Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

August 16, 2016

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

Re: **Notice of Exempt Modification – Facility Modification**
Eastover Road (a/k/a 1590 Newfield Avenue), Stamford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the 143-foot level of the existing 148-foot tower at Eastover Road (a/k/a 1590 Newfield Avenue) in Stamford, Connecticut (the "Property"). The tower is owned by American Tower Corporation ("ATC"). The Council approved Cellco's shared use of this tower in 2004. Cellco now intends to modify its facility by replacing nine (9) of its existing antennas with one (1) model BXA-70063-6CF antenna; four (4) model SBNHH-1D45B antennas; and four (4) model SBNHH-1D65B antennas, all at the same level on the tower. Cellco also intends to replace three (3) remote radio heads ("RRHs") with three (3) newer model RRHs and install six (6) new RRHs. Cellco also intends to install one (1) HYBRIFLEX™ antenna cable attached to the outside of the monopole tower. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to David Martin, Mayor of the City of Stamford. A copy of this letter is also being sent to ATC, the tower owner. Cellco is the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antenna will be installed on its existing antenna platform at the 143-foot level.

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

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

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

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

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

A copy of the Town Assessor's Parcel Map and property owner information is included in Attachment 4.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
David Martin, Stamford Mayor
ATC
Tim Parks

ATTACHMENT 1

Amphenol ANTENNA SOLUTIONS

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

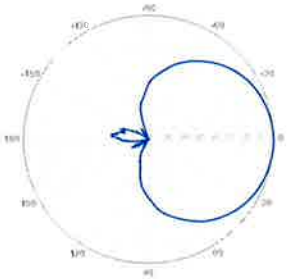
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m^2 Side: 0.24 m^2	Front: 5.5 ft^2 Side: 2.6 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

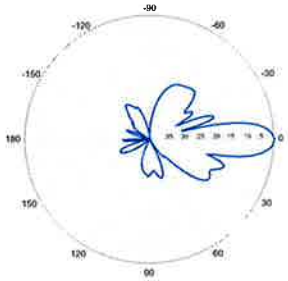
Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

BXA-70063-6CF-EDIN-X



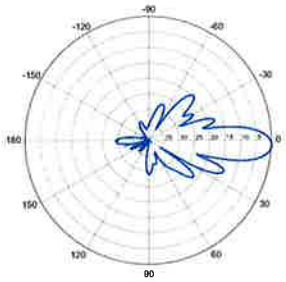
Horizontal | 750 MHz

BXA-70063-6CF-EDIN-0

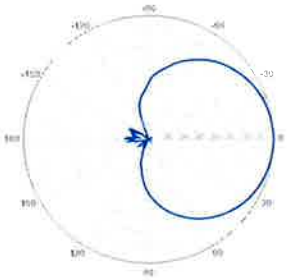


0° | Vertical | 750 MHz

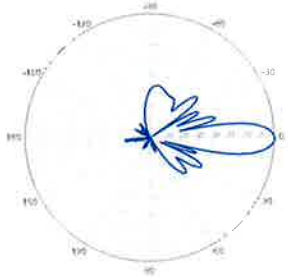
BXA-70063-6CF-EDIN-2



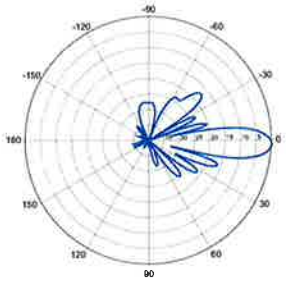
2° | Vertical | 750 MHz



Horizontal | 850 MHz



0° | Vertical | 850 MHz



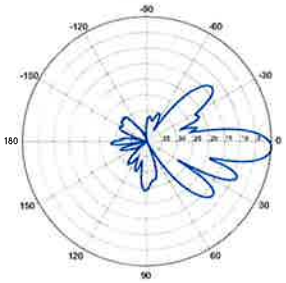
2° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-70063-6CF-EDIN-X

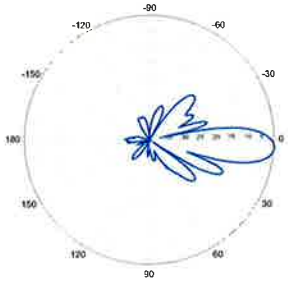
X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3



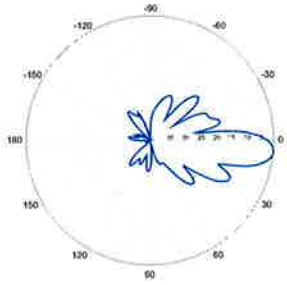
3° | Vertical | 750 MHz

BXA-70063-6CF-EDIN-4

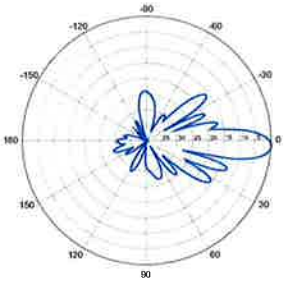


4° | Vertical | 750 MHz

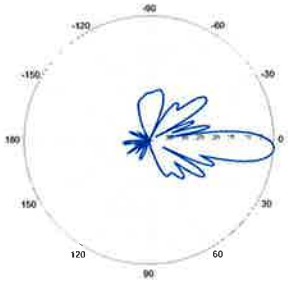
BXA-70063-6CF-EDIN-5



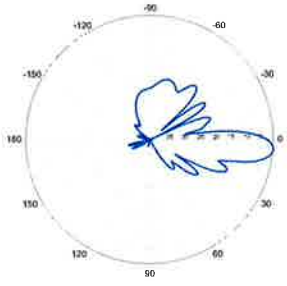
5° | Vertical | 750 MHz



3° | Vertical | 850 MHz

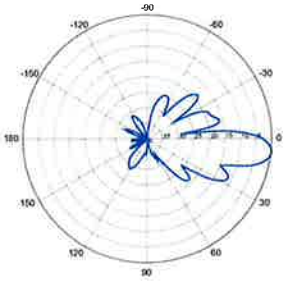


4° | Vertical | 850 MHz



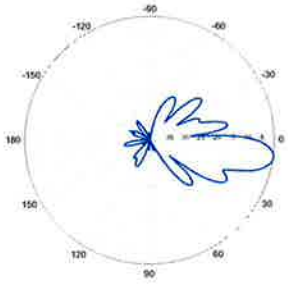
5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6



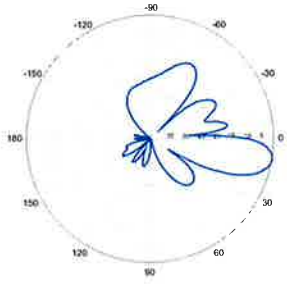
6° | Vertical | 750 MHz

BXA-70063-6CF-EDIN-8

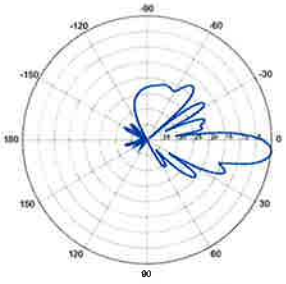


8° | Vertical | 750 MHz

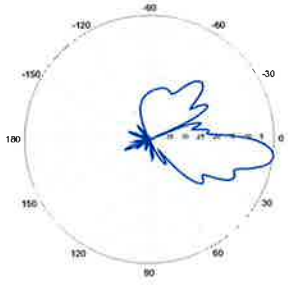
BXA-70063-6CF-EDIN-10



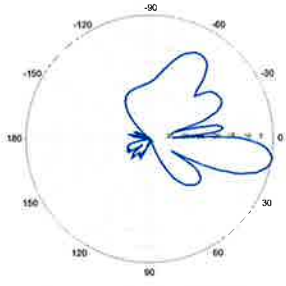
10° | Vertical | 750 MHz



6° | Vertical | 850 MHz



8° | Vertical | 850 MHz



10° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

Product Specifications

COMMSCOPE®

SBNHH-1D45B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 45° horizontal beamwidth, internal RETs.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Three internal RETs for independent tilt on all three bands

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	16.9	17.6	19.6	20.1	20.5	21.0
Beamwidth, Horizontal, degrees	47	43	45	42	42	39
Beamwidth, Vertical, degrees	12.4	11.4	5.8	5.3	5.1	4.5
Beam Tilt, degrees	0–14	0–14	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	16	16	18	17	17	16
Front-to-Back Ratio at 180°, dB	34	33	35	37	37	39
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	16.6	17.3	19.2	19.8	20.1	20.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.5	±0.4	±0.5	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 16.6	0 ° | 17.3	0 ° | 19.3	0 ° | 19.9	0 ° | 20.1	0 ° | 20.7
	7 ° | 16.7	7 ° | 17.4	4 ° | 19.3	4 ° | 19.9	4 ° | 20.2	4 ° | 20.9
	14 ° | 16.4	14 ° | 17.1	8 ° | 19.0	8 ° | 19.6	8 ° | 20.0	8 ° | 20.4
Beamwidth, Horizontal Tolerance, degrees	±1.5	±2.8	±2.1	±1.7	±1	±1.7
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.6	±0.3	±0.2	±0.4	±0.1
USLS, beampeak to 20° above beampeak, dB	19	23	16	15	16	16
Front-to-Back Total Power at 180° ± 30°, dB	24	24	28	30	31	30
CPR at Boresight, dB	28	29	23	24	20	19
CPR at 10 dB Horizontal Beamwidth, dB	13	17	13	13	13	13

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

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

Product Specifications

SBNHH-1D45B

Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	1038.0 N @ 150 km/h 233.4 lbf @ 150 km/h
Wind Loading, lateral	234.0 N @ 150 km/h 52.6 lbf @ 150 km/h
Wind Loading, rear	1091.0 N @ 150 km/h 245.3 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Depth	178.0 mm | 7.0 in
Length	1829.0 mm | 72.0 in
Width	457.0 mm | 18.0 in
Net Weight, without mounting kit	29.2 kg | 64.4 lb

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

Depth	311.0 mm | 12.2 in
Length	1950.0 mm | 76.8 in
Width	567.0 mm | 22.3 in
Shipping Weight	42.5 kg | 93.7 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

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

Product Specifications

SBNHH-1D45B

Included Products

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

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

Product Specifications

COMMSCOPE®

SBNHH-1D65B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

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

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.6	0 ° | 14.5	0 ° | 17.4	0 ° | 17.8	0 ° | 18.1	0 ° | 18.2
	7 ° | 14.6	7 ° | 14.4	3 ° | 17.5	3 ° | 17.9	3 ° | 18.3	3 ° | 18.4
	14 ° | 14.2	14 ° | 13.6	7 ° | 17.4	7 ° | 17.9	7 ° | 18.2	7 ° | 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

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

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

Product Specifications

SBNHH-1D65B

Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

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

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

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

Regulatory Compliance/Certifications

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

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

Product Specifications

SBNHH-1D65B

Included Products

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

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

©2016 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope.
All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: July 7, 2016

ALCATEL-LUCENT B13 RRH4X30-4R

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

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

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

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

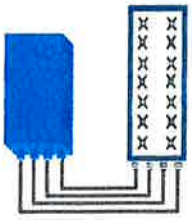
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

Alcatel·Lucent

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

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.
Copyright © 2014 Alcatel-Lucent. All Rights Reserved

ALCATEL-LUCENT
WIRELESS PRODUCT DATASHEET
RRH2X60-1900A-4R FOR BAND 2/25 APPLICATIONS

The Alcatel-Lucent RRH2x60-1900A-4R is a high power, small form factor Remote Radio Head operating in the PCS 1900MHz frequency band for WCDMA and LTE technologies. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.

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

The Alcatel-Lucent RRH2x60-1900A-4R is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-1900A-4R integrates all the latest technologies. This allows operators to offer best-in-class characteristics.

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

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

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

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

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-1900A-4R is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

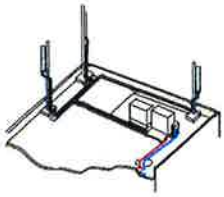
The Alcatel-Lucent RRH2x60-1900A-4R is a very cost-effective solution to deploy LTE MIMO.

EASY INSTALLATION

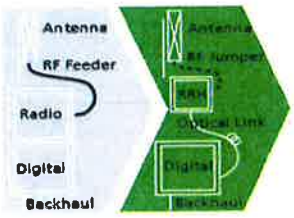
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-1900A-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-1900A-4R is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

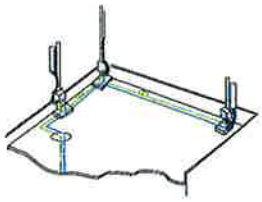
Installation can easily be done by a single person as the Alcatel–Lucent RRH2x60-190A-4R is compact and weighs about 21 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-1900A-4R integrates two power amplifiers of 60W rating (at each antenna connector)
- RRH2x60-1900A-4R can operate WCDMA only, LTE only or a mix of WCDMA and LTE
- RRH2x60-1900A-4R offers the possibility for WCDMA (non MIMO) to operate the two radio chains independently (2 blocks of 20 MHz anywhere in the band)
- RRH2x60-1900A-4R is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO deployment and/or WCDMA and LTE simultaneous operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

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

Dimensions and weights

- HxWxD : 500x285x208 mm (30l with solar shield)
- Weight : 21 kg (46 lbs) (with solar shield)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption: 460W typ. @2x60W (100%RF)

RF Characteristics

- Supported spectrum: DL 1930-1990 / UL 1850-1910
- Frequency band: 3GPP band 2/25
- Output power: 2x60W at antenna connectors
- Technology supported: W-CDMA and LTE
- Instantaneous bandwidth: 20 MHz (MIMO) or 2x20 MHz (non MIMO)
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -124.8dBm for WCDMA and -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 15km using SM fiber
- TMA/RETA: AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions: ETS300-019-1-4 class4.1E
- Ingress Protection: IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089
- Safety : IEC60950-1, EN 60825-1
- Regulatory: CE Mark-European Directive 2002/95/EC (RoHS), 2002/96/EC (WEEE), 1999/5/EC (R&TTE)
- Health : EN 50385

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice.
Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.

Copyright © 2014 Alcatel-Lucent. All rights reserved.

Alcatel·Lucent

B66A RRH 4X45 – PHYSICAL CHARACTERISTICS- TARGET 15.1

B4 RRH4x45-4R (AWS-Extension Band)	
Frequency Band	LR15.1 – B4 / LR16.1 B66 (AWS 1 and 3 only)
RF Output Power	2x90W/4x45W (SW configurable)
Operational range	2110-2180 MHz, DL/ 1710-1780 MHz UL
Instantaneous Bandwidth	70MHz
Configuration (HW readiness)	LTE: 2T2R, 2T4R, 4T4R
Carrier Bandwidths	5, 10, 15 and 20 MHz
Interfaces	2x CPRI Rate 7 Ports Antenna Connectors 4.3-10
AISG Support	AISG 2.0 for RET Internal Smart Bias T
Monitor Ports	NA (Spec An to replace ports)
Environmental	GR487 Compliance / GR3178 Compliance (with exceptions)
Mounting options	Pole/Wall
Connectors location	All bottom
External Alarms	4
Annual Return Rate (Target)	<2%
Operating Temperature	-40 C to +55 C (without solar load)

- Commercial Product Will include B66 support of AWS 1 and 3.
- Lower AWS 3 UL Not in 3GPP Band 66 Definition

Physical Dimensions – Not to Exceed		
	W/O Solar Shield	With Solar Shield
Dimensions HxWxD	H = 26in (H=660mm) W = 11.4in (W=290mm) D = 5.9in (D=150mm)	H = 26.6in (H=675mm) W = 12in (W=304mm) D = 6.8n (D=173mm)
Volume	29l	35.5l
Weight		64lbs / 29kg

COPYRIGHT © 2014 ALCATEL-LUCENT. ALL RIGHTS RESERVED.
ALCATEL-LUCENT – CONFIDENTIAL – SOLELY FOR AUTHORIZED PERSONS HAVING A NEED TO KNOW – PROPRIETARY – USE PURSUANT TO COMPANY INSTRUCTION

Product Data Sheet HB158-1-08U8-S8J18

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

Product Description

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

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX³ accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

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

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²(8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-99-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

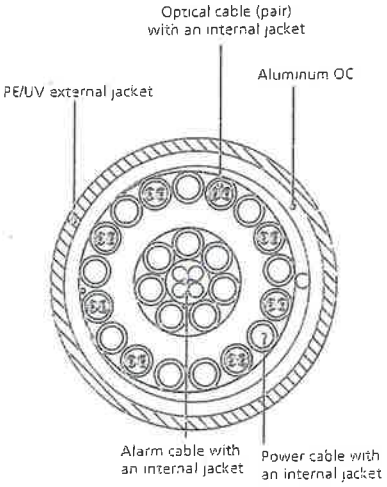


Figure 2: Construction Detail

* This data is provisional and subject to change

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

ATTACHMENT 2

Site Name: North Stamford								
Tower Height: 148Ft.								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*Sprint	4	693	120	1900	0.0767	1.0000	0.77%	
*Sprint	1	390	120	850	0.0108	0.5667	0.19%	
*Sprint	2	390	120	2300	0.0216	1.0000	0.22%	
*Sensus (CL&P)	1	200	105	940.1125	0.0073	0.6267	0.12%	
*AT&T	2	349	149.7	850	0.0122	0.5667	0.21%	
*AT&T	1	336	149.7	1900	0.0058	1.0000	0.06%	
*AT&T	1	748	149	2300	0.0132	1.0000	0.13%	
*AT&T	1	88	149	850	0.0016	0.5667	0.03%	
*AT&T	1	900	149	737	0.0158	0.4913	0.32%	
*AT&T	1	1476	149	1900	0.0260	1.0000	0.26%	
*Clearwire	2	153	137	2496	0.0064	1.0000	0.06%	
*Clearwire	1	211	137	11 GHz	0.0044	1.0000	0.04%	
*Nextel iDEN	19	100	131.5	851	0.0434	0.5673	0.76%	
*Sprint	3	562	131.5	2657	0.0385	1.0000	0.38%	
*T-Mobile	2	542	160	2100	0.0164	1.0000	0.16%	
*T-Mobile	8	136	160	1945	0.0165	1.0000	0.16%	
Verizon PCS	**1**	**2240**	**143**	**0.0394**	**1970**	**1.0000**	**3.94%**	
Verizon Cellular	**9**	**309**	**143**	**0.0489**	**869**	**0.5793**	**8.44%**	
Verizon AWS	**1**	**2199**	**143**	**0.0387**	**2145**	**1.0000**	**3.87%**	
Verizon 700	**1**	**831**	**143**	**0.0146**	**746**	**0.4973**	**2.94%**	
								23.08%
* Source: Siting Council								

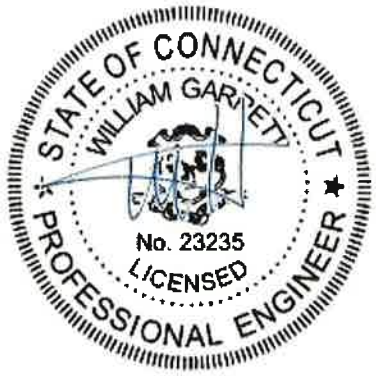
ATTACHMENT 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**148 ft Monopole**
ATC Site Name	:	**SMFR - North, CT**
ATC Site Number	:	**302515**
Engineering Number	:	**64559325**
Proposed Carrier	:	**Verizon**
Carrier Site Name	:	**North Stamford**
Carrier Site Number	:	**N/A**
Site Location	:	**0 Lot 4 Eastover Road** **Stamford, CT 06905-1403** **41.112750,-73.538353**
County	:	**Fairfield**
Date	:	**February 18, 2016**
Max Usage	:	**93%**
Result	:	**Pass**

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Daniel Hinshaw

Feb 18 2016 4:42 PM

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

AMERICAN TOWER®
CORPORATION

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.

Supporting Documents

Tower Drawings	Engineered Endeavors Job #4370, dated October 21, 1998
Foundation Drawing	Engineered Endeavors Job #5591, dated November 17, 1999
Geotechnical Report	Dr. Clarence Welti, dated October 25, 2000
Modifications	ATC Project #43868633, dated September 1, 2009 ATC Project #51772939, dated April 11, 2013

Analysis

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

Basic Wind Speed:	105 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.25, S_1 = 0.07
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
160.0	160.0	3	Andrew E15S09P94	Flush	(12) 1 5/8" Coax	T-Mobile
		3	RFS ATMAP1412D-1A20			
		2	Andrew ADFD1820-9090B-R2DM			
		1	Andrew TMZXXX-6516-R2M			
152.0	153.0	12	Powerwave LGP21401	Platform w/ Handrails	(12) 1 1/4" Coax (4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 0.74" 8 AWG 7 (1) 3" Conduit	AT&T Mobility
	152.0	6	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Powerwave 7770.00			
		3	Powerwave P65-16-XLH-RR			
		3	CCI OPA-65R-LCUU-H6			
	148.0	2	Raycap DC6-48-60-18-8F			
141.0	141.0	1	RFS DB-T1-6Z-8AB-0Z	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon Wireless
		1	Antel BXA-80063-6BF-EDIN-X			
		1	Antel BXA-70063/6CF__2°			
		1	Antel BXA-80080/6CF			
	139.0	6	RFS FD9R6004			
137.0	137.0	1	DragonWave Horizon Compact	Side Arms	(6) 5/16" (0.31") Coax (1) 2" Conduit (1) 1/2" Coax	Clearwire
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		1	DragonWave A-ANT-18G-2.5-C			
131.0	133.0	3	KMW KMDAPS2040000 (E-F Band)	Low Profile Platform	(9) 1 1/4" Coax (6) 1 5/8 Coax	Sprint Nextel
	131.0	3	KMW AM-X-WM-17-65-00T (48")			
		9	Decibel DB844H90E-XY			
120.0	120.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex	
		3	Alcatel-Lucent 4x40W RRH (91 lb)			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSPP18-C-A20			
110.0	110.0	2	Diamond X50A	Side Arms	(2) 1/2" Coax	Senet
100.0	105.0	1	Antel BCD-87010___4°	Side Arm	(1) 7/8" Coax	Sensus USA
75.0	75.0	1	PCTEL GPS-TMG-HR-26N	Side Arm	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
141.0	143.0	3	Antel BXA-171063/8CF	-	-	Verizon Wireless
		3	Antel BXA-70063/6CF			
		3	Rymsa MGD3-800T0			
		3	Alcatel-Lucent RRH2x40-AWS			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
141.0	141.0	1	RFS DB-T1-6Z-8AB-0Z	Low Profile Platform	(1) 1 5/8" Hybriflex	Verizon Wireless
		1	Antel BXA-70063/6CF __ 2°			
		4	Commscope SBNHH-1D65B			
		4	Commscope SBNHH-1D45B			
	139.0	4	Alcatel-Lucent RRH2X60-1900			
		4	Alcatel-Lucent RRH2x60 700			
		4	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			

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

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	59%	Pass
Shaft	67%	Pass
Base Plate	30%	Pass
Reinforcement	76%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,014.1	89%
Axial (Kips)	94.3	9%
Shear (Kips)	33.8	93%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
141.0	Alcatel-Lucent RRH2X60-1900	Verizon Wireless	1.594	1.327
	Alcatel-Lucent RRH2x60 700			
	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
	RFS DB-T1-6Z-8AB-0Z			
	Antel BXA-70063/6CF __ 2°			
	Commscope SBNHH-1D65B			
	Commscope SBNHH-1D45B			
137.0	DragonWave A-ANT-18G-2.5-C	Clearwire	1.503	1.305

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

AMERICAN TOWER®
CORPORATION

Standard Conditions

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

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

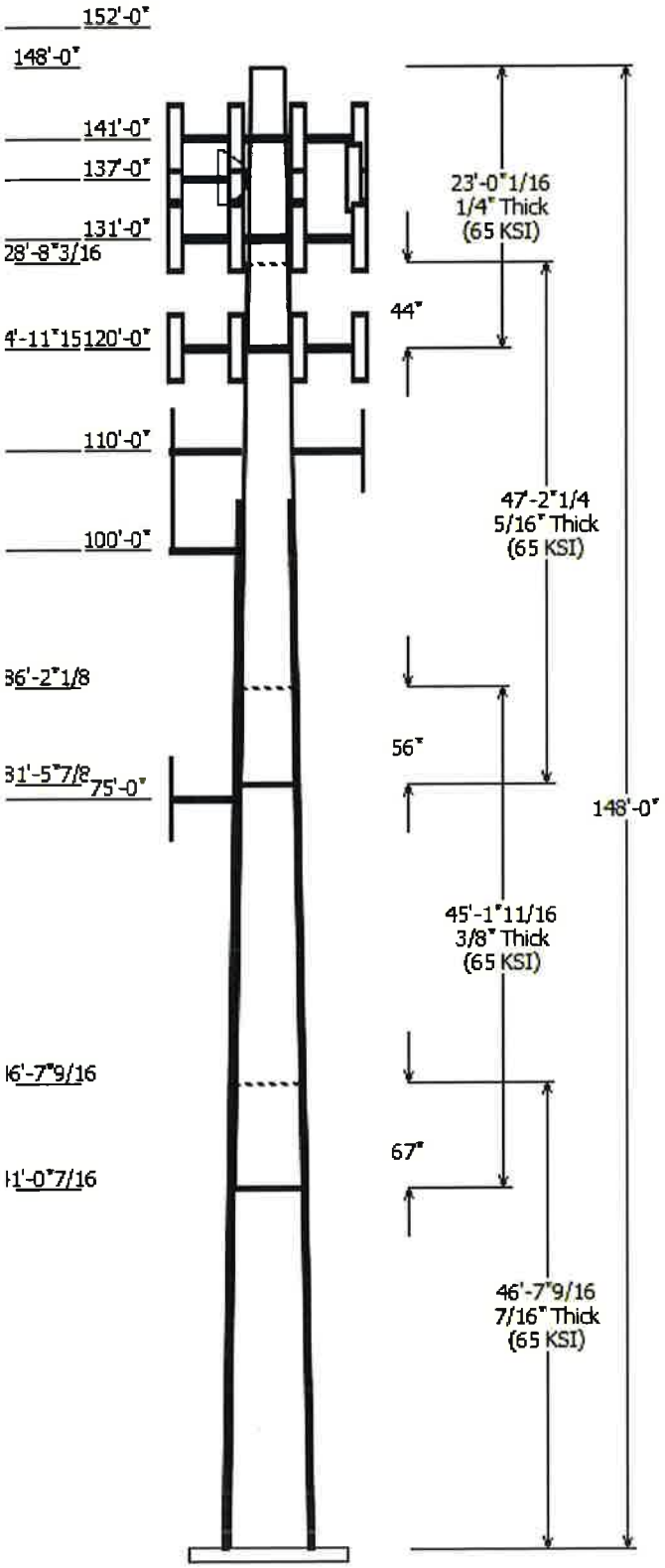
-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

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

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

© 2007 - 2016 by ATC IP LLC. All rights reserved.



