2	0.0	0.0
115.00		299.4	697.3					0.0	186.6	299.4	883.9	0.0	0.0
117.00	Appurtenance(s)	209.4	272.1	546.1	0.0	1,581.6	230.4	0.0	74.6	755.5	577.1	0.0	0.0
120.00		328.6	400.8					0.0	108.4	328.6	509.2	0.0	0.0
125.00		401.3	648.5					0.0	180.7	401.3	829.2	0.0	0.0
130.00		389.3	624.1					0.0	180.7	389.3	804.7	0.0	0.0
135.00		346.8	599.7					0.0	180.7	346.8	780.3	0.0	0.0
139.18	Bot - Section 4	185.7	482.2					0.0	150.9	185.7	633.1	0.0	0.0
140.00	Appurtenance(s)	152.4	149.9	3,658.8	0.0	0.0	3,044.0	0.0	29.7	3,811.2	3,223.7	0.0	0.0
143.34	Top - Section 3	181.3	597.7					0.0	53.9	181.3	651.6	0.0	0.0
145.00		199.7	109.9					0.0	26.7	199.7	136.6	0.0	0.0
149.00	Appurtenance(s)	140.3	258.7	10,615.5	0.0	31,835.1	4,872.0	0.0	64.5	10,755.8	5,195.2	0.0	0.0
<b>Totals:</b>										<b>31,314.2</b>	<b>47,969.2</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:45 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

90 mph with No Ice

22 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	-47.93	-31.14	0.00	-3,585.71	0.00	3,585.71	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.653
5.00	-46.19	-30.78	0.00	-3,430.03	0.00	3,430.03	4,461.01	2,230.51	10,816.2	5,416.14	0.08	-0.15	0.644
10.00	-44.49	-30.42	0.00	-3,276.15	0.00	3,276.15	4,410.95	2,205.48	10,474.5	5,245.08	0.33	-0.31	0.635
15.00	-42.81	-30.06	0.00	-3,124.04	0.00	3,124.04	4,359.17	2,179.58	10,133.9	5,074.52	0.73	-0.47	0.626
20.00	-41.17	-29.68	0.00	-2,973.73	0.00	2,973.73	4,305.66	2,152.83	9,794.63	4,904.59	1.31	-0.63	0.616
25.00	-39.55	-29.29	0.00	-2,825.31	0.00	2,825.31	4,250.43	2,125.22	9,456.78	4,735.42	2.05	-0.79	0.606
30.00	-37.97	-28.88	0.00	-2,678.88	0.00	2,678.88	4,193.48	2,096.74	9,120.71	4,567.13	2.96	-0.95	0.596
35.00	-36.42	-28.45	0.00	-2,534.50	0.00	2,534.50	4,134.81	2,067.40	8,786.66	4,399.86	4.05	-1.12	0.585
40.00	-34.90	-28.02	0.00	-2,392.23	0.00	2,392.23	4,074.41	2,037.21	8,454.90	4,233.73	5.31	-1.29	0.574
45.00	-33.45	-27.78	0.00	-2,252.13	0.00	2,252.13	4,012.29	2,006.15	8,125.68	4,068.88	6.75	-1.46	0.562
45.09	-33.39	-27.57	0.00	-2,249.72	0.00	2,249.72	4,011.20	2,005.60	8,120.00	4,066.03	6.78	-1.46	0.562
50.00	-30.80	-27.22	0.00	-2,114.25	0.00	2,114.25	3,948.45	1,974.23	7,799.26	3,905.43	8.37	-1.63	0.549
51.92	-29.78	-26.98	0.00	-2,061.99	0.00	2,061.99	3,963.81	1,981.91	7,876.71	3,944.21	9.04	-1.70	0.530
55.00	-28.89	-26.61	0.00	-1,978.90	0.00	1,978.90	3,923.88	1,961.94	7,676.69	3,844.05	10.17	-1.81	0.522
60.00	-27.48	-26.14	0.00	-1,845.84	0.00	1,845.84	3,857.67	1,928.83	7,354.55	3,682.74	12.16	-1.98	0.509
65.00	-26.10	-25.67	0.00	-1,715.14	0.00	1,715.14	3,789.73	1,894.87	7,035.83	3,523.15	14.32	-2.14	0.494
70.00	-24.76	-25.20	0.00	-1,586.80	0.00	1,586.80	3,720.08	1,860.04	6,720.79	3,365.39	16.65	-2.31	0.478
75.00	-23.44	-24.72	0.00	-1,460.82	0.00	1,460.82	3,648.70	1,824.35	6,409.67	3,209.60	19.17	-2.48	0.462
80.00	-22.16	-24.25	0.00	-1,337.21	0.00	1,337.21	3,575.60	1,787.80	6,102.74	3,055.91	21.86	-2.65	0.444
85.00	-20.92	-23.78	0.00	-1,215.96	0.00	1,215.96	3,500.77	1,750.39	5,800.26	2,904.44	24.72	-2.82	0.425
90.00	-19.72	-23.48	0.00	-1,097.07	0.00	1,097.07	3,424.23	1,712.11	5,502.49	2,755.33	27.77	-2.99	0.404
90.71	-19.53	-23.27	0.00	-1,080.32	0.00	1,080.32	3,413.17	1,706.58	5,460.40	2,734.26	28.21	-3.01	0.401
95.00	-17.85	-22.95	0.00	-980.57	0.00	980.57	3,345.96	1,672.98	5,209.67	2,608.71	30.98	-3.15	0.381
96.30	-17.34	-22.72	0.00	-950.81	0.00	950.81	2,663.58	1,331.79	4,195.31	2,100.78	31.84	-3.19	0.459
100.00	-16.59	-22.32	0.00	-866.69	0.00	866.69	2,621.35	1,310.68	4,031.88	2,018.94	34.37	-3.31	0.436
105.00	-15.60	-21.87	0.00	-755.08	0.00	755.08	2,562.85	1,281.43	3,813.95	1,909.81	37.93	-3.49	0.402
110.00	-13.04	-18.54	0.00	-645.74	0.00	645.74	2,502.63	1,251.31	3,599.38	1,802.37	41.67	-3.66	0.364
115.00	-12.15	-18.21	0.00	-553.02	0.00	553.02	2,440.68	1,220.34	3,388.44	1,696.74	45.59	-3.81	0.331
117.00	-11.60	-17.43	0.00	-515.02	0.00	515.02	2,415.42	1,207.71	3,305.13	1,655.02	47.20	-3.88	0.316
120.00	-11.08	-17.09	0.00	-462.72	0.00	462.72	2,377.01	1,188.51	3,181.37	1,593.05	49.66	-3.97	0.295
125.00	-10.24	-16.66	0.00	-377.25	0.00	377.25	2,311.62	1,155.81	2,978.45	1,491.44	53.89	-4.10	0.258
130.00	-9.43	-16.23	0.00	-293.96	0.00	293.96	2,226.60	1,113.30	2,757.75	1,380.92	58.25	-4.23	0.217
135.00	-8.66	-15.84	0.00	-212.81	0.00	212.81	2,137.76	1,068.88	2,540.99	1,272.38	62.73	-4.33	0.172
139.18	-8.03	-15.61	0.00	-146.66	0.00	146.66	2,063.55	1,031.78	2,366.73	1,185.12	66.55	-4.40	0.128
140.00	-5.10	-11.57	0.00	-133.80	0.00	133.80	2,048.92	1,024.46	2,333.10	1,168.29	67.31	-4.41	0.117
143.34	-4.46	-11.34	0.00	-95.14	0.00	95.14	1,072.97	536.48	1,213.64	607.72	70.41	-4.45	0.161
145.00	-4.34	-11.13	0.00	-76.35	0.00	76.35	1,063.79	531.90	1,185.67	593.71	71.96	-4.47	0.133
149.00	0.00	-10.76	0.00	-31.84	0.00	31.84	1,040.86	520.43	1,118.54	560.10	75.72	-4.51	0.057

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:45 AM

Customer: VERIZON WIRELESS

**Load Case: 0.9D + 1.6W**

**90 mph with No Ice (Reduced DL)**

**22 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		242.7	0.0					0.0	0.0	242.7	0.0	0.0	0.0
5.00		480.6	1,084.8					0.0	155.1	480.6	1,239.9	0.0	0.0
10.00		470.8	1,062.8					0.0	155.1	470.8	1,217.9	0.0	0.0
15.00		468.2	1,040.8					0.0	155.1	468.2	1,196.0	0.0	0.0
20.00		478.0	1,018.9					0.0	155.1	478.0	1,174.0	0.0	0.0
25.00		490.4	996.9					0.0	155.1	490.4	1,152.0	0.0	0.0
30.00		498.5	974.9					0.0	155.1	498.5	1,130.0	0.0	0.0
35.00		503.4	953.0					0.0	155.1	503.4	1,108.1	0.0	0.0
40.00		505.8	931.0					0.0	155.1	505.8	1,086.1	0.0	0.0
45.00		257.6	909.0					0.0	155.1	257.6	1,064.1	0.0	0.0
45.09	Bot - Section 2	256.8	15.6					0.0	2.7	256.8	18.3	0.0	0.0
50.00		350.9	1,756.4					0.0	152.4	350.9	1,908.8	0.0	0.0
51.92	Top - Section 1	256.0	674.8					0.0	59.6	256.0	734.4	0.0	0.0
55.00		412.0	538.7					0.0	95.6	412.0	634.3	0.0	0.0
60.00		506.9	856.8					0.0	155.1	506.9	1,011.9	0.0	0.0
65.00		502.2	834.8					0.0	155.1	502.2	989.9	0.0	0.0
70.00		496.6	812.8					0.0	155.1	496.6	967.9	0.0	0.0
75.00		490.2	790.8					0.0	155.1	490.2	946.0	0.0	0.0
80.00		483.0	768.9					0.0	155.1	483.0	924.0	0.0	0.0
85.00		475.2	746.9					0.0	155.1	475.2	902.0	0.0	0.0
90.00		268.8	724.9					0.0	155.1	268.8	880.0	0.0	0.0
90.71	Bot - Section 3	234.3	101.6					0.0	22.1	234.3	123.8	0.0	0.0
95.00		261.3	1,111.4					0.0	133.0	261.3	1,244.4	0.0	0.0
96.30	Top - Section 2	230.2	330.3					0.0	40.2	230.2	370.6	0.0	0.0
100.00		395.5	426.3					0.0	114.9	395.5	541.2	0.0	0.0
105.00		445.6	559.6					0.0	155.1	445.6	714.7	0.0	0.0
110.00	Appurtenance(s)	435.2	541.3	2,763.1	0.0	0.0	1,331.7	0.0	155.1	3,198.3	2,028.2	0.0	0.0
115.00		299.4	523.0					0.0	139.9	299.4	662.9	0.0	0.0
117.00	Appurtenance(s)	209.4	204.1	546.1	0.0	1,581.6	172.8	0.0	56.0	755.5	432.9	0.0	0.0
120.00		328.6	300.6					0.0	81.3	328.6	381.9	0.0	0.0
125.00		401.3	486.4					0.0	135.5	401.3	621.9	0.0	0.0
130.00		389.3	468.1					0.0	135.5	389.3	603.6	0.0	0.0
135.00		346.8	449.8					0.0	135.5	346.8	585.3	0.0	0.0
139.18	Bot - Section 4	185.7	361.7					0.0	113.2	185.7	474.8	0.0	0.0
140.00	Appurtenance(s)	152.4	112.4	3,658.8	0.0	0.0	2,283.0	0.0	22.3	3,811.2	2,417.8	0.0	0.0
143.34	Top - Section 3	181.3	448.3					0.0	40.4	181.3	488.7	0.0	0.0
145.00		199.7	82.4					0.0	20.0	199.7	102.4	0.0	0.0
149.00	Appurtenance(s)	140.3	194.0	10,615.5	0.0	31,835.1	3,654.0	0.0	48.3	10,755.8	3,896.4	0.0	0.0
<b>Totals:</b>										<b>31,314.2</b>	<b>35,976.9</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:50 AM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

90 mph with No Ice (Reduced DL)

