

December 29, 2015

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

Re: **Notice of Exempt Modification – Facility Modification
305 West Service Road, Hartford, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) wireless telecommunications antennas at the 115-foot level of the existing 147.9-foot tower at 305 West Service Road in Hartford, Connecticut (the “Property”). The tower is owned by American Tower Corporation (“ATC”). The Council approved Cellco’s use of the tower in 2002. Cellco now intends to modify its facility by replacing six (6) of its existing antennas with three (3) model SBNHH-1D65B, 700 MHz antennas and three (3) model SBNHH-1D65B, 1900/2100 MHz antennas, all at the same level on the tower. Cellco also intends to replace three (3) remote radio heads (“RRHs”) and install six (6) new RRHs and two (2) HYBRIFLEX™ 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 Pedro E. Segarra, Mayor of the City of Hartford. A copy of this letter is also being sent to 305 W. Service Road Associates LLC, the owner of the Property and ATC, the tower owner.

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

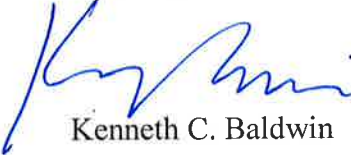
14386023-v1

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1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be located at the 115-foot level on the 147.9-foot tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and/or local criteria.
4. The operation of the modified facility 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 behind 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*).

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:

Pedro E. Segarra, Hartford Mayor
305 W. Service Road Associates LLC
ATC
Tim Parks

ATTACHMENT 1



SBNH-1D65B

Andrew® Dualband Antenna, 698–896 MHz and 1710–2360 MHz, 65° horizontal beamwidth, internal RET.

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

Electrical Specifications

| Frequency Band, MHz | 698–806 | 806–896 | 1710–1880 | 1850–1990 | 1920–2200 | 2300–2360 |
|--------------------------------------|------------|------------|------------|------------|------------|------------|
| Gain, dBi | 14.8 | 14.6 | 17.8 | 18.1 | 18.5 | 18.5 |
| Beamwidth, Horizontal, degrees | 68 | 66 | 70 | 65 | 62 | 59 |
| Beamwidth, Vertical, degrees | 12.1 | 11.0 | 5.7 | 5.2 | 5.0 | 4.5 |
| Beam Tilt, degrees | 0–14 | 0–14 | 0–7 | 0–7 | 0–7 | 0–7 |
| USLS (First Lobe), dB | 17 | 16 | 15 | 14 | 16 | 15 |
| Front-to-Back Ratio at 180°, dB | 29 | 32 | 31 | 28 | 30 | 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, maximum, watts | 350 | 350 | 350 | 350 | 350 | 300 |
| Polarization | ±45° | ±45° | ±45° | ±45° | ±45° | ±45° |
| Impedance | 50 ohm | 50 ohm | 50 ohm | 50 ohm | 50 ohm | 50 ohm |

Electrical Specifications, BASTA*

| Frequency Band, MHz | 698–806 | 806–896 | 1710–1880 | 1850–1990 | 1920–2200 | 2300–2360 |
|---|------------|------------|-----------|-----------|-----------|-----------|
| Gain by all Beam Tilts, average, dBi | 14.5 | 14.1 | 17.5 | 17.9 | 18.2 | 18.3 |
| Gain by all Beam Tilts Tolerance, dB | ±0.4 | ±0.9 | ±0.4 | ±0.3 | ±0.5 | ±0.4 |
| | 0° 14.6 | 0° 14.3 | 0° 17.5 | 0° 17.8 | 0° 18.0 | 0° 18.0 |
| Gain by Beam Tilt, average, dBi | 7° 14.6 | 7° 14.3 | 3° 17.5 | 3° 18.0 | 3° 18.3 | 3° 18.4 |
| | 14° 14.2 | 14° 13.6 | 7° 17.4 | 7° 17.9 | 7° 18.2 | 7° 18.4 |
| Beamwidth, Horizontal Tolerance, degrees | ±1.7 | ±3.3 | ±2.3 | ±4.9 | ±4.5 | ±4.4 |
| Beamwidth, Vertical Tolerance, degrees | ±0.8 | ±0.7 | ±0.3 | ±0.2 | ±0.3 | ±0.1 |
| USLS, beampeak to 20° above beampeak, dB | 17 | 16 | 15 | 14 | 15 | 14 |
| Front-to-Back Total Power at 180° ± 30°, dB | 25 | 25 | 28 | 25 | 25 | 26 |
| CPR at Boresight, dB | 21 | 22 | 19 | 20 | 19 | 23 |
| CPR at Sector, dB | 13 | 11 | 16 | 13 | 13 | 4 |

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

General Specifications

| | |
|--------------------------|---------------------------------|
| Antenna Brand | Andrew® |
| Antenna Type | DualPol® multiband |
| Band | Multiband |
| Brand | DualPol® Teletilt® |
| Operating Frequency Band | 1710 - 2360 MHz 698 - 896 MHz |
| Performance Note | Outdoor usage |

Mechanical Specifications

| | |
|-------|------------|
| Color | Light gray |
|-------|------------|

SBNH-1D65B

POWERED BY



| | |
|------------------------------|--|
| Lightning Protection | dc Ground |
| Radiator Material | Aluminum Low loss circuit board |
| Radome Material | Fiberglass, UV resistant |
| Reflector Material | Aluminum |
| RF Connector Interface | 7-16 DIN Female |
| RF Connector Location | Bottom |
| RF Connector Quantity, total | 4 |
| Wind Loading, maximum | 618.0 N @ 150 km/h 138.9 lbf @ 150 km/h |
| Wind Speed, maximum | 241 km/h 150 mph |

Dimensions

| | |
|------------|---------------------|
| Depth | 181.0 mm 7.1 in |
| Length | 1848.0 mm 72.8 in |
| Width | 301.0 mm 11.9 in |
| Net Weight | 18.4 kg 40.6 lb |

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

| | |
|-----------------|---------------------|
| Depth | 299.0 mm 11.8 in |
| Length | 1970.0 mm 77.6 in |
| Width | 409.0 mm 16.1 in |
| Shipping Weight | 31.0 kg 68.3 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

SBNH-1D65B



scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance

ALCATEL-LUCENT B13 RRH4X30-4R

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

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



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

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

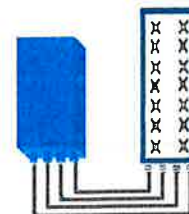
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R
Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

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

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PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

| | |
|-------------------------|---|
| RRH2x60 | |
| RF Output Power | 2X60W |
| Instantaneous Bandwidth | 20MHz |
| Transmitter | 2 TX |
| Receiver | 2 Branch RX – LA6.0.1 4 Branch RX – LR13.3 |
| Features | AISG 2.0 for RET/TMA Internal Smart Bias-T |
| Power | -48VDC |
| CPRI Ports | 2 CPRI Rate 3 Ports |
| External Alarms | 4 External User Alarms |
| Monitor Ports | TX |
| Environmental | GR487 Compliance |
| RF Connectors | 7/16 DIN (top mounted) |

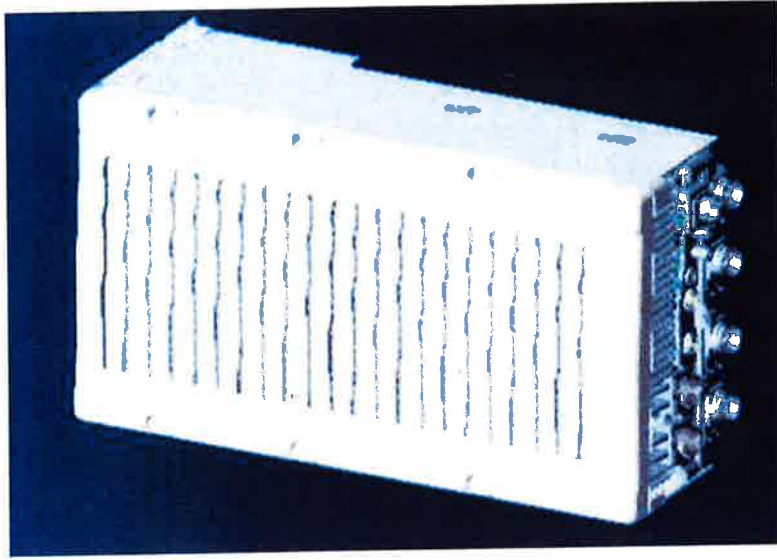


** Not a Verizon Wireless deployed product

NEW PCS RF MODULES FOR VZW RRH2X60 - HW CHARACTERISTICS

LR14.3

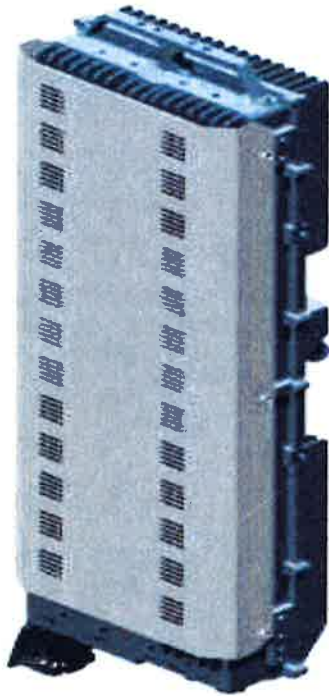
| RRH2X60 | |
|--|---------------------------------|
| RF Output Power | 2x60W (4x30W HW Ready) |
| Instantaneous Bandwidth | 60MHz |
| Target Reliability (Annual Return Rate) | <2% |
| Receiver | 4 Branch Rx |
| Features | AISG 2.0 for RET/TMA |
| Power | -48VDC Internal Smart Bias-T |
| CPRI Ports | 2 CPRI Rate 5 Ports |
| External Alarms | 4 External User Alarms |
| Monitor Ports | TX, RX |
| Environmental | GR487 Compliance |
| RF Connectors | 7/16 DIN (downward facing) |
| Dimensions | 22"(h) x 12"(w) x 9.4" (d)** |
| Weight | 55lb** |



**-. Includes solar shield but not mounting brackets (8 lbs.)

ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals

along with operations, administration and maintenance (OA&M) information.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

EASY INSTALLATION

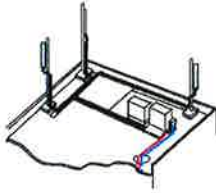
The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

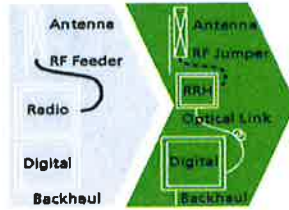
The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.

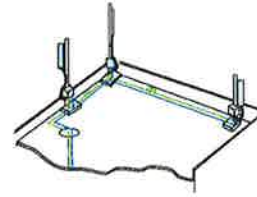




Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

silent solutions, with minimum impact on the neighborhood, which ease the deployment

- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

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

Product Description

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

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

Features/Benefits

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



Figure 1: HYBRIFLEX Series

Technical Specifications

| | | | |
|--|--------------------------------|-------------------|---|
| Outer Conductor Armor | Corrugated Aluminum | (mm (in)) | 46.5 (1.83) |
| Jacket | Polyethylene, PE | (mm (in)) | 50.3 (1.98) |
| UV-Protection | Individual and External Jacket | | Yes |
| Weight and Bending | | | |
| 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) |
| Electrical Properties | | | |
| DC-Resistance Outer Conductor Armor | | (Ω/km (Ω/1000ft)) | 0.68 (0.205) |
| DC-Resistance Power Cable, 8.4mm ² (8AWG) | | (Ω/km (Ω/1000ft)) | 2.1 (0.307) |
| Optical Properties | | | |
| Version | | | Single-mode OM3 |
| Quantity, Fiber Count | | | 16 (8 pairs) |
| Core/Clad | | (μm) | 50/125 |
| Primary Coating (Acrylate) | | (μm) | 245 |
| Buffer Diameter, Nominal | | (μm) | 900 |
| Secondary Protection, Jacket, Nominal | | (mm (in)) | 2.0 (0.08) |
| Minimum Bending Radius | | (mm (in)) | 104 (4.1) |
| Insertion Loss @ wavelength 850nm | | dB/km | 3.0 |
| Insertion Loss @ wavelength 1310nm | | dB/km | 1.0 |
| Standards (Meets or exceeds) | | | UL94-V0, UL1666 RoHS Compliant |
| Power Cable Properties | | | |
| Size (Power) | | (mm (AWG)) | 8.4 (8) |
| Quantity, Wire Count (Power) | | | 16 (8 pairs) |
| Size (Alarm) | | (mm (AWG)) | 0.8 (18) |
| Quantity, Wire Count (Alarm) | | | 4 (2 pairs) |
| Type | | | UV protected |
| Strands | | | 19 |
| Primary Jacket Diameter, Nominal | | (mm (in)) | 6.8 (0.27) |
| Standards (Meets or exceeds) | | | NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant |
| Operating Temperature | | | |
| Installation Temperature | | (°C (°F)) | -40 to +65 (-40 to 149) |
| Operation Temperature | | (°C (°F)) | -40 to +65 (-40 to 149) |

* This data is provisional and subject to change

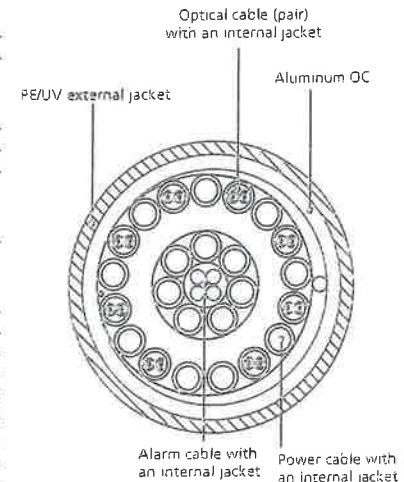


Figure 2: Construction Detail

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

ATTACHMENT 2

| Site Name: Hartford N Tower Height: 147.9' | | General | Power | Density | CALC. POWER DENS | FREQ. | MAX. PERMISS. EXP. | FRACTION MPE | Total |
|---|------------|-------------|------------|---------------|------------------------|---------------|--------------------------|-----------------|--------------|
| CARRIER | # OF CHAN. | WATTS ERP | HEIGHT | | | | | | |
| *Northcoast | | | 125 | 0.0201 | 1900 | 1.0000 | 0.20% | | |
| *Nextel | 9 | 100 | 150 | 0.0156 | 851 | 0.5673 | 0.28% | | |
| *Clearwire | 2 | 153 | 90 | 0.0156 | 2496 | 1.0000 | 0.16% | | |
| *Clearwire | 1 | 211 | 90 | 0.0108 | 18 GHz | 1.0000 | 0.11% | | |
| *Sensus (CL&P) | 1 | 200 | 97 | 0.0087 | 940.1125 | 0.6267 | 0.14% | | |
| *T-Mobile (AWS) LTE | 2 | 2334 | 125 | 0.1186 | 2100 | 1.0000 | 1.19% | | |
| *T-Mobile (PCS) GSM/UMTS | 2 | 1167 | 125 | 0.0593 | 1900 | 1.0000 | 0.59% | | |
| *T-Mobile (AWS) UMTS | 2 | 1167 | 125 | 0.0593 | 2100 | 1.0000 | 0.59% | | |
| *T-Mobile LTE | 1 | 865 | 125 | 0.0220 | 700 | 0.4667 | 0.47% | | |
| Verizon | 11 | 443 | 115 | 0.1325 | 1970 | 1.0000 | 13.25% | | |
| Verizon | 9 | 406 | 115 | 0.0993 | 869 | 0.5793 | 17.15% | | |
| Verizon | 1 | 3500 | 115 | 0.0952 | 2145 | 1.0000 | 9.52% | | |
| Verizon | 1 | 2100 | 115 | 0.0571 | 746 | 0.4973 | 11.48% | | |
| | | | | | | | | | 55.1% |
| * Source: Siting Council | | | | | | | | | |

ATTACHMENT 3



AMERICAN TOWER®
CORPORATION

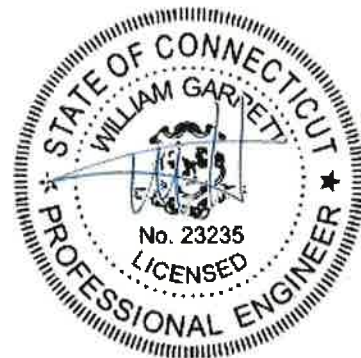
Structural Analysis Report

Structure : 147.9 ft Monopole
ATC Site Name : West Service Road, CT
ATC Site Number : 302466
Engineering Number : 631495KK2
Proposed Carrier : Verizon
Carrier Site Name : Hartford North
Carrier Site Number : 118031
Site Location : 305 W. Service Rd.
Hartford, CT 06120-0001
41.799539,-72.656697
County : Hartford
Date : December 2, 2015
Max Usage : 64%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer

Prepared By:
Travis J. Gatling

Travis J. Gatling



Dec 2 2015 3:43 PM

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 147.9 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

| | |
|----------------------------|---|
| Tower Drawings | FWT Job #18053, dated September 10, 1998 |
| Foundation Drawing | FWT Job #18054, dated September 10, 1998 |
| Geotechnical Report | Gibble Norden Champion Project #98134.09, dated September 8, 1998 |

Analysis

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

| | |
|---------------------------------|---|
| Basic Wind Speed: | 95 mph (3-Second Gust) |
| Basic Wind Speed w/ Ice: | 50 mph (3-Second Gust) w/ 1" radial ice concurrent |
| Code: | ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment |
| Structure Class: | II |
| Exposure Category: | C |
| Topographic Category: | 1 |
| Crest Height: | 0 ft |
| Spectral Response: | $S_s = 0.18$, $S_1 = 0.06$ |
| Site Class: | D - Stiff Soil |

Conclusion

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

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

Existing and Reserved Equipment

| Elevation ¹ (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|---------------------------------|-----------------------|---|---------------|
| Mount | RAD | | | | | |
| 150.0 | 150.0 | 9 | 48" x 12" Panel | Platform w/ Handrails | (12) 1 5/8" Coax | Sprint Nextel |
| | | 3 | 72" x 12" Panel | | | |
| 133.0 | 135.0 | 9 | 48" x 4" Panel | Low Profile Platform | (9) 1 5/8" Coax | AT&T Mobility |
| 125.0 | 125.0 | 6 | Ericsson KRY 112 144/1 | T-Arms | (12) 1 5/8" Coax (1) 1 5/8" Fiber | T-Mobile |
| | | 3 | Ericsson AIR 21, 1.3 M, B2A B4P | | | |
| | | 3 | Ericsson AIR 21, 1.3M, B4A B2P | | | |
| 115.0 | 115.0 | 6 | Antel BXA-70063-6CF-EDIN-X | Low Profile Platform | (18) 1 5/8" Coax | Verizon |
| | | 1 | RFS DB-T1-6Z-8AB-OZ | | | |
| 97.0 | 102.0 | 1 | Antel BCD-87010__25 | Stand-Off | (1) 7/8" Coax | Sensus USA |
| 90.0 | 90.0 | 2 | DragonWave Horizon Compact | Side Arms | (6) 5/16" Coax (2) 2" Conduit (2) 1/2" Coax | Clearwire |
| | | 3 | NextNet BTS-2500 | | | |
| | | 3 | Argus LLPX310R | | | |
| | | 2 | DragonWave A-ANT-18G-2-C | | | |

Equipment to be Removed

| Elevation ¹ (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|------------------------------|------------|----------------------|---------|
| Mount | RAD | | | | | |
| 115.0 | 115.0 | 3 | Alcatel-Lucent RRH2x40-AWS | - | (1) 1 5/8" Hybriflex | Verizon |
| | | 1 | Antel BXA-171063-12BF-EDIN-X | | | |
| | | 2 | Antel BXA-171063-8BF-EDIN-X | | | |
| | | 3 | Antel BXA-171063-12CF-EDIN-X | | | |

Proposed Equipment

| Elevation ¹ (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|-----------------------------|----------------------|------------------|---------|
| Mount | RAD | | | | | |
| 115.0 | 115.0 | 3 | Alcatel-Lucent RRH2X60-1900 | Low Profile Platform | (2) 1 5/8" Fiber | Verizon |
| | | 3 | Alcatel-Lucent RRH2X60-AWS | | | |
| | | 3 | Alcatel-Lucent RRH2x60 700 | | | |
| | | 1 | RFS DB-T1-6Z-8AB-OZ | | | |
| | | 6 | Commscope SBNHH-1D65B | | | |

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

Install proposed coax outside the pole shaft. Stacking coax is not allowed.

Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Anchor Bolts | 61% | Pass |
| Shaft | 64% | Pass |
| Base Plate | 53% | Pass |

Foundations

| Reaction Component | Analysis Reactions | % of Design |
|--------------------|--------------------|-------------|
| Moment (Kips-Ft) | 3,142.6 | 63% |
| Shear (Kips) | 30.6 | 64% |

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) (°) |
|------------------------|-----------------------------|-----------|-----------------|---------------------|
| 115.0 | Alcatel-Lucent RRH2X60-1900 | Verizon | 0.892 | 0.826 |
| | Alcatel-Lucent RRH2X60-AWS | | | |
| | Alcatel-Lucent RRH2x60 700 | | | |
| | RFS DB-T1-6Z-8AB-0Z | | | |
| | Commscope SBNHH-1D65B | | | |
| 90.0 | DragonWave A-ANT-18G-2-C | Clearwire | 0.560 | 0.689 |

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

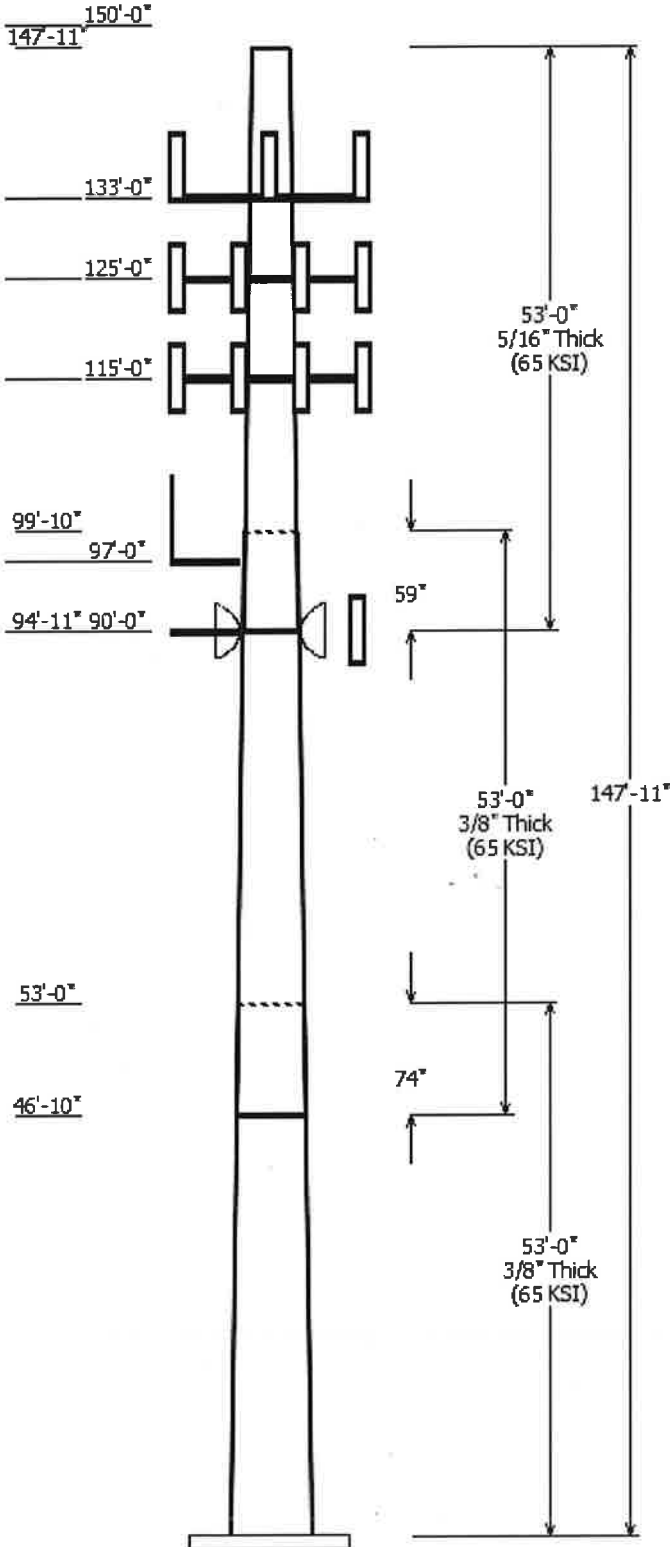
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

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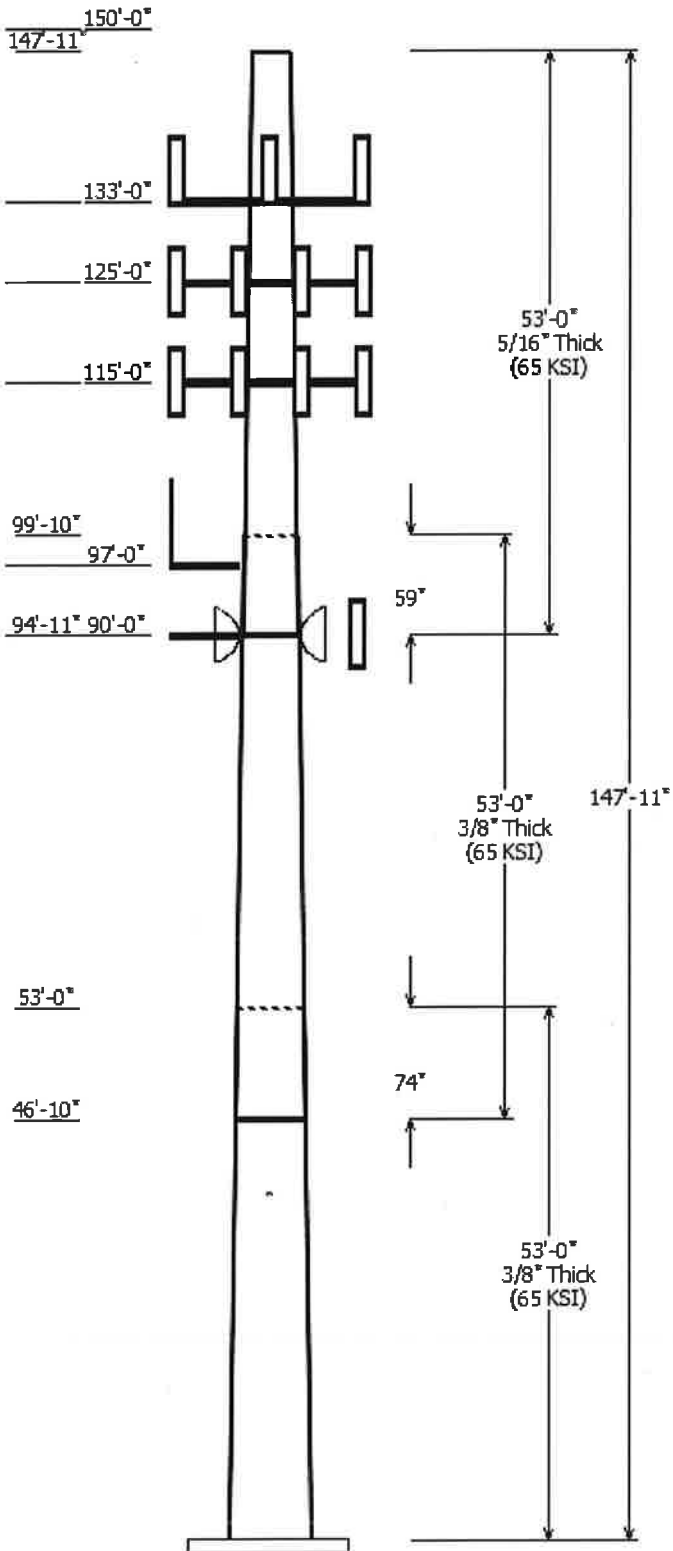


| Job Information | |
|-----------------|-----------------------|
| Pole : | 302466 |
| Code : | ANSI/TIA-222-G |
| Description : | 148 ft FWT Monopole |
| Client : | VERIZON WIRELESS |
| Struct Class : | II |
| Location : | West Service Road, CT |
| Shape : | 18 Sides |
| Exposure : | C |
| Height : | 147.92 (ft) |
| Topo : | 1 |
| Base Elev (ft): | 0.00 |
| Taper: | 0.21456(in/ft) |

| Sections Properties | | | | | | | |
|---------------------|-------------|---------------|--------|------------------|---------------------|---------------|-------------------|
| Section | Length (ft) | Diameter (in) | | Thick Joint (in) | Overlap Length (in) | Taper (in/ft) | Steel Grade (ksi) |
| | | Top | Bottom | | | | |
| 1 | 53.000 | 45.20 | 56.58 | 0.375 | 0.000 | 0.214600 | 65 |
| 2 | 53.000 | 35.90 | 47.28 | 0.375 Slip Joint | 74.000 | 0.214600 | 65 |
| 3 | 53.000 | 26.21 | 37.58 | 0.313 Slip Joint | 59.000 | 0.214600 | 65 |

| Discrete Appurtenance | | | | |
|-----------------------|-----------------|-----|--------------------------------|--|
| Attach Elev (ft) | Force Elev (ft) | Qty | Description | |
| 150.000 | 150.000 | 1 | Flat Platform w/ Handrails | |
| 150.000 | 150.000 | 3 | 72" x 12" Panel | |
| 150.000 | 150.000 | 9 | 48" x 12" Panel | |
| 133.000 | 135.000 | 9 | 48" x 4" Panel | |
| 133.000 | 133.000 | 1 | Flat Low Profile Platform | |
| 125.000 | 125.000 | 3 | Ericsson AIR 21, 1.3M, B4A B2P | |
| 125.000 | 125.000 | 3 | Ericsson AIR 21, 1.3 M, B2A B4 | |
| 125.000 | 125.000 | 6 | Ericsson KRY 112 144/1 | |
| 125.000 | 125.000 | 3 | Round T-Arm | |
| 115.000 | 115.000 | 6 | Commscope SBNHH-1D65B | |
| 115.000 | 115.000 | 2 | RFS DB-T1-6Z-8AB-0Z | |
| 115.000 | 115.000 | 3 | Alcatel-Lucent RRH2x60 700 | |
| 115.000 | 115.000 | 3 | Alcatel-Lucent RRH2X60-AWS | |
| 115.000 | 115.000 | 3 | Alcatel-Lucent RRH2X60-1900 | |
| 115.000 | 115.000 | 6 | Amphenol Antel BXA-70063- | |
| 115.000 | 115.000 | 1 | Flat Low Profile Platform | |
| 97.000 | 97.000 | 1 | Stand-Off | |
| 97.000 | 102.000 | 1 | Antel BCD-87010 ___ 25 | |
| 90.000 | 90.000 | 1 | Side Arms | |
| 90.000 | 90.000 | 3 | NextNet BTS-2500 | |
| 90.000 | 90.000 | 3 | Argus LLPX310R | |
| 90.000 | 90.000 | 2 | DragonWave Horizon Compact | |
| 90.000 | 90.000 | 2 | DragonWave A-ANT-18G-2-C | |

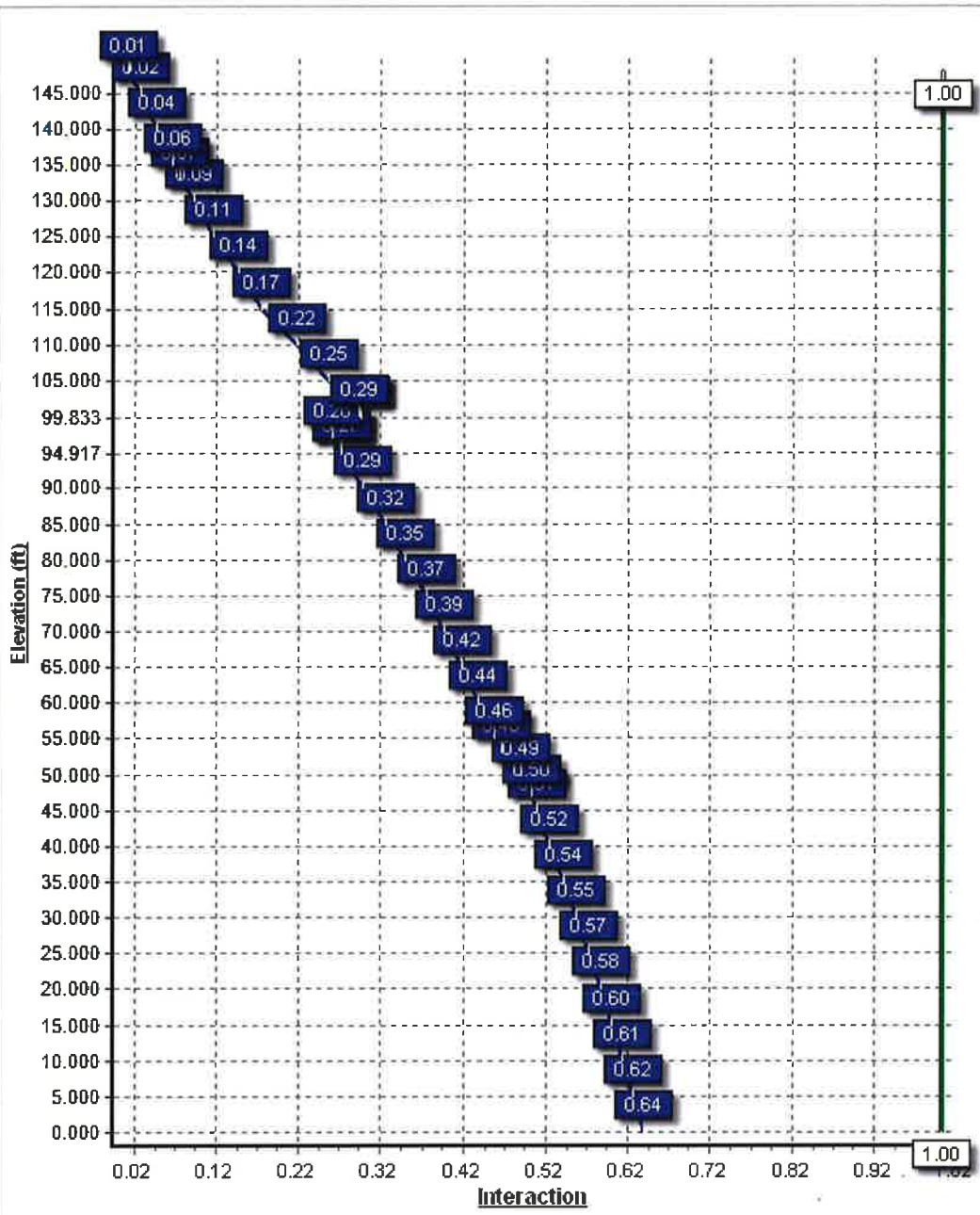
| Linear Appurtenance | | | |
|---------------------|--------|--------------|-----------------|
| Elev (ft) | | Description | Exposed To Wind |
| From | To | | |
| 0.000 | 90.000 | 1/2" Coax | Yes |
| 0.000 | 90.000 | 2" Conduit | Yes |
| 0.000 | 90.000 | 5/16" Coax | Yes |
| 0.000 | 97.000 | 7/8" Coax | Yes |
| 0.000 | 115.0 | 1 5/8" Coax | Yes |
| 0.000 | 115.0 | 1 5/8" Coax | Yes |
| 0.000 | 115.0 | 1 5/8" Fiber | Yes |
| 0.000 | 125.0 | 1 5/8" Coax | Yes |
| 0.000 | 125.0 | 1 5/8" Coax | No |
| 0.000 | 125.0 | 1 5/8" Fiber | Yes |
| 0.000 | 133.0 | 1 5/8" Coax | No |
| 0.000 | 150.0 | 1 5/8" Coax | No |



| Load Cases | |
|-------------------------|--|
| 1.2D + 1.6W | 95 mph with No Ice |
| 0.9D + 1.6W | 95 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 50 mph with 1.00 in Radial Ice |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Lateral |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Modal |
| 1.0D + 1.0W | Serviceability 60 mph |

| Reactions | | | |
|-------------------------------|-----------------|-------------|-------------|
| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
| 1.2D + 1.6W | 3142.63 | 30.60 | 48.87 |
| 0.9D + 1.6W | 3022.71 | 29.41 | 36.65 |
| 1.2D + 1.0Di + 1.0Wi | 946.05 | 9.09 | 96.94 |
| (1.2 + 0.2Sds) * DL + E E LFM | 161.57 | 1.51 | 45.77 |
| (1.2 + 0.2Sds) * DL + E E MAM | 128.40 | 1.38 | 45.77 |
| (0.9 - 0.2Sds) * DL + E E LFM | 160.18 | 1.51 | 31.84 |
| (0.9 - 0.2Sds) * DL + E E MAM | 127.27 | 1.38 | 31.84 |
| 1.0D + 1.0W | 756.24 | 7.33 | 40.76 |

| Dish Deflections | | | |
|------------------|------------------|-----------------|----------------|
| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
| 1.0D + 1.0W | 90.00 | 6.719 | 0.689 |



Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:07 PM

Customer: VERIZON WIRELESS

Analysis Parameters

| | | | |
|--------------------|---------------------|---------------------|-------|
| Location: | Hartford County, CT | Height (ft): | 147. |
| Code: | ANSI/TIA-222-G | Base Diameter (in): | 56.58 |
| Shape: | 18 Sides | Top Diameter (in): | 26.22 |
| Pole Type: | Taper | Taper (in/ft) : | 0.215 |
| Pole Manufacturer: | FWT Inc | | |

Ice & Wind Parameters

| | | | |
|-----------------------|--------|--------------------------------|---------|
| Structure Class: | II | Design Wind Speed Without Ice: | 95 m ph |
| Exposure Category: | C | Design Wind Speed With Ice: | 50 m ph |
| Topographic Category: | 1 | Operational Wind Speed: | 60 m ph |
| Crest Height: | 0.0 ft | Design Ice Thickness: | 1.00 in |

Seismic Parameters

| | | | |
|--|--|---------------------|-------|
| Analysis Method: | Equivalent Modal Analysis & Equivalent Lateral Force Methods | | |
| Site Class: | D - Stiff Soil | | |
| Period Based on Rayleigh Method (sec): | 2.02 | | |
| T _L (sec): | 6 | p: | 1.3 |
| S _s : | 0.180 | S ₁ : | 0.064 |
| F _a : | 1.600 | F _v : | 2.400 |
| S _{ds} : | 0.192 | S _{d1} : | 0.102 |
| | | C _s : | 0.034 |
| | | C _s Max: | 0.034 |
| | | C _s Min: | 0.030 |