Job Information

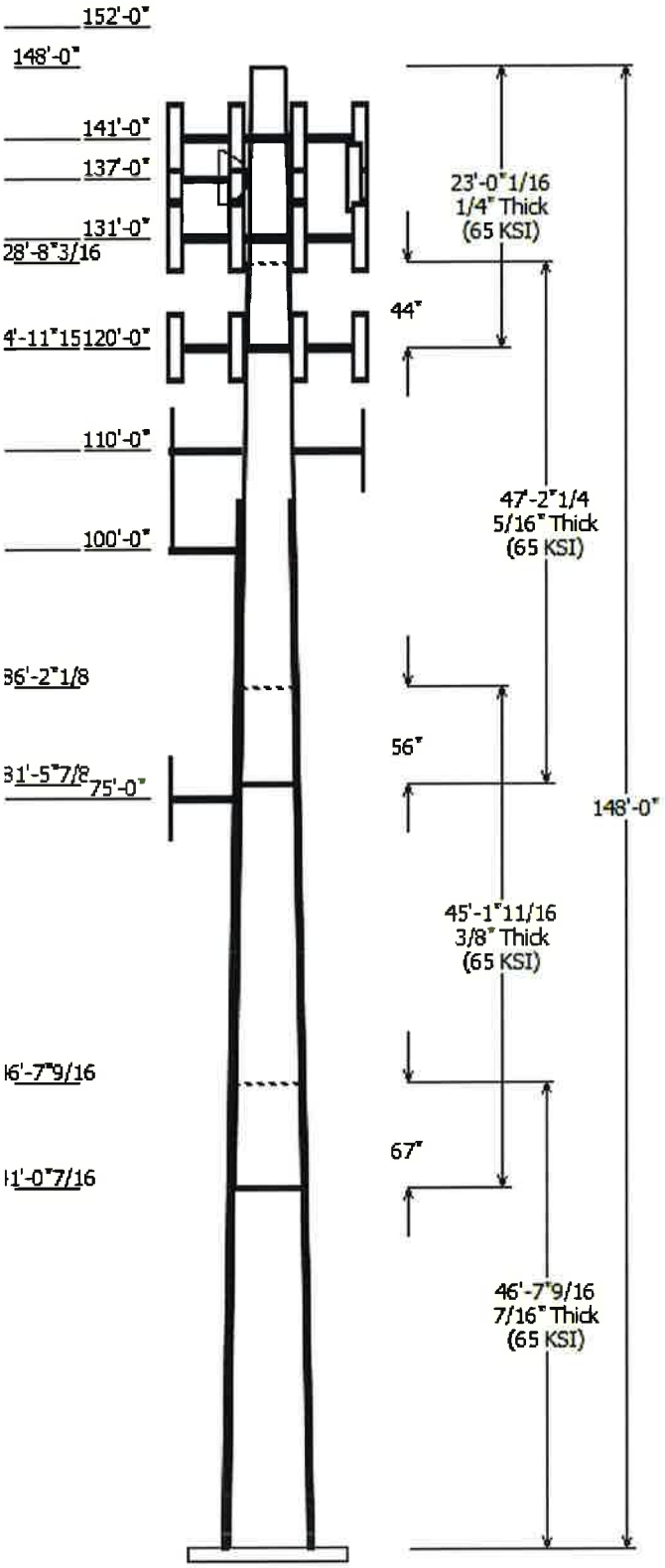
Pole :	302515	Code:	ANSI/TIA-222-G
Description :	148 ft EEI Monopole		
Client :	Verizon Wireless	Struct Class :	II
Location :	SMFR - North, CT		
Shape :	18 Sides	Exposure :	B
Height :	148.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.19510 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	46.630	38.90	48.00	0.438		0.000	0.195100	65
2	45.140	31.93	40.74	0.375	Slip Joint	67.125	0.195100	65
3	47.190	24.26	33.47	0.313	Slip Joint	56.218	0.195100	65
4	23.006	21.00	25.48	0.250	Slip Joint	44.251	0.195100	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
160.000	160.000	1	Andrew TMZXXX-6516-R2M
160.000	160.000	2	Andrew ADFD1820-9090B-R2DM
160.000	160.000	3	RFS ATMAP1412D-1A20
160.000	160.000	3	Andrew E15S09P94
152.000	152.000	1	Flat Platform w/ Handrails
152.000	152.000	3	CCI OPA-65R-LCUU-H6
152.000	152.000	3	Powerwave Allgon P65-16-
152.000	152.000	3	Powerwave Allgon 7770.00
152.000	152.000	3	Ericsson RRUS 32
152.000	152.000	6	Ericsson RRUS 11 (Band 12) (55
152.000	153.000	12	Powerwave Allgon LGP21401
152.000	148.000	2	Raycap DC6-48-60-18-8F
148.000	148.000	1	Pipe
141.000	141.000	4	Commscope SBNHH-1D45B
141.000	141.000	4	Commscope SBNHH-1D65B
141.000	139.000	4	Alcatel-Lucent RRH4x45-B66
141.000	139.000	4	Alcatel-Lucent RRH2x60 700
141.000	139.000	4	Alcatel-Lucent RRH2X60-1900
141.000	141.000	1	Antel BXA-70063/6CF__2°
141.000	141.000	1	RFS DB-T1-6Z-8AB-0Z
141.000	141.000	1	RFS DB-T1-6Z-8AB-0Z
141.000	141.000	1	Antel BXA-70063/6CF__2°
141.000	141.000	1	Flat Low Profile Platform
141.000	141.000	1	Antel BXA-80080/6CF
141.000	139.000	6	RFS FD9R6004
141.000	141.000	1	Antel BXA-80063-6BF-EDIN-X
137.000	137.000	1	DragonWave A-ANT-18G-2.5-C
137.000	137.000	1	Side Arms
137.000	137.000	3	NextNet BTS-2500
137.000	137.000	1	DragonWave Horizon Compact
137.000	137.000	3	Argus LLPX310R
131.000	133.000	3	KMW KMDAPS2040000 (E-F
131.000	131.000	3	KMW AM-X-WM-17-65-00T (48")
131.000	131.000	9	Decibel DB844H90E-XY
131.000	131.000	1	Flat Low Profile Platform
120.000	120.000	3	RFS APXVSPP18-C-A20
120.000	120.000	3	Alcatel-Lucent 4x40W RRH (91 l
120.000	120.000	3	Alcatel-Lucent 800 MHz 2X50W
120.000	120.000	3	RFS APXVTM14-C-I20
120.000	120.000	3	Alcatel-Lucent TD-RRH8x20-25
120.000	120.000	1	Flat Low Profile Platform
110.000	110.000	2	Diamond X50A
110.000	110.000	2	Flat Side Arm
100.000	100.000	1	Flat Side Arm



100.000	105.000	1	Antel BCD-87010 ___ 4°
75.000	75.000	1	Round Side Arm
75.000	75.000	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
10.000	120.0	1 1/4" Hybriflex	Yes
10.000	131.0	1 1/4" Coax	No
10.000	131.0	1 5/8 Coax	No
10.000	137.0	1/2" Coax	No
10.000	137.0	2" Conduit	Yes
10.000	137.0	5/16" (0.31",	No
10.000	141.0	1 5/8" Coax	No
10.000	141.0	1 5/8" Hybriflex	Yes
10.000	141.0	1 5/8" Hybriflex	Yes
10.000	148.0	1 5/8" Coax	Yes
10.000	152.0	0.39" (10mm)	No
10.000	152.0	0.74" 8 (18.7mm)	No
10.000	152.0	0.78" 8 (19.7mm)	No
10.000	152.0	1 1/4" Coax	No
10.000	152.0	3" Conduit	No
10.000	75.000	1/2" Coax	Yes
10.000	100.0	7/8" Coax	Yes
10.000	110.0	1/2" Coax	No
0.000	113.2	DYWIDAG	Yes

Load Cases

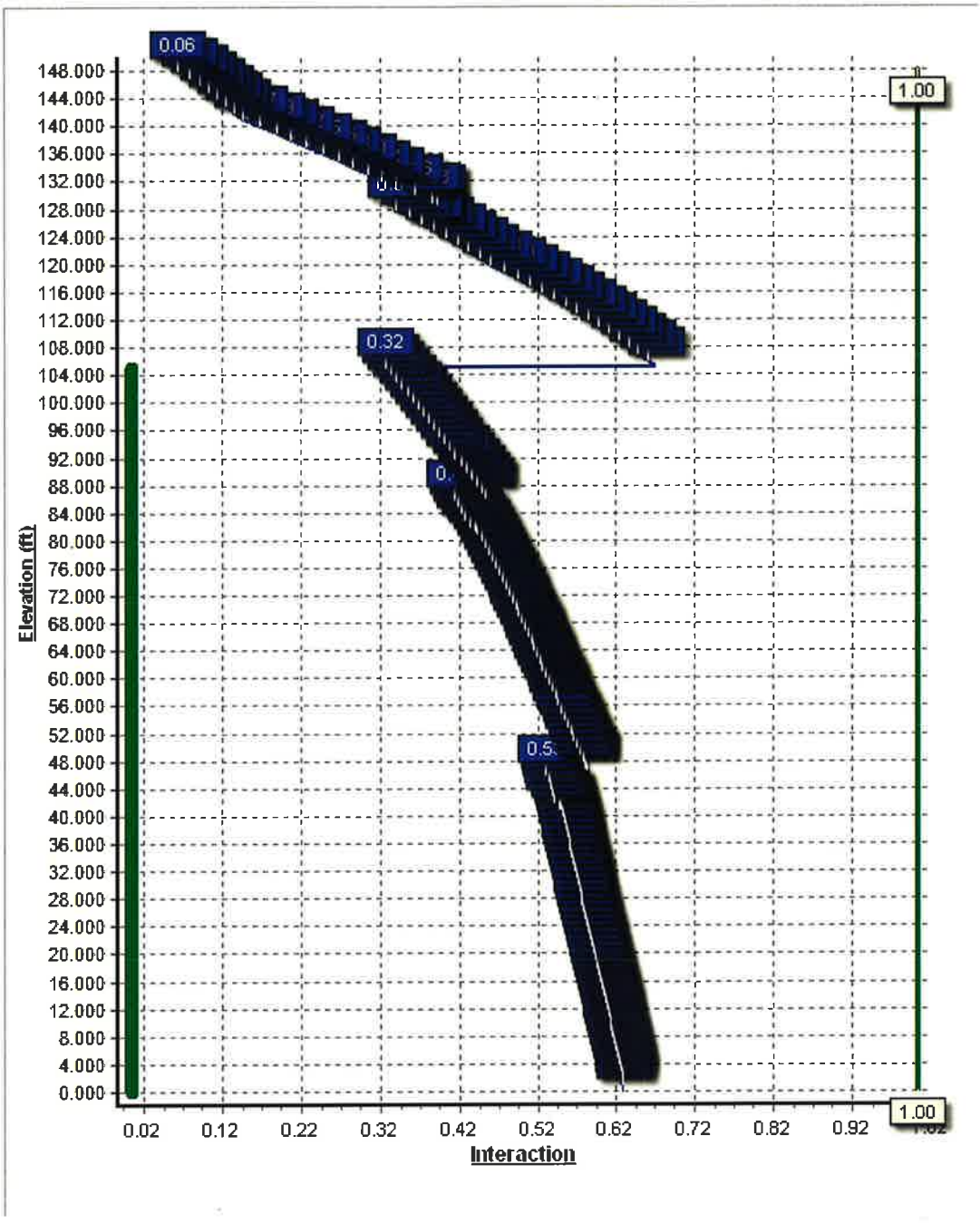
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	4014.14	33.80	58.65
0.9D + 1.6W	3826.88	32.33	43.99
1.2D + 1.0Di + 1.0Wi	868.67	7.31	94.30
(1.2 + 0.2Sds) * DL + E ELFM	184.74	1.57	56.69
(1.2 + 0.2Sds) * DL + E EMAM	304.19	2.93	56.69
(0.9 - 0.2Sds) * DL + E ELFM	182.29	1.57	38.36
(0.9 - 0.2Sds) * DL + E EMAM	299.96	2.93	38.36
1.0D + 1.0W	785.63	6.60	48.89

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	137.00	18.030	1.305


0.06
0.32
0.5
1.00
1.00
148.000
144.000
140.000
136.000
132.000
128.000
124.000
120.000
116.000
112.000
108.000
104.000
100.000
96.000
92.000
88.000
84.000
80.000
76.000
72.000
68.000
64.000
60.000
56.000
52.000
48.000
44.000
40.000
36.000
32.000
28.000
24.000
20.000
16.000
12.000
8.000
4.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	302515	Code: ANSI/TIA-222-G	© 2007 - 2016 by ATC IP LLC. All rights reserved.
Site Name:	SMFR - North, CT	Engineering Number: 64559325	2/18/2016 3:39:28 PM
Customer:	Verizon Wireless		

Analysis Parameters

Location:	Fairfield County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	148
Shape:	18 Sides	Base Diameter (in):	48.00
Pole Type:	Taper	Top Diameter (in):	21.00
Pole Manfacturer:	EEI	Taper (in/ft) :	0.195

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.42				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.246	S_1:	0.069	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.262	S_{d1}:	0.110		

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 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: 302515 | Code: ANSI/TIA-222-G | © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT | Engineering Number: 64559325 | 2/18/2016 3:39:28 PM

Customer: Verizon Wireless

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	46.630	0.4375	65		0.00	9,477	48.00	0.00	66.04	18876.3	17.93	109.71	38.90	46.63	53.41	9984.3	14.27	88.92	0.195101
2-18	45.140	0.3750	65	Slip	67.13	6,575	40.74	41.04	48.05	9892.6	17.75	108.65	31.93	86.18	37.57	4727.9	13.61	85.17	0.195101
3-18	47.190	0.3125	65	Slip	56.22	4,549	33.47	81.49	32.89	4570.6	17.48	107.12	24.26	128.68	23.76	1722.9	12.28	77.66	0.195101
4-18	23.006	0.2500	65	Slip	44.25	1,428	25.48	124.99	20.03	1611.7	16.57	101.95	21.00	148.00	16.46	895.7	13.40	84.00	0.195101
				Shaft Weight		22,029													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
160.00	Andrew ADFD1820-9090B-	2	22.00	5.540	0.73	153.08	6.578	0.73	0.000	0.000
160.00	Andrew E15S09P94	3	14.60	0.660	0.50	38.86	0.915	0.50	0.000	0.000
160.00	Andrew TMZXXX-6516-R2M	1	35.20	10.050	0.63	234.29	11.357	0.63	0.000	0.000
160.00	RFS ATMAP1412D-1A20	3	13.00	1.000	0.50	48.09	1.432	0.50	0.000	0.000
152.00	CCI OPA-65R-LCUU-H6	3	73.00	9.660	0.79	304.31	11.024	0.79	0.000	0.000
152.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.520	0.67	135.24	3.164	0.67	0.000	0.000
152.00	Ericsson RRUS 32	3	50.80	2.690	0.67	136.07	3.416	0.67	0.000	0.000
152.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,421.69	63.380	1.00	0.000	0.000
152.00	Powerwave Allgon 7770.00	3	35.00	5.510	0.77	169.81	6.558	0.77	0.000	0.000
152.00	Powerwave Allgon LGP21401	12	14.10	1.100	0.50	47.67	1.563	0.50	0.000	1.000
152.00	Powerwave Allgon P65-16-	3	53.00	8.130	0.79	244.27	9.427	0.79	0.000	0.000
152.00	Raycap DC6-48-60-18-8F	2	20.00	1.110	1.00	100.41	2.523	1.00	0.000	-4.000
148.00	Pipe	1	200.00	6.400	1.00	339.38	7.292	1.00	0.000	0.000
141.00	Alcatel-Lucent RRH2x60 700	4	56.70	2.150	0.67	137.43	2.771	0.67	0.000	-2.000
141.00	Alcatel-Lucent RRH2X60-	4	43.00	1.880	0.50	110.13	2.469	0.50	0.000	-2.000
141.00	Alcatel-Lucent RRH4x45-B66	4	63.30	2.470	0.67	151.06	3.592	0.67	0.000	-2.000
141.00	Antel BXA-70063/6CF__2°	1	17.00	7.570	0.75	183.28	8.835	0.75	0.000	0.000
141.00	Antel BXA-70063/6CF__2°	1	17.00	7.570	0.75	183.28	8.835	0.75	0.000	0.000
141.00	Antel BXA-80063-6BF-EDIN-X	1	19.20	7.260	0.78	187.68	8.492	0.78	0.000	0.000
141.00	Antel BXA-80080/6CF	1	22.00	7.780	0.75	192.50	9.047	0.75	0.000	0.000
141.00	Commscope SBNHH-1D45B	4	61.70	11.400	0.73	280.36	14.705	0.73	0.000	0.000
141.00	Commscope SBNHH-1D65B	4	50.70	8.170	0.83	252.56	9.469	0.83	0.000	0.000
141.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,144.99	45.106	1.00	0.000	0.000
141.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	186.62	5.668	0.67	0.000	0.000
141.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	186.62	5.668	0.67	0.000	0.000
141.00	RFS FD9R6004	6	3.10	0.370	0.50	5.25	0.627	0.50	0.000	-2.000
137.00	Argus LLPX310R	3	28.60	4.290	0.73	135.19	5.180	0.73	0.000	0.000
137.00	DragonWave A-ANT-18G-2.5-	1	47.60	8.430	1.00	221.04	10.074	1.00	0.000	0.000
137.00	DragonWave Horizon	1	10.60	0.430	0.50	40.46	0.658	0.50	0.000	0.000
137.00	NextNet BTS-2500	3	35.00	1.820	0.50	92.14	2.392	0.50	0.000	0.000
137.00	Side Arms	1	560.00	8.500	1.00	1,024.71	15.554	1.00	0.000	0.000
131.00	Decibel DB844H90E-XY	9	14.00	3.610	0.92	122.76	3.909	0.92	0.000	0.000
131.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,140.24	44.966	1.00	0.000	0.000
131.00	KMW AM-X-WM-17-65-00T	3	14.20	3.360	0.73	92.88	4.222	0.73	0.000	0.000
131.00	KMW KMDAPS2040000 (E-F	3	15.90	0.970	0.50	50.17	1.418	0.50	0.000	2.000
120.00	Alcatel-Lucent 4x40W RRH	3	91.00	3.290	0.67	213.58	3.120	0.67	0.000	0.000
120.00	Alcatel-Lucent 800 MHz	3	64.00	2.060	0.67	152.32	2.641	0.67	0.000	0.000
120.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.050	0.67	177.66	4.854	0.67	0.000	0.000
120.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,134.63	44.801	1.00	0.000	0.000
120.00	RFS APXVSPP18-C-A20	3	57.00	8.020	0.83	251.35	9.284	0.83	0.000	0.000
120.00	RFS APXVTM14-C-I20	3	52.90	6.900	0.78	208.94	7.424	0.78	0.000	0.000
110.00	Diamond X50A	2	2.30	1.120	1.00	59.85	2.469	1.00	0.000	0.000
110.00	Flat Side Arm	2	150.00	6.300	0.67	221.03	8.686	0.67	0.000	0.000
100.00	Antel BCD-87010 ___ 4°	1	26.50	2.900	1.00	154.73	6.569	1.00	0.000	5.000
100.00	Flat Side Arm	1	150.00	6.300	1.00	220.35	8.664	1.00	0.000	0.000
75.00	PCTEL GPS-TMG-HR-26N	1	0.60	0.090	1.00	0.99	0.149	1.00	0.000	0.000
75.00	Round Side Arm	1	150.00	5.200	1.00	218.34	7.739	1.00	0.000	0.000

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Totals 125 11981.70 27,677.45 Number of Loadings : 47

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
10.00	152.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T Mobility
10.00	152.00	2	0.74" 8 (18.7mm)	0.74	0.49	N	0.00	N	AT&T Mobility
10.00	152.00	4	0.78" 8 (19.7mm)	0.78	0.59	N	0.00	N	AT&T Mobility
10.00	152.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
10.00	152.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
10.00	148.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	T-Mobile
10.00	141.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
10.00	141.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	Y	Verizon
10.00	141.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	Y	Verizon
10.00	137.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
10.00	137.00	1	2" Conduit	2.38	3.65	N	0.00	Y	Clearwire
10.00	137.00	6	5/16" (0.31", 7.9mm)	0.31	0.05	N	0.00	N	Clearwire
10.00	131.00	9	1 1/4" Coax	1.55	0.63	N	3.10	N	Sprint Nextel
10.00	131.00	6	1 5/8 Coax	1.98	0.82	N	0.00	N	Sprint Nextel
10.00	120.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Y	Sprint Nextel
0.00	113.25	4	DYWIDAG	2.50	0.00	N	0.94	Y	Mods
10.00	110.00	2	1/2" Coax	0.63	0.15	N	0.00	N	Senet
10.00	100.00	1	7/8" Coax	1.09	0.33	N	0.00	Y	Sensus USA
10.00	75.00	1	1/2" Coax	0.63	0.15	N	0.50	Y	Sprint Nextel

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	— Intermediate Connections — Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	105.0	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:39:28 PM