22 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	-35.93	-31.12	0.00	-3,555.06	0.00	3,555.06	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.644
5.00	-34.61	-30.73	0.00	-3,399.46	0.00	3,399.46	4,461.01	2,230.51	10,816.2	5,416.14	0.08	-0.15	0.636
10.00	-33.32	-30.34	0.00	-3,245.81	0.00	3,245.81	4,410.95	2,205.48	10,474.5	5,245.08	0.32	-0.31	0.627
15.00	-32.04	-29.96	0.00	-3,094.09	0.00	3,094.09	4,359.17	2,179.58	10,133.9	5,074.52	0.73	-0.46	0.617
20.00	-30.79	-29.55	0.00	-2,944.32	0.00	2,944.32	4,305.66	2,152.83	9,794.63	4,904.59	1.29	-0.62	0.608
25.00	-29.56	-29.13	0.00	-2,796.56	0.00	2,796.56	4,250.43	2,125.22	9,456.78	4,735.42	2.03	-0.78	0.598
30.00	-28.36	-28.70	0.00	-2,650.90	0.00	2,650.90	4,193.48	2,096.74	9,120.71	4,567.13	2.93	-0.94	0.587
35.00	-27.18	-28.25	0.00	-2,507.41	0.00	2,507.41	4,134.81	2,067.40	8,786.66	4,399.86	4.01	-1.11	0.577
40.00	-26.02	-27.80	0.00	-2,366.15	0.00	2,366.15	4,074.41	2,037.21	8,454.90	4,233.73	5.26	-1.27	0.565
45.00	-24.92	-27.56	0.00	-2,227.14	0.00	2,227.14	4,012.29	2,006.15	8,125.68	4,068.88	6.69	-1.44	0.554
45.09	-24.87	-27.34	0.00	-2,224.76	0.00	2,224.76	4,011.20	2,005.60	8,120.00	4,066.03	6.71	-1.45	0.554
50.00	-22.91	-26.98	0.00	-2,090.45	0.00	2,090.45	3,948.45	1,974.23	7,799.26	3,905.43	8.29	-1.61	0.541
51.92	-22.15	-26.74	0.00	-2,038.64	0.00	2,038.64	3,963.81	1,981.91	7,876.71	3,944.21	8.95	-1.68	0.523
55.00	-21.46	-26.36	0.00	-1,956.29	0.00	1,956.29	3,923.88	1,961.94	7,676.69	3,844.05	10.07	-1.79	0.515
60.00	-20.39	-25.88	0.00	-1,824.50	0.00	1,824.50	3,857.67	1,928.83	7,354.55	3,682.74	12.04	-1.96	0.501
65.00	-19.35	-25.40	0.00	-1,695.11	0.00	1,695.11	3,789.73	1,894.87	7,035.83	3,523.15	14.17	-2.12	0.486
70.00	-18.33	-24.92	0.00	-1,568.13	0.00	1,568.13	3,720.08	1,860.04	6,720.79	3,365.39	16.49	-2.29	0.471
75.00	-17.33	-24.44	0.00	-1,443.54	0.00	1,443.54	3,648.70	1,824.35	6,409.67	3,209.60	18.97	-2.46	0.455
80.00	-16.36	-23.96	0.00	-1,321.35	0.00	1,321.35	3,575.60	1,787.80	6,102.74	3,055.91	21.64	-2.62	0.437
85.00	-15.41	-23.49	0.00	-1,201.53	0.00	1,201.53	3,500.77	1,750.39	5,800.26	2,904.44	24.47	-2.79	0.418
90.00	-14.51	-23.20	0.00	-1,084.08	0.00	1,084.08	3,424.23	1,712.11	5,502.49	2,755.33	27.48	-2.95	0.398
90.71	-14.37	-22.98	0.00	-1,067.53	0.00	1,067.53	3,413.17	1,706.58	5,460.40	2,734.26	27.92	-2.98	0.395
95.00	-13.10	-22.68	0.00	-969.02	0.00	969.02	3,345.96	1,672.98	5,209.67	2,608.71	30.66	-3.12	0.376
96.30	-12.71	-22.44	0.00	-939.61	0.00	939.61	2,663.58	1,331.79	4,195.31	2,100.78	31.51	-3.16	0.452
100.00	-12.14	-22.05	0.00	-856.50	0.00	856.50	2,621.35	1,310.68	4,031.88	2,018.94	34.01	-3.28	0.429
105.00	-11.39	-21.60	0.00	-746.25	0.00	746.25	2,562.85	1,281.43	3,813.95	1,909.81	37.54	-3.45	0.395
110.00	-9.51	-18.31	0.00	-638.28	0.00	638.28	2,502.63	1,251.31	3,599.38	1,802.37	41.24	-3.62	0.358
115.00	-8.83	-17.98	0.00	-546.75	0.00	546.75	2,440.68	1,220.34	3,388.44	1,696.74	45.11	-3.77	0.326
117.00	-8.43	-17.21	0.00	-509.21	0.00	509.21	2,415.42	1,207.71	3,305.13	1,655.02	46.70	-3.83	0.311
120.00	-8.03	-16.87	0.00	-457.58	0.00	457.58	2,377.01	1,188.51	3,181.37	1,593.05	49.14	-3.92	0.291
125.00	-7.41	-16.44	0.00	-373.22	0.00	373.22	2,311.62	1,155.81	2,978.45	1,491.44	53.32	-4.06	0.254
130.00	-6.80	-16.03	0.00	-291.00	0.00	291.00	2,226.60	1,113.30	2,757.75	1,380.92	57.63	-4.18	0.214
135.00	-6.22	-15.65	0.00	-210.87	0.00	210.87	2,137.76	1,068.88	2,540.99	1,272.38	62.06	-4.28	0.169
139.18	-5.75	-15.43	0.00	-145.52	0.00	145.52	2,063.55	1,031.78	2,366.73	1,185.12	65.84	-4.35	0.126
140.00	-3.62	-11.45	0.00	-132.81	0.00	132.81	2,048.92	1,024.46	2,333.10	1,168.29	66.59	-4.36	0.116
143.34	-3.14	-11.23	0.00	-94.54	0.00	94.54	1,072.97	536.48	1,213.64	607.72	69.66	-4.40	0.159
145.00	-3.05	-11.03	0.00	-75.94	0.00	75.94	1,063.79	531.90	1,185.67	593.71	71.19	-4.42	0.131
149.00	0.00	-10.76	0.00	-31.84	0.00	31.84	1,040.86	520.43	1,118.54	560.10	74.91	-4.46	0.057

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:50 AM

Customer: VERIZON WIRELESS

**Load Case: 1.2D + 1.0Di + 1.0Wi**

**40 mph with 0.75 in Radial Ice**

**21 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		57.4	0.0					0.0	0.0	57.4	0.0	0.0	0.0
5.00		114.0	1,885.3					0.0	206.8	114.0	2,092.1	0.0	0.0
10.00		112.1	1,898.3					0.0	206.8	112.1	2,105.1	0.0	0.0
15.00		111.8	1,884.5					0.0	206.8	111.8	2,091.3	0.0	0.0
20.00		114.5	1,861.9					0.0	206.8	114.5	2,068.8	0.0	0.0
25.00		117.7	1,834.9					0.0	206.8	117.7	2,041.7	0.0	0.0
30.00		119.9	1,805.0					0.0	206.8	119.9	2,011.8	0.0	0.0
35.00		121.3	1,773.1					0.0	206.8	121.3	1,979.9	0.0	0.0
40.00		122.1	1,739.7					0.0	206.8	122.1	1,946.6	0.0	0.0
45.00		62.3	1,705.3					0.0	206.8	62.3	1,912.1	0.0	0.0
45.09	Bot - Section 2	62.1	29.3					0.0	3.6	62.1	32.9	0.0	0.0
50.00		84.9	2,827.8					0.0	203.2	84.9	3,031.1	0.0	0.0
51.92	Top - Section 1	62.1	1,089.3					0.0	79.4	62.1	1,168.7	0.0	0.0
55.00		100.0	1,019.3					0.0	127.4	100.0	1,146.7	0.0	0.0
60.00		123.3	1,622.7					0.0	206.8	123.3	1,829.6	0.0	0.0
65.00		122.4	1,585.5					0.0	206.8	122.4	1,792.3	0.0	0.0
70.00		121.3	1,547.8					0.0	206.8	121.3	1,754.6	0.0	0.0
75.00		120.0	1,509.7					0.0	206.8	120.0	1,716.5	0.0	0.0
80.00		118.6	1,471.2					0.0	206.8	118.6	1,678.0	0.0	0.0
85.00		116.9	1,432.4					0.0	206.8	116.9	1,639.2	0.0	0.0
90.00		66.2	1,393.3					0.0	206.8	66.2	1,600.1	0.0	0.0
90.71	Bot - Section 3	57.8	196.3					0.0	29.5	57.8	225.8	0.0	0.0
95.00		64.5	1,844.8					0.0	177.3	64.5	2,022.1	0.0	0.0
96.30	Top - Section 2	57.0	549.7					0.0	53.6	57.0	603.4	0.0	0.0
100.00		98.1	874.4					0.0	153.2	98.1	1,027.6	0.0	0.0
105.00		110.8	1,148.5					0.0	206.8	110.8	1,355.3	0.0	0.0
110.00	Appurtenance(s)	108.5	1,113.3	448.5	0.0	0.0	4,109.0	0.0	206.8	557.0	5,429.1	0.0	0.0
115.00		74.8	1,077.9					0.0	186.6	74.8	1,264.5	0.0	0.0
117.00	Appurtenance(s)	52.5	422.8	113.3	0.0	328.1	553.0	0.0	74.6	165.8	1,050.4	0.0	0.0
120.00		82.6	622.7					0.0	108.4	82.6	731.1	0.0	0.0
125.00		101.2	1,006.7					0.0	180.7	101.2	1,187.3	0.0	0.0
130.00		98.6	970.8					0.0	180.7	98.6	1,151.4	0.0	0.0
135.00		88.2	934.8					0.0	180.7	88.2	1,115.4	0.0	0.0
139.18	Bot - Section 4	47.3	754.0					0.0	150.9	47.3	904.9	0.0	0.0
140.00	Appurtenance(s)	39.0	203.9	640.3	0.0	0.0	6,383.8	0.0	29.7	679.2	6,617.4	0.0	0.0
143.34	Top - Section 3	46.4	811.5					0.0	53.9	46.4	865.3	0.0	0.0
145.00		51.3	214.6					0.0	26.7	51.3	241.3	0.0	0.0
149.00	Appurtenance(s)	36.1	503.5	2,081.9	0.0	6,796.9	11,629.5	0.0	64.5	2,117.9	12,197.5	0.0	0.0
<b>Totals:</b>										<b>6,649.45</b>	<b>73,628.9</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:54 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 0.75 in Radial Ice