Load Cases

| | |
|-----------------------------|---|
| 1.2D + 1.6W | 95 m ph with No Ice |
| 0.9D + 1.6W | 95 m ph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 50 m ph with 1.00 in Radial Ice |
| (1.2 + 0.2Sds) * DL + EELFM | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + EEMAM | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + EELFM | Seismic (Reduced DL) Equivalent Lateral Forces Method |
| (0.9 - 0.2Sds) * DL + EEMAM | Seismic (Reduced DL) Equivalent Modal Analysis Method |
| 1.0D + 1.0W | Serviceability 60 m ph |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:08 PM

Customer: VERIZON WIRELESS

Shaft Section Properties

| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Slip | | Weight (lb) | Bottom | | | | | | Top | | | | | | |
|--------------|-------------|------------|----------|------------|----------------|-------------|----------|-----------|-------------------------|-----------------------|-----------|-----------|----------|-----------|-------------------------|-----------------------|-----------|-----------|---------------|
| | | | | Joint Type | Joint Len (in) | | Dia (in) | Elev (ft) | Area (in ²) | Ix (in ⁴) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (in ²) | Ix (in ⁴) | W/t Ratio | D/t Ratio | Taper (in/ft) |
| 1-18 | 53.000 | 0.3750 | 65 | | 0.00 | 10,844 | 56.58 | 0.00 | 66.90 | 26698.9 | 24.84 | 150.88 | 45.20 | 53.00 | 53.36 | 13550.7 | 19.49 | 120.55 | 0.214565 |
| 2-18 | 53.000 | 0.3750 | 65 | Slip | 74.00 | 8,848 | 47.28 | 46.83 | 55.83 | 15518.8 | 20.47 | 126.08 | 35.90 | 99.83 | 42.29 | 6746.9 | 15.12 | 95.76 | 0.214565 |
| 3-18 | 53.000 | 0.3125 | 65 | Slip | 59.00 | 5,651 | 37.58 | 94.92 | 36.97 | 6490.8 | 19.45 | 120.28 | 26.21 | 147.92 | 25.69 | 2178.3 | 13.03 | 83.89 | 0.214565 |
| Shaft Weight | | | | | | 25,343 | | | | | | | | | | | | | |

Discrete Appurtenance Properties

| Attach Elev (ft) | Description | Qty | Weight (lb) | No Ice EPAa (sf) | Orientation Factor | Weight (lb) | Ice EPAa (sf) | Orientation Factor | Distance From Face (ft) | Vert Ecc (ft) |
|------------------|-----------------------------|-----|-------------|------------------|--------------------|-------------|---------------|--------------------|-------------------------|---------------|
| 150.00 | 48" x 12" Panel | 9 | 30.00 | 5.070 | 0.78 | 220.18 | 6.407 | 0.78 | 0.000 | 0.000 |
| 150.00 | 72" x 12" Panel | 3 | 45.00 | 8.130 | 0.79 | 316.94 | 9.896 | 0.79 | 0.000 | 0.000 |
| 150.00 | Flat Platform w/ Handrails | 1 | 2000.00 | 42.400 | 1.00 | 3,894.24 | 70.353 | 1.00 | 0.000 | 0.000 |
| 133.00 | 48" x 4" Panel | 9 | 20.00 | 2.090 | 0.81 | 104.12 | 3.223 | 0.81 | 0.000 | 2.000 |
| 133.00 | Flat Low Profile Platform | 1 | 1500.00 | 26.100 | 1.00 | 2,354.31 | 51.275 | 1.00 | 0.000 | 0.000 |
| 125.00 | Ericsson AIR 21, 1.3 M, B2A | 3 | 83.00 | 6.050 | 0.86 | 317.17 | 7.513 | 0.86 | 0.000 | 0.000 |
| 125.00 | Ericsson AIR 21, 1.3M, B4A | 3 | 81.50 | 6.090 | 0.85 | 315.61 | 7.559 | 0.85 | 0.000 | 0.000 |
| 125.00 | Ericsson KRY 112 144/1 | 6 | 11.00 | 0.410 | 0.50 | 36.18 | 0.744 | 0.50 | 0.000 | 0.000 |
| 125.00 | Round T-Arm | 3 | 250.00 | 9.700 | 0.67 | 523.64 | 20.494 | 0.67 | 0.000 | 0.000 |
| 115.00 | Alcatel-Lucent RRH2x60 700 | 3 | 56.70 | 2.150 | 0.67 | 169.78 | 2.983 | 0.67 | 0.000 | 0.000 |
| 115.00 | Alcatel-Lucent RRH2X60- | 3 | 43.00 | 1.880 | 0.50 | 137.73 | 2.670 | 0.50 | 0.000 | 0.000 |
| 115.00 | Alcatel-Lucent RRH2X60- | 3 | 44.00 | 1.880 | 0.50 | 140.83 | 2.670 | 0.50 | 0.000 | 0.000 |
| 115.00 | Amphenol Antel BXA-70063- | 6 | 17.00 | 7.570 | 0.77 | 262.36 | 9.487 | 0.77 | 0.000 | 0.000 |
| 115.00 | Commscope SBNHH-1D65B | 6 | 50.70 | 8.170 | 0.83 | 329.33 | 9.896 | 0.83 | 0.000 | 0.000 |
| 115.00 | Flat Low Profile Platform | 1 | 1500.00 | 26.100 | 1.00 | 2,341.08 | 50.885 | 1.00 | 0.000 | 0.000 |
| 115.00 | RFS DB-T1-6Z-8AB-0Z | 2 | 44.00 | 4.800 | 0.67 | 240.18 | 5.955 | 0.67 | 0.000 | 0.000 |
| 97.00 | Antel BCD-87010 ___ 25 | 1 | 26.50 | 2.900 | 1.00 | 220.20 | 7.327 | 1.00 | 0.000 | 5.000 |
| 97.00 | Stand-Off | 1 | 75.00 | 2.500 | 1.00 | 121.73 | 3.746 | 1.00 | 0.000 | 0.000 |
| 90.00 | Argus LLPX310R | 3 | 28.60 | 4.290 | 0.73 | 173.54 | 5.448 | 0.73 | 0.000 | 0.000 |
| 90.00 | DragonWave A-ANT-18G-2-C | 2 | 27.10 | 4.690 | 1.00 | 150.74 | 6.303 | 1.00 | 0.000 | 0.000 |
| 90.00 | DragonWave Horizon | 2 | 10.60 | 0.430 | 1.00 | 52.85 | 0.757 | 1.00 | 0.000 | 0.000 |
| 90.00 | NextNet BTS-2500 | 3 | 35.00 | 1.820 | 0.50 | 113.80 | 2.570 | 0.50 | 0.000 | 0.000 |
| 90.00 | Side Arms | 1 | 560.00 | 8.500 | 1.00 | 1,152.66 | 17.496 | 1.00 | 0.000 | 0.000 |
| Totals | | 75 | 8747.50 | | | 24,284.78 | | | Number of Loadings : | 23 |

Linear Appurtenance Properties

| Elev From (ft) | Elev To (ft) | Qty | Description | Coax Diameter (in) | Coax Weight (lb/ft) | Projected Width (in) | Exposed To Wind | Carrier |
|----------------|--------------|-----|--------------|--------------------|---------------------|----------------------|-----------------|---------------|
| 0.00 | 150.00 | 12 | 1 5/8" Coax | 1.98 | 0.82 | N | 0.00 | Sprint Nextel |
| 0.00 | 133.00 | 9 | 1 5/8" Coax | 1.98 | 0.82 | N | 0.00 | AT&T Mobility |
| 0.00 | 125.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 1.98 | T-Mobile |
| 0.00 | 125.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 0.00 | T-Mobile |
| 0.00 | 125.00 | 1 | 1 5/8" Fiber | 1.63 | 1.61 | N | 0.00 | T-Mobile |
| 0.00 | 115.00 | 12 | 1 5/8" Coax | 1.98 | 0.82 | N | 0.00 | Verizon |
| 0.00 | 115.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 3.96 | Verizon |
| 0.00 | 115.00 | 2 | 1 5/8" Fiber | 1.63 | 1.61 | N | 0.00 | Verizon |
| 0.00 | 97.00 | 1 | 7/8" Coax | 1.09 | 0.33 | N | 0.00 | Sensus USA |
| 0.00 | 90.00 | 2 | 1/2" Coax | 0.63 | 0.15 | N | 0.00 | Clearwire |
| 0.00 | 90.00 | 2 | 2" Conduit | 2.38 | 3.65 | N | 0.00 | Clearwire |
| 0.00 | 90.00 | 6 | 5/16" Coax | 0.31 | 0.05 | N | 0.00 | Clearwire |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:08 PM

Customer: VERIZON WIRELESS

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:08 PM

Customer: VERIZON WIRELESS

Segment Properties (Max Len : 5. ft)

| Seg Top Elev (ft) | Description | Thick (in) | Flat Dia (in) | Area (in ²) | Ix (in ⁴) | W/t Ratio | D/t Ratio | Fy (ksi) | S (in ³) | Z (in ³) | Weight (lb) |
|-------------------|-----------------|------------|---------------|-------------------------|-----------------------|-----------|-----------|----------|----------------------|----------------------|-------------|
| 0.00 | | 0.3750 | 56.580 | 66.895 | 26,698.9 | 24.84 | 150.88 | 72.2 | 929.4 | 0.0 | 0.0 |
| 5.00 | | 0.3750 | 55.507 | 65.618 | 25,199.0 | 24.34 | 148.02 | 72.8 | 894.2 | 0.0 | 1,127.3 |
| 10.00 | | 0.3750 | 54.434 | 64.341 | 23,756.4 | 23.83 | 145.16 | 73.4 | 859.6 | 0.0 | 1,105.6 |
| 15.00 | | 0.3750 | 53.361 | 63.065 | 22,369.9 | 23.33 | 142.30 | 74.0 | 825.7 | 0.0 | 1,083.8 |
| 20.00 | | 0.3750 | 52.288 | 61.788 | 21,038.5 | 22.82 | 139.44 | 74.6 | 792.5 | 0.0 | 1,062.1 |
| 25.00 | | 0.3750 | 51.216 | 60.511 | 19,760.9 | 22.32 | 136.57 | 75.2 | 760.0 | 0.0 | 1,040.4 |
| 30.00 | | 0.3750 | 50.143 | 59.234 | 18,536.2 | 21.81 | 133.71 | 75.7 | 728.1 | 0.0 | 1,018.7 |
| 35.00 | | 0.3750 | 49.070 | 57.957 | 17,363.1 | 21.31 | 130.85 | 76.3 | 696.9 | 0.0 | 996.9 |
| 40.00 | | 0.3750 | 47.997 | 56.680 | 16,240.6 | 20.81 | 127.99 | 76.9 | 666.5 | 0.0 | 975.2 |
| 45.00 | | 0.3750 | 46.924 | 55.403 | 15,167.5 | 20.30 | 125.13 | 77.5 | 636.6 | 0.0 | 953.5 |
| 46.83 | Bot - Section 2 | 0.3750 | 46.531 | 54.935 | 14,786.2 | 20.12 | 124.08 | 77.7 | 625.9 | 0.0 | 344.2 |
| 50.00 | | 0.3750 | 45.851 | 54.126 | 14,142.8 | 19.80 | 122.27 | 78.1 | 607.5 | 0.0 | 1,184.8 |
| 53.00 | Top - Section 1 | 0.3750 | 45.958 | 54.253 | 14,242.2 | 19.85 | 122.55 | 78.1 | 610.4 | 0.0 | 1,106.4 |
| 55.00 | | 0.3750 | 45.529 | 53.742 | 13,843.7 | 19.64 | 121.41 | 78.3 | 598.9 | 0.0 | 367.5 |
| 60.00 | | 0.3750 | 44.456 | 52.465 | 12,880.2 | 19.14 | 118.55 | 78.9 | 570.7 | 0.0 | 903.5 |
| 65.00 | | 0.3750 | 43.383 | 51.188 | 11,962.5 | 18.64 | 115.69 | 79.5 | 543.1 | 0.0 | 881.8 |
| 70.00 | | 0.3750 | 42.310 | 49.912 | 11,089.5 | 18.13 | 112.83 | 80.1 | 516.2 | 0.0 | 860.1 |
| 75.00 | | 0.3750 | 41.237 | 48.635 | 10,259.9 | 17.63 | 109.97 | 80.7 | 490.0 | 0.0 | 838.3 |
| 80.00 | | 0.3750 | 40.165 | 47.358 | 9,472.9 | 17.12 | 107.11 | 81.3 | 464.5 | 0.0 | 816.6 |
| 85.00 | | 0.3750 | 39.092 | 46.081 | 8,727.1 | 16.62 | 104.24 | 81.9 | 439.7 | 0.0 | 794.9 |
| 90.00 | | 0.3750 | 38.019 | 44.804 | 8,021.5 | 16.11 | 101.38 | 82.4 | 415.6 | 0.0 | 773.2 |
| 94.92 | Bot - Section 3 | 0.3750 | 36.964 | 43.548 | 7,365.9 | 15.62 | 98.57 | 82.6 | 392.5 | 0.0 | 739.1 |
| 95.00 | | 0.3750 | 36.946 | 43.527 | 7,355.1 | 15.61 | 98.52 | 82.6 | 392.1 | 0.0 | 22.8 |
| 97.00 | | 0.3750 | 36.517 | 43.016 | 7,099.2 | 15.41 | 97.38 | 82.6 | 382.9 | 0.0 | 544.5 |
| 99.83 | Top - Section 2 | 0.3125 | 36.534 | 35.926 | 5,955.1 | 18.85 | 116.91 | 79.2 | 321.1 | 0.0 | 760.5 |
| 100.0 | | 0.3125 | 36.498 | 35.890 | 5,937.5 | 18.83 | 116.79 | 79.3 | 320.4 | 0.0 | 20.4 |
| 105.0 | | 0.3125 | 35.425 | 34.826 | 5,424.9 | 18.23 | 113.36 | 80.0 | 301.6 | 0.0 | 601.6 |
| 110.0 | | 0.3125 | 34.353 | 33.762 | 4,942.7 | 17.62 | 109.93 | 80.7 | 283.4 | 0.0 | 583.5 |
| 115.0 | | 0.3125 | 33.280 | 32.698 | 4,490.0 | 17.01 | 106.50 | 81.4 | 265.7 | 0.0 | 565.4 |
| 120.0 | | 0.3125 | 32.207 | 31.634 | 4,065.7 | 16.41 | 103.06 | 82.1 | 248.6 | 0.0 | 547.3 |
| 125.0 | | 0.3125 | 31.134 | 30.570 | 3,669.1 | 15.80 | 99.63 | 82.6 | 232.1 | 0.0 | 529.2 |
| 130.0 | | 0.3125 | 30.061 | 29.506 | 3,299.1 | 15.20 | 96.20 | 82.6 | 216.2 | 0.0 | 511.1 |
| 133.0 | | 0.3125 | 29.418 | 28.868 | 3,089.6 | 14.84 | 94.14 | 82.6 | 206.9 | 0.0 | 297.9 |
| 135.0 | | 0.3125 | 28.988 | 28.442 | 2,954.9 | 14.59 | 92.76 | 82.6 | 200.8 | 0.0 | 195.0 |
| 140.0 | | 0.3125 | 27.916 | 27.378 | 2,635.5 | 13.99 | 89.33 | 82.6 | 186.0 | 0.0 | 474.9 |
| 145.0 | | 0.3125 | 26.843 | 26.314 | 2,340.0 | 13.38 | 85.90 | 82.6 | 171.7 | 0.0 | 456.8 |
| 147.9 | | 0.3125 | 26.217 | 25.693 | 2,178.3 | 13.03 | 83.89 | 82.6 | 163.6 | 0.0 | 258.1 |
| 25,342.5 | | | | | | | | | | | |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:08 PM

Customer: VERIZON WIRELESS

| | | |
|-------------------------------|--------------------|-------------------------------|
| Load Case: 1.2D + 1.6W | 95 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) | Torsion MY (lb-ft) | Moment MZ (lb) | | |
| 0.00 | | 256.4 | 0.0 | | | | | 0.0 | 0.0 | 256.4 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 509.3 | 1,352.7 | | | | | 0.0 | 329.1 | 509.3 | 1,681.8 | 0.0 | 0.0 |
| 10.00 | | 502.6 | 1,326.7 | | | | | 0.0 | 329.1 | 502.6 | 1,655.7 | 0.0 | 0.0 |
| 15.00 | | 503.6 | 1,300.6 | | | | | 0.0 | 329.1 | 503.6 | 1,629.7 | 0.0 | 0.0 |
| 20.00 | | 518.1 | 1,274.5 | | | | | 0.0 | 329.1 | 518.1 | 1,603.6 | 0.0 | 0.0 |
| 25.00 | | 535.7 | 1,248.5 | | | | | 0.0 | 329.1 | 535.7 | 1,577.5 | 0.0 | 0.0 |
| 30.00 | | 549.0 | 1,222.4 | | | | | 0.0 | 329.1 | 549.0 | 1,551.5 | 0.0 | 0.0 |
| 35.00 | | 559.1 | 1,196.3 | | | | | 0.0 | 329.1 | 559.1 | 1,525.4 | 0.0 | 0.0 |
| 40.00 | | 566.8 | 1,170.3 | | | | | 0.0 | 329.1 | 566.8 | 1,499.3 | 0.0 | 0.0 |
| 45.00 | | 390.2 | 1,144.2 | | | | | 0.0 | 329.1 | 390.2 | 1,473.3 | 0.0 | 0.0 |
| 46.83 | Bot - Section 2 | 290.4 | 413.0 | | | | | 0.0 | 120.7 | 290.4 | 533.7 | 0.0 | 0.0 |
| 50.00 | | 361.5 | 1,421.8 | | | | | 0.0 | 208.4 | 361.5 | 1,630.2 | 0.0 | 0.0 |
| 53.00 | Top - Section 1 | 293.3 | 1,327.6 | | | | | 0.0 | 197.4 | 293.3 | 1,525.1 | 0.0 | 0.0 |
| 55.00 | | 410.5 | 441.0 | | | | | 0.0 | 131.6 | 410.5 | 572.6 | 0.0 | 0.0 |
| 60.00 | | 587.5 | 1,084.2 | | | | | 0.0 | 329.1 | 587.5 | 1,413.3 | 0.0 | 0.0 |
| 65.00 | | 588.3 | 1,058.1 | | | | | 0.0 | 329.1 | 588.3 | 1,387.2 | 0.0 | 0.0 |
| 70.00 | | 588.2 | 1,032.1 | | | | | 0.0 | 329.1 | 588.2 | 1,361.1 | 0.0 | 0.0 |
| 75.00 | | 587.3 | 1,006.0 | | | | | 0.0 | 329.1 | 587.3 | 1,335.1 | 0.0 | 0.0 |
| 80.00 | | 585.7 | 979.9 | | | | | 0.0 | 329.1 | 585.7 | 1,309.0 | 0.0 | 0.0 |
| 85.00 | | 583.5 | 953.9 | | | | | 0.0 | 329.1 | 583.5 | 1,282.9 | 0.0 | 0.0 |
| 90.00 | Appertunance(s) | 575.9 | 927.8 | 1,262.0 | 0.0 | 0.0 | 991.4 | 0.0 | 329.1 | 1,837.9 | 2,248.3 | 0.0 | 0.0 |
| 94.92 | Bot - Section 3 | 289.7 | 886.9 | | | | | 0.0 | 277.2 | 289.7 | 1,164.1 | 0.0 | 0.0 |
| 95.00 | | 122.2 | 27.4 | | | | | 0.0 | 4.7 | 122.2 | 32.1 | 0.0 | 0.0 |
| 97.00 | Appertunance(s) | 283.0 | 653.4 | 263.8 | 0.0 | 711.9 | 121.8 | 0.0 | 112.7 | 546.8 | 888.0 | 0.0 | 0.0 |
| 99.83 | Top - Section 2 | 175.3 | 912.6 | | | | | 0.0 | 158.6 | 175.3 | 1,071.2 | 0.0 | 0.0 |
| 100.00 | | 298.4 | 24.4 | | | | | 0.0 | 9.3 | 298.4 | 33.8 | 0.0 | 0.0 |
| 105.00 | | 575.2 | 721.9 | | | | | 0.0 | 279.9 | 575.2 | 1,001.8 | 0.0 | 0.0 |
| 110.00 | | 570.6 | 700.2 | | | | | 0.0 | 279.9 | 570.6 | 980.0 | 0.0 | 0.0 |
| 115.00 | Appertunance(s) | 511.8 | 678.5 | 5,022.1 | 0.0 | 0.0 | 2,910.4 | 0.0 | 279.9 | 5,533.9 | 3,868.7 | 0.0 | 0.0 |
| 120.00 | | 449.9 | 656.7 | | | | | 0.0 | 172.0 | 449.9 | 828.7 | 0.0 | 0.0 |
| 125.00 | Appertunance(s) | 438.7 | 635.0 | 2,076.2 | 0.0 | 0.0 | 1,571.4 | 0.0 | 172.0 | 2,514.9 | 2,378.4 | 0.0 | 0.0 |
| 130.00 | | 343.6 | 613.3 | | | | | 0.0 | 103.3 | 343.6 | 716.6 | 0.0 | 0.0 |
| 133.00 | Appertunance(s) | 210.6 | 357.5 | 1,989.8 | 0.0 | 1,269.6 | 2,016.0 | 0.0 | 62.0 | 2,200.4 | 2,435.5 | 0.0 | 0.0 |
| 135.00 | | 288.1 | 234.0 | | | | | 0.0 | 23.6 | 288.1 | 257.6 | 0.0 | 0.0 |
| 140.00 | | 402.9 | 569.8 | | | | | 0.0 | 59.0 | 402.9 | 628.9 | 0.0 | 0.0 |
| 145.00 | | 311.1 | 548.1 | | | | | 0.0 | 59.0 | 311.1 | 607.1 | 0.0 | 0.0 |
| 147.92 | | 112.8 | 309.7 | | | | | 0.0 | 34.4 | 112.8 | 344.2 | 0.0 | 0.0 |
| | | Totals: | | | | | | | | 26,340.5 | 46,032.8 | 0.00 | 0.00 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:09 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