Customer: Verizon Wireless

Segment Properties (Max Len : 1.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	48.000	66.044	18,876.3	17.93	109.71	80.3	774.6	0.0	0.0	19.64	7,401	0.0
1.00		0.4375	47.805	65.773	18,644.9	17.86	109.27	80.4	768.2	0.0	224.3	19.64	7,349	66.8
2.00		0.4375	47.610	65.502	18,415.5	17.78	108.82	80.5	761.8	0.0	223.4	19.64	7,296	66.8
3.00		0.4375	47.415	65.231	18,187.9	17.70	108.38	80.6	755.5	0.0	222.4	19.64	7,244	66.8
4.00		0.4375	47.220	64.960	17,962.3	17.62	107.93	80.7	749.2	0.0	221.5	19.64	7,192	66.8
5.00		0.4375	47.024	64.690	17,738.5	17.54	107.48	80.8	743.0	0.0	220.6	19.64	7,141	66.8
6.00		0.4375	46.829	64.419	17,516.6	17.46	107.04	80.9	736.7	0.0	219.7	19.64	7,089	66.8
7.00		0.4375	46.634	64.148	17,296.5	17.38	106.59	81.0	730.5	0.0	218.7	19.64	7,038	66.8
8.00		0.4375	46.439	63.877	17,078.3	17.31	106.15	81.0	724.3	0.0	217.8	19.64	6,987	66.8
9.00		0.4375	46.244	63.606	16,861.9	17.23	105.70	81.1	718.2	0.0	216.9	19.64	6,936	66.8
10.00		0.4375	46.049	63.335	16,647.3	17.15	105.25	81.2	712.0	0.0	216.0	19.64	6,885	66.8
11.00		0.4375	45.854	63.064	16,434.6	17.07	104.81	81.3	705.9	0.0	215.1	19.64	6,834	66.8
12.00		0.4375	45.659	62.793	16,223.7	16.99	104.36	81.4	699.9	0.0	214.1	19.64	6,784	66.8
13.00		0.4375	45.464	62.522	16,014.7	16.91	103.92	81.5	693.8	0.0	213.2	19.64	6,734	66.8
14.00		0.4375	45.269	62.251	15,807.4	16.83	103.47	81.6	687.8	0.0	212.3	19.64	6,684	66.8
15.00		0.4375	45.073	61.980	15,601.9	16.76	103.03	81.7	681.8	0.0	211.4	19.64	6,634	66.8
16.00		0.4375	44.878	61.709	15,398.2	16.68	102.58	81.8	675.8	0.0	210.4	19.64	6,584	66.8
17.00		0.4375	44.683	61.439	15,196.3	16.60	102.13	81.9	669.8	0.0	209.5	19.64	6,535	66.8
18.00		0.4375	44.488	61.168	14,996.2	16.52	101.69	82.0	663.9	0.0	208.6	19.64	6,485	66.8
19.00		0.4375	44.293	60.897	14,797.8	16.44	101.24	82.1	658.0	0.0	207.7	19.64	6,436	66.8
20.00		0.4375	44.098	60.626	14,601.2	16.36	100.80	82.2	652.2	0.0	206.8	19.64	6,387	66.8
21.00		0.4375	43.903	60.355	14,406.3	16.28	100.35	82.2	646.3	0.0	205.8	19.64	6,338	66.8
22.00		0.4375	43.708	60.084	14,213.2	16.21	99.90	82.3	640.5	0.0	204.9	19.64	6,290	66.8
23.00		0.4375	43.513	59.813	14,021.8	16.13	99.46	82.4	634.7	0.0	204.0	19.64	6,242	66.8
24.00		0.4375	43.318	59.542	13,832.1	16.05	99.01	82.5	628.9	0.0	203.1	19.64	6,193	66.8
25.00		0.4375	43.122	59.271	13,644.2	15.97	98.57	82.6	623.2	0.0	202.1	19.64	6,145	66.8
26.00		0.4375	42.927	59.000	13,457.9	15.89	98.12	82.6	617.5	0.0	201.2	19.64	6,098	66.8
27.00		0.4375	42.732	58.729	13,273.4	15.81	97.67	82.6	611.8	0.0	200.3	19.64	6,050	66.8
28.00		0.4375	42.537	58.459	13,090.6	15.73	97.23	82.6	606.1	0.0	199.4	19.64	6,002	66.8
29.00		0.4375	42.342	58.188	12,909.4	15.65	96.78	82.6	600.5	0.0	198.5	19.64	5,955	66.8
30.00		0.4375	42.147	57.917	12,729.9	15.58	96.34	82.6	594.9	0.0	197.5	19.64	5,908	66.8
31.00		0.4375	41.952	57.646	12,552.1	15.50	95.89	82.6	589.3	0.0	196.6	19.64	5,861	66.8
32.00		0.4375	41.757	57.375	12,376.0	15.42	95.44	82.6	583.8	0.0	195.7	19.64	5,815	66.8
33.00		0.4375	41.562	57.104	12,201.5	15.34	95.00	82.6	578.2	0.0	194.8	19.64	5,768	66.8
34.00		0.4375	41.367	56.833	12,028.7	15.26	94.55	82.6	572.7	0.0	193.9	19.64	5,722	66.8
35.00		0.4375	41.171	56.562	11,857.5	15.18	94.11	82.6	567.3	0.0	192.9	19.64	5,676	66.8
36.00		0.4375	40.976	56.291	11,687.9	15.10	93.66	82.6	561.8	0.0	192.0	19.64	5,630	66.8
37.00		0.4375	40.781	56.020	11,520.0	15.03	93.21	82.6	556.4	0.0	191.1	19.64	5,584	66.8
38.00		0.4375	40.586	55.749	11,353.6	14.95	92.77	82.6	551.0	0.0	190.2	19.64	5,538	66.8
39.00		0.4375	40.391	55.478	11,188.9	14.87	92.32	82.6	545.6	0.0	189.2	19.64	5,493	66.8
40.00		0.4375	40.196	55.208	11,025.8	14.79	91.88	82.6	540.3	0.0	188.3	19.64	5,448	66.8
41.00		0.4375	40.001	54.937	10,864.3	14.71	91.43	82.6	535.0	0.0	187.4	19.64	5,403	66.8
41.04	Bot - Section 2	0.4375	39.994	54.927	10,858.5	14.71	91.41	82.6	534.8	0.0	6.8	19.64	5,401	2.4
42.00		0.4375	39.806	54.666	10,704.4	14.63	90.98	82.6	529.7	0.0	336.9	19.64	5,531	64.4
43.00		0.4375	39.611	54.395	10,546.0	14.55	90.54	82.6	524.4	0.0	347.9	19.64	5,486	66.8
44.00		0.4375	39.416	54.124	10,389.2	14.48	90.09	82.6	519.2	0.0	346.2	19.64	5,441	66.8
45.00		0.4375	39.220	53.853	10,234.0	14.40	89.65	82.6	513.9	0.0	344.5	19.64	5,396	66.8
46.00		0.4375	39.025	53.582	10,080.3	14.32	89.20	82.6	508.8	0.0	342.8	19.64	5,351	66.8
46.63	Top - Section 1	0.3750	39.652	46.748	9,111.8	17.23	105.74	81.1	452.6	0.0	215.1	19.64	5,323	42.1
47.00		0.3750	39.580	46.662	9,061.7	17.20	105.55	81.2	450.9	0.0	58.8	19.64	5,306	24.7
48.00		0.3750	39.385	46.430	8,927.1	17.11	105.03	81.3	446.4	0.0	158.4	19.64	5,262	66.8
49.00		0.3750	39.190	46.198	8,793.8	17.02	104.51	81.4	442.0	0.0	157.6	19.64	5,218	66.8
50.00		0.3750	38.995	45.966	8,661.8	16.93	103.99	81.5	437.5	0.0	156.8	19.64	5,174	66.8
51.00		0.3750	38.800	45.734	8,531.2	16.83	103.47	81.6	433.1	0.0	156.0	19.64	5,130	66.8
52.00		0.3750	38.605	45.501	8,401.9	16.74	102.95	81.7	428.7	0.0	155.2	19.64	5,086	66.8
53.00		0.3750	38.410	45.269	8,274.0	16.65	102.43	81.8	424.3	0.0	154.4	19.64	5,043	66.8
54.00		0.3750	38.215	45.037	8,147.3	16.56	101.91	81.9	419.9	0.0	153.6	19.64	5,000	66.8
55.00		0.3750	38.019	44.805	8,021.9	16.47	101.39	82.0	415.6	0.0	152.9	19.64	4,956	66.8

© 2007 - 2016 by ATC IP LLC. All rights reserved.

56.00		0.3750	37.824	44.572	7,897.8	16.37	100.86	82.1	411.3	0.0	152.1	19.64	4,913	66.8
57.00		0.3750	37.629	44.340	7,775.0	16.28	100.34	82.2	407.0	0.0	151.3	19.64	4,871	66.8
58.00		0.3750	37.434	44.108	7,653.5	16.19	99.82	82.4	402.7	0.0	150.5	19.64	4,828	66.8
59.00		0.3750	37.239	43.876	7,533.3	16.10	99.30	82.5	398.4	0.0	149.7	19.64	4,786	66.8
60.00		0.3750	37.044	43.644	7,414.3	16.01	98.78	82.6	394.2	0.0	148.9	19.64	4,744	66.8
61.00		0.3750	36.849	43.411	7,296.6	15.92	98.26	82.6	390.0	0.0	148.1	19.64	4,702	66.8
62.00		0.3750	36.654	43.179	7,180.1	15.82	97.74	82.6	385.8	0.0	147.3	19.64	4,660	66.8
63.00		0.3750	36.459	42.947	7,064.9	15.73	97.22	82.6	381.7	0.0	146.5	19.64	4,618	66.8
64.00		0.3750	36.264	42.715	6,950.9	15.64	96.70	82.6	377.5	0.0	145.7	19.64	4,577	66.8
65.00		0.3750	36.068	42.483	6,838.2	15.55	96.18	82.6	373.4	0.0	145.0	19.64	4,536	66.8
66.00		0.3750	35.873	42.250	6,726.6	15.46	95.66	82.6	369.3	0.0	144.2	19.64	4,495	66.8
67.00		0.3750	35.678	42.018	6,616.3	15.37	95.14	82.6	365.3	0.0	143.4	19.64	4,454	66.8
68.00		0.3750	35.483	41.786	6,507.3	15.27	94.62	82.6	361.2	0.0	142.6	19.64	4,413	66.8
69.00		0.3750	35.288	41.554	6,399.4	15.18	94.10	82.6	357.2	0.0	141.8	19.64	4,373	66.8
70.00		0.3750	35.093	41.321	6,292.7	15.09	93.58	82.6	353.2	0.0	141.0	19.64	4,332	66.8
71.00		0.3750	34.898	41.089	6,187.2	15.00	93.06	82.6	349.2	0.0	140.2	19.64	4,292	66.8
72.00		0.3750	34.703	40.857	6,082.9	14.91	92.54	82.6	345.2	0.0	139.4	19.64	4,252	66.8
73.00		0.3750	34.508	40.625	5,979.8	14.82	92.02	82.6	341.3	0.0	138.6	19.64	4,212	66.8
74.00		0.3750	34.313	40.393	5,877.8	14.72	91.50	82.6	337.4	0.0	137.8	19.64	4,173	66.8
75.00		0.3750	34.117	40.160	5,777.0	14.63	90.98	82.6	333.5	0.0	137.1	19.64	4,134	66.8
76.00		0.3750	33.922	39.928	5,677.4	14.54	90.46	82.6	329.6	0.0	136.3	19.64	4,094	66.8
77.00		0.3750	33.727	39.696	5,578.9	14.45	89.94	82.6	325.8	0.0	135.5	19.64	4,055	66.8
78.00		0.3750	33.532	39.464	5,481.6	14.36	89.42	82.6	322.0	0.0	134.7	19.64	4,017	66.8
79.00		0.3750	33.337	39.232	5,385.4	14.26	88.90	82.6	318.2	0.0	133.9	19.64	3,978	66.8
80.00		0.3750	33.142	38.999	5,290.3	14.17	88.38	82.6	314.4	0.0	133.1	19.64	3,940	66.8
81.00		0.3750	32.947	38.767	5,196.4	14.08	87.86	82.6	310.6	0.0	132.3	19.64	3,901	66.8
81.49	Bot - Section 3	0.3750	32.851	38.653	5,150.6	14.04	87.60	82.6	308.8	0.0	64.7	19.64	3,883	32.8
82.00		0.3750	32.752	38.535	5,103.6	13.99	87.34	82.6	306.9	0.0	123.6	19.64	3,986	34.0
83.00		0.3750	32.557	38.303	5,011.8	13.90	86.82	82.6	303.2	0.0	242.0	19.64	3,947	66.8
84.00		0.3750	32.361	38.071	4,921.2	13.81	86.30	82.6	299.5	0.0	240.5	19.64	3,909	66.8
85.00		0.3750	32.166	37.838	4,831.7	13.71	85.78	82.6	295.9	0.0	239.1	19.64	3,871	66.8
86.00		0.3750	31.971	37.606	4,743.3	13.62	85.26	82.6	292.2	0.0	237.6	19.64	3,833	66.8
86.18	Top - Section 2	0.3125	32.562	31.986	4,203.0	16.96	104.20	81.4	254.2	0.0	41.7	19.64	3,826	11.8
87.00		0.3125	32.401	31.827	4,140.5	16.87	103.68	81.6	251.7	0.0	89.4	19.64	3,795	55.0
88.00		0.3125	32.206	31.633	4,065.4	16.76	103.06	81.7	248.6	0.0	108.0	19.64	3,758	66.8
89.00		0.3125	32.011	31.440	3,991.3	16.65	102.44	81.8	245.6	0.0	107.3	19.64	3,720	66.8
90.00		0.3125	31.816	31.246	3,918.0	16.54	101.81	81.9	242.6	0.0	106.7	19.64	3,683	66.8
91.00		0.3125	31.621	31.053	3,845.7	16.43	101.19	82.1	239.5	0.0	106.0	19.64	3,646	66.8
92.00		0.3125	31.426	30.859	3,774.2	16.32	100.56	82.2	236.6	0.0	105.3	19.64	3,610	66.8
93.00		0.3125	31.231	30.666	3,703.7	16.21	99.94	82.3	233.6	0.0	104.7	19.64	3,573	66.8
94.00		0.3125	31.035	30.472	3,634.0	16.10	99.31	82.5	230.6	0.0	104.0	19.64	3,536	66.8
95.00		0.3125	30.840	30.279	3,565.2	15.99	98.69	82.6	227.7	0.0	103.4	19.64	3,500	66.8
96.00		0.3125	30.645	30.085	3,497.3	15.88	98.06	82.6	224.8	0.0	102.7	19.64	3,464	66.8
97.00		0.3125	30.450	29.892	3,430.2	15.77	97.44	82.6	221.9	0.0	102.0	19.64	3,428	66.8
98.00		0.3125	30.255	29.698	3,364.0	15.66	96.82	82.6	219.0	0.0	101.4	19.64	3,393	66.8
99.00		0.3125	30.060	29.505	3,298.7	15.55	96.19	82.6	216.1	0.0	100.7	19.64	3,357	66.8
100.0		0.3125	29.865	29.311	3,234.2	15.44	95.57	82.6	213.3	0.0	100.1	19.64	3,322	66.8
101.0		0.3125	29.670	29.118	3,170.6	15.33	94.94	82.6	210.5	0.0	99.4	19.64	3,287	66.8
102.0		0.3125	29.475	28.924	3,107.8	15.22	94.32	82.6	207.7	0.0	98.8	19.64	3,252	66.8
103.0		0.3125	29.280	28.731	3,045.8	15.11	93.69	82.6	204.9	0.0	98.1	19.64	3,217	66.8
104.0		0.3125	29.084	28.537	2,984.7	15.00	93.07	82.6	202.1	0.0	97.4	19.64	3,183	66.8
105.0	Reinf. Top	0.3125	28.889	28.344	2,924.4	14.89	92.45	82.6	199.4	0.0	96.8	19.64	3,148	66.8
106.0		0.3125	28.694	28.150	2,864.9	14.78	91.82	82.6	196.7	0.0	96.1			
107.0		0.3125	28.499	27.957	2,806.2	14.67	91.20	82.6	193.9	0.0	95.5			
108.0		0.3125	28.304	27.763	2,748.4	14.56	90.57	82.6	191.3	0.0	94.8			
109.0		0.3125	28.109	27.570	2,691.3	14.45	89.95	82.6	188.6	0.0	94.1			
110.0		0.3125	27.914	27.376	2,635.0	14.34	89.32	82.6	185.9	0.0	93.5			
111.0		0.3125	27.719	27.183	2,579.5	14.23	88.70	82.6	183.3	0.0	92.8			
112.0		0.3125	27.524	26.989	2,524.8	14.12	88.08	82.6	180.7	0.0	92.2			
113.0		0.3125	27.329	26.796	2,470.9	14.01	87.45	82.6	178.1	0.0	91.5			
114.0		0.3125	27.133	26.602	2,417.8	13.90	86.83	82.6	175.5	0.0	90.9			
115.0		0.3125	26.938	26.409	2,365.4	13.79	86.20	82.6	172.9	0.0	90.2			
116.0		0.3125	26.743	26.215	2,313.8	13.68	85.58	82.6	170.4	0.0	89.5			
117.0		0.3125	26.548	26.022	2,262.9	13.57	84.95	82.6	167.9	0.0	88.9			

© 2007 - 2016 by ATC IP LLC. All rights reserved.

118.0		0.3125	26.353	25.828	2,212.8	13.46	84.33	82.6	165.4	0.0	88.2	
119.0		0.3125	26.158	25.635	2,163.4	13.35	83.71	82.6	162.9	0.0	87.6	
120.0		0.3125	25.963	25.441	2,114.8	13.24	83.08	82.6	160.4	0.0	86.9	
121.0		0.3125	25.768	25.248	2,066.9	13.13	82.46	82.6	158.0	0.0	86.2	
122.0		0.3125	25.573	25.054	2,019.8	13.02	81.83	82.6	155.6	0.0	85.6	
123.0		0.3125	25.378	24.860	1,973.3	12.91	81.21	82.6	153.2	0.0	84.9	
124.0		0.3125	25.182	24.667	1,927.6	12.80	80.58	82.6	150.8	0.0	84.3	
124.9	Bot - Section 4	0.3125	24.989	24.475	1,882.9	12.69	79.96	82.6	148.4	0.0	83.1	
125.0		0.3125	24.987	24.473	1,882.6	12.69	79.96	82.6	148.4	0.0	0.9	
126.0		0.3125	24.792	24.280	1,838.3	12.58	79.34	82.6	146.0	0.0	150.8	
127.0		0.3125	24.597	24.086	1,794.7	12.47	78.71	82.6	143.7	0.0	149.6	
128.0		0.3125	24.402	23.893	1,751.8	12.36	78.09	82.6	141.4	0.0	148.5	
128.6	Top - Section 3	0.2500	24.769	19.455	1,477.7	16.06	99.08	82.5	117.5	0.0	100.5	
129.0		0.2500	24.707	19.406	1,466.5	16.02	98.83	82.6	116.9	0.0	21.1	
130.0		0.2500	24.512	19.251	1,431.7	15.88	98.05	82.6	115.0	0.0	65.8	
131.0		0.2500	24.317	19.096	1,397.4	15.74	97.27	82.6	113.2	0.0	65.2	
132.0		0.2500	24.122	18.941	1,363.7	15.60	96.49	82.6	111.4	0.0	64.7	
133.0		0.2500	23.927	18.787	1,330.6	15.46	95.71	82.6	109.5	0.0	64.2	
134.0		0.2500	23.731	18.632	1,297.9	15.33	94.93	82.6	107.7	0.0	63.7	
135.0		0.2500	23.536	18.477	1,265.9	15.19	94.15	82.6	105.9	0.0	63.1	
136.0		0.2500	23.341	18.322	1,234.3	15.05	93.36	82.6	104.2	0.0	62.6	
137.0		0.2500	23.146	18.167	1,203.3	14.91	92.58	82.6	102.4	0.0	62.1	
138.0		0.2500	22.951	18.013	1,172.8	14.78	91.80	82.6	100.6	0.0	61.6	
139.0		0.2500	22.756	17.858	1,142.8	14.64	91.02	82.6	98.9	0.0	61.0	
140.0		0.2500	22.561	17.703	1,113.3	14.50	90.24	82.6	97.2	0.0	60.5	
141.0		0.2500	22.366	17.548	1,084.4	14.36	89.46	82.6	95.5	0.0	60.0	
142.0		0.2500	22.171	17.393	1,055.9	14.23	88.68	82.6	93.8	0.0	59.4	
143.0		0.2500	21.976	17.239	1,028.0	14.09	87.90	82.6	92.1	0.0	58.9	
144.0		0.2500	21.780	17.084	1,000.6	13.95	87.12	82.6	90.5	0.0	58.4	
145.0		0.2500	21.585	16.929	973.6	13.81	86.34	82.6	88.8	0.0	57.9	
146.0		0.2500	21.390	16.774	947.1	13.68	85.56	82.6	87.2	0.0	57.3	
147.0		0.2500	21.195	16.619	921.2	13.54	84.78	82.6	85.6	0.0	56.8	
148.0		0.2500	21.000	16.465	895.7	13.40	84.00	82.6	84.0	0.0	56.3	
											22,029.2	7,014.0

Site Number: 302515 | Code: ANSI/TIA-222-G | © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT | Engineering Number: 64559325 | 2/18/2016 3:39:29 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W | 105 mph with No Ice | 30 Iterations

Gust Response Factor : 1.10 | Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		43.5	0.0					0.0	0.0	43.5	0.0	0.0	0.0
1.00		86.9	269.1					0.0	80.2	86.9	349.3	0.0	0.0
2.00		86.5	268.0					0.0	80.2	86.5	348.2	0.0	0.0
3.00		86.1	266.9					0.0	80.2	86.1	347.1	0.0	0.0
4.00		85.8	265.8					0.0	80.2	85.8	346.0	0.0	0.0
5.00		85.4	264.7					0.0	80.2	85.4	344.9	0.0	0.0
6.00		85.1	263.6					0.0	80.2	85.1	343.8	0.0	0.0
7.00		84.7	262.5					0.0	80.2	84.7	342.6	0.0	0.0
8.00		84.4	261.4					0.0	80.2	84.4	341.5	0.0	0.0
9.00		84.0	260.3					0.0	80.2	84.0	340.4	0.0	0.0
10.00		85.6	259.2					0.0	80.2	85.6	339.3	0.0	0.0
11.00		87.3	258.1					0.0	152.6	87.3	410.6	0.0	0.0
12.00		87.1	257.0					0.0	152.6	87.1	409.5	0.0	0.0
13.00		86.8	255.9					0.0	152.6	86.8	408.4	0.0	0.0
14.00		86.6	254.7					0.0	152.6	86.6	407.3	0.0	0.0
15.00		86.3	253.6					0.0	152.6	86.3	406.2	0.0	0.0
16.00		86.1	252.5					0.0	152.6	86.1	405.1	0.0	0.0
17.00		85.8	251.4					0.0	152.6	85.8	404.0	0.0	0.0
18.00		85.6	250.3					0.0	152.6	85.6	402.9	0.0	0.0
19.00		85.3	249.2					0.0	152.6	85.3	401.8	0.0	0.0
20.00		85.1	248.1					0.0	152.6	85.1	400.7	0.0	0.0
21.00		84.8	247.0					0.0	152.6	84.8	399.6	0.0	0.0
22.00		84.6	245.9					0.0	152.6	84.6	398.5	0.0	0.0
23.00		84.3	244.8					0.0	152.6	84.3	397.4	0.0	0.0
24.00		84.1	243.7					0.0	152.6	84.1	396.3	0.0	0.0
25.00		83.8	242.6					0.0	152.6	83.8	395.2	0.0	0.0
26.00		83.6	241.5					0.0	152.6	83.6	394.0	0.0	0.0
27.00		83.3	240.4					0.0	152.6	83.3	392.9	0.0	0.0
28.00		83.1	239.3					0.0	152.6	83.1	391.8	0.0	0.0
29.00		82.8	238.2					0.0	152.6	82.8	390.7	0.0	0.0
30.00		82.8	237.0					0.0	152.6	82.8	389.6	0.0	0.0
31.00		83.2	235.9					0.0	152.6	83.2	388.5	0.0	0.0
32.00		83.7	234.8					0.0	152.6	83.7	387.4	0.0	0.0
33.00		84.2	233.7					0.0	152.6	84.2	386.3	0.0	0.0
34.00		84.6	232.6					0.0	152.6	84.6	385.2	0.0	0.0
35.00		85.1	231.5					0.0	152.6	85.1	384.1	0.0	0.0
36.00		85.5	230.4					0.0	152.6	85.5	383.0	0.0	0.0
37.00		85.9	229.3					0.0	152.6	85.9	381.9	0.0	0.0
38.00		86.3	228.2					0.0	152.6	86.3	380.8	0.0	0.0
39.00		86.7	227.1					0.0	152.6	86.7	379.7	0.0	0.0
40.00		87.0	226.0					0.0	152.6	87.0	378.6	0.0	0.0
41.00		45.2	224.9					0.0	152.6	45.2	377.5	0.0	0.0
41.04	Bot - Section 2	44.6	8.1					0.0	5.5	44.6	13.7	0.0	0.0
42.00		87.8	404.3					0.0	147.0	87.8	551.3	0.0	0.0
43.00		89.7	417.5					0.0	152.6	89.7	570.0	0.0	0.0
44.00		90.0	415.4					0.0	152.6	90.0	568.0	0.0	0.0
45.00		90.3	413.4					0.0	152.6	90.3	565.9	0.0	0.0
46.00		73.8	411.3					0.0	152.6	73.8	563.9	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.6W — 105 mph with No Ice — 30 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

