



Alex Murshteyn, Site Acquisition Consultant  
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February 23, 2018

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

**RE: Notice of Exempt Modification // Site: Madison 2 CT (ATC: 302540)  
8 Old Route 79, Madison, CT 06443  
N 41.2855 // W -72.6013**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 6 antennas at the 140-foot mount on the existing 148-foot monopole tower, located at 8 Old Route 79, Madison, CT (aka 8 Meeting House Lane to Verizon). The Council approved Verizon Wireless shared use of the existing tower in 2000. The tower is owned by American Tower. The revenue stream at the property is owned by the Town of Madison its original owner and CK Builders LLC now owns the land. Verizon Wireless presently intends to remove three (3) of its antennas and replace with six (6) newer JAHH-65B-R3B models installed in pairs on side-by-side mounts, including 700/850/1900/2100 MHz replacements for its PCS/AWS/LTE upgrade. Additionally, Verizon Wireless will relocate three (3) remote radio heads (RRHs) on the ground inside its shelter, and upgrade all of its RRHs on the tower thereby installing nine (9) new RRHs thereon; while updating certain leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

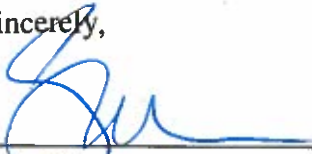
Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Tom Banisch, First Selectman for the Town of Madison, which is also the original landowner, continuing ground lessor and revenue stream holder, its Town Planner David Anderson, including for the Planning & Zoning Commission, American Tower, the tower owner and the underlying property owner, CK Builders LLC.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are specifications for all new and replacement Verizon Wireless tower equipment, a structural analysis dated February 16, 2018 by Tower Engineering Professionals, Inc. and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by Tower Engineering Professionals, Inc. dated February 16, 2018.

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

Sincerely,



Alex Murshteyn, Site Acquisition Consultant  
c/o Cellco Partnership d/b/a Verizon Wireless  
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Raynham, MA 02767  
Mobile: (508) 821-0159  
[AMurshteyn@centerlinecommunications.com](mailto:AMurshteyn@centerlinecommunications.com)

#### Attachments

cc: Tom Banisch, First Selectman - as elected official c/o original landowner - 1Z9Y45030321823997  
David Anderson, Town Planner - as P&Z official - 1Z9Y45030333030606  
American Tower Corporation - as tower owner - 1Z9Y45030332830217  
CK Builders LLC - as property owner - 1Z9Y45030332122821



## JAHH-65B-R3B

8-port sector antenna, 2x 698-787, 2x 824-894 and 4x 1695-2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB (Port 5).

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

### Electrical Specifications

| Frequency Band, MHz                  | 698-787    | 824-894    | 1695-1880  | 1850-1990  | 1920-2200  | 2300-2360  |
|--------------------------------------|------------|------------|------------|------------|------------|------------|
| Gain, dBi                            | 14.5       | 15.8       | 18.0       | 18.4       | 18.5       | 18.8       |
| Beamwidth, Horizontal, degrees       | 67         | 65         | 63         | 63         | 65         | 68         |
| Beamwidth, Vertical, degrees         | 12.4       | 10.5       | 5.7        | 5.2        | 4.9        | 4.4        |
| Beam Tilt, degrees                   | 2-14       | 2-14       | 0-10       | 0-10       | 0-10       | 0-10       |
| USLS (First Lobe), dB                | 18         | 18         | 20         | 20         | 21         | 23         |
| Front-to-Back Ratio at 180°, dB      | 32         | 34         | 31         | 35         | 36         | 38         |
| 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\*

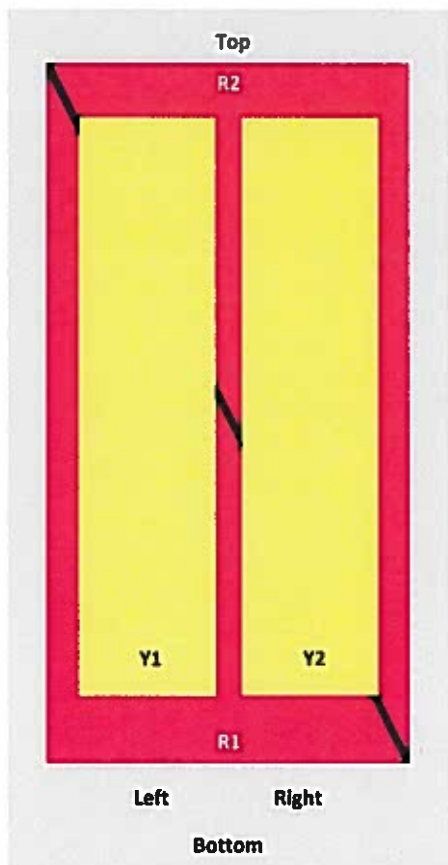
| Frequency Band, MHz                         | 698-787     | 824-894     | 1695-1880   | 1850-1990   | 1920-2200   | 2300-2360   |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Gain by all Beam Tilts, average, dBi        | 14.3        | 14.9        | 17.6        | 18.1        | 18.2        | 18.5        |
| Gain by all Beam Tilts Tolerance, dB        | ±0.3        | ±0.5        | ±0.6        | ±0.4        | ±0.5        | ±0.6        |
| Gain by Beam Tilt, average, dBi             | 2 °   14.3  | 2 °   15.0  | 0 °   17.2  | 0 °   17.6  | 0 °   17.7  | 0 °   17.9  |
| Gain by Beam Tilt, average, dBi             | 8 °   14.3  | 8 °   14.9  | 5 °   17.6  | 5 °   18.2  | 5 °   18.3  | 5 °   18.7  |
| Gain by Beam Tilt, average, dBi             | 14 °   14.3 | 14 °   15.4 | 10 °   17.6 | 10 °   18.2 | 10 °   18.3 | 10 °   18.7 |
| Beamwidth, Horizontal Tolerance, degrees    | ±1.2        | ±1.4        | ±4          | ±2.4        | ±2.9        | ±2.7        |
| Beamwidth, Vertical Tolerance, degrees      | ±0.9        | ±0.5        | ±0.3        | ±0.2        | ±0.3        | ±0.1        |
| USLS, beampeak to 20° above beampeak, dB    | 18          | 17          | 17          | 18          | 19          | 18          |
| Front-to-Back Total Power at 180° ± 30°, dB | 25          | 24          | 26          | 29          | 27          | 29          |
| CPR at Boresight, dB                        | 22          | 23          | 20          | 21          | 21          | 24          |
| CPR at Sector, dB                           | 11          | 12          | 11          | 11          | 11          | 8           |

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

### Array Layout

JAHH-65B-R3B

JAHH-65A-R3B JAHH-65B-R3B JAHH-65C-R3B



| Array | Freq (MHz) | Cones | RET (SRET) | AISG RET CID     |
|-------|------------|-------|------------|------------------|
| R1    | 698-787    | 1-2   | 1          | ANXXXXXXXXXXXXX1 |
| R2    | 824-894    | 3-4   | 2          | ANXXXXXXXXXXXXX2 |
| Y1    | 1695-2360  | 5-6   | 3          | ANXXXXXXXXXXXXX3 |
| Y2    | 1695-2360  | 7-8   |            |                  |

View from the front of the antenna

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

## General Specifications

|                          |   |
|--------------------------|---|
| Operating Frequency Band | 1695 – 2360 MHz   698 – 787 MHz   824 – 894 MHz |
| Antenna Type             | Sector  |
| Band                     | Multiband                                       |
| Performance Note         | Outdoor usage                                   |

## Mechanical Specifications

|                                  |               |
|----------------------------------|---------------|
| RF Connector Quantity, total     | 8             |
| RF Connector Quantity, low band  | 4             |
| RF Connector Quantity, high band | 4             |
| RF Connector Interface           | 4.3-10 Female |
| Color                            | Light gray    |

JAHH65BR3B

|                       |  |
|-----------------------|--|
| Grounding Type        | RF connector body grounded to reflector and mounting bracket |
| Radiator Material     | Aluminum   Low loss circuit board                            |
| Radome Material       | Fiberglass, UV resistant                                     |
| Reflector Material    | Aluminum   |
| RF Connector Location | Bottom   |
| Wind Loading, frontal | 746.0 N @ 150 km/h<br>167.7 lbf @ 150 km/h                   |
| Wind Loading, lateral | 243.0 N @ 150 km/h<br>54.6 lbf @ 150 km/h                    |
| Wind Loading, rear    | 776.0 N @ 150 km/h<br>174.5 lbf @ 150 km/h                   |
| Wind Speed, maximum   | 241 km/h   150 mph   |

## Dimensions

|                                  |                     |
|----------------------------------|---------------------|
| Length                           | 1828.0 mm   72.0 in |
| Width                            | 350.0 mm   13.8 in  |
| Depth                            | 208.0 mm   8.2 in   |
| Net Weight, without mounting kit | 28.7 kg   63.3 lb   |

## Remote Electrical Tilt (RET) Information

|   |                                   |
|---|-----------------------------------|
| Input Voltage                                 | 10–30 Vdc                         |
| Internal Bias Tee                             | Port 1   Port 5                   |
| Internal RET                                  | High band (1)   Low band (2)      |
| Power Consumption, idle state, maximum        | 2.0 W                             |
| Power Consumption, normal conditions, maximum | 13.0 W                            |
| Protocol                                      | 3GPP/AISG 2.0 (Single RET)        |
| RET Interface                                 | 8-pin DIN Female   8-pin DIN Male |
| RET Interface, quantity                       | 2 female   2 male                 |

## Packed Dimensions

|                 |                     |
|-----------------|---------------------|
| Length          | 1975.0 mm   77.8 in |
| Width           | 456.0 mm   18.0 in  |
| Depth           | 357.0 mm   14.1 in  |
| Shipping Weight | 42.0 kg   92.6 lb   |

## Regulatory Compliance/Certifications

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



JAHH-65BR3B

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## Included Products

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

## \* Footnotes

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Performance Note      Severe environmental conditions may degrade optimum performance



## BSAMNT-1

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

### General Specifications

|                  |                     |
|------------------|---------------------|
| Application      | Outdoor             |
| Includes         | Brackets   Hardware |
| Package Quantity | 1                   |

### Mechanical Specifications

|               |                  |
|---------------|------------------|
| Color         | Silver           |
| Material Type | Galvanized steel |

### Dimensions

|                              |                   |
|------------------------------|-------------------|
| Compatible Diameter, maximum | 115.0 mm   4.5 in |
| Compatible Diameter, minimum | 60.0 mm   2.4 in  |
| Net Weight                   | 6.0 kg   13.3 lb  |

### Regulatory Compliance/Certifications

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





## AirScale RRH 4T4R B5 160W AHCA

Capacity, performance, low total cost of ownership and investment protection

Nokia AirScale Remote Radio Head (RRH) AHCA supports band 5 - full band - along with 4x4 MIMO and 256QAM modulation to deliver higher data rates. It offers Nokia's unique book mounting for faster roll out and radio-integrated Passive Intermodulation (PIM) cancellation for enhanced network performance.

Furthermore, 4TX and 4RX paths in a single radio unit gives the flexibility to support 2T2R-2 sectors or 4T4R-single sector from a single unit, for cost-effective scaling of both coverage and capacity.

### Capacity and performance

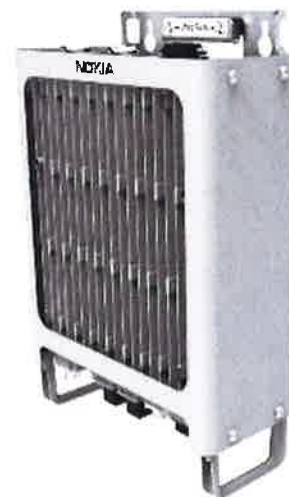
AirScale RRH 4T4R delivers 160 W (4x40 W) transmit power and can support 2x2 MIMO, 4x2 MIMO and 4x4 MIMO. The radio supports 256 QAM modulation in the downlink (DL) for up to 30 percent higher throughput. The Virtual Spectrum Analyzer feature enables both uplink and downlink spectrum to be analyzed.

### Low total cost of ownership

With up to two sectors in a single radio, light weight and zero-bolt book mounting, AirScale RRH 4T4R allows operators to achieve faster roll outs and more cost-effective installation and maintenance of radios and tower space.

### Investment protection

AirScale RRH 4T4R complements the AirScale System Module, offering a complete base station solution that is software upgradeable to 5G. AirScale System



Module offers 28 Gbps capacity that can be further enhanced by chaining more modules or through Cloud RAN. AirScale RRH is part of the AirScale Base Station portfolio, the next generation Nokia base station platform, and is backwards-compatible with the Nokia Flexi Multiradio 10 Base Station to best use an operator's existing investments.



| Product name                           | AirScale RRH 4T4R B5 160W AHCA - 473966A   |
|--|--|
| Supported frequency bands              | 3GPP band 5  |
| Frequencies                            | DL 869-894MHz, UL 824-849MHz   |
| Number of TX/RX ports                  | 4/4  |
| Instantaneous Bandwidth IBW            | 25MHz  |
| Occupied Bandwidth OBW                 | 25MHz  |
| Output power                           | 4T4R 40 W/ 2T4R 60W  |
| Dimensions (mm) height x width x depth | 337 x 295 x 165  |
| Volume (liters)                        | 16.4   |
| Weight (kg)                            | 16   |
| Supply Voltage / Voltage Range         | DC-48V / -36V to -60V  |
| Typical Power Consumption              | 207 W (ETSI 24h Avg – 4x20W mode)  |
| Antenna ports                          | 4TX/4RX, 4.3-10+   |
| Optical ports                          | 2 x CPRI 9.8 Gbps  |
| ALD control interfaces                 | AISG3.0 from ANT1, 2, 3, 4 and RET<br>(Power supply ANT1 and ANT3)                         |
| Other interfaces                       | External alarm MDR-26 serial connector (4 inputs, 1 output)<br>DC circular power connector |
| Operational temperature range          | -40°C to 55°C (with no solar load)   |
| Ingress protection class               | IP65   |
| Installation options                   | Pole or wall, RAS, vertical or horizontal book mount                                       |
| Surge protection                       | Class II 5kA   |

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Tel. +358 (0) 10 44 88 000

Product code: SR1611002341EN (April)

Alcatel-Lucent Remote Radio Head B25 RRH 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 B25 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30-4R 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, LTE carriers from 3MHz up to 20MHz and up to 65MHz instantaneous bandwidth.

The Alcatel-Lucent B25 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 B25 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.

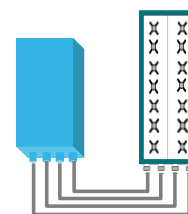


### FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 3, 5, 10, 15 or 20MHz LTE carrier with 4Rx Diversity
- Up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- 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 PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency 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                     |   |
|--|---|
| <b>Number of TX/RX paths</b>               | 4 duplexed (either 4T4R or 2T4R by SW)  |
| <b>Frequency band</b>                      | PCS-G (3GPP bands 2 & 25):<br>DL: 1930 - 1995 MHz / UL: 1850 - 1915 MHz                     |
| <b>Instantaneous bandwidth - #carriers</b> | 65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)                                  |
| <b>LTE carrier bandwidth</b>               | 3, 5, 10, 15 or 20 MHz  |
| <b>RF output power</b>                     | 2x60W or 4x30W (by SW)  |
| <b>Noise figure – RX Diversity scheme</b>  | 2.5 dB typ. (<3 dB max) – 2 or 4 way Rx diversity   |
| <b>Sizes (HxWxD) in mm (in.)</b>           | 544 x 305 x 184 (21.4" x 12.0" x 7.2") (with solar shield)                                  |
| <b>Volume in L</b>                         | 30.5 (with solar shield)  |
| <b>Weight in kg (lb) (w/o mounting HW)</b> | 23 (51) (with solar shield)   |
| <b>DC voltage range</b>                    | -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption         |
| <b>DC power consumption</b>                | 520W typical @100% RF load  |
| <b>Environmental conditions</b>            | -40°C (-40°F) / +55°C (+131°F)<br>IP65  |
| <b>Wind load (@150km/h or 93mph)</b>       | Frontal:<200N / Lateral :<150N  |
| <b>Antenna ports</b>                       | 4 ports 7/16 DIN female (50 ohms)<br>VSWR < 1.5   |
| <b>CPRI ports</b>                          | 2 CPRI ports (HW ready for Rate7, 9.8 Gbps)<br>SFP single mode dual fiber                   |
| <b>AISG interfaces</b>                     | 1 AISG2.0 output (RS485)<br>Integrated Smart Bias Tees (x2)                                 |
| <b>Misc. Interfaces</b>                    | 4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins) |
| <b>Installation conditions</b>             | Pole and wall mounting  |
| <b>Regulatory compliance</b>               | 3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27          |

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# ALCATEL-LUCENT B66A RRH4X45

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

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

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



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

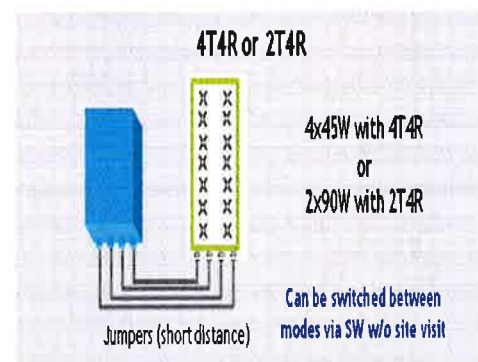
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

## FEATURES

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

## BENEFITS

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



## TECHNICAL SPECIFICATIONS

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

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This report was prepared for American Tower Corporation by



**T O W E R**  
**E N G I N E E R I N G**  
**P R O F E S S I O N A L S**

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## Structural Analysis Report

**Structure** : 148 ft Monopole  
**ATC Site Name** : Madison CT 6, CT  
**ATC Site Number** : 302540  
**Engineering Number** : OAA724329\_C3\_01  
**Proposed Carrier** : Verizon Wireless  
**Carrier Site Name** : Madison 2 CT  
**Carrier Site Number** : PSCL# 117597 / FUZE# 2556278  
**Site Location** : 8 Old 79  
Madison, CT 06443-2685  
41.285500,-72.601300  
**County** : New Haven  
**Date** : February 16, 2018  
**Max Usage** : 50%  
**Result** : Pass

Prepared By:  
Zac Mueller  
TEP

Reviewed By:



COA: PEC.0001553



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft monopole to reflect the change in loading by Verizon Wireless.

## Supporting Documents

|                            |   |
|----------------------------|---|
| <b>Tower Drawings</b>      | Summit, PJF Job #29299-729, dated November 12, 1999                                   |
| <b>Foundation Drawing</b>  | Spectrasite Project #F301896.00, dated August 13, 2003                                |
| <b>Geotechnical Report</b> | Dr. Clarence Welti, P.E., P.C., Site: Madison Police Station, dated November 19, 1999 |

## Analysis

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

|                                 |   |
|---------------------------------|---|
| <b>Basic Wind Speed:</b>        | 101 mph (3-Second Gust $V_{nsc}$ ) / 130 mph (3-Second Gust $V_{ult}$ ) |
| <b>Basic Wind Speed w/ Ice:</b> | 50 mph (3-Second Gust) w/ 3/4" radial ice concurrent                    |
| <b>Code:</b>                    | ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code        |
| <b>Structure Class:</b>         | II  |
| <b>Exposure Category:</b>       | B   |
| <b>Topographic Category:</b>    | 1   |
| <b>Spectral Response:</b>       | $S_s = 0.17, S_1 = 0.06$  |
| <b>Site Class:</b>              | D - Stiff Soil  |

## Conclusion

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

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



**Existing and Reserved Equipment**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna   | Mount Type                         | Lines  | Carrier       |
|-----------------------------|-------|-----|---|------------------------------------|--|---------------|
| Mount                       | RAD   |     |   |                                    |  |               |
| 148.0                       | 157.0 | 1   | 18' Dipole                                      | Low Profile Platform               | (12) 1 1/4" Coax<br>(5) 7/8" Coax  | Other         |
|                             | 153.0 | 1   | 8' Omni   |                                    |  |               |
|                             | 152.0 | 1   | 6' Dipole                                       |                                    |  |               |
|                             | 149.0 | 12  | 48" x 12" Panel                                 |                                    |  | Sprint Nextel |
| 140.0                       | 140.0 | 3   | Nokia B5 RRH4x40-850                            | Low Profile Platform               | (11) 1 5/8" Coax<br>(2) 1 5/8" Fiber   | Verizon       |
|                             |       | 2   | RFS DB-T1-6Z-8AB-0Z                             |                                    |  |               |
|                             |       | 2   | Andrew LNX-8513DS-A1M                           |                                    |  |               |
|                             |       | 1   | Commscope LNX-6514DS-A1M                        |                                    |  |               |
|                             |       | 6   | Commscope JAHH-65B-R3B                          |                                    |  |               |
| 138.0                       | 138.0 | 3   | Ericsson RRUS 11 (Band 12) (55 lb)              | Collar                             | -  |               |
|                             |       | 1   | Raycap DC6-48-60-18-8F ("Squid")                |                                    |  |               |
|                             |       | 3   | Ericsson RRUS-12 B2                             |                                    |  |               |
| 135.0                       | 135.0 | 6   | Powerwave LGP13519                              | Low Profile Platform w/<br>Kickers | (2) 3" Conduit<br>(12) 1 5/8" Coax<br>(2) 0.78" 8 AWG 6<br>(1) 0.39" Fiber Trunk | AT&T Mobility |
|                             |       | 6   | Powerwave TT19-08BP111-001                      |                                    |  |               |
|                             |       | 3   | Ericsson RRUS A2 B2                             |                                    |  |               |
|                             |       | 6   | Powerwave 7770.00                               |                                    |  |               |
|                             |       | 3   | Commscope SBNHH-1D65A                           |                                    |  |               |
| 121.0                       | 121.0 | 4   | Ericsson KRY 112 144/1                          | Low Profile Platform               | (16) 1 5/8" Coax<br>(1) 1 1/4" Hybriflex   | T-Mobile      |
|                             |       | 4   | Ericsson AIR 21, 1.3M, B2A B4P                  |                                    |  |               |
|                             |       | 4   | Ericsson AIR 21, 1.3M, B4A B2P                  |                                    |  |               |
| 112.0                       | 112.0 | 6   | 6.7" x 10.7" TTA                                | Flush                              | -  | Other         |
|                             |       | 3   | 36" x 10" Panel                                 |                                    |  |               |
| 101.0                       | 101.0 | 3   | Alcatel-Lucent 800MHz 2X50W RRH w/<br>Filter    | Platform w/ Handrails              | (4) 1 1/4" Hybriflex   | Sprint Nextel |
|                             |       | 3   | Alcatel-Lucent 1900MHz 4x45 RRH                 |                                    |  |               |
|                             |       | 3   | Alcatel-Lucent TD-RRH8x20-25 w/ Solar<br>Shield |                                    |  |               |
|                             |       | 3   | RFS APXV9TM14-ALU-I20                           |                                    |  |               |
|                             |       | 3   | RFS APXVSPP18-C-A20                             |                                    |  |               |
| 89.0                        | 89.0  | 3   | RFS APXV18-206517S-C                            | Flush                              | (6) 1 5/8" Coax  | Metro PCS     |
| 75.0                        | 75.0  | 1   | GPS   | Stand-Off                          | (1) 1/2" Coax  | Sprint Nextel |

**Equipment to be Removed**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                     | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|-----------------------------|------------|-------|---------|
| Mount                       | RAD   |     |                             |            |       |         |
| 147.0                       | 147.0 | 3   | Alcatel-Lucent RRH2X60-AWS  | -          | -     | Verizon |
|                             |       | 3   | Alcatel-Lucent RRH2X60-1900 |            |       |         |



**Proposed Equipment**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                      | Mount Type           | Lines | Carrier |
|-----------------------------|-------|-----|------------------------------|----------------------|-------|---------|
| Mount                       | RAD   |     |                              |                      |       |         |
| 140.0                       | 140.0 | 3   | Alcatel-Lucent RRH4x30W-B25  | Low Profile Platform | -     | Verizon |
|                             |       | 3   | Alcatel-Lucent B66A RRH 4x45 |                      |       |         |

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

**Structure Usages**

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Anchor Bolts         | 46%               | Pass      |
| Shaft                | 50%               | Pass      |
| Base Plate           | 33%               | Pass      |

**Foundations**

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|--------------------|---------------------------|----------------------------|--------------------|-------------|
| Moment (Kips-Ft)   | 5,050.0                   | 6,817.5                    | 3,331.2            | 49%         |
| Shear (Kips)       | 47.0                      | 63.5                       | 31.0               | 49%         |

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

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

**Deflection and Sway\***

| Antenna Elevation (ft) | Antenna                       | Carrier          | Deflection (ft) | Sway (Rotation) (°) |
|------------------------|-------------------------------|------------------|-----------------|---------------------|
| 140.0                  | Alcatel-Lucent RRH4x30W-B25   | Verizon Wireless | 0.946           | 0.772               |
|                        | Alcatel-Lucent B13 RRH4x30-4R |                  |                 |                     |
|                        | Alcatel-Lucent B66A RRH 4x45  |                  |                 |                     |