21 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	-73.63	-6.61	0.00	-756.51	0.00	756.51	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.152
5.00	-71.53	-6.54	0.00	-723.45	0.00	723.45	4,461.01	2,230.51	10,816.2	5,416.14	0.02	-0.03	0.150
10.00	-69.42	-6.46	0.00	-690.76	0.00	690.76	4,410.95	2,205.48	10,474.5	5,245.08	0.07	-0.06	0.147
15.00	-67.33	-6.39	0.00	-658.44	0.00	658.44	4,359.17	2,179.58	10,133.9	5,074.52	0.15	-0.10	0.145
20.00	-65.26	-6.31	0.00	-626.49	0.00	626.49	4,305.66	2,152.83	9,794.63	4,904.59	0.28	-0.13	0.143
25.00	-63.21	-6.22	0.00	-594.95	0.00	594.95	4,250.43	2,125.22	9,456.78	4,735.42	0.43	-0.17	0.141
30.00	-61.20	-6.13	0.00	-563.83	0.00	563.83	4,193.48	2,096.74	9,120.71	4,567.13	0.62	-0.20	0.138
35.00	-59.21	-6.04	0.00	-533.16	0.00	533.16	4,134.81	2,067.40	8,786.66	4,399.86	0.85	-0.24	0.136
40.00	-57.26	-5.95	0.00	-502.94	0.00	502.94	4,074.41	2,037.21	8,454.90	4,233.73	1.12	-0.27	0.133
45.00	-55.35	-5.89	0.00	-473.21	0.00	473.21	4,012.29	2,006.15	8,125.68	4,068.88	1.42	-0.31	0.130
45.09	-55.31	-5.85	0.00	-472.70	0.00	472.70	4,011.20	2,005.60	8,120.00	4,066.03	1.43	-0.31	0.130
50.00	-52.28	-5.77	0.00	-443.96	0.00	443.96	3,948.45	1,974.23	7,799.26	3,905.43	1.76	-0.34	0.127
51.92	-51.11	-5.72	0.00	-432.89	0.00	432.89	3,963.81	1,981.91	7,876.71	3,944.21	1.90	-0.36	0.123
55.00	-49.96	-5.63	0.00	-415.28	0.00	415.28	3,923.88	1,961.94	7,676.69	3,844.05	2.14	-0.38	0.121
60.00	-48.13	-5.53	0.00	-387.11	0.00	387.11	3,857.67	1,928.83	7,354.55	3,682.74	2.56	-0.42	0.118
65.00	-46.34	-5.42	0.00	-359.47	0.00	359.47	3,789.73	1,894.87	7,035.83	3,523.15	3.02	-0.45	0.114
70.00	-44.58	-5.31	0.00	-332.37	0.00	332.37	3,720.08	1,860.04	6,720.79	3,365.39	3.51	-0.49	0.111
75.00	-42.86	-5.20	0.00	-305.80	0.00	305.80	3,648.70	1,824.35	6,409.67	3,209.60	4.04	-0.52	0.107
80.00	-41.18	-5.10	0.00	-279.78	0.00	279.78	3,575.60	1,787.80	6,102.74	3,055.91	4.60	-0.56	0.103
85.00	-39.54	-4.99	0.00	-254.31	0.00	254.31	3,500.77	1,750.39	5,800.26	2,904.44	5.20	-0.59	0.099
90.00	-37.94	-4.92	0.00	-229.38	0.00	229.38	3,424.23	1,712.11	5,502.49	2,755.33	5.84	-0.63	0.094
90.71	-37.71	-4.87	0.00	-225.88	0.00	225.88	3,413.17	1,706.58	5,460.40	2,734.26	5.94	-0.63	0.094
95.00	-35.69	-4.79	0.00	-205.01	0.00	205.01	3,345.96	1,672.98	5,209.67	2,608.71	6.52	-0.66	0.089
96.30	-35.08	-4.74	0.00	-198.80	0.00	198.80	2,663.58	1,331.79	4,195.31	2,100.78	6.70	-0.67	0.108
100.00	-34.06	-4.65	0.00	-181.26	0.00	181.26	2,621.35	1,310.68	4,031.88	2,018.94	7.23	-0.70	0.103
105.00	-32.70	-4.54	0.00	-158.03	0.00	158.03	2,562.85	1,281.43	3,813.95	1,909.81	7.98	-0.73	0.096
110.00	-27.28	-3.93	0.00	-135.33	0.00	135.33	2,502.63	1,251.31	3,599.38	1,802.37	8.77	-0.77	0.086
115.00	-26.01	-3.85	0.00	-115.70	0.00	115.70	2,440.68	1,220.34	3,388.44	1,696.74	9.59	-0.80	0.079
117.00	-24.96	-3.67	0.00	-107.68	0.00	107.68	2,415.42	1,207.71	3,305.13	1,655.02	9.93	-0.81	0.075
120.00	-24.23	-3.59	0.00	-96.67	0.00	96.67	2,377.01	1,188.51	3,181.37	1,593.05	10.44	-0.83	0.071
125.00	-23.04	-3.48	0.00	-78.72	0.00	78.72	2,311.62	1,155.81	2,978.45	1,491.44	11.33	-0.86	0.063
130.00	-21.89	-3.37	0.00	-61.32	0.00	61.32	2,226.60	1,113.30	2,757.75	1,380.92	12.25	-0.89	0.054
135.00	-20.78	-3.27	0.00	-44.45	0.00	44.45	2,137.76	1,068.88	2,540.99	1,272.38	13.19	-0.91	0.045
139.18	-19.87	-3.22	0.00	-30.78	0.00	30.78	2,063.55	1,031.78	2,366.73	1,185.12	13.99	-0.92	0.036
140.00	-13.27	-2.43	0.00	-28.13	0.00	28.13	2,048.92	1,024.46	2,333.10	1,168.29	14.15	-0.93	0.031
143.34	-12.40	-2.37	0.00	-20.00	0.00	20.00	1,072.97	536.48	1,213.64	607.72	14.80	-0.93	0.044
145.00	-12.16	-2.32	0.00	-16.07	0.00	16.07	1,063.79	531.90	1,185.67	593.71	15.12	-0.94	0.039
149.00	0.00	-2.12	0.00	-6.80	0.00	6.80	1,040.86	520.43	1,118.54	560.10	15.91	-0.95	0.012

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:54 AM

Customer: VERIZON WIRELESS

**Load Case: 1.0D + 1.0W**

**Serviceability 60 mph**

**21 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		67.4	0.0					0.0	0.0	67.4	0.0	0.0	0.0
5.00		133.5	1,205.3					0.0	172.4	133.5	1,377.7	0.0	0.0
10.00		130.8	1,180.9					0.0	172.4	130.8	1,353.3	0.0	0.0
15.00		130.1	1,156.5					0.0	172.4	130.1	1,328.8	0.0	0.0
20.00		132.8	1,132.1					0.0	172.4	132.8	1,304.4	0.0	0.0
25.00		136.2	1,107.7					0.0	172.4	136.2	1,280.0	0.0	0.0
30.00		138.5	1,083.3					0.0	172.4	138.5	1,255.6	0.0	0.0
35.00		139.8	1,058.8					0.0	172.4	139.8	1,231.2	0.0	0.0
40.00		140.5	1,034.4					0.0	172.4	140.5	1,206.8	0.0	0.0
45.00		71.6	1,010.0					0.0	172.4	71.6	1,182.4	0.0	0.0
45.09	Bot - Section 2	71.3	17.3					0.0	3.0	71.3	20.3	0.0	0.0
50.00		97.5	1,951.5					0.0	169.4	97.5	2,120.9	0.0	0.0
51.92	Top - Section 1	71.1	749.8					0.0	66.2	71.1	816.0	0.0	0.0
55.00		114.4	598.6					0.0	106.2	114.4	704.7	0.0	0.0
60.00		140.8	952.0					0.0	172.4	140.8	1,124.3	0.0	0.0
65.00		139.5	927.5					0.0	172.4	139.5	1,099.9	0.0	0.0
70.00		137.9	903.1					0.0	172.4	137.9	1,075.5	0.0	0.0
75.00		136.2	878.7					0.0	172.4	136.2	1,051.1	0.0	0.0
80.00		134.2	854.3					0.0	172.4	134.2	1,026.7	0.0	0.0
85.00		132.0	829.9					0.0	172.4	132.0	1,002.2	0.0	0.0
90.00		74.7	805.5					0.0	172.4	74.7	977.8	0.0	0.0
90.71	Bot - Section 3	65.1	112.9					0.0	24.6	65.1	137.5	0.0	0.0
95.00		72.6	1,234.9					0.0	147.8	72.6	1,382.6	0.0	0.0
96.30	Top - Section 2	64.0	367.1					0.0	44.7	64.0	411.7	0.0	0.0
100.00		109.9	473.7					0.0	127.7	109.9	601.3	0.0	0.0
105.00		123.8	621.8					0.0	172.4	123.8	794.1	0.0	0.0
110.00	Appurtenance(s)	120.9	601.5	767.5	0.0	0.0	1,479.7	0.0	172.4	888.4	2,253.5	0.0	0.0
115.00		83.2	581.1					0.0	155.5	83.2	736.6	0.0	0.0
117.00	Appurtenance(s)	58.2	226.7	151.7	0.0	439.3	192.0	0.0	62.2	209.9	480.9	0.0	0.0
120.00		91.3	334.0					0.0	90.3	91.3	424.3	0.0	0.0
125.00		111.5	540.4					0.0	150.6	111.5	691.0	0.0	0.0
130.00		108.1	520.1					0.0	150.6	108.1	670.6	0.0	0.0
135.00		96.3	499.7					0.0	150.6	96.3	650.3	0.0	0.0
139.18	Bot - Section 4	51.6	401.8					0.0	125.8	51.6	527.6	0.0	0.0
140.00	Appurtenance(s)	42.3	124.9	1,016.3	0.0	0.0	2,536.7	0.0	24.8	1,058.7	2,686.4	0.0	0.0
143.34	Top - Section 3	50.4	498.1					0.0	44.9	50.4	543.0	0.0	0.0
145.00		55.5	91.6					0.0	22.2	55.5	113.8	0.0	0.0
149.00	Appurtenance(s)	39.0	215.6	2,948.8	0.0	8,843.1	4,060.0	0.0	53.7	2,987.7	4,329.3	0.0	0.0
<b>Totals:</b>										<b>8,698.41</b>	<b>39,974.3</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:58 AM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 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	-39.97	-8.65	0.00	-991.13	0.00	991.13	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.186
5.00	-38.59	-8.54	0.00	-947.91	0.00	947.91	4,461.01	2,230.51	10,816.2	5,416.14	0.02	-0.04	0.184
10.00	-37.23	-8.44	0.00	-905.21	0.00	905.21	4,410.95	2,205.48	10,474.5	5,245.08	0.09	-0.09	0.181
15.00	-35.89	-8.33	0.00	-863.03	0.00	863.03	4,359.17	2,179.58	10,133.9	5,074.52	0.20	-0.13	0.178
20.00	-34.58	-8.22	0.00	-821.38	0.00	821.38	4,305.66	2,152.83	9,794.63	4,904.59	0.36	-0.17	0.176
25.00	-33.30	-8.11	0.00	-780.27	0.00	780.27	4,250.43	2,125.22	9,456.78	4,735.42	0.57	-0.22	0.173
30.00	-32.03	-7.99	0.00	-739.74	0.00	739.74	4,193.48	2,096.74	9,120.71	4,567.13	0.82	-0.26	0.170
35.00	-30.80	-7.87	0.00	-699.79	0.00	699.79	4,134.81	2,067.40	8,786.66	4,399.86	1.12	-0.31	0.167
40.00	-29.59	-7.74	0.00	-660.45	0.00	660.45	4,074.41	2,037.21	8,454.90	4,233.73	1.47	-0.36	0.163
45.00	-28.40	-7.68	0.00	-621.73	0.00	621.73	4,012.29	2,006.15	8,125.68	4,068.88	1.86	-0.40	0.160
45.09	-28.38	-7.62	0.00	-621.07	0.00	621.07	4,011.20	2,005.60	8,120.00	4,066.03	1.87	-0.40	0.160
50.00	-26.25	-7.52	0.00	-583.64	0.00	583.64	3,948.45	1,974.23	7,799.26	3,905.43	2.31	-0.45	0.156
51.92	-25.43	-7.45	0.00	-569.21	0.00	569.21	3,963.81	1,981.91	7,876.71	3,944.21	2.50	-0.47	0.151
55.00	-24.73	-7.35	0.00	-546.25	0.00	546.25	3,923.88	1,961.94	7,676.69	3,844.05	2.81	-0.50	0.148
60.00	-23.60	-7.22	0.00	-509.51	0.00	509.51	3,857.67	1,928.83	7,354.55	3,682.74	3.36	-0.55	0.144
65.00	-22.49	-7.08	0.00	-473.43	0.00	473.43	3,789.73	1,894.87	7,035.83	3,523.15	3.95	-0.59	0.140
70.00	-21.41	-6.95	0.00	-438.01	0.00	438.01	3,720.08	1,860.04	6,720.79	3,365.39	4.60	-0.64	0.136
75.00	-20.36	-6.82	0.00	-403.25	0.00	403.25	3,648.70	1,824.35	6,409.67	3,209.60	5.29	-0.69	0.131
80.00	-19.33	-6.69	0.00	-369.15	0.00	369.15	3,575.60	1,787.80	6,102.74	3,055.91	6.04	-0.73	0.126
85.00	-18.32	-6.56	0.00	-335.70	0.00	335.70	3,500.77	1,750.39	5,800.26	2,904.44	6.83	-0.78	0.121
90.00	-17.34	-6.48	0.00	-302.90	0.00	302.90	3,424.23	1,712.11	5,502.49	2,755.33	7.67	-0.82	0.115
90.71	-17.20	-6.42	0.00	-298.28	0.00	298.28	3,413.17	1,706.58	5,460.40	2,734.26	7.79	-0.83	0.114
95.00	-15.82	-6.33	0.00	-270.77	0.00	270.77	3,345.96	1,672.98	5,209.67	2,608.71	8.56	-0.87	0.109
96.30	-15.41	-6.27	0.00	-262.56	0.00	262.56	2,663.58	1,331.79	4,195.31	2,100.78	8.80	-0.88	0.131
100.00	-14.80	-6.16	0.00	-239.35	0.00	239.35	2,621.35	1,310.68	4,031.88	2,018.94	9.49	-0.91	0.124
105.00	-14.01	-6.03	0.00	-208.55	0.00	208.55	2,562.85	1,281.43	3,813.95	1,909.81	10.48	-0.96	0.115
110.00	-11.76	-5.12	0.00	-178.38	0.00	178.38	2,502.63	1,251.31	3,599.38	1,802.37	11.51	-1.01	0.104
115.00	-11.03	-5.03	0.00	-152.80	0.00	152.80	2,440.68	1,220.34	3,388.44	1,696.74	12.59	-1.05	0.095
117.00	-10.55	-4.81	0.00	-142.31	0.00	142.31	2,415.42	1,207.71	3,305.13	1,655.02	13.04	-1.07	0.090
120.00	-10.12	-4.72	0.00	-127.87	0.00	127.87	2,377.01	1,188.51	3,181.37	1,593.05	13.72	-1.10	0.085
125.00	-9.43	-4.60	0.00	-104.29	0.00	104.29	2,311.62	1,155.81	2,978.45	1,491.44	14.89	-1.13	0.074
130.00	-8.76	-4.48	0.00	-81.30	0.00	81.30	2,226.60	1,113.30	2,757.75	1,380.92	16.09	-1.17	0.063
135.00	-8.11	-4.38	0.00	-58.89	0.00	58.89	2,137.76	1,068.88	2,540.99	1,272.38	17.33	-1.20	0.050
139.18	-7.58	-4.31	0.00	-40.61	0.00	40.61	2,063.55	1,031.78	2,366.73	1,185.12	18.39	-1.22	0.038
140.00	-4.92	-3.20	0.00	-37.06	0.00	37.06	2,048.92	1,024.46	2,333.10	1,168.29	18.60	-1.22	0.034
143.34	-4.38	-3.14	0.00	-26.36	0.00	26.36	1,072.97	536.48	1,213.64	607.72	19.46	-1.23	0.047
145.00	-4.26	-3.08	0.00	-21.17	0.00	21.17	1,063.79	531.90	1,185.67	593.71	19.88	-1.23	0.040
149.00	0.00	-2.99	0.00	-8.84	0.00	8.84	1,040.86	520.43	1,118.54	560.10	20.92	-1.25	0.016



Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_g$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	6
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.20
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.01
Redundancy Factor ( $\rho$ ):	1.30
Seismic Force Distribution Exponent (k):	1.75
Total Unfactored Dead Load:	39.97 k
Seismic Base Shear (E):	1.80 k

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

#### Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	269	1,698	0.016	29	334
36	144.17	114	693	0.007	12	141
35	141.67	543	3,208	0.030	55	673
34	139.59	150	862	0.008	15	186
33	137.09	528	2,943	0.028	50	654
32	132.50	650	3,417	0.032	58	807
31	127.50	671	3,294	0.031	56	832
30	122.50	691	3,164	0.030	54	857
29	118.50	424	1,833	0.017	31	526
28	116.00	289	1,202	0.011	20	358
27	112.50	737	2,905	0.028	50	914
26	107.50	774	2,818	0.027	48	960
25	102.50	794	2,660	0.025	45	985
24	98.15	601	1,867	0.018	32	746
23	95.65	412	1,222	0.012	21	511
22	92.86	1,383	3,895	0.037	66	1,715
21	90.36	138	369	0.004	6	171
20	87.50	978	2,482	0.024	42	1,213
19	82.50	1,002	2,295	0.022	39	1,243
18	77.50	1,027	2,107	0.020	36	1,273
17	72.50	1,051	1,919	0.018	33	1,304
16	67.50	1,075	1,732	0.016	30	1,334
15	62.50	1,100	1,548	0.015	26	1,364

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

14	57.50	1,124	1,367	0.013	23	1,395
13	53.46	705	754	0.007	13	874
12	50.96	816	803	0.008	14	1,012
11	47.54	2,121	1,848	0.018	31	2,631
10	45.04	20	16	0.000	0	25
9	42.50	1,182	846	0.008	14	1,467
8	37.50	1,207	694	0.007	12	1,497
7	32.50	1,231	551	0.005	9	1,527
6	27.50	1,256	419	0.004	7	1,557
5	22.50	1,280	300	0.003	5	1,588
4	17.50	1,304	197	0.002	3	1,618
3	12.50	1,329	111	0.001	2	1,648
2	7.50	1,353	46	0.000	1	1,678
1	2.50	1,378	7	0.000	0	1,709
Samsung PCS/AWS Dual	149.00	253	1,634	0.016	28	314
Samsung 700+850MHZ D	149.00	246	1,588	0.015	27	305
3' Yagi	149.00	10	65	0.001	1	12
Raycap RVZDC-6627-PF	149.00	32	207	0.002	4	40
RFS Celwave PD220	149.00	50	323	0.003	5	62
Commscope NHH-65B-R2	149.00	262	1,692	0.016	29	325
Antel LPA-80080/6CF	149.00	126	813	0.008	14	156
Flat Low Profile Pla	149.00	1,500	9,682	0.092	165	1,860
VZW Unused Reserve:	149.00	1,581	10,202	0.097	174	1,960
Andrew ABT-DFDM-ADB	140.00	1	6	0.000	0	1
Powerwave Allgon TT1	140.00	96	556	0.005	9	119
Powerwave Allgon TT0	140.00	66	382	0.004	7	82
Raycap DC6-48-60-18-	140.00	20	116	0.001	2	25
Ericsson RRUS A2 Mod	140.00	64	368	0.003	6	79
Ericsson RRUS 32 B2	140.00	159	920	0.009	16	197
Ericsson RRUS-11	140.00	165	955	0.009	16	205
Raycap DC6-48-60-18	140.00	30	174	0.002	3	37
Andrew SBNHH-1D65A (	140.00	67	388	0.004	7	83
Powerwave Allgon P90	140.00	318	1,840	0.017	31	394
CCI HPA-65R-BUU-H6	140.00	51	295	0.003	5	63
Round Low Profile PI	140.00	1,500	8,680	0.082	148	1,860
Decibel DB222	117.00	32	135	0.001	2	40
Stand Off	117.00	150	634	0.006	11	186
3' Yagi	117.00	10	42	0.000	1	12
Symmetricom 58532A	110.00	0	2	0.000	0	0
Ericsson RRUS 11 B12	110.00	152	577	0.005	10	189
Ericsson RRUS 11 B4	110.00	152	577	0.005	10	189
Ericsson RRUS 11 B2	110.00	152	577	0.005	10	189
RFS APX16DWV-16DWVS-	110.00	122	463	0.004	8	151
Commscope LNX-6515DS	110.00	151	572	0.005	10	187
Flat T-Arm	110.00	750	2,844	0.027	48	930
		39,974	105,396	1.000	1,796	49,581

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

**Seismic (Reduced DL) Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	269	1,698	0.016	29	232
36	144.17	114	693	0.007	12	98
35	141.67	543	3,208	0.030	55	467
34	139.59	150	862	0.008	15	129
33	137.09	528	2,943	0.028	50	454
32	132.50	650	3,417	0.032	58	559
31	127.50	671	3,294	0.031	56	577
30	122.50	691	3,164	0.030	54	594
29	118.50	424	1,833	0.017	31	365

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

28	116.00	289	1,202	0.011	20	248
27	112.50	737	2,905	0.028	50	633
26	107.50	774	2,818	0.027	48	665
25	102.50	794	2,660	0.025	45	683
24	98.15	601	1,867	0.018	32	517
23	95.65	412	1,222	0.012	21	354
22	92.86	1,383	3,895	0.037	66	1,189
21	90.36	138	369	0.004	6	118
20	87.50	978	2,482	0.024	42	841
19	82.50	1,002	2,295	0.022	39	862
18	77.50	1,027	2,107	0.020	36	883
17	72.50	1,051	1,919	0.018	33	904
16	67.50	1,075	1,732	0.016	30	925
15	62.50	1,100	1,548	0.015	26	946
14	57.50	1,124	1,367	0.013	23	967
13	53.46	705	754	0.007	13	606
12	50.96	816	803	0.008	14	701
11	47.54	2,121	1,848	0.018	31	1,823
10	45.04	20	16	0.000	0	17
9	42.50	1,182	846	0.008	14	1,016
8	37.50	1,207	694	0.007	12	1,037
7	32.50	1,231	551	0.005	9	1,058
6	27.50	1,256	419	0.004	7	1,079
5	22.50	1,280	300	0.003	5	1,100
4	17.50	1,304	197	0.002	3	1,121
3	12.50	1,329	111	0.001	2	1,142
2	7.50	1,353	46	0.000	1	1,163
1	2.50	1,378	7	0.000	0	1,184
Samsung PCS/AWS Dual	149.00	253	1,634	0.016	28	218
Samsung 700+850MHZ D	149.00	246	1,588	0.015	27	211
3' Yagi	149.00	10	65	0.001	1	9
Raycap RVZDC-6627-PF	149.00	32	207	0.002	4	28
RFS Celwave PD220	149.00	50	323	0.003	5	43
Commscope NHH-65B-R2	149.00	262	1,692	0.016	29	225
Antel LPA-80080/6CF	149.00	126	813	0.008	14	108
Flat Low Profile Pla	149.00	1,500	9,682	0.092	165	1,290
VZW Unused Reserve:	149.00	1,581	10,202	0.097	174	1,359
Andrew ABT-DFDM-ADB	140.00	1	6	0.000	0	1
Powerwave Allgon TT1	140.00	96	556	0.005	9	83
Powerwave Allgon TT0	140.00	66	382	0.004	7	57
Raycap DC6-48-60-18-	140.00	20	116	0.001	2	17
Ericsson RRUS A2 Mod	140.00	64	368	0.003	6	55
Ericsson RRUS 32 B2	140.00	159	920	0.009	16	137
Ericsson RRUS-11	140.00	165	955	0.009	16	142
Raycap DC6-48-60-18	140.00	30	174	0.002	3	26
Andrew SBNHH-1D65A (	140.00	67	388	0.004	7	58
Powerwave Allgon P90	140.00	318	1,840	0.017	31	273
CCI HPA-65R-BUU-H6	140.00	51	295	0.003	5	44
Round Low Profile PI	140.00	1,500	8,680	0.082	148	1,290
Decibel DB222	117.00	32	135	0.001	2	28
Stand Off	117.00	150	634	0.006	11	129
3' Yagi	117.00	10	42	0.000	1	9
Symmetricom 58532A	110.00	0	2	0.000	0	0
Ericsson RRUS 11 B12	110.00	152	577	0.005	10	131
Ericsson RRUS 11 B4	110.00	152	577	0.005	10	131
Ericsson RRUS 11 B2	110.00	152	577	0.005	10	131
RFS APX16DWV-16DWVS-	110.00	122	463	0.004	8	105
Commscope LNX-6515DS	110.00	151	572	0.005	10	130
Flat T-Arm	110.00	750	2,844	0.027	48	645
		39,974	105,396	1.000	1,796	34,365

---

**Site Number: 413783**

**Code: ANSI/TIA-222-G**

© 2007 - 2018 by ATC IP LLC. All rights reserved.