95 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 | -48.87 | -30.60 | 0.00 | -3,142.63 | 0.00 | 3,142.63 | 4,345.86 | 2,172.93 | 10,048.4 | 5,031.69 | 0.00 | 0.00 | 0.636 |
| 5.00 | -47.11 | -30.23 | 0.00 | -2,989.62 | 0.00 | 2,989.62 | 4,297.95 | 2,148.97 | 9,746.71 | 4,880.60 | 0.09 | -0.16 | 0.624 |
| 10.00 | -45.37 | -29.85 | 0.00 | -2,838.48 | 0.00 | 2,838.48 | 4,248.67 | 2,124.33 | 9,446.21 | 4,730.12 | 0.35 | -0.33 | 0.611 |
| 15.00 | -43.66 | -29.46 | 0.00 | -2,689.25 | 0.00 | 2,689.25 | 4,198.03 | 2,099.01 | 9,147.11 | 4,580.35 | 0.78 | -0.49 | 0.598 |
| 20.00 | -41.97 | -29.05 | 0.00 | -2,541.96 | 0.00 | 2,541.96 | 4,146.02 | 2,073.01 | 8,849.60 | 4,431.38 | 1.39 | -0.66 | 0.584 |
| 25.00 | -40.32 | -28.61 | 0.00 | -2,396.72 | 0.00 | 2,396.72 | 4,092.65 | 2,046.33 | 8,553.86 | 4,283.29 | 2.17 | -0.83 | 0.570 |
| 30.00 | -38.70 | -28.15 | 0.00 | -2,253.68 | 0.00 | 2,253.68 | 4,037.92 | 2,018.96 | 8,260.07 | 4,136.18 | 3.12 | -0.99 | 0.555 |
| 35.00 | -37.10 | -27.67 | 0.00 | -2,112.94 | 0.00 | 2,112.94 | 3,981.82 | 1,990.91 | 7,968.42 | 3,990.13 | 4.26 | -1.16 | 0.539 |
| 40.00 | -35.53 | -27.17 | 0.00 | -1,974.60 | 0.00 | 1,974.60 | 3,924.36 | 1,962.18 | 7,679.09 | 3,845.25 | 5.56 | -1.33 | 0.523 |
| 45.00 | -34.02 | -26.81 | 0.00 | -1,838.73 | 0.00 | 1,838.73 | 3,865.54 | 1,932.77 | 7,392.25 | 3,701.62 | 7.04 | -1.50 | 0.506 |
| 46.83 | -33.45 | -26.56 | 0.00 | -1,789.57 | 0.00 | 1,789.57 | 3,843.63 | 1,921.82 | 7,287.74 | 3,649.29 | 7.63 | -1.56 | 0.499 |
| 50.00 | -31.79 | -26.21 | 0.00 | -1,705.47 | 0.00 | 1,705.47 | 3,805.35 | 1,902.68 | 7,108.10 | 3,559.33 | 8.70 | -1.66 | 0.488 |
| 53.00 | -30.23 | -25.92 | 0.00 | -1,626.84 | 0.00 | 1,626.84 | 3,811.38 | 1,905.69 | 7,136.13 | 3,573.37 | 9.78 | -1.77 | 0.463 |
| 55.00 | -29.62 | -25.55 | 0.00 | -1,575.01 | 0.00 | 1,575.01 | 3,786.98 | 1,893.49 | 7,023.14 | 3,516.79 | 10.54 | -1.83 | 0.456 |
| 60.00 | -28.16 | -24.99 | 0.00 | -1,447.29 | 0.00 | 1,447.29 | 3,725.01 | 1,862.51 | 6,742.74 | 3,376.38 | 12.54 | -1.99 | 0.436 |
| 65.00 | -26.73 | -24.42 | 0.00 | -1,322.36 | 0.00 | 1,322.36 | 3,661.69 | 1,830.84 | 6,465.44 | 3,237.53 | 14.70 | -2.14 | 0.416 |
| 70.00 | -25.33 | -23.84 | 0.00 | -1,200.26 | 0.00 | 1,200.26 | 3,597.00 | 1,798.50 | 6,191.43 | 3,100.31 | 17.03 | -2.29 | 0.394 |
| 75.00 | -23.97 | -23.26 | 0.00 | -1,081.04 | 0.00 | 1,081.04 | 3,530.95 | 1,765.47 | 5,920.87 | 2,964.83 | 19.50 | -2.44 | 0.372 |
| 80.00 | -22.63 | -22.68 | 0.00 | -964.73 | 0.00 | 964.73 | 3,463.53 | 1,731.77 | 5,653.95 | 2,831.18 | 22.13 | -2.58 | 0.347 |
| 85.00 | -21.32 | -22.08 | 0.00 | -851.35 | 0.00 | 851.35 | 3,394.75 | 1,697.38 | 5,390.86 | 2,699.44 | 24.91 | -2.72 | 0.322 |
| 90.00 | -19.12 | -20.18 | 0.00 | -740.94 | 0.00 | 740.94 | 3,324.61 | 1,662.30 | 5,131.78 | 2,569.70 | 27.82 | -2.85 | 0.294 |
| 94.92 | -17.95 | -19.85 | 0.00 | -641.72 | 0.00 | 641.72 | 3,235.43 | 1,617.71 | 4,852.78 | 2,430.00 | 30.82 | -2.97 | 0.270 |
| 95.00 | -17.92 | -19.73 | 0.00 | -640.07 | 0.00 | 640.07 | 3,233.85 | 1,616.92 | 4,848.02 | 2,427.61 | 30.87 | -2.97 | 0.269 |
| 97.00 | -17.04 | -19.16 | 0.00 | -599.89 | 0.00 | 599.89 | 3,195.90 | 1,597.95 | 4,734.34 | 2,370.69 | 32.12 | -3.02 | 0.259 |
| 99.83 | -15.97 | -18.94 | 0.00 | -545.60 | 0.00 | 545.60 | 2,561.72 | 1,280.86 | 3,809.83 | 1,907.74 | 33.93 | -3.08 | 0.292 |
| 100.00 | -15.93 | -18.65 | 0.00 | -542.45 | 0.00 | 542.45 | 2,559.96 | 1,279.98 | 3,803.41 | 1,904.53 | 34.04 | -3.08 | 0.291 |
| 105.00 | -14.93 | -18.05 | 0.00 | -449.18 | 0.00 | 449.18 | 2,506.38 | 1,253.19 | 3,612.46 | 1,808.91 | 37.33 | -3.20 | 0.254 |
| 110.00 | -13.95 | -17.45 | 0.00 | -358.91 | 0.00 | 358.91 | 2,451.43 | 1,225.72 | 3,424.36 | 1,714.72 | 40.75 | -3.31 | 0.215 |
| 115.00 | -10.40 | -11.72 | 0.00 | -271.64 | 0.00 | 271.64 | 2,395.12 | 1,197.56 | 3,239.30 | 1,622.06 | 44.26 | -3.40 | 0.172 |
| 120.00 | -9.58 | -11.23 | 0.00 | -213.06 | 0.00 | 213.06 | 2,337.45 | 1,168.73 | 3,057.46 | 1,531.00 | 47.86 | -3.48 | 0.143 |
| 125.00 | -7.36 | -8.58 | 0.00 | -156.91 | 0.00 | 156.91 | 2,271.20 | 1,135.60 | 2,869.91 | 1,437.09 | 51.54 | -3.54 | 0.112 |
| 130.00 | -6.66 | -8.20 | 0.00 | -114.00 | 0.00 | 114.00 | 2,192.15 | 1,096.07 | 2,672.63 | 1,338.30 | 55.27 | -3.59 | 0.088 |
| 133.00 | -4.36 | -5.85 | 0.00 | -88.14 | 0.00 | 88.14 | 2,144.71 | 1,072.36 | 2,557.63 | 1,280.72 | 57.54 | -3.62 | 0.071 |
| 135.00 | -4.12 | -5.55 | 0.00 | -76.44 | 0.00 | 76.44 | 2,113.09 | 1,056.55 | 2,482.37 | 1,243.03 | 59.06 | -3.64 | 0.063 |
| 140.00 | -3.52 | -5.11 | 0.00 | -48.69 | 0.00 | 48.69 | 2,034.04 | 1,017.02 | 2,299.14 | 1,151.28 | 62.88 | -3.67 | 0.044 |
| 145.00 | -2.93 | -4.76 | 0.00 | -23.15 | 0.00 | 23.15 | 1,954.98 | 977.49 | 2,122.94 | 1,063.05 | 66.73 | -3.69 | 0.023 |
| 147.92 | 0.00 | -4.56 | 0.00 | -9.27 | 0.00 | 9.27 | 1,908.86 | 954.43 | 2,023.38 | 1,013.20 | 68.98 | -3.69 | 0.009 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:09 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

95 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 | | 253.0 | 0.0 | | | | | 0.0 | 0.0 | 253.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 501.2 | 1,014.6 | | | | | 0.0 | 246.8 | 501.2 | 1,261.4 | 0.0 | 0.0 |
| 10.00 | | 491.5 | 995.0 | | | | | 0.0 | 246.8 | 491.5 | 1,241.8 | 0.0 | 0.0 |
| 15.00 | | 489.4 | 975.5 | | | | | 0.0 | 246.8 | 489.4 | 1,222.3 | 0.0 | 0.0 |
| 20.00 | | 500.2 | 955.9 | | | | | 0.0 | 246.8 | 500.2 | 1,202.7 | 0.0 | 0.0 |
| 25.00 | | 513.8 | 936.3 | | | | | 0.0 | 246.8 | 513.8 | 1,183.2 | 0.0 | 0.0 |
| 30.00 | | 522.8 | 916.8 | | | | | 0.0 | 246.8 | 522.8 | 1,163.6 | 0.0 | 0.0 |
| 35.00 | | 528.6 | 897.2 | | | | | 0.0 | 246.8 | 528.6 | 1,144.0 | 0.0 | 0.0 |
| 40.00 | | 531.9 | 877.7 | | | | | 0.0 | 246.8 | 531.9 | 1,124.5 | 0.0 | 0.0 |
| 45.00 | | 364.2 | 858.1 | | | | | 0.0 | 246.8 | 364.2 | 1,104.9 | 0.0 | 0.0 |
| 46.83 | Bot - Section 2 | 269.3 | 309.8 | | | | | 0.0 | 90.5 | 269.3 | 400.2 | 0.0 | 0.0 |
| 50.00 | | 333.9 | 1,066.3 | | | | | 0.0 | 156.3 | 333.9 | 1,222.6 | 0.0 | 0.0 |
| 53.00 | Top - Section 1 | 270.4 | 995.7 | | | | | 0.0 | 148.1 | 270.4 | 1,143.8 | 0.0 | 0.0 |
| 55.00 | | 377.3 | 330.7 | | | | | 0.0 | 98.7 | 377.3 | 429.5 | 0.0 | 0.0 |
| 60.00 | | 536.7 | 813.2 | | | | | 0.0 | 246.8 | 536.7 | 1,060.0 | 0.0 | 0.0 |
| 65.00 | | 532.6 | 793.6 | | | | | 0.0 | 246.8 | 532.6 | 1,040.4 | 0.0 | 0.0 |
| 70.00 | | 527.6 | 774.0 | | | | | 0.0 | 246.8 | 527.6 | 1,020.8 | 0.0 | 0.0 |
| 75.00 | | 521.8 | 754.5 | | | | | 0.0 | 246.8 | 521.8 | 1,001.3 | 0.0 | 0.0 |
| 80.00 | | 515.2 | 734.9 | | | | | 0.0 | 246.8 | 515.2 | 981.7 | 0.0 | 0.0 |
| 85.00 | | 507.8 | 715.4 | | | | | 0.0 | 246.8 | 507.8 | 962.2 | 0.0 | 0.0 |
| 90.00 | Appertunance(s) | 495.8 | 695.8 | 1,262.0 | 0.0 | 0.0 | 743.6 | 0.0 | 246.8 | 1,757.8 | 1,686.2 | 0.0 | 0.0 |
| 94.92 | Bot - Section 3 | 248.0 | 665.2 | | | | | 0.0 | 207.9 | 248.0 | 873.0 | 0.0 | 0.0 |
| 95.00 | | 103.8 | 20.5 | | | | | 0.0 | 3.5 | 103.8 | 24.1 | 0.0 | 0.0 |
| 97.00 | Appertunance(s) | 239.5 | 490.1 | 263.8 | 0.0 | 711.9 | 91.3 | 0.0 | 84.6 | 503.3 | 666.0 | 0.0 | 0.0 |
| 99.83 | Top - Section 2 | 148.0 | 684.5 | | | | | 0.0 | 118.9 | 148.0 | 803.4 | 0.0 | 0.0 |
| 100.00 | | 251.2 | 18.3 | | | | | 0.0 | 7.0 | 251.2 | 25.3 | 0.0 | 0.0 |
| 105.00 | | 481.2 | 541.4 | | | | | 0.0 | 209.9 | 481.2 | 751.3 | 0.0 | 0.0 |
| 110.00 | | 471.2 | 525.1 | | | | | 0.0 | 209.9 | 471.2 | 735.0 | 0.0 | 0.0 |
| 115.00 | Appertunance(s) | 460.8 | 508.8 | 5,022.1 | 0.0 | 0.0 | 2,182.8 | 0.0 | 209.9 | 5,482.9 | 2,901.5 | 0.0 | 0.0 |
| 120.00 | | 449.9 | 492.5 | | | | | 0.0 | 129.0 | 449.9 | 621.5 | 0.0 | 0.0 |
| 125.00 | Appertunance(s) | 438.7 | 476.3 | 2,076.2 | 0.0 | 0.0 | 1,178.5 | 0.0 | 129.0 | 2,514.9 | 1,783.8 | 0.0 | 0.0 |
| 130.00 | | 343.6 | 460.0 | | | | | 0.0 | 77.5 | 343.6 | 537.4 | 0.0 | 0.0 |
| 133.00 | Appertunance(s) | 210.6 | 268.2 | 1,989.8 | 0.0 | 1,269.6 | 1,512.0 | 0.0 | 46.5 | 2,200.4 | 1,826.6 | 0.0 | 0.0 |
| 135.00 | | 288.1 | 175.5 | | | | | 0.0 | 17.7 | 288.1 | 193.2 | 0.0 | 0.0 |
| 140.00 | | 402.9 | 427.4 | | | | | 0.0 | 44.3 | 402.9 | 471.6 | 0.0 | 0.0 |
| 145.00 | | 311.1 | 411.1 | | | | | 0.0 | 44.3 | 311.1 | 455.4 | 0.0 | 0.0 |
| 147.92 | | 112.8 | 232.3 | | | | | 0.0 | 25.8 | 112.8 | 258.1 | 0.0 | 0.0 |
| Totals: | | | | | | | | | | 25,160.1 | 34,524.6 | 0.00 | 0.00 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:10 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