46.63	Top - Section 1	45.3	258.1					0.0	96.1	45.3	354.2	0.0	0.0
47.00		61.9	70.6					0.0	56.5	61.9	127.0	0.0	0.0
48.00		90.5	190.1					0.0	152.6	90.5	342.6	0.0	0.0
49.00		90.8	189.1					0.0	152.6	90.8	341.7	0.0	0.0
50.00		91.0	188.2					0.0	152.6	91.0	340.7	0.0	0.0
51.00		91.2	187.2					0.0	152.6	91.2	339.8	0.0	0.0
52.00		91.5	186.3					0.0	152.6	91.5	338.8	0.0	0.0
53.00		91.7	185.3					0.0	152.6	91.7	337.9	0.0	0.0
54.00		91.9	184.4					0.0	152.6	91.9	337.0	0.0	0.0
55.00		92.0	183.4					0.0	152.6	92.0	336.0	0.0	0.0
56.00		92.2	182.5					0.0	152.6	92.2	335.1	0.0	0.0
57.00		92.4	181.5					0.0	152.6	92.4	334.1	0.0	0.0
58.00		92.5	180.6					0.0	152.6	92.5	333.2	0.0	0.0
59.00		92.7	179.6					0.0	152.6	92.7	332.2	0.0	0.0
60.00		92.8	178.7					0.0	152.6	92.8	331.3	0.0	0.0
61.00		93.0	177.7					0.0	152.6	93.0	330.3	0.0	0.0
62.00		93.1	176.8					0.0	152.6	93.1	329.4	0.0	0.0
63.00		93.2	175.8					0.0	152.6	93.2	328.4	0.0	0.0
64.00		93.3	174.9					0.0	152.6	93.3	327.5	0.0	0.0
65.00		93.4	173.9					0.0	152.6	93.4	326.5	0.0	0.0
66.00		93.5	173.0					0.0	152.6	93.5	325.6	0.0	0.0
67.00		93.6	172.0					0.0	152.6	93.6	324.6	0.0	0.0
68.00		93.7	171.1					0.0	152.6	93.7	323.7	0.0	0.0
69.00		93.8	170.2					0.0	152.6	93.8	322.7	0.0	0.0
70.00		93.9	169.2					0.0	152.6	93.9	321.8	0.0	0.0
71.00		93.9	168.3					0.0	152.6	93.9	320.8	0.0	0.0
72.00		94.0	167.3					0.0	152.6	94.0	319.9	0.0	0.0
73.00		94.0	166.4					0.0	152.6	94.0	318.9	0.0	0.0
74.00		94.1	165.4					0.0	152.6	94.1	318.0	0.0	0.0
75.00	Appertunance(s)	92.4	164.5	227.2	0.0	0.0	180.7	0.0	152.6	319.6	497.8	0.0	0.0
76.00		90.6	163.5					0.0	152.4	90.6	315.9	0.0	0.0
77.00		90.7	162.6					0.0	152.4	90.7	315.0	0.0	0.0
78.00		90.7	161.6					0.0	152.4	90.7	314.0	0.0	0.0
79.00		90.7	160.7					0.0	152.4	90.7	313.1	0.0	0.0
80.00		90.7	159.7					0.0	152.4	90.7	312.1	0.0	0.0
81.00		67.6	158.8					0.0	152.4	67.6	311.2	0.0	0.0
81.49	Bot - Section 3	45.8	77.7					0.0	74.9	45.8	152.6	0.0	0.0
82.00		69.7	148.3					0.0	77.5	69.7	225.9	0.0	0.0
83.00		92.4	290.4					0.0	152.4	92.4	442.8	0.0	0.0
84.00		92.4	288.7					0.0	152.4	92.4	441.1	0.0	0.0
85.00		92.3	286.9					0.0	152.4	92.3	439.3	0.0	0.0
86.00		54.3	285.2					0.0	152.4	54.3	437.6	0.0	0.0
86.18	Top - Section 2	45.9	50.1					0.0	26.9	45.9	76.9	0.0	0.0
87.00		83.5	107.3					0.0	125.5	83.5	232.9	0.0	0.0
88.00		91.6	129.6					0.0	152.4	91.6	282.0	0.0	0.0
89.00		91.5	128.8					0.0	152.4	91.5	281.2	0.0	0.0
90.00		91.5	128.0					0.0	152.4	91.5	280.4	0.0	0.0
91.00		91.4	127.2					0.0	152.4	91.4	279.6	0.0	0.0
92.00		91.4	126.4					0.0	152.4	91.4	278.8	0.0	0.0
93.00		91.3	125.6					0.0	152.4	91.3	278.0	0.0	0.0
94.00		91.2	124.8					0.0	152.4	91.2	277.2	0.0	0.0
95.00		91.2	124.0					0.0	152.4	91.2	276.4	0.0	0.0
96.00		91.1	123.2					0.0	152.4	91.1	275.6	0.0	0.0
97.00		91.0	122.5					0.0	152.4	91.0	274.9	0.0	0.0
98.00		90.9	121.7					0.0	152.4	90.9	274.1	0.0	0.0
99.00		90.8	120.9					0.0	152.4	90.8	273.3	0.0	0.0
100.00	Appertunance(s)	90.8	120.1	430.9	0.0	685.7	211.8	0.0	152.4	521.7	484.3	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.6W — 105 mph with No Ice — 30 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

101.00		90.7	119.3					0.0	152.0	90.7	271.3	0.0	0.0
102.00		90.6	118.5					0.0	152.0	90.6	270.5	0.0	0.0
103.00		90.5	117.7					0.0	152.0	90.5	269.7	0.0	0.0
104.00		90.4	116.9					0.0	152.0	90.4	268.9	0.0	0.0
105.00	Reinf. Top	90.3	116.1					0.0	152.0	90.3	268.1	0.0	0.0
106.00		90.1	115.3					0.0	71.8	90.1	187.2	0.0	0.0
107.00		90.0	114.6					0.0	71.8	90.0	186.4	0.0	0.0
108.00		89.9	113.8					0.0	71.8	89.9	185.6	0.0	0.0
109.00		89.8	113.0					0.0	71.8	89.8	184.8	0.0	0.0
110.00	Appertunance(s)	89.7	112.2	460.7	0.0	0.0	365.5	0.0	71.8	550.4	549.5	0.0	0.0
111.00		89.5	111.4					0.0	71.5	89.5	182.9	0.0	0.0
112.00		89.4	110.6					0.0	71.5	89.4	182.1	0.0	0.0
113.00		86.5	109.8					0.0	71.5	86.5	181.3	0.0	0.0
114.00		82.7	109.0					0.0	71.5	82.7	180.5	0.0	0.0
115.00		81.6	108.2					0.0	71.5	81.6	179.7	0.0	0.0
116.00		81.4	107.4					0.0	71.5	81.4	178.9	0.0	0.0
117.00		81.2	106.6					0.0	71.5	81.2	178.1	0.0	0.0
118.00		81.1	105.9					0.0	71.5	81.1	177.3	0.0	0.0
119.00		80.9	105.1					0.0	71.5	80.9	176.6	0.0	0.0
120.00	Appertunance(s)	80.7	104.3	3,444.3	0.0	0.0	3,005.6	0.0	71.5	3,525.0	3,181.4	0.0	0.0
121.00		80.5	103.5					0.0	66.7	80.5	170.2	0.0	0.0
122.00		80.4	102.7					0.0	66.7	80.4	169.4	0.0	0.0
123.00		80.2	101.9					0.0	66.7	80.2	168.6	0.0	0.0
124.00		79.7	101.1					0.0	66.7	79.7	167.8	0.0	0.0
124.99	Bot - Section 4	40.0	99.7					0.0	66.3	40.0	166.0	0.0	0.0
125.00		40.9	1.1					0.0	0.4	40.9	1.5	0.0	0.0
126.00		81.2	181.0					0.0	66.7	81.2	247.7	0.0	0.0
127.00		81.0	179.6					0.0	66.7	81.0	246.3	0.0	0.0
128.00		68.0	178.1					0.0	66.7	68.0	244.8	0.0	0.0
128.68	Top - Section 3	40.3	120.6					0.0	45.4	40.3	166.0	0.0	0.0
129.00		52.7	25.3					0.0	21.2	52.7	46.5	0.0	0.0
130.00		79.8	78.9					0.0	66.7	79.8	145.6	0.0	0.0
131.00	Appertunance(s)	79.6	78.3	2,874.9	0.0	117.8	2,059.6	0.0	66.7	2,954.4	2,204.5	0.0	0.0
132.00		79.4	77.7					0.0	54.0	79.4	131.6	0.0	0.0
133.00		79.2	77.0					0.0	54.0	79.2	131.0	0.0	0.0
134.00		79.0	76.4					0.0	54.0	79.0	130.4	0.0	0.0
135.00		78.7	75.8					0.0	54.0	78.7	129.7	0.0	0.0
136.00		78.5	75.1					0.0	54.0	78.5	129.1	0.0	0.0
137.00	Appertunance(s)	78.3	74.5	1,281.5	0.0	0.0	970.8	0.0	54.0	1,359.8	1,099.3	0.0	0.0
138.00		78.1	73.9					0.0	49.1	78.1	122.9	0.0	0.0
139.00		77.9	73.2					0.0	49.1	77.9	122.3	0.0	0.0
140.00		77.6	72.6					0.0	49.1	77.6	121.7	0.0	0.0
141.00	Appertunance(s)	77.4	72.0	5,741.5	0.0	-1,414.2	3,340.1	0.0	49.1	5,818.9	3,461.1	0.0	0.0
142.00		77.2	71.3					0.0	34.1	77.2	105.5	0.0	0.0
143.00		76.9	70.7					0.0	34.1	76.9	104.8	0.0	0.0
144.00		76.7	70.1					0.0	34.1	76.7	104.2	0.0	0.0
145.00		76.5	69.4					0.0	34.1	76.5	103.6	0.0	0.0
146.00		76.2	68.8					0.0	34.1	76.2	102.9	0.0	0.0
147.00		76.0	68.2					0.0	34.1	76.0	102.3	0.0	0.0
148.00	Appertunance(s)	37.9	67.5	250.4	0.0	0.0	240.0	0.0	34.1	288.3	341.7	0.0	0.0
								Totals:		27,571.0	54,664.7	0.00	0.00

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:39:42 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W 105 mph with No Ice 30 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	-58.65	-33.80	0.00	-4,014.14	0.00	4,014.14	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.628
1.00	-58.28	-33.76	0.00	-3,980.34	0.00	3,980.34	4,759.25	2,379.62	9,250.46	4,632.10	0.00	-0.04	0.626
2.00	-57.91	-33.72	0.00	-3,946.57	0.00	3,946.57	4,745.10	2,372.55	9,184.62	4,599.13	0.02	-0.09	0.624
3.00	-57.53	-33.68	0.00	-3,912.86	0.00	3,912.86	4,730.90	2,365.45	9,118.92	4,566.24	0.04	-0.13	0.622
4.00	-57.16	-33.63	0.00	-3,879.18	0.00	3,879.18	4,716.66	2,358.33	9,053.36	4,533.41	0.07	-0.17	0.621
5.00	-56.79	-33.59	0.00	-3,845.55	0.00	3,845.55	4,702.37	2,351.19	8,987.95	4,500.66	0.12	-0.22	0.619
6.00	-56.42	-33.55	0.00	-3,811.96	0.00	3,811.96	4,688.04	2,344.02	8,922.68	4,467.97	0.17	-0.26	0.617
7.00	-56.06	-33.50	0.00	-3,778.42	0.00	3,778.42	4,673.67	2,336.83	8,857.56	4,435.36	0.23	-0.31	0.615
8.00	-55.69	-33.46	0.00	-3,744.91	0.00	3,744.91	4,659.25	2,329.62	8,792.59	4,402.83	0.30	-0.35	0.613
9.00	-55.32	-33.42	0.00	-3,711.46	0.00	3,711.46	4,644.78	2,322.39	8,727.76	4,370.37	0.37	-0.39	0.611
10.00	-54.96	-33.37	0.00	-3,678.04	0.00	3,678.04	4,630.27	2,315.13	8,663.09	4,337.98	0.46	-0.44	0.609
11.00	-54.52	-33.32	0.00	-3,644.67	0.00	3,644.67	4,615.71	2,307.86	8,598.56	4,305.67	0.56	-0.48	0.607
12.00	-54.09	-33.27	0.00	-3,611.35	0.00	3,611.35	4,601.11	2,300.55	8,534.19	4,273.44	0.66	-0.53	0.605
13.00	-53.65	-33.22	0.00	-3,578.08	0.00	3,578.08	4,586.46	2,293.23	8,469.97	4,241.28	0.78	-0.57	0.603
14.00	-53.22	-33.17	0.00	-3,544.86	0.00	3,544.86	4,571.77	2,285.88	8,405.90	4,209.20	0.90	-0.61	0.601
15.00	-52.79	-33.12	0.00	-3,511.68	0.00	3,511.68	4,557.03	2,278.52	8,341.98	4,177.19	1.04	-0.66	0.599
16.00	-52.36	-33.07	0.00	-3,478.56	0.00	3,478.56	4,542.25	2,271.13	8,278.23	4,145.27	1.18	-0.70	0.597
17.00	-51.93	-33.02	0.00	-3,445.49	0.00	3,445.49	4,527.42	2,263.71	8,214.63	4,113.42	1.33	-0.75	0.595
18.00	-51.51	-32.97	0.00	-3,412.46	0.00	3,412.46	4,512.55	2,256.28	8,151.19	4,081.65	1.49	-0.79	0.592
19.00	-51.08	-32.92	0.00	-3,379.49	0.00	3,379.49	4,497.63	2,248.82	8,087.91	4,049.96	1.67	-0.84	0.590
20.00	-50.65	-32.87	0.00	-3,346.57	0.00	3,346.57	4,482.67	2,241.34	8,024.78	4,018.36	1.85	-0.88	0.588
21.00	-50.23	-32.82	0.00	-3,313.70	0.00	3,313.70	4,467.66	2,233.83	7,961.82	3,986.83	2.04	-0.93	0.586
22.00	-49.81	-32.77	0.00	-3,280.88	0.00	3,280.88	4,452.61	2,226.31	7,899.03	3,955.38	2.24	-0.97	0.584
23.00	-49.39	-32.72	0.00	-3,248.11	0.00	3,248.11	4,437.51	2,218.76	7,836.39	3,924.02	2.45	-1.02	0.581
24.00	-48.96	-32.66	0.00	-3,215.40	0.00	3,215.40	4,422.37	2,211.19	7,773.92	3,892.74	2.67	-1.07	0.579
25.00	-48.55	-32.61	0.00	-3,182.73	0.00	3,182.73	4,403.56	2,201.78	7,705.28	3,858.37	2.89	-1.11	0.577
26.00	-48.13	-32.56	0.00	-3,150.12	0.00	3,150.12	4,383.43	2,191.72	7,634.65	3,823.00	3.13	-1.16	0.576
27.00	-47.71	-32.50	0.00	-3,117.57	0.00	3,117.57	4,363.30	2,181.65	7,564.34	3,787.79	3.38	-1.20	0.574
28.00	-47.29	-32.45	0.00	-3,085.06	0.00	3,085.06	4,343.18	2,171.59	7,494.36	3,752.75	3.64	-1.25	0.572
29.00	-46.88	-32.40	0.00	-3,052.61	0.00	3,052.61	4,323.05	2,161.52	7,424.70	3,717.87	3.90	-1.29	0.570
30.00	-46.47	-32.34	0.00	-3,020.22	0.00	3,020.22	4,302.92	2,151.46	7,355.37	3,683.15	4.18	-1.34	0.568
31.00	-46.05	-32.29	0.00	-2,987.88	0.00	2,987.88	4,282.79	2,141.40	7,286.37	3,648.60	4.46	-1.38	0.566
32.00	-45.64	-32.23	0.00	-2,955.59	0.00	2,955.59	4,262.67	2,131.33	7,217.68	3,614.21	4.76	-1.43	0.565
33.00	-45.23	-32.17	0.00	-2,923.36	0.00	2,923.36	4,242.54	2,121.27	7,149.33	3,579.98	5.06	-1.48	0.563
34.00	-44.82	-32.11	0.00	-2,891.19	0.00	2,891.19	4,222.41	2,111.21	7,081.30	3,545.91	5.38	-1.52	0.561
35.00	-44.42	-32.05	0.00	-2,859.08	0.00	2,859.08	4,202.28	2,101.14	7,013.59	3,512.01	5.70	-1.57	0.559
36.00	-44.01	-31.99	0.00	-2,827.02	0.00	2,827.02	4,182.16	2,091.08	6,946.22	3,478.27	6.04	-1.61	0.557
37.00	-43.61	-31.93	0.00	-2,795.03	0.00	2,795.03	4,162.03	2,081.01	6,879.16	3,444.69	6.38	-1.66	0.554
38.00	-43.20	-31.87	0.00	-2,763.10	0.00	2,763.10	4,141.90	2,070.95	6,812.43	3,411.28	6.73	-1.71	0.552
39.00	-42.80	-31.81	0.00	-2,731.23	0.00	2,731.23	4,121.77	2,060.89	6,746.03	3,378.03	7.10	-1.75	0.550
40.00	-42.40	-31.74	0.00	-2,699.43	0.00	2,699.43	4,101.65	2,050.82	6,679.95	3,344.94	7.47	-1.80	0.548
41.00	-42.01	-31.70	0.00	-2,667.69	0.00	2,667.69	4,081.52	2,040.76	6,614.19	3,312.01	7.85	-1.85	0.546
41.04	-41.98	-31.67	0.00	-2,666.54	0.00	2,666.54	4,080.79	2,040.40	6,611.82	3,310.82	7.86	-1.85	0.546
42.00	-41.41	-31.60	0.00	-2,636.01	0.00	2,636.01	4,061.39	2,030.70	6,548.77	3,279.25	8.24	-1.89	0.538
43.00	-40.82	-31.52	0.00	-2,604.41	0.00	2,604.41	4,041.26	2,020.63	6,483.66	3,246.65	8.64	-1.94	0.535
44.00	-40.23	-31.45	0.00	-2,572.89	0.00	2,572.89	4,021.14	2,010.57	6,418.89	3,214.21	9.05	-1.98	0.533
45.00	-39.64	-31.37	0.00	-2,541.44	0.00	2,541.44	4,001.01	2,000.51	6,354.43	3,181.94	9.48	-2.03	0.530
46.00	-39.06	-31.30	0.00	-2,510.07	0.00	2,510.07	3,980.88	1,990.44	6,290.31	3,149.83	9.91	-2.08	0.528
46.63	-38.70	-31.26	0.00	-2,490.35	0.00	2,490.35	3,413.42	1,706.71	5,499.77	2,753.97	10.18	-2.11	0.579
47.00	-38.55	-31.21	0.00	-2,478.79	0.00	2,478.79	3,408.82	1,704.41	5,482.17	2,745.16	10.35	-2.12	0.578
48.00	-38.19	-31.14	0.00	-2,447.57	0.00	2,447.57	3,396.37	1,698.19	5,434.70	2,721.39	10.80	-2.17	0.574

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.6W — 105 mph with No Ice — 30 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

49.00	-37.82	-31.07	0.00	-2,416.43	0.00	2,416.43	3,383.87	1,691.93	5,387.36	2,697.69	11.26	-2.22	0.570
50.00	-37.46	-31.00	0.00	-2,385.36	0.00	2,385.36	3,371.32	1,685.66	5,340.15	2,674.04	11.73	-2.27	0.567
51.00	-37.10	-30.93	0.00	-2,354.36	0.00	2,354.36	3,358.73	1,679.37	5,293.07	2,650.47	12.21	-2.32	0.563
52.00	-36.74	-30.85	0.00	-2,323.44	0.00	2,323.44	3,346.10	1,673.05	5,246.13	2,626.96	12.70	-2.37	0.559
53.00	-36.38	-30.78	0.00	-2,292.59	0.00	2,292.59	3,333.42	1,666.71	5,199.32	2,603.52	13.20	-2.41	0.555
54.00	-36.02	-30.70	0.00	-2,261.81	0.00	2,261.81	3,320.69	1,660.35	5,152.64	2,580.15	13.71	-2.46	0.551
55.00	-35.66	-30.63	0.00	-2,231.11	0.00	2,231.11	3,307.92	1,653.96	5,106.10	2,556.84	14.23	-2.51	0.547
56.00	-35.30	-30.55	0.00	-2,200.48	0.00	2,200.48	3,295.11	1,647.55	5,059.70	2,533.61	14.76	-2.56	0.543
57.00	-34.95	-30.47	0.00	-2,169.94	0.00	2,169.94	3,282.25	1,641.12	5,013.43	2,510.44	15.31	-2.61	0.539
58.00	-34.59	-30.39	0.00	-2,139.47	0.00	2,139.47	3,269.34	1,634.67	4,967.30	2,487.34	15.86	-2.66	0.535
59.00	-34.24	-30.31	0.00	-2,109.07	0.00	2,109.07	3,256.39	1,628.19	4,921.32	2,464.32	16.42	-2.71	0.531
60.00	-33.89	-30.23	0.00	-2,078.76	0.00	2,078.76	3,242.50	1,621.25	4,874.14	2,440.69	16.99	-2.75	0.527
61.00	-33.54	-30.15	0.00	-2,048.53	0.00	2,048.53	3,225.25	1,612.62	4,822.15	2,414.66	17.57	-2.80	0.523
62.00	-33.19	-30.07	0.00	-2,018.38	0.00	2,018.38	3,208.00	1,604.00	4,770.44	2,388.76	18.17	-2.85	0.520
63.00	-32.84	-29.99	0.00	-1,988.31	0.00	1,988.31	3,190.75	1,595.37	4,719.00	2,363.01	18.77	-2.90	0.516
64.00	-32.49	-29.91	0.00	-1,958.32	0.00	1,958.32	3,173.49	1,586.75	4,667.85	2,337.39	19.38	-2.95	0.513
65.00	-32.15	-29.82	0.00	-1,928.41	0.00	1,928.41	3,156.24	1,578.12	4,616.98	2,311.92	20.00	-3.00	0.509
66.00	-31.80	-29.74	0.00	-1,898.59	0.00	1,898.59	3,138.99	1,569.49	4,566.38	2,286.58	20.64	-3.04	0.505
67.00	-31.46	-29.65	0.00	-1,868.85	0.00	1,868.85	3,121.74	1,560.87	4,516.06	2,261.39	21.28	-3.09	0.501
68.00	-31.11	-29.57	0.00	-1,839.20	0.00	1,839.20	3,104.48	1,552.24	4,466.02	2,236.33	21.93	-3.14	0.497
69.00	-30.77	-29.48	0.00	-1,809.63	0.00	1,809.63	3,087.23	1,543.62	4,416.26	2,211.41	22.59	-3.19	0.493
70.00	-30.43	-29.40	0.00	-1,780.15	0.00	1,780.15	3,069.98	1,534.99	4,366.78	2,186.64	23.27	-3.23	0.489
71.00	-30.09	-29.31	0.00	-1,750.75	0.00	1,750.75	3,052.73	1,526.36	4,317.58	2,162.00	23.95	-3.28	0.485
72.00	-29.76	-29.22	0.00	-1,721.44	0.00	1,721.44	3,035.48	1,517.74	4,268.66	2,137.50	24.64	-3.33	0.481
73.00	-29.42	-29.13	0.00	-1,692.22	0.00	1,692.22	3,018.22	1,509.11	4,220.01	2,113.14	25.34	-3.37	0.477
74.00	-29.08	-29.04	0.00	-1,663.09	0.00	1,663.09	3,000.97	1,500.49	4,171.65	2,088.92	26.06	-3.42	0.472
75.00	-28.58	-28.72	0.00	-1,634.05	0.00	1,634.05	2,983.72	1,491.86	4,123.56	2,064.84	26.78	-3.47	0.468
76.00	-28.25	-28.63	0.00	-1,605.33	0.00	1,605.33	2,966.47	1,483.23	4,075.75	2,040.90	27.51	-3.51	0.464
77.00	-27.92	-28.54	0.00	-1,576.70	0.00	1,576.70	2,949.22	1,474.61	4,028.22	2,017.11	28.25	-3.56	0.459
78.00	-27.59	-28.46	0.00	-1,548.16	0.00	1,548.16	2,931.96	1,465.98	3,980.97	1,993.44	29.00	-3.61	0.455
79.00	-27.26	-28.37	0.00	-1,519.70	0.00	1,519.70	2,914.71	1,457.36	3,934.00	1,969.92	29.76	-3.65	0.450
80.00	-26.93	-28.28	0.00	-1,491.33	0.00	1,491.33	2,897.46	1,448.73	3,887.31	1,946.54	30.53	-3.70	0.446
81.00	-26.61	-28.21	0.00	-1,463.06	0.00	1,463.06	2,880.21	1,440.10	3,840.89	1,923.30	31.31	-3.74	0.441
81.49	-26.45	-28.16	0.00	-1,449.19	0.00	1,449.19	2,871.73	1,435.86	3,818.18	1,911.93	31.70	-3.77	0.439
82.00	-26.21	-28.09	0.00	-1,434.87	0.00	1,434.87	2,862.96	1,431.48	3,794.76	1,900.20	32.10	-3.79	0.430
83.00	-25.75	-27.99	0.00	-1,406.78	0.00	1,406.78	2,845.70	1,422.85	3,748.90	1,877.24	32.90	-3.83	0.426
84.00	-25.30	-27.89	0.00	-1,378.79	0.00	1,378.79	2,828.45	1,414.23	3,703.32	1,854.41	33.70	-3.88	0.421
85.00	-24.84	-27.79	0.00	-1,350.90	0.00	1,350.90	2,811.20	1,405.60	3,658.02	1,831.73	34.52	-3.92	0.416
86.00	-24.40	-27.71	0.00	-1,323.12	0.00	1,323.12	2,793.95	1,396.97	3,613.00	1,809.19	35.35	-3.97	0.411
86.18	-24.31	-27.67	0.00	-1,318.23	0.00	1,318.23	2,344.74	1,172.37	3,101.47	1,553.04	35.49	-3.97	0.451
87.00	-24.07	-27.59	0.00	-1,295.44	0.00	1,295.44	2,336.11	1,168.06	3,074.51	1,539.54	36.18	-4.01	0.446
88.00	-23.77	-27.50	0.00	-1,267.85	0.00	1,267.85	2,325.60	1,162.80	3,041.88	1,523.20	37.03	-4.06	0.439
89.00	-23.47	-27.40	0.00	-1,240.36	0.00	1,240.36	2,315.03	1,157.52	3,009.36	1,506.91	37.88	-4.10	0.433
90.00	-23.18	-27.31	0.00	-1,212.95	0.00	1,212.95	2,304.43	1,152.21	2,976.95	1,490.69	38.75	-4.15	0.426
91.00	-22.89	-27.22	0.00	-1,185.65	0.00	1,185.65	2,293.77	1,146.89	2,944.66	1,474.52	39.62	-4.19	0.419
92.00	-22.59	-27.12	0.00	-1,158.43	0.00	1,158.43	2,283.08	1,141.54	2,912.48	1,458.40	40.50	-4.24	0.413
93.00	-22.30	-27.03	0.00	-1,131.31	0.00	1,131.31	2,272.33	1,136.17	2,880.41	1,442.35	41.39	-4.28	0.406
94.00	-22.01	-26.93	0.00	-1,104.28	0.00	1,104.28	2,261.54	1,130.77	2,848.47	1,426.35	42.29	-4.32	0.399
95.00	-21.72	-26.84	0.00	-1,077.35	0.00	1,077.35	2,249.56	1,124.78	2,815.20	1,409.69	43.20	-4.37	0.392
96.00	-21.44	-26.74	0.00	-1,050.51	0.00	1,050.51	2,235.18	1,117.59	2,779.15	1,391.64	44.12	-4.41	0.386
97.00	-21.15	-26.64	0.00	-1,023.77	0.00	1,023.77	2,220.81	1,110.40	2,743.33	1,373.70	45.05	-4.45	0.379
98.00	-20.86	-26.55	0.00	-997.13	0.00	997.13	2,206.43	1,103.21	2,707.75	1,355.89	45.99	-4.49	0.372
99.00	-20.58	-26.45	0.00	-970.58	0.00	970.58	2,192.05	1,096.03	2,672.39	1,338.18	46.93	-4.54	0.366
100.00	-20.12	-25.91	0.00	-943.44	0.00	943.44	2,177.68	1,088.84	2,637.27	1,320.60	47.89	-4.58	0.358
101.00	-19.84	-25.81	0.00	-917.54	0.00	917.54	2,163.30	1,081.65	2,602.39	1,303.13	48.85	-4.62	0.352
102.00	-19.56	-25.71	0.00	-891.73	0.00	891.73	2,148.92	1,074.46	2,567.73	1,285.77	49.82	-4.66	0.345
103.00	-19.28	-25.61	0.00	-866.02	0.00	866.02	2,134.54	1,067.27	2,533.31	1,268.54	50.80	-4.70	0.338