**Site Name: Kent Pcs CT, CT**

**Engineering Number: OAA731824\_C3\_02**

**5/23/2018 11:36:59 AM**

---

**Customer: VERIZON WIRELESS**

---

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

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

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-47.87	-1.80	0.00	-217.55	0.00	217.55	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.050
5.00	-46.19	-1.81	0.00	-208.56	0.00	208.56	4,461.01	2,230.51	10,816.2	5,416.14	0.00	-0.01	0.049
10.00	-44.54	-1.81	0.00	-199.53	0.00	199.53	4,410.95	2,205.48	10,474.5	5,245.08	0.02	-0.02	0.048
15.00	-42.93	-1.81	0.00	-190.47	0.00	190.47	4,359.17	2,179.58	10,133.9	5,074.52	0.04	-0.03	0.047
20.00	-41.34	-1.82	0.00	-181.40	0.00	181.40	4,305.66	2,152.83	9,794.63	4,904.59	0.08	-0.04	0.047
25.00	-39.78	-1.81	0.00	-172.33	0.00	172.33	4,250.43	2,125.22	9,456.78	4,735.42	0.12	-0.05	0.046
30.00	-38.25	-1.81	0.00	-163.26	0.00	163.26	4,193.48	2,096.74	9,120.71	4,567.13	0.18	-0.06	0.045
35.00	-36.76	-1.80	0.00	-154.21	0.00	154.21	4,134.81	2,067.40	8,786.66	4,399.86	0.25	-0.07	0.044
40.00	-35.29	-1.79	0.00	-145.20	0.00	145.20	4,074.41	2,037.21	8,454.90	4,233.73	0.32	-0.08	0.043
45.00	-35.26	-1.80	0.00	-136.23	0.00	136.23	4,012.29	2,006.15	8,125.68	4,068.88	0.41	-0.09	0.042
45.09	-32.63	-1.76	0.00	-136.08	0.00	136.08	4,011.20	2,005.60	8,120.00	4,066.03	0.41	-0.09	0.042
50.00	-31.62	-1.75	0.00	-127.41	0.00	127.41	3,948.45	1,974.23	7,799.26	3,905.43	0.51	-0.10	0.041
51.92	-30.75	-1.74	0.00	-124.05	0.00	124.05	3,963.81	1,981.91	7,876.71	3,944.21	0.55	-0.10	0.039
55.00	-29.35	-1.72	0.00	-118.69	0.00	118.69	3,923.88	1,961.94	7,676.69	3,844.05	0.62	-0.11	0.038
60.00	-27.99	-1.69	0.00	-110.10	0.00	110.10	3,857.67	1,928.83	7,354.55	3,682.74	0.74	-0.12	0.037
65.00	-26.65	-1.67	0.00	-101.62	0.00	101.62	3,789.73	1,894.87	7,035.83	3,523.15	0.87	-0.13	0.036
70.00	-25.35	-1.64	0.00	-93.29	0.00	93.29	3,720.08	1,860.04	6,720.79	3,365.39	1.01	-0.14	0.035
75.00	-24.08	-1.60	0.00	-85.12	0.00	85.12	3,648.70	1,824.35	6,409.67	3,209.60	1.16	-0.15	0.033
80.00	-22.83	-1.56	0.00	-77.11	0.00	77.11	3,575.60	1,787.80	6,102.74	3,055.91	1.33	-0.16	0.032
85.00	-21.62	-1.52	0.00	-69.30	0.00	69.30	3,500.77	1,750.39	5,800.26	2,904.44	1.50	-0.17	0.030
90.00	-21.45	-1.51	0.00	-61.71	0.00	61.71	3,424.23	1,712.11	5,502.49	2,755.33	1.68	-0.18	0.029
90.71	-19.73	-1.44	0.00	-60.63	0.00	60.63	3,413.17	1,706.58	5,460.40	2,734.26	1.71	-0.18	0.028
95.00	-19.22	-1.42	0.00	-54.43	0.00	54.43	3,345.96	1,672.98	5,209.67	2,608.71	1.87	-0.19	0.027
96.30	-18.48	-1.39	0.00	-52.59	0.00	52.59	2,663.58	1,331.79	4,195.31	2,100.78	1.92	-0.19	0.032
100.00	-17.49	-1.35	0.00	-47.44	0.00	47.44	2,621.35	1,310.68	4,031.88	2,018.94	2.07	-0.20	0.030
105.00	-16.53	-1.30	0.00	-40.71	0.00	40.71	2,562.85	1,281.43	3,813.95	1,909.81	2.29	-0.21	0.028
110.00	-13.78	-1.14	0.00	-34.23	0.00	34.23	2,502.63	1,251.31	3,599.38	1,802.37	2.51	-0.22	0.025
115.00	-13.43	-1.12	0.00	-28.51	0.00	28.51	2,440.68	1,220.34	3,388.44	1,696.74	2.74	-0.22	0.022
117.00	-12.66	-1.08	0.00	-26.27	0.00	26.27	2,415.42	1,207.71	3,305.13	1,655.02	2.83	-0.23	0.021
120.00	-11.81	-1.02	0.00	-23.04	0.00	23.04	2,377.01	1,188.51	3,181.37	1,593.05	2.98	-0.23	0.019
125.00	-10.97	-0.96	0.00	-17.95	0.00	17.95	2,311.62	1,155.81	2,978.45	1,491.44	3.22	-0.24	0.017
130.00	-10.17	-0.90	0.00	-13.14	0.00	13.14	2,226.60	1,113.30	2,757.75	1,380.92	3.47	-0.24	0.014
135.00	-9.51	-0.85	0.00	-8.64	0.00	8.64	2,137.76	1,068.88	2,540.99	1,272.38	3.73	-0.25	0.011
139.18	-9.33	-0.83	0.00	-5.10	0.00	5.10	2,063.55	1,031.78	2,366.73	1,185.12	3.95	-0.25	0.009
140.00	-5.51	-0.51	0.00	-4.41	0.00	4.41	2,048.92	1,024.46	2,333.10	1,168.29	3.99	-0.25	0.006
143.34	-5.37	-0.50	0.00	-2.70	0.00	2.70	1,072.97	536.48	1,213.64	607.72	4.17	-0.25	0.009
145.00	-5.03	-0.47	0.00	-1.87	0.00	1.87	1,063.79	531.90	1,185.67	593.71	4.26	-0.25	0.008
149.00	0.00	-0.45	0.00	0.00	0.00	0.00	1,040.86	520.43	1,118.54	560.10	4.47	-0.25	0.000

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

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

**Seismic (Reduced DL) Equivalent Lateral Forces Method**

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.18	-1.80	0.00	-215.35	0.00	215.35	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.046
5.00	-32.02	-1.80	0.00	-206.37	0.00	206.37	4,461.01	2,230.51	10,816.2	5,416.14	0.00	-0.01	0.045
10.00	-30.87	-1.81	0.00	-197.35	0.00	197.35	4,410.95	2,205.48	10,474.5	5,245.08	0.02	-0.02	0.045
15.00	-29.75	-1.81	0.00	-188.33	0.00	188.33	4,359.17	2,179.58	10,133.9	5,074.52	0.04	-0.03	0.044
20.00	-28.65	-1.81	0.00	-179.30	0.00	179.30	4,305.66	2,152.83	9,794.63	4,904.59	0.08	-0.04	0.043
25.00	-27.57	-1.80	0.00	-170.27	0.00	170.27	4,250.43	2,125.22	9,456.78	4,735.42	0.12	-0.05	0.042
30.00	-26.51	-1.80	0.00	-161.26	0.00	161.26	4,193.48	2,096.74	9,120.71	4,567.13	0.18	-0.06	0.042
35.00	-25.48	-1.79	0.00	-152.28	0.00	152.28	4,134.81	2,067.40	8,786.66	4,399.86	0.24	-0.07	0.041
40.00	-24.46	-1.78	0.00	-143.34	0.00	143.34	4,074.41	2,037.21	8,454.90	4,233.73	0.32	-0.08	0.040
45.00	-24.44	-1.78	0.00	-134.45	0.00	134.45	4,012.29	2,006.15	8,125.68	4,068.88	0.41	-0.09	0.039
45.09	-22.62	-1.75	0.00	-134.30	0.00	134.30	4,011.20	2,005.60	8,120.00	4,066.03	0.41	-0.09	0.039
50.00	-21.92	-1.73	0.00	-125.72	0.00	125.72	3,948.45	1,974.23	7,799.26	3,905.43	0.50	-0.10	0.038
51.92	-21.31	-1.72	0.00	-122.39	0.00	122.39	3,963.81	1,981.91	7,876.71	3,944.21	0.54	-0.10	0.036
55.00	-20.34	-1.70	0.00	-117.08	0.00	117.08	3,923.88	1,961.94	7,676.69	3,844.05	0.61	-0.11	0.036
60.00	-19.40	-1.68	0.00	-108.58	0.00	108.58	3,857.67	1,928.83	7,354.55	3,682.74	0.73	-0.12	0.035
65.00	-18.47	-1.65	0.00	-100.21	0.00	100.21	3,789.73	1,894.87	7,035.83	3,523.15	0.86	-0.13	0.033
70.00	-17.57	-1.62	0.00	-91.97	0.00	91.97	3,720.08	1,860.04	6,720.79	3,365.39	1.00	-0.14	0.032
75.00	-16.69	-1.58	0.00	-83.90	0.00	83.90	3,648.70	1,824.35	6,409.67	3,209.60	1.15	-0.15	0.031
80.00	-15.82	-1.54	0.00	-76.00	0.00	76.00	3,575.60	1,787.80	6,102.74	3,055.91	1.31	-0.16	0.029
85.00	-14.98	-1.50	0.00	-68.29	0.00	68.29	3,500.77	1,750.39	5,800.26	2,904.44	1.48	-0.17	0.028
90.00	-14.87	-1.49	0.00	-60.80	0.00	60.80	3,424.23	1,712.11	5,502.49	2,755.33	1.66	-0.18	0.026
90.71	-13.68	-1.42	0.00	-59.73	0.00	59.73	3,413.17	1,706.58	5,460.40	2,734.26	1.69	-0.18	0.026
95.00	-13.32	-1.40	0.00	-53.63	0.00	53.63	3,345.96	1,672.98	5,209.67	2,608.71	1.85	-0.19	0.025
96.30	-12.81	-1.37	0.00	-51.81	0.00	51.81	2,663.58	1,331.79	4,195.31	2,100.78	1.90	-0.19	0.029
100.00	-12.12	-1.33	0.00	-46.73	0.00	46.73	2,621.35	1,310.68	4,031.88	2,018.94	2.05	-0.19	0.028
105.00	-11.46	-1.28	0.00	-40.10	0.00	40.10	2,562.85	1,281.43	3,813.95	1,909.81	2.26	-0.20	0.025
110.00	-9.55	-1.13	0.00	-33.71	0.00	33.71	2,502.63	1,251.31	3,599.38	1,802.37	2.48	-0.21	0.023
115.00	-9.30	-1.11	0.00	-28.08	0.00	28.08	2,440.68	1,220.34	3,388.44	1,696.74	2.70	-0.22	0.020
117.00	-8.77	-1.06	0.00	-25.87	0.00	25.87	2,415.42	1,207.71	3,305.13	1,655.02	2.80	-0.22	0.019
120.00	-8.18	-1.00	0.00	-22.69	0.00	22.69	2,377.01	1,188.51	3,181.37	1,593.05	2.94	-0.23	0.018
125.00	-7.60	-0.95	0.00	-17.67	0.00	17.67	2,311.62	1,155.81	2,978.45	1,491.44	3.18	-0.23	0.015
130.00	-7.05	-0.89	0.00	-12.94	0.00	12.94	2,226.60	1,113.30	2,757.75	1,380.92	3.43	-0.24	0.013
135.00	-6.59	-0.83	0.00	-8.51	0.00	8.51	2,137.76	1,068.88	2,540.99	1,272.38	3.68	-0.24	0.010
139.18	-6.46	-0.82	0.00	-5.02	0.00	5.02	2,063.55	1,031.78	2,366.73	1,185.12	3.90	-0.25	0.007
140.00	-3.82	-0.50	0.00	-4.35	0.00	4.35	2,048.92	1,024.46	2,333.10	1,168.29	3.94	-0.25	0.006
143.34	-3.72	-0.49	0.00	-2.66	0.00	2.66	1,072.97	536.48	1,213.64	607.72	4.12	-0.25	0.008
145.00	-3.49	-0.46	0.00	-1.85	0.00	1.85	1,063.79	531.90	1,185.67	593.71	4.20	-0.25	0.006
149.00	0.00	-0.45	0.00	0.00	0.00	0.00	1,040.86	520.43	1,118.54	560.10	4.41	-0.25	0.000

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

### Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.20
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.01
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)
37	147.00	269	1.840	1.725	1.047	0.353	82	334
36	144.17	114	1.769	1.403	0.926	0.308	30	141
35	141.67	543	1.709	1.155	0.828	0.270	127	673
34	139.59	150	1.659	0.972	0.753	0.241	31	186
33	137.09	528	1.600	0.778	0.670	0.208	95	654
32	132.50	650	1.495	0.488	0.536	0.152	86	807
31	127.50	671	1.384	0.254	0.415	0.100	58	832
30	122.50	691	1.278	0.091	0.317	0.057	34	857
29	118.50	424	1.195	0.000	0.251	0.028	10	526
28	116.00	289	1.146	-0.041	0.216	0.013	3	358
27	112.50	737	1.077	-0.082	0.173	-0.004	-3	914
26	107.50	774	0.984	-0.114	0.123	-0.022	-15	960
25	102.50	794	0.894	-0.122	0.085	-0.032	-22	985
24	98.15	601	0.820	-0.115	0.060	-0.035	-18	746
23	95.65	412	0.779	-0.108	0.048	-0.034	-12	511
22	92.86	1,383	0.734	-0.097	0.037	-0.030	-36	1,715
21	90.36	138	0.695	-0.085	0.029	-0.026	-3	171
20	87.50	978	0.652	-0.071	0.021	-0.019	-16	1,213
19	82.50	1,002	0.579	-0.045	0.012	-0.005	-4	1,243
18	77.50	1,027	0.511	-0.020	0.008	0.010	9	1,273
17	72.50	1,051	0.447	0.002	0.006	0.024	22	1,304
16	67.50	1,075	0.388	0.022	0.007	0.035	33	1,334
15	62.50	1,100	0.333	0.037	0.010	0.043	41	1,364
14	57.50	1,124	0.281	0.049	0.014	0.048	47	1,395
13	53.46	705	0.243	0.056	0.018	0.050	31	874
12	50.96	816	0.221	0.060	0.021	0.051	36	1,012
11	47.54	2,121	0.192	0.064	0.024	0.051	94	2,631
10	45.04	20	0.173	0.066	0.027	0.051	1	25
9	42.50	1,182	0.154	0.068	0.030	0.051	52	1,467
8	37.50	1,207	0.120	0.070	0.034	0.050	52	1,497
7	32.50	1,231	0.090	0.071	0.038	0.048	51	1,527
6	27.50	1,256	0.064	0.072	0.041	0.047	51	1,557
5	22.50	1,280	0.043	0.071	0.042	0.045	50	1,588
4	17.50	1,304	0.026	0.067	0.040	0.043	48	1,618