95 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 | -36.65 | -29.41 | 0.00 | -3,022.71 | 0.00 | 3,022.71 | 4,345.86 | 2,172.93 | 10,048.4 | 5,031.69 | 0.00 | 0.00 | 0.609 |
| 5.00 | -35.31 | -29.00 | 0.00 | -2,875.68 | 0.00 | 2,875.68 | 4,297.95 | 2,148.97 | 9,746.71 | 4,880.60 | 0.08 | -0.16 | 0.598 |
| 10.00 | -33.99 | -28.60 | 0.00 | -2,730.68 | 0.00 | 2,730.68 | 4,248.67 | 2,124.33 | 9,446.21 | 4,730.12 | 0.33 | -0.32 | 0.585 |
| 15.00 | -32.69 | -28.19 | 0.00 | -2,587.69 | 0.00 | 2,587.69 | 4,198.03 | 2,099.01 | 9,147.11 | 4,580.35 | 0.75 | -0.47 | 0.573 |
| 20.00 | -31.42 | -27.77 | 0.00 | -2,446.73 | 0.00 | 2,446.73 | 4,146.02 | 2,073.01 | 8,849.60 | 4,431.38 | 1.33 | -0.63 | 0.560 |
| 25.00 | -30.16 | -27.32 | 0.00 | -2,307.89 | 0.00 | 2,307.89 | 4,092.65 | 2,046.33 | 8,553.86 | 4,283.29 | 2.09 | -0.80 | 0.546 |
| 30.00 | -28.93 | -26.87 | 0.00 | -2,171.27 | 0.00 | 2,171.27 | 4,037.92 | 2,018.96 | 8,260.07 | 4,136.18 | 3.01 | -0.96 | 0.532 |
| 35.00 | -27.72 | -26.39 | 0.00 | -2,036.94 | 0.00 | 2,036.94 | 3,981.82 | 1,990.91 | 7,968.42 | 3,990.13 | 4.09 | -1.12 | 0.518 |
| 40.00 | -26.54 | -25.91 | 0.00 | -1,904.97 | 0.00 | 1,904.97 | 3,924.36 | 1,962.18 | 7,679.09 | 3,845.25 | 5.35 | -1.28 | 0.502 |
| 45.00 | -25.39 | -25.57 | 0.00 | -1,775.41 | 0.00 | 1,775.41 | 3,865.54 | 1,932.77 | 7,392.25 | 3,701.62 | 6.78 | -1.44 | 0.486 |
| 46.83 | -24.96 | -25.33 | 0.00 | -1,728.52 | 0.00 | 1,728.52 | 3,843.63 | 1,921.82 | 7,287.74 | 3,649.29 | 7.35 | -1.50 | 0.480 |
| 50.00 | -23.71 | -25.00 | 0.00 | -1,648.32 | 0.00 | 1,648.32 | 3,805.35 | 1,902.68 | 7,108.10 | 3,559.33 | 8.38 | -1.60 | 0.470 |
| 53.00 | -22.54 | -24.73 | 0.00 | -1,573.31 | 0.00 | 1,573.31 | 3,811.38 | 1,905.69 | 7,136.13 | 3,573.37 | 9.42 | -1.70 | 0.446 |
| 55.00 | -22.07 | -24.38 | 0.00 | -1,523.85 | 0.00 | 1,523.85 | 3,786.98 | 1,893.49 | 7,023.14 | 3,516.79 | 10.14 | -1.77 | 0.439 |
| 60.00 | -20.97 | -23.87 | 0.00 | -1,401.93 | 0.00 | 1,401.93 | 3,725.01 | 1,862.51 | 6,742.74 | 3,376.38 | 12.07 | -1.92 | 0.421 |
| 65.00 | -19.89 | -23.35 | 0.00 | -1,282.60 | 0.00 | 1,282.60 | 3,661.69 | 1,830.84 | 6,465.44 | 3,237.53 | 14.16 | -2.06 | 0.402 |
| 70.00 | -18.83 | -22.83 | 0.00 | -1,165.85 | 0.00 | 1,165.85 | 3,597.00 | 1,798.50 | 6,191.43 | 3,100.31 | 16.40 | -2.21 | 0.381 |
| 75.00 | -17.79 | -22.31 | 0.00 | -1,051.69 | 0.00 | 1,051.69 | 3,530.95 | 1,765.47 | 5,920.87 | 2,964.83 | 18.79 | -2.35 | 0.360 |
| 80.00 | -16.78 | -21.80 | 0.00 | -940.12 | 0.00 | 940.12 | 3,463.53 | 1,731.77 | 5,653.95 | 2,831.18 | 21.33 | -2.49 | 0.337 |
| 85.00 | -15.80 | -21.28 | 0.00 | -831.13 | 0.00 | 831.13 | 3,394.75 | 1,697.38 | 5,390.86 | 2,699.44 | 24.01 | -2.62 | 0.313 |
| 90.00 | -14.15 | -19.48 | 0.00 | -724.71 | 0.00 | 724.71 | 3,324.61 | 1,662.30 | 5,131.78 | 2,569.70 | 26.83 | -2.75 | 0.286 |
| 94.92 | -13.27 | -19.20 | 0.00 | -628.94 | 0.00 | 628.94 | 3,235.43 | 1,617.71 | 4,852.78 | 2,430.00 | 29.72 | -2.87 | 0.263 |
| 95.00 | -13.25 | -19.10 | 0.00 | -627.34 | 0.00 | 627.34 | 3,233.85 | 1,616.92 | 4,848.02 | 2,427.61 | 29.77 | -2.87 | 0.263 |
| 97.00 | -12.59 | -18.58 | 0.00 | -588.43 | 0.00 | 588.43 | 3,195.90 | 1,597.95 | 4,734.34 | 2,370.69 | 30.99 | -2.92 | 0.252 |
| 99.83 | -11.78 | -18.40 | 0.00 | -535.79 | 0.00 | 535.79 | 2,561.72 | 1,280.86 | 3,809.83 | 1,907.74 | 32.74 | -2.98 | 0.286 |
| 100.00 | -11.75 | -18.16 | 0.00 | -532.72 | 0.00 | 532.72 | 2,559.96 | 1,279.98 | 3,803.41 | 1,904.53 | 32.84 | -2.99 | 0.285 |
| 105.00 | -10.99 | -17.66 | 0.00 | -441.94 | 0.00 | 441.94 | 2,506.38 | 1,253.19 | 3,612.46 | 1,808.91 | 36.03 | -3.10 | 0.249 |
| 110.00 | -10.26 | -17.16 | 0.00 | -353.65 | 0.00 | 353.65 | 2,451.43 | 1,225.72 | 3,424.36 | 1,714.72 | 39.34 | -3.21 | 0.211 |
| 115.00 | -7.65 | -11.54 | 0.00 | -267.82 | 0.00 | 267.82 | 2,395.12 | 1,197.56 | 3,239.30 | 1,622.06 | 42.74 | -3.30 | 0.168 |
| 120.00 | -7.05 | -11.06 | 0.00 | -210.14 | 0.00 | 210.14 | 2,337.45 | 1,168.73 | 3,057.46 | 1,531.00 | 46.23 | -3.37 | 0.140 |
| 125.00 | -5.41 | -8.45 | 0.00 | -154.84 | 0.00 | 154.84 | 2,271.20 | 1,135.60 | 2,869.91 | 1,437.09 | 49.80 | -3.44 | 0.110 |
| 130.00 | -4.89 | -8.08 | 0.00 | -112.60 | 0.00 | 112.60 | 2,192.15 | 1,096.07 | 2,672.63 | 1,338.30 | 53.42 | -3.49 | 0.086 |
| 133.00 | -3.19 | -5.77 | 0.00 | -87.10 | 0.00 | 87.10 | 2,144.71 | 1,072.36 | 2,557.63 | 1,280.72 | 55.62 | -3.51 | 0.070 |
| 135.00 | -3.02 | -5.47 | 0.00 | -75.56 | 0.00 | 75.56 | 2,113.09 | 1,056.55 | 2,482.37 | 1,243.03 | 57.10 | -3.53 | 0.062 |
| 140.00 | -2.57 | -5.04 | 0.00 | -48.20 | 0.00 | 48.20 | 2,034.04 | 1,017.02 | 2,299.14 | 1,151.28 | 60.81 | -3.56 | 0.043 |
| 145.00 | -2.13 | -4.70 | 0.00 | -22.99 | 0.00 | 22.99 | 1,954.98 | 977.49 | 2,122.94 | 1,063.05 | 64.54 | -3.58 | 0.023 |
| 147.92 | 0.00 | -4.56 | 0.00 | -9.27 | 0.00 | 9.27 | 1,908.86 | 954.43 | 2,023.38 | 1,013.20 | 66.73 | -3.58 | 0.009 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:11 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 Iterations

Gust Response Factor : 1.10

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

| Seg Elev (ft) | Description | Shaft Forces | | Discrete Forces | | | Linear Forces | | Sum of Forces | | | | |
|---------------------|-----------------|-----------------|----------------------|-----------------|--------------------------|-------------------------|----------------------|-----------------|----------------------|-----------------|----------------------|--------------------------|----------------------|
| | | Wind FX (lb) | Dead Load (lb) | Wind FX (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) | Dead Load (lb) | Wind FX (lb) | Dead Load (lb) | Wind FX (lb) | Dead Load (lb) | Torsion MY (lb-ft) | Moment MZ (lb) |
| 0.00 | | 85.3 | 0.0 | | | | | 0.0 | 0.0 | 85.3 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 169.5 | 1,904.9 | | | | | 0.0 | 877.7 | 169.5 | 2,782.7 | 0.0 | 0.0 |
| 10.00 | | 167.2 | 1,933.3 | | | | | 0.0 | 952.8 | 167.2 | 2,886.1 | 0.0 | 0.0 |
| 15.00 | | 167.1 | 1,927.9 | | | | | 0.0 | 992.0 | 167.1 | 2,919.9 | 0.0 | 0.0 |
| 20.00 | | 171.3 | 1,911.3 | | | | | 0.0 | 1,019.4 | 171.3 | 2,930.8 | 0.0 | 0.0 |
| 25.00 | | 176.5 | 1,889.1 | | | | | 0.0 | 1,040.8 | 176.5 | 2,929.9 | 0.0 | 0.0 |
| 30.00 | | 180.1 | 1,863.3 | | | | | 0.0 | 1,058.5 | 180.1 | 2,921.8 | 0.0 | 0.0 |
| 35.00 | | 182.6 | 1,835.0 | | | | | 0.0 | 1,073.6 | 182.6 | 2,908.6 | 0.0 | 0.0 |
| 40.00 | | 184.2 | 1,804.9 | | | | | 0.0 | 1,086.8 | 184.2 | 2,891.7 | 0.0 | 0.0 |
| 45.00 | | 126.4 | 1,773.3 | | | | | 0.0 | 1,098.6 | 126.4 | 2,872.0 | 0.0 | 0.0 |
| 46.83 | Bot - Section 2 | 93.6 | 643.7 | | | | | 0.0 | 405.6 | 93.6 | 1,049.2 | 0.0 | 0.0 |
| 50.00 | | 116.1 | 1,823.0 | | | | | 0.0 | 703.8 | 116.1 | 2,526.8 | 0.0 | 0.0 |
| 53.00 | Top - Section 1 | 94.2 | 1,705.2 | | | | | 0.0 | 670.3 | 94.2 | 2,375.5 | 0.0 | 0.0 |
| 55.00 | | 131.7 | 691.6 | | | | | 0.0 | 448.7 | 131.7 | 1,140.4 | 0.0 | 0.0 |
| 60.00 | | 187.7 | 1,700.8 | | | | | 0.0 | 1,128.1 | 187.7 | 2,828.9 | 0.0 | 0.0 |
| 65.00 | | 186.8 | 1,665.8 | | | | | 0.0 | 1,136.5 | 186.8 | 2,802.2 | 0.0 | 0.0 |
| 70.00 | | 185.6 | 1,630.2 | | | | | 0.0 | 1,144.3 | 185.6 | 2,774.4 | 0.0 | 0.0 |
| 75.00 | | 184.1 | 1,594.0 | | | | | 0.0 | 1,151.6 | 184.1 | 2,745.7 | 0.0 | 0.0 |
| 80.00 | | 182.3 | 1,557.5 | | | | | 0.0 | 1,158.5 | 182.3 | 2,716.0 | 0.0 | 0.0 |
| 85.00 | | 180.3 | 1,520.5 | | | | | 0.0 | 1,165.1 | 180.3 | 2,685.5 | 0.0 | 0.0 |
| 90.00 | Appertunance(s) | 176.6 | 1,483.1 | 342.9 | 0.0 | 0.0 | 2,411.0 | 0.0 | 1,171.3 | 519.5 | 5,065.4 | 0.0 | 0.0 |
| 94.92 | Bot - Section 3 | 88.5 | 1,421.7 | | | | | 0.0 | 950.2 | 88.5 | 2,372.0 | 0.0 | 0.0 |
| 95.00 | | 37.1 | 36.6 | | | | | 0.0 | 16.1 | 37.1 | 52.8 | 0.0 | 0.0 |
| 97.00 | Appertunance(s) | 85.6 | 872.9 | 93.8 | 0.0 | 311.4 | 207.2 | 0.0 | 387.8 | 179.4 | 1,467.9 | 0.0 | 0.0 |
| 99.83 | Top - Section 2 | 53.0 | 1,219.5 | | | | | 0.0 | 526.5 | 53.0 | 1,746.0 | 0.0 | 0.0 |
| 100.00 | | 90.1 | 42.5 | | | | | 0.0 | 31.0 | 90.1 | 73.5 | 0.0 | 0.0 |
| 105.00 | | 173.0 | 1,250.1 | | | | | 0.0 | 932.3 | 173.0 | 2,182.4 | 0.0 | 0.0 |
| 110.00 | | 170.1 | 1,216.0 | | | | | 0.0 | 935.9 | 170.1 | 2,151.9 | 0.0 | 0.0 |
| 115.00 | Appertunance(s) | 167.0 | 1,181.5 | 1,246.3 | 0.0 | 0.0 | 8,001.6 | 0.0 | 939.4 | 1,413.3 | 10,122.6 | 0.0 | 0.0 |
| 120.00 | | 163.8 | 1,146.9 | | | | | 0.0 | 365.2 | 163.8 | 1,512.1 | 0.0 | 0.0 |
| 125.00 | Appertunance(s) | 160.5 | 1,112.0 | 564.3 | 0.0 | 0.0 | 3,756.2 | 0.0 | 366.3 | 724.8 | 5,234.5 | 0.0 | 0.0 |
| 130.00 | | 126.2 | 1,076.9 | | | | | 0.0 | 103.3 | 126.2 | 1,180.2 | 0.0 | 0.0 |
| 133.00 | Appertunance(s) | 77.6 | 631.1 | 630.4 | 0.0 | 339.0 | 3,427.4 | 0.0 | 62.0 | 708.0 | 4,120.4 | 0.0 | 0.0 |
| 135.00 | | 106.7 | 414.3 | | | | | 0.0 | 23.6 | 106.7 | 437.9 | 0.0 | 0.0 |
| 140.00 | | 149.8 | 1,006.2 | | | | | 0.0 | 59.0 | 149.8 | 1,065.2 | 0.0 | 0.0 |
| 145.00 | | 116.2 | 970.6 | | | | | 0.0 | 59.0 | 116.2 | 1,029.6 | 0.0 | 0.0 |
| 147.92 | | 42.3 | 551.6 | | | | | 0.0 | 34.4 | 42.3 | 586.1 | 0.0 | 0.0 |
| Totals: | | | | | | | | | | 8,014.01 | 90,088.5 | 0.00 | 0.00 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:12 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

22 Iterations

Gust Response Factor : 1.10

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Ice Importance Factor : 1.00

Wind Load Factor : 1.00

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 | -96.94 | -9.09 | 0.00 | -946.05 | 0.00 | 946.05 | 4,345.86 | 2,172.93 | 10,048.4 | 5,031.69 | 0.00 | 0.00 | 0.210 |
| 5.00 | -94.15 | -9.00 | 0.00 | -900.59 | 0.00 | 900.59 | 4,297.95 | 2,148.97 | 9,746.71 | 4,880.60 | 0.03 | -0.05 | 0.206 |
| 10.00 | -91.26 | -8.91 | 0.00 | -855.57 | 0.00 | 855.57 | 4,248.67 | 2,124.33 | 9,446.21 | 4,730.12 | 0.10 | -0.10 | 0.202 |
| 15.00 | -88.33 | -8.82 | 0.00 | -811.01 | 0.00 | 811.01 | 4,198.03 | 2,099.01 | 9,147.11 | 4,580.35 | 0.24 | -0.15 | 0.198 |
| 20.00 | -85.39 | -8.71 | 0.00 | -766.94 | 0.00 | 766.94 | 4,146.02 | 2,073.01 | 8,849.60 | 4,431.38 | 0.42 | -0.20 | 0.194 |
| 25.00 | -82.46 | -8.59 | 0.00 | -723.39 | 0.00 | 723.39 | 4,092.65 | 2,046.33 | 8,553.86 | 4,283.29 | 0.65 | -0.25 | 0.189 |
| 30.00 | -79.53 | -8.47 | 0.00 | -680.42 | 0.00 | 680.42 | 4,037.92 | 2,018.96 | 8,260.07 | 4,136.18 | 0.94 | -0.30 | 0.184 |
| 35.00 | -76.61 | -8.34 | 0.00 | -638.07 | 0.00 | 638.07 | 3,981.82 | 1,990.91 | 7,968.42 | 3,990.13 | 1.28 | -0.35 | 0.179 |
| 40.00 | -73.72 | -8.20 | 0.00 | -596.37 | 0.00 | 596.37 | 3,924.36 | 1,962.18 | 7,679.09 | 3,845.25 | 1.68 | -0.40 | 0.174 |
| 45.00 | -70.84 | -8.10 | 0.00 | -555.37 | 0.00 | 555.37 | 3,865.54 | 1,932.77 | 7,392.25 | 3,701.62 | 2.12 | -0.45 | 0.168 |
| 46.83 | -69.79 | -8.03 | 0.00 | -540.52 | 0.00 | 540.52 | 3,843.63 | 1,921.82 | 7,287.74 | 3,649.29 | 2.30 | -0.47 | 0.166 |
| 50.00 | -67.26 | -7.92 | 0.00 | -515.11 | 0.00 | 515.11 | 3,805.35 | 1,902.68 | 7,108.10 | 3,559.33 | 2.62 | -0.50 | 0.162 |
| 53.00 | -64.88 | -7.84 | 0.00 | -491.34 | 0.00 | 491.34 | 3,811.38 | 1,905.69 | 7,136.13 | 3,573.37 | 2.95 | -0.53 | 0.155 |
| 55.00 | -63.74 | -7.73 | 0.00 | -475.67 | 0.00 | 475.67 | 3,786.98 | 1,893.49 | 7,023.14 | 3,516.79 | 3.18 | -0.55 | 0.152 |
| 60.00 | -60.90 | -7.57 | 0.00 | -437.01 | 0.00 | 437.01 | 3,725.01 | 1,862.51 | 6,742.74 | 3,376.38 | 3.78 | -0.60 | 0.146 |
| 65.00 | -58.10 | -7.39 | 0.00 | -399.18 | 0.00 | 399.18 | 3,661.69 | 1,830.84 | 6,465.44 | 3,237.53 | 4.44 | -0.65 | 0.139 |
| 70.00 | -55.32 | -7.22 | 0.00 | -362.21 | 0.00 | 362.21 | 3,597.00 | 1,798.50 | 6,191.43 | 3,100.31 | 5.14 | -0.69 | 0.132 |
| 75.00 | -52.57 | -7.04 | 0.00 | -326.11 | 0.00 | 326.11 | 3,530.95 | 1,765.47 | 5,920.87 | 2,964.83 | 5.88 | -0.74 | 0.125 |
| 80.00 | -49.85 | -6.86 | 0.00 | -290.90 | 0.00 | 290.90 | 3,463.53 | 1,731.77 | 5,653.95 | 2,831.18 | 6.68 | -0.78 | 0.117 |
| 85.00 | -47.17 | -6.68 | 0.00 | -256.60 | 0.00 | 256.60 | 3,394.75 | 1,697.38 | 5,390.86 | 2,699.44 | 7.52 | -0.82 | 0.109 |
| 90.00 | -42.10 | -6.11 | 0.00 | -223.23 | 0.00 | 223.23 | 3,324.61 | 1,662.30 | 5,131.78 | 2,569.70 | 8.40 | -0.86 | 0.100 |
| 94.92 | -39.73 | -6.00 | 0.00 | -193.19 | 0.00 | 193.19 | 3,235.43 | 1,617.71 | 4,852.78 | 2,430.00 | 9.30 | -0.89 | 0.092 |
| 95.00 | -39.68 | -5.96 | 0.00 | -192.69 | 0.00 | 192.69 | 3,233.85 | 1,616.92 | 4,848.02 | 2,427.61 | 9.31 | -0.90 | 0.092 |
| 97.00 | -38.21 | -5.77 | 0.00 | -180.45 | 0.00 | 180.45 | 3,195.90 | 1,597.95 | 4,734.34 | 2,370.69 | 9.69 | -0.91 | 0.088 |
| 99.83 | -36.47 | -5.70 | 0.00 | -164.10 | 0.00 | 164.10 | 2,561.72 | 1,280.86 | 3,809.83 | 1,907.74 | 10.24 | -0.93 | 0.100 |
| 100.00 | -36.39 | -5.62 | 0.00 | -163.15 | 0.00 | 163.15 | 2,559.96 | 1,279.98 | 3,803.41 | 1,904.53 | 10.27 | -0.93 | 0.100 |
| 105.00 | -34.21 | -5.43 | 0.00 | -135.05 | 0.00 | 135.05 | 2,506.38 | 1,253.19 | 3,612.46 | 1,808.91 | 11.27 | -0.97 | 0.088 |
| 110.00 | -32.06 | -5.24 | 0.00 | -107.90 | 0.00 | 107.90 | 2,451.43 | 1,225.72 | 3,424.36 | 1,714.72 | 12.30 | -1.00 | 0.076 |
| 115.00 | -21.96 | -3.66 | 0.00 | -81.70 | 0.00 | 81.70 | 2,395.12 | 1,197.56 | 3,239.30 | 1,622.06 | 13.36 | -1.03 | 0.060 |
| 120.00 | -20.45 | -3.47 | 0.00 | -63.41 | 0.00 | 63.41 | 2,337.45 | 1,168.73 | 3,057.46 | 1,531.00 | 14.44 | -1.05 | 0.050 |
| 125.00 | -15.23 | -2.66 | 0.00 | -46.04 | 0.00 | 46.04 | 2,271.20 | 1,135.60 | 2,869.91 | 1,437.09 | 15.55 | -1.07 | 0.039 |
| 130.00 | -14.05 | -2.51 | 0.00 | -32.76 | 0.00 | 32.76 | 2,192.15 | 1,096.07 | 2,672.63 | 1,338.30 | 16.68 | -1.08 | 0.031 |
| 133.00 | -9.95 | -1.73 | 0.00 | -24.88 | 0.00 | 24.88 | 2,144.71 | 1,072.36 | 2,557.63 | 1,280.72 | 17.36 | -1.09 | 0.024 |
| 135.00 | -9.51 | -1.61 | 0.00 | -21.43 | 0.00 | 21.43 | 2,113.09 | 1,056.55 | 2,482.37 | 1,243.03 | 17.82 | -1.09 | 0.022 |
| 140.00 | -8.45 | -1.44 | 0.00 | -13.37 | 0.00 | 13.37 | 2,034.04 | 1,017.02 | 2,299.14 | 1,151.28 | 18.97 | -1.10 | 0.016 |
| 145.00 | -7.42 | -1.31 | 0.00 | -6.15 | 0.00 | 6.15 | 1,954.98 | 977.49 | 2,122.94 | 1,063.05 | 20.13 | -1.11 | 0.010 |
| 147.92 | 0.00 | -1.16 | 0.00 | -2.34 | 0.00 | 2.34 | 1,908.86 | 954.43 | 2,023.38 | 1,013.20 | 20.81 | -1.11 | 0.002 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:12 PM