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



## **Standard Conditions**

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

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

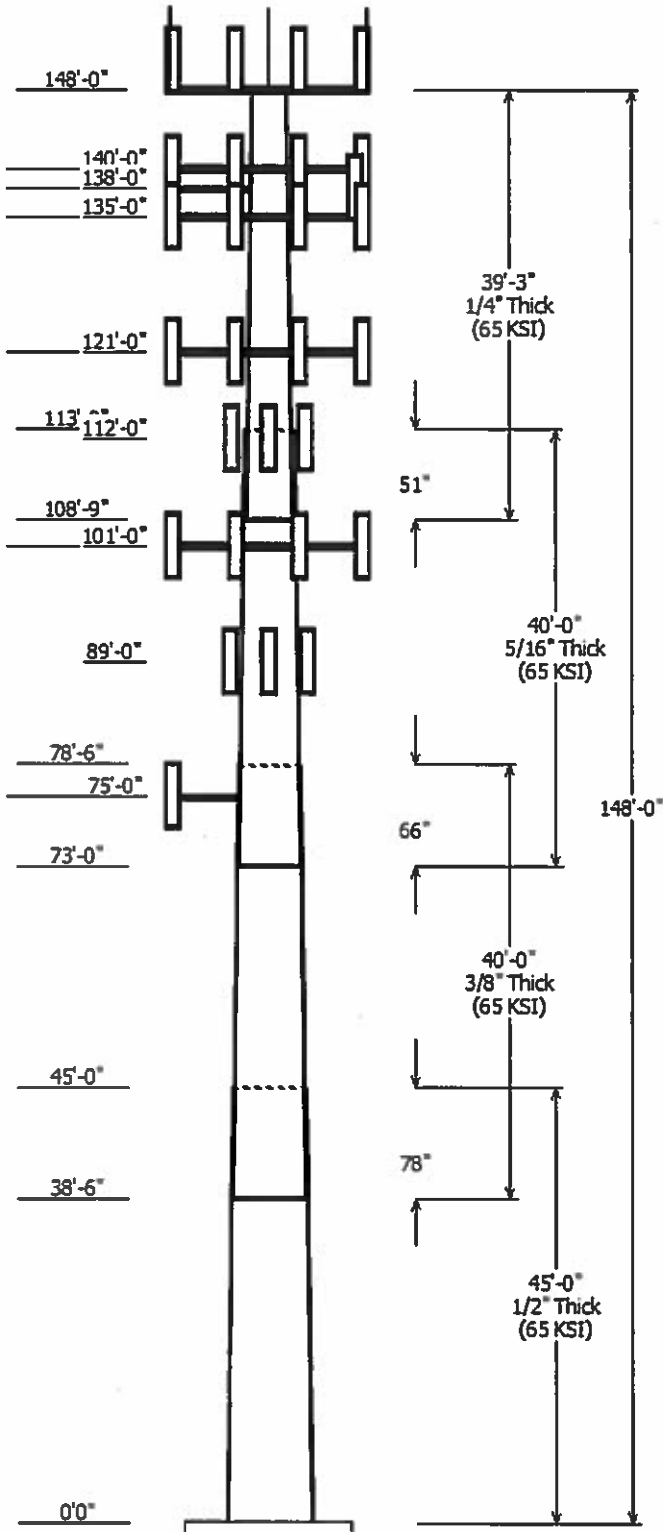
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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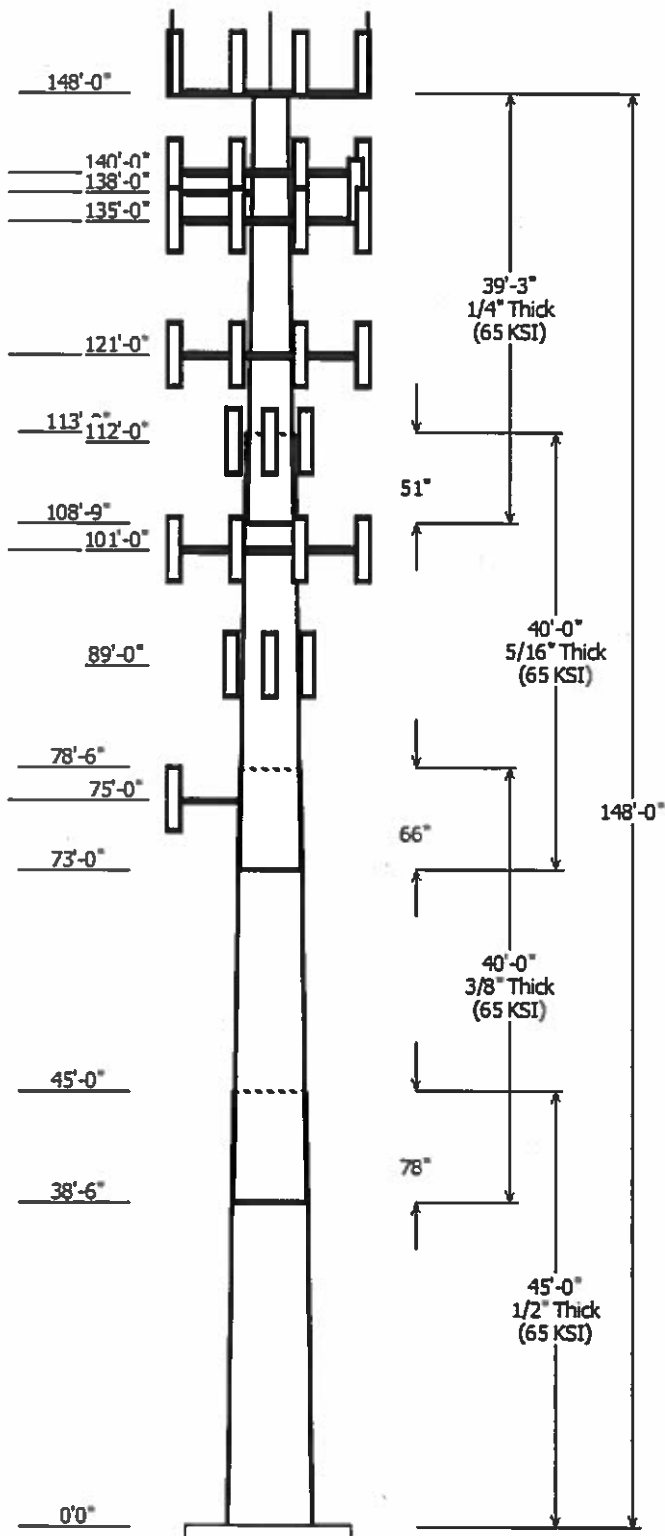


| Job Information                      |                      |
|--------------------------------------|----------------------|
| Pole : 302540                        | Code: ANSI/TIA-222-G |
| Location : Madison CT 6, CT          |                      |
| Description : 148 ft Summit Monopole |                      |
| Client : VERIZON WIRELESS            | Struct Class : II    |
| Shape : 18 Sides                     | Exposure : B         |
| Height : 148.00 (ft)                 | Topo : 1             |
| Base Elev (ft): 0.00                 |                      |
| Taper: 0.26300%/in/ft)               |                      |

| Sections Properties |             |               |              |            |            |                     |             |       |
|---------------------|-------------|---------------|--------------|------------|------------|---------------------|-------------|-------|
| Shaft Section       | Length (ft) | Diameter (in) |              | Thick (in) | Joint Type | Overlap Length (in) | Steel Grade | Shape |
|                     |             | Across Top    | Flats Bottom |            |            |                     |             |       |
| 1                   | 45.000      | 49.21         | 61.05        | 0.500      |            | 0.000               | 18 Sides    | 65    |
| 2                   | 40.000      | 41.15         | 51.67        | 0.375      | Slip Joint | 78.000              | 18 Sides    | 65    |
| 3                   | 40.000      | 32.70         | 43.22        | 0.313      | Slip Joint | 66.000              | 18 Sides    | 65    |
| 4                   | 39.250      | 24.00         | 34.32        | 0.250      | Slip Joint | 51.000              | 18 Sides    | 65    |

| Discrete Appurtenance |                 |     |                                |  |
|-----------------------|-----------------|-----|--------------------------------|--|
| Attach Elev (ft)      | Force Elev (ft) | Qty | Description                    |  |
| 148.000               | 152.000         | 1   | 6' Dipole                      |  |
| 148.000               | 153.000         | 1   | 8' Omni                        |  |
| 148.000               | 157.000         | 1   | 18' Dipole                     |  |
| 148.000               | 149.000         | 12  | 48" x 12" Panel                |  |
| 148.000               | 148.000         | 1   | Flat Low Profile Platform      |  |
| 140.000               | 140.000         | 3   | Alcatel-Lucent B66A RRH 4x45   |  |
| 140.000               | 140.000         | 3   | Alcatel-Lucent RRH4x30W-B25    |  |
| 140.000               | 140.000         | 2   | RFS DB-T1-6Z-8AB-0Z            |  |
| 140.000               | 140.000         | 1   | Commscope LNX-6514DS-A1M       |  |
| 140.000               | 140.000         | 3   | Nokia B5 RRH4x40-850           |  |
| 140.000               | 140.000         | 1   | Flat Low Profile Platform      |  |
| 140.000               | 140.000         | 2   | Andrew LNX-8513DS-A1M          |  |
| 140.000               | 140.000         | 6   | Commscope JAHH-65B-R3B         |  |
| 138.000               | 138.000         | 1   | Raycap DC6-48-60-18-8F         |  |
| 138.000               | 138.000         | 1   | Collar                         |  |
| 138.000               | 138.000         | 3   | Ericsson RRUS 11 (Band 12) (55 |  |
| 138.000               | 138.000         | 3   | Ericsson RRUS-12 B2            |  |
| 135.000               | 135.000         | 6   | Powerwave Allgon 7770.00       |  |
| 135.000               | 135.000         | 1   | Flat Low Profile Platform w/ K |  |
| 135.000               | 135.000         | 3   | Commscope SBNHH-1D65A          |  |
| 135.000               | 135.000         | 3   | Ericsson RRUS A2 B2            |  |
| 135.000               | 135.000         | 6   | Powerwave Allgon LGP13519      |  |
| 135.000               | 135.000         | 6   | Powerwave Allgon TT19-         |  |
| 121.000               | 121.000         | 1   | Round Low Profile Platform     |  |
| 121.000               | 121.000         | 4   | Ericsson AIR 21, 1.3M, B4A B2P |  |
| 121.000               | 121.000         | 4   | Ericsson AIR 21, 1.3M, B2A B4P |  |
| 121.000               | 121.000         | 4   | Ericsson KRY 112 144/1         |  |
| 112.000               | 112.000         | 3   | 36" x 10" Panel                |  |
| 112.000               | 112.000         | 6   | 6.7" x 10.7" TTA               |  |
| 101.000               | 101.000         | 1   | Flat Platform w/ Handrails     |  |
| 101.000               | 101.000         | 3   | RFS APXVSP18-C-A20             |  |
| 101.000               | 101.000         | 3   | RFS APXV9TM14-ALU-J20          |  |
| 101.000               | 101.000         | 3   | Alcatel-Lucent TD-RRH8x20-25   |  |
| 101.000               | 101.000         | 3   | Alcatel-Lucent 1900 MHz 4x45   |  |
| 101.000               | 101.000         | 3   | Alcatel-Lucent 800 MHz 2X50W   |  |
| 89.000                | 89.000          | 3   | RFS APXV18-206517S-C           |  |
| 75.000                | 75.000          | 1   | Stand-Off                      |  |
| 75.000                | 75.000          | 1   | GPS                            |  |

| Linear Appurtenance |    |             |                 |
|---------------------|----|-------------|-----------------|
| Elev (ft)           |    | Description | Exposed To Wind |
| From                | To |             |                 |



|       |        |                  |     |
|-------|--------|------------------|-----|
| 0.000 | 75.000 | 1/2" Coax        | Yes |
| 0.000 | 89.000 | 1 5/8" Coax      | No  |
| 0.000 | 101.0  | 1 1/4" Hybriflex | Yes |
| 0.000 | 121.0  | 1 1/4" Hybriflex | Yes |
| 0.000 | 121.0  | 1 5/8" Coax      | Yes |
| 0.000 | 135.0  | 0.39" (10mm)     | Yes |
| 0.000 | 135.0  | 0.78" (19.7mm) 8 | No  |
| 0.000 | 135.0  | 1 5/8" Coax      | No  |
| 0.000 | 135.0  | 3" Conduit       | No  |
| 0.000 | 140.0  | 1 5/8" Coax      | No  |
| 0.000 | 140.0  | 1 5/8" (1.63"-   | No  |
| 0.000 | 148.0  | 1 1/4" Coax      | No  |
| 0.000 | 148.0  | 7/8" Coax        | No  |
| 0.000 | 148.0  | 7/8" Coax        | No  |
| 0.000 | 148.0  | 7/8" Coax        | No  |

### Load Cases

|                         |  |
|-------------------------|--|
| 1.2D + 1.6W             | 101 mph with No Ice                      |
| 0.9D + 1.6W             | 101 mph with No Ice (Reduced DL)         |
| 1.2D + 1.0Di + 1.0Wi    | 50 mph with 0.75 in Radial Ice           |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Lateral  |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Modal    |
| 1.0D + 1.0W             | Serviceability 60 mph                    |

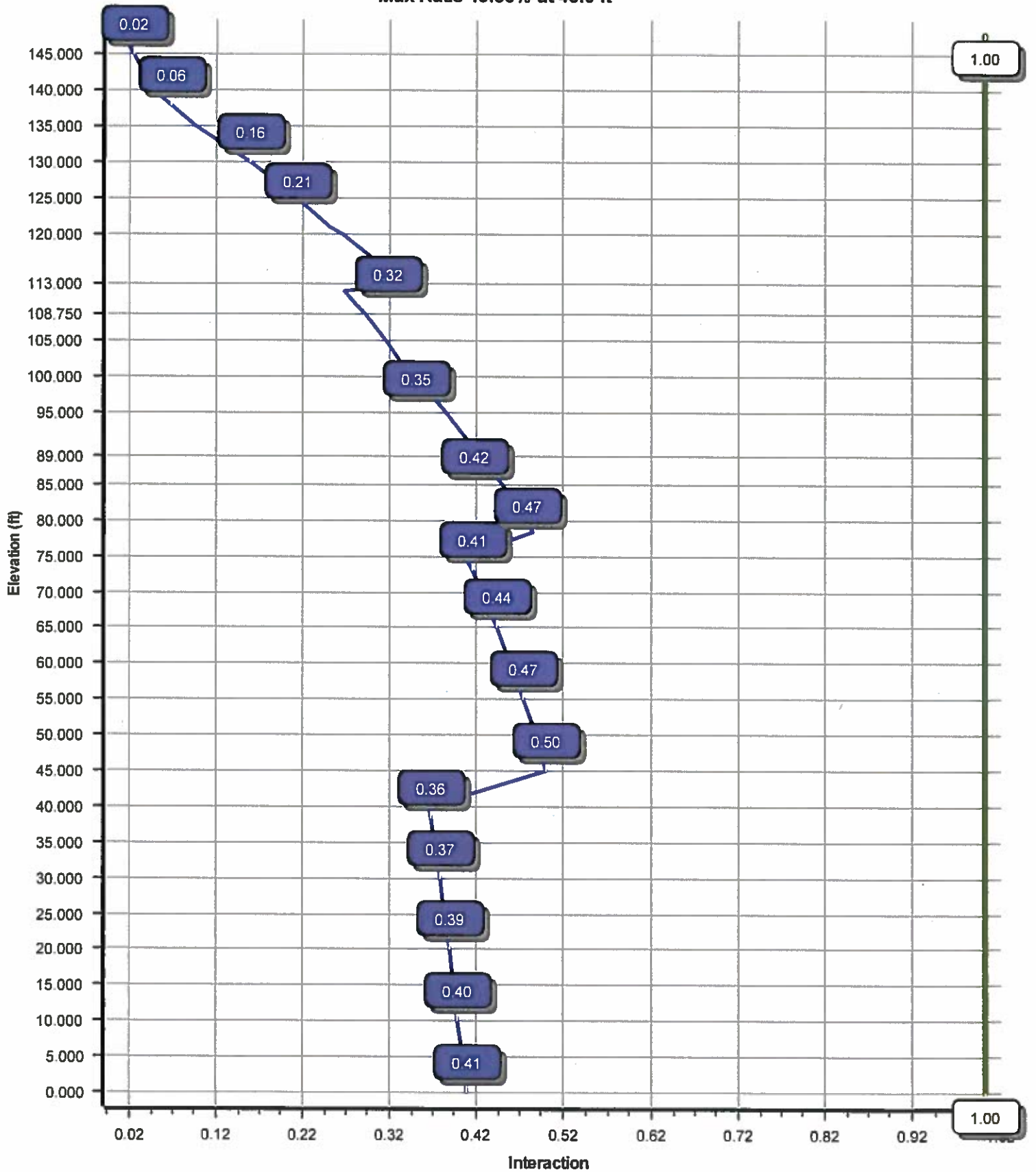
### Reactions

| Load Case                    | Moment (kip-ft) | Shear (kip) | Axial (kip) |
|------------------------------|-----------------|-------------|-------------|
| 1.2D + 1.6W                  | 3331.16         | 31.00       | 61.97       |
| 0.9D + 1.6W                  | 3259.04         | 30.46       | 46.47       |
| 1.2D + 1.0Di + 1.0Wi         | 833.11          | 7.81        | 97.94       |
| (1.2 + 0.2Sds) * DL + E ELFM | 253.28          | 2.17        | 61.45       |
| (1.2 + 0.2Sds) * DL + E EMAM | 324.82          | 2.81        | 61.45       |
| (0.9 - 0.2Sds) * DL + E ELFM | 250.75          | 2.17        | 42.91       |
| (0.9 - 0.2Sds) * DL + E EMAM | 321.29          | 2.81        | 42.91       |
| 1.0D + 1.0W                  | 721.11          | 6.72        | 51.66       |

### Dish Deflections

| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
|-----------|------------------|-----------------|----------------|
|           | 0.00             | 0.000           | 0.000          |

Load Case : 1.2D + 1.6W  
Max Ratio 49.80% at 45.0 ft





Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

**Analysis Parameters**

|                     |                      |                      |       |
|---------------------|----------------------|----------------------|-------|
| Location :          | NEW HAVEN County, CT | Height (ft) :        | 148   |
| Code :              | ANSI/TIA-222-G       | Base Diameter (In) : | 61.05 |
| Shape :             | 18 Sides             | Top Diameter (In) :  | 24.00 |
| Pole Type :         | Taper                | Taper (In/ft) :      | 0.263 |
| Pole Manufacturer : | Summit Manufacturing | Rotation (deg) :     | 0.00  |

**Ice & Wind Parameters**

|                       |      |                                |         |
|-----------------------|------|--------------------------------|---------|
| Structure Class:      | II   | Design Wind Speed Without Ice: | 101 mph |
| Exposure Category:    | B    | Design Wind Speed With Ice:    | 50 mph  |
| Topographic Category: | 1    | Operational Wind Speed:        | 60 mph  |
| Crest Height:         | 0 ft | Design Ice Thickness:          | 0.75 in |

**Seismic Parameters**

|  |  |                     |       |
|--|--|---------------------|-------|
| Analysis Method:                       | Equivalent Modal Analysis & Equivalent Lateral Force Methods |                     |       |
| Site Class:                            | D - Stiff Soil   |                     |       |
| Period Based on Rayleigh Method (sec): | 1.98   |                     |       |
| T <sub>L</sub> (sec):                  | 6  | p:                  | 1.3   |
| S <sub>s</sub> :                       | 0.171  | S <sub>i</sub> :    | 0.060 |
| F <sub>s</sub> :                       | 1.600  | F <sub>v</sub> :    | 2.400 |
| S <sub>ds</sub> :                      | 0.182  | S <sub>d1</sub> :   | 0.096 |
|  |  | C <sub>s</sub> :    | 0.032 |
|  |  | C <sub>s</sub> Max: | 0.032 |
|  |  | C <sub>s</sub> Min: | 0.030 |

**Load Cases**

|                              |   |
|------------------------------|---|
| 1.2D + 1.6W                  | 101 mph with No Ice                                   |
| 0.9D + 1.6W                  | 101 mph with No Ice (Reduced DL)                      |
| 1.2D + 1.0Di + 1.0Wi         | 50 mph with 0.75 in Radial Ice                        |
| (1.2 + 0.2Sds) * DL + E ELFM | Seismic Equivalent Lateral Forces Method              |
| (1.2 + 0.2Sds) * DL + E EMAM | Seismic Equivalent Modal Analysis Method              |
| (0.9 - 0.2Sds) * DL + E ELFM | Seismic (Reduced DL) Equivalent Lateral Forces Method |
| (0.9 - 0.2Sds) * DL + E EMAM | Seismic (Reduced DL) Equivalent Modal Analysis Method |
| 1.0D + 1.0W                  | Serviceability 60 mph                                 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

**Shaft Section Properties**

| Sect Info    | Length (ft) | Thick (in) | Fy (ksi) | Joint Type | Joint Len (in) | Weight (lb) | Bottom   |           |                         |                       |           |           | Top      |           |                         |                       |           |           |               |
|--------------|-------------|------------|----------|------------|----------------|-------------|----------|-----------|-------------------------|-----------------------|-----------|-----------|----------|-----------|-------------------------|-----------------------|-----------|-----------|---------------|
|              |             |            |          |            |                |             | Dia (in) | Elev (ft) | Area (in <sup>2</sup> ) | Ix (in <sup>4</sup> ) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (in <sup>2</sup> ) | Ix (in <sup>4</sup> ) | W/t Ratio | D/t Ratio | Taper (in/ft) |
| 1-18         | 45.000      | 0.5000     | 65       |            | 0.00           | 13,276      | 61.05    | 0.00      | 96.09                   | 44509.7               | 19.77     | 122.10    | 49.21    | 45.00     | 77.31                   | 23178.9               | 15.59     | 98.43     | 0.263006      |
| 2-18         | 40.000      | 0.3750     | 65       | Slip       | 78.00          | 7,458       | 51.67    | 38.50     | 61.06                   | 20300.5               | 22.53     | 137.80    | 41.15    | 78.50     | 48.54                   | 10197.2               | 17.59     | 109.74    | 0.263006      |
| 3-18         | 40.000      | 0.3125     | 65       | Slip       | 66.00          | 5,083       | 43.22    | 73.00     | 42.56                   | 9902.8                | 22.63     | 138.32    | 32.70    | 113.00    | 32.13                   | 4259.3                | 16.69     | 104.66    | 0.263006      |
| 4-18         | 39.250      | 0.2500     | 65       | Slip       | 51.00          | 3,064       | 34.32    | 108.75    | 27.04                   | 3965.7                | 22.45     | 137.29    | 24.00    | 148.00    | 18.84                   | 1343.0                | 15.16     | 96.00     | 0.263006      |
| Shaft Weight |             |            |          |            |                | 28,881      |          |           |                         |                       |           |           |          |           |                         |                       |           |           |               |