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

3	12.50	1,329	0.013	0.059	0.034	0.038	44	1,648
2	7.50	1,353	0.005	0.044	0.025	0.030	35	1,678
1	2.50	1,378	0.001	0.018	0.010	0.013	16	1,709
Samsung PCS/AWS	149.00	253	1.890	1.980	1.140	0.386	85	314
Samsung 700+850MHZ	149.00	246	1.890	1.980	1.140	0.386	82	305
3' Yagi	149.00	10	1.890	1.980	1.140	0.386	3	12
Raycap RVZDC-6627-PF	149.00	32	1.890	1.980	1.140	0.386	11	40
RFS Celwave PD220	149.00	50	1.890	1.980	1.140	0.386	17	62
Commscope NHH-65B-	149.00	262	1.890	1.980	1.140	0.386	88	325
Antel LPA-80080/6CF	149.00	126	1.890	1.980	1.140	0.386	42	156
Flat Low Profile Pla	149.00	1,500	1.890	1.980	1.140	0.386	502	1,860
VZW Unused Reserve:	149.00	1,581	1.890	1.980	1.140	0.386	529	1,960
Andrew ABT-DFDM-ADB	140.00	1	1.669	1.007	0.767	0.247	0	1
Powerwave Allgon TT1	140.00	96	1.669	1.007	0.767	0.247	21	119
Powerwave Allgon TT0	140.00	66	1.669	1.007	0.767	0.247	14	82
Raycap DC6-48-60-18-	140.00	20	1.669	1.007	0.767	0.247	4	25
Ericsson RRUS A2 Mod	140.00	64	1.669	1.007	0.767	0.247	14	79
Ericsson RRUS 32 B2	140.00	159	1.669	1.007	0.767	0.247	34	197
Ericsson RRUS-11	140.00	165	1.669	1.007	0.767	0.247	35	205
Raycap DC6-48-60-18	140.00	30	1.669	1.007	0.767	0.247	6	37
Andrew SBNHH-1D65A (	140.00	67	1.669	1.007	0.767	0.247	14	83
Powerwave Allgon P90	140.00	318	1.669	1.007	0.767	0.247	68	394
CCI HPA-65R-BUU-H6	140.00	51	1.669	1.007	0.767	0.247	11	63
Round Low Profile PI	140.00	1,500	1.669	1.007	0.767	0.247	321	1,860
Decibel DB222	117.00	32	1.165	-0.025	0.230	0.019	1	40
Stand Off	117.00	150	1.165	-0.025	0.230	0.019	2	186
3' Yagi	117.00	10	1.165	-0.025	0.230	0.019	0	12
Symmetricom 58532A	110.00	0	1.030	-0.101	0.147	-0.014	0	0
Ericsson RRUS 11 B12	110.00	152	1.030	-0.101	0.147	-0.014	-2	189
Ericsson RRUS 11 B4	110.00	152	1.030	-0.101	0.147	-0.014	-2	189
Ericsson RRUS 11 B2	110.00	152	1.030	-0.101	0.147	-0.014	-2	189
RFS APX16DWV-	110.00	122	1.030	-0.101	0.147	-0.014	-2	151
Commscope LNX-	110.00	151	1.030	-0.101	0.147	-0.014	-2	187
Flat T-Arm	110.00	750	1.030	-0.101	0.147	-0.014	-9	930
		39,974	73.334	35.979	28.160	8.647	3,028	49,581

**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)
37	147.00	269	1.840	1.725	1.047	0.353	82	232
36	144.17	114	1.769	1.403	0.926	0.308	30	98
35	141.67	543	1.709	1.155	0.828	0.270	127	467
34	139.59	150	1.659	0.972	0.753	0.241	31	129
33	137.09	528	1.600	0.778	0.670	0.208	95	454
32	132.50	650	1.495	0.488	0.536	0.152	86	559
31	127.50	671	1.384	0.254	0.415	0.100	58	577
30	122.50	691	1.278	0.091	0.317	0.057	34	594
29	118.50	424	1.195	0.000	0.251	0.028	10	365
28	116.00	289	1.146	-0.041	0.216	0.013	3	248
27	112.50	737	1.077	-0.082	0.173	-0.004	-3	633
26	107.50	774	0.984	-0.114	0.123	-0.022	-15	665
25	102.50	794	0.894	-0.122	0.085	-0.032	-22	683
24	98.15	601	0.820	-0.115	0.060	-0.035	-18	517
23	95.65	412	0.779	-0.108	0.048	-0.034	-12	354
22	92.86	1,383	0.734	-0.097	0.037	-0.030	-36	1,189
21	90.36	138	0.695	-0.085	0.029	-0.026	-3	118
20	87.50	978	0.652	-0.071	0.021	-0.019	-16	841
19	82.50	1,002	0.579	-0.045	0.012	-0.005	-4	862



Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

18	77.50	1,027	0.511	-0.020	0.008	0.010	9	883
17	72.50	1,051	0.447	0.002	0.006	0.024	22	904
16	67.50	1,075	0.388	0.022	0.007	0.035	33	925
15	62.50	1,100	0.333	0.037	0.010	0.043	41	946
14	57.50	1,124	0.281	0.049	0.014	0.048	47	967
13	53.46	705	0.243	0.056	0.018	0.050	31	606
12	50.96	816	0.221	0.060	0.021	0.051	36	701
11	47.54	2,121	0.192	0.064	0.024	0.051	94	1,823
10	45.04	20	0.173	0.066	0.027	0.051	1	17
9	42.50	1,182	0.154	0.068	0.030	0.051	52	1,016
8	37.50	1,207	0.120	0.070	0.034	0.050	52	1,037
7	32.50	1,231	0.090	0.071	0.038	0.048	51	1,058
6	27.50	1,256	0.064	0.072	0.041	0.047	51	1,079
5	22.50	1,280	0.043	0.071	0.042	0.045	50	1,100
4	17.50	1,304	0.026	0.067	0.040	0.043	48	1,121
3	12.50	1,329	0.013	0.059	0.034	0.038	44	1,142
2	7.50	1,353	0.005	0.044	0.025	0.030	35	1,163
1	2.50	1,378	0.001	0.018	0.010	0.013	16	1,184
Samsung PCS/AWS	149.00	253	1.890	1.980	1.140	0.386	85	218
Samsung 700+850MHZ	149.00	246	1.890	1.980	1.140	0.386	82	211
3' Yagi	149.00	10	1.890	1.980	1.140	0.386	3	9
Raycap RVZDC-6627-PF	149.00	32	1.890	1.980	1.140	0.386	11	28
RFS Celwave PD220	149.00	50	1.890	1.980	1.140	0.386	17	43
Commscope NHH-65B-	149.00	262	1.890	1.980	1.140	0.386	88	225
Antel LPA-80080/6CF	149.00	126	1.890	1.980	1.140	0.386	42	108
Flat Low Profile Pla	149.00	1,500	1.890	1.980	1.140	0.386	502	1,290
VZW Unused Reserve:	149.00	1,581	1.890	1.980	1.140	0.386	529	1,359
Andrew ABT-DFDM-ADB	140.00	1	1.669	1.007	0.767	0.247	0	1
Powerwave Allgon TT1	140.00	96	1.669	1.007	0.767	0.247	21	83
Powerwave Allgon TT0	140.00	66	1.669	1.007	0.767	0.247	14	57
Raycap DC6-48-60-18-	140.00	20	1.669	1.007	0.767	0.247	4	17
Ericsson RRUS A2 Mod	140.00	64	1.669	1.007	0.767	0.247	14	55
Ericsson RRUS 32 B2	140.00	159	1.669	1.007	0.767	0.247	34	137
Ericsson RRUS-11	140.00	165	1.669	1.007	0.767	0.247	35	142
Raycap DC6-48-60-18	140.00	30	1.669	1.007	0.767	0.247	6	26
Andrew SBNHH-1D65A (	140.00	67	1.669	1.007	0.767	0.247	14	58
Powerwave Allgon P90	140.00	318	1.669	1.007	0.767	0.247	68	273
CCI HPA-65R-BUU-H6	140.00	51	1.669	1.007	0.767	0.247	11	44
Round Low Profile PI	140.00	1,500	1.669	1.007	0.767	0.247	321	1,290
Decibel DB222	117.00	32	1.165	-0.025	0.230	0.019	1	28
Stand Off	117.00	150	1.165	-0.025	0.230	0.019	2	129
3' Yagi	117.00	10	1.165	-0.025	0.230	0.019	0	9
Symmetricom 58532A	110.00	0	1.030	-0.101	0.147	-0.014	0	0
Ericsson RRUS 11 B12	110.00	152	1.030	-0.101	0.147	-0.014	-2	131
Ericsson RRUS 11 B4	110.00	152	1.030	-0.101	0.147	-0.014	-2	131
Ericsson RRUS 11 B2	110.00	152	1.030	-0.101	0.147	-0.014	-2	131
RFS APX16DWV-	110.00	122	1.030	-0.101	0.147	-0.014	-2	105
Commscope LNX-	110.00	151	1.030	-0.101	0.147	-0.014	-2	130
Flat T-Arm	110.00	750	1.030	-0.101	0.147	-0.014	-9	645
		39,974	73.334	35.979	28.160	8.647	3,028	34,365