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 | | 63.1 | 0.0 | | | | | 0.0 | 0.0 | 63.1 | 0.0 | 0.0 | 0.0 | |
| 5.00 | | 125.0 | 1,127.3 | | | | | 0.0 | 274.2 | 125.0 | 1,401.5 | 0.0 | 0.0 | |
| 10.00 | | 122.5 | 1,105.6 | | | | | 0.0 | 274.2 | 122.5 | 1,379.8 | 0.0 | 0.0 | |
| 15.00 | | 122.0 | 1,083.8 | | | | | 0.0 | 274.2 | 122.0 | 1,358.1 | 0.0 | 0.0 | |
| 20.00 | | 124.7 | 1,062.1 | | | | | 0.0 | 274.2 | 124.7 | 1,336.3 | 0.0 | 0.0 | |
| 25.00 | | 128.1 | 1,040.4 | | | | | 0.0 | 274.2 | 128.1 | 1,314.6 | 0.0 | 0.0 | |
| 30.00 | | 130.3 | 1,018.7 | | | | | 0.0 | 274.2 | 130.3 | 1,292.9 | 0.0 | 0.0 | |
| 35.00 | | 131.8 | 996.9 | | | | | 0.0 | 274.2 | 131.8 | 1,271.2 | 0.0 | 0.0 | |
| 40.00 | | 132.6 | 975.2 | | | | | 0.0 | 274.2 | 132.6 | 1,249.4 | 0.0 | 0.0 | |
| 45.00 | | 90.8 | 953.5 | | | | | 0.0 | 274.2 | 90.8 | 1,227.7 | 0.0 | 0.0 | |
| 46.83 | Bot - Section 2 | 67.1 | 344.2 | | | | | 0.0 | 100.5 | 67.1 | 444.7 | 0.0 | 0.0 | |
| 50.00 | | 83.2 | 1,184.8 | | | | | 0.0 | 173.7 | 83.2 | 1,358.5 | 0.0 | 0.0 | |
| 53.00 | Top - Section 1 | 67.4 | 1,106.4 | | | | | 0.0 | 164.5 | 67.4 | 1,270.9 | 0.0 | 0.0 | |
| 55.00 | | 94.1 | 367.5 | | | | | 0.0 | 109.7 | 94.1 | 477.2 | 0.0 | 0.0 | |
| 60.00 | | 133.8 | 903.5 | | | | | 0.0 | 274.2 | 133.8 | 1,177.7 | 0.0 | 0.0 | |
| 65.00 | | 132.8 | 881.8 | | | | | 0.0 | 274.2 | 132.8 | 1,156.0 | 0.0 | 0.0 | |
| 70.00 | | 131.5 | 860.1 | | | | | 0.0 | 274.2 | 131.5 | 1,134.3 | 0.0 | 0.0 | |
| 75.00 | | 130.1 | 838.3 | | | | | 0.0 | 274.2 | 130.1 | 1,112.6 | 0.0 | 0.0 | |
| 80.00 | | 128.4 | 816.6 | | | | | 0.0 | 274.2 | 128.4 | 1,090.8 | 0.0 | 0.0 | |
| 85.00 | | 126.6 | 794.9 | | | | | 0.0 | 274.2 | 126.6 | 1,069.1 | 0.0 | 0.0 | |
| 90.00 | Appertunance(s) | 123.6 | 773.2 | 314.6 | 0.0 | 0.0 | 826.2 | 0.0 | 274.2 | 438.2 | 1,873.6 | 0.0 | 0.0 | |
| 94.92 | Bot - Section 3 | 61.8 | 739.1 | | | | | 0.0 | 231.0 | 61.8 | 970.0 | 0.0 | 0.0 | |
| 95.00 | | 25.9 | 22.8 | | | | | 0.0 | 3.9 | 25.9 | 26.7 | 0.0 | 0.0 | |
| 97.00 | Appertunance(s) | 59.7 | 544.5 | 65.8 | 0.0 | 177.5 | 101.5 | 0.0 | 93.9 | 125.5 | 740.0 | 0.0 | 0.0 | |
| 99.83 | Top - Section 2 | 36.9 | 760.5 | | | | | 0.0 | 132.2 | 36.9 | 892.7 | 0.0 | 0.0 | |
| 100.00 | | 62.6 | 20.4 | | | | | 0.0 | 7.8 | 62.6 | 28.1 | 0.0 | 0.0 | |
| 105.00 | | 120.0 | 601.6 | | | | | 0.0 | 233.2 | 120.0 | 834.8 | 0.0 | 0.0 | |
| 110.00 | | 117.5 | 583.5 | | | | | 0.0 | 233.2 | 117.5 | 816.7 | 0.0 | 0.0 | |
| 115.00 | Appertunance(s) | 114.9 | 565.4 | 1,252.1 | 0.0 | 0.0 | 2,425.3 | 0.0 | 233.2 | 1,366.9 | 3,223.9 | 0.0 | 0.0 | |
| 120.00 | | 112.2 | 547.3 | | | | | 0.0 | 143.3 | 112.2 | 690.6 | 0.0 | 0.0 | |
| 125.00 | Appertunance(s) | 109.4 | 529.2 | 517.6 | 0.0 | 0.0 | 1,309.5 | 0.0 | 143.3 | 627.0 | 1,982.0 | 0.0 | 0.0 | |
| 130.00 | | 85.7 | 511.1 | | | | | 0.0 | 86.1 | 85.7 | 597.2 | 0.0 | 0.0 | |
| 133.00 | Appertunance(s) | 52.5 | 297.9 | 496.1 | 0.0 | 316.5 | 1,680.0 | 0.0 | 51.7 | 548.6 | 2,029.6 | 0.0 | 0.0 | |
| 135.00 | | 71.8 | 195.0 | | | | | 0.0 | 19.7 | 71.8 | 214.7 | 0.0 | 0.0 | |
| 140.00 | | 100.4 | 474.9 | | | | | 0.0 | 49.2 | 100.4 | 524.0 | 0.0 | 0.0 | |
| 145.00 | | 77.6 | 456.8 | | | | | 0.0 | 49.2 | 77.6 | 505.9 | 0.0 | 0.0 | |
| 147.92 | | 28.1 | 258.1 | | | | | 0.0 | 28.7 | 28.1 | 286.8 | 0.0 | 0.0 | |
| | | | | | | | Totals: | | | | 6,272.62 | 38,360.6 | 0.00 | 0.00 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:13 PM

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 | -40.76 | -7.33 | 0.00 | -756.24 | 0.00 | 756.24 | 4,345.86 | 2,172.93 | 10,048.4 | 5,031.69 | 0.00 | 0.00 | 0.160 |
| 5.00 | -39.36 | -7.23 | 0.00 | -719.58 | 0.00 | 719.58 | 4,297.95 | 2,148.97 | 9,746.71 | 4,880.60 | 0.02 | -0.04 | 0.157 |
| 10.00 | -37.97 | -7.14 | 0.00 | -683.41 | 0.00 | 683.41 | 4,248.67 | 2,124.33 | 9,446.21 | 4,730.12 | 0.08 | -0.08 | 0.153 |
| 15.00 | -36.61 | -7.04 | 0.00 | -647.73 | 0.00 | 647.73 | 4,198.03 | 2,099.01 | 9,147.11 | 4,580.35 | 0.19 | -0.12 | 0.150 |
| 20.00 | -35.27 | -6.93 | 0.00 | -612.55 | 0.00 | 612.55 | 4,146.02 | 2,073.01 | 8,849.60 | 4,431.38 | 0.33 | -0.16 | 0.147 |
| 25.00 | -33.95 | -6.83 | 0.00 | -577.88 | 0.00 | 577.88 | 4,092.65 | 2,046.33 | 8,553.86 | 4,283.29 | 0.52 | -0.20 | 0.143 |
| 30.00 | -32.65 | -6.71 | 0.00 | -543.75 | 0.00 | 543.75 | 4,037.92 | 2,018.96 | 8,260.07 | 4,136.18 | 0.75 | -0.24 | 0.140 |
| 35.00 | -31.38 | -6.60 | 0.00 | -510.18 | 0.00 | 510.18 | 3,981.82 | 1,990.91 | 7,968.42 | 3,990.13 | 1.02 | -0.28 | 0.136 |
| 40.00 | -30.12 | -6.48 | 0.00 | -477.19 | 0.00 | 477.19 | 3,924.36 | 1,962.18 | 7,679.09 | 3,845.25 | 1.34 | -0.32 | 0.132 |
| 45.00 | -28.89 | -6.40 | 0.00 | -444.79 | 0.00 | 444.79 | 3,865.54 | 1,932.77 | 7,392.25 | 3,701.62 | 1.70 | -0.36 | 0.128 |
| 46.83 | -28.45 | -6.34 | 0.00 | -433.06 | 0.00 | 433.06 | 3,843.63 | 1,921.82 | 7,287.74 | 3,649.29 | 1.84 | -0.38 | 0.126 |
| 50.00 | -27.09 | -6.26 | 0.00 | -413.00 | 0.00 | 413.00 | 3,805.35 | 1,902.68 | 7,108.10 | 3,559.33 | 2.10 | -0.40 | 0.123 |
| 53.00 | -25.81 | -6.19 | 0.00 | -394.23 | 0.00 | 394.23 | 3,811.38 | 1,905.69 | 7,136.13 | 3,573.37 | 2.36 | -0.43 | 0.117 |
| 55.00 | -25.33 | -6.10 | 0.00 | -381.85 | 0.00 | 381.85 | 3,786.98 | 1,893.49 | 7,023.14 | 3,516.79 | 2.54 | -0.44 | 0.115 |
| 60.00 | -24.15 | -5.98 | 0.00 | -351.34 | 0.00 | 351.34 | 3,725.01 | 1,862.51 | 6,742.74 | 3,376.38 | 3.02 | -0.48 | 0.111 |
| 65.00 | -23.00 | -5.85 | 0.00 | -321.47 | 0.00 | 321.47 | 3,661.69 | 1,830.84 | 6,465.44 | 3,237.53 | 3.55 | -0.52 | 0.106 |
| 70.00 | -21.86 | -5.72 | 0.00 | -292.23 | 0.00 | 292.23 | 3,597.00 | 1,798.50 | 6,191.43 | 3,100.31 | 4.11 | -0.55 | 0.100 |
| 75.00 | -20.74 | -5.59 | 0.00 | -263.64 | 0.00 | 263.64 | 3,530.95 | 1,765.47 | 5,920.87 | 2,964.83 | 4.71 | -0.59 | 0.095 |
| 80.00 | -19.65 | -5.46 | 0.00 | -235.69 | 0.00 | 235.69 | 3,463.53 | 1,731.77 | 5,653.95 | 2,831.18 | 5.34 | -0.62 | 0.089 |
| 85.00 | -18.58 | -5.33 | 0.00 | -208.38 | 0.00 | 208.38 | 3,394.75 | 1,697.38 | 5,390.86 | 2,699.44 | 6.01 | -0.66 | 0.083 |
| 90.00 | -16.71 | -4.88 | 0.00 | -181.71 | 0.00 | 181.71 | 3,324.61 | 1,662.30 | 5,131.78 | 2,569.70 | 6.72 | -0.69 | 0.076 |
| 94.92 | -15.74 | -4.81 | 0.00 | -157.70 | 0.00 | 157.70 | 3,235.43 | 1,617.71 | 4,852.78 | 2,430.00 | 7.44 | -0.72 | 0.070 |
| 95.00 | -15.71 | -4.79 | 0.00 | -157.30 | 0.00 | 157.30 | 3,233.85 | 1,616.92 | 4,848.02 | 2,427.61 | 7.46 | -0.72 | 0.070 |
| 97.00 | -14.97 | -4.66 | 0.00 | -147.55 | 0.00 | 147.55 | 3,195.90 | 1,597.95 | 4,734.34 | 2,370.69 | 7.76 | -0.73 | 0.067 |
| 99.83 | -14.08 | -4.61 | 0.00 | -134.35 | 0.00 | 134.35 | 2,561.72 | 1,280.86 | 3,809.83 | 1,907.74 | 8.20 | -0.75 | 0.076 |
| 100.00 | -14.05 | -4.55 | 0.00 | -133.58 | 0.00 | 133.58 | 2,559.96 | 1,279.98 | 3,803.41 | 1,904.53 | 8.23 | -0.75 | 0.076 |
| 105.00 | -13.22 | -4.43 | 0.00 | -110.82 | 0.00 | 110.82 | 2,506.38 | 1,253.19 | 3,612.46 | 1,808.91 | 9.03 | -0.78 | 0.067 |
| 110.00 | -12.40 | -4.30 | 0.00 | -88.69 | 0.00 | 88.69 | 2,451.43 | 1,225.72 | 3,424.36 | 1,714.72 | 9.85 | -0.80 | 0.057 |
| 115.00 | -9.19 | -2.89 | 0.00 | -67.17 | 0.00 | 67.17 | 2,395.12 | 1,197.56 | 3,239.30 | 1,622.06 | 10.71 | -0.83 | 0.045 |
| 120.00 | -8.50 | -2.77 | 0.00 | -52.70 | 0.00 | 52.70 | 2,337.45 | 1,168.73 | 3,057.46 | 1,531.00 | 11.58 | -0.84 | 0.038 |
| 125.00 | -6.53 | -2.12 | 0.00 | -38.82 | 0.00 | 38.82 | 2,271.20 | 1,135.60 | 2,869.91 | 1,437.09 | 12.48 | -0.86 | 0.030 |
| 130.00 | -5.94 | -2.03 | 0.00 | -28.22 | 0.00 | 28.22 | 2,192.15 | 1,096.07 | 2,672.63 | 1,338.30 | 13.39 | -0.87 | 0.024 |
| 133.00 | -3.91 | -1.45 | 0.00 | -21.83 | 0.00 | 21.83 | 2,144.71 | 1,072.36 | 2,557.63 | 1,280.72 | 13.94 | -0.88 | 0.019 |
| 135.00 | -3.70 | -1.37 | 0.00 | -18.93 | 0.00 | 18.93 | 2,113.09 | 1,056.55 | 2,482.37 | 1,243.03 | 14.31 | -0.88 | 0.017 |
| 140.00 | -3.18 | -1.26 | 0.00 | -12.07 | 0.00 | 12.07 | 2,034.04 | 1,017.02 | 2,299.14 | 1,151.28 | 15.24 | -0.89 | 0.012 |
| 145.00 | -2.67 | -1.18 | 0.00 | -5.75 | 0.00 | 5.75 | 1,954.98 | 977.49 | 2,122.94 | 1,063.05 | 16.17 | -0.90 | 0.007 |
| 147.92 | 0.00 | -1.14 | 0.00 | -2.31 | 0.00 | 2.31 | 1,908.86 | 954.43 | 2,023.38 | 1,013.20 | 16.72 | -0.90 | 0.002 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:13 PM

Customer: VERIZON WIRELESS

Equivalent Lateral Forces Method Analysis

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

| | |
|--|---------|
| Spectral Response Acceleration for Short Period (S_g): | 0.18 |
| Spectral Response Acceleration at 1.0 Second Period (S_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}): | 0.19 |
| 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): | 2.02 |
| Redundancy Factor (ρ): | 1.30 |
| Seismic Force Distribution Exponent (k): | 1.76 |
| Total Unfactored Dead Load: | 40.77 k |
| Seismic Base Shear (E): | 1.79 k |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:13 PM

Customer: VERIZON WIRELESS

Equivalent Modal Forces Analysis

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

| | |
|--|------|
| Spectral Response Acceleration for Short Period (S_s): | 0.18 |
| Spectral Response Acceleration at 1.0 Second Period (S_1): | 0.06 |
| Importance Factor (I_E): | 1.00 |
| Site Coefficient F_a : | 1.60 |
| Site Coefficient F_v : | 2.40 |
| Response Modification Coefficient (R): | 1.50 |
| Design Spectral Response Acceleration at Short Period (S_{ds}): | 0.19 |
| Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}): | 0.10 |
| Period Based on Rayleigh Method (sec): | 2.02 |
| Redundancy Factor (p): | 1.30 |