**Discrete Appurtenance Properties**

| Attach Elev (ft) | Description                    | Qty | Distance From Face (ft) | Vert Ecc (ft) | Weight (lb) | No Ice EPAa (sf) | Orientation Factor |
|------------------|--------------------------------|-----|-------------------------|---------------|-------------|------------------|--------------------|
| 148.00           | 18' Dipole                     | 1   | 0.000                   | 9.000         | 55.00       | 6.770            | 1.00               |
| 148.00           | 48" x 12" Panel                | 12  | 0.000                   | 1.000         | 30.00       | 5.070            | 0.66               |
| 148.00           | 6' Dipole                      | 1   | 0.000                   | 4.000         | 20.00       | 2.220            | 1.00               |
| 148.00           | 8' Omni                        | 1   | 0.000                   | 5.000         | 25.00       | 2.400            | 1.00               |
| 148.00           | Flat Low Profile Platform      | 1   | 0.000                   | 0.000         | 1500.00     | 26.100           | 1.00               |
| 140.00           | Alcatel-Lucent B66A RRH 4x45   | 3   | 0.000                   | 0.000         | 67.00       | 2.580            | 0.67               |
| 140.00           | Alcatel-Lucent RRH4x30W-B25    | 3   | 0.000                   | 0.000         | 55.10       | 1.970            | 0.50               |
| 140.00           | Andrew LNX-8513DS-A1M          | 2   | 0.000                   | 0.000         | 39.20       | 8.170            | 0.69               |
| 140.00           | Commscope JAHH-65B-R3B         | 6   | 0.000                   | 0.000         | 60.60       | 9.110            | 0.69               |
| 140.00           | Commscope LNX-6514DS-A1M       | 1   | 0.000                   | 0.000         | 38.80       | 8.170            | 0.69               |
| 140.00           | Flat Low Profile Platform      | 1   | 0.000                   | 0.000         | 1500.00     | 26.100           | 1.00               |
| 140.00           | Nokia B5 RRH4x40-850           | 3   | 0.000                   | 0.000         | 48.50       | 1.320            | 0.50               |
| 140.00           | RFS DB-T1-6Z-8AB-0Z            | 2   | 0.000                   | 0.000         | 44.00       | 4.800            | 0.67               |
| 138.00           | Collar                         | 1   | 0.000                   | 0.000         | 560.00      | 8.500            | 0.67               |
| 138.00           | Ericsson RRUS 11 (Band 12) (55 | 3   | 0.000                   | 0.000         | 55.00       | 2.520            | 0.67               |
| 138.00           | Ericsson RRUS-12 B2            | 3   | 0.000                   | 0.000         | 58.00       | 3.150            | 0.67               |
| 138.00           | Raycap DC6-48-60-18-8F ("Squid | 1   | 0.000                   | 0.000         | 31.80       | 1.280            | 1.00               |
| 135.00           | Commscope SBNHH-1D65A          | 3   | 0.000                   | 0.000         | 33.50       | 5.880            | 0.69               |
| 135.00           | Ericsson RRUS A2 B2            | 3   | 0.000                   | 0.000         | 22.00       | 2.060            | 0.67               |
| 135.00           | Flat Low Profile Platform w/ K | 1   | 0.000                   | 0.000         | 1725.00     | 33.600           | 1.00               |
| 135.00           | Powerwave Allgon 7770.00       | 6   | 0.000                   | 0.000         | 35.00       | 5.510            | 0.65               |
| 135.00           | Powerwave Allgon LGP13519      | 6   | 0.000                   | 0.000         | 5.30        | 0.340            | 0.50               |
| 135.00           | Powerwave Allgon TT19-         | 6   | 0.000                   | 0.000         | 16.00       | 0.640            | 0.50               |
| 121.00           | Ericsson AIR 21, 1.3M, B2A B4P | 4   | 0.000                   | 0.000         | 83.00       | 6.050            | 0.71               |
| 121.00           | Ericsson AIR 21, 1.3M, B4A B2P | 4   | 0.000                   | 0.000         | 81.50       | 6.090            | 0.70               |
| 121.00           | Ericsson KRY 112 144/1         | 4   | 0.000                   | 0.000         | 11.00       | 0.410            | 0.50               |
| 121.00           | Round Low Profile Platform     | 1   | 0.000                   | 0.000         | 2000.00     | 23.500           | 1.00               |
| 112.00           | 36" x 10" Panel                | 3   | 0.000                   | 0.000         | 20.00       | 3.120            | 0.66               |
| 112.00           | 6.7" x 10.7" TTA               | 6   | 0.000                   | 0.000         | 9.90        | 0.700            | 0.50               |
| 101.00           | Alcatel-Lucent 1900 MHz 4x45 R | 3   | 0.000                   | 0.000         | 60.00       | 2.320            | 0.67               |
| 101.00           | Alcatel-Lucent 800 MHz 2X50W R | 3   | 0.000                   | 0.000         | 64.00       | 2.060            | 0.67               |
| 101.00           | Alcatel-Lucent TD-RRH8x20-25 w | 3   | 0.000                   | 0.000         | 70.00       | 4.050            | 0.67               |
| 101.00           | Flat Platform w/ Handrails     | 1   | 0.000                   | 0.000         | 2000.00     | 42.400           | 1.00               |
| 101.00           | RFS APXV9TM14-ALU-I20          | 3   | 0.000                   | 0.000         | 55.10       | 6.380            | 0.66               |
| 101.00           | RFS APXVSP18-C-A20             | 3   | 0.000                   | 0.000         | 57.00       | 8.020            | 0.69               |
| 89.00            | RFS APXV18-206517S-C           | 3   | 0.000                   | 0.000         | 26.40       | 5.170            | 0.68               |
| 75.00            | GPS                            | 1   | 0.000                   | 0.000         | 10.00       | 1.000            | 1.00               |
| 75.00            | Stand-Off                      | 1   | 0.000                   | 0.000         | 75.00       | 2.500            | 1.00               |
| Totals           | Num Loadings:38                | 113 |                         |               | 13604.60    |                  |                    |

**Linear Appurtenance Properties**

| Elev From (ft) | Elev To (ft) | Qty | Description | Coax Diameter (in) | Coax Weight (lb/ft) | Projected Width Flat (in) | Exposed To Wind | Carrier |
|----------------|--------------|-----|-------------|--------------------|---------------------|---------------------------|-----------------|---------|
|----------------|--------------|-----|-------------|--------------------|---------------------|---------------------------|-----------------|---------|

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:30 PM

Customer: VERIZON WIRELESS

|      |        |    |                         |      |      |   |      |   |                  |
|------|--------|----|-------------------------|------|------|---|------|---|------------------|
| 0.00 | 148.00 | 12 | 1 1/4" Coax             | 1.55 | 0.63 | N | 0.00 | N | Sprint Nextel    |
| 0.00 | 148.00 | 2  | 7/8" Coax               | 1.09 | 0.33 | N | 0.00 | N | Other            |
| 0.00 | 148.00 | 1  | 7/8" Coax               | 1.09 | 0.33 | N | 0.00 | N | Other            |
| 0.00 | 148.00 | 2  | 7/8" Coax               | 1.09 | 0.33 | N | 0.00 | N | Other            |
| 0.00 | 140.00 | 11 | 1 5/8" Coax             | 1.98 | 0.82 | N | 0.00 | N | Verizon Wireless |
| 0.00 | 140.00 | 2  | 1 5/8" (1.63"-41.3mm)   | 1.63 | 1.61 | N | 0.00 | N | Verizon Wireless |
| 0.00 | 135.00 | 1  | 0.39" (10mm) Fiber      | 0.39 | 0.06 | N | 0.00 | Y | AT&T Mobility    |
| 0.00 | 135.00 | 2  | 0.78" (19.7mm) 8        | 0.78 | 0.59 | N | 0.00 | N | AT&T Mobility    |
| 0.00 | 135.00 | 12 | 1 5/8" Coax             | 1.98 | 0.82 | N | 0.00 | N | AT&T Mobility    |
| 0.00 | 135.00 | 2  | 3" Conduit              | 3.50 | 7.58 | N | 0.00 | N | AT&T Mobility    |
| 0.00 | 121.00 | 1  | 1 1/4" Hybriflex        | 1.54 | 1.00 | N | 0.00 | Y | T-Mobile         |
| 0.00 | 121.00 | 16 | 1 5/8" Coax             | 1.98 | 0.82 | N | 3.96 | Y | T-Mobile         |
| 0.00 | 101.00 | 4  | 1 1/4" Hybriflex Cables | 1.54 | 1.00 | N | 1.54 | Y | Sprint Nextel    |
| 0.00 | 89.00  | 6  | 1 5/8" Coax             | 1.98 | 0.82 | N | 0.00 | N | Metro PCS        |
| 0.00 | 75.00  | 1  | 1/2" Coax               | 0.63 | 0.15 | N | 0.00 | Y | Sprint Nextel    |

Site Number: 302540

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Site Name: Madison CT 6, CT

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Customer: VERIZON WIRELESS

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

| Seg Top Elev (ft) | Description     | Thick (in) | Flat Dia (in) | Area (in <sup>2</sup> ) | Ix (in <sup>4</sup> ) | W/t Ratio | D/t Ratio | F'y (ksi) | S (in <sup>3</sup> ) | Z (in <sup>3</sup> ) | Weight (lb) |
|-------------------|-----------------|------------|---------------|-------------------------|-----------------------|-----------|-----------|-----------|----------------------|----------------------|-------------|
| 0.00              |                 | 0.5000     | 61.050        | 96.089                  | 44,509.7              | 19.77     | 122.10    | 78.2      | 1436.                | 0.0                  | 0.0         |
| 5.00              |                 | 0.5000     | 59.735        | 94.002                  | 41,672.2              | 19.30     | 119.47    | 78.7      | 1374.                | 0.0                  | 1,617.1     |
| 10.00             |                 | 0.5000     | 58.420        | 91.915                  | 38,958.0              | 18.84     | 116.84    | 79.2      | 1313.                | 0.0                  | 1,581.6     |
| 15.00             |                 | 0.5000     | 57.105        | 89.829                  | 36,364.2              | 18.37     | 114.21    | 79.8      | 1254.                | 0.0                  | 1,546.1     |
| 20.00             |                 | 0.5000     | 55.790        | 87.742                  | 33,888.2              | 17.91     | 111.58    | 80.3      | 1196.                | 0.0                  | 1,510.6     |
| 25.00             |                 | 0.5000     | 54.475        | 85.655                  | 31,527.3              | 17.45     | 108.95    | 80.9      | 1139.                | 0.0                  | 1,475.1     |
| 30.00             |                 | 0.5000     | 53.160        | 83.568                  | 29,278.6              | 16.98     | 106.32    | 81.4      | 1084.                | 0.0                  | 1,439.6     |
| 35.00             |                 | 0.5000     | 51.845        | 81.481                  | 27,139.4              | 16.52     | 103.69    | 82.0      | 1031.                | 0.0                  | 1,404.1     |
| 38.50             | Bot - Section 2 | 0.5000     | 50.924        | 80.020                  | 25,705.8              | 16.20     | 101.85    | 82.4      | 994.2                | 0.0                  | 961.7       |
| 40.00             |                 | 0.5000     | 50.530        | 79.394                  | 25,107.1              | 16.06     | 101.06    | 82.5      | 978.7                | 0.0                  | 717.3       |
| 45.00             | Top - Section 1 | 0.3750     | 49.965        | 59.022                  | 18,337.8              | 21.73     | 133.24    | 75.8      | 722.9                | 0.0                  | 2,350.6     |
| 50.00             |                 | 0.3750     | 48.650        | 57.457                  | 16,917.3              | 21.11     | 129.73    | 76.6      | 684.9                | 0.0                  | 990.9       |
| 55.00             |                 | 0.3750     | 47.335        | 55.892                  | 15,572.1              | 20.49     | 126.23    | 77.3      | 648.0                | 0.0                  | 964.2       |
| 60.00             |                 | 0.3750     | 46.020        | 54.326                  | 14,300.2              | 19.88     | 122.72    | 78.0      | 612.0                | 0.0                  | 937.6       |
| 65.00             |                 | 0.3750     | 44.705        | 52.761                  | 13,099.5              | 19.26     | 119.21    | 78.8      | 577.1                | 0.0                  | 911.0       |
| 70.00             |                 | 0.3750     | 43.389        | 51.196                  | 11,967.9              | 18.64     | 115.71    | 79.5      | 543.3                | 0.0                  | 884.4       |
| 73.00             | Bot - Section 3 | 0.3750     | 42.600        | 50.257                  | 11,321.4              | 18.27     | 113.60    | 79.9      | 523.4                | 0.0                  | 517.8       |
| 75.00             |                 | 0.3750     | 42.074        | 49.631                  | 10,903.5              | 18.02     | 112.20    | 80.2      | 510.4                | 0.0                  | 627.8       |
| 78.50             | Top - Section 2 | 0.3125     | 41.779        | 41.128                  | 8,934.8               | 21.81     | 133.69    | 75.7      | 421.2                | 0.0                  | 1,079.8     |
| 80.00             |                 | 0.3125     | 41.384        | 40.737                  | 8,682.2               | 21.59     | 132.43    | 76.0      | 413.2                | 0.0                  | 208.9       |
| 85.00             |                 | 0.3125     | 40.069        | 39.432                  | 7,874.7               | 20.85     | 128.22    | 76.9      | 387.1                | 0.0                  | 682.0       |
| 89.00             |                 | 0.3125     | 39.017        | 38.389                  | 7,265.9               | 20.25     | 124.86    | 77.6      | 366.8                | 0.0                  | 529.6       |
| 90.00             |                 | 0.3125     | 38.754        | 38.128                  | 7,118.8               | 20.10     | 124.01    | 77.8      | 361.8                | 0.0                  | 130.2       |
| 95.00             |                 | 0.3125     | 37.439        | 36.824                  | 6,412.9               | 19.36     | 119.81    | 78.6      | 337.4                | 0.0                  | 637.6       |
| 100.0             |                 | 0.3125     | 36.124        | 35.520                  | 5,755.4               | 18.62     | 115.60    | 79.5      | 313.8                | 0.0                  | 615.4       |
| 101.0             |                 | 0.3125     | 35.861        | 35.259                  | 5,629.5               | 18.47     | 114.76    | 79.7      | 309.2                | 0.0                  | 120.4       |
| 105.0             |                 | 0.3125     | 34.809        | 34.215                  | 5,144.3               | 17.88     | 111.39    | 80.4      | 291.1                | 0.0                  | 472.8       |
| 108.7             | Bot - Section 4 | 0.3125     | 33.823        | 33.237                  | 4,715.6               | 17.32     | 108.23    | 81.0      | 274.6                | 0.0                  | 430.4       |
| 110.0             |                 | 0.3125     | 33.494        | 32.911                  | 4,578.2               | 17.14     | 107.18    | 81.2      | 269.2                | 0.0                  | 255.1       |
| 112.0             |                 | 0.3125     | 32.968        | 32.389                  | 4,363.9               | 16.84     | 105.50    | 81.6      | 260.7                | 0.0                  | 403.0       |
| 113.0             | Top - Section 3 | 0.2500     | 33.205        | 26.149                  | 3,588.0               | 21.66     | 132.82    | 75.9      | 212.8                | 0.0                  | 199.1       |
| 115.0             |                 | 0.2500     | 32.679        | 25.732                  | 3,419.0               | 21.29     | 130.72    | 76.4      | 206.1                | 0.0                  | 176.5       |
| 120.0             |                 | 0.2500     | 31.364        | 24.688                  | 3,019.7               | 20.36     | 125.46    | 77.5      | 189.6                | 0.0                  | 428.9       |
| 121.0             |                 | 0.2500     | 31.101        | 24.480                  | 2,943.7               | 20.17     | 124.40    | 77.7      | 186.4                | 0.0                  | 83.7        |
| 125.0             |                 | 0.2500     | 30.049        | 23.645                  | 2,652.7               | 19.43     | 120.20    | 78.5      | 173.9                | 0.0                  | 327.5       |
| 130.0             |                 | 0.2500     | 28.734        | 22.601                  | 2,316.8               | 18.50     | 114.94    | 79.6      | 158.8                | 0.0                  | 393.4       |
| 135.0             |                 | 0.2500     | 27.419        | 21.558                  | 2,010.5               | 17.58     | 109.68    | 80.7      | 144.4                | 0.0                  | 375.7       |
| 138.0             |                 | 0.2500     | 26.630        | 20.932                  | 1,840.4               | 17.02     | 106.52    | 81.4      | 136.1                | 0.0                  | 216.9       |
| 140.0             |                 | 0.2500     | 26.104        | 20.514                  | 1,732.5               | 16.65     | 104.42    | 81.8      | 130.7                | 0.0                  | 141.0       |
| 145.0             |                 | 0.2500     | 24.789        | 19.471                  | 1,481.3               | 15.72     | 99.16     | 82.6      | 117.7                | 0.0                  | 340.2       |
| 148.0             |                 | 0.2500     | 24.000        | 18.845                  | 1,343.0               | 15.16     | 96.00     | 82.6      | 110.2                | 0.0                  | 195.6       |
| 28,881.1          |                 |            |               |                         |                       |           |           |           |                      |                      |             |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

|                                   |                            |                                    |
|-----------------------------------|----------------------------|------------------------------------|
| <b>Load Case: 1.2D + 1.6W</b>     | <b>101 mph with No Ice</b> | <b>21 Iterations</b>               |
| <b>Gust Response Factor :1.10</b> |                            | <b>Wind Importance Factor 1.00</b> |
| <b>Dead Load Factor :1.20</b>     |                            |                                    |
| <b>Wind Load Factor :1.60</b>     |                            |                                    |

**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           |                 | 253.8        | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 253.8           | 0.0             | 0.0                | 0.0            |
| 5.00           |                 | 502.1        | 1,940.5        |                 |                    |                   |                | 0.0          | 425.3          | 502.1           | 2,365.8         | 0.0                | 0.0            |
| 10.00          |                 | 491.1        | 1,897.9        |                 |                    |                   |                | 0.0          | 425.3          | 491.1           | 2,323.2         | 0.0                | 0.0            |
| 15.00          |                 | 480.0        | 1,855.3        |                 |                    |                   |                | 0.0          | 425.3          | 480.0           | 2,280.6         | 0.0                | 0.0            |
| 20.00          |                 | 468.9        | 1,812.7        |                 |                    |                   |                | 0.0          | 425.3          | 468.9           | 2,238.0         | 0.0                | 0.0            |
| 25.00          |                 | 458.3        | 1,770.1        |                 |                    |                   |                | 0.0          | 425.3          | 458.3           | 2,195.4         | 0.0                | 0.0            |
| 30.00          |                 | 454.7        | 1,727.5        |                 |                    |                   |                | 0.0          | 425.3          | 454.7           | 2,152.7         | 0.0                | 0.0            |
| 35.00          |                 | 391.0        | 1,684.9        |                 |                    |                   |                | 0.0          | 425.3          | 391.0           | 2,110.1         | 0.0                | 0.0            |
| 38.50          | Bot - Section 2 | 234.5        | 1,154.1        |                 |                    |                   |                | 0.0          | 297.7          | 234.5           | 1,451.7         | 0.0                | 0.0            |
| 40.00          |                 | 312.9        | 860.7          |                 |                    |                   |                | 0.0          | 127.6          | 312.9           | 988.3           | 0.0                | 0.0            |
| 45.00          | Top - Section 1 | 484.8        | 2,820.7        |                 |                    |                   |                | 0.0          | 425.3          | 484.8           | 3,245.9         | 0.0                | 0.0            |
| 50.00          |                 | 489.5        | 1,189.1        |                 |                    |                   |                | 0.0          | 425.3          | 489.5           | 1,614.3         | 0.0                | 0.0            |
| 55.00          |                 | 493.8        | 1,157.1        |                 |                    |                   |                | 0.0          | 425.3          | 493.8           | 1,582.4         | 0.0                | 0.0            |
| 60.00          |                 | 496.9        | 1,125.1        |                 |                    |                   |                | 0.0          | 425.3          | 496.9           | 1,550.4         | 0.0                | 0.0            |
| 65.00          |                 | 498.7        | 1,093.2        |                 |                    |                   |                | 0.0          | 425.3          | 498.7           | 1,518.4         | 0.0                | 0.0            |
| 70.00          |                 | 399.6        | 1,061.2        |                 |                    |                   |                | 0.0          | 425.3          | 399.6           | 1,486.5         | 0.0                | 0.0            |
| 73.00          | Bot - Section 3 | 251.3        | 621.4          |                 |                    |                   |                | 0.0          | 255.2          | 251.3           | 876.6           | 0.0                | 0.0            |
| 75.00          | Appurtenance(s) | 278.8        | 753.3          | 139.1           | 0.0                | 0.0               | 102.0          | 0.0          | 170.1          | 417.9           | 1,025.4         | 0.0                | 0.0            |
| 78.50          | Top - Section 2 | 252.9        | 1,295.8        |                 |                    |                   |                | 0.0          | 297.1          | 252.9           | 1,592.8         | 0.0                | 0.0            |
| 80.00          |                 | 326.9        | 250.7          |                 |                    |                   |                | 0.0          | 127.3          | 326.9           | 378.0           | 0.0                | 0.0            |
| 85.00          |                 | 451.7        | 818.4          |                 |                    |                   |                | 0.0          | 424.4          | 451.7           | 1,242.8         | 0.0                | 0.0            |
| 89.00          | Appurtenance(s) | 250.4        | 635.5          | 440.2           | 0.0                | 0.0               | 95.0           | 0.0          | 339.5          | 690.5           | 1,070.1         | 0.0                | 0.0            |
| 90.00          |                 | 299.0        | 156.2          |                 |                    |                   |                | 0.0          | 79.0           | 299.0           | 235.2           | 0.0                | 0.0            |
| 95.00          |                 | 496.4        | 765.1          |                 |                    |                   |                | 0.0          | 394.8          | 496.4           | 1,160.0         | 0.0                | 0.0            |
| 100.00         |                 | 296.6        | 738.5          |                 |                    |                   |                | 0.0          | 394.8          | 296.6           | 1,133.3         | 0.0                | 0.0            |
| 101.00         | Appurtenance(s) | 223.7        | 144.5          | 3,333.4         | 0.0                | 0.0               | 3,502.0        | 0.0          | 79.0           | 3,557.1         | 3,725.4         | 0.0                | 0.0            |
| 105.00         |                 | 336.4        | 567.4          |                 |                    |                   |                | 0.0          | 296.7          | 336.4           | 864.0           | 0.0                | 0.0            |
| 108.75         | Bot - Section 4 | 216.5        | 516.4          |                 |                    |                   |                | 0.0          | 278.1          | 216.5           | 794.6           | 0.0                | 0.0            |
| 110.00         |                 | 141.2        | 306.1          |                 |                    |                   |                | 0.0          | 92.7           | 141.2           | 398.9           | 0.0                | 0.0            |
| 112.00         | Appurtenance(s) | 130.0        | 483.6          | 368.9           | 0.0                | 0.0               | 143.3          | 0.0          | 148.3          | 498.9           | 775.2           | 0.0                | 0.0            |
| 113.00         | Top - Section 3 | 128.9        | 238.9          |                 |                    |                   |                | 0.0          | 74.2           | 128.9           | 313.1           | 0.0                | 0.0            |
| 115.00         |                 | 297.6        | 211.8          |                 |                    |                   |                | 0.0          | 148.3          | 297.6           | 360.2           | 0.0                | 0.0            |
| 120.00         |                 | 254.0        | 514.7          |                 |                    |                   |                | 0.0          | 370.8          | 254.0           | 885.5           | 0.0                | 0.0            |
| 121.00         | Appurtenance(s) | 196.0        | 100.4          | 2,348.6         | 0.0                | 0.0               | 3,242.4        | 0.0          | 74.2           | 2,544.5         | 3,417.0         | 0.0                | 0.0            |
| 125.00         |                 | 340.9        | 393.0          |                 |                    |                   |                | 0.0          | 228.9          | 340.9           | 621.9           | 0.0                | 0.0            |
| 130.00         |                 | 367.5        | 472.1          |                 |                    |                   |                | 0.0          | 286.1          | 367.5           | 758.2           | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 285.7        | 450.8          | 3,111.9         | 0.0                | 0.0               | 2,675.2        | 0.0          | 286.1          | 3,397.6         | 3,412.1         | 0.0                | 0.0            |
| 138.00         | Appurtenance(s) | 173.9        | 260.2          | 749.2           | 0.0                | 0.0               | 1,117.0        | 0.0          | 77.2           | 923.1           | 1,454.4         | 0.0                | 0.0            |
| 140.00         | Appurtenance(s) | 235.8        | 169.2          | 3,944.9         | 0.0                | 0.0               | 3,096.7        | 0.0          | 51.5           | 4,180.7         | 3,317.4         | 0.0                | 0.0            |
| 145.00         |                 | 263.9        | 408.2          |                 |                    |                   |                | 0.0          | 55.3           | 263.9           | 463.4           | 0.0                | 0.0            |
| 148.00         | Appurtenance(s) | 96.9         | 234.7          | 3,258.9         | 0.0                | 4,759.2           | 2,352.0        | 0.0          | 33.2           | 3,355.7         | 2,619.8         | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | <b>31,198.4</b> | <b>61,999.2</b> | <b>0.00</b>        | <b>0.00</b>    |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:35 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

101 mph with No Ice

21 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          | -61.97           | -31.00           | 0.00            | -3,331.16       | 0.00            | 3,331.16                   | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.405 |
| 5.00          | -59.55           | -30.61           | 0.00            | -3,176.15       | 0.00            | 3,176.15                   | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.06               | -0.10          | 0.401 |
| 10.00         | -57.17           | -30.22           | 0.00            | -3,023.13       | 0.00            | 3,023.13                   | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.22               | -0.21          | 0.396 |
| 15.00         | -54.84           | -29.83           | 0.00            | -2,872.05       | 0.00            | 2,872.05                   | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.50               | -0.32          | 0.391 |
| 20.00         | -52.54           | -29.45           | 0.00            | -2,722.91       | 0.00            | 2,722.91                   | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.89               | -0.43          | 0.386 |
| 25.00         | -50.30           | -29.07           | 0.00            | -2,575.68       | 0.00            | 2,575.68                   | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 1.40               | -0.54          | 0.381 |
| 30.00         | -48.09           | -28.69           | 0.00            | -2,430.35       | 0.00            | 2,430.35                   | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 2.02               | -0.65          | 0.375 |
| 35.00         | -45.94           | -28.35           | 0.00            | -2,286.92       | 0.00            | 2,286.92                   | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 2.77               | -0.77          | 0.369 |
| 38.50         | -44.46           | -28.14           | 0.00            | -2,187.70       | 0.00            | 2,187.70                   | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 3.36               | -0.85          | 0.364 |
| 40.00         | -43.44           | -27.87           | 0.00            | -2,145.49       | 0.00            | 2,145.49                   | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 3.63               | -0.88          | 0.362 |
| 45.00         | -40.15           | -27.41           | 0.00            | -2,006.15       | 0.00            | 2,006.15                   | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 4.62               | -1.00          | 0.498 |
| 50.00         | -38.48           | -26.99           | 0.00            | -1,869.08       | 0.00            | 1,869.08                   | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 5.73               | -1.12          | 0.485 |
| 55.00         | -36.84           | -26.56           | 0.00            | -1,734.15       | 0.00            | 1,734.15                   | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 6.99               | -1.27          | 0.471 |
| 60.00         | -35.23           | -26.12           | 0.00            | -1,601.36       | 0.00            | 1,601.36                   | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 8.40               | -1.42          | 0.457 |
| 65.00         | -33.65           | -25.67           | 0.00            | -1,470.77       | 0.00            | 1,470.77                   | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 9.98               | -1.58          | 0.441 |
| 70.00         | -32.13           | -25.30           | 0.00            | -1,342.43       | 0.00            | 1,342.43                   | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 11.71              | -1.73          | 0.424 |
| 73.00         | -31.22           | -25.06           | 0.00            | -1,266.54       | 0.00            | 1,266.54                   | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 12.83              | -1.82          | 0.413 |
| 75.00         | -30.18           | -24.65           | 0.00            | -1,216.42       | 0.00            | 1,216.42                   | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 13.61              | -1.88          | 0.405 |
| 78.50         | -28.56           | -24.39           | 0.00            | -1,130.14       | 0.00            | 1,130.14                   | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 15.03              | -1.99          | 0.483 |
| 80.00         | -28.15           | -24.10           | 0.00            | -1,093.56       | 0.00            | 1,093.56                   | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 15.66              | -2.04          | 0.475 |
| 85.00         | -26.86           | -23.67           | 0.00            | -973.07         | 0.00            | 973.07                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 17.89              | -2.21          | 0.446 |
| 89.00         | -25.79           | -22.98           | 0.00            | -878.38         | 0.00            | 878.38                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 19.80              | -2.34          | 0.421 |
| 90.00         | -25.52           | -22.71           | 0.00            | -855.40         | 0.00            | 855.40                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 20.29              | -2.38          | 0.415 |
| 95.00         | -24.33           | -22.23           | 0.00            | -741.84         | 0.00            | 741.84                     | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 22.87              | -2.54          | 0.383 |
| 100.00        | -23.17           | -21.92           | 0.00            | -630.68         | 0.00            | 630.68                     | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 25.61              | -2.69          | 0.346 |
| 101.00        | -19.60           | -18.22           | 0.00            | -608.75         | 0.00            | 608.75                     | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 26.17              | -2.72          | 0.337 |
| 105.00        | -18.71           | -17.88           | 0.00            | -535.88         | 0.00            | 535.88                     | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 28.50              | -2.83          | 0.313 |
| 108.75        | -17.91           | -17.64           | 0.00            | -468.85         | 0.00            | 468.85                     | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 30.77              | -2.94          | 0.289 |
| 110.00        | -17.51           | -17.49           | 0.00            | -446.80         | 0.00            | 446.80                     | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 31.54              | -2.97          | 0.280 |
| 112.00        | -16.75           | -16.97           | 0.00            | -411.81         | 0.00            | 411.81                     | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 32.80              | -3.03          | 0.265 |
| 113.00        | -16.43           | -16.83           | 0.00            | -394.85         | 0.00            | 394.85                     | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 33.43              | -3.05          | 0.335 |
| 115.00        | -16.06           | -16.54           | 0.00            | -361.18         | 0.00            | 361.18                     | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 34.72              | -3.10          | 0.315 |
| 120.00        | -15.17           | -16.26           | 0.00            | -278.48         | 0.00            | 278.48                     | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 38.05              | -3.24          | 0.262 |
| 121.00        | -11.89           | -13.54           | 0.00            | -262.22         | 0.00            | 262.22                     | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 38.73              | -3.26          | 0.249 |
| 125.00        | -11.26           | -13.18           | 0.00            | -208.07         | 0.00            | 208.07                     | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 41.50              | -3.35          | 0.210 |
| 130.00        | -10.51           | -12.78           | 0.00            | -142.17         | 0.00            | 142.17                     | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 45.06              | -3.45          | 0.157 |
| 135.00        | -7.30            | -9.19            | 0.00            | -78.25          | 0.00            | 78.25                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 48.71              | -3.51          | 0.094 |
| 138.00        | -5.91            | -8.18            | 0.00            | -50.68          | 0.00            | 50.68                      | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 50.93              | -3.54          | 0.065 |
| 140.00        | -2.85            | -3.80            | 0.00            | -34.32          | 0.00            | 34.32                      | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 52.41              | -3.55          | 0.045 |
| 145.00        | -2.41            | -3.51            | 0.00            | -15.30          | 0.00            | 15.30                      | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 56.14              | -3.57          | 0.023 |
| 148.00        | 0.00             | -3.36            | 0.00            | -4.76           | 0.00            | 4.76                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 58.39              | -3.58          | 0.007 |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:35 PM

Customer: VERIZON WIRELESS

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

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

**21 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           |                 | 253.8        | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 253.8           | 0.0             | 0.0                | 0.0            |
| 5.00           |                 | 502.1        | 1,455.4        |                 |                    |                   |                | 0.0          | 318.9          | 502.1           | 1,774.3         | 0.0                | 0.0            |
| 10.00          |                 | 491.1        | 1,423.4        |                 |                    |                   |                | 0.0          | 318.9          | 491.1           | 1,742.4         | 0.0                | 0.0            |
| 15.00          |                 | 480.0        | 1,391.5        |                 |                    |                   |                | 0.0          | 318.9          | 480.0           | 1,710.4         | 0.0                | 0.0            |
| 20.00          |                 | 468.9        | 1,359.5        |                 |                    |                   |                | 0.0          | 318.9          | 468.9           | 1,678.5         | 0.0                | 0.0            |
| 25.00          |                 | 457.9        | 1,327.6        |                 |                    |                   |                | 0.0          | 318.9          | 457.9           | 1,646.5         | 0.0                | 0.0            |
| 30.00          |                 | 452.1        | 1,295.6        |                 |                    |                   |                | 0.0          | 318.9          | 452.1           | 1,614.6         | 0.0                | 0.0            |
| 35.00          |                 | 386.3        | 1,263.7        |                 |                    |                   |                | 0.0          | 318.9          | 386.3           | 1,582.6         | 0.0                | 0.0            |
| 38.50          | Bot - Section 2 | 230.5        | 865.5          |                 |                    |                   |                | 0.0          | 223.3          | 230.5           | 1,088.8         | 0.0                | 0.0            |
| 40.00          |                 | 305.4        | 645.6          |                 |                    |                   |                | 0.0          | 95.7           | 305.4           | 741.2           | 0.0                | 0.0            |
| 45.00          | Top - Section 1 | 471.7        | 2,115.5        |                 |                    |                   |                | 0.0          | 318.9          | 471.7           | 2,434.4         | 0.0                | 0.0            |
| 50.00          |                 | 473.4        | 891.8          |                 |                    |                   |                | 0.0          | 318.9          | 473.4           | 1,210.7         | 0.0                | 0.0            |
| 55.00          |                 | 473.3        | 867.8          |                 |                    |                   |                | 0.0          | 318.9          | 473.3           | 1,186.8         | 0.0                | 0.0            |
| 60.00          |                 | 471.8        | 843.9          |                 |                    |                   |                | 0.0          | 318.9          | 471.8           | 1,162.8         | 0.0                | 0.0            |
| 65.00          |                 | 468.9        | 819.9          |                 |                    |                   |                | 0.0          | 318.9          | 468.9           | 1,138.8         | 0.0                | 0.0            |
| 70.00          |                 | 372.7        | 795.9          |                 |                    |                   |                | 0.0          | 318.9          | 372.7           | 1,114.9         | 0.0                | 0.0            |
| 73.00          | Bot - Section 3 | 232.6        | 466.1          |                 |                    |                   |                | 0.0          | 191.4          | 232.6           | 657.4           | 0.0                | 0.0            |
| 75.00          | Appurtenance(s) | 256.2        | 565.0          | 139.1           | 0.0                | 0.0               | 76.5           | 0.0          | 127.6          | 395.3           | 769.1           | 0.0                | 0.0            |
| 78.50          | Top - Section 2 | 231.9        | 971.8          |                 |                    |                   |                | 0.0          | 222.8          | 231.9           | 1,194.6         | 0.0                | 0.0            |
| 80.00          |                 | 298.0        | 188.0          |                 |                    |                   |                | 0.0          | 95.5           | 298.0           | 283.5           | 0.0                | 0.0            |
| 85.00          |                 | 409.1        | 613.8          |                 |                    |                   |                | 0.0          | 318.3          | 409.1           | 932.1           | 0.0                | 0.0            |
| 89.00          | Appurtenance(s) | 225.1        | 476.7          | 440.2           | 0.0                | 0.0               | 71.3           | 0.0          | 254.6          | 665.3           | 802.6           | 0.0                | 0.0            |
| 90.00          |                 | 265.8        | 117.2          |                 |                    |                   |                | 0.0          | 59.2           | 265.8           | 176.4           | 0.0                | 0.0            |
| 95.00          |                 | 437.7        | 573.9          |                 |                    |                   |                | 0.0          | 296.1          | 437.7           | 870.0           | 0.0                | 0.0            |
| 100.00         |                 | 259.4        | 553.9          |                 |                    |                   |                | 0.0          | 296.1          | 259.4           | 850.0           | 0.0                | 0.0            |
| 101.00         | Appurtenance(s) | 211.9        | 108.4          | 3,333.4         | 0.0                | 0.0               | 2,626.5        | 0.0          | 59.2           | 3,545.4         | 2,794.1         | 0.0                | 0.0            |
| 105.00         |                 | 324.8        | 425.5          |                 |                    |                   |                | 0.0          | 222.5          | 324.8           | 648.0           | 0.0                | 0.0            |
| 108.75         | Bot - Section 4 | 207.6        | 387.3          |                 |                    |                   |                | 0.0          | 208.6          | 207.6           | 595.9           | 0.0                | 0.0            |
| 110.00         |                 | 134.5        | 229.6          |                 |                    |                   |                | 0.0          | 69.5           | 134.5           | 299.1           | 0.0                | 0.0            |
| 112.00         | Appurtenance(s) | 123.4        | 362.7          | 368.9           | 0.0                | 0.0               | 107.5          | 0.0          | 111.3          | 492.3           | 581.4           | 0.0                | 0.0            |
| 113.00         | Top - Section 3 | 122.1        | 179.2          |                 |                    |                   |                | 0.0          | 55.6           | 122.1           | 234.8           | 0.0                | 0.0            |
| 115.00         |                 | 280.1        | 158.9          |                 |                    |                   |                | 0.0          | 111.3          | 280.1           | 270.1           | 0.0                | 0.0            |
| 120.00         |                 | 238.0        | 386.0          |                 |                    |                   |                | 0.0          | 278.1          | 238.0           | 664.2           | 0.0                | 0.0            |
| 121.00         | Appurtenance(s) | 193.1        | 75.3           | 2,348.6         | 0.0                | 0.0               | 2,431.8        | 0.0          | 55.6           | 2,541.6         | 2,562.7         | 0.0                | 0.0            |
| 125.00         |                 | 340.9        | 294.8          |                 |                    |                   |                | 0.0          | 171.7          | 340.9           | 466.4           | 0.0                | 0.0            |
| 130.00         |                 | 367.5        | 354.1          |                 |                    |                   |                | 0.0          | 214.6          | 367.5           | 568.7           | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 285.7        | 338.1          | 3,111.9         | 0.0                | 0.0               | 2,006.4        | 0.0          | 214.6          | 3,397.6         | 2,559.1         | 0.0                | 0.0            |
| 138.00         | Appurtenance(s) | 173.9        | 195.2          | 749.2           | 0.0                | 0.0               | 837.7          | 0.0          | 57.9           | 923.1           | 1,090.8         | 0.0                | 0.0            |
| 140.00         | Appurtenance(s) | 235.8        | 126.9          | 3,944.9         | 0.0                | 0.0               | 2,322.5        | 0.0          | 38.6           | 4,180.7         | 2,488.1         | 0.0                | 0.0            |
| 145.00         |                 | 263.9        | 306.1          |                 |                    |                   |                | 0.0          | 41.4           | 263.9           | 347.6           | 0.0                | 0.0            |
| 148.00         | Appurtenance(s) | 96.9         | 176.0          | 3,258.9         | 0.0                | 4,759.2           | 1,764.0        | 0.0          | 24.9           | 3,355.7         | 1,964.9         | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | <b>30,670.7</b> | <b>46,499.4</b> | <b>0.00</b>        | <b>0.00</b>    |



Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:41 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

101 mph with No Ice (Reduced DL)

21 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          | -46.47           | -30.46           | 0.00            | -3,259.04       | 0.00            | 3,259.04                   | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.394 |
| 5.00          | -44.64           | -30.03           | 0.00            | -3,106.75       | 0.00            | 3,106.75                   | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.05               | -0.10          | 0.390 |
| 10.00         | -42.85           | -29.62           | 0.00            | -2,956.58       | 0.00            | 2,956.58                   | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.22               | -0.21          | 0.385 |
| 15.00         | -41.09           | -29.21           | 0.00            | -2,808.50       | 0.00            | 2,808.50                   | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.49               | -0.31          | 0.381 |
| 20.00         | -39.36           | -28.80           | 0.00            | -2,662.48       | 0.00            | 2,662.48                   | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.87               | -0.42          | 0.376 |
| 25.00         | -37.66           | -28.40           | 0.00            | -2,518.48       | 0.00            | 2,518.48                   | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 1.37               | -0.53          | 0.370 |
| 30.00         | -36.00           | -28.00           | 0.00            | -2,376.48       | 0.00            | 2,376.48                   | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 1.98               | -0.64          | 0.365 |
| 35.00         | -34.37           | -27.65           | 0.00            | -2,236.47       | 0.00            | 2,236.47                   | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 2.71               | -0.75          | 0.359 |
| 38.50         | -33.26           | -27.44           | 0.00            | -2,139.68       | 0.00            | 2,139.68                   | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 3.29               | -0.83          | 0.354 |
| 40.00         | -32.49           | -27.17           | 0.00            | -2,098.52       | 0.00            | 2,098.52                   | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 3.55               | -0.86          | 0.352 |
| 45.00         | -30.01           | -26.72           | 0.00            | -1,962.68       | 0.00            | 1,962.68                   | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 4.52               | -0.98          | 0.485 |
| 50.00         | -28.74           | -26.29           | 0.00            | -1,829.08       | 0.00            | 1,829.08                   | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 5.61               | -1.10          | 0.472 |
| 55.00         | -27.50           | -25.86           | 0.00            | -1,697.64       | 0.00            | 1,697.64                   | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 6.84               | -1.24          | 0.459 |
| 60.00         | -26.28           | -25.43           | 0.00            | -1,568.32       | 0.00            | 1,568.32                   | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 8.22               | -1.39          | 0.445 |
| 65.00         | -25.09           | -25.00           | 0.00            | -1,441.15       | 0.00            | 1,441.15                   | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 9.76               | -1.54          | 0.430 |
| 70.00         | -23.93           | -24.65           | 0.00            | -1,316.14       | 0.00            | 1,316.14                   | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 11.46              | -1.69          | 0.413 |
| 73.00         | -23.25           | -24.43           | 0.00            | -1,242.20       | 0.00            | 1,242.20                   | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 12.55              | -1.78          | 0.403 |
| 75.00         | -22.46           | -24.04           | 0.00            | -1,193.34       | 0.00            | 1,193.34                   | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 13.31              | -1.84          | 0.395 |
| 78.50         | -21.24           | -23.80           | 0.00            | -1,109.21       | 0.00            | 1,109.21                   | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 14.70              | -1.95          | 0.471 |
| 80.00         | -20.93           | -23.53           | 0.00            | -1,073.51       | 0.00            | 1,073.51                   | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 15.32              | -2.00          | 0.464 |
| 85.00         | -19.95           | -23.14           | 0.00            | -955.87         | 0.00            | 955.87                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 17.50              | -2.16          | 0.436 |
| 89.00         | -19.14           | -22.47           | 0.00            | -863.33         | 0.00            | 863.33                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 19.37              | -2.29          | 0.412 |
| 90.00         | -18.94           | -22.23           | 0.00            | -840.86         | 0.00            | 840.86                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 19.86              | -2.33          | 0.406 |
| 95.00         | -18.03           | -21.80           | 0.00            | -729.72         | 0.00            | 729.72                     | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 22.38              | -2.48          | 0.374 |
| 100.00        | -17.16           | -21.53           | 0.00            | -620.71         | 0.00            | 620.71                     | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 25.06              | -2.63          | 0.339 |
| 101.00        | -14.51           | -17.88           | 0.00            | -599.18         | 0.00            | 599.18                     | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 25.62              | -2.66          | 0.330 |
| 105.00        | -13.84           | -17.55           | 0.00            | -527.66         | 0.00            | 527.66                     | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 27.90              | -2.78          | 0.307 |
| 108.75        | -13.24           | -17.33           | 0.00            | -461.85         | 0.00            | 461.85                     | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 30.12              | -2.88          | 0.282 |
| 110.00        | -12.93           | -17.19           | 0.00            | -440.19         | 0.00            | 440.19                     | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 30.88              | -2.91          | 0.274 |
| 112.00        | -12.37           | -16.68           | 0.00            | -405.81         | 0.00            | 405.81                     | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 32.11              | -2.97          | 0.260 |
| 113.00        | -12.13           | -16.55           | 0.00            | -389.13         | 0.00            | 389.13                     | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 32.74              | -2.99          | 0.328 |
| 115.00        | -11.85           | -16.28           | 0.00            | -356.03         | 0.00            | 356.03                     | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 34.00              | -3.04          | 0.309 |
| 120.00        | -11.17           | -16.02           | 0.00            | -274.66         | 0.00            | 274.66                     | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 37.26              | -3.17          | 0.256 |
| 121.00        | -8.74            | -13.35           | 0.00            | -258.64         | 0.00            | 258.64                     | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 37.93              | -3.20          | 0.244 |
| 125.00        | -8.28            | -12.99           | 0.00            | -205.26         | 0.00            | 205.26                     | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 40.64              | -3.29          | 0.206 |
| 130.00        | -7.71            | -12.60           | 0.00            | -140.30         | 0.00            | 140.30                     | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 44.14              | -3.38          | 0.153 |
| 135.00        | -5.35            | -9.06            | 0.00            | -77.28          | 0.00            | 77.28                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 47.72              | -3.45          | 0.092 |
| 138.00        | -4.32            | -8.08            | 0.00            | -50.09          | 0.00            | 50.09                      | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 49.89              | -3.47          | 0.063 |
| 140.00        | -2.09            | -3.75            | 0.00            | -33.94          | 0.00            | 33.94                      | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 51.35              | -3.49          | 0.044 |
| 145.00        | -1.76            | -3.47            | 0.00            | -15.17          | 0.00            | 15.17                      | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 55.02              | -3.51          | 0.022 |
| 148.00        | 0.00             | -3.36            | 0.00            | -4.76           | 0.00            | 4.76                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 57.22              | -3.51          | 0.007 |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:41 PM

Customer: VERIZON WIRELESS

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

**50 mph with 0.75 in Radial Ice**

**21 Iterations**

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

**Applied Segment Forces Summary**

| Seg Elev (ft)  | Description     | Shaft Forces |                | Discrete Forces |                    |                   | Linear Forces  |              |                | Sum of Forces |                |                    |                |
|----------------|-----------------|--------------|----------------|-----------------|--------------------|-------------------|----------------|--------------|----------------|---------------|----------------|--------------------|----------------|
|                |                 | Wind FX (lb) | Dead Load (lb) | Wind FX (lb)    | Torsion MY (lb-ft) | Moment MZ (lb-ft) | Dead Load (lb) | Wind FX (lb) | Dead Load (lb) | Wind FX (lb)  | Dead Load (lb) | Torsion MY (lb-ft) | Moment MZ (lb) |
| 0.00           |                 | 74.5         | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 74.5          | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 147.7        | 2,382.6        |                 |                    |                   |                | 0.0          | 679.7          | 147.7         | 3,062.3        | 0.0                | 0.0            |
| 10.00          |                 | 145.1        | 2,381.8        |                 |                    |                   |                | 0.0          | 710.9          | 145.1         | 3,092.7        | 0.0                | 0.0            |
| 15.00          |                 | 142.2        | 2,353.9        |                 |                    |                   |                | 0.0          | 727.1          | 142.2         | 3,080.9        | 0.0                | 0.0            |
| 20.00          |                 | 139.3        | 2,317.1        |                 |                    |                   |                | 0.0          | 738.3          | 139.3         | 3,055.4        | 0.0                | 0.0            |
| 25.00          |                 | 136.3        | 2,275.8        |                 |                    |                   |                | 0.0          | 747.1          | 136.3         | 3,022.9        | 0.0                | 0.0            |
| 30.00          |                 | 134.9        | 2,231.5        |                 |                    |                   |                | 0.0          | 754.3          | 134.9         | 2,985.8        | 0.0                | 0.0            |
| 35.00          |                 | 115.5        | 2,185.3        |                 |                    |                   |                | 0.0          | 760.4          | 115.5         | 2,945.7        | 0.0                | 0.0            |
| 38.50          | Bot - Section 2 | 69.0         | 1,502.7        |                 |                    |                   |                | 0.0          | 535.5          | 69.0          | 2,038.2        | 0.0                | 0.0            |
| 40.00          |                 | 91.5         | 1,012.2        |                 |                    |                   |                | 0.0          | 230.3          | 91.5          | 1,242.5        | 0.0                | 0.0            |
| 45.00          | Top - Section 1 | 141.5        | 3,317.0        |                 |                    |                   |                | 0.0          | 770.6          | 141.5         | 4,087.6        | 0.0                | 0.0            |
| 50.00          |                 | 142.3        | 1,678.3        |                 |                    |                   |                | 0.0          | 774.9          | 142.3         | 2,453.2        | 0.0                | 0.0            |
| 55.00          |                 | 142.6        | 1,638.4        |                 |                    |                   |                | 0.0          | 778.9          | 142.6         | 2,417.3        | 0.0                | 0.0            |
| 60.00          |                 | 142.5        | 1,597.9        |                 |                    |                   |                | 0.0          | 782.5          | 142.5         | 2,380.5        | 0.0                | 0.0            |
| 65.00          |                 | 142.0        | 1,556.9        |                 |                    |                   |                | 0.0          | 785.9          | 142.0         | 2,342.8        | 0.0                | 0.0            |
| 70.00          |                 | 113.1        | 1,515.4        |                 |                    |                   |                | 0.0          | 789.1          | 113.1         | 2,304.4        | 0.0                | 0.0            |
| 73.00          | Bot - Section 3 | 70.7         | 890.7          |                 |                    |                   |                | 0.0          | 474.9          | 70.7          | 1,365.6        | 0.0                | 0.0            |
| 75.00          | Appurtenance(s) | 77.9         | 933.9          | 30.5            | 0.0                | 0.0               | 96.2           | 0.0          | 317.1          | 108.4         | 1,347.3        | 0.0                | 0.0            |
| 78.50          | Top - Section 2 | 70.6         | 1,606.4        |                 |                    |                   |                | 0.0          | 541.1          | 70.6          | 2,147.6        | 0.0                | 0.0            |
| 80.00          |                 | 90.9         | 383.1          |                 |                    |                   |                | 0.0          | 232.3          | 90.9          | 615.3          | 0.0                | 0.0            |
| 85.00          |                 | 125.0        | 1,247.9        |                 |                    |                   |                | 0.0          | 775.8          | 125.0         | 2,023.7        | 0.0                | 0.0            |
| 89.00          | Appurtenance(s) | 68.9         | 972.3          | 82.7            | 0.0                | 0.0               | 424.0          | 0.0          | 622.3          | 151.6         | 2,018.6        | 0.0                | 0.0            |
| 90.00          |                 | 81.6         | 240.1          |                 |                    |                   |                | 0.0          | 149.9          | 81.6          | 390.0          | 0.0                | 0.0            |
| 95.00          |                 | 134.6        | 1,172.3        |                 |                    |                   |                | 0.0          | 750.8          | 134.6         | 1,923.1        | 0.0                | 0.0            |
| 100.00         |                 | 80.0         | 1,134.2        |                 |                    |                   |                | 0.0          | 752.8          | 80.0          | 1,887.0        | 0.0                | 0.0            |
| 101.00         | Appurtenance(s) | 65.5         | 223.3          | 702.9           | 0.0                | 0.0               | 5,993.5        | 0.0          | 150.8          | 768.4         | 6,367.6        | 0.0                | 0.0            |
| 105.00         |                 | 100.6        | 874.6          |                 |                    |                   |                | 0.0          | 535.6          | 100.6         | 1,410.3        | 0.0                | 0.0            |
| 108.75         | Bot - Section 4 | 64.4         | 797.8          |                 |                    |                   |                | 0.0          | 503.1          | 64.4          | 1,300.8        | 0.0                | 0.0            |
| 110.00         |                 | 41.8         | 400.6          |                 |                    |                   |                | 0.0          | 167.9          | 41.8          | 568.5          | 0.0                | 0.0            |
| 112.00         | Appurtenance(s) | 38.4         | 632.7          | 71.6            | 0.0                | 0.0               | 528.7          | 0.0          | 268.8          | 110.0         | 1,430.3        | 0.0                | 0.0            |
| 113.00         | Top - Section 3 | 38.0         | 313.0          |                 |                    |                   |                | 0.0          | 134.5          | 38.0          | 447.5          | 0.0                | 0.0            |
| 115.00         |                 | 87.4         | 358.1          |                 |                    |                   |                | 0.0          | 269.1          | 87.4          | 627.2          | 0.0                | 0.0            |
| 120.00         |                 | 74.4         | 867.3          |                 |                    |                   |                | 0.0          | 673.8          | 74.4          | 1,541.2        | 0.0                | 0.0            |
| 121.00         | Appurtenance(s) | 60.6         | 170.5          | 538.3           | 0.0                | 0.0               | 5,770.0        | 0.0          | 134.9          | 598.9         | 6,075.4        | 0.0                | 0.0            |
| 125.00         |                 | 107.3        | 665.2          |                 |                    |                   |                | 0.0          | 245.3          | 107.3         | 910.5          | 0.0                | 0.0            |
| 130.00         |                 | 116.2        | 799.5          |                 |                    |                   |                | 0.0          | 306.8          | 116.2         | 1,106.3        | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 90.7         | 765.3          | 700.6           | 0.0                | 0.0               | 4,790.6        | 0.0          | 307.0          | 791.3         | 5,862.9        | 0.0                | 0.0            |
| 138.00         | Appurtenance(s) | 55.4         | 444.4          | 178.9           | 0.0                | 0.0               | 2,643.3        | 0.0          | 77.2           | 234.4         | 3,164.9        | 0.0                | 0.0            |
| 140.00         | Appurtenance(s) | 75.5         | 290.0          | 824.4           | 0.0                | 0.0               | 6,678.4        | 0.0          | 51.5           | 899.9         | 7,019.8        | 0.0                | 0.0            |
| 145.00         |                 | 84.8         | 696.5          |                 |                    |                   |                | 0.0          | 55.3           | 84.8          | 751.8          | 0.0                | 0.0            |
| 148.00         | Appurtenance(s) | 31.2         | 403.0          | 778.5           | 0.0                | 1,477.6           | 4,692.4        | 0.0          | 33.2           | 809.8         | 5,128.6        | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 7,860.71      | 97,944.1       | 0.00               | 0.00           |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:47 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

21 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -97.94           | -7.81            | 0.00            | -833.11         | 0.00            | 833.11                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.113 |
| 5.00          | -94.88           | -7.70            | 0.00            | -794.07         | 0.00            | 794.07                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.01               | -0.03          | 0.112 |
| 10.00         | -91.78           | -7.60            | 0.00            | -755.55         | 0.00            | 755.55                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.06               | -0.05          | 0.111 |
| 15.00         | -88.70           | -7.50            | 0.00            | -717.56         | 0.00            | 717.56                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.13               | -0.08          | 0.109 |
| 20.00         | -85.64           | -7.39            | 0.00            | -680.08         | 0.00            | 680.08                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.22               | -0.11          | 0.108 |
| 25.00         | -82.61           | -7.29            | 0.00            | -643.12         | 0.00            | 643.12                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.35               | -0.13          | 0.106 |
| 30.00         | -79.62           | -7.19            | 0.00            | -606.67         | 0.00            | 606.67                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.51               | -0.16          | 0.105 |
| 35.00         | -76.67           | -7.10            | 0.00            | -570.74         | 0.00            | 570.74                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.69               | -0.19          | 0.103 |
| 38.50         | -74.63           | -7.04            | 0.00            | -545.91         | 0.00            | 545.91                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.84               | -0.21          | 0.101 |
| 40.00         | -73.39           | -6.97            | 0.00            | -535.35         | 0.00            | 535.35                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.91               | -0.22          | 0.101 |
| 45.00         | -69.30           | -6.84            | 0.00            | -500.52         | 0.00            | 500.52                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 1.15               | -0.25          | 0.139 |
| 50.00         | -66.84           | -6.73            | 0.00            | -466.30         | 0.00            | 466.30                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 1.43               | -0.28          | 0.135 |
| 55.00         | -64.42           | -6.62            | 0.00            | -432.65         | 0.00            | 432.65                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 1.75               | -0.32          | 0.132 |
| 60.00         | -62.04           | -6.50            | 0.00            | -399.56         | 0.00            | 399.56                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 2.10               | -0.36          | 0.128 |
| 65.00         | -59.69           | -6.38            | 0.00            | -367.06         | 0.00            | 367.06                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 2.49               | -0.39          | 0.124 |
| 70.00         | -57.38           | -6.29            | 0.00            | -335.13         | 0.00            | 335.13                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 2.93               | -0.43          | 0.119 |
| 73.00         | -56.02           | -6.22            | 0.00            | -316.28         | 0.00            | 316.28                     | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 3.20               | -0.46          | 0.116 |
| 75.00         | -54.67           | -6.12            | 0.00            | -303.83         | 0.00            | 303.83                     | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 3.40               | -0.47          | 0.114 |
| 78.50         | -52.52           | -6.05            | 0.00            | -282.40         | 0.00            | 282.40                     | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 3.75               | -0.50          | 0.137 |
| 80.00         | -51.90           | -5.98            | 0.00            | -273.32         | 0.00            | 273.32                     | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 3.91               | -0.51          | 0.135 |
| 85.00         | -49.88           | -5.87            | 0.00            | -243.42         | 0.00            | 243.42                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 4.47               | -0.55          | 0.127 |
| 89.00         | -47.86           | -5.72            | 0.00            | -219.94         | 0.00            | 219.94                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 4.94               | -0.58          | 0.121 |
| 90.00         | -47.47           | -5.65            | 0.00            | -214.22         | 0.00            | 214.22                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 5.07               | -0.59          | 0.119 |
| 95.00         | -45.54           | -5.53            | 0.00            | -185.97         | 0.00            | 185.97                     | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 5.71               | -0.63          | 0.111 |
| 100.00        | -43.65           | -5.44            | 0.00            | -158.33         | 0.00            | 158.33                     | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 6.40               | -0.67          | 0.102 |
| 101.00        | -37.29           | -4.61            | 0.00            | -152.89         | 0.00            | 152.89                     | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 6.54               | -0.68          | 0.098 |
| 105.00        | -35.88           | -4.51            | 0.00            | -134.45         | 0.00            | 134.45                     | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 7.12               | -0.71          | 0.091 |
| 108.75        | -34.58           | -4.44            | 0.00            | -117.53         | 0.00            | 117.53                     | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 7.69               | -0.73          | 0.085 |
| 110.00        | -34.01           | -4.40            | 0.00            | -111.98         | 0.00            | 111.98                     | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 7.88               | -0.74          | 0.082 |
| 112.00        | -32.58           | -4.27            | 0.00            | -103.19         | 0.00            | 103.19                     | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 8.19               | -0.76          | 0.078 |
| 113.00        | -32.13           | -4.24            | 0.00            | -98.91          | 0.00            | 98.91                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 8.35               | -0.76          | 0.100 |
| 115.00        | -31.51           | -4.15            | 0.00            | -90.44          | 0.00            | 90.44                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 8.68               | -0.78          | 0.094 |
| 120.00        | -29.97           | -4.07            | 0.00            | -69.67          | 0.00            | 69.67                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 9.51               | -0.81          | 0.081 |
| 121.00        | -23.90           | -3.39            | 0.00            | -65.60          | 0.00            | 65.60                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 9.68               | -0.82          | 0.074 |
| 125.00        | -22.99           | -3.28            | 0.00            | -52.05          | 0.00            | 52.05                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 10.37              | -0.84          | 0.065 |
| 130.00        | -21.88           | -3.15            | 0.00            | -35.66          | 0.00            | 35.66                      | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 11.26              | -0.86          | 0.051 |
| 135.00        | -16.03           | -2.28            | 0.00            | -19.89          | 0.00            | 19.89                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 12.17              | -0.88          | 0.033 |
| 138.00        | -12.87           | -1.99            | 0.00            | -13.07          | 0.00            | 13.07                      | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 12.73              | -0.89          | 0.024 |
| 140.00        | -5.87            | -0.99            | 0.00            | -9.08           | 0.00            | 9.08                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 13.10              | -0.89          | 0.015 |
| 145.00        | -5.12            | -0.89            | 0.00            | -4.15           | 0.00            | 4.15                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 14.03              | -0.89          | 0.009 |
| 148.00        | 0.00             | -0.81            | 0.00            | -1.48           | 0.00            | 1.48                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 14.60              | -0.90          | 0.002 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:47 PM

Customer: VERIZON WIRELESS

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

**Serviceability 60 mph**

**20 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           |                 | 56.0         | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 56.0         | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 110.7        | 1,617.1        |                 |                    |                   |                | 0.0          | 354.4          | 110.7        | 1,971.5        | 0.0                | 0.0            |
| 10.00          |                 | 108.3        | 1,581.6        |                 |                    |                   |                | 0.0          | 354.4          | 108.3        | 1,936.0        | 0.0                | 0.0            |
| 15.00          |                 | 105.9        | 1,546.1        |                 |                    |                   |                | 0.0          | 354.4          | 105.9        | 1,900.5        | 0.0                | 0.0            |
| 20.00          |                 | 103.4        | 1,510.6        |                 |                    |                   |                | 0.0          | 354.4          | 103.4        | 1,865.0        | 0.0                | 0.0            |
| 25.00          |                 | 101.0        | 1,475.1        |                 |                    |                   |                | 0.0          | 354.4          | 101.0        | 1,829.5        | 0.0                | 0.0            |
| 30.00          |                 | 99.7         | 1,439.6        |                 |                    |                   |                | 0.0          | 354.4          | 99.7         | 1,794.0        | 0.0                | 0.0            |
| 35.00          |                 | 85.2         | 1,404.1        |                 |                    |                   |                | 0.0          | 354.4          | 85.2         | 1,758.4        | 0.0                | 0.0            |
| 38.50          | Bot - Section 2 | 50.8         | 961.7          |                 |                    |                   |                | 0.0          | 248.1          | 50.8         | 1,209.8        | 0.0                | 0.0            |
| 40.00          |                 | 67.4         | 717.3          |                 |                    |                   |                | 0.0          | 106.3          | 67.4         | 823.6          | 0.0                | 0.0            |
| 45.00          | Top - Section 1 | 104.0        | 2,350.6        |                 |                    |                   |                | 0.0          | 354.4          | 104.0        | 2,704.9        | 0.0                | 0.0            |
| 50.00          |                 | 104.4        | 990.9          |                 |                    |                   |                | 0.0          | 354.4          | 104.4        | 1,345.3        | 0.0                | 0.0            |
| 55.00          |                 | 104.4        | 964.2          |                 |                    |                   |                | 0.0          | 354.4          | 104.4        | 1,318.6        | 0.0                | 0.0            |
| 60.00          |                 | 104.1        | 937.6          |                 |                    |                   |                | 0.0          | 354.4          | 104.1        | 1,292.0        | 0.0                | 0.0            |
| 65.00          |                 | 103.4        | 911.0          |                 |                    |                   |                | 0.0          | 354.4          | 103.4        | 1,265.4        | 0.0                | 0.0            |
| 70.00          |                 | 82.2         | 884.4          |                 |                    |                   |                | 0.0          | 354.4          | 82.2         | 1,238.7        | 0.0                | 0.0            |
| 73.00          | Bot - Section 3 | 51.3         | 517.8          |                 |                    |                   |                | 0.0          | 212.6          | 51.3         | 730.5          | 0.0                | 0.0            |
| 75.00          | Appurtenance(s) | 56.5         | 627.8          | 30.7            | 0.0                | 0.0               | 85.0           | 0.0          | 141.8          | 87.2         | 854.5          | 0.0                | 0.0            |
| 78.50          | Top - Section 2 | 51.2         | 1,079.8        |                 |                    |                   |                | 0.0          | 247.5          | 51.2         | 1,327.4        | 0.0                | 0.0            |
| 80.00          |                 | 65.7         | 208.9          |                 |                    |                   |                | 0.0          | 106.1          | 65.7         | 315.0          | 0.0                | 0.0            |
| 85.00          |                 | 90.2         | 682.0          |                 |                    |                   |                | 0.0          | 353.6          | 90.2         | 1,035.6        | 0.0                | 0.0            |
| 89.00          | Appurtenance(s) | 49.6         | 529.6          | 97.1            | 0.0                | 0.0               | 79.2           | 0.0          | 282.9          | 146.7        | 891.7          | 0.0                | 0.0            |
| 90.00          |                 | 58.6         | 130.2          |                 |                    |                   |                | 0.0          | 65.8           | 58.6         | 196.0          | 0.0                | 0.0            |
| 95.00          |                 | 96.5         | 637.6          |                 |                    |                   |                | 0.0          | 329.0          | 96.5         | 966.6          | 0.0                | 0.0            |
| 100.00         |                 | 57.2         | 615.4          |                 |                    |                   |                | 0.0          | 329.0          | 57.2         | 944.5          | 0.0                | 0.0            |
| 101.00         | Appurtenance(s) | 46.7         | 120.4          | 735.2           | 0.0                | 0.0               | 2,918.3        | 0.0          | 65.8           | 782.0        | 3,104.5        | 0.0                | 0.0            |
| 105.00         |                 | 71.6         | 472.8          |                 |                    |                   |                | 0.0          | 247.2          | 71.6         | 720.0          | 0.0                | 0.0            |
| 108.75         | Bot - Section 4 | 45.8         | 430.4          |                 |                    |                   |                | 0.0          | 231.8          | 45.8         | 662.1          | 0.0                | 0.0            |
| 110.00         |                 | 29.7         | 255.1          |                 |                    |                   |                | 0.0          | 77.3           | 29.7         | 332.4          | 0.0                | 0.0            |
| 112.00         | Appurtenance(s) | 27.2         | 403.0          | 81.4            | 0.0                | 0.0               | 119.4          | 0.0          | 123.6          | 108.6        | 646.0          | 0.0                | 0.0            |
| 113.00         | Top - Section 3 | 26.9         | 199.1          |                 |                    |                   |                | 0.0          | 61.8           | 26.9         | 260.9          | 0.0                | 0.0            |
| 115.00         |                 | 61.8         | 176.5          |                 |                    |                   |                | 0.0          | 123.6          | 61.8         | 300.2          | 0.0                | 0.0            |
| 120.00         |                 | 52.5         | 428.9          |                 |                    |                   |                | 0.0          | 309.0          | 52.5         | 738.0          | 0.0                | 0.0            |
| 121.00         | Appurtenance(s) | 42.6         | 83.7           | 518.0           | 0.0                | 0.0               | 2,702.0        | 0.0          | 61.8           | 560.6        | 2,847.5        | 0.0                | 0.0            |
| 125.00         |                 | 75.2         | 327.5          |                 |                    |                   |                | 0.0          | 190.8          | 75.2         | 518.3          | 0.0                | 0.0            |
| 130.00         |                 | 81.0         | 393.4          |                 |                    |                   |                | 0.0          | 238.4          | 81.0         | 631.9          | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 63.0         | 375.7          | 686.4           | 0.0                | 0.0               | 2,229.3        | 0.0          | 238.4          | 749.4        | 2,843.4        | 0.0                | 0.0            |
| 138.00         | Appurtenance(s) | 38.4         | 216.9          | 165.2           | 0.0                | 0.0               | 930.8          | 0.0          | 64.3           | 203.6        | 1,212.0        | 0.0                | 0.0            |
| 140.00         | Appurtenance(s) | 52.0         | 141.0          | 870.1           | 0.0                | 0.0               | 2,580.6        | 0.0          | 42.9           | 922.1        | 2,764.5        | 0.0                | 0.0            |
| 145.00         |                 | 58.2         | 340.2          |                 |                    |                   |                | 0.0          | 46.0           | 58.2         | 386.2          | 0.0                | 0.0            |
| 148.00         | Appurtenance(s) | 21.4         | 195.6          | 718.8           | 0.0                | 1,049.7           | 1,960.0        | 0.0          | 27.6           | 740.2        | 2,183.2        | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 6,764.95     | 51,666.0       | 0.00               | 0.00           |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:52 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

20 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          | -51.66           | -6.72            | 0.00            | -721.11         | 0.00            | 721.11                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.093 |
| 5.00          | -49.69           | -6.63            | 0.00            | -687.52         | 0.00            | 687.52                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.01               | -0.02          | 0.092 |
| 10.00         | -47.75           | -6.54            | 0.00            | -654.38         | 0.00            | 654.38                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.05               | -0.05          | 0.091 |
| 15.00         | -45.85           | -6.45            | 0.00            | -621.70         | 0.00            | 621.70                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.11               | -0.07          | 0.090 |
| 20.00         | -43.98           | -6.36            | 0.00            | -589.46         | 0.00            | 589.46                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.19               | -0.09          | 0.089 |
| 25.00         | -42.15           | -6.27            | 0.00            | -557.66         | 0.00            | 557.66                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.30               | -0.12          | 0.087 |
| 30.00         | -40.35           | -6.19            | 0.00            | -526.29         | 0.00            | 526.29                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.44               | -0.14          | 0.086 |
| 35.00         | -38.59           | -6.11            | 0.00            | -495.36         | 0.00            | 495.36                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.60               | -0.17          | 0.085 |
| 38.50         | -37.38           | -6.07            | 0.00            | -473.97         | 0.00            | 473.97                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.73               | -0.18          | 0.083 |
| 40.00         | -36.56           | -6.01            | 0.00            | -464.87         | 0.00            | 464.87                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.79               | -0.19          | 0.083 |
| 45.00         | -33.85           | -5.91            | 0.00            | -434.84         | 0.00            | 434.84                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 1.00               | -0.22          | 0.114 |
| 50.00         | -32.50           | -5.81            | 0.00            | -405.30         | 0.00            | 405.30                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 1.24               | -0.24          | 0.111 |
| 55.00         | -31.18           | -5.72            | 0.00            | -376.23         | 0.00            | 376.23                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 1.51               | -0.28          | 0.108 |
| 60.00         | -29.89           | -5.63            | 0.00            | -347.62         | 0.00            | 347.62                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 1.82               | -0.31          | 0.105 |
| 65.00         | -28.62           | -5.53            | 0.00            | -319.48         | 0.00            | 319.48                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 2.16               | -0.34          | 0.101 |
| 70.00         | -27.38           | -5.46            | 0.00            | -291.81         | 0.00            | 291.81                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 2.54               | -0.37          | 0.098 |
| 73.00         | -26.65           | -5.41            | 0.00            | -275.44         | 0.00            | 275.44                     | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 2.78               | -0.40          | 0.095 |
| 75.00         | -25.79           | -5.32            | 0.00            | -264.62         | 0.00            | 264.62                     | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 2.95               | -0.41          | 0.093 |
| 78.50         | -24.46           | -5.27            | 0.00            | -245.98         | 0.00            | 245.98                     | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 3.26               | -0.43          | 0.112 |
| 80.00         | -24.14           | -5.21            | 0.00            | -238.08         | 0.00            | 238.08                     | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 3.39               | -0.44          | 0.110 |
| 85.00         | -23.11           | -5.13            | 0.00            | -212.02         | 0.00            | 212.02                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 3.88               | -0.48          | 0.103 |
| 89.00         | -22.21           | -4.98            | 0.00            | -191.51         | 0.00            | 191.51                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 4.29               | -0.51          | 0.098 |
| 90.00         | -22.02           | -4.93            | 0.00            | -186.53         | 0.00            | 186.53                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 4.40               | -0.52          | 0.097 |
| 95.00         | -21.05           | -4.83            | 0.00            | -161.89         | 0.00            | 161.89                     | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 4.96               | -0.55          | 0.089 |
| 100.00        | -20.10           | -4.77            | 0.00            | -137.72         | 0.00            | 137.72                     | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 5.55               | -0.58          | 0.082 |
| 101.00        | -17.01           | -3.97            | 0.00            | -132.95         | 0.00            | 132.95                     | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 5.67               | -0.59          | 0.079 |
| 105.00        | -16.28           | -3.89            | 0.00            | -117.08         | 0.00            | 117.08                     | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 6.18               | -0.62          | 0.073 |
| 108.75        | -15.62           | -3.84            | 0.00            | -102.48         | 0.00            | 102.48                     | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 6.67               | -0.64          | 0.068 |
| 110.00        | -15.29           | -3.81            | 0.00            | -97.68          | 0.00            | 97.68                      | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 6.84               | -0.65          | 0.066 |
| 112.00        | -14.64           | -3.70            | 0.00            | -90.05          | 0.00            | 90.05                      | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 7.11               | -0.66          | 0.063 |
| 113.00        | -14.38           | -3.67            | 0.00            | -86.35          | 0.00            | 86.35                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 7.25               | -0.66          | 0.079 |
| 115.00        | -14.08           | -3.61            | 0.00            | -79.01          | 0.00            | 79.01                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 7.53               | -0.67          | 0.075 |
| 120.00        | -13.34           | -3.55            | 0.00            | -60.94          | 0.00            | 60.94                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 8.26               | -0.70          | 0.063 |
| 121.00        | -10.50           | -2.96            | 0.00            | -57.39          | 0.00            | 57.39                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 8.40               | -0.71          | 0.059 |
| 125.00        | -9.98            | -2.88            | 0.00            | -45.54          | 0.00            | 45.54                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 9.01               | -0.73          | 0.050 |
| 130.00        | -9.35            | -2.80            | 0.00            | -31.13          | 0.00            | 31.13                      | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 9.78               | -0.75          | 0.039 |
| 135.00        | -6.52            | -2.01            | 0.00            | -17.14          | 0.00            | 17.14                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 10.58              | -0.76          | 0.024 |
| 138.00        | -5.31            | -1.79            | 0.00            | -11.11          | 0.00            | 11.11                      | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 11.06              | -0.77          | 0.017 |
| 140.00        | -2.56            | -0.83            | 0.00            | -7.52           | 0.00            | 7.52                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 11.38              | -0.77          | 0.011 |
| 145.00        | -2.17            | -0.77            | 0.00            | -3.36           | 0.00            | 3.36                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 12.19              | -0.78          | 0.006 |
| 148.00        | 0.00             | -0.74            | 0.00            | -1.05           | 0.00            | 1.05                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 12.68              | -0.78          | 0.002 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

### Equivalent Lateral Forces Method Analysis

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

|  |         |
|--|---------|
| Spectral Response Acceleration for Short Period ( $S_a$ ):               | 0.17    |
| 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 ( $S_{ds}$ ):      | 0.18    |
| 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):                                   | 1.98    |
| Redundancy Factor (p):   | 1.30    |
| Seismic Force Distribution Exponent (k):                                 | 1.74    |
| Total Unfactored Dead Load:  | 51.67 k |
| Seismic Base Shear (E):  | 2.17 k  |

**Load Case (1.2 + 0.2S<sub>ds</sub>) \* DL + E ELFM**

**Seismic Equivalent Lateral Forces Method**

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---------|------------------------|-------------|---------------|----------|-----------------------|---------------------|
| 40      | 146.50                 | 223         | 1,322         | 0.011    | 24                    | 276                 |
| 39      | 142.50                 | 386         | 2,180         | 0.018    | 39                    | 478                 |
| 38      | 139.00                 | 184         | 994           | 0.008    | 18                    | 227                 |
| 37      | 136.50                 | 281         | 1,473         | 0.012    | 26                    | 348                 |
| 36      | 132.50                 | 614         | 3,054         | 0.025    | 55                    | 759                 |
| 35      | 127.50                 | 632         | 2,939         | 0.024    | 53                    | 781                 |
| 34      | 123.00                 | 518         | 2,264         | 0.019    | 41                    | 641                 |
| 33      | 120.50                 | 145         | 613           | 0.005    | 11                    | 180                 |
| 32      | 117.50                 | 738         | 2,977         | 0.025    | 54                    | 912                 |
| 31      | 114.00                 | 300         | 1,149         | 0.010    | 21                    | 371                 |
| 30      | 112.50                 | 261         | 976           | 0.008    | 18                    | 323                 |
| 29      | 111.00                 | 527         | 1,924         | 0.016    | 35                    | 651                 |
| 28      | 109.38                 | 332         | 1,183         | 0.010    | 21                    | 411                 |
| 27      | 106.88                 | 662         | 2,265         | 0.019    | 41                    | 819                 |
| 26      | 103.00                 | 720         | 2,309         | 0.019    | 42                    | 890                 |
| 25      | 100.50                 | 186         | 572           | 0.005    | 10                    | 230                 |
| 24      | 97.50                  | 944         | 2,753         | 0.023    | 50                    | 1,168               |
| 23      | 92.50                  | 967         | 2,571         | 0.021    | 46                    | 1,195               |
| 22      | 89.50                  | 196         | 492           | 0.004    | 9                     | 242                 |
| 21      | 87.00                  | 813         | 1,942         | 0.016    | 35                    | 1,005               |
| 20      | 82.50                  | 1,036       | 2,256         | 0.019    | 41                    | 1,281               |
| 19      | 79.25                  | 315         | 640           | 0.005    | 12                    | 390                 |
| 18      | 76.75                  | 1,327       | 2,550         | 0.021    | 46                    | 1,641               |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

|                      |        |        |         |       |       |        |
|----------------------|--------|--------|---------|-------|-------|--------|
| 17                   | 74.00  | 770    | 1,387   | 0.012 | 25    | 952    |
| 16                   | 71.50  | 730    | 1,240   | 0.010 | 22    | 903    |
| 15                   | 67.50  | 1,239  | 1,903   | 0.016 | 34    | 1,532  |
| 14                   | 62.50  | 1,265  | 1,700   | 0.014 | 31    | 1,565  |
| 13                   | 57.50  | 1,292  | 1,501   | 0.012 | 27    | 1,598  |
| 12                   | 52.50  | 1,319  | 1,307   | 0.011 | 24    | 1,630  |
| 11                   | 47.50  | 1,345  | 1,120   | 0.009 | 20    | 1,663  |
| 10                   | 42.50  | 2,705  | 1,856   | 0.015 | 33    | 3,345  |
| 9                    | 39.25  | 824    | 492     | 0.004 | 9     | 1,018  |
| 8                    | 36.75  | 1,210  | 644     | 0.005 | 12    | 1,496  |
| 7                    | 32.50  | 1,758  | 756     | 0.006 | 14    | 2,174  |
| 6                    | 27.50  | 1,794  | 577     | 0.005 | 10    | 2,218  |
| 5                    | 22.50  | 1,829  | 415     | 0.003 | 7     | 2,262  |
| 4                    | 17.50  | 1,865  | 273     | 0.002 | 5     | 2,306  |
| 3                    | 12.50  | 1,900  | 155     | 0.001 | 3     | 2,350  |
| 2                    | 7.50   | 1,936  | 65      | 0.001 | 1     | 2,394  |
| 1                    | 2.50   | 1,971  | 10      | 0.000 | 0     | 2,438  |
| 6' Dipole            | 148.00 | 20     | 121     | 0.001 | 2     | 25     |
| 8' Omni              | 148.00 | 25     | 151     | 0.001 | 3     | 31     |
| 48" x 12" Panel      | 148.00 | 360    | 2,171   | 0.018 | 39    | 445    |
| 18' Dipole           | 148.00 | 55     | 332     | 0.003 | 6     | 68     |
| Flat Low Profile Pla | 148.00 | 1,500  | 9,045   | 0.075 | 163   | 1,855  |
| Nokia B5 RRH4x40-850 | 140.00 | 146    | 796     | 0.007 | 14    | 180    |
| Alcatel-Lucent RRH4x | 140.00 | 165    | 905     | 0.008 | 16    | 204    |
| Alcatel-Lucent B66A  | 140.00 | 201    | 1,100   | 0.009 | 20    | 249    |
| RFS DB-T1-6Z-8AB-0Z  | 140.00 | 88     | 482     | 0.004 | 9     | 109    |
| Commscope LNX-6514DS | 140.00 | 39     | 212     | 0.002 | 4     | 48     |
| Andrew LNX-8513DS-A1 | 140.00 | 78     | 429     | 0.004 | 8     | 97     |
| Commscope JAHH-65B-R | 140.00 | 364    | 1,990   | 0.017 | 36    | 450    |
| Flat Low Profile Pla | 140.00 | 1,500  | 8,210   | 0.068 | 148   | 1,855  |
| Raycap DC6-48-60-18- | 138.00 | 32     | 170     | 0.001 | 3     | 39     |
| Ericsson RRUS 11 (Ba | 138.00 | 165    | 881     | 0.007 | 16    | 204    |
| Ericsson RRUS-12 B2  | 138.00 | 174    | 929     | 0.008 | 17    | 215    |
| Collar               | 138.00 | 560    | 2,989   | 0.025 | 54    | 692    |
| Powerwave Allgon LGP | 135.00 | 32     | 163     | 0.001 | 3     | 39     |
| Powerwave Allgon TT1 | 135.00 | 96     | 493     | 0.004 | 9     | 119    |
| Ericsson RRUS A2 B2  | 135.00 | 66     | 339     | 0.003 | 6     | 82     |
| Powerwave Allgon 777 | 135.00 | 210    | 1,079   | 0.009 | 19    | 260    |
| Commscope SBNHH-1D65 | 135.00 | 101    | 516     | 0.004 | 9     | 124    |
| Flat Low Profile Pla | 135.00 | 1,725  | 8,862   | 0.074 | 159   | 2,133  |
| Ericsson KRY 112 144 | 121.00 | 44     | 187     | 0.002 | 3     | 54     |
| Ericsson AIR 21, 1.3 | 121.00 | 332    | 1,410   | 0.012 | 25    | 411    |
| Ericsson AIR 21, 1.3 | 121.00 | 326    | 1,384   | 0.011 | 25    | 403    |
| Round Low Profile PI | 121.00 | 2,000  | 8,491   | 0.070 | 153   | 2,473  |
| 6.7" x 10.7" TTA     | 112.00 | 59     | 220     | 0.002 | 4     | 73     |
| 36" x 10" Panel      | 112.00 | 60     | 223     | 0.002 | 4     | 74     |
| Alcatel-Lucent 800 M | 101.00 | 192    | 595     | 0.005 | 11    | 237    |
| Alcatel-Lucent 1900  | 101.00 | 180    | 558     | 0.005 | 10    | 223    |
| Alcatel-Lucent TD-RR | 101.00 | 210    | 651     | 0.005 | 12    | 260    |
| RFS APXV9TM14-ALU-I2 | 101.00 | 165    | 512     | 0.004 | 9     | 204    |
| RFS APXVSP18-C-A20   | 101.00 | 171    | 530     | 0.004 | 10    | 211    |
| Flat Platform w/ Han | 101.00 | 2,000  | 6,199   | 0.051 | 111   | 2,473  |
| RFS APXV18-206517S-C | 89.00  | 79     | 197     | 0.002 | 4     | 98     |
| GPS                  | 75.00  | 10     | 18      | 0.000 | 0     | 12     |
| Stand-Off            | 75.00  | 75     | 138     | 0.001 | 2     | 93     |
|                      |        | 51,666 | 120,478 | 1.000 | 2,167 | 63,884 |



Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

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

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

| Segment              | Height Above Base (ft) | Weight (lb) | W <sub>z</sub> (lb-ft) | C <sub>vx</sub> | Horizontal Force (lb) | Vertical Force (lb) |
|----------------------|------------------------|-------------|------------------------|-----------------|-----------------------|---------------------|
| 40                   | 146.50                 | 223         | 1,322                  | 0.011           | 24                    | 193                 |
| 39                   | 142.50                 | 386         | 2,180                  | 0.018           | 39                    | 333                 |
| 38                   | 139.00                 | 184         | 994                    | 0.008           | 18                    | 159                 |
| 37                   | 136.50                 | 281         | 1,473                  | 0.012           | 26                    | 243                 |
| 36                   | 132.50                 | 614         | 3,054                  | 0.025           | 55                    | 530                 |
| 35                   | 127.50                 | 632         | 2,939                  | 0.024           | 53                    | 546                 |
| 34                   | 123.00                 | 518         | 2,264                  | 0.019           | 41                    | 448                 |
| 33                   | 120.50                 | 145         | 613                    | 0.005           | 11                    | 126                 |
| 32                   | 117.50                 | 738         | 2,977                  | 0.025           | 54                    | 637                 |
| 31                   | 114.00                 | 300         | 1,149                  | 0.010           | 21                    | 259                 |
| 30                   | 112.50                 | 261         | 976                    | 0.008           | 18                    | 225                 |
| 29                   | 111.00                 | 527         | 1,924                  | 0.016           | 35                    | 455                 |
| 28                   | 109.38                 | 332         | 1,183                  | 0.010           | 21                    | 287                 |
| 27                   | 106.88                 | 662         | 2,265                  | 0.019           | 41                    | 572                 |
| 26                   | 103.00                 | 720         | 2,309                  | 0.019           | 42                    | 622                 |
| 25                   | 100.50                 | 186         | 572                    | 0.005           | 10                    | 161                 |
| 24                   | 97.50                  | 944         | 2,753                  | 0.023           | 50                    | 816                 |
| 23                   | 92.50                  | 967         | 2,571                  | 0.021           | 46                    | 835                 |
| 22                   | 89.50                  | 196         | 492                    | 0.004           | 9                     | 169                 |
| 21                   | 87.00                  | 813         | 1,942                  | 0.016           | 35                    | 702                 |
| 20                   | 82.50                  | 1,036       | 2,256                  | 0.019           | 41                    | 894                 |
| 19                   | 79.25                  | 315         | 640                    | 0.005           | 12                    | 272                 |
| 18                   | 76.75                  | 1,327       | 2,550                  | 0.021           | 46                    | 1,146               |
| 17                   | 74.00                  | 770         | 1,387                  | 0.012           | 25                    | 665                 |
| 16                   | 71.50                  | 730         | 1,240                  | 0.010           | 22                    | 631                 |
| 15                   | 67.50                  | 1,239       | 1,903                  | 0.016           | 34                    | 1,070               |
| 14                   | 62.50                  | 1,265       | 1,700                  | 0.014           | 31                    | 1,093               |
| 13                   | 57.50                  | 1,292       | 1,501                  | 0.012           | 27                    | 1,116               |
| 12                   | 52.50                  | 1,319       | 1,307                  | 0.011           | 24                    | 1,139               |
| 11                   | 47.50                  | 1,345       | 1,120                  | 0.009           | 20                    | 1,162               |
| 10                   | 42.50                  | 2,705       | 1,856                  | 0.015           | 33                    | 2,336               |
| 9                    | 39.25                  | 824         | 492                    | 0.004           | 9                     | 711                 |
| 8                    | 36.75                  | 1,210       | 644                    | 0.005           | 12                    | 1,045               |
| 7                    | 32.50                  | 1,758       | 756                    | 0.006           | 14                    | 1,518               |
| 6                    | 27.50                  | 1,794       | 577                    | 0.005           | 10                    | 1,549               |
| 5                    | 22.50                  | 1,829       | 415                    | 0.003           | 7                     | 1,580               |
| 4                    | 17.50                  | 1,865       | 273                    | 0.002           | 5                     | 1,610               |
| 3                    | 12.50                  | 1,900       | 155                    | 0.001           | 3                     | 1,641               |
| 2                    | 7.50                   | 1,936       | 65                     | 0.001           | 1                     | 1,672               |
| 1                    | 2.50                   | 1,971       | 10                     | 0.000           | 0                     | 1,702               |
| 6' Dipole            | 148.00                 | 20          | 121                    | 0.001           | 2                     | 17                  |
| 8' Omni              | 148.00                 | 25          | 151                    | 0.001           | 3                     | 22                  |
| 48" x 12" Panel      | 148.00                 | 360         | 2,171                  | 0.018           | 39                    | 311                 |
| 18' Dipole           | 148.00                 | 55          | 332                    | 0.003           | 6                     | 47                  |
| Flat Low Profile Pla | 148.00                 | 1,500       | 9,045                  | 0.075           | 163                   | 1,295               |
| Nokia B5 RRH4x40-850 | 140.00                 | 146         | 796                    | 0.007           | 14                    | 126                 |
| Alcatel-Lucent RRH4x | 140.00                 | 165         | 905                    | 0.008           | 16                    | 143                 |
| Alcatel-Lucent B66A  | 140.00                 | 201         | 1,100                  | 0.009           | 20                    | 174                 |
| RFS DB-T1-6Z-8AB-0Z  | 140.00                 | 88          | 482                    | 0.004           | 9                     | 76                  |
| Commscope LNX-6514DS | 140.00                 | 39          | 212                    | 0.002           | 4                     | 34                  |
| Andrew LNX-8513DS-A1 | 140.00                 | 78          | 429                    | 0.004           | 8                     | 68                  |
| Commscope JAHH-65B-R | 140.00                 | 364         | 1,990                  | 0.017           | 36                    | 314                 |
| Flat Low Profile Pla | 140.00                 | 1,500       | 8,210                  | 0.068           | 148                   | 1,295               |
| Raycap DC6-48-60-18- | 138.00                 | 32          | 170                    | 0.001           | 3                     | 27                  |
| Ericsson RRUS 11 (Ba | 138.00                 | 165         | 881                    | 0.007           | 16                    | 142                 |
| Ericsson RRUS-12 B2  | 138.00                 | 174         | 929                    | 0.008           | 17                    | 150                 |
| Collar               | 138.00                 | 560         | 2,989                  | 0.025           | 54                    | 484                 |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

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Customer: VERIZON WIRELESS

|                      |        |        |         |       |       |        |
|----------------------|--------|--------|---------|-------|-------|--------|
| Powerwave Allgon LGP | 135.00 | 32     | 163     | 0.001 | 3     | 27     |
| Powerwave Allgon TT1 | 135.00 | 96     | 493     | 0.004 | 9     | 83     |
| Ericsson RRUS A2 B2  | 135.00 | 66     | 339     | 0.003 | 6     | 57     |
| Powerwave Allgon 777 | 135.00 | 210    | 1,079   | 0.009 | 19    | 181    |
| Commscope SBNHH-1D65 | 135.00 | 101    | 516     | 0.004 | 9     | 87     |
| Flat Low Profile Pla | 135.00 | 1,725  | 8,862   | 0.074 | 159   | 1,490  |
| Ericsson KRY 112 144 | 121.00 | 44     | 187     | 0.002 | 3     | 38     |
| Ericsson AIR 21, 1.3 | 121.00 | 332    | 1,410   | 0.012 | 25    | 287    |
| Ericsson AIR 21, 1.3 | 121.00 | 326    | 1,384   | 0.011 | 25    | 282    |
| Round Low Profile PI | 121.00 | 2,000  | 8,491   | 0.070 | 153   | 1,727  |
| 6.7" x 10.7" TTA     | 112.00 | 59     | 220     | 0.002 | 4     | 51     |
| 36" x 10" Panel      | 112.00 | 60     | 223     | 0.002 | 4     | 52     |
| Alcatel-Lucent 800 M | 101.00 | 192    | 595     | 0.005 | 11    | 166    |
| Alcatel-Lucent 1900  | 101.00 | 180    | 558     | 0.005 | 10    | 155    |
| Alcatel-Lucent TD-RR | 101.00 | 210    | 651     | 0.005 | 12    | 181    |
| RFS APXV9TM14-ALU-I2 | 101.00 | 165    | 512     | 0.004 | 9     | 143    |
| RFS APXSPP18-C-A20   | 101.00 | 171    | 530     | 0.004 | 10    | 148    |
| Flat Platform w/ Han | 101.00 | 2,000  | 6,199   | 0.051 | 111   | 1,727  |
| RFS APXV18-206517S-C | 89.00  | 79     | 197     | 0.002 | 4     | 68     |
| GPS                  | 75.00  | 10     | 18      | 0.000 | 0     | 9      |
| Stand-Off            | 75.00  | 75     | 138     | 0.001 | 2     | 65     |
|                      |        | 51,666 | 120,478 | 1.000 | 2,167 | 44,615 |

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Site Name: Madison CT 6, CT

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Customer: VERIZON WIRELESS

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

**Seismic Equivalent Lateral Forces Method**

**Calculated Forces**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -61.45           | -2.17            | 0.00            | -253.28         | 0.00            | 253.28                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.039 |
| 5.00          | -59.05           | -2.18            | 0.00            | -242.43         | 0.00            | 242.43                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.00               | -0.01          | 0.039 |
| 10.00         | -56.70           | -2.18            | 0.00            | -231.55         | 0.00            | 231.55                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.02               | -0.02          | 0.038 |
| 15.00         | -54.40           | -2.18            | 0.00            | -220.64         | 0.00            | 220.64                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.04               | -0.02          | 0.038 |
| 20.00         | -52.13           | -2.18            | 0.00            | -209.73         | 0.00            | 209.73                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.07               | -0.03          | 0.037 |
| 25.00         | -49.91           | -2.18            | 0.00            | -198.81         | 0.00            | 198.81                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.11               | -0.04          | 0.037 |
| 30.00         | -47.74           | -2.17            | 0.00            | -187.92         | 0.00            | 187.92                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.15               | -0.05          | 0.036 |
| 35.00         | -46.24           | -2.16            | 0.00            | -177.07         | 0.00            | 177.07                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.21               | -0.06          | 0.036 |
| 38.50         | -45.23           | -2.16            | 0.00            | -169.50         | 0.00            | 169.50                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.26               | -0.07          | 0.035 |
| 40.00         | -41.88           | -2.12            | 0.00            | -166.26         | 0.00            | 166.26                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.28               | -0.07          | 0.035 |
| 45.00         | -40.22           | -2.11            | 0.00            | -155.64         | 0.00            | 155.64                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 0.35               | -0.08          | 0.048 |
| 50.00         | -38.59           | -2.09            | 0.00            | -145.09         | 0.00            | 145.09                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 0.44               | -0.09          | 0.047 |
| 55.00         | -36.99           | -2.07            | 0.00            | -134.65         | 0.00            | 134.65                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 0.54               | -0.10          | 0.045 |
| 60.00         | -35.42           | -2.04            | 0.00            | -124.31         | 0.00            | 124.31                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 0.65               | -0.11          | 0.044 |
| 65.00         | -33.89           | -2.01            | 0.00            | -114.10         | 0.00            | 114.10                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 0.77               | -0.12          | 0.043 |
| 70.00         | -32.99           | -1.99            | 0.00            | -104.04         | 0.00            | 104.04                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 0.90               | -0.13          | 0.041 |
| 73.00         | -32.04           | -1.97            | 0.00            | -98.06          | 0.00            | 98.06                      | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 0.99               | -0.14          | 0.040 |
| 75.00         | -30.29           | -1.92            | 0.00            | -94.13          | 0.00            | 94.13                      | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 1.05               | -0.15          | 0.039 |
| 78.50         | -29.90           | -1.91            | 0.00            | -87.41          | 0.00            | 87.41                      | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 1.16               | -0.15          | 0.047 |
| 80.00         | -28.62           | -1.87            | 0.00            | -84.54          | 0.00            | 84.54                      | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 1.21               | -0.16          | 0.046 |
| 85.00         | -27.61           | -1.84            | 0.00            | -75.19          | 0.00            | 75.19                      | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 1.38               | -0.17          | 0.044 |
| 89.00         | -27.27           | -1.83            | 0.00            | -67.84          | 0.00            | 67.84                      | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 1.53               | -0.18          | 0.042 |
| 90.00         | -26.08           | -1.78            | 0.00            | -66.01          | 0.00            | 66.01                      | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 1.57               | -0.18          | 0.041 |
| 95.00         | -24.91           | -1.73            | 0.00            | -57.11          | 0.00            | 57.11                      | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 1.76               | -0.20          | 0.038 |
| 100.00        | -24.68           | -1.72            | 0.00            | -48.45          | 0.00            | 48.45                      | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 1.98               | -0.21          | 0.036 |
| 101.00        | -20.18           | -1.51            | 0.00            | -46.72          | 0.00            | 46.72                      | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 2.02               | -0.21          | 0.033 |
| 105.00        | -19.36           | -1.47            | 0.00            | -40.70          | 0.00            | 40.70                      | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 2.20               | -0.22          | 0.031 |
| 108.75        | -18.95           | -1.44            | 0.00            | -35.20          | 0.00            | 35.20                      | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 2.37               | -0.23          | 0.029 |
| 110.00        | -18.30           | -1.41            | 0.00            | -33.40          | 0.00            | 33.40                      | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 2.43               | -0.23          | 0.028 |
| 112.00        | -17.83           | -1.38            | 0.00            | -30.58          | 0.00            | 30.58                      | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 2.53               | -0.23          | 0.027 |
| 113.00        | -17.46           | -1.36            | 0.00            | -29.20          | 0.00            | 29.20                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 2.58               | -0.24          | 0.034 |
| 115.00        | -16.55           | -1.31            | 0.00            | -26.48          | 0.00            | 26.48                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 2.68               | -0.24          | 0.032 |
| 120.00        | -16.37           | -1.29            | 0.00            | -19.95          | 0.00            | 19.95                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 2.94               | -0.25          | 0.028 |
| 121.00        | -12.39           | -1.03            | 0.00            | -18.66          | 0.00            | 18.66                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 2.99               | -0.25          | 0.024 |
| 125.00        | -11.61           | -0.98            | 0.00            | -14.53          | 0.00            | 14.53                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 3.20               | -0.26          | 0.021 |
| 130.00        | -10.85           | -0.92            | 0.00            | -9.65           | 0.00            | 9.65                       | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 3.47               | -0.26          | 0.017 |
| 135.00        | -7.74            | -0.67            | 0.00            | -5.05           | 0.00            | 5.05                       | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 3.75               | -0.27          | 0.011 |
| 138.00        | -6.37            | -0.56            | 0.00            | -3.04           | 0.00            | 3.04                       | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 3.92               | -0.27          | 0.008 |
| 140.00        | -2.70            | -0.25            | 0.00            | -1.92           | 0.00            | 1.92                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 4.03               | -0.27          | 0.004 |
| 145.00        | -2.42            | -0.22            | 0.00            | -0.67           | 0.00            | 0.67                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 4.32               | -0.27          | 0.003 |
| 148.00        | 0.00             | -0.21            | 0.00            | 0.00            | 0.00            | 0.00                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 4.49               | -0.27          | 0.000 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

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

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

**Calculated Forces**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -42.91           | -2.17            | 0.00            | -250.75         | 0.00            | 250.75                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.036 |
| 5.00          | -41.24           | -2.17            | 0.00            | -239.91         | 0.00            | 239.91                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.00               | -0.01          | 0.036 |
| 10.00         | -39.60           | -2.18            | 0.00            | -229.05         | 0.00            | 229.05                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.02               | -0.02          | 0.035 |
| 15.00         | -37.99           | -2.18            | 0.00            | -218.17         | 0.00            | 218.17                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.04               | -0.02          | 0.035 |
| 20.00         | -36.41           | -2.17            | 0.00            | -207.29         | 0.00            | 207.29                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.07               | -0.03          | 0.034 |
| 25.00         | -34.86           | -2.17            | 0.00            | -196.43         | 0.00            | 196.43                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.11               | -0.04          | 0.034 |
| 30.00         | -33.34           | -2.16            | 0.00            | -185.60         | 0.00            | 185.60                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.15               | -0.05          | 0.033 |
| 35.00         | -32.29           | -2.15            | 0.00            | -174.82         | 0.00            | 174.82                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.21               | -0.06          | 0.033 |
| 38.50         | -31.58           | -2.14            | 0.00            | -167.30         | 0.00            | 167.30                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.25               | -0.06          | 0.033 |
| 40.00         | -29.25           | -2.11            | 0.00            | -164.09         | 0.00            | 164.09                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.28               | -0.07          | 0.032 |
| 45.00         | -28.09           | -2.09            | 0.00            | -153.55         | 0.00            | 153.55                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 0.35               | -0.08          | 0.044 |
| 50.00         | -26.95           | -2.07            | 0.00            | -143.09         | 0.00            | 143.09                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 0.44               | -0.09          | 0.043 |
| 55.00         | -25.83           | -2.05            | 0.00            | -132.74         | 0.00            | 132.74                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 0.53               | -0.10          | 0.042 |
| 60.00         | -24.74           | -2.02            | 0.00            | -122.51         | 0.00            | 122.51                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 0.64               | -0.11          | 0.041 |
| 65.00         | -23.67           | -1.99            | 0.00            | -112.41         | 0.00            | 112.41                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 0.76               | -0.12          | 0.039 |
| 70.00         | -23.04           | -1.97            | 0.00            | -102.47         | 0.00            | 102.47                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 0.89               | -0.13          | 0.038 |
| 73.00         | -22.37           | -1.94            | 0.00            | -96.56          | 0.00            | 96.56                      | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 0.98               | -0.14          | 0.037 |
| 75.00         | -21.15           | -1.89            | 0.00            | -92.68          | 0.00            | 92.68                      | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 1.04               | -0.14          | 0.036 |
| 78.50         | -20.88           | -1.88            | 0.00            | -86.04          | 0.00            | 86.04                      | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 1.14               | -0.15          | 0.043 |
| 80.00         | -19.99           | -1.84            | 0.00            | -83.22          | 0.00            | 83.22                      | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 1.19               | -0.16          | 0.043 |
| 85.00         | -19.28           | -1.81            | 0.00            | -73.99          | 0.00            | 73.99                      | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 1.36               | -0.17          | 0.040 |
| 89.00         | -19.05           | -1.80            | 0.00            | -66.75          | 0.00            | 66.75                      | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 1.51               | -0.18          | 0.038 |
| 90.00         | -18.21           | -1.75            | 0.00            | -64.95          | 0.00            | 64.95                      | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 1.55               | -0.18          | 0.038 |
| 95.00         | -17.40           | -1.71            | 0.00            | -56.18          | 0.00            | 56.18                      | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 1.74               | -0.19          | 0.035 |
| 100.00        | -17.23           | -1.70            | 0.00            | -47.65          | 0.00            | 47.65                      | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 1.95               | -0.20          | 0.032 |
| 101.00        | -14.09           | -1.48            | 0.00            | -45.95          | 0.00            | 45.95                      | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 1.99               | -0.21          | 0.030 |
| 105.00        | -13.52           | -1.44            | 0.00            | -40.02          | 0.00            | 40.02                      | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 2.17               | -0.22          | 0.028 |
| 108.75        | -13.23           | -1.42            | 0.00            | -34.62          | 0.00            | 34.62                      | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 2.34               | -0.22          | 0.026 |
| 110.00        | -12.78           | -1.39            | 0.00            | -32.84          | 0.00            | 32.84                      | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 2.40               | -0.23          | 0.025 |
| 112.00        | -12.45           | -1.36            | 0.00            | -30.07          | 0.00            | 30.07                      | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 2.50               | -0.23          | 0.024 |
| 113.00        | -12.19           | -1.34            | 0.00            | -28.71          | 0.00            | 28.71                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 2.55               | -0.23          | 0.031 |
| 115.00        | -11.55           | -1.28            | 0.00            | -26.03          | 0.00            | 26.03                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 2.64               | -0.24          | 0.029 |
| 120.00        | -11.43           | -1.27            | 0.00            | -19.62          | 0.00            | 19.62                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 2.90               | -0.24          | 0.024 |
| 121.00        | -8.65            | -1.01            | 0.00            | -18.35          | 0.00            | 18.35                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 2.95               | -0.25          | 0.022 |
| 125.00        | -8.10            | -0.96            | 0.00            | -14.29          | 0.00            | 14.29                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 3.16               | -0.25          | 0.019 |
| 130.00        | -7.57            | -0.90            | 0.00            | -9.49           | 0.00            | 9.49                       | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 3.43               | -0.26          | 0.015 |
| 135.00        | -5.41            | -0.66            | 0.00            | -4.97           | 0.00            | 4.97                       | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 3.70               | -0.26          | 0.009 |
| 138.00        | -4.44            | -0.55            | 0.00            | -2.99           | 0.00            | 2.99                       | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 3.87               | -0.27          | 0.006 |
| 140.00        | -1.88            | -0.24            | 0.00            | -1.89           | 0.00            | 1.89                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 3.98               | -0.27          | 0.004 |
| 145.00        | -1.69            | -0.22            | 0.00            | -0.66           | 0.00            | 0.66                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 4.26               | -0.27          | 0.002 |
| 148.00        | 0.00             | -0.21            | 0.00            | 0.00            | 0.00            | 0.00                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 4.43               | -0.27          | 0.000 |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

### Equivalent Modal Forces Analysis

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

|  |      |
|--|------|
| Spectral Response Acceleration for Short Period ( $S_a$ ):               | 0.17 |
| 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 ( $S_{ds}$ ):      | 0.18 |
| Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ): | 0.10 |
| Period Based on Rayleigh Method (sec):                                   | 1.98 |
| Redundancy Factor ( $\rho$ ):  | 1.30 |

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

| Segment | Height<br>Above<br>Base<br>(ft) | Weight<br>(lb) | a     | b      | c     | Saz    | Horizontal<br>Force<br>(lb) | Vertical<br>Force<br>(lb) |
|---------|---------------------------------|----------------|-------|--------|-------|--------|-----------------------------|---------------------------|
| 40      | 146.50                          | 223            | 1.852 | 1.785  | 1.069 | 0.327  | 63                          | 276                       |
| 39      | 142.50                          | 386            | 1.752 | 1.330  | 0.897 | 0.269  | 90                          | 478                       |
| 38      | 139.00                          | 184            | 1.667 | 1.002  | 0.765 | 0.223  | 36                          | 227                       |
| 37      | 136.50                          | 281            | 1.608 | 0.803  | 0.681 | 0.193  | 47                          | 348                       |
| 36      | 132.50                          | 614            | 1.515 | 0.538  | 0.561 | 0.148  | 79                          | 759                       |
| 35      | 127.50                          | 632            | 1.403 | 0.289  | 0.435 | 0.100  | 54                          | 781                       |
| 34      | 123.00                          | 518            | 1.305 | 0.128  | 0.341 | 0.063  | 28                          | 641                       |
| 33      | 120.50                          | 145            | 1.253 | 0.060  | 0.296 | 0.045  | 6                           | 180                       |
| 32      | 117.50                          | 738            | 1.191 | -0.003 | 0.248 | 0.026  | 17                          | 912                       |
| 31      | 114.00                          | 300            | 1.121 | -0.057 | 0.200 | 0.008  | 2                           | 371                       |
| 30      | 112.50                          | 261            | 1.092 | -0.074 | 0.182 | 0.001  | 0                           | 323                       |
| 29      | 111.00                          | 527            | 1.063 | -0.088 | 0.165 | -0.005 | -2                          | 651                       |
| 28      | 109.38                          | 332            | 1.032 | -0.100 | 0.148 | -0.011 | -3                          | 411                       |
| 27      | 106.88                          | 662            | 0.986 | -0.113 | 0.124 | -0.018 | -10                         | 819                       |
| 26      | 103.00                          | 720            | 0.915 | -0.121 | 0.093 | -0.026 | -16                         | 890                       |
| 25      | 100.50                          | 186            | 0.872 | -0.121 | 0.077 | -0.028 | -5                          | 230                       |
| 24      | 97.50                           | 944            | 0.820 | -0.115 | 0.060 | -0.029 | -24                         | 1,168                     |
| 23      | 92.50                           | 967            | 0.738 | -0.098 | 0.038 | -0.025 | -21                         | 1,195                     |
| 22      | 89.50                           | 196            | 0.691 | -0.084 | 0.028 | -0.021 | -4                          | 242                       |
| 21      | 87.00                           | 813            | 0.653 | -0.072 | 0.022 | -0.015 | -11                         | 1,005                     |
| 20      | 82.50                           | 1,036          | 0.587 | -0.048 | 0.013 | -0.004 | -4                          | 1,281                     |
| 19      | 79.25                           | 315            | 0.542 | -0.032 | 0.009 | 0.004  | 1                           | 390                       |
| 18      | 76.75                           | 1,327          | 0.508 | -0.019 | 0.007 | 0.011  | 13                          | 1,641                     |
| 17      | 74.00                           | 770            | 0.472 | -0.006 | 0.006 | 0.018  | 12                          | 952                       |
| 16      | 71.50                           | 730            | 0.441 | 0.005  | 0.006 | 0.024  | 15                          | 903                       |
| 15      | 67.50                           | 1,239          | 0.393 | 0.020  | 0.007 | 0.031  | 34                          | 1,532                     |
| 14      | 62.50                           | 1,265          | 0.337 | 0.036  | 0.009 | 0.039  | 42                          | 1,565                     |
| 13      | 57.50                           | 1,292          | 0.285 | 0.048  | 0.014 | 0.043  | 48                          | 1,598                     |
| 12      | 52.50                           | 1,319          | 0.238 | 0.057  | 0.018 | 0.045  | 52                          | 1,630                     |
| 11      | 47.50                           | 1,345          | 0.195 | 0.063  | 0.024 | 0.046  | 53                          | 1,663                     |
| 10      | 42.50                           | 2,705          | 0.156 | 0.067  | 0.029 | 0.045  | 106                         | 3,345                     |
| 9       | 39.25                           | 824            | 0.133 | 0.069  | 0.033 | 0.045  | 32                          | 1,018                     |
| 8       | 36.75                           | 1,210          | 0.117 | 0.070  | 0.035 | 0.044  | 46                          | 1,496                     |
| 7       | 32.50                           | 1,758          | 0.091 | 0.071  | 0.038 | 0.043  | 66                          | 2,174                     |

Site Number: 302540

Code: ANSITIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

|                      |        |        |        |        |        |        |       |        |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 6                    | 27.50  | 1,794  | 0.065  | 0.072  | 0.041  | 0.042  | 65    | 2,218  |
| 5                    | 22.50  | 1,829  | 0.044  | 0.071  | 0.042  | 0.040  | 64    | 2,262  |
| 4                    | 17.50  | 1,865  | 0.026  | 0.067  | 0.040  | 0.038  | 61    | 2,306  |
| 3                    | 12.50  | 1,900  | 0.013  | 0.059  | 0.035  | 0.034  | 56    | 2,350  |
| 2                    | 7.50   | 1,936  | 0.005  | 0.044  | 0.025  | 0.026  | 44    | 2,394  |
| 1                    | 2.50   | 1,971  | 0.001  | 0.018  | 0.010  | 0.012  | 20    | 2,438  |
| 6' Dipole            | 148.00 | 20     | 1.890  | 1.980  | 1.140  | 0.350  | 6     | 25     |
| 8' Omni              | 148.00 | 25     | 1.890  | 1.980  | 1.140  | 0.350  | 8     | 31     |
| 48" x 12" Panel      | 148.00 | 360    | 1.890  | 1.980  | 1.140  | 0.350  | 109   | 445    |
| 18' Dipole           | 148.00 | 55     | 1.890  | 1.980  | 1.140  | 0.350  | 17    | 68     |
| Flat Low Profile Pla | 148.00 | 1,500  | 1.890  | 1.980  | 1.140  | 0.350  | 455   | 1,855  |
| Nokia B5 RRH4x40-850 | 140.00 | 146    | 1.691  | 1.089  | 0.801  | 0.236  | 30    | 180    |
| Alcatel-Lucent RRH4x | 140.00 | 165    | 1.691  | 1.089  | 0.801  | 0.236  | 34    | 204    |
| Alcatel-Lucent B66A  | 140.00 | 201    | 1.691  | 1.089  | 0.801  | 0.236  | 41    | 249    |
| RFS DB-T1-6Z-8AB-0Z  | 140.00 | 88     | 1.691  | 1.089  | 0.801  | 0.236  | 18    | 109    |
| Commscope LNX-       | 140.00 | 39     | 1.691  | 1.089  | 0.801  | 0.236  | 8     | 48     |
| Andrew LNX-8513DS-A1 | 140.00 | 78     | 1.691  | 1.089  | 0.801  | 0.236  | 16    | 97     |
| Commscope JAHH-65B-  | 140.00 | 364    | 1.691  | 1.089  | 0.801  | 0.236  | 74    | 450    |
| Flat Low Profile Pla | 140.00 | 1,500  | 1.691  | 1.089  | 0.801  | 0.236  | 307   | 1,855  |
| Raycap DC6-48-60-18- | 138.00 | 32     | 1.643  | 0.919  | 0.730  | 0.211  | 6     | 39     |
| Ericsson RRUS 11 (Ba | 138.00 | 165    | 1.643  | 0.919  | 0.730  | 0.211  | 30    | 204    |
| Ericsson RRUS-12 B2  | 138.00 | 174    | 1.643  | 0.919  | 0.730  | 0.211  | 32    | 215    |
| Collar               | 138.00 | 560    | 1.643  | 0.919  | 0.730  | 0.211  | 102   | 692    |
| Powerwave Allgon LGP | 135.00 | 32     | 1.573  | 0.696  | 0.633  | 0.175  | 5     | 39     |
| Powerwave Allgon TT1 | 135.00 | 96     | 1.573  | 0.696  | 0.633  | 0.175  | 15    | 119    |
| Ericsson RRUS A2 B2  | 135.00 | 66     | 1.573  | 0.696  | 0.633  | 0.175  | 10    | 82     |
| Powerwave Allgon 777 | 135.00 | 210    | 1.573  | 0.696  | 0.633  | 0.175  | 32    | 260    |
| Commscope SBNHH-     | 135.00 | 101    | 1.573  | 0.696  | 0.633  | 0.175  | 15    | 124    |
| Flat Low Profile Pla | 135.00 | 1,725  | 1.573  | 0.696  | 0.633  | 0.175  | 262   | 2,133  |
| Ericsson KRY 112 144 | 121.00 | 44     | 1.263  | 0.073  | 0.305  | 0.048  | 2     | 54     |
| Ericsson AIR 21, 1.3 | 121.00 | 332    | 1.263  | 0.073  | 0.305  | 0.048  | 14    | 411    |
| Ericsson AIR 21, 1.3 | 121.00 | 326    | 1.263  | 0.073  | 0.305  | 0.048  | 14    | 403    |
| Round Low Profile PI | 121.00 | 2,000  | 1.263  | 0.073  | 0.305  | 0.048  | 84    | 2,473  |
| 6.7" x 10.7" TTA     | 112.00 | 59     | 1.082  | -0.079 | 0.176  | -0.001 | 0     | 73     |
| 36" x 10" Panel      | 112.00 | 60     | 1.082  | -0.079 | 0.176  | -0.001 | 0     | 74     |
| Alcatel-Lucent 800 M | 101.00 | 192    | 0.880  | -0.121 | 0.080  | -0.028 | -5    | 237    |
| Alcatel-Lucent 1900  | 101.00 | 180    | 0.880  | -0.121 | 0.080  | -0.028 | -4    | 223    |
| Alcatel-Lucent TD-RR | 101.00 | 210    | 0.880  | -0.121 | 0.080  | -0.028 | -5    | 260    |
| RFS APXV9TM14-ALU-I2 | 101.00 | 165    | 0.880  | -0.121 | 0.080  | -0.028 | -4    | 204    |
| RFS APXVSP18-C-A20   | 101.00 | 171    | 0.880  | -0.121 | 0.080  | -0.028 | -4    | 211    |
| Flat Platform w/ Han | 101.00 | 2,000  | 0.880  | -0.121 | 0.080  | -0.028 | -48   | 2,473  |
| RFS APXV18-206517S-C | 89.00  | 79     | 0.683  | -0.082 | 0.027  | -0.020 | -1    | 98     |
| GPS                  | 75.00  | 10     | 0.485  | -0.011 | 0.007  | 0.015  | 0     | 12     |
| Stand-Off            | 75.00  | 75     | 0.485  | -0.011 | 0.007  | 0.015  | 1     | 93     |
|                      |        | 51,666 | 81.321 | 31.386 | 27.792 | 7.418  | 2,826 | 63,884 |

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) |
|---------|------------------------|-------------|-------|--------|-------|-------|-----------------------|---------------------|
| 40      | 146.50                 | 223         | 1.852 | 1.785  | 1.069 | 0.327 | 63                    | 193                 |
| 39      | 142.50                 | 386         | 1.752 | 1.330  | 0.897 | 0.269 | 90                    | 333                 |
| 38      | 139.00                 | 184         | 1.667 | 1.002  | 0.765 | 0.223 | 36                    | 159                 |
| 37      | 136.50                 | 281         | 1.608 | 0.803  | 0.681 | 0.193 | 47                    | 243                 |
| 36      | 132.50                 | 614         | 1.515 | 0.538  | 0.561 | 0.148 | 79                    | 530                 |
| 35      | 127.50                 | 632         | 1.403 | 0.289  | 0.435 | 0.100 | 54                    | 546                 |
| 34      | 123.00                 | 518         | 1.305 | 0.128  | 0.341 | 0.063 | 28                    | 448                 |
| 33      | 120.50                 | 145         | 1.253 | 0.060  | 0.296 | 0.045 | 6                     | 126                 |
| 32      | 117.50                 | 738         | 1.191 | -0.003 | 0.248 | 0.026 | 17                    | 637                 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: DAA724329\_C3\_01

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Customer: VERIZON WIRELESS

|                      |        |       |       |        |       |        |     |       |
|----------------------|--------|-------|-------|--------|-------|--------|-----|-------|
| 31                   | 114.00 | 300   | 1.121 | -0.057 | 0.200 | 0.008  | 2   | 259   |
| 30                   | 112.50 | 261   | 1.092 | -0.074 | 0.182 | 0.001  | 0   | 225   |
| 29                   | 111.00 | 527   | 1.063 | -0.088 | 0.165 | -0.005 | -2  | 455   |
| 28                   | 109.38 | 332   | 1.032 | -0.100 | 0.148 | -0.011 | -3  | 287   |
| 27                   | 106.88 | 662   | 0.986 | -0.113 | 0.124 | -0.018 | -10 | 572   |
| 26                   | 103.00 | 720   | 0.915 | -0.121 | 0.093 | -0.026 | -16 | 622   |
| 25                   | 100.50 | 186   | 0.872 | -0.121 | 0.077 | -0.028 | -5  | 161   |
| 24                   | 97.50  | 944   | 0.820 | -0.115 | 0.060 | -0.029 | -24 | 816   |
| 23                   | 92.50  | 967   | 0.738 | -0.098 | 0.038 | -0.025 | -21 | 835   |
| 22                   | 89.50  | 196   | 0.691 | -0.084 | 0.028 | -0.021 | -4  | 169   |
| 21                   | 87.00  | 813   | 0.653 | -0.072 | 0.022 | -0.015 | -11 | 702   |
| 20                   | 82.50  | 1,036 | 0.587 | -0.048 | 0.013 | -0.004 | -4  | 894   |
| 19                   | 79.25  | 315   | 0.542 | -0.032 | 0.009 | 0.004  | 1   | 272   |
| 18                   | 76.75  | 1,327 | 0.508 | -0.019 | 0.007 | 0.011  | 13  | 1,146 |
| 17                   | 74.00  | 770   | 0.472 | -0.006 | 0.006 | 0.018  | 12  | 665   |
| 16                   | 71.50  | 730   | 0.441 | 0.005  | 0.006 | 0.024  | 15  | 631   |
| 15                   | 67.50  | 1,239 | 0.393 | 0.020  | 0.007 | 0.031  | 34  | 1,070 |
| 14                   | 62.50  | 1,265 | 0.337 | 0.036  | 0.009 | 0.039  | 42  | 1,093 |
| 13                   | 57.50  | 1,292 | 0.285 | 0.048  | 0.014 | 0.043  | 48  | 1,116 |
| 12                   | 52.50  | 1,319 | 0.238 | 0.057  | 0.018 | 0.045  | 52  | 1,139 |
| 11                   | 47.50  | 1,345 | 0.195 | 0.063  | 0.024 | 0.046  | 53  | 1,162 |
| 10                   | 42.50  | 2,705 | 0.156 | 0.067  | 0.029 | 0.045  | 106 | 2,336 |
| 9                    | 39.25  | 824   | 0.133 | 0.069  | 0.033 | 0.045  | 32  | 711   |
| 8                    | 36.75  | 1,210 | 0.117 | 0.070  | 0.035 | 0.044  | 46  | 1,045 |
| 7                    | 32.50  | 1,758 | 0.091 | 0.071  | 0.038 | 0.043  | 66  | 1,518 |
| 6                    | 27.50  | 1,794 | 0.065 | 0.072  | 0.041 | 0.042  | 65  | 1,549 |
| 5                    | 22.50  | 1,829 | 0.044 | 0.071  | 0.042 | 0.040  | 64  | 1,580 |
| 4                    | 17.50  | 1,865 | 0.026 | 0.067  | 0.040 | 0.038  | 61  | 1,610 |
| 3                    | 12.50  | 1,900 | 0.013 | 0.059  | 0.035 | 0.034  | 56  | 1,641 |
| 2                    | 7.50   | 1,936 | 0.005 | 0.044  | 0.025 | 0.026  | 44  | 1,672 |
| 1                    | 2.50   | 1,971 | 0.001 | 0.018  | 0.010 | 0.012  | 20  | 1,702 |
| 6' Dipole            | 148.00 | 20    | 1.890 | 1.980  | 1.140 | 0.350  | 6   | 17    |
| 8' Omni              | 148.00 | 25    | 1.890 | 1.980  | 1.140 | 0.350  | 8   | 22    |
| 48" x 12" Panel      | 148.00 | 360   | 1.890 | 1.980  | 1.140 | 0.350  | 109 | 311   |
| 18' Dipole           | 148.00 | 55    | 1.890 | 1.980  | 1.140 | 0.350  | 17  | 47    |
| Flat Low Profile Pla | 148.00 | 1,500 | 1.890 | 1.980  | 1.140 | 0.350  | 455 | 1,295 |
| Nokia B5 RRH4x40-850 | 140.00 | 146   | 1.691 | 1.089  | 0.801 | 0.236  | 30  | 126   |
| Alcatel-Lucent RRH4x | 140.00 | 165   | 1.691 | 1.089  | 0.801 | 0.236  | 34  | 143   |
| Alcatel-Lucent B66A  | 140.00 | 201   | 1.691 | 1.089  | 0.801 | 0.236  | 41  | 174   |
| RFS DB-T1-6Z-8AB-0Z  | 140.00 | 88    | 1.691 | 1.089  | 0.801 | 0.236  | 18  | 76    |
| Commscope LNX-       | 140.00 | 39    | 1.691 | 1.089  | 0.801 | 0.236  | 8   | 34    |
| Andrew LNX-8513DS-A1 | 140.00 | 78    | 1.691 | 1.089  | 0.801 | 0.236  | 16  | 68    |
| Commscope JAHH-65B-  | 140.00 | 364   | 1.691 | 1.089  | 0.801 | 0.236  | 74  | 314   |
| Flat Low Profile Pla | 140.00 | 1,500 | 1.691 | 1.089  | 0.801 | 0.236  | 307 | 1,295 |
| Raycap DC6-48-60-18- | 138.00 | 32    | 1.643 | 0.919  | 0.730 | 0.211  | 6   | 27    |
| Ericsson RRUS 11 (Ba | 138.00 | 165   | 1.643 | 0.919  | 0.730 | 0.211  | 30  | 142   |
| Ericsson RRUS-12 B2  | 138.00 | 174   | 1.643 | 0.919  | 0.730 | 0.211  | 32  | 150   |
| Collar               | 138.00 | 560   | 1.643 | 0.919  | 0.730 | 0.211  | 102 | 484   |
| Powerwave Allgon LGP | 135.00 | 32    | 1.573 | 0.696  | 0.633 | 0.175  | 5   | 27    |
| Powerwave Allgon TT1 | 135.00 | 96    | 1.573 | 0.696  | 0.633 | 0.175  | 15  | 83    |
| Ericsson RRUS A2 B2  | 135.00 | 66    | 1.573 | 0.696  | 0.633 | 0.175  | 10  | 57    |
| Powerwave Allgon 777 | 135.00 | 210   | 1.573 | 0.696  | 0.633 | 0.175  | 32  | 181   |
| Commscope SBNHH-     | 135.00 | 101   | 1.573 | 0.696  | 0.633 | 0.175  | 15  | 87    |
| Flat Low Profile Pla | 135.00 | 1,725 | 1.573 | 0.696  | 0.633 | 0.175  | 262 | 1,490 |
| Ericsson KRY 112 144 | 121.00 | 44    | 1.263 | 0.073  | 0.305 | 0.048  | 2   | 38    |
| Ericsson AIR 21, 1.3 | 121.00 | 332   | 1.263 | 0.073  | 0.305 | 0.048  | 14  | 287   |
| Ericsson AIR 21, 1.3 | 121.00 | 326   | 1.263 | 0.073  | 0.305 | 0.048  | 14  | 282   |
| Round Low Profile Pl | 121.00 | 2,000 | 1.263 | 0.073  | 0.305 | 0.048  | 84  | 1,727 |
| 6.7" x 10.7" TTA     | 112.00 | 59    | 1.082 | -0.079 | 0.176 | -0.001 | 0   | 51    |
| 36" x 10" Panel      | 112.00 | 60    | 1.082 | -0.079 | 0.176 | -0.001 | 0   | 52    |
| Alcatel-Lucent 800 M | 101.00 | 192   | 0.880 | -0.121 | 0.080 | -0.028 | -5  | 166   |
| Alcatel-Lucent 1900  | 101.00 | 180   | 0.880 | -0.121 | 0.080 | -0.028 | -4  | 155   |
| Alcatel-Lucent TD-RR | 101.00 | 210   | 0.880 | -0.121 | 0.080 | -0.028 | -5  | 181   |
| RFS APXV9TM14-ALU-I2 | 101.00 | 165   | 0.880 | -0.121 | 0.080 | -0.028 | -4  | 143   |

Site Number: 302540

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

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Customer: VERIZON WIRELESS

|                      |        |        |        |        |        |        |       |        |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| RFS APXVSPP18-C-A20  | 101.00 | 171    | 0.880  | -0.121 | 0.080  | -0.028 | -4    | 148    |
| Flat Platform w/ Han | 101.00 | 2,000  | 0.880  | -0.121 | 0.080  | -0.028 | -48   | 1,727  |
| RFS APXV18-206517S-C | 89.00  | 79     | 0.683  | -0.082 | 0.027  | -0.020 | -1    | 68     |
| GPS                  | 75.00  | 10     | 0.485  | -0.011 | 0.007  | 0.015  | 0     | 9      |
| Stand-Off            | 75.00  | 75     | 0.485  | -0.011 | 0.007  | 0.015  | 1     | 65     |
|                      |        | 51,666 | 81.321 | 31.386 | 27.792 | 7.418  | 2,826 | 44,615 |