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 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	-47.87	-3.02	0.00	-379.10	0.00	379.10	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.078
5.00	-46.19	-3.00	0.00	-364.01	0.00	364.01	4,461.01	2,230.51	10,816.2	5,416.14	0.01	-0.02	0.078
10.00	-44.54	-2.96	0.00	-349.03	0.00	349.03	4,410.95	2,205.48	10,474.5	5,245.08	0.03	-0.03	0.077
15.00	-42.92	-2.93	0.00	-334.21	0.00	334.21	4,359.17	2,179.58	10,133.9	5,074.52	0.08	-0.05	0.076
20.00	-41.34	-2.89	0.00	-319.57	0.00	319.57	4,305.66	2,152.83	9,794.63	4,904.59	0.14	-0.07	0.075
25.00	-39.78	-2.85	0.00	-305.13	0.00	305.13	4,250.43	2,125.22	9,456.78	4,735.42	0.22	-0.08	0.074
30.00	-38.25	-2.81	0.00	-290.89	0.00	290.89	4,193.48	2,096.74	9,120.71	4,567.13	0.32	-0.10	0.073
35.00	-36.75	-2.76	0.00	-276.86	0.00	276.86	4,134.81	2,067.40	8,786.66	4,399.86	0.43	-0.12	0.072
40.00	-35.29	-2.72	0.00	-263.04	0.00	263.04	4,074.41	2,037.21	8,454.90	4,233.73	0.57	-0.14	0.071
45.00	-35.26	-2.72	0.00	-249.45	0.00	249.45	4,012.29	2,006.15	8,125.68	4,068.88	0.72	-0.16	0.070
45.09	-32.63	-2.63	0.00	-249.21	0.00	249.21	4,011.20	2,005.60	8,120.00	4,066.03	0.73	-0.16	0.069
50.00	-31.62	-2.60	0.00	-236.30	0.00	236.30	3,948.45	1,974.23	7,799.26	3,905.43	0.90	-0.18	0.069
51.92	-30.74	-2.57	0.00	-231.31	0.00	231.31	3,963.81	1,981.91	7,876.71	3,944.21	0.97	-0.18	0.066
55.00	-29.35	-2.52	0.00	-223.40	0.00	223.40	3,923.88	1,961.94	7,676.69	3,844.05	1.09	-0.20	0.066
60.00	-27.98	-2.49	0.00	-210.78	0.00	210.78	3,857.67	1,928.83	7,354.55	3,682.74	1.31	-0.22	0.064
65.00	-26.65	-2.46	0.00	-198.34	0.00	198.34	3,789.73	1,894.87	7,035.83	3,523.15	1.55	-0.23	0.063
70.00	-25.34	-2.44	0.00	-186.05	0.00	186.05	3,720.08	1,860.04	6,720.79	3,365.39	1.80	-0.25	0.062
75.00	-24.07	-2.43	0.00	-173.85	0.00	173.85	3,648.70	1,824.35	6,409.67	3,209.60	2.08	-0.27	0.061
80.00	-22.82	-2.44	0.00	-161.68	0.00	161.68	3,575.60	1,787.80	6,102.74	3,055.91	2.38	-0.29	0.059
85.00	-21.61	-2.46	0.00	-149.48	0.00	149.48	3,500.77	1,750.39	5,800.26	2,904.44	2.70	-0.32	0.058
90.00	-21.44	-2.46	0.00	-137.19	0.00	137.19	3,424.23	1,712.11	5,502.49	2,755.33	3.04	-0.34	0.056
90.71	-19.72	-2.49	0.00	-135.43	0.00	135.43	3,413.17	1,706.58	5,460.40	2,734.26	3.09	-0.34	0.055
95.00	-19.21	-2.51	0.00	-124.74	0.00	124.74	3,345.96	1,672.98	5,209.67	2,608.71	3.40	-0.36	0.054
96.30	-18.47	-2.52	0.00	-121.49	0.00	121.49	2,663.58	1,331.79	4,195.31	2,100.78	3.50	-0.36	0.065
100.00	-17.48	-2.55	0.00	-112.15	0.00	112.15	2,621.35	1,310.68	4,031.88	2,018.94	3.79	-0.38	0.062
105.00	-16.52	-2.56	0.00	-99.42	0.00	99.42	2,562.85	1,281.43	3,813.95	1,909.81	4.20	-0.40	0.059
110.00	-13.77	-2.57	0.00	-86.62	0.00	86.62	2,502.63	1,251.31	3,599.38	1,802.37	4.63	-0.42	0.054
115.00	-13.41	-2.56	0.00	-73.79	0.00	73.79	2,440.68	1,220.34	3,388.44	1,696.74	5.08	-0.44	0.049
117.00	-12.65	-2.55	0.00	-68.66	0.00	68.66	2,415.42	1,207.71	3,305.13	1,655.02	5.27	-0.45	0.047
120.00	-11.79	-2.51	0.00	-61.01	0.00	61.01	2,377.01	1,188.51	3,181.37	1,593.05	5.56	-0.46	0.043
125.00	-10.96	-2.45	0.00	-48.47	0.00	48.47	2,311.62	1,155.81	2,978.45	1,491.44	6.05	-0.48	0.037
130.00	-10.15	-2.36	0.00	-36.23	0.00	36.23	2,226.60	1,113.30	2,757.75	1,380.92	6.57	-0.50	0.031
135.00	-9.50	-2.26	0.00	-24.45	0.00	24.45	2,137.76	1,068.88	2,540.99	1,272.38	7.09	-0.51	0.024
139.18	-9.31	-2.23	0.00	-15.01	0.00	15.01	2,063.55	1,031.78	2,366.73	1,185.12	7.54	-0.52	0.017
140.00	-5.50	-1.52	0.00	-13.18	0.00	13.18	2,048.92	1,024.46	2,333.10	1,168.29	7.63	-0.52	0.014
143.34	-5.36	-1.49	0.00	-8.09	0.00	8.09	1,072.97	536.48	1,213.64	607.72	8.00	-0.52	0.018
145.00	-5.02	-1.41	0.00	-5.62	0.00	5.62	1,063.79	531.90	1,185.67	593.71	8.18	-0.52	0.014
149.00	0.00	-1.36	0.00	0.00	0.00	0.00	1,040.86	520.43	1,118.54	560.10	8.62	-0.53	0.000

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 AM

Customer: VERIZON WIRELESS

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

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.18	-3.02	0.00	-374.98	0.00	374.98	4,509.35	2,254.68	11,158.5	5,587.56	0.00	0.00	0.074
5.00	-32.02	-2.99	0.00	-359.90	0.00	359.90	4,461.01	2,230.51	10,816.2	5,416.14	0.01	-0.02	0.074
10.00	-30.87	-2.95	0.00	-344.95	0.00	344.95	4,410.95	2,205.48	10,474.5	5,245.08	0.03	-0.03	0.073
15.00	-29.75	-2.91	0.00	-330.18	0.00	330.18	4,359.17	2,179.58	10,133.9	5,074.52	0.08	-0.05	0.072
20.00	-28.65	-2.87	0.00	-315.61	0.00	315.61	4,305.66	2,152.83	9,794.63	4,904.59	0.14	-0.07	0.071
25.00	-27.57	-2.83	0.00	-301.25	0.00	301.25	4,250.43	2,125.22	9,456.78	4,735.42	0.22	-0.08	0.070
30.00	-26.51	-2.78	0.00	-287.12	0.00	287.12	4,193.48	2,096.74	9,120.71	4,567.13	0.31	-0.10	0.069
35.00	-25.47	-2.74	0.00	-273.20	0.00	273.20	4,134.81	2,067.40	8,786.66	4,399.86	0.43	-0.12	0.068
40.00	-24.45	-2.69	0.00	-259.52	0.00	259.52	4,074.41	2,037.21	8,454.90	4,233.73	0.56	-0.14	0.067
45.00	-24.44	-2.69	0.00	-246.06	0.00	246.06	4,012.29	2,006.15	8,125.68	4,068.88	0.71	-0.16	0.067
45.09	-22.61	-2.60	0.00	-245.83	0.00	245.83	4,011.20	2,005.60	8,120.00	4,066.03	0.72	-0.16	0.066
50.00	-21.91	-2.57	0.00	-233.06	0.00	233.06	3,948.45	1,974.23	7,799.26	3,905.43	0.89	-0.17	0.065
51.92	-21.31	-2.54	0.00	-228.14	0.00	228.14	3,963.81	1,981.91	7,876.71	3,944.21	0.96	-0.18	0.063
55.00	-20.34	-2.49	0.00	-220.33	0.00	220.33	3,923.88	1,961.94	7,676.69	3,844.05	1.08	-0.19	0.063
60.00	-19.39	-2.45	0.00	-207.87	0.00	207.87	3,857.67	1,928.83	7,354.55	3,682.74	1.29	-0.21	0.061
65.00	-18.47	-2.42	0.00	-195.60	0.00	195.60	3,789.73	1,894.87	7,035.83	3,523.15	1.53	-0.23	0.060
70.00	-17.56	-2.40	0.00	-183.49	0.00	183.49	3,720.08	1,860.04	6,720.79	3,365.39	1.78	-0.25	0.059
75.00	-16.68	-2.40	0.00	-171.48	0.00	171.48	3,648.70	1,824.35	6,409.67	3,209.60	2.05	-0.27	0.058
80.00	-15.82	-2.40	0.00	-159.50	0.00	159.50	3,575.60	1,787.80	6,102.74	3,055.91	2.35	-0.29	0.057
85.00	-14.97	-2.42	0.00	-147.49	0.00	147.49	3,500.77	1,750.39	5,800.26	2,904.44	2.66	-0.31	0.055
90.00	-14.86	-2.42	0.00	-135.40	0.00	135.40	3,424.23	1,712.11	5,502.49	2,755.33	3.00	-0.33	0.053
90.71	-13.67	-2.46	0.00	-133.67	0.00	133.67	3,413.17	1,706.58	5,460.40	2,734.26	3.05	-0.33	0.053
95.00	-13.31	-2.47	0.00	-123.14	0.00	123.14	3,345.96	1,672.98	5,209.67	2,608.71	3.36	-0.35	0.051
96.30	-12.79	-2.49	0.00	-119.94	0.00	119.94	2,663.58	1,331.79	4,195.31	2,100.78	3.46	-0.36	0.062
100.00	-12.11	-2.51	0.00	-110.73	0.00	110.73	2,621.35	1,310.68	4,031.88	2,018.94	3.74	-0.37	0.059
105.00	-11.45	-2.52	0.00	-98.19	0.00	98.19	2,562.85	1,281.43	3,813.95	1,909.81	4.14	-0.40	0.056
110.00	-9.54	-2.53	0.00	-85.58	0.00	85.58	2,502.63	1,251.31	3,599.38	1,802.37	4.57	-0.42	0.051
115.00	-9.29	-2.53	0.00	-72.91	0.00	72.91	2,440.68	1,220.34	3,388.44	1,696.74	5.02	-0.44	0.047
117.00	-8.76	-2.52	0.00	-67.85	0.00	67.85	2,415.42	1,207.71	3,305.13	1,655.02	5.20	-0.45	0.045
120.00	-8.17	-2.48	0.00	-60.30	0.00	60.30	2,377.01	1,188.51	3,181.37	1,593.05	5.49	-0.46	0.041
125.00	-7.59	-2.42	0.00	-47.91	0.00	47.91	2,311.62	1,155.81	2,978.45	1,491.44	5.98	-0.48	0.035
130.00	-7.03	-2.33	0.00	-35.82	0.00	35.82	2,226.60	1,113.30	2,757.75	1,380.92	6.48	-0.49	0.029
135.00	-6.58	-2.23	0.00	-24.17	0.00	24.17	2,137.76	1,068.88	2,540.99	1,272.38	7.00	-0.50	0.022
139.18	-6.45	-2.20	0.00	-14.86	0.00	14.86	2,063.55	1,031.78	2,366.73	1,185.12	7.45	-0.51	0.016
140.00	-3.81	-1.51	0.00	-13.04	0.00	13.04	2,048.92	1,024.46	2,333.10	1,168.29	7.54	-0.51	0.013
143.34	-3.71	-1.48	0.00	-8.01	0.00	8.01	1,072.97	536.48	1,213.64	607.72	7.90	-0.52	0.017
145.00	-3.48	-1.39	0.00	-5.56	0.00	5.56	1,063.79	531.90	1,185.67	593.71	8.08	-0.52	0.013
149.00	0.00	-1.36	0.00	0.00	0.00	0.00	1,040.86	520.43	1,118.54	560.10	8.51	-0.52	0.000

Site Number: 413783

Code: ANSI/TIA-222-G

© 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Kent Pcs CT, CT

Engineering Number: OAA731824\_C3\_02

5/23/2018 11:36:59 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	31.14	0.00	47.93	0.00	0.00	3585.71	0.00	0.65
0.9D + 1.6W	31.12	0.00	35.93	0.00	0.00	3555.06	0.00	0.64
1.2D + 1.0Di + 1.0Wi	6.61	0.00	73.63	0.00	0.00	756.51	0.00	0.15
(1.2 + 0.2Sds) * DL + E ELFM	1.80	0.00	47.87	0.00	0.00	217.55	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	3.02	0.00	47.87	0.00	0.00	379.10	0.00	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.80	0.00	33.18	0.00	0.00	215.35	0.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	3.02	0.00	33.18	0.00	0.00	374.98	0.00	0.07
1.0D + 1.0W	8.65	0.00	39.97	0.00	0.00	991.13	0.00	0.19

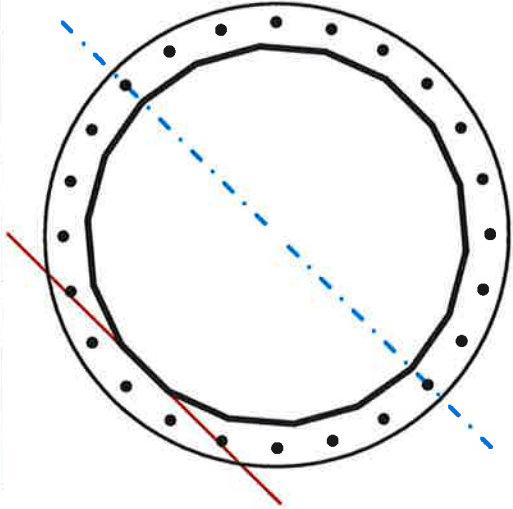
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	60.50	in
Thickness	0.375	in
Orientation Offset	15	°

Base Reactions		
Moment, Mu	3585.7	k-ft
Axial, Pu	47.9	k
Shear, Vu	31.1	k
Neutral Axis	135	°