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

Seismic Equivalent Lateral Forces Method

| Segment | Height Above Base (ft) | Weight (lb) | a | b | c | Saz | Horizontal Force (lb) | Vertical Force (lb) |
|---------|---------------------------------|----------------|-------|--------|-------|--------|-----------------------------|---------------------------|
| 36 | 146.46 | 287 | 1.853 | 1.790 | 1.071 | 0.345 | 86 | 247 |
| 35 | 142.50 | 506 | 1.754 | 1.338 | 0.900 | 0.285 | 125 | 436 |
| 34 | 137.50 | 524 | 1.633 | 0.885 | 0.716 | 0.216 | 98 | 452 |
| 33 | 134.00 | 215 | 1.551 | 0.635 | 0.606 | 0.174 | 32 | 185 |
| 32 | 131.50 | 350 | 1.494 | 0.486 | 0.535 | 0.146 | 44 | 301 |
| 31 | 127.50 | 597 | 1.404 | 0.292 | 0.436 | 0.105 | 54 | 515 |
| 30 | 122.50 | 673 | 1.296 | 0.115 | 0.333 | 0.062 | 36 | 579 |
| 29 | 117.50 | 691 | 1.193 | -0.002 | 0.249 | 0.027 | 16 | 595 |
| 28 | 112.50 | 799 | 1.093 | -0.074 | 0.183 | 0.001 | 1 | 688 |
| 27 | 107.50 | 817 | 0.998 | -0.110 | 0.130 | -0.018 | -12 | 704 |
| 26 | 102.50 | 835 | 0.908 | -0.122 | 0.090 | -0.028 | -20 | 719 |
| 25 | 99.92 | 28 | 0.862 | -0.120 | 0.074 | -0.031 | -1 | 24 |
| 24 | 98.42 | 893 | 0.837 | -0.118 | 0.065 | -0.031 | -24 | 769 |
| 23 | 96.00 | 638 | 0.796 | -0.111 | 0.053 | -0.031 | -17 | 550 |
| 22 | 94.96 | 27 | 0.779 | -0.108 | 0.048 | -0.030 | -1 | 23 |
| 21 | 92.46 | 970 | 0.738 | -0.098 | 0.038 | -0.027 | -23 | 836 |
| 20 | 87.50 | 1,047 | 0.661 | -0.074 | 0.023 | -0.018 | -16 | 902 |
| 19 | 82.50 | 1,069 | 0.588 | -0.049 | 0.013 | -0.005 | -5 | 921 |
| 18 | 77.50 | 1,091 | 0.519 | -0.023 | 0.008 | 0.009 | 9 | 940 |
| 17 | 72.50 | 1,113 | 0.454 | 0.000 | 0.006 | 0.022 | 21 | 959 |
| 16 | 67.50 | 1,134 | 0.394 | 0.020 | 0.007 | 0.033 | 32 | 977 |
| 15 | 62.50 | 1,156 | 0.337 | 0.036 | 0.009 | 0.041 | 41 | 996 |
| 14 | 57.50 | 1,178 | 0.286 | 0.048 | 0.014 | 0.045 | 46 | 1,015 |
| 13 | 54.00 | 477 | 0.252 | 0.055 | 0.017 | 0.047 | 20 | 411 |
| 12 | 51.50 | 1,271 | 0.229 | 0.059 | 0.020 | 0.048 | 53 | 1,095 |
| 11 | 48.42 | 1,358 | 0.202 | 0.062 | 0.023 | 0.048 | 57 | 1,170 |
| 10 | 45.92 | 445 | 0.182 | 0.065 | 0.026 | 0.048 | 19 | 383 |
| 9 | 42.50 | 1,228 | 0.156 | 0.067 | 0.029 | 0.048 | 51 | 1,058 |
| 8 | 37.50 | 1,249 | 0.121 | 0.070 | 0.034 | 0.047 | 51 | 1,077 |
| 7 | 32.50 | 1,271 | 0.091 | 0.071 | 0.038 | 0.045 | 50 | 1,095 |
| 6 | 27.50 | 1,293 | 0.065 | 0.072 | 0.041 | 0.044 | 49 | 1,114 |
| 5 | 22.50 | 1,315 | 0.044 | 0.071 | 0.042 | 0.042 | 48 | 1,133 |
| 4 | 17.50 | 1,336 | 0.026 | 0.067 | 0.040 | 0.040 | 46 | 1,151 |
| 3 | 12.50 | 1,358 | 0.013 | 0.059 | 0.035 | 0.036 | 42 | 1,170 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:13 PM

Customer: VERIZON WIRELESS

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 2 | 7.50 | 1,380 | 0.005 | 0.044 | 0.025 | 0.028 | 33 | 1,189 |
| 1 | 2.50 | 1,402 | 0.001 | 0.018 | 0.010 | 0.013 | 15 | 1,208 |
| 48" x 12" Panel | 150.00 | 270 | 1.944 | 2.275 | 1.245 | 0.404 | 94 | 233 |
| 72" x 12" Panel | 150.00 | 135 | 1.944 | 2.275 | 1.245 | 0.404 | 47 | 116 |
| Flat Platform w/ Han | 150.00 | 2,000 | 1.944 | 2.275 | 1.245 | 0.404 | 700 | 1,723 |
| 48" x 4" Panel | 133.00 | 180 | 1.528 | 0.572 | 0.577 | 0.162 | 25 | 155 |
| Flat Low Profile Pla | 133.00 | 1,500 | 1.528 | 0.572 | 0.577 | 0.162 | 211 | 1,292 |
| Ericsson KRY 112 144 | 125.00 | 66 | 1.350 | 0.195 | 0.382 | 0.083 | 5 | 57 |
| Ericsson AIR 21, 1.3 | 125.00 | 249 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 215 |
| Ericsson AIR 21, 1.3 | 125.00 | 244 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 211 |
| Round T-Arm | 125.00 | 750 | 1.350 | 0.195 | 0.382 | 0.083 | 54 | 646 |
| Alcatel-Lucent RRH2X | 115.00 | 129 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 111 |
| Alcatel-Lucent RRH2X | 115.00 | 132 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 114 |
| Alcatel-Lucent RRH2x | 115.00 | 170 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 147 |
| RFS DB-T1-6Z-8AB-0Z | 115.00 | 88 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 76 |
| Amphenol Antel BXA-7 | 115.00 | 102 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 88 |
| Commscope SBNHH- | 115.00 | 304 | 1.142 | -0.043 | 0.214 | 0.013 | 3 | 262 |
| Flat Low Profile Pla | 115.00 | 1,500 | 1.142 | -0.043 | 0.214 | 0.013 | 17 | 1,292 |
| Stand-Off | 97.00 | 75 | 0.813 | -0.114 | 0.058 | -0.031 | -2 | 65 |
| Antel BCD-87010 | 97.00 | 26 | 0.813 | -0.114 | 0.058 | -0.031 | -1 | 23 |
| DragonWave Horizon C | 90.00 | 21 | 0.700 | -0.087 | 0.030 | -0.023 | 0 | 18 |
| NextNet BTS-2500 | 90.00 | 105 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 90 |
| Argus LLPX310R | 90.00 | 86 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 74 |
| DragonWave A-ANT-18G | 90.00 | 54 | 0.700 | -0.087 | 0.030 | -0.023 | -1 | 47 |
| Side Arms | 90.00 | 560 | 0.700 | -0.087 | 0.030 | -0.023 | -11 | 482 |
| | | 40,766 | 51.224 | 13.207 | 14.163 | 3.607 | 2,237 | 35,124 |

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) |
|---------|------------------------|-------------|-------|--------|-------|--------|-----------------------|---------------------|
| 36 | 146.46 | 287 | 1.853 | 1.790 | 1.071 | 0.345 | 86 | 247 |
| 35 | 142.50 | 506 | 1.754 | 1.338 | 0.900 | 0.285 | 125 | 436 |
| 34 | 137.50 | 524 | 1.633 | 0.885 | 0.716 | 0.216 | 98 | 452 |
| 33 | 134.00 | 215 | 1.551 | 0.635 | 0.606 | 0.174 | 32 | 185 |
| 32 | 131.50 | 350 | 1.494 | 0.486 | 0.535 | 0.146 | 44 | 301 |
| 31 | 127.50 | 597 | 1.404 | 0.292 | 0.436 | 0.105 | 54 | 515 |
| 30 | 122.50 | 673 | 1.296 | 0.115 | 0.333 | 0.062 | 36 | 579 |
| 29 | 117.50 | 691 | 1.193 | -0.002 | 0.249 | 0.027 | 16 | 595 |
| 28 | 112.50 | 799 | 1.093 | -0.074 | 0.183 | 0.001 | 1 | 688 |
| 27 | 107.50 | 817 | 0.998 | -0.110 | 0.130 | -0.018 | -12 | 704 |
| 26 | 102.50 | 835 | 0.908 | -0.122 | 0.090 | -0.028 | -20 | 719 |
| 25 | 99.92 | 28 | 0.862 | -0.120 | 0.074 | -0.031 | -1 | 24 |
| 24 | 98.42 | 893 | 0.837 | -0.118 | 0.065 | -0.031 | -24 | 769 |
| 23 | 96.00 | 638 | 0.796 | -0.111 | 0.053 | -0.031 | -17 | 550 |
| 22 | 94.96 | 27 | 0.779 | -0.108 | 0.048 | -0.030 | -1 | 23 |
| 21 | 92.46 | 970 | 0.738 | -0.098 | 0.038 | -0.027 | -23 | 836 |
| 20 | 87.50 | 1,047 | 0.661 | -0.074 | 0.023 | -0.018 | -16 | 902 |
| 19 | 82.50 | 1,069 | 0.588 | -0.049 | 0.013 | -0.005 | -5 | 921 |
| 18 | 77.50 | 1,091 | 0.519 | -0.023 | 0.008 | 0.009 | 9 | 940 |
| 17 | 72.50 | 1,113 | 0.454 | 0.000 | 0.006 | 0.022 | 21 | 959 |
| 16 | 67.50 | 1,134 | 0.394 | 0.020 | 0.007 | 0.033 | 32 | 977 |
| 15 | 62.50 | 1,156 | 0.337 | 0.036 | 0.009 | 0.041 | 41 | 996 |
| 14 | 57.50 | 1,178 | 0.286 | 0.048 | 0.014 | 0.045 | 46 | 1,015 |
| 13 | 54.00 | 477 | 0.252 | 0.055 | 0.017 | 0.047 | 20 | 411 |
| 12 | 51.50 | 1,271 | 0.229 | 0.059 | 0.020 | 0.048 | 53 | 1,095 |
| 11 | 48.42 | 1,358 | 0.202 | 0.062 | 0.023 | 0.048 | 57 | 1,170 |
| 10 | 45.92 | 445 | 0.182 | 0.065 | 0.026 | 0.048 | 19 | 383 |
| 9 | 42.50 | 1,228 | 0.156 | 0.067 | 0.029 | 0.048 | 51 | 1,058 |
| 8 | 37.50 | 1,249 | 0.121 | 0.070 | 0.034 | 0.047 | 51 | 1,077 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:13 PM

Customer: VERIZON WIRELESS

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 7 | 32.50 | 1,271 | 0.091 | 0.071 | 0.038 | 0.045 | 50 | 1,095 |
| 6 | 27.50 | 1,293 | 0.065 | 0.072 | 0.041 | 0.044 | 49 | 1,114 |
| 5 | 22.50 | 1,315 | 0.044 | 0.071 | 0.042 | 0.042 | 48 | 1,133 |
| 4 | 17.50 | 1,336 | 0.026 | 0.067 | 0.040 | 0.040 | 46 | 1,151 |
| 3 | 12.50 | 1,358 | 0.013 | 0.059 | 0.035 | 0.036 | 42 | 1,170 |
| 2 | 7.50 | 1,380 | 0.005 | 0.044 | 0.025 | 0.028 | 33 | 1,189 |
| 1 | 2.50 | 1,402 | 0.001 | 0.018 | 0.010 | 0.013 | 15 | 1,208 |
| 48" x 12" Panel | 150.00 | 270 | 1.944 | 2.275 | 1.245 | 0.404 | 94 | 233 |
| 72" x 12" Panel | 150.00 | 135 | 1.944 | 2.275 | 1.245 | 0.404 | 47 | 116 |
| Flat Platform w/ Han | 150.00 | 2,000 | 1.944 | 2.275 | 1.245 | 0.404 | 700 | 1,723 |
| 48" x 4" Panel | 133.00 | 180 | 1.528 | 0.572 | 0.577 | 0.162 | 25 | 155 |
| Flat Low Profile Pla | 133.00 | 1,500 | 1.528 | 0.572 | 0.577 | 0.162 | 211 | 1,292 |
| Ericsson KRY 112 144 | 125.00 | 66 | 1.350 | 0.195 | 0.382 | 0.083 | 5 | 57 |
| Ericsson AIR 21, 1.3 | 125.00 | 249 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 215 |
| Ericsson AIR 21, 1.3 | 125.00 | 244 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 211 |
| Round T-Arm | 125.00 | 750 | 1.350 | 0.195 | 0.382 | 0.083 | 54 | 646 |
| Alcatel-Lucent RRH2X | 115.00 | 129 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 111 |
| Alcatel-Lucent RRH2X | 115.00 | 132 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 114 |
| Alcatel-Lucent RRH2x | 115.00 | 170 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 147 |
| RFS DB-T1-6Z-8AB-0Z | 115.00 | 88 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 76 |
| Amphenol Antel BXA-7 | 115.00 | 102 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 88 |
| Commscope SBNHH- | 115.00 | 304 | 1.142 | -0.043 | 0.214 | 0.013 | 3 | 262 |
| Flat Low Profile Pla | 115.00 | 1,500 | 1.142 | -0.043 | 0.214 | 0.013 | 17 | 1,292 |
| Stand-Off | 97.00 | 75 | 0.813 | -0.114 | 0.058 | -0.031 | -2 | 65 |
| Antel BCD-87010 | 97.00 | 26 | 0.813 | -0.114 | 0.058 | -0.031 | -1 | 23 |
| DragonWave Horizon C | 90.00 | 21 | 0.700 | -0.087 | 0.030 | -0.023 | 0 | 18 |
| NextNet BTS-2500 | 90.00 | 105 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 90 |
| Argus LLPX310R | 90.00 | 86 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 74 |
| DragonWave A-ANT-18G | 90.00 | 54 | 0.700 | -0.087 | 0.030 | -0.023 | -1 | 47 |
| Side Arms | 90.00 | 560 | 0.700 | -0.087 | 0.030 | -0.023 | -11 | 482 |
| | | 40,766 | 51.224 | 13.207 | 14.163 | 3.607 | 2,237 | 35,124 |

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

| Segment | Height Above Base (ft) | Weight (lb) | a | b | c | Saz | Horizontal Force (lb) | Vertical Force (lb) |
|---------|------------------------|-------------|-------|--------|-------|--------|-----------------------|---------------------|
| 36 | 146.46 | 287 | 1.853 | 1.790 | 1.071 | 0.345 | 86 | 247 |
| 35 | 142.50 | 506 | 1.754 | 1.338 | 0.900 | 0.285 | 125 | 436 |
| 34 | 137.50 | 524 | 1.633 | 0.885 | 0.716 | 0.216 | 98 | 452 |
| 33 | 134.00 | 215 | 1.551 | 0.635 | 0.606 | 0.174 | 32 | 185 |
| 32 | 131.50 | 350 | 1.494 | 0.486 | 0.535 | 0.146 | 44 | 301 |
| 31 | 127.50 | 597 | 1.404 | 0.292 | 0.436 | 0.105 | 54 | 515 |
| 30 | 122.50 | 673 | 1.296 | 0.115 | 0.333 | 0.062 | 36 | 579 |
| 29 | 117.50 | 691 | 1.193 | -0.002 | 0.249 | 0.027 | 16 | 595 |
| 28 | 112.50 | 799 | 1.093 | -0.074 | 0.183 | 0.001 | 1 | 688 |
| 27 | 107.50 | 817 | 0.998 | -0.110 | 0.130 | -0.018 | -12 | 704 |
| 26 | 102.50 | 835 | 0.908 | -0.122 | 0.090 | -0.028 | -20 | 719 |
| 25 | 99.92 | 28 | 0.862 | -0.120 | 0.074 | -0.031 | -1 | 24 |
| 24 | 98.42 | 893 | 0.837 | -0.118 | 0.065 | -0.031 | -24 | 769 |
| 23 | 96.00 | 638 | 0.796 | -0.111 | 0.053 | -0.031 | -17 | 550 |
| 22 | 94.96 | 27 | 0.779 | -0.108 | 0.048 | -0.030 | -1 | 23 |
| 21 | 92.46 | 970 | 0.738 | -0.098 | 0.038 | -0.027 | -23 | 836 |
| 20 | 87.50 | 1,047 | 0.661 | -0.074 | 0.023 | -0.018 | -16 | 902 |
| 19 | 82.50 | 1,069 | 0.588 | -0.049 | 0.013 | -0.005 | -5 | 921 |
| 18 | 77.50 | 1,091 | 0.519 | -0.023 | 0.008 | 0.009 | 9 | 940 |
| 17 | 72.50 | 1,113 | 0.454 | 0.000 | 0.006 | 0.022 | 21 | 959 |
| 16 | 67.50 | 1,134 | 0.394 | 0.020 | 0.007 | 0.033 | 32 | 977 |
| 15 | 62.50 | 1,156 | 0.337 | 0.036 | 0.009 | 0.041 | 41 | 996 |
| 14 | 57.50 | 1,178 | 0.286 | 0.048 | 0.014 | 0.045 | 46 | 1,015 |
| 13 | 54.00 | 477 | 0.252 | 0.055 | 0.017 | 0.047 | 20 | 411 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:14 PM

Customer: VERIZON WIRELESS

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 12 | 51.50 | 1,271 | 0.229 | 0.059 | 0.020 | 0.048 | 53 | 1,095 |
| 11 | 48.42 | 1,358 | 0.202 | 0.062 | 0.023 | 0.048 | 57 | 1,170 |
| 10 | 45.92 | 445 | 0.182 | 0.065 | 0.026 | 0.048 | 19 | 383 |
| 9 | 42.50 | 1,228 | 0.156 | 0.067 | 0.029 | 0.048 | 51 | 1,058 |
| 8 | 37.50 | 1,249 | 0.121 | 0.070 | 0.034 | 0.047 | 51 | 1,077 |
| 7 | 32.50 | 1,271 | 0.091 | 0.071 | 0.038 | 0.045 | 50 | 1,095 |
| 6 | 27.50 | 1,293 | 0.065 | 0.072 | 0.041 | 0.044 | 49 | 1,114 |
| 5 | 22.50 | 1,315 | 0.044 | 0.071 | 0.042 | 0.042 | 48 | 1,133 |
| 4 | 17.50 | 1,336 | 0.026 | 0.067 | 0.040 | 0.040 | 46 | 1,151 |
| 3 | 12.50 | 1,358 | 0.013 | 0.059 | 0.035 | 0.036 | 42 | 1,170 |
| 2 | 7.50 | 1,380 | 0.005 | 0.044 | 0.025 | 0.028 | 33 | 1,189 |
| 1 | 2.50 | 1,402 | 0.001 | 0.018 | 0.010 | 0.013 | 15 | 1,208 |
| 48" x 12" Panel | 150.00 | 270 | 1.944 | 2.275 | 1.245 | 0.404 | 94 | 233 |
| 72" x 12" Panel | 150.00 | 135 | 1.944 | 2.275 | 1.245 | 0.404 | 47 | 116 |
| Flat Platform w/ Han | 150.00 | 2,000 | 1.944 | 2.275 | 1.245 | 0.404 | 700 | 1,723 |
| 48" x 4" Panel | 133.00 | 180 | 1.528 | 0.572 | 0.577 | 0.162 | 25 | 155 |
| Flat Low Profile Pla | 133.00 | 1,500 | 1.528 | 0.572 | 0.577 | 0.162 | 211 | 1,292 |
| Ericsson KRY 112 144 | 125.00 | 66 | 1.350 | 0.195 | 0.382 | 0.083 | 5 | 57 |
| Ericsson AIR 21, 1.3 | 125.00 | 249 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 215 |
| Ericsson AIR 21, 1.3 | 125.00 | 244 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 211 |
| Round T-Arm | 125.00 | 750 | 1.350 | 0.195 | 0.382 | 0.083 | 54 | 646 |
| Alcatel-Lucent RRH2X | 115.00 | 129 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 111 |
| Alcatel-Lucent RRH2X | 115.00 | 132 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 114 |
| Alcatel-Lucent RRH2x | 115.00 | 170 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 147 |
| RFS DB-T1-6Z-8AB-0Z | 115.00 | 88 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 76 |
| Amphenol Antel BXA-7 | 115.00 | 102 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 88 |
| Commscope SBNHH- | 115.00 | 304 | 1.142 | -0.043 | 0.214 | 0.013 | 3 | 262 |
| Flat Low Profile Pla | 115.00 | 1,500 | 1.142 | -0.043 | 0.214 | 0.013 | 17 | 1,292 |
| Stand-Off | 97.00 | 75 | 0.813 | -0.114 | 0.058 | -0.031 | -2 | 65 |
| Antel BCD-87010 | 97.00 | 26 | 0.813 | -0.114 | 0.058 | -0.031 | -1 | 23 |
| DragonWave Horizon C | 90.00 | 21 | 0.700 | -0.087 | 0.030 | -0.023 | 0 | 18 |
| NextNet BTS-2500 | 90.00 | 105 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 90 |
| Argus LLPX310R | 90.00 | 86 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 74 |
| DragonWave A-ANT-18G | 90.00 | 54 | 0.700 | -0.087 | 0.030 | -0.023 | -1 | 47 |
| Side Arms | 90.00 | 560 | 0.700 | -0.087 | 0.030 | -0.023 | -11 | 482 |
| | | 40,766 | 51.224 | 13.207 | 14.163 | 3.607 | 2,237 | 35,124 |