Site Number: 302540

Code: ANSITIA-222-G © 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -61.45           | -2.81            | 0.00            | -324.82         | 0.00            | 324.82                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.048 |
| 5.00          | -59.05           | -2.78            | 0.00            | -310.77         | 0.00            | 310.77                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.01               | -0.01          | 0.047 |
| 10.00         | -56.70           | -2.73            | 0.00            | -296.89         | 0.00            | 296.89                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.02               | -0.02          | 0.047 |
| 15.00         | -54.39           | -2.68            | 0.00            | -283.24         | 0.00            | 283.24                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.05               | -0.03          | 0.046 |
| 20.00         | -52.13           | -2.62            | 0.00            | -269.84         | 0.00            | 269.84                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.09               | -0.04          | 0.046 |
| 25.00         | -49.91           | -2.57            | 0.00            | -256.73         | 0.00            | 256.73                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.14               | -0.05          | 0.045 |
| 30.00         | -47.74           | -2.51            | 0.00            | -243.89         | 0.00            | 243.89                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.20               | -0.06          | 0.045 |
| 35.00         | -46.24           | -2.47            | 0.00            | -231.35         | 0.00            | 231.35                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.27               | -0.08          | 0.044 |
| 38.50         | -45.22           | -2.44            | 0.00            | -222.71         | 0.00            | 222.71                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.33               | -0.08          | 0.044 |
| 40.00         | -41.88           | -2.33            | 0.00            | -219.05         | 0.00            | 219.05                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.36               | -0.09          | 0.043 |
| 45.00         | -40.22           | -2.29            | 0.00            | -207.38         | 0.00            | 207.38                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 0.46               | -0.10          | 0.060 |
| 50.00         | -38.58           | -2.24            | 0.00            | -195.95         | 0.00            | 195.95                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 0.57               | -0.11          | 0.060 |
| 55.00         | -36.99           | -2.20            | 0.00            | -184.74         | 0.00            | 184.74                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 0.69               | -0.13          | 0.059 |
| 60.00         | -35.42           | -2.16            | 0.00            | -173.74         | 0.00            | 173.74                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 0.84               | -0.14          | 0.058 |
| 65.00         | -33.89           | -2.14            | 0.00            | -162.92         | 0.00            | 162.92                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 1.00               | -0.16          | 0.057 |
| 70.00         | -32.99           | -2.13            | 0.00            | -152.24         | 0.00            | 152.24                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 1.18               | -0.18          | 0.056 |
| 73.00         | -32.03           | -2.12            | 0.00            | -145.86         | 0.00            | 145.86                     | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 1.29               | -0.19          | 0.055 |
| 75.00         | -30.29           | -2.10            | 0.00            | -141.62         | 0.00            | 141.62                     | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 1.37               | -0.20          | 0.055 |
| 78.50         | -29.90           | -2.10            | 0.00            | -134.26         | 0.00            | 134.26                     | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 1.52               | -0.21          | 0.067 |
| 80.00         | -28.62           | -2.11            | 0.00            | -131.10         | 0.00            | 131.10                     | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 1.59               | -0.21          | 0.066 |
| 85.00         | -27.61           | -2.13            | 0.00            | -120.55         | 0.00            | 120.55                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 1.82               | -0.24          | 0.064 |
| 89.00         | -27.27           | -2.14            | 0.00            | -112.05         | 0.00            | 112.05                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 2.03               | -0.25          | 0.063 |
| 90.00         | -26.07           | -2.16            | 0.00            | -109.91         | 0.00            | 109.91                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 2.08               | -0.26          | 0.062 |
| 95.00         | -24.91           | -2.18            | 0.00            | -99.13          | 0.00            | 99.13                      | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 2.36               | -0.28          | 0.059 |
| 100.00        | -24.67           | -2.19            | 0.00            | -88.20          | 0.00            | 88.20                      | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 2.66               | -0.30          | 0.057 |
| 101.00        | -20.18           | -2.26            | 0.00            | -86.01          | 0.00            | 86.01                      | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 2.73               | -0.30          | 0.055 |
| 105.00        | -19.36           | -2.27            | 0.00            | -76.97          | 0.00            | 76.97                      | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 2.99               | -0.32          | 0.052 |
| 108.75        | -18.94           | -2.28            | 0.00            | -68.45          | 0.00            | 68.45                      | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 3.24               | -0.33          | 0.049 |
| 110.00        | -18.29           | -2.28            | 0.00            | -65.61          | 0.00            | 65.61                      | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 3.33               | -0.34          | 0.048 |
| 112.00        | -17.82           | -2.27            | 0.00            | -61.06          | 0.00            | 61.06                      | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 3.47               | -0.35          | 0.046 |
| 113.00        | -17.45           | -2.27            | 0.00            | -58.78          | 0.00            | 58.78                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 3.55               | -0.35          | 0.058 |
| 115.00        | -16.54           | -2.25            | 0.00            | -54.24          | 0.00            | 54.24                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 3.70               | -0.36          | 0.055 |
| 120.00        | -16.36           | -2.25            | 0.00            | -42.97          | 0.00            | 42.97                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 4.08               | -0.38          | 0.049 |
| 121.00        | -12.38           | -2.09            | 0.00            | -40.72          | 0.00            | 40.72                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 4.16               | -0.38          | 0.045 |
| 125.00        | -11.60           | -2.03            | 0.00            | -32.38          | 0.00            | 32.38                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 4.49               | -0.40          | 0.039 |
| 130.00        | -10.84           | -1.95            | 0.00            | -22.23          | 0.00            | 22.23                      | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 4.91               | -0.41          | 0.030 |
| 135.00        | -7.74            | -1.54            | 0.00            | -12.50          | 0.00            | 12.50                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 5.35               | -0.42          | 0.019 |
| 138.00        | -6.36            | -1.32            | 0.00            | -7.88           | 0.00            | 7.88                       | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 5.62               | -0.43          | 0.014 |
| 140.00        | -2.69            | -0.68            | 0.00            | -5.23           | 0.00            | 5.23                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 5.80               | -0.43          | 0.008 |
| 145.00        | -2.42            | -0.61            | 0.00            | -1.84           | 0.00            | 1.84                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 6.25               | -0.43          | 0.004 |
| 148.00        | 0.00             | -0.60            | 0.00            | 0.00            | 0.00            | 0.00                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 6.52               | -0.43          | 0.000 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

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

**Calculated Forces**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -42.91           | -2.81            | 0.00            | -321.29         | 0.00            | 321.29                     | 6,758.61      | 3,379.30      | 16,808.8         | 8,416.91         | 0.00               | 0.00           | 0.045 |
| 5.00          | -41.24           | -2.77            | 0.00            | -307.25         | 0.00            | 307.25                     | 6,657.97      | 3,328.99      | 16,195.9         | 8,110.02         | 0.01               | -0.01          | 0.044 |
| 10.00         | -39.60           | -2.72            | 0.00            | -293.39         | 0.00            | 293.39                     | 6,555.28      | 3,277.64      | 15,589.2         | 7,806.19         | 0.02               | -0.02          | 0.044 |
| 15.00         | -37.99           | -2.67            | 0.00            | -279.78         | 0.00            | 279.78                     | 6,450.55      | 3,225.27      | 14,988.8         | 7,505.57         | 0.05               | -0.03          | 0.043 |
| 20.00         | -36.41           | -2.61            | 0.00            | -266.44         | 0.00            | 266.44                     | 6,343.76      | 3,171.88      | 14,395.2         | 7,208.34         | 0.09               | -0.04          | 0.043 |
| 25.00         | -34.86           | -2.55            | 0.00            | -253.39         | 0.00            | 253.39                     | 6,234.93      | 3,117.46      | 13,808.7         | 6,914.66         | 0.14               | -0.05          | 0.042 |
| 30.00         | -33.34           | -2.49            | 0.00            | -240.63         | 0.00            | 240.63                     | 6,124.04      | 3,062.02      | 13,229.7         | 6,624.69         | 0.20               | -0.06          | 0.042 |
| 35.00         | -32.29           | -2.45            | 0.00            | -228.18         | 0.00            | 228.18                     | 6,011.11      | 3,005.56      | 12,658.4         | 6,338.62         | 0.27               | -0.07          | 0.041 |
| 38.50         | -31.58           | -2.42            | 0.00            | -219.61         | 0.00            | 219.61                     | 5,930.84      | 2,965.42      | 12,263.3         | 6,140.77         | 0.33               | -0.08          | 0.041 |
| 40.00         | -29.25           | -2.31            | 0.00            | -215.99         | 0.00            | 215.99                     | 5,896.13      | 2,948.06      | 12,095.2         | 6,056.60         | 0.35               | -0.09          | 0.041 |
| 45.00         | -28.08           | -2.26            | 0.00            | -204.42         | 0.00            | 204.42                     | 4,028.70      | 2,014.35      | 8,211.50         | 4,111.85         | 0.45               | -0.10          | 0.057 |
| 50.00         | -26.95           | -2.22            | 0.00            | -193.10         | 0.00            | 193.10                     | 3,959.47      | 1,979.74      | 7,854.78         | 3,933.23         | 0.56               | -0.11          | 0.056 |
| 55.00         | -25.83           | -2.17            | 0.00            | -182.02         | 0.00            | 182.02                     | 3,888.20      | 1,944.10      | 7,501.64         | 3,756.40         | 0.69               | -0.13          | 0.055 |
| 60.00         | -24.74           | -2.13            | 0.00            | -171.16         | 0.00            | 171.16                     | 3,814.87      | 1,907.44      | 7,152.43         | 3,581.53         | 0.83               | -0.14          | 0.054 |
| 65.00         | -23.67           | -2.11            | 0.00            | -160.48         | 0.00            | 160.48                     | 3,739.50      | 1,869.75      | 6,807.48         | 3,408.80         | 0.99               | -0.16          | 0.053 |
| 70.00         | -23.03           | -2.09            | 0.00            | -149.95         | 0.00            | 149.95                     | 3,662.08      | 1,831.04      | 6,467.12         | 3,238.36         | 1.16               | -0.18          | 0.053 |
| 73.00         | -22.37           | -2.08            | 0.00            | -143.67         | 0.00            | 143.67                     | 3,614.64      | 1,807.32      | 6,265.24         | 3,137.28         | 1.27               | -0.19          | 0.052 |
| 75.00         | -21.15           | -2.07            | 0.00            | -139.51         | 0.00            | 139.51                     | 3,582.60      | 1,791.30      | 6,131.68         | 3,070.40         | 1.35               | -0.19          | 0.051 |
| 78.50         | -20.88           | -2.07            | 0.00            | -132.26         | 0.00            | 132.26                     | 2,803.82      | 1,401.91      | 4,778.86         | 2,392.98         | 1.50               | -0.21          | 0.063 |
| 80.00         | -19.98           | -2.08            | 0.00            | -129.16         | 0.00            | 129.16                     | 2,786.75      | 1,393.37      | 4,704.23         | 2,355.61         | 1.57               | -0.21          | 0.062 |
| 85.00         | -19.28           | -2.09            | 0.00            | -118.78         | 0.00            | 118.78                     | 2,728.49      | 1,364.25      | 4,457.31         | 2,231.97         | 1.80               | -0.23          | 0.060 |
| 89.00         | -19.04           | -2.10            | 0.00            | -110.42         | 0.00            | 110.42                     | 2,680.41      | 1,340.21      | 4,262.00         | 2,134.17         | 2.00               | -0.25          | 0.059 |
| 90.00         | -18.21           | -2.12            | 0.00            | -108.32         | 0.00            | 108.32                     | 2,668.19      | 1,334.09      | 4,213.50         | 2,109.88         | 2.05               | -0.25          | 0.058 |
| 95.00         | -17.39           | -2.15            | 0.00            | -97.73          | 0.00            | 97.73                      | 2,605.84      | 1,302.92      | 3,973.13         | 1,989.52         | 2.33               | -0.27          | 0.056 |
| 100.00        | -17.23           | -2.15            | 0.00            | -87.00          | 0.00            | 87.00                      | 2,541.44      | 1,270.72      | 3,736.55         | 1,871.05         | 2.63               | -0.29          | 0.053 |
| 101.00        | -14.09           | -2.23            | 0.00            | -84.85          | 0.00            | 84.85                      | 2,528.31      | 1,264.16      | 3,689.71         | 1,847.60         | 2.69               | -0.30          | 0.051 |
| 105.00        | -13.51           | -2.24            | 0.00            | -75.94          | 0.00            | 75.94                      | 2,474.99      | 1,237.49      | 3,504.07         | 1,754.64         | 2.95               | -0.31          | 0.049 |
| 108.75        | -13.23           | -2.24            | 0.00            | -67.56          | 0.00            | 67.56                      | 2,423.81      | 1,211.90      | 3,332.62         | 1,668.79         | 3.20               | -0.33          | 0.046 |
| 110.00        | -12.77           | -2.24            | 0.00            | -64.75          | 0.00            | 64.75                      | 2,406.49      | 1,203.24      | 3,276.05         | 1,640.46         | 3.29               | -0.33          | 0.045 |
| 112.00        | -12.44           | -2.24            | 0.00            | -60.27          | 0.00            | 60.27                      | 2,378.52      | 1,189.26      | 3,186.16         | 1,595.45         | 3.43               | -0.34          | 0.043 |
| 113.00        | -12.18           | -2.24            | 0.00            | -58.03          | 0.00            | 58.03                      | 1,786.91      | 893.46        | 2,420.38         | 1,211.99         | 3.50               | -0.35          | 0.055 |
| 115.00        | -11.55           | -2.22            | 0.00            | -53.55          | 0.00            | 53.55                      | 1,768.50      | 884.25        | 2,356.91         | 1,180.21         | 3.65               | -0.35          | 0.052 |
| 120.00        | -11.42           | -2.22            | 0.00            | -42.45          | 0.00            | 42.45                      | 1,721.02      | 860.51        | 2,199.92         | 1,101.60         | 4.03               | -0.37          | 0.045 |
| 121.00        | -8.64            | -2.06            | 0.00            | -40.23          | 0.00            | 40.23                      | 1,711.28      | 855.64        | 2,168.83         | 1,086.03         | 4.11               | -0.38          | 0.042 |
| 125.00        | -8.09            | -2.00            | 0.00            | -31.99          | 0.00            | 31.99                      | 1,671.50      | 835.75        | 2,045.59         | 1,024.32         | 4.43               | -0.39          | 0.036 |
| 130.00        | -7.56            | -1.92            | 0.00            | -21.98          | 0.00            | 21.98                      | 1,619.92      | 809.96        | 1,894.26         | 948.54           | 4.85               | -0.41          | 0.028 |
| 135.00        | -5.40            | -1.52            | 0.00            | -12.37          | 0.00            | 12.37                      | 1,566.30      | 783.15        | 1,746.27         | 874.43           | 5.28               | -0.42          | 0.018 |
| 138.00        | -4.44            | -1.31            | 0.00            | -7.80           | 0.00            | 7.80                       | 1,533.15      | 766.57        | 1,659.21         | 830.84           | 5.54               | -0.42          | 0.012 |
| 140.00        | -1.88            | -0.67            | 0.00            | -5.18           | 0.00            | 5.18                       | 1,510.63      | 755.32        | 1,601.94         | 802.16           | 5.72               | -0.42          | 0.008 |
| 145.00        | -1.69            | -0.61            | 0.00            | -1.82           | 0.00            | 1.82                       | 1,446.60      | 723.30        | 1,455.26         | 728.71           | 6.16               | -0.43          | 0.004 |
| 148.00        | 0.00             | -0.60            | 0.00            | 0.00            | 0.00            | 0.00                       | 1,400.09      | 700.04        | 1,362.73         | 682.38           | 6.43               | -0.43          | 0.000 |

Site Number: 302540

Code: ANSI/TIA-222-G

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Site Name: Madison CT 6, CT

Engineering Number: OAA724329\_C3\_01

2/16/2018 3:32:53 PM

Customer: VERIZON WIRELESS

### Analysis Summary

| Load Case                    | Reactions          |                    |                    |                        |                        |                        | Max Usage |                   |
|------------------------------|--------------------|--------------------|--------------------|------------------------|------------------------|------------------------|-----------|-------------------|
|                              | Shear FX<br>(kips) | Shear FZ<br>(kips) | Axial FY<br>(kips) | Moment MX<br>(ft-kips) | Moment MY<br>(ft-kips) | Moment MZ<br>(ft-kips) | Elev (ft) | Interaction Ratio |
| 1.2D + 1.6W                  | 31.00              | 0.00               | 61.97              | 0.00                   | 0.00                   | 3331.16                | 45.00     | 0.50              |
| 0.9D + 1.6W                  | 30.46              | 0.00               | 46.47              | 0.00                   | 0.00                   | 3259.04                | 45.00     | 0.48              |
| 1.2D + 1.0Di + 1.0Wi         | 7.81               | 0.00               | 97.94              | 0.00                   | 0.00                   | 833.11                 | 45.00     | 0.14              |
| (1.2 + 0.2Sds) * DL + E ELFM | 2.17               | 0.00               | 61.45              | 0.00                   | 0.00                   | 253.28                 | 45.00     | 0.05              |
| (1.2 + 0.2Sds) * DL + E EMAM | 2.81               | 0.00               | 61.45              | 0.00                   | 0.00                   | 324.82                 | 78.50     | 0.07              |
| (0.9 - 0.2Sds) * DL + E ELFM | 2.17               | 0.00               | 42.91              | 0.00                   | 0.00                   | 250.75                 | 45.00     | 0.04              |
| (0.9 - 0.2Sds) * DL + E EMAM | 2.81               | 0.00               | 42.91              | 0.00                   | 0.00                   | 321.29                 | 78.50     | 0.06              |
| 1.0D + 1.0W                  | 6.72               | 0.00               | 51.66              | 0.00                   | 0.00                   | 721.11                 | 45.00     | 0.11              |

|                   |                     |                  |
|-------------------|---------------------|------------------|
| Base/Flange Plate | Plate Type          | <b>Baseplate</b> |
|                   | Pole Diameter       | 61.05 in         |
|                   | Pole Thickness      | 0.5 in           |
|                   | Plate Length        | 68 in            |
|                   | Plate Thickness     | 3.25 in          |
|                   | Plate Fy            | 50 ksi           |
|                   | Weld Length         | 0.4375 in        |
|                   | $\phi_s$ Resistance | 4068.86 k-in     |
|                   | Applied             | 1322.93 k-in     |
|                   | #                   | 0                |
| Stiffeners        |                     |                  |

Code Rev. **G**

Date **2/16/2018**  
 Engineer **Zac.Mueller**  
 Site # **302540**  
 Carrier **VERIZON WIRELESS**

Moment **3331.2 k-ft**  
 Axial **62.0 k**

|         |                                 |           |
|---------|---------------------------------|-----------|
| Bolts ● | #                               | <b>20</b> |
|         | Bolt Circle (R)adial / (S)quare | 69 in S   |
|         | Bolt Gap                        | 6 in      |
|         | Diameter                        | 2.25 in   |
|         | Hole Diameter                   | 2.625 in  |
|         | Type                            | 18J       |
|         | Fy                              | 75 ksi    |
|         | Fu                              | 100 ksi   |
|         | $\phi_s$ Resistance             | 259.82 k  |
|         | Applied                         | 118.91 k  |

|                 |   |   |
|-----------------|---|---|
| Reinforcement ● | # | 0 |
|-----------------|---|---|

|               |   |   |
|---------------|---|---|
| Extra Bolts O | # | 0 |
|---------------|---|---|

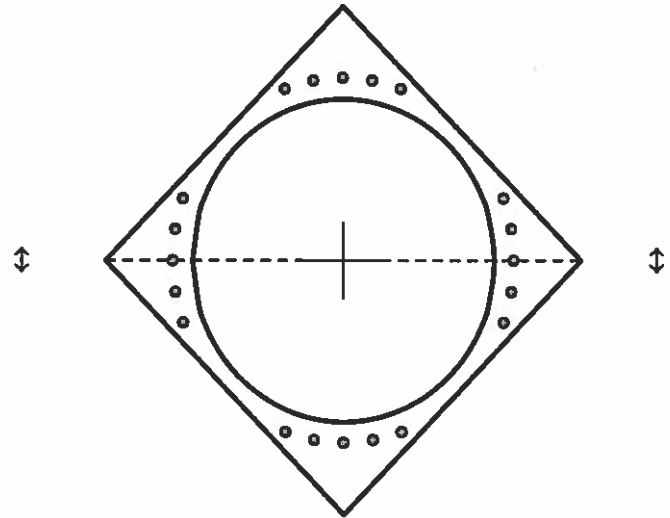


Plate Stress Ratio:  
**0.33** (Pass)

Bolt Stress Ratio:  
**0.46** (Pass)

Site Name: Madison 2 CT

**Cumulative Power Density**

| Operator     | Operating Frequency | Number of Trans. | ERP Per Trans. | Total ERP | Distance to Target | Calculated Power Density | Maximum Permissible Exposure* | Fraction of MPE |
|--------------|---------------------|------------------|----------------|-----------|--------------------|--------------------------|-------------------------------|-----------------|
|              | (MHz)               |                  | (watts)        | (watts)   | (feet)             | (mW/cm <sup>2</sup> )    | (mW/cm <sup>2</sup> )         | (%)             |
| VZW PCS      | 1970                | 1                | 5180           | 5180      | 140                | 0.0950                   | 1.0                           | 9.50%           |
| VZW Cellular | 869                 | 9                | 475            | 4275      | 140                | 0.0784                   | 0.5793333333                  | 13.54%          |
| VZW 850 LTE  | 869                 | 1                | 3710           | 4428      | 140                | 0.1106                   | 0.5793333333                  | 19.09%          |
| VZW AWS      | 2145                | 1                | 7771           | 7771      | 140                | 0.1426                   | 1.0                           | 14.26%          |
| VZW 700      | 746                 | 1                | 2063           | 2063      | 140                | 0.0379                   | 0.4973333333                  | 7.61%           |

**Total Percentage of Maximum Permissible Exposure** 64.00%

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:

1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.

Description

[Google Street View](#) | [FEMA Flood Map](#)  
[Property Card](#)

Details

Owner Name  
CK BUILDERS LLC

Location  
8 OLD ROUTE 79

Acres  
0

Assessed Value  
487500

Appraised Value  
696200

Year Built  
1974

Year Improved  
unavailabl

Land Use  
Commercial



# 8 OLD ROUTE 79

**Location** 8 OLD ROUTE 79

**Mblu** 48/ 53/ / /

**Acct#** 00321200

**Owner** CK BUILDERS LLC

**Assessment** \$299,600

**Appraisal** \$427,800

**PID** 3310

**Building Count** 1

## Current Value

| Appraisal      |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$22,500     | \$405,300 | \$427,800 |

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$15,800     | \$283,800 | \$299,600 |

## Owner of Record

**Owner** CK BUILDERS LLC

**Sale Price** \$0

**Co-Owner**

**Book & Page** 1340/ 270

**Sale Date** 12/21/2004

**Instrument** 15

## Ownership History

| Ownership History |            |             |            |            |
|-------------------|------------|-------------|------------|------------|
| Owner             | Sale Price | Book & Page | Instrument | Sale Date  |
| CK BUILDERS LLC   | \$0        | 1340/ 270   | 15         | 12/21/2004 |
| TOWN OF MADISON   | \$0        | 136/ 597    |            |            |

## Building Information

### Building 1 : Section 1

**Year Built:**

**Living Area:** 0

| Building Attributes |             |
|---------------------|-------------|
| Field               | Description |
| Style               | Vacant Land |
| Model               |             |
| Stories:            |             |

|               |  |
|---------------|--|
| Total Rooms:  |  |
| Fireplace(s)  |  |
| Xtra FPL Open |  |

### Building Photo



(http://images.vgsi.com/photos/MadisonCTPhotos//\01\00\81\09

### Building Layout

Building Layout

| Building Sub-Areas (sq ft)     | Legend |
|--------------------------------|--------|
| No Data for Building Sub-Areas |        |

### Extra Features

| Extra Features             | Legend |
|----------------------------|--------|
| No Data for Extra Features |        |

### Land

#### Land Use

**Use Code** 4310  
**Description** TEL REL TW  
**Zone** R-1

#### Land Line Valuation

**Size (Acres)** 1.02

### Outbuildings

| Outbuildings |             |          |                 |         |          | Legend |
|--------------|-------------|----------|-----------------|---------|----------|--------|
| Code         | Description | Sub Code | Sub Description | Size    | Value    | Bldg # |
| FND          | Foundation  |          |                 | 1 UNITS | \$22,500 | 1      |

### Valuation History

| Appraisal      |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$22,500     | \$405,300 | \$427,800 |



**Assessment**

| <b>Valuation Year</b> | <b>Improvements</b> | <b>Land</b> | <b>Total</b> |
|-----------------------|---------------------|-------------|--------------|
| 2017                  | \$15,800            | \$283,800   | \$299,600    |

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