Report Capacities		
Component	Capacity	Result
Base Plate	31%	Pass
Anchor Rods	46%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	75	in
Thickness	3 1/4	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	1079.3	k
Bending Stress, $\phi Mn$	3490.0	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	24	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	-
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	9.0	in
Orientation Offset	0	°
Applied Force, Pu	105.9	k
Anchor Rods, $\phi Pn$	259.8	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu k	Moment Mu k-ft	Factor
Base Forces	31.1	3585.7	1.00
Anchor Rod Forces	31.1	3585.7	1.00
Additional Bolt (Grp1) Forces			
Additional Bolt (Grp2) Forces			
Dywidag Forces			
Stiffener Forces			

## Geometric Properties

Section	Gross Area in <sup>2</sup>	Net Area in <sup>2</sup>	Individual Inertia in <sup>4</sup>	Threads per Inch #	Moment of Inertia in <sup>4</sup>
Pole	70.4740	3.9152	0.1841		31848.90
Bolt	3.9761	3.2477	0.8393	4.5	46406.89
Bolt1					
Bolt2					
Dywidag					
Stiffener					

Base Plate		
Shape	Round	-
Diameter, D	75	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	44.326	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	69	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	105.9	k
Applied Shear, Vu	2.7	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.408	OK
Interaction Capacity	0.457	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k
Vertical Weld		
Vert.-to-Stiffener a=e <sub>v</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, φPn	#DIV/0!	k
Vert.-to-Plate a=e <sub>v</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
$P_u/\phi_p P_n + V_u/\phi_v V_n$		

External Base Plate		
Chord Length AA	38.105	in
Additional AA	6.000	in
Section Modulus, Z	116.465	in <sup>3</sup>
Applied Moment, Mu	1079.3	k-ft
Bending Capacity, φMn	5240.9	k-ft
Capacity, Mu/φMn	0.206	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	0.0	k
Compressive Capacity, φPn	0.0	k
Interaction Capacity		

Horizontal Weld		
Horz.-to-Stiffener a=e <sub>h</sub> /l	0.000	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, φPn	#DIV/0!	k
Horz.-to-Pole a=e <sub>h</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
$P_u/\phi_p P_n + V_u/\phi_v V_n$		

Chord Length AB	36.581	in
Additional AB	6.000	in
Section Modulus, Z	112.441	in <sup>3</sup>
Applied Moment, Mu	934.4	k-ft
Bending Capacity, φMn	5059.9	k-ft
Capacity, Mu/φMn	0.185	OK

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	0.0	k
Compressive Capacity, φPn	0.0	k
Interaction Capacity		

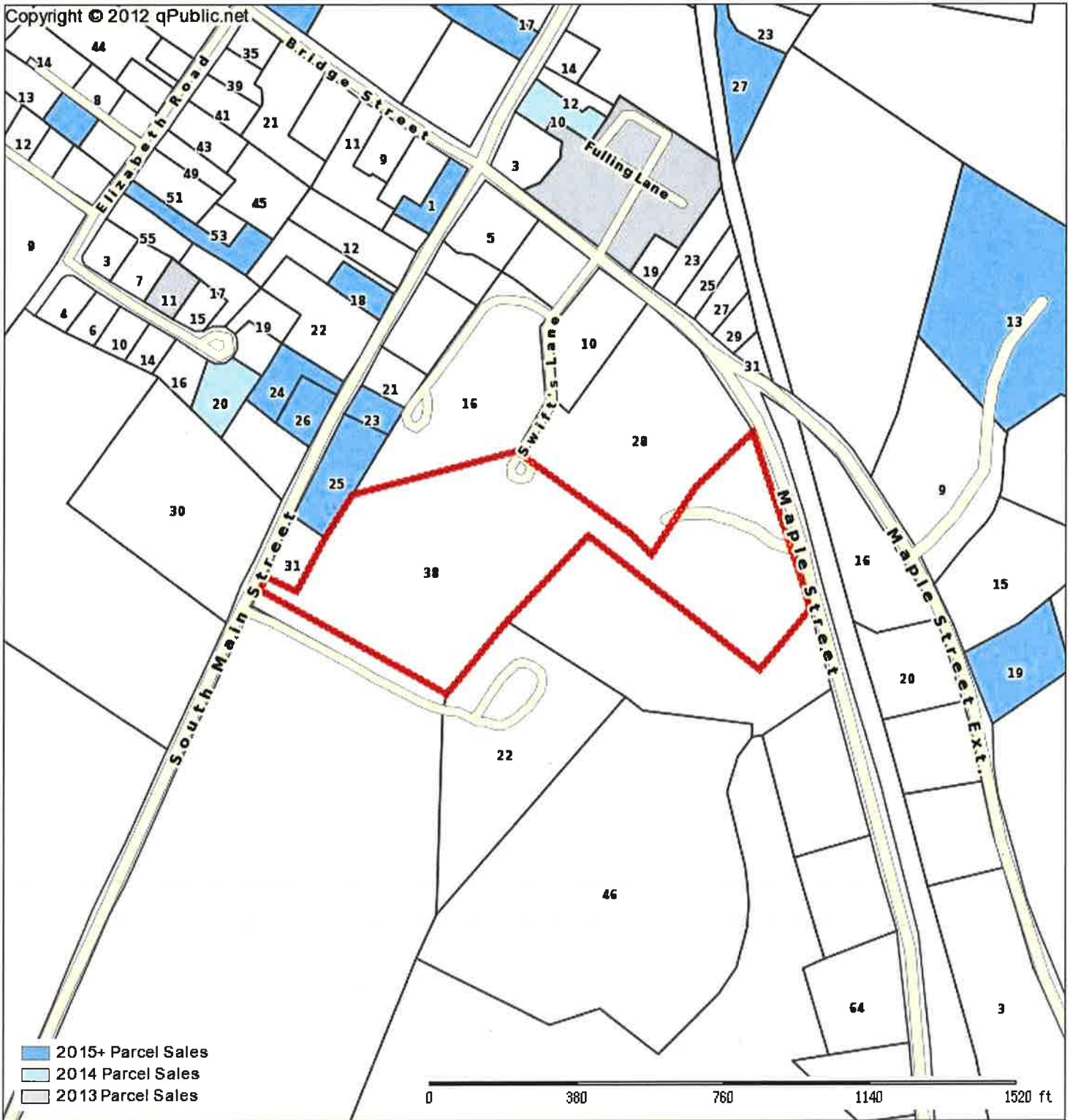
Plate Tension		
Gross Cross Section	0.000	in <sup>2</sup>
Net Cross Section	0.000	in <sup>2</sup>
Tensile Capacity, φTn	0.0	k
Capacity, Tu/φTn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	67.38	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn		

Plate Compression		
Radius of Gyration	#DIV/0!	in <sup>3</sup>
k/r	#DIV/0!	-
$4.71 \sqrt{E/F_y}$	0.00	-
Buckling Stress(F <sub>e</sub> )	0.0	-
Crit. Buckling Stress(F <sub>cr</sub> )	0.0	ksi
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn		

# **ATTACHMENT 4**



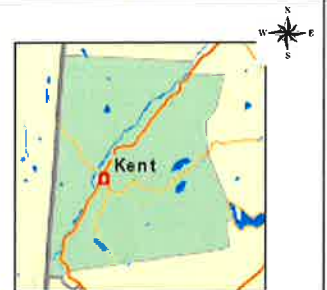
- 2015+ Parcel Sales
- 2014 Parcel Sales
- 2013 Parcel Sales

0 380 760 1140 1520 ft

**38 maple**

Parcel: 246 Acres: 10.19

Name:	KENT TOWN OF	Land Value:	343600
Site:	38 MAPLE ST	Improvement Value:	188800
Sale:	\$0 on 1973-01-15 Reason= Qual=U	Accessory Value:	0
Mail:	PO BOX 678 KENT, CT 06757	Total Value:	613600



The Town of Kent makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified taxroll. All data is subject to change before the next certified taxroll.



# 38 MAPLE ST

**Location** 38 MAPLE ST

**Mblu** 4/ 12/ 4/ /

**Acct#** 4 12 4

**Owner** KENT TOWN OF

**Assessment** \$429,500

**Appraisal** \$613,600

**PID** 246

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$270,000	\$343,600	\$613,600
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$189,000	\$240,500	\$429,500

## Owner of Record

**Owner** KENT TOWN OF  
**Co-Owner** (TOWN GARAGE)

**Sale Price** \$0  
**Certificate**  
**Book & Page** 61/ 346  
**Sale Date** 01/15/1973

## Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
KENT TOWN OF	\$0		61/ 346	01/15/1973

## Building Information

### Building 1 : Section 1

**Year Built:** 1974  
**Living Area:** 6,400  
**Replacement Cost:** \$230,209  
**Replacement Cost  
 Less Depreciation:** \$188,800

Building Attributes	
Field	Description
STYLE	Warehouse
MODEL	Commercial

Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Com/Res MDL96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	2-1I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	14
% Comn Wall	0

### Building Layout



([http://images.vgsi.com/photos/KentCTPhotos//Sketches/246\\_](http://images.vgsi.com/photos/KentCTPhotos//Sketches/246_))

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	6,400	6,400
UST	Utility, Storage, Unfinished	800	0
		7,200	6,400

### Extra Features

Extra Features	Legend
No Data for Extra Features	

### Land

#### Land Use

**Use Code** 920C  
**Description** Town MDL94  
**Alt Land Appr Category** No

#### Land Line Valuation

**Size (Acres)** 10.19  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$240,500  
**Appraised Value** \$343,600

### Outbuildins

**Outbuildings****Legend**

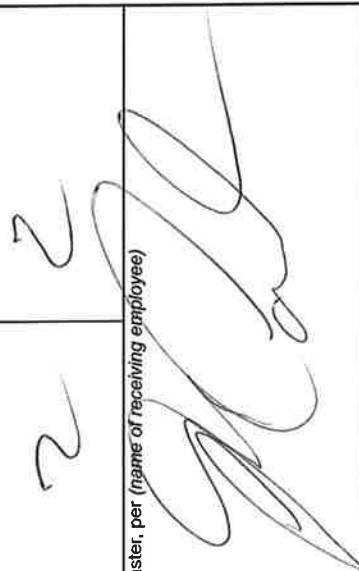
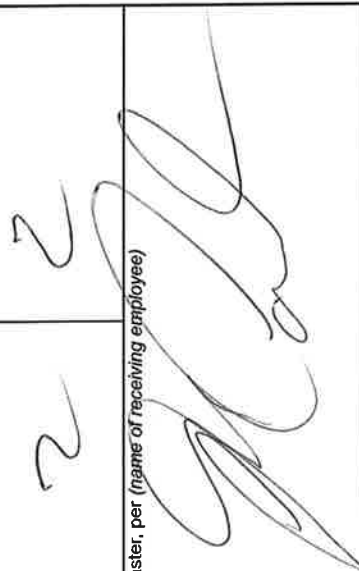

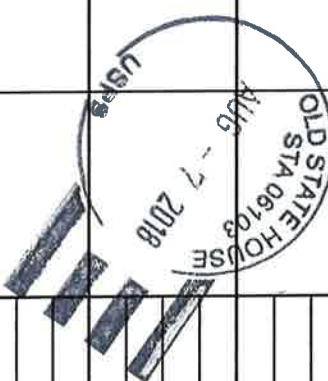
<b>Code</b>	<b>Description</b>	<b>Sub Code</b>	<b>Sub Description</b>	<b>Size</b>	<b>Value</b>	<b>Bldg #</b>
SHD3	SHED METAL			3360 S.F.	\$25,200	1
TEN	TENNIS COURT			2 UNITS	\$45,000	1
IMP	IMPLEMENT SHED			800 S.F.	\$3,600	1
IMP	IMPLEMENT SHED			1650 S.F.	\$7,400	1

(c) 2016 Vision Government Solutions, Inc. All rights reserved.

# **ATTACHMENT 5**



# Certificate of Mailing — Firm

Name and Address of Sender		TOTAL NO. of Pieces Listed by Sender		TOTAL NO. of Pieces Received at Post Office™		Affix Stamp Here Postmark with Date of Receipt.			
UNITED STATES POSTAL SERVICE® Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		2 Postmaster, per (name of receiving employee) 		2 		<div style="text-align: right;">  <p>neopost® 08/07/2018 US POSTAGE \$002.38</p> <p>ZIP 06103 041L122033</p> </div>			
USPS® Tracking Number Firm-specific Identifier		Address (Name, Street, City, State, and ZIP Code™)		Postage	Fee	Special Handling	Parcel Airlift		
1.		Bruce K. Adams, First Selectman Town of Kent 41 Kent Green Boulevard Kent, CT 06757							
2.		Donna Hayes, Land Use Administrator Town of Kent 41 Kent Green Boulevard Kent, CT 06757							
3.									
4.									
5.									
6.									