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) |
|---------|------------------------|-------------|-------|--------|-------|--------|-----------------------|---------------------|
| 36 | 146.46 | 287 | 1.853 | 1.790 | 1.071 | 0.345 | 86 | 247 |
| 35 | 142.50 | 506 | 1.754 | 1.338 | 0.900 | 0.285 | 125 | 436 |
| 34 | 137.50 | 524 | 1.633 | 0.885 | 0.716 | 0.216 | 98 | 452 |
| 33 | 134.00 | 215 | 1.551 | 0.635 | 0.606 | 0.174 | 32 | 185 |
| 32 | 131.50 | 350 | 1.494 | 0.486 | 0.535 | 0.146 | 44 | 301 |
| 31 | 127.50 | 597 | 1.404 | 0.292 | 0.436 | 0.105 | 54 | 515 |
| 30 | 122.50 | 673 | 1.296 | 0.115 | 0.333 | 0.062 | 36 | 579 |
| 29 | 117.50 | 691 | 1.193 | -0.002 | 0.249 | 0.027 | 16 | 595 |
| 28 | 112.50 | 799 | 1.093 | -0.074 | 0.183 | 0.001 | 1 | 688 |
| 27 | 107.50 | 817 | 0.998 | -0.110 | 0.130 | -0.018 | -12 | 704 |
| 26 | 102.50 | 835 | 0.908 | -0.122 | 0.090 | -0.028 | -20 | 719 |
| 25 | 99.92 | 28 | 0.862 | -0.120 | 0.074 | -0.031 | -1 | 24 |
| 24 | 98.42 | 893 | 0.837 | -0.118 | 0.065 | -0.031 | -24 | 769 |
| 23 | 96.00 | 638 | 0.796 | -0.111 | 0.053 | -0.031 | -17 | 550 |
| 22 | 94.96 | 27 | 0.779 | -0.108 | 0.048 | -0.030 | -1 | 23 |
| 21 | 92.46 | 970 | 0.738 | -0.098 | 0.038 | -0.027 | -23 | 836 |
| 20 | 87.50 | 1,047 | 0.661 | -0.074 | 0.023 | -0.018 | -16 | 902 |
| 19 | 82.50 | 1,069 | 0.588 | -0.049 | 0.013 | -0.005 | -5 | 921 |
| 18 | 77.50 | 1,091 | 0.519 | -0.023 | 0.008 | 0.009 | 9 | 940 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:14 PM

Customer: VERIZON WIRELESS

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 17 | 72.50 | 1,113 | 0.454 | 0.000 | 0.006 | 0.022 | 21 | 959 |
| 16 | 67.50 | 1,134 | 0.394 | 0.020 | 0.007 | 0.033 | 32 | 977 |
| 15 | 62.50 | 1,156 | 0.337 | 0.036 | 0.009 | 0.041 | 41 | 996 |
| 14 | 57.50 | 1,178 | 0.286 | 0.048 | 0.014 | 0.045 | 46 | 1,015 |
| 13 | 54.00 | 477 | 0.252 | 0.055 | 0.017 | 0.047 | 20 | 411 |
| 12 | 51.50 | 1,271 | 0.229 | 0.059 | 0.020 | 0.048 | 53 | 1,095 |
| 11 | 48.42 | 1,358 | 0.202 | 0.062 | 0.023 | 0.048 | 57 | 1,170 |
| 10 | 45.92 | 445 | 0.182 | 0.065 | 0.026 | 0.048 | 19 | 383 |
| 9 | 42.50 | 1,228 | 0.156 | 0.067 | 0.029 | 0.048 | 51 | 1,058 |
| 8 | 37.50 | 1,249 | 0.121 | 0.070 | 0.034 | 0.047 | 51 | 1,077 |
| 7 | 32.50 | 1,271 | 0.091 | 0.071 | 0.038 | 0.045 | 50 | 1,095 |
| 6 | 27.50 | 1,293 | 0.065 | 0.072 | 0.041 | 0.044 | 49 | 1,114 |
| 5 | 22.50 | 1,315 | 0.044 | 0.071 | 0.042 | 0.042 | 48 | 1,133 |
| 4 | 17.50 | 1,336 | 0.026 | 0.067 | 0.040 | 0.040 | 46 | 1,151 |
| 3 | 12.50 | 1,358 | 0.013 | 0.059 | 0.035 | 0.036 | 42 | 1,170 |
| 2 | 7.50 | 1,380 | 0.005 | 0.044 | 0.025 | 0.028 | 33 | 1,189 |
| 1 | 2.50 | 1,402 | 0.001 | 0.018 | 0.010 | 0.013 | 15 | 1,208 |
| 48" x 12" Panel | 150.00 | 270 | 1.944 | 2.275 | 1.245 | 0.404 | 94 | 233 |
| 72" x 12" Panel | 150.00 | 135 | 1.944 | 2.275 | 1.245 | 0.404 | 47 | 116 |
| Flat Platform w/ Han | 150.00 | 2,000 | 1.944 | 2.275 | 1.245 | 0.404 | 700 | 1,723 |
| 48" x 4" Panel | 133.00 | 180 | 1.528 | 0.572 | 0.577 | 0.162 | 25 | 155 |
| Flat Low Profile Pla | 133.00 | 1,500 | 1.528 | 0.572 | 0.577 | 0.162 | 211 | 1,292 |
| Ericsson KRY 112 144 | 125.00 | 66 | 1.350 | 0.195 | 0.382 | 0.083 | 5 | 57 |
| Ericsson AIR 21, 1.3 | 125.00 | 249 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 215 |
| Ericsson AIR 21, 1.3 | 125.00 | 244 | 1.350 | 0.195 | 0.382 | 0.083 | 18 | 211 |
| Round T-Arm | 125.00 | 750 | 1.350 | 0.195 | 0.382 | 0.083 | 54 | 646 |
| Alcatel-Lucent RRH2X | 115.00 | 129 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 111 |
| Alcatel-Lucent RRH2X | 115.00 | 132 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 114 |
| Alcatel-Lucent RRH2x | 115.00 | 170 | 1.142 | -0.043 | 0.214 | 0.013 | 2 | 147 |
| RFS DB-T1-6Z-8AB-0Z | 115.00 | 88 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 76 |
| Amphenol Antel BXA-7 | 115.00 | 102 | 1.142 | -0.043 | 0.214 | 0.013 | 1 | 88 |
| Commscope SBNHH- | 115.00 | 304 | 1.142 | -0.043 | 0.214 | 0.013 | 3 | 262 |
| Flat Low Profile Pla | 115.00 | 1,500 | 1.142 | -0.043 | 0.214 | 0.013 | 17 | 1,292 |
| Stand-Off | 97.00 | 75 | 0.813 | -0.114 | 0.058 | -0.031 | -2 | 65 |
| Antel BCD-87010 | 97.00 | 26 | 0.813 | -0.114 | 0.058 | -0.031 | -1 | 23 |
| DragonWave Horizon C | 90.00 | 21 | 0.700 | -0.087 | 0.030 | -0.023 | 0 | 18 |
| NextNet BTS-2500 | 90.00 | 105 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 90 |
| Argus LLPX310R | 90.00 | 86 | 0.700 | -0.087 | 0.030 | -0.023 | -2 | 74 |
| DragonWave A-ANT-18G | 90.00 | 54 | 0.700 | -0.087 | 0.030 | -0.023 | -1 | 47 |
| Side Arms | 90.00 | 560 | 0.700 | -0.087 | 0.030 | -0.023 | -11 | 482 |
| | | 40,766 | 51.224 | 13.207 | 14.163 | 3.607 | 2,237 | 35,124 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:14 PM

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 | 30.60 | 0.00 | 48.87 | 0.00 | 0.00 | 3142.63 | 0.00 | 0.64 |
| 0.9D + 1.6W | 29.41 | 0.00 | 36.65 | 0.00 | 0.00 | 3022.71 | 0.00 | 0.61 |
| 1.2D + 1.0Di + 1.0Wi | 9.09 | 0.00 | 96.94 | 0.00 | 0.00 | 946.05 | 0.00 | 0.21 |
| (1.2 + 0.2Sds) * DL + E ELFM | 1.51 | 0.00 | 45.77 | 0.00 | 0.00 | 161.57 | 0.00 | 0.04 |
| (1.2 + 0.2Sds) * DL + E EMAM | 1.38 | 0.00 | 45.77 | 0.00 | 0.00 | 128.40 | 0.00 | 0.04 |
| (0.9 - 0.2Sds) * DL + E ELFM | 1.51 | 0.00 | 31.84 | 0.00 | 0.00 | 160.18 | 0.00 | 0.04 |
| (0.9 - 0.2Sds) * DL + E EMAM | 1.38 | 0.00 | 31.84 | 0.00 | 0.00 | 127.27 | 0.00 | 0.03 |
| 1.0D + 1.0W | 7.33 | 0.00 | 40.76 | 0.00 | 0.00 | 756.24 | 0.00 | 0.16 |

Site Number: 302466

Code: ANSI/TIA-222-G

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Site Name: West Service Road, CT

Engineering Number: 631495KK2

12/2/2015 2:16:14 PM

Customer: VERIZON WIRELESS

Base Summary

Reactions

| Original Design | | | Analysis | | | |
|-----------------|-------------|-------------|-----------------|-------------|-------------|-----------------|
| Moment (kip-ft) | Axial (kip) | Shear (kip) | Moment (kip-ft) | Axial (kip) | Shear (kip) | Moment Design % |
| 3,969.00 | 39.50 | 29.40 | 3,142.63 | 96.94 | 30.60 | 58.65 |

Base Plate

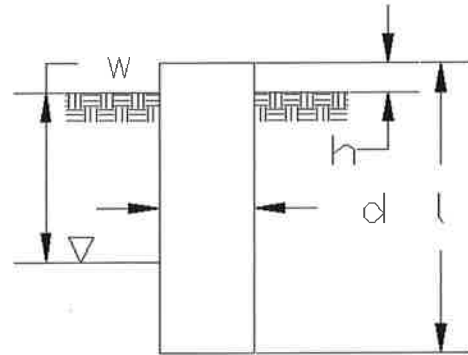
| Yield (ksi) | Thick (in) | Width (in) | Style | Poly Sides | Clip Len (in) | Effective Len (in) | Mu (kip-in) | Phi Mn (kip-in) | Ratio |
|-------------|------------|------------|-------|------------|---------------|--------------------|-------------|-----------------|-------|
| 60.0 | 2.500 | 69.000 | Round | 0 | 0.00 | 11.224 | 499.85 | 946.99 | 0.53 |

Anchor Bolts

| Bolt Circle | Num Bolts | Bolt Type | Bolt Dia (in) | Yield (ksi) | Ultimate (ksi) | Arrange | Cluster Dist (in) | Start Angle (deg) | Compression | | | Tension | | |
|-------------|-----------|-----------|---------------|-------------|----------------|---------|-------------------|-------------------|-------------|-------------|-------|-------------|-------------|-------|
| | | | | | | | | | Force (kip) | Allow (kip) | Ratio | Force (kip) | Allow (kip) | Ratio |
| 63.00 | 16 | 2.25" 18J | 2.25 | 75.00 | 100.00 | Radial | 0.00 | 0.0 | 155.71 | 260.00 | 0.61 | 143.59 | 260.00 | 0.57 |

Site Name: West Service Road, CT
 Site Number: 302466
 Engineer: T. Gatling
 Engineering Number: 63149521
 Date: 09/01/15

Program Last Updated: 5/13/2014
 American Tower Corporation



Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Analyze or Design a Foundation? Analyze
 Foundation Mapped: N
 Moment (M): 3142.6 k-ft
 Shear/Leg (V): 30.6 k
 Axial Load (P): 48.9 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d):
 Caisson Embedment (L-h):
 Caisson Height Above Ground (h):
 Depth Below Ground Surface to Water Table (w):
 Unit Weight of Concrete:
 Unit Weight of Water:
 Tension Skin Friction/Compression Skin Friction:
 Pullout Angle:

7.0 ft
 33.5 ft
 0.5 ft
 7.5 ft
 150.0 pcf
 62.4 pcf
 1.00
 30.0 degrees

Engineer Notes

Soil Mechanical Properties

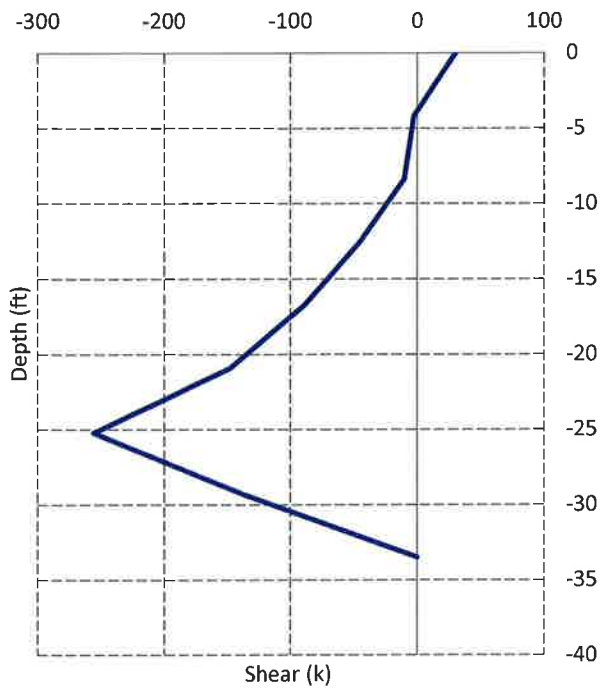
| Depth (ft) | | γ_{Soil} | Cohesion | ϕ | Ultimate Skin | Ultimate Bearing |
|------------|--------|------------------------|----------|----------|----------------|------------------|
| Top | Bottom | (pcf) | (psf) | (degree) | Friction (psf) | Pressure (psf) |
| 0.0 | 5.0 | 100 | 0 | 0 | 0 | 0 |
| 5.0 | 14.0 | 120 | 0 | 30 | 338 | 0 |
| 14.0 | 19.0 | 110 | 0 | 33 | 588 | 0 |
| 19.0 | 34.5 | 120 | 0 | 43 | 1040 | 19048 |

Required Embedment: 22.3 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 1308.5 ft³ = 48.5 yd³
 Weight of Concrete (Buoyancy Effect Considered): 133.8 k
 Average Soil Unit Weight: 67.1 pcf
 Skin Friction Resistance: 463.2 k
 Compressive Bearing Resistance: 733.1 k
 Pullout Weight (Minus Concrete Weight): 1358.5 k
 Nominal Uplift Capacity per Leg ($\phi_s T_n$): 447.8 k
 Nominal Compressive Capacity per Leg ($\phi_s P_n$): 897.2 k
 P_u : 102.2 k
 $T_u / \phi_s T_n$: 0.00 Result: OK
 $P_u / \phi_s P_n$: 0.11 Result: OK
 Total Lateral Resistance: 3149.5 k
 Inflection Point (Below Ground Surface): 25.2 ft
 Design Overturning Moment At Inflection Point (M_D): 3929.4 k-ft
 Nominal Moment Capacity ($\phi_s M_n$): 13292.2 k-ft
 $M_D / \phi_s M_n$: 0.30 Result: OK
 ϕ_s : 0.75

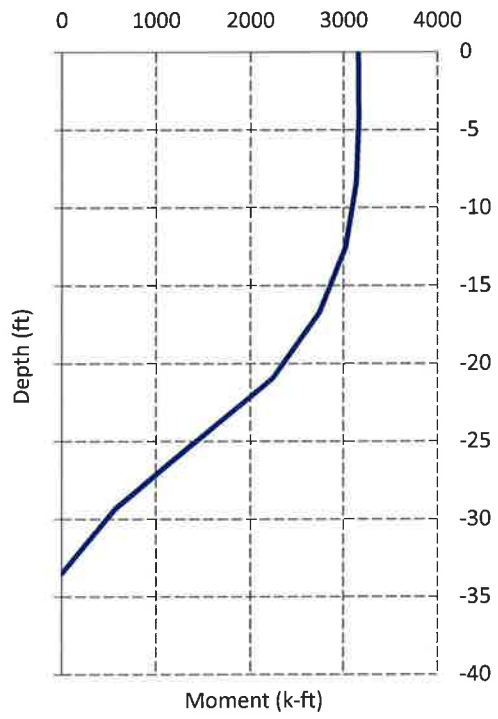
Caisson Strength Capacity

| | |
|--|--|
| Concrete Compressive Strength (f'_c): | 3000 psi |
| Vertical Steel Rebar Size #: | 11 |
| Vertical Steel Rebar Area: | 1.56 in ² |
| # of Vertical Steel Rebars: | 21 |
| Vertical Steel Rebar Yield Strength (F_y): | 60 ksi |
| Horizontal Tie / Stirrup Size #: | 5 |
| Horizontal Tie / Stirrup Area: | 0.31 in ² |
| Design Horizontal Tie / Stirrup Spacing: | 18.0 in |
| Horizontal Tie / Stirrup Steel Yield Strength (F_y): | 40 ksi |
| Rebar Cage Diameter: | 76.0 in |
| Strength Bending/Tension Reduction Factor (ϕ_B): | 0.90 ACI318-05 - 9.3.2.1 |
| Strength Shear Reduction Factor (ϕ_V): | 0.75 ACI318-05 - 9.3.2.3 |
| Strength Compression Reduction Factor (ϕ_P): | 0.65 ACI318-05 - 9.3.2.2 |
| Steel Elastic Modulus: | 29000 ksi |
| Design Moment (M_u): | 3163.0 k-ft |
| Nominal Moment Capacity ($\phi_B M_n$): | 4963.4 k-ft - ACI318-005 - 10.2 |
| $M_u / \phi_B M_n$: | 0.64 Result: OK |
| Design Shear (V_u): | 256.0 k |
| Nominal Shear Capacity ($\phi_V V_n$): | 457.3 k - ACI318-05 - 11.3.1.1 or 11.5.7.2 |
| $V_u / \phi_V V_n$: | 0.56 Result: OK |
| Design Tension (T_u): | 0.0 k |
| Nominal Tension Capacity ($\phi_T T_n$): | 1769.0 k - ACI318-05 - 10.2 |
| $T_u / \phi_T T_n$: | 0.00 Result: OK |
| Design Compression (P_u): | 102.2 k |
| Nominal Compression Capacity ($\phi_P P_n$): | 7304.9 k - ACI318-05 - 10.3.6.2 |
| $P_u / \phi_P P_n$: | 0.01 Result: OK |
| Bending Reinforcement Ratio: | 0.006 ACI318-05 - 10.8.4 & 10.9.1 |
| $M_u / \phi_B M_n + T_u / \phi_T T_n$: | 0.64 Result: OK |

Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads