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:39:42 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W 105 mph with No Ice 30 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

104.00	-19.00	-25.51	0.00	-840.41	0.00	840.41	2,120.17	1,060.08	2,499.12	1,251.42	51.79	-4.73	0.331
105.00	-18.73	-25.41	0.00	-814.90	0.00	814.90	2,105.79	1,052.90	2,465.16	1,234.41	52.78	-4.77	0.324
105.00	-18.73	-25.41	0.00	-814.90	0.00	814.90	2,105.79	1,052.90	2,465.16	1,234.41	52.78	-4.77	0.670
106.00	-18.52	-25.32	0.00	-789.49	0.00	789.49	2,091.41	1,045.71	2,431.43	1,217.52	53.78	-4.81	0.658
107.00	-18.31	-25.24	0.00	-764.16	0.00	764.16	2,077.04	1,038.52	2,397.94	1,200.75	54.80	-4.89	0.646
108.00	-18.10	-25.16	0.00	-738.92	0.00	738.92	2,062.66	1,031.33	2,364.68	1,184.10	55.83	-4.96	0.633
109.00	-17.89	-25.08	0.00	-713.76	0.00	713.76	2,048.28	1,024.14	2,331.65	1,167.56	56.88	-5.04	0.621
110.00	-17.36	-24.51	0.00	-688.68	0.00	688.68	2,033.91	1,016.95	2,298.85	1,151.13	57.94	-5.11	0.607
111.00	-17.16	-24.42	0.00	-664.17	0.00	664.17	2,019.53	1,009.77	2,266.28	1,134.83	59.02	-5.19	0.594
112.00	-16.95	-24.34	0.00	-639.75	0.00	639.75	2,005.15	1,002.58	2,233.95	1,118.64	60.11	-5.26	0.581
113.00	-16.75	-24.25	0.00	-615.42	0.00	615.42	1,990.78	995.39	2,201.85	1,102.56	61.22	-5.33	0.567
114.00	-16.55	-24.18	0.00	-591.16	0.00	591.16	1,976.40	988.20	2,169.98	1,086.60	62.34	-5.40	0.553
115.00	-16.35	-24.10	0.00	-566.99	0.00	566.99	1,962.02	981.01	2,138.35	1,070.76	63.48	-5.47	0.538
116.00	-16.15	-24.02	0.00	-542.89	0.00	542.89	1,947.65	973.82	2,106.94	1,055.04	64.63	-5.53	0.523
117.00	-15.96	-23.94	0.00	-518.88	0.00	518.88	1,933.27	966.64	2,075.77	1,039.43	65.79	-5.60	0.508
118.00	-15.76	-23.86	0.00	-494.94	0.00	494.94	1,918.89	959.45	2,044.84	1,023.94	66.97	-5.66	0.492
119.00	-15.57	-23.77	0.00	-471.08	0.00	471.08	1,904.52	952.26	2,014.13	1,008.56	68.16	-5.72	0.476
120.00	-12.74	-19.96	0.00	-447.31	0.00	447.31	1,890.14	945.07	1,983.66	993.30	69.37	-5.78	0.458
121.00	-12.55	-19.88	0.00	-427.35	0.00	427.35	1,875.76	937.88	1,953.41	978.16	70.58	-5.84	0.444
122.00	-12.37	-19.79	0.00	-407.47	0.00	407.47	1,861.39	930.69	1,923.40	963.13	71.81	-5.90	0.430
123.00	-12.20	-19.71	0.00	-387.68	0.00	387.68	1,847.01	923.50	1,893.63	948.22	73.05	-5.96	0.416
124.00	-12.02	-19.62	0.00	-367.98	0.00	367.98	1,832.63	916.32	1,864.08	933.43	74.30	-6.01	0.401
124.99	-11.85	-19.57	0.00	-348.48	0.00	348.48	1,818.34	909.17	1,834.95	918.84	75.56	-6.06	0.386
125.00	-11.84	-19.53	0.00	-348.36	0.00	348.36	1,818.26	909.13	1,834.77	918.75	75.57	-6.06	0.386
126.00	-11.59	-19.44	0.00	-328.82	0.00	328.82	1,803.88	901.94	1,805.69	904.19	76.84	-6.12	0.371
127.00	-11.34	-19.34	0.00	-309.39	0.00	309.39	1,789.50	894.75	1,776.84	889.74	78.12	-6.16	0.355
128.00	-11.09	-19.25	0.00	-290.05	0.00	290.05	1,775.13	887.56	1,748.23	875.41	79.42	-6.21	0.338
128.68	-10.92	-19.20	0.00	-276.93	0.00	276.93	1,444.76	722.38	1,452.22	727.19	80.31	-6.24	0.389
129.00	-10.87	-19.15	0.00	-270.81	0.00	270.81	1,441.76	720.88	1,445.49	723.82	80.72	-6.26	0.382
130.00	-10.71	-19.06	0.00	-251.66	0.00	251.66	1,430.26	715.13	1,422.41	712.26	82.04	-6.31	0.362
131.00	-8.84	-15.89	0.00	-232.48	0.00	232.48	1,418.76	709.38	1,399.51	700.79	83.36	-6.36	0.338
132.00	-8.70	-15.80	0.00	-216.59	0.00	216.59	1,407.25	703.63	1,376.79	689.42	84.69	-6.40	0.321
133.00	-8.57	-15.72	0.00	-200.79	0.00	200.79	1,395.75	697.88	1,354.26	678.14	86.04	-6.45	0.303
134.00	-8.44	-15.63	0.00	-185.08	0.00	185.08	1,384.25	692.13	1,331.92	666.95	87.39	-6.49	0.284
135.00	-8.31	-15.54	0.00	-169.45	0.00	169.45	1,372.75	686.38	1,309.76	655.86	88.75	-6.53	0.265
136.00	-8.18	-15.45	0.00	-153.91	0.00	153.91	1,361.25	680.62	1,287.79	644.85	90.12	-6.56	0.245
137.00	-7.23	-13.98	0.00	-138.45	0.00	138.45	1,349.75	674.87	1,266.01	633.94	91.50	-6.60	0.224
138.00	-7.11	-13.89	0.00	-124.47	0.00	124.47	1,338.25	669.12	1,244.41	623.13	92.88	-6.63	0.206
139.00	-7.00	-13.80	0.00	-110.58	0.00	110.58	1,326.75	663.37	1,222.99	612.41	94.27	-6.66	0.186
140.00	-6.88	-13.72	0.00	-96.77	0.00	96.77	1,315.24	657.62	1,201.77	601.78	95.66	-6.68	0.166
141.00	-4.12	-7.54	0.00	-83.06	0.00	83.06	1,303.74	651.87	1,180.73	591.24	97.06	-6.70	0.144
142.00	-4.02	-7.45	0.00	-75.52	0.00	75.52	1,292.24	646.12	1,159.87	580.80	98.46	-6.73	0.133
143.00	-3.92	-7.36	0.00	-68.08	0.00	68.08	1,280.74	640.37	1,139.20	570.45	99.87	-6.74	0.123
144.00	-3.82	-7.27	0.00	-60.72	0.00	60.72	1,269.24	634.62	1,118.72	560.19	101.28	-6.76	0.112
145.00	-3.73	-7.19	0.00	-53.44	0.00	53.44	1,257.74	628.87	1,098.42	550.03	102.70	-6.78	0.100
146.00	-3.63	-7.10	0.00	-46.26	0.00	46.26	1,246.24	623.12	1,078.30	539.95	104.12	-6.79	0.089
147.00	-3.54	-7.01	0.00	-39.16	0.00	39.16	1,234.73	617.37	1,058.38	529.98	105.54	-6.81	0.077
148.00	0.00	-6.54	0.00	-32.15	0.00	32.15	1,223.23	611.62	1,038.64	520.09	106.96	-6.82	0.062

Site Number: 302515 | Code: ANSI/TIA-222-G | © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT | Engineering Number: 64559325 | 2/18/2016 3:39:42 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W — 105 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		43.5	0.0					0.0	0.0	43.5	0.0	0.0	0.0
1.00		86.9	201.8					0.0	60.1	86.9	262.0	0.0	0.0
2.00		86.5	201.0					0.0	60.1	86.5	261.1	0.0	0.0
3.00		86.1	200.2					0.0	60.1	86.1	260.3	0.0	0.0
4.00		85.8	199.4					0.0	60.1	85.8	259.5	0.0	0.0
5.00		85.4	198.5					0.0	60.1	85.4	258.6	0.0	0.0
6.00		85.1	197.7					0.0	60.1	85.1	257.8	0.0	0.0
7.00		84.7	196.9					0.0	60.1	84.7	257.0	0.0	0.0
8.00		84.4	196.0					0.0	60.1	84.4	256.2	0.0	0.0
9.00		84.0	195.2					0.0	60.1	84.0	255.3	0.0	0.0
10.00		83.7	194.4					0.0	60.1	83.7	254.5	0.0	0.0
11.00		83.3	193.5					0.0	114.4	83.3	308.0	0.0	0.0
12.00		83.0	192.7					0.0	114.4	83.0	307.2	0.0	0.0
13.00		82.6	191.9					0.0	114.4	82.6	306.3	0.0	0.0
14.00		82.2	191.1					0.0	114.4	82.2	305.5	0.0	0.0
15.00		81.9	190.2					0.0	114.4	81.9	304.7	0.0	0.0
16.00		81.5	189.4					0.0	114.4	81.5	303.8	0.0	0.0
17.00		81.2	188.6					0.0	114.4	81.2	303.0	0.0	0.0
18.00		80.8	187.7					0.0	114.4	80.8	302.2	0.0	0.0
19.00		80.5	186.9					0.0	114.4	80.5	301.3	0.0	0.0
20.00		80.1	186.1					0.0	114.4	80.1	300.5	0.0	0.0
21.00		79.8	185.3					0.0	114.4	79.8	299.7	0.0	0.0
22.00		79.4	184.4					0.0	114.4	79.4	298.9	0.0	0.0
23.00		79.1	183.6					0.0	114.4	79.1	298.0	0.0	0.0
24.00		78.7	182.8					0.0	114.4	78.7	297.2	0.0	0.0
25.00		78.3	181.9					0.0	114.4	78.3	296.4	0.0	0.0
26.00		78.0	181.1					0.0	114.4	78.0	295.5	0.0	0.0
27.00		77.6	180.3					0.0	114.4	77.6	294.7	0.0	0.0
28.00		77.3	179.4					0.0	114.4	77.3	293.9	0.0	0.0
29.00		76.9	178.6					0.0	114.4	76.9	293.0	0.0	0.0
30.00		76.8	177.8					0.0	114.4	76.8	292.2	0.0	0.0
31.00		77.0	177.0					0.0	114.4	77.0	291.4	0.0	0.0
32.00		77.3	176.1					0.0	114.4	77.3	290.6	0.0	0.0
33.00		77.7	175.3					0.0	114.4	77.7	289.7	0.0	0.0
34.00		78.0	174.5					0.0	114.4	78.0	288.9	0.0	0.0
35.00		78.2	173.6					0.0	114.4	78.2	288.1	0.0	0.0
36.00		78.5	172.8					0.0	114.4	78.5	287.2	0.0	0.0
37.00		78.7	172.0					0.0	114.4	78.7	286.4	0.0	0.0
38.00		79.0	171.1					0.0	114.4	79.0	285.6	0.0	0.0
39.00		79.2	170.3					0.0	114.4	79.2	284.8	0.0	0.0
40.00		79.4	169.5					0.0	114.4	79.4	283.9	0.0	0.0
41.00		41.2	168.7					0.0	114.4	41.2	283.1	0.0	0.0
41.04	Bot - Section 2	40.5	6.1					0.0	4.1	40.5	10.2	0.0	0.0
42.00		79.7	303.2					0.0	110.3	79.7	413.5	0.0	0.0
43.00		81.3	313.1					0.0	114.4	81.3	427.5	0.0	0.0
44.00		81.5	311.6					0.0	114.4	81.5	426.0	0.0	0.0
45.00		81.6	310.0					0.0	114.4	81.6	424.5	0.0	0.0
46.00		66.6	308.5					0.0	114.4	66.6	422.9	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 0.9D + 1.6W — 105 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

46.63	Top - Section 1	40.9	193.6					0.0	72.1	40.9	265.6	0.0	0.0
47.00		56.1	52.9					0.0	42.3	56.1	95.3	0.0	0.0
48.00		81.9	142.5					0.0	114.4	81.9	257.0	0.0	0.0
49.00		82.0	141.8					0.0	114.4	82.0	256.3	0.0	0.0
50.00		82.1	141.1					0.0	114.4	82.1	255.6	0.0	0.0
51.00		82.1	140.4					0.0	114.4	82.1	254.8	0.0	0.0
52.00		82.1	139.7					0.0	114.4	82.1	254.1	0.0	0.0
53.00		82.2	139.0					0.0	114.4	82.2	253.4	0.0	0.0
54.00		82.2	138.3					0.0	114.4	82.2	252.7	0.0	0.0
55.00		82.2	137.6					0.0	114.4	82.2	252.0	0.0	0.0
56.00		82.2	136.9					0.0	114.4	82.2	251.3	0.0	0.0
57.00		82.2	136.1					0.0	114.4	82.2	250.6	0.0	0.0
58.00		82.2	135.4					0.0	114.4	82.2	249.9	0.0	0.0
59.00		82.2	134.7					0.0	114.4	82.2	249.2	0.0	0.0
60.00		82.1	134.0					0.0	114.4	82.1	248.4	0.0	0.0
61.00		82.1	133.3					0.0	114.4	82.1	247.7	0.0	0.0
62.00		82.0	132.6					0.0	114.4	82.0	247.0	0.0	0.0
63.00		82.0	131.9					0.0	114.4	82.0	246.3	0.0	0.0
64.00		81.9	131.2					0.0	114.4	81.9	245.6	0.0	0.0
65.00		81.8	130.5					0.0	114.4	81.8	244.9	0.0	0.0
66.00		81.7	129.7					0.0	114.4	81.7	244.2	0.0	0.0
67.00		81.6	129.0					0.0	114.4	81.6	243.5	0.0	0.0
68.00		81.5	128.3					0.0	114.4	81.5	242.8	0.0	0.0
69.00		81.4	127.6					0.0	114.4	81.4	242.0	0.0	0.0
70.00		81.3	126.9					0.0	114.4	81.3	241.3	0.0	0.0
71.00		81.2	126.2					0.0	114.4	81.2	240.6	0.0	0.0
72.00		81.0	125.5					0.0	114.4	81.0	239.9	0.0	0.0
73.00		80.9	124.8					0.0	114.4	80.9	239.2	0.0	0.0
74.00		80.8	124.1					0.0	114.4	80.8	238.5	0.0	0.0
75.00	Appertunance(s)	80.6	123.3	227.2	0.0	0.0	135.5	0.0	114.4	307.8	373.3	0.0	0.0
76.00		80.4	122.6					0.0	114.3	80.4	236.9	0.0	0.0
77.00		80.3	121.9					0.0	114.3	80.3	236.2	0.0	0.0
78.00		80.1	121.2					0.0	114.3	80.1	235.5	0.0	0.0
79.00		79.9	120.5					0.0	114.3	79.9	234.8	0.0	0.0
80.00		79.8	119.8					0.0	114.3	79.8	234.1	0.0	0.0
81.00		59.4	119.1					0.0	114.3	59.4	233.4	0.0	0.0
81.49	Bot - Section 3	40.1	58.3					0.0	56.2	40.1	114.4	0.0	0.0
82.00		61.0	111.3					0.0	58.1	61.0	169.4	0.0	0.0
83.00		80.7	217.8					0.0	114.3	80.7	332.1	0.0	0.0
84.00		80.5	216.5					0.0	114.3	80.5	330.8	0.0	0.0
85.00		80.3	215.2					0.0	114.3	80.3	329.5	0.0	0.0
86.00		47.2	213.9					0.0	114.3	47.2	328.2	0.0	0.0
86.18	Top - Section 2	40.0	37.6					0.0	20.1	40.0	57.7	0.0	0.0
87.00		72.8	80.5					0.0	94.2	72.8	174.6	0.0	0.0
88.00		79.6	97.2					0.0	114.3	79.6	211.5	0.0	0.0
89.00		79.4	96.6					0.0	114.3	79.4	210.9	0.0	0.0
90.00		79.2	96.0					0.0	114.3	79.2	210.3	0.0	0.0
91.00		79.0	95.4					0.0	114.3	79.0	209.7	0.0	0.0
92.00		78.7	94.8					0.0	114.3	78.7	209.1	0.0	0.0
93.00		78.5	94.2					0.0	114.3	78.5	208.5	0.0	0.0
94.00		78.2	93.6					0.0	114.3	78.2	207.9	0.0	0.0
95.00		78.0	93.0					0.0	114.3	78.0	207.3	0.0	0.0
96.00		77.7	92.4					0.0	114.3	77.7	206.7	0.0	0.0
97.00		77.4	91.8					0.0	114.3	77.4	206.1	0.0	0.0
98.00		77.2	91.2					0.0	114.3	77.2	205.5	0.0	0.0
99.00		76.9	90.7					0.0	114.3	76.9	205.0	0.0	0.0
100.00	Appertunance(s)	76.6	90.1	430.9	0.0	685.7	158.8	0.0	114.3	507.5	363.2	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 0.9D + 1.6W — 105 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

101.00		76.3	89.5					0.0	114.0	76.3	203.5	0.0	0.0
102.00		76.0	88.9					0.0	114.0	76.0	202.9	0.0	0.0
103.00		75.7	88.3					0.0	114.0	75.7	202.3	0.0	0.0
104.00		75.4	87.7					0.0	114.0	75.4	201.7	0.0	0.0
105.00	Reinf. Top	75.1	87.1					0.0	114.0	75.1	201.1	0.0	0.0
106.00		74.8	86.5					0.0	53.9	74.8	140.4	0.0	0.0
107.00		74.5	85.9					0.0	53.9	74.5	139.8	0.0	0.0
108.00		74.2	85.3					0.0	53.9	74.2	139.2	0.0	0.0
109.00		73.9	84.7					0.0	53.9	73.9	138.6	0.0	0.0
110.00	Appertunance(s)	73.6	84.1	460.7	0.0	0.0	274.1	0.0	53.9	534.3	412.2	0.0	0.0
111.00		73.3	83.5					0.0	53.6	73.3	137.2	0.0	0.0
112.00		72.9	83.0					0.0	53.6	72.9	136.6	0.0	0.0
113.00		72.6	82.4					0.0	53.6	72.6	136.0	0.0	0.0
114.00		72.3	81.8					0.0	53.6	72.3	135.4	0.0	0.0
115.00		71.9	81.2					0.0	53.6	71.9	134.8	0.0	0.0
116.00		71.6	80.6					0.0	53.6	71.6	134.2	0.0	0.0
117.00		71.2	80.0					0.0	53.6	71.2	133.6	0.0	0.0
118.00		70.9	79.4					0.0	53.6	70.9	133.0	0.0	0.0
119.00		70.5	78.8					0.0	53.6	70.5	132.4	0.0	0.0
120.00	Appertunance(s)	70.2	78.2	3,444.3	0.0	0.0	2,254.2	0.0	53.6	3,514.5	2,386.1	0.0	0.0
121.00		69.8	77.6					0.0	50.0	69.8	127.6	0.0	0.0
122.00		69.4	77.0					0.0	50.0	69.4	127.0	0.0	0.0
123.00		69.1	76.4					0.0	50.0	69.1	126.4	0.0	0.0
124.00		68.5	75.8					0.0	50.0	68.5	125.9	0.0	0.0
124.99	Bot - Section 4	34.3	74.8					0.0	49.7	34.3	124.5	0.0	0.0
125.00		35.0	0.8					0.0	0.3	35.0	1.1	0.0	0.0
126.00		69.3	135.7					0.0	50.0	69.3	185.8	0.0	0.0
127.00		68.9	134.7					0.0	50.0	68.9	184.7	0.0	0.0
128.00		57.7	133.6					0.0	50.0	57.7	183.6	0.0	0.0
128.68	Top - Section 3	34.2	90.4					0.0	34.1	34.2	124.5	0.0	0.0
129.00		44.8	19.0					0.0	15.9	44.8	34.9	0.0	0.0
130.00		67.8	59.2					0.0	50.0	67.8	109.2	0.0	0.0
131.00	Appertunance(s)	67.4	58.7	2,874.9	0.0	117.8	1,544.7	0.0	50.0	2,942.2	1,653.4	0.0	0.0
132.00		67.0	58.2					0.0	40.5	67.0	98.7	0.0	0.0
133.00		66.6	57.8					0.0	40.5	66.6	98.3	0.0	0.0
134.00		66.2	57.3					0.0	40.5	66.2	97.8	0.0	0.0
135.00		65.8	56.8					0.0	40.5	65.8	97.3	0.0	0.0
136.00		65.4	56.3					0.0	40.5	65.4	96.8	0.0	0.0
137.00	Appertunance(s)	65.0	55.9	1,281.5	0.0	0.0	728.1	0.0	40.5	1,346.5	824.5	0.0	0.0
138.00		64.5	55.4					0.0	36.8	64.5	92.2	0.0	0.0
139.00		64.1	54.9					0.0	36.8	64.1	91.7	0.0	0.0
140.00		63.7	54.5					0.0	36.8	63.7	91.2	0.0	0.0
141.00	Appertunance(s)	63.3	54.0	5,741.5	0.0	-1,414.2	2,505.1	0.0	36.8	5,804.7	2,595.8	0.0	0.0
142.00		62.9	53.5					0.0	25.6	62.9	79.1	0.0	0.0
143.00		62.4	53.0					0.0	25.6	62.4	78.6	0.0	0.0
144.00		62.0	52.6					0.0	25.6	62.0	78.2	0.0	0.0
145.00		61.6	52.1					0.0	25.6	61.6	77.7	0.0	0.0
146.00		61.1	51.6					0.0	25.6	61.1	77.2	0.0	0.0
147.00		60.7	51.1					0.0	25.6	60.7	76.7	0.0	0.0
148.00	Appertunance(s)	30.2	50.7	250.4	0.0	0.0	180.0	0.0	25.6	280.6	256.3	0.0	0.0
								Totals:		26,102.6	40,998.5	0.00	0.00

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:39:55 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W 105 mph with No Ice (Reduced DL) 29 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	-43.99	-32.33	0.00	-3,826.88	0.00	3,826.88	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.597
1.00	-43.70	-32.27	0.00	-3,794.56	0.00	3,794.56	4,759.25	2,379.62	9,250.46	4,632.10	0.00	-0.04	0.595
2.00	-43.42	-32.22	0.00	-3,762.29	0.00	3,762.29	4,745.10	2,372.55	9,184.62	4,599.13	0.02	-0.08	0.593
3.00	-43.14	-32.16	0.00	-3,730.07	0.00	3,730.07	4,730.90	2,365.45	9,118.92	4,566.24	0.04	-0.12	0.591
4.00	-42.85	-32.11	0.00	-3,697.91	0.00	3,697.91	4,716.66	2,358.33	9,053.36	4,533.41	0.07	-0.17	0.590
5.00	-42.57	-32.05	0.00	-3,665.80	0.00	3,665.80	4,702.37	2,351.19	8,987.95	4,500.66	0.11	-0.21	0.588
6.00	-42.29	-32.00	0.00	-3,633.76	0.00	3,633.76	4,688.04	2,344.02	8,922.68	4,467.97	0.16	-0.25	0.586
7.00	-42.01	-31.94	0.00	-3,601.76	0.00	3,601.76	4,673.67	2,336.83	8,857.56	4,435.36	0.22	-0.29	0.584
8.00	-41.73	-31.88	0.00	-3,569.82	0.00	3,569.82	4,659.25	2,329.62	8,792.59	4,402.83	0.28	-0.33	0.582
9.00	-41.45	-31.83	0.00	-3,537.94	0.00	3,537.94	4,644.78	2,322.39	8,727.76	4,370.37	0.36	-0.37	0.581
10.00	-41.18	-31.77	0.00	-3,506.11	0.00	3,506.11	4,630.27	2,315.13	8,663.09	4,337.98	0.44	-0.42	0.579
11.00	-40.85	-31.72	0.00	-3,474.33	0.00	3,474.33	4,615.71	2,307.86	8,598.56	4,305.67	0.53	-0.46	0.577
12.00	-40.52	-31.66	0.00	-3,442.62	0.00	3,442.62	4,601.11	2,300.55	8,534.19	4,273.44	0.63	-0.50	0.575
13.00	-40.19	-31.61	0.00	-3,410.95	0.00	3,410.95	4,586.46	2,293.23	8,469.97	4,241.28	0.74	-0.54	0.573
14.00	-39.86	-31.55	0.00	-3,379.35	0.00	3,379.35	4,571.77	2,285.88	8,405.90	4,209.20	0.86	-0.59	0.571
15.00	-39.53	-31.50	0.00	-3,347.80	0.00	3,347.80	4,557.03	2,278.52	8,341.98	4,177.19	0.99	-0.63	0.569
16.00	-39.21	-31.44	0.00	-3,316.30	0.00	3,316.30	4,542.25	2,271.13	8,278.23	4,145.27	1.13	-0.67	0.567
17.00	-38.88	-31.38	0.00	-3,284.86	0.00	3,284.86	4,527.42	2,263.71	8,214.63	4,113.42	1.27	-0.71	0.565
18.00	-38.56	-31.33	0.00	-3,253.48	0.00	3,253.48	4,512.55	2,256.28	8,151.19	4,081.65	1.42	-0.76	0.563
19.00	-38.23	-31.27	0.00	-3,222.15	0.00	3,222.15	4,497.63	2,248.82	8,087.91	4,049.96	1.59	-0.80	0.561
20.00	-37.91	-31.22	0.00	-3,190.87	0.00	3,190.87	4,482.67	2,241.34	8,024.78	4,018.36	1.76	-0.84	0.559
21.00	-37.59	-31.16	0.00	-3,159.66	0.00	3,159.66	4,467.66	2,233.83	7,961.82	3,986.83	1.94	-0.89	0.557
22.00	-37.27	-31.10	0.00	-3,128.50	0.00	3,128.50	4,452.61	2,226.31	7,899.03	3,955.38	2.13	-0.93	0.555
23.00	-36.95	-31.05	0.00	-3,097.39	0.00	3,097.39	4,437.51	2,218.76	7,836.39	3,924.02	2.33	-0.97	0.553
24.00	-36.63	-30.99	0.00	-3,066.35	0.00	3,066.35	4,422.37	2,211.19	7,773.92	3,892.74	2.54	-1.02	0.551
25.00	-36.31	-30.94	0.00	-3,035.35	0.00	3,035.35	4,403.56	2,201.78	7,705.28	3,858.37	2.76	-1.06	0.549
26.00	-35.99	-30.88	0.00	-3,004.42	0.00	3,004.42	4,383.43	2,191.72	7,634.65	3,823.00	2.99	-1.10	0.547
27.00	-35.67	-30.82	0.00	-2,973.54	0.00	2,973.54	4,363.30	2,181.65	7,564.34	3,787.79	3.22	-1.15	0.546
28.00	-35.36	-30.77	0.00	-2,942.72	0.00	2,942.72	4,343.18	2,171.59	7,494.36	3,752.75	3.47	-1.19	0.544
29.00	-35.04	-30.71	0.00	-2,911.95	0.00	2,911.95	4,323.05	2,161.52	7,424.70	3,717.87	3.72	-1.23	0.542
30.00	-34.73	-30.65	0.00	-2,881.24	0.00	2,881.24	4,302.92	2,151.46	7,355.37	3,683.15	3.98	-1.28	0.541
31.00	-34.42	-30.60	0.00	-2,850.58	0.00	2,850.58	4,282.79	2,141.40	7,286.37	3,648.60	4.26	-1.32	0.539
32.00	-34.11	-30.54	0.00	-2,819.99	0.00	2,819.99	4,262.67	2,131.33	7,217.68	3,614.21	4.54	-1.36	0.537
33.00	-33.79	-30.48	0.00	-2,789.45	0.00	2,789.45	4,242.54	2,121.27	7,149.33	3,579.98	4.83	-1.41	0.535
34.00	-33.48	-30.42	0.00	-2,758.97	0.00	2,758.97	4,222.41	2,111.21	7,081.30	3,545.91	5.13	-1.45	0.533
35.00	-33.17	-30.36	0.00	-2,728.55	0.00	2,728.55	4,202.28	2,101.14	7,013.59	3,512.01	5.44	-1.50	0.531
36.00	-32.87	-30.30	0.00	-2,698.19	0.00	2,698.19	4,182.16	2,091.08	6,946.22	3,478.27	5.75	-1.54	0.530
37.00	-32.56	-30.24	0.00	-2,667.89	0.00	2,667.89	4,162.03	2,081.01	6,879.16	3,444.69	6.08	-1.58	0.528
38.00	-32.25	-30.18	0.00	-2,637.65	0.00	2,637.65	4,141.90	2,070.95	6,812.43	3,411.28	6.42	-1.63	0.526
39.00	-31.95	-30.11	0.00	-2,607.48	0.00	2,607.48	4,121.77	2,060.89	6,746.03	3,378.03	6.76	-1.67	0.524
40.00	-31.64	-30.05	0.00	-2,577.36	0.00	2,577.36	4,101.65	2,050.82	6,679.95	3,344.94	7.12	-1.72	0.522
41.00	-31.35	-30.01	0.00	-2,547.31	0.00	2,547.31	4,081.52	2,040.76	6,614.19	3,312.01	7.48	-1.76	0.520
41.04	-31.33	-29.98	0.00	-2,546.22	0.00	2,546.22	4,080.79	2,040.40	6,611.82	3,310.82	7.50	-1.76	0.519
42.00	-30.89	-29.92	0.00	-2,517.33	0.00	2,517.33	4,061.39	2,030.70	6,548.77	3,279.25	7.86	-1.80	0.512
43.00	-30.45	-29.84	0.00	-2,487.41	0.00	2,487.41	4,041.26	2,020.63	6,483.66	3,246.65	8.24	-1.85	0.510
44.00	-30.00	-29.77	0.00	-2,457.57	0.00	2,457.57	4,021.14	2,010.57	6,418.89	3,214.21	8.63	-1.89	0.507
45.00	-29.56	-29.70	0.00	-2,427.80	0.00	2,427.80	4,001.01	2,000.51	6,354.43	3,181.94	9.04	-1.94	0.505
46.00	-29.12	-29.64	0.00	-2,398.10	0.00	2,398.10	3,980.88	1,990.44	6,290.31	3,149.83	9.45	-1.98	0.503
46.63	-28.84	-29.60	0.00	-2,379.43	0.00	2,379.43	3,413.42	1,706.71	5,499.77	2,753.97	9.71	-2.01	0.552
47.00	-28.73	-29.55	0.00	-2,368.48	0.00	2,368.48	3,408.82	1,704.41	5,482.17	2,745.16	9.87	-2.02	0.550
48.00	-28.46	-29.49	0.00	-2,338.93	0.00	2,338.93	3,396.37	1,698.19	5,434.70	2,721.39	10.29	-2.07	0.547

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:39:56 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W — 105 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor : 1.10 — Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

49.00	-28.18	-29.42	0.00	-2,309.44	0.00	2,309.44	3,383.87	1,691.93	5,387.36	2,697.69	10.73	-2.12	0.543
50.00	-27.90	-29.35	0.00	-2,280.03	0.00	2,280.03	3,371.32	1,685.66	5,340.15	2,674.04	11.18	-2.16	0.540
51.00	-27.63	-29.28	0.00	-2,250.68	0.00	2,250.68	3,358.73	1,679.37	5,293.07	2,650.47	11.64	-2.21	0.536
52.00	-27.35	-29.21	0.00	-2,221.40	0.00	2,221.40	3,346.10	1,673.05	5,246.13	2,626.96	12.11	-2.26	0.533
53.00	-27.08	-29.14	0.00	-2,192.19	0.00	2,192.19	3,333.42	1,666.71	5,199.32	2,603.52	12.59	-2.30	0.529
54.00	-26.81	-29.07	0.00	-2,163.06	0.00	2,163.06	3,320.69	1,660.35	5,152.64	2,580.15	13.08	-2.35	0.525
55.00	-26.53	-29.00	0.00	-2,133.99	0.00	2,133.99	3,307.92	1,653.96	5,106.10	2,556.84	13.57	-2.40	0.522
56.00	-26.26	-28.93	0.00	-2,104.99	0.00	2,104.99	3,295.11	1,647.55	5,059.70	2,533.61	14.08	-2.44	0.518
57.00	-25.99	-28.85	0.00	-2,076.07	0.00	2,076.07	3,282.25	1,641.12	5,013.43	2,510.44	14.60	-2.49	0.514
58.00	-25.72	-28.78	0.00	-2,047.21	0.00	2,047.21	3,269.34	1,634.67	4,967.30	2,487.34	15.12	-2.54	0.510
59.00	-25.45	-28.71	0.00	-2,018.43	0.00	2,018.43	3,256.39	1,628.19	4,921.32	2,464.32	15.66	-2.58	0.507
60.00	-25.19	-28.64	0.00	-1,989.72	0.00	1,989.72	3,242.50	1,621.25	4,874.14	2,440.69	16.21	-2.63	0.503
61.00	-24.92	-28.56	0.00	-1,961.09	0.00	1,961.09	3,225.25	1,612.62	4,822.15	2,414.66	16.76	-2.68	0.500
62.00	-24.65	-28.49	0.00	-1,932.53	0.00	1,932.53	3,208.00	1,604.00	4,770.44	2,388.76	17.33	-2.72	0.496
63.00	-24.39	-28.41	0.00	-1,904.04	0.00	1,904.04	3,190.75	1,595.37	4,719.00	2,363.01	17.90	-2.77	0.493
64.00	-24.13	-28.34	0.00	-1,875.62	0.00	1,875.62	3,173.49	1,586.75	4,667.85	2,337.39	18.49	-2.81	0.489
65.00	-23.86	-28.27	0.00	-1,847.28	0.00	1,847.28	3,156.24	1,578.12	4,616.98	2,311.92	19.08	-2.86	0.486
66.00	-23.60	-28.19	0.00	-1,819.02	0.00	1,819.02	3,138.99	1,569.49	4,566.38	2,286.58	19.69	-2.91	0.482
67.00	-23.34	-28.12	0.00	-1,790.83	0.00	1,790.83	3,121.74	1,560.87	4,516.06	2,261.39	20.30	-2.95	0.479
68.00	-23.08	-28.04	0.00	-1,762.71	0.00	1,762.71	3,104.48	1,552.24	4,466.02	2,236.33	20.92	-3.00	0.475
69.00	-22.82	-27.96	0.00	-1,734.67	0.00	1,734.67	3,087.23	1,543.62	4,416.26	2,211.41	21.56	-3.04	0.471
70.00	-22.56	-27.89	0.00	-1,706.71	0.00	1,706.71	3,069.98	1,534.99	4,366.78	2,186.64	22.20	-3.09	0.468
71.00	-22.30	-27.81	0.00	-1,678.82	0.00	1,678.82	3,052.73	1,526.36	4,317.58	2,162.00	22.85	-3.13	0.464
72.00	-22.05	-27.73	0.00	-1,651.01	0.00	1,651.01	3,035.48	1,517.74	4,268.66	2,137.50	23.51	-3.18	0.460
73.00	-21.79	-27.66	0.00	-1,623.28	0.00	1,623.28	3,018.22	1,509.11	4,220.01	2,113.14	24.18	-3.22	0.456
74.00	-21.53	-27.58	0.00	-1,595.62	0.00	1,595.62	3,000.97	1,500.49	4,171.65	2,088.92	24.86	-3.27	0.452
75.00	-21.16	-27.27	0.00	-1,568.04	0.00	1,568.04	2,983.72	1,491.86	4,123.56	2,064.84	25.55	-3.31	0.448
76.00	-20.91	-27.19	0.00	-1,540.77	0.00	1,540.77	2,966.47	1,483.23	4,075.75	2,040.90	26.25	-3.36	0.444
77.00	-20.65	-27.11	0.00	-1,513.58	0.00	1,513.58	2,949.22	1,474.61	4,028.22	2,017.11	26.96	-3.40	0.440
78.00	-20.40	-27.03	0.00	-1,486.47	0.00	1,486.47	2,931.96	1,465.98	3,980.97	1,993.44	27.67	-3.45	0.435
79.00	-20.15	-26.96	0.00	-1,459.44	0.00	1,459.44	2,914.71	1,457.36	3,934.00	1,969.92	28.40	-3.49	0.431
80.00	-19.90	-26.88	0.00	-1,432.48	0.00	1,432.48	2,897.46	1,448.73	3,887.31	1,946.54	29.14	-3.53	0.427
81.00	-19.66	-26.81	0.00	-1,405.61	0.00	1,405.61	2,880.21	1,440.10	3,840.89	1,923.30	29.88	-3.58	0.422
81.49	-19.54	-26.77	0.00	-1,392.43	0.00	1,392.43	2,871.73	1,435.86	3,818.18	1,911.93	30.25	-3.60	0.420
82.00	-19.36	-26.71	0.00	-1,378.81	0.00	1,378.81	2,862.96	1,431.48	3,794.76	1,900.20	30.64	-3.62	0.412
83.00	-19.01	-26.63	0.00	-1,352.10	0.00	1,352.10	2,845.70	1,422.85	3,748.90	1,877.24	31.40	-3.66	0.408
84.00	-18.66	-26.54	0.00	-1,325.47	0.00	1,325.47	2,828.45	1,414.23	3,703.32	1,854.41	32.17	-3.71	0.403
85.00	-18.32	-26.45	0.00	-1,298.94	0.00	1,298.94	2,811.20	1,405.60	3,658.02	1,831.73	32.95	-3.75	0.398
86.00	-17.99	-26.39	0.00	-1,272.49	0.00	1,272.49	2,793.95	1,396.97	3,613.00	1,809.19	33.74	-3.79	0.394
86.18	-17.92	-26.35	0.00	-1,267.84	0.00	1,267.84	2,344.74	1,172.37	3,101.47	1,553.04	33.88	-3.80	0.433
87.00	-17.73	-26.28	0.00	-1,246.13	0.00	1,246.13	2,336.11	1,168.06	3,074.51	1,539.54	34.54	-3.83	0.427
88.00	-17.51	-26.20	0.00	-1,219.85	0.00	1,219.85	2,325.60	1,162.80	3,041.88	1,523.20	35.35	-3.88	0.421
89.00	-17.28	-26.12	0.00	-1,193.65	0.00	1,193.65	2,315.03	1,157.52	3,009.36	1,506.91	36.16	-3.92	0.415
90.00	-17.06	-26.04	0.00	-1,167.53	0.00	1,167.53	2,304.43	1,152.21	2,976.95	1,490.69	36.99	-3.96	0.409
91.00	-16.84	-25.96	0.00	-1,141.49	0.00	1,141.49	2,293.77	1,146.89	2,944.66	1,474.52	37.82	-4.01	0.402
92.00	-16.61	-25.88	0.00	-1,115.53	0.00	1,115.53	2,283.08	1,141.54	2,912.48	1,458.40	38.67	-4.05	0.396
93.00	-16.39	-25.80	0.00	-1,089.65	0.00	1,089.65	2,272.33	1,136.17	2,880.41	1,442.35	39.52	-4.09	0.389
94.00	-16.17	-25.72	0.00	-1,063.86	0.00	1,063.86	2,261.54	1,130.77	2,848.47	1,426.35	40.38	-4.14	0.383
95.00	-15.95	-25.63	0.00	-1,038.14	0.00	1,038.14	2,249.56	1,124.78	2,815.20	1,409.69	41.25	-4.18	0.376
96.00	-15.73	-25.55	0.00	-1,012.51	0.00	1,012.51	2,235.18	1,117.59	2,779.15	1,391.64	42.13	-4.22	0.370
97.00	-15.52	-25.47	0.00	-986.95	0.00	986.95	2,220.81	1,110.40	2,743.33	1,373.70	43.02	-4.26	0.364
98.00	-15.30	-25.39	0.00	-961.48	0.00	961.48	2,206.43	1,103.21	2,707.75	1,355.89	43.92	-4.30	0.358
99.00	-15.08	-25.31	0.00	-936.09	0.00	936.09	2,192.05	1,096.03	2,672.39	1,338.18	44.82	-4.34	0.351
100.00	-14.74	-24.79	0.00	-910.10	0.00	910.10	2,177.68	1,088.84	2,637.27	1,320.60	45.73	-4.38	0.345
101.00	-14.53	-24.70	0.00	-885.31	0.00	885.31	2,163.30	1,081.65	2,602.39	1,303.13	46.65	-4.42	0.338
102.00	-14.32	-24.62	0.00	-860.61	0.00	860.61	2,148.92	1,074.46	2,567.73	1,285.77	47.58	-4.46	0.332
103.00	-14.10	-24.54	0.00	-835.99	0.00	835.99	2,134.54	1,067.27	2,533.31	1,268.54	48.52	-4.49	0.325

Site Number: 302515 | Code: ANSI/TIA-222-G | © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT | Engineering Number: 64559325 | 2/18/2016 3:39:56 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W — 105 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

104.00	-13.89	-24.46	0.00	-811.45	0.00	811.45	2,120.17	1,060.08	2,499.12	1,251.42	49.47	-4.53	0.318
105.00	-13.68	-24.38	0.00	-786.99	0.00	786.99	2,105.79	1,052.90	2,465.16	1,234.41	50.42	-4.57	0.311
105.00	-13.68	-24.38	0.00	-786.99	0.00	786.99	2,105.79	1,052.90	2,465.16	1,234.41	50.42	-4.57	0.645
106.00	-13.52	-24.30	0.00	-762.62	0.00	762.62	2,091.41	1,045.71	2,431.43	1,217.52	51.38	-4.61	0.633
107.00	-13.36	-24.23	0.00	-738.31	0.00	738.31	2,077.04	1,038.52	2,397.94	1,200.75	52.35	-4.68	0.622
108.00	-13.20	-24.17	0.00	-714.08	0.00	714.08	2,062.66	1,031.33	2,364.68	1,184.10	53.34	-4.75	0.610
109.00	-13.03	-24.10	0.00	-689.91	0.00	689.91	2,048.28	1,024.14	2,331.65	1,167.56	54.34	-4.83	0.598
110.00	-12.64	-23.55	0.00	-665.82	0.00	665.82	2,033.91	1,016.95	2,298.85	1,151.13	55.36	-4.90	0.585
111.00	-12.48	-23.48	0.00	-642.27	0.00	642.27	2,019.53	1,009.77	2,266.28	1,134.83	56.39	-4.97	0.573
112.00	-12.32	-23.41	0.00	-618.80	0.00	618.80	2,005.15	1,002.58	2,233.95	1,118.64	57.44	-5.04	0.560
113.00	-12.17	-23.34	0.00	-595.39	0.00	595.39	1,990.78	995.39	2,201.85	1,102.56	58.50	-5.11	0.547
114.00	-12.01	-23.27	0.00	-572.05	0.00	572.05	1,976.40	988.20	2,169.98	1,086.60	59.58	-5.17	0.533
115.00	-11.86	-23.20	0.00	-548.79	0.00	548.79	1,962.02	981.01	2,138.35	1,070.76	60.67	-5.24	0.519
116.00	-11.70	-23.13	0.00	-525.59	0.00	525.59	1,947.65	973.82	2,106.94	1,055.04	61.77	-5.30	0.505
117.00	-11.55	-23.06	0.00	-502.47	0.00	502.47	1,933.27	966.64	2,075.77	1,039.43	62.89	-5.37	0.490
118.00	-11.40	-22.98	0.00	-479.41	0.00	479.41	1,918.89	959.45	2,044.84	1,023.94	64.02	-5.43	0.475
119.00	-11.25	-22.91	0.00	-456.43	0.00	456.43	1,904.52	952.26	2,014.13	1,008.56	65.16	-5.49	0.459
120.00	-9.20	-19.19	0.00	-433.52	0.00	433.52	1,890.14	945.07	1,983.66	993.30	66.31	-5.55	0.442
121.00	-9.06	-19.12	0.00	-414.32	0.00	414.32	1,875.76	937.88	1,953.41	978.16	67.48	-5.60	0.429
122.00	-8.92	-19.05	0.00	-395.20	0.00	395.20	1,861.39	930.69	1,923.40	963.13	68.66	-5.66	0.416
123.00	-8.78	-18.98	0.00	-376.15	0.00	376.15	1,847.01	923.50	1,893.63	948.22	69.85	-5.71	0.402
124.00	-8.65	-18.90	0.00	-357.18	0.00	357.18	1,832.63	916.32	1,864.08	933.43	71.05	-5.77	0.388
124.99	-8.52	-18.86	0.00	-338.39	0.00	338.39	1,818.34	909.17	1,834.95	918.84	72.25	-5.82	0.373
125.00	-8.51	-18.83	0.00	-338.27	0.00	338.27	1,818.26	909.13	1,834.77	918.75	72.26	-5.82	0.373
126.00	-8.32	-18.75	0.00	-319.45	0.00	319.45	1,803.88	901.94	1,805.69	904.19	73.48	-5.87	0.358
127.00	-8.13	-18.67	0.00	-300.70	0.00	300.70	1,789.50	894.75	1,776.84	889.74	74.72	-5.92	0.343
128.00	-7.94	-18.60	0.00	-282.03	0.00	282.03	1,775.13	887.56	1,748.23	875.41	75.96	-5.96	0.327
128.68	-7.81	-18.55	0.00	-269.36	0.00	269.36	1,444.76	722.38	1,452.22	727.19	76.81	-5.99	0.376
129.00	-7.77	-18.51	0.00	-263.45	0.00	263.45	1,441.76	720.88	1,445.49	723.82	77.21	-6.01	0.370
130.00	-7.65	-18.44	0.00	-244.94	0.00	244.94	1,430.26	715.13	1,422.41	712.26	78.47	-6.06	0.350
131.00	-6.31	-15.34	0.00	-226.39	0.00	226.39	1,418.76	709.38	1,399.51	700.79	79.74	-6.10	0.328
132.00	-6.21	-15.27	0.00	-211.05	0.00	211.05	1,407.25	703.63	1,376.79	689.42	81.02	-6.15	0.311
133.00	-6.11	-15.20	0.00	-195.78	0.00	195.78	1,395.75	697.88	1,354.26	678.14	82.31	-6.19	0.294
134.00	-6.00	-15.12	0.00	-180.58	0.00	180.58	1,384.25	692.13	1,331.92	666.95	83.61	-6.23	0.276
135.00	-5.91	-15.05	0.00	-165.46	0.00	165.46	1,372.75	686.38	1,309.76	655.86	84.92	-6.27	0.257
136.00	-5.81	-14.98	0.00	-150.41	0.00	150.41	1,361.25	680.62	1,287.79	644.85	86.24	-6.30	0.238
137.00	-5.13	-13.55	0.00	-135.43	0.00	135.43	1,349.75	674.87	1,266.01	633.94	87.56	-6.34	0.218
138.00	-5.04	-13.48	0.00	-121.87	0.00	121.87	1,338.25	669.12	1,244.41	623.13	88.89	-6.37	0.200
139.00	-4.95	-13.41	0.00	-108.39	0.00	108.39	1,326.75	663.37	1,222.99	612.41	90.22	-6.40	0.181
140.00	-4.86	-13.34	0.00	-94.98	0.00	94.98	1,315.24	657.62	1,201.77	601.78	91.56	-6.42	0.162
141.00	-2.93	-7.28	0.00	-81.65	0.00	81.65	1,303.74	651.87	1,180.73	591.24	92.90	-6.44	0.140
142.00	-2.85	-7.21	0.00	-74.37	0.00	74.37	1,292.24	646.12	1,159.87	580.80	94.25	-6.46	0.130
143.00	-2.78	-7.14	0.00	-67.15	0.00	67.15	1,280.74	640.37	1,139.20	570.45	95.61	-6.48	0.120
144.00	-2.71	-7.07	0.00	-60.01	0.00	60.01	1,269.24	634.62	1,118.72	560.19	96.96	-6.50	0.109
145.00	-2.63	-7.00	0.00	-52.94	0.00	52.94	1,257.74	628.87	1,098.42	550.03	98.32	-6.52	0.098
146.00	-2.56	-6.93	0.00	-45.94	0.00	45.94	1,246.24	623.12	1,078.30	539.95	99.69	-6.53	0.087
147.00	-2.49	-6.86	0.00	-39.01	0.00	39.01	1,234.73	617.37	1,058.38	529.98	101.05	-6.54	0.076
148.00	0.00	-6.53	0.00	-32.15	0.00	32.15	1,223.23	611.62	1,038.64	520.09	102.42	-6.55	0.062

Site Number: 302515 | Code: ANSI/TIA-222-G | © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT | Engineering Number: 64559325 | 2/18/2016 3:39:56 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		11.8	0.0					0.0	0.0	11.8	0.0	0.0	0.0
1.00		23.7	329.4					0.0	91.1	23.7	420.5	0.0	0.0
2.00		23.7	335.2					0.0	92.3	23.7	427.5	0.0	0.0
3.00		23.6	337.4					0.0	92.9	23.6	430.3	0.0	0.0
4.00		23.6	338.5					0.0	93.3	23.6	431.8	0.0	0.0
5.00		23.5	339.0					0.0	93.7	23.5	432.7	0.0	0.0
6.00		23.4	339.1					0.0	93.9	23.4	433.1	0.0	0.0
7.00		23.4	339.0					0.0	94.1	23.4	433.2	0.0	0.0
8.00		23.3	338.7					0.0	94.3	23.3	433.1	0.0	0.0
9.00		23.2	338.3					0.0	94.5	23.2	432.8	0.0	0.0
10.00		23.1	337.8					0.0	94.7	23.1	432.5	0.0	0.0
11.00		23.1	337.2					0.0	228.1	23.1	565.2	0.0	0.0
12.00		23.0	336.5					0.0	228.8	23.0	565.3	0.0	0.0
13.00		22.9	335.7					0.0	229.5	22.9	565.3	0.0	0.0
14.00		22.8	334.9					0.0	230.2	22.8	565.1	0.0	0.0
15.00		22.7	334.0					0.0	230.9	22.7	564.9	0.0	0.0
16.00		22.6	333.2					0.0	231.5	22.6	564.6	0.0	0.0
17.00		22.6	332.2					0.0	232.0	22.6	564.2	0.0	0.0
18.00		22.5	331.3					0.0	232.5	22.5	563.8	0.0	0.0
19.00		22.4	330.3					0.0	233.1	22.4	563.3	0.0	0.0
20.00		22.3	329.3					0.0	233.5	22.3	562.8	0.0	0.0
21.00		22.2	328.2					0.0	234.0	22.2	562.2	0.0	0.0
22.00		22.1	327.2					0.0	234.5	22.1	561.6	0.0	0.0
23.00		22.0	326.1					0.0	234.9	22.0	561.0	0.0	0.0
24.00		22.0	325.0					0.0	235.3	22.0	560.3	0.0	0.0
25.00		21.9	323.9					0.0	235.7	21.9	559.6	0.0	0.0
26.00		21.8	322.8					0.0	236.1	21.8	558.8	0.0	0.0
27.00		21.7	321.6					0.0	236.5	21.7	558.1	0.0	0.0
28.00		21.6	320.5					0.0	236.8	21.6	557.3	0.0	0.0
29.00		21.5	319.3					0.0	237.2	21.5	556.5	0.0	0.0
30.00		21.5	318.1					0.0	237.5	21.5	555.6	0.0	0.0
31.00		21.6	316.9					0.0	237.8	21.6	554.8	0.0	0.0
32.00		21.7	315.7					0.0	238.1	21.7	553.9	0.0	0.0
33.00		21.8	314.5					0.0	238.5	21.8	553.0	0.0	0.0
34.00		21.9	313.3					0.0	238.8	21.9	552.1	0.0	0.0
35.00		21.9	312.1					0.0	239.1	21.9	551.1	0.0	0.0
36.00		22.0	310.8					0.0	239.3	22.0	550.2	0.0	0.0
37.00		22.1	309.6					0.0	239.6	22.1	549.2	0.0	0.0
38.00		22.2	308.3					0.0	239.9	22.2	548.2	0.0	0.0
39.00		22.3	307.1					0.0	240.2	22.3	547.2	0.0	0.0
40.00		22.3	305.8					0.0	240.4	22.3	546.2	0.0	0.0
41.00		11.6	304.5					0.0	240.7	11.6	545.2	0.0	0.0
41.04	Bot - Section 2	11.4	11.0					0.0	8.7	11.4	19.8	0.0	0.0
42.00		22.4	482.3					0.0	232.2	22.4	714.5	0.0	0.0
43.00		22.9	498.2					0.0	241.2	22.9	739.4	0.0	0.0
44.00		22.9	496.0					0.0	241.4	22.9	737.4	0.0	0.0
45.00		23.0	493.7					0.0	241.7	23.0	735.4	0.0	0.0
46.00		18.8	491.5					0.0	241.9	18.8	733.4	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 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

46.63	Top - Section 1	11.5	308.5					0.0	152.5	11.5	461.0	0.0	0.0
47.00		15.8	100.2					0.0	89.6	15.8	189.8	0.0	0.0
48.00		23.1	269.8					0.0	242.3	23.1	512.2	0.0	0.0
49.00		23.1	268.7					0.0	242.6	23.1	511.3	0.0	0.0
50.00		23.2	267.5					0.0	242.8	23.2	510.3	0.0	0.0
51.00		23.2	266.4					0.0	243.0	23.2	509.4	0.0	0.0
52.00		23.2	265.2					0.0	243.2	23.2	508.4	0.0	0.0
53.00		23.2	264.0					0.0	243.4	23.2	507.4	0.0	0.0
54.00		23.3	262.8					0.0	243.6	23.3	506.4	0.0	0.0
55.00		23.3	261.7					0.0	243.8	23.3	505.5	0.0	0.0
56.00		23.3	260.5					0.0	244.0	23.3	504.5	0.0	0.0
57.00		23.3	259.3					0.0	244.2	23.3	503.5	0.0	0.0
58.00		23.3	258.1					0.0	244.4	23.3	502.5	0.0	0.0
59.00		23.3	256.9					0.0	244.6	23.3	501.5	0.0	0.0
60.00		23.3	255.7					0.0	244.8	23.3	500.4	0.0	0.0
61.00		23.3	254.5					0.0	244.9	23.3	499.4	0.0	0.0
62.00		23.3	253.3					0.0	245.1	23.3	498.4	0.0	0.0
63.00		23.3	252.1					0.0	245.3	23.3	497.4	0.0	0.0
64.00		23.3	250.8					0.0	245.5	23.3	496.3	0.0	0.0
65.00		23.3	249.6					0.0	245.6	23.3	495.3	0.0	0.0
66.00		23.3	248.4					0.0	245.8	23.3	494.2	0.0	0.0
67.00		23.3	247.2					0.0	246.0	23.3	493.2	0.0	0.0
68.00		23.2	246.0					0.0	246.1	23.2	492.1	0.0	0.0
69.00		23.2	244.7					0.0	246.3	23.2	491.0	0.0	0.0
70.00		23.2	243.5					0.0	246.5	23.2	490.0	0.0	0.0
71.00		23.2	242.3					0.0	246.6	23.2	488.9	0.0	0.0
72.00		23.2	241.0					0.0	246.8	23.2	487.8	0.0	0.0
73.00		23.1	239.8					0.0	246.9	23.1	486.7	0.0	0.0
74.00		23.1	238.6					0.0	247.1	23.1	485.7	0.0	0.0
75.00	Appertunance(s)	23.1	237.3	48.0	0.0	0.0	221.6	0.0	247.2	71.1	706.1	0.0	0.0
76.00		23.0	236.1					0.0	243.1	23.0	479.2	0.0	0.0
77.00		23.0	234.8					0.0	243.3	23.0	478.1	0.0	0.0
78.00		23.0	233.6					0.0	243.4	23.0	477.0	0.0	0.0
79.00		22.9	232.3					0.0	243.6	22.9	475.9	0.0	0.0
80.00		22.9	231.1					0.0	243.7	22.9	474.8	0.0	0.0
81.00		17.1	229.8					0.0	243.8	17.1	473.6	0.0	0.0
81.49	Bot - Section 3	11.5	112.5					0.0	119.9	11.5	232.4	0.0	0.0
82.00		17.5	185.0					0.0	124.1	17.5	309.1	0.0	0.0
83.00		23.2	362.1					0.0	244.1	23.2	606.2	0.0	0.0
84.00		23.1	360.0					0.0	244.2	23.1	604.3	0.0	0.0
85.00		23.1	358.0					0.0	244.3	23.1	602.3	0.0	0.0
86.00		13.6	355.9					0.0	244.5	13.6	600.4	0.0	0.0
86.18	Top - Section 2	11.5	62.6					0.0	43.1	11.5	105.7	0.0	0.0
87.00		21.0	165.4					0.0	201.5	21.0	366.8	0.0	0.0
88.00		22.9	199.7					0.0	244.7	22.9	444.4	0.0	0.0
89.00		22.9	198.6					0.0	244.8	22.9	443.4	0.0	0.0
90.00		22.8	197.5					0.0	245.0	22.8	442.4	0.0	0.0
91.00		22.8	196.3					0.0	245.1	22.8	441.4	0.0	0.0
92.00		22.7	195.2					0.0	245.2	22.7	440.4	0.0	0.0
93.00		22.7	194.1					0.0	245.3	22.7	439.4	0.0	0.0
94.00		22.6	193.0					0.0	245.4	22.6	438.4	0.0	0.0
95.00		22.6	191.9					0.0	245.5	22.6	437.4	0.0	0.0
96.00		22.5	190.7					0.0	245.7	22.5	436.4	0.0	0.0
97.00		22.4	189.6					0.0	245.8	22.4	435.4	0.0	0.0
98.00		22.4	188.5					0.0	245.9	22.4	434.4	0.0	0.0
99.00		22.3	187.4					0.0	246.0	22.3	433.4	0.0	0.0
100.00	Appertunance(s)	22.3	186.2	101.3	0.0	220.1	330.4	0.0	246.1	123.5	762.7	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 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

101.00		22.2	185.1					0.0	240.9	22.2	426.0	0.0	0.0
102.00		22.1	184.0					0.0	241.0	22.1	425.0	0.0	0.0
103.00		22.1	182.8					0.0	241.1	22.1	423.9	0.0	0.0
104.00		22.0	181.7					0.0	241.2	22.0	422.9	0.0	0.0
105.00	Reinf. Top	21.9	180.6					0.0	241.3	21.9	421.8	0.0	0.0
106.00		21.8	179.4					0.0	161.2	21.8	340.6	0.0	0.0
107.00		21.8	178.3					0.0	161.3	21.8	339.6	0.0	0.0
108.00		21.7	177.2					0.0	161.4	21.7	338.6	0.0	0.0
109.00		21.6	176.0					0.0	161.5	21.6	337.5	0.0	0.0
110.00	Appertunance(s)	21.5	174.9	101.3	0.0	0.0	462.7	0.0	161.6	122.9	799.1	0.0	0.0
111.00		21.5	173.7					0.0	161.3	21.5	335.1	0.0	0.0
112.00		21.4	172.6					0.0	161.4	21.4	334.0	0.0	0.0
113.00		21.3	171.4					0.0	161.5	21.3	332.9	0.0	0.0
114.00		21.2	170.3					0.0	147.5	21.2	317.8	0.0	0.0
115.00		21.2	169.1					0.0	142.9	21.2	312.0	0.0	0.0
116.00		21.1	168.0					0.0	142.9	21.1	310.9	0.0	0.0
117.00		21.0	166.8					0.0	143.0	21.0	309.9	0.0	0.0
118.00		20.9	165.7					0.0	143.1	20.9	308.8	0.0	0.0
119.00		20.8	164.5					0.0	143.1	20.8	307.7	0.0	0.0
120.00	Appertunance(s)	20.7	163.4	656.3	0.0	0.0	5,447.1	0.0	143.2	677.0	5,753.7	0.0	0.0
121.00		20.6	162.2					0.0	126.0	20.6	288.2	0.0	0.0
122.00		20.6	161.1					0.0	126.0	20.6	287.1	0.0	0.0
123.00		20.5	159.9					0.0	126.1	20.5	286.0	0.0	0.0
124.00		20.3	158.8					0.0	126.1	20.3	284.9	0.0	0.0
124.99	Bot - Section 4	10.2	156.6					0.0	125.4	10.2	282.0	0.0	0.0
125.00		10.4	1.5					0.0	0.8	10.4	2.2	0.0	0.0
126.00		20.6	239.0					0.0	126.2	20.6	365.2	0.0	0.0
127.00		20.5	237.2					0.0	126.3	20.5	363.5	0.0	0.0
128.00		17.1	235.4					0.0	126.3	17.1	361.7	0.0	0.0
128.68	Top - Section 3	10.2	159.4					0.0	86.1	10.2	245.5	0.0	0.0
129.00		13.3	43.4					0.0	40.3	13.3	83.7	0.0	0.0
130.00		20.2	135.4					0.0	126.5	20.2	261.9	0.0	0.0
131.00	Appertunance(s)	20.1	134.4	570.9	0.0	24.4	3,817.5	0.0	126.5	591.0	4,078.4	0.0	0.0
132.00		20.0	133.4					0.0	113.8	20.0	247.2	0.0	0.0
133.00		19.9	132.4					0.0	113.9	19.9	246.3	0.0	0.0
134.00		19.8	131.4					0.0	114.0	19.8	245.3	0.0	0.0
135.00		19.7	130.4					0.0	114.0	19.7	244.4	0.0	0.0
136.00		19.6	129.4					0.0	114.1	19.6	243.4	0.0	0.0
137.00	Appertunance(s)	19.5	128.3	259.0	0.0	0.0	1,955.8	0.0	114.1	278.5	2,198.3	0.0	0.0
138.00		19.4	127.3					0.0	101.9	19.4	229.2	0.0	0.0
139.00		19.3	126.3					0.0	101.9	19.3	228.3	0.0	0.0
140.00		19.2	125.3					0.0	102.0	19.2	227.3	0.0	0.0
141.00	Appertunance(s)	19.1	124.3	1,101.1	0.0	-277.3	6,929.1	0.0	102.0	1,120.2	7,155.4	0.0	0.0
142.00		19.0	123.3					0.0	73.8	19.0	197.1	0.0	0.0
143.00		18.9	122.2					0.0	73.8	18.9	196.1	0.0	0.0
144.00		18.8	121.2					0.0	73.9	18.8	195.1	0.0	0.0
145.00		18.7	120.2					0.0	73.9	18.7	194.1	0.0	0.0
146.00		18.6	119.2					0.0	73.9	18.6	193.1	0.0	0.0
147.00		18.4	118.2					0.0	73.9	18.4	192.1	0.0	0.0
148.00	Appertunance(s)	9.2	117.1	40.4	0.0	0.0	579.4	0.0	74.0	49.6	770.5	0.0	0.0
								Totals:		6,141.96	85,716.8	0.00	0.00

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:40:09 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 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	-94.30	-7.31	0.00	-868.67	0.00	868.67	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.149
1.00	-93.88	-7.30	0.00	-861.37	0.00	861.37	4,759.25	2,379.62	9,250.46	4,632.10	0.00	-0.01	0.149
2.00	-93.45	-7.29	0.00	-854.07	0.00	854.07	4,745.10	2,372.55	9,184.62	4,599.13	0.00	-0.02	0.148
3.00	-93.02	-7.28	0.00	-846.78	0.00	846.78	4,730.90	2,365.45	9,118.92	4,566.24	0.01	-0.03	0.148
4.00	-92.59	-7.27	0.00	-839.49	0.00	839.49	4,716.66	2,358.33	9,053.36	4,533.41	0.02	-0.04	0.147
5.00	-92.16	-7.27	0.00	-832.22	0.00	832.22	4,702.37	2,351.19	8,987.95	4,500.66	0.03	-0.05	0.147
6.00	-91.72	-7.26	0.00	-824.95	0.00	824.95	4,688.04	2,344.02	8,922.68	4,467.97	0.04	-0.06	0.146
7.00	-91.29	-7.25	0.00	-817.70	0.00	817.70	4,673.67	2,336.83	8,857.56	4,435.36	0.05	-0.07	0.146
8.00	-90.85	-7.24	0.00	-810.45	0.00	810.45	4,659.25	2,329.62	8,792.59	4,402.83	0.06	-0.08	0.146
9.00	-90.42	-7.23	0.00	-803.21	0.00	803.21	4,644.78	2,322.39	8,727.76	4,370.37	0.08	-0.09	0.145
10.00	-89.98	-7.22	0.00	-795.98	0.00	795.98	4,630.27	2,315.13	8,663.09	4,337.98	0.10	-0.09	0.145
11.00	-89.42	-7.21	0.00	-788.76	0.00	788.76	4,615.71	2,307.86	8,598.56	4,305.67	0.12	-0.10	0.144
12.00	-88.85	-7.20	0.00	-781.55	0.00	781.55	4,601.11	2,300.55	8,534.19	4,273.44	0.14	-0.11	0.144
13.00	-88.29	-7.19	0.00	-774.34	0.00	774.34	4,586.46	2,293.23	8,469.97	4,241.28	0.17	-0.12	0.143
14.00	-87.72	-7.19	0.00	-767.15	0.00	767.15	4,571.77	2,285.88	8,405.90	4,209.20	0.20	-0.13	0.143
15.00	-87.15	-7.18	0.00	-759.96	0.00	759.96	4,557.03	2,278.52	8,341.98	4,177.19	0.22	-0.14	0.142
16.00	-86.59	-7.17	0.00	-752.79	0.00	752.79	4,542.25	2,271.13	8,278.23	4,145.27	0.26	-0.15	0.142
17.00	-86.02	-7.16	0.00	-745.62	0.00	745.62	4,527.42	2,263.71	8,214.63	4,113.42	0.29	-0.16	0.141
18.00	-85.46	-7.15	0.00	-738.47	0.00	738.47	4,512.55	2,256.28	8,151.19	4,081.65	0.32	-0.17	0.141
19.00	-84.89	-7.14	0.00	-731.32	0.00	731.32	4,497.63	2,248.82	8,087.91	4,049.96	0.36	-0.18	0.140
20.00	-84.33	-7.13	0.00	-724.18	0.00	724.18	4,482.67	2,241.34	8,024.78	4,018.36	0.40	-0.19	0.140
21.00	-83.77	-7.12	0.00	-717.05	0.00	717.05	4,467.66	2,233.83	7,961.82	3,986.83	0.44	-0.20	0.139
22.00	-83.20	-7.11	0.00	-709.94	0.00	709.94	4,452.61	2,226.31	7,899.03	3,955.38	0.48	-0.21	0.139
23.00	-82.64	-7.10	0.00	-702.83	0.00	702.83	4,437.51	2,218.76	7,836.39	3,924.02	0.53	-0.22	0.138
24.00	-82.08	-7.09	0.00	-695.73	0.00	695.73	4,422.37	2,211.19	7,773.92	3,892.74	0.58	-0.23	0.137
25.00	-81.52	-7.08	0.00	-688.64	0.00	688.64	4,403.56	2,201.78	7,705.28	3,858.37	0.63	-0.24	0.137
26.00	-80.96	-7.07	0.00	-681.57	0.00	681.57	4,383.43	2,191.72	7,634.65	3,823.00	0.68	-0.25	0.137
27.00	-80.40	-7.06	0.00	-674.50	0.00	674.50	4,363.30	2,181.65	7,564.34	3,787.79	0.73	-0.26	0.136
28.00	-79.84	-7.05	0.00	-667.44	0.00	667.44	4,343.18	2,171.59	7,494.36	3,752.75	0.79	-0.27	0.136
29.00	-79.28	-7.04	0.00	-660.40	0.00	660.40	4,323.05	2,161.52	7,424.70	3,717.87	0.84	-0.28	0.135
30.00	-78.73	-7.03	0.00	-653.36	0.00	653.36	4,302.92	2,151.46	7,355.37	3,683.15	0.90	-0.29	0.135
31.00	-78.17	-7.01	0.00	-646.33	0.00	646.33	4,282.79	2,141.40	7,286.37	3,648.60	0.97	-0.30	0.134
32.00	-77.62	-7.00	0.00	-639.32	0.00	639.32	4,262.67	2,131.33	7,217.68	3,614.21	1.03	-0.31	0.134
33.00	-77.06	-6.99	0.00	-632.32	0.00	632.32	4,242.54	2,121.27	7,149.33	3,579.98	1.10	-0.32	0.133
34.00	-76.51	-6.98	0.00	-625.33	0.00	625.33	4,222.41	2,111.21	7,081.30	3,545.91	1.16	-0.33	0.133
35.00	-75.96	-6.97	0.00	-618.34	0.00	618.34	4,202.28	2,101.14	7,013.59	3,512.01	1.23	-0.34	0.132
36.00	-75.41	-6.96	0.00	-611.38	0.00	611.38	4,182.16	2,091.08	6,946.22	3,478.27	1.31	-0.35	0.132
37.00	-74.85	-6.94	0.00	-604.42	0.00	604.42	4,162.03	2,081.01	6,879.16	3,444.69	1.38	-0.36	0.132
38.00	-74.31	-6.93	0.00	-597.48	0.00	597.48	4,141.90	2,070.95	6,812.43	3,411.28	1.46	-0.37	0.131
39.00	-73.76	-6.92	0.00	-590.55	0.00	590.55	4,121.77	2,060.89	6,746.03	3,378.03	1.54	-0.38	0.130
40.00	-73.21	-6.91	0.00	-583.63	0.00	583.63	4,101.65	2,050.82	6,679.95	3,344.94	1.62	-0.39	0.130
41.00	-72.66	-6.90	0.00	-576.72	0.00	576.72	4,081.52	2,040.76	6,614.19	3,312.01	1.70	-0.40	0.129
41.04	-72.64	-6.89	0.00	-576.47	0.00	576.47	4,080.79	2,040.40	6,611.82	3,310.82	1.70	-0.40	0.129
42.00	-71.93	-6.88	0.00	-569.83	0.00	569.83	4,061.39	2,030.70	6,548.77	3,279.25	1.78	-0.41	0.128
43.00	-71.19	-6.86	0.00	-562.96	0.00	562.96	4,041.26	2,020.63	6,483.66	3,246.65	1.87	-0.42	0.127
44.00	-70.45	-6.84	0.00	-556.10	0.00	556.10	4,021.14	2,010.57	6,418.89	3,214.21	1.96	-0.43	0.126
45.00	-69.71	-6.83	0.00	-549.25	0.00	549.25	4,001.01	2,000.51	6,354.43	3,181.94	2.05	-0.44	0.126
46.00	-68.98	-6.81	0.00	-542.43	0.00	542.43	3,980.88	1,990.44	6,290.31	3,149.83	2.14	-0.45	0.125
46.63	-68.52	-6.80	0.00	-538.13	0.00	538.13	3,413.42	1,706.71	5,499.77	2,753.97	2.20	-0.46	0.137
47.00	-68.33	-6.79	0.00	-535.62	0.00	535.62	3,408.82	1,704.41	5,482.17	2,745.16	2.24	-0.46	0.137
48.00	-67.81	-6.78	0.00	-528.82	0.00	528.82	3,396.37	1,698.19	5,434.70	2,721.39	2.34	-0.47	0.136

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 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

49.00	-67.30	-6.76	0.00	-522.04	0.00	522.04	3,383.87	1,691.93	5,387.36	2,697.69	2.44	-0.48	0.135
50.00	-66.79	-6.75	0.00	-515.28	0.00	515.28	3,371.32	1,685.66	5,340.15	2,674.04	2.54	-0.49	0.135
51.00	-66.28	-6.73	0.00	-508.53	0.00	508.53	3,358.73	1,679.37	5,293.07	2,650.47	2.64	-0.50	0.134
52.00	-65.77	-6.72	0.00	-501.79	0.00	501.79	3,346.10	1,673.05	5,246.13	2,626.96	2.75	-0.51	0.133
53.00	-65.26	-6.70	0.00	-495.08	0.00	495.08	3,333.42	1,666.71	5,199.32	2,603.52	2.86	-0.52	0.132
54.00	-64.75	-6.69	0.00	-488.37	0.00	488.37	3,320.69	1,660.35	5,152.64	2,580.15	2.97	-0.53	0.131
55.00	-64.25	-6.67	0.00	-481.69	0.00	481.69	3,307.92	1,653.96	5,106.10	2,556.84	3.08	-0.54	0.130
56.00	-63.74	-6.65	0.00	-475.02	0.00	475.02	3,295.11	1,647.55	5,059.70	2,533.61	3.19	-0.55	0.129
57.00	-63.24	-6.64	0.00	-468.36	0.00	468.36	3,282.25	1,641.12	5,013.43	2,510.44	3.31	-0.56	0.128
58.00	-62.73	-6.62	0.00	-461.73	0.00	461.73	3,269.34	1,634.67	4,967.30	2,487.34	3.43	-0.57	0.127
59.00	-62.23	-6.60	0.00	-455.11	0.00	455.11	3,256.39	1,628.19	4,921.32	2,464.32	3.55	-0.59	0.126
60.00	-61.73	-6.59	0.00	-448.50	0.00	448.50	3,242.50	1,621.25	4,874.14	2,440.69	3.68	-0.60	0.125
61.00	-61.23	-6.57	0.00	-441.92	0.00	441.92	3,225.25	1,612.62	4,822.15	2,414.66	3.80	-0.61	0.124
62.00	-60.73	-6.55	0.00	-435.35	0.00	435.35	3,208.00	1,604.00	4,770.44	2,388.76	3.93	-0.62	0.124
63.00	-60.23	-6.53	0.00	-428.80	0.00	428.80	3,190.75	1,595.37	4,719.00	2,363.01	4.06	-0.63	0.123
64.00	-59.74	-6.52	0.00	-422.26	0.00	422.26	3,173.49	1,586.75	4,667.85	2,337.39	4.19	-0.64	0.122
65.00	-59.24	-6.50	0.00	-415.75	0.00	415.75	3,156.24	1,578.12	4,616.98	2,311.92	4.33	-0.65	0.121
66.00	-58.74	-6.48	0.00	-409.25	0.00	409.25	3,138.99	1,569.49	4,566.38	2,286.58	4.47	-0.66	0.120
67.00	-58.25	-6.46	0.00	-402.77	0.00	402.77	3,121.74	1,560.87	4,516.06	2,261.39	4.60	-0.67	0.119
68.00	-57.76	-6.44	0.00	-396.31	0.00	396.31	3,104.48	1,552.24	4,466.02	2,236.33	4.75	-0.68	0.118
69.00	-57.27	-6.42	0.00	-389.87	0.00	389.87	3,087.23	1,543.62	4,416.26	2,211.41	4.89	-0.69	0.117
70.00	-56.78	-6.40	0.00	-383.45	0.00	383.45	3,069.98	1,534.99	4,366.78	2,186.64	5.03	-0.70	0.116
71.00	-56.29	-6.38	0.00	-377.04	0.00	377.04	3,052.73	1,526.36	4,317.58	2,162.00	5.18	-0.71	0.115
72.00	-55.80	-6.37	0.00	-370.66	0.00	370.66	3,035.48	1,517.74	4,268.66	2,137.50	5.33	-0.72	0.114
73.00	-55.31	-6.35	0.00	-364.29	0.00	364.29	3,018.22	1,509.11	4,220.01	2,113.14	5.48	-0.73	0.114
74.00	-54.82	-6.33	0.00	-357.95	0.00	357.95	3,000.97	1,500.49	4,171.65	2,088.92	5.64	-0.74	0.113
75.00	-54.12	-6.26	0.00	-351.62	0.00	351.62	2,983.72	1,491.86	4,123.56	2,064.84	5.79	-0.75	0.111
76.00	-53.64	-6.24	0.00	-345.37	0.00	345.37	2,966.47	1,483.23	4,075.75	2,040.90	5.95	-0.76	0.110
77.00	-53.16	-6.22	0.00	-339.13	0.00	339.13	2,949.22	1,474.61	4,028.22	2,017.11	6.11	-0.77	0.109
78.00	-52.68	-6.20	0.00	-332.92	0.00	332.92	2,931.96	1,465.98	3,980.97	1,993.44	6.27	-0.78	0.108
79.00	-52.20	-6.17	0.00	-326.72	0.00	326.72	2,914.71	1,457.36	3,934.00	1,969.92	6.44	-0.79	0.107
80.00	-51.73	-6.15	0.00	-320.55	0.00	320.55	2,897.46	1,448.73	3,887.31	1,946.54	6.60	-0.80	0.106
81.00	-51.25	-6.14	0.00	-314.39	0.00	314.39	2,880.21	1,440.10	3,840.89	1,923.30	6.77	-0.81	0.105
81.49	-51.02	-6.13	0.00	-311.38	0.00	311.38	2,871.73	1,435.86	3,818.18	1,911.93	6.86	-0.81	0.105
82.00	-50.71	-6.11	0.00	-308.26	0.00	308.26	2,862.96	1,431.48	3,794.76	1,900.20	6.94	-0.82	0.103
83.00	-50.10	-6.09	0.00	-302.15	0.00	302.15	2,845.70	1,422.85	3,748.90	1,877.24	7.12	-0.83	0.102
84.00	-49.50	-6.06	0.00	-296.06	0.00	296.06	2,828.45	1,414.23	3,703.32	1,854.41	7.29	-0.84	0.101
85.00	-48.90	-6.04	0.00	-290.00	0.00	290.00	2,811.20	1,405.60	3,658.02	1,831.73	7.47	-0.85	0.099
86.00	-48.30	-6.02	0.00	-283.96	0.00	283.96	2,793.95	1,396.97	3,613.00	1,809.19	7.65	-0.86	0.098
86.18	-48.19	-6.01	0.00	-282.90	0.00	282.90	2,344.74	1,172.37	3,101.47	1,553.04	7.68	-0.86	0.108
87.00	-47.82	-5.99	0.00	-277.95	0.00	277.95	2,336.11	1,168.06	3,074.51	1,539.54	7.83	-0.87	0.107
88.00	-47.38	-5.97	0.00	-271.95	0.00	271.95	2,325.60	1,162.80	3,041.88	1,523.20	8.01	-0.88	0.105
89.00	-46.93	-5.95	0.00	-265.98	0.00	265.98	2,315.03	1,157.52	3,009.36	1,506.91	8.19	-0.89	0.104
90.00	-46.49	-5.93	0.00	-260.03	0.00	260.03	2,304.43	1,152.21	2,976.95	1,490.69	8.38	-0.90	0.102
91.00	-46.05	-5.91	0.00	-254.10	0.00	254.10	2,293.77	1,146.89	2,944.66	1,474.52	8.57	-0.90	0.101
92.00	-45.61	-5.88	0.00	-248.20	0.00	248.20	2,283.08	1,141.54	2,912.48	1,458.40	8.76	-0.91	0.099
93.00	-45.17	-5.86	0.00	-242.31	0.00	242.31	2,272.33	1,136.17	2,880.41	1,442.35	8.95	-0.92	0.098
94.00	-44.73	-5.84	0.00	-236.45	0.00	236.45	2,261.54	1,130.77	2,848.47	1,426.35	9.15	-0.93	0.096
95.00	-44.29	-5.82	0.00	-230.61	0.00	230.61	2,249.56	1,124.78	2,815.20	1,409.69	9.34	-0.94	0.095
96.00	-43.85	-5.79	0.00	-224.80	0.00	224.80	2,235.18	1,117.59	2,779.15	1,391.64	9.54	-0.95	0.093
97.00	-43.42	-5.77	0.00	-219.00	0.00	219.00	2,220.81	1,110.40	2,743.33	1,373.70	9.74	-0.96	0.092
98.00	-42.98	-5.75	0.00	-213.23	0.00	213.23	2,206.43	1,103.21	2,707.75	1,355.89	9.94	-0.97	0.090
99.00	-42.55	-5.73	0.00	-207.48	0.00	207.48	2,192.05	1,096.03	2,672.39	1,338.18	10.15	-0.98	0.089
100.00	-41.79	-5.59	0.00	-201.54	0.00	201.54	2,177.68	1,088.84	2,637.27	1,320.60	10.35	-0.99	0.087
101.00	-41.36	-5.57	0.00	-195.94	0.00	195.94	2,163.30	1,081.65	2,602.39	1,303.13	10.56	-1.00	0.085
102.00	-40.94	-5.55	0.00	-190.37	0.00	190.37	2,148.92	1,074.46	2,567.73	1,285.77	10.77	-1.00	0.084
103.00	-40.51	-5.52	0.00	-184.82	0.00	184.82	2,134.54	1,067.27	2,533.31	1,268.54	10.98	-1.01	0.082

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 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

104.00	-40.09	-5.50	0.00	-179.30	0.00	179.30	2,120.17	1,060.08	2,499.12	1,251.42	11.20	-1.02	0.081
105.00	-39.67	-5.48	0.00	-173.80	0.00	173.80	2,105.79	1,052.90	2,465.16	1,234.41	11.41	-1.03	0.079
105.00	-39.67	-5.48	0.00	-173.80	0.00	173.80	2,105.79	1,052.90	2,465.16	1,234.41	11.41	-1.03	0.160
106.00	-39.33	-5.46	0.00	-168.32	0.00	168.32	2,091.41	1,045.71	2,431.43	1,217.52	11.63	-1.04	0.157
107.00	-38.99	-5.44	0.00	-162.87	0.00	162.87	2,077.04	1,038.52	2,397.94	1,200.75	11.85	-1.05	0.154
108.00	-38.65	-5.42	0.00	-157.43	0.00	157.43	2,062.66	1,031.33	2,364.68	1,184.10	12.07	-1.07	0.152
109.00	-38.31	-5.41	0.00	-152.00	0.00	152.00	2,048.28	1,024.14	2,331.65	1,167.56	12.29	-1.09	0.149
110.00	-37.51	-5.28	0.00	-146.60	0.00	146.60	2,033.91	1,016.95	2,298.85	1,151.13	12.52	-1.10	0.146
111.00	-37.17	-5.26	0.00	-141.32	0.00	141.32	2,019.53	1,009.77	2,266.28	1,134.83	12.76	-1.12	0.143
112.00	-36.84	-5.24	0.00	-136.06	0.00	136.06	2,005.15	1,002.58	2,233.95	1,118.64	12.99	-1.13	0.140
113.00	-36.50	-5.22	0.00	-130.82	0.00	130.82	1,990.78	995.39	2,201.85	1,102.56	13.23	-1.15	0.137
114.00	-36.19	-5.21	0.00	-125.60	0.00	125.60	1,976.40	988.20	2,169.98	1,086.60	13.47	-1.16	0.134
115.00	-35.87	-5.19	0.00	-120.39	0.00	120.39	1,962.02	981.01	2,138.35	1,070.76	13.72	-1.18	0.131
116.00	-35.56	-5.17	0.00	-115.20	0.00	115.20	1,947.65	973.82	2,106.94	1,055.04	13.97	-1.19	0.127
117.00	-35.25	-5.15	0.00	-110.04	0.00	110.04	1,933.27	966.64	2,075.77	1,039.43	14.22	-1.20	0.124
118.00	-34.94	-5.13	0.00	-104.89	0.00	104.89	1,918.89	959.45	2,044.84	1,023.94	14.47	-1.22	0.121
119.00	-34.63	-5.11	0.00	-99.76	0.00	99.76	1,904.52	952.26	2,014.13	1,008.56	14.73	-1.23	0.117
120.00	-28.89	-4.32	0.00	-94.65	0.00	94.65	1,890.14	945.07	1,983.66	993.30	14.99	-1.24	0.111
121.00	-28.61	-4.29	0.00	-90.33	0.00	90.33	1,875.76	937.88	1,953.41	978.16	15.25	-1.26	0.108
122.00	-28.32	-4.27	0.00	-86.04	0.00	86.04	1,861.39	930.69	1,923.40	963.13	15.51	-1.27	0.105
123.00	-28.03	-4.25	0.00	-81.77	0.00	81.77	1,847.01	923.50	1,893.63	948.22	15.78	-1.28	0.101
124.00	-27.75	-4.23	0.00	-77.51	0.00	77.51	1,832.63	916.32	1,864.08	933.43	16.05	-1.29	0.098
124.99	-27.46	-4.22	0.00	-73.31	0.00	73.31	1,818.34	909.17	1,834.95	918.84	16.32	-1.30	0.095
125.00	-27.46	-4.21	0.00	-73.28	0.00	73.28	1,818.26	909.13	1,834.77	918.75	16.32	-1.30	0.095
126.00	-27.10	-4.19	0.00	-69.08	0.00	69.08	1,803.88	901.94	1,805.69	904.19	16.60	-1.31	0.091
127.00	-26.73	-4.16	0.00	-64.89	0.00	64.89	1,789.50	894.75	1,776.84	889.74	16.87	-1.32	0.088
128.00	-26.37	-4.14	0.00	-60.73	0.00	60.73	1,775.13	887.56	1,748.23	875.41	17.15	-1.33	0.084
128.68	-26.13	-4.13	0.00	-57.91	0.00	57.91	1,444.76	722.38	1,452.22	727.19	17.34	-1.34	0.098
129.00	-26.04	-4.11	0.00	-56.59	0.00	56.59	1,441.76	720.88	1,445.49	723.82	17.43	-1.34	0.096
130.00	-25.78	-4.09	0.00	-52.48	0.00	52.48	1,430.26	715.13	1,422.41	712.26	17.71	-1.35	0.092
131.00	-21.72	-3.41	0.00	-48.36	0.00	48.36	1,418.76	709.38	1,399.51	700.79	18.00	-1.36	0.084
132.00	-21.47	-3.39	0.00	-44.96	0.00	44.96	1,407.25	703.63	1,376.79	689.42	18.29	-1.37	0.080
133.00	-21.22	-3.36	0.00	-41.57	0.00	41.57	1,395.75	697.88	1,354.26	678.14	18.57	-1.38	0.077
134.00	-20.98	-3.34	0.00	-38.21	0.00	38.21	1,384.25	692.13	1,331.92	666.95	18.87	-1.39	0.072
135.00	-20.73	-3.32	0.00	-34.87	0.00	34.87	1,372.75	686.38	1,309.76	655.86	19.16	-1.40	0.068
136.00	-20.49	-3.29	0.00	-31.55	0.00	31.55	1,361.25	680.62	1,287.79	644.85	19.45	-1.41	0.064
137.00	-18.30	-2.96	0.00	-28.26	0.00	28.26	1,349.75	674.87	1,266.01	633.94	19.75	-1.41	0.058
138.00	-18.07	-2.94	0.00	-25.29	0.00	25.29	1,338.25	669.12	1,244.41	623.13	20.04	-1.42	0.054
139.00	-17.84	-2.92	0.00	-22.35	0.00	22.35	1,326.75	663.37	1,222.99	612.41	20.34	-1.43	0.050
140.00	-17.61	-2.89	0.00	-19.43	0.00	19.43	1,315.24	657.62	1,201.77	601.78	20.64	-1.43	0.046
141.00	-10.49	-1.60	0.00	-16.54	0.00	16.54	1,303.74	651.87	1,180.73	591.24	20.94	-1.44	0.036
142.00	-10.29	-1.57	0.00	-14.94	0.00	14.94	1,292.24	646.12	1,159.87	580.80	21.24	-1.44	0.034
143.00	-10.10	-1.55	0.00	-13.37	0.00	13.37	1,280.74	640.37	1,139.20	570.45	21.55	-1.44	0.031
144.00	-9.90	-1.53	0.00	-11.82	0.00	11.82	1,269.24	634.62	1,118.72	560.19	21.85	-1.45	0.029
145.00	-9.71	-1.50	0.00	-10.29	0.00	10.29	1,257.74	628.87	1,098.42	550.03	22.15	-1.45	0.026
146.00	-9.52	-1.48	0.00	-8.79	0.00	8.79	1,246.24	623.12	1,078.30	539.95	22.46	-1.45	0.024
147.00	-9.32	-1.46	0.00	-7.31	0.00	7.31	1,234.73	617.37	1,058.38	529.98	22.76	-1.46	0.021
148.00	0.00	-1.22	0.00	-5.85	0.00	5.85	1,223.23	611.62	1,038.64	520.09	23.07	-1.46	0.011

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		8.9	0.0					0.0	0.0	8.9	0.0	0.0	0.0
1.00		17.7	224.3					0.0	66.8	17.7	291.1	0.0	0.0
2.00		17.7	223.4					0.0	66.8	17.7	290.2	0.0	0.0
3.00		17.6	222.4					0.0	66.8	17.6	289.2	0.0	0.0
4.00		17.5	221.5					0.0	66.8	17.5	288.3	0.0	0.0
5.00		17.4	220.6					0.0	66.8	17.4	287.4	0.0	0.0
6.00		17.4	219.7					0.0	66.8	17.4	286.5	0.0	0.0
7.00		17.3	218.7					0.0	66.8	17.3	285.5	0.0	0.0
8.00		17.2	217.8					0.0	66.8	17.2	284.6	0.0	0.0
9.00		17.1	216.9					0.0	66.8	17.1	283.7	0.0	0.0
10.00		17.1	216.0					0.0	66.8	17.1	282.8	0.0	0.0
11.00		17.0	215.1					0.0	127.1	17.0	342.2	0.0	0.0
12.00		16.9	214.1					0.0	127.1	16.9	341.3	0.0	0.0
13.00		16.9	213.2					0.0	127.1	16.9	340.4	0.0	0.0
14.00		16.8	212.3					0.0	127.1	16.8	339.4	0.0	0.0
15.00		16.7	211.4					0.0	127.1	16.7	338.5	0.0	0.0
16.00		16.6	210.4					0.0	127.1	16.6	337.6	0.0	0.0
17.00		16.6	209.5					0.0	127.1	16.6	336.7	0.0	0.0
18.00		16.5	208.6					0.0	127.1	16.5	335.7	0.0	0.0
19.00		16.4	207.7					0.0	127.1	16.4	334.8	0.0	0.0
20.00		16.4	206.8					0.0	127.1	16.4	333.9	0.0	0.0
21.00		16.3	205.8					0.0	127.1	16.3	333.0	0.0	0.0
22.00		16.2	204.9					0.0	127.1	16.2	332.1	0.0	0.0
23.00		16.1	204.0					0.0	127.1	16.1	331.1	0.0	0.0
24.00		16.1	203.1					0.0	127.1	16.1	330.2	0.0	0.0
25.00		16.0	202.1					0.0	127.1	16.0	329.3	0.0	0.0
26.00		15.9	201.2					0.0	127.1	15.9	328.4	0.0	0.0
27.00		15.8	200.3					0.0	127.1	15.8	327.5	0.0	0.0
28.00		15.8	199.4					0.0	127.1	15.8	326.5	0.0	0.0
29.00		15.7	198.5					0.0	127.1	15.7	325.6	0.0	0.0
30.00		15.7	197.5					0.0	127.1	15.7	324.7	0.0	0.0
31.00		15.7	196.6					0.0	127.1	15.7	323.8	0.0	0.0
32.00		15.8	195.7					0.0	127.1	15.8	322.8	0.0	0.0
33.00		15.8	194.8					0.0	127.1	15.8	321.9	0.0	0.0
34.00		15.9	193.9					0.0	127.1	15.9	321.0	0.0	0.0
35.00		16.0	192.9					0.0	127.1	16.0	320.1	0.0	0.0
36.00		16.0	192.0					0.0	127.1	16.0	319.2	0.0	0.0
37.00		16.1	191.1					0.0	127.1	16.1	318.2	0.0	0.0
38.00		16.1	190.2					0.0	127.1	16.1	317.3	0.0	0.0
39.00		16.2	189.2					0.0	127.1	16.2	316.4	0.0	0.0
40.00		16.2	188.3					0.0	127.1	16.2	315.5	0.0	0.0
41.00		8.4	187.4					0.0	127.1	8.4	314.5	0.0	0.0
41.04	Bot - Section 2	8.3	6.8					0.0	4.6	8.3	11.4	0.0	0.0
42.00		16.3	336.9					0.0	122.5	16.3	459.4	0.0	0.0
43.00		16.6	347.9					0.0	127.1	16.6	475.0	0.0	0.0
44.00		16.6	346.2					0.0	127.1	16.6	473.3	0.0	0.0
45.00		16.7	344.5					0.0	127.1	16.7	471.6	0.0	0.0
46.00		13.6	342.8					0.0	127.1	13.6	469.9	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

46.63	Top - Section 1	8.3	215.1					0.0	80.1	8.3	295.2	0.0	0.0
47.00		11.4	58.8					0.0	47.0	11.4	105.8	0.0	0.0
48.00		16.7	158.4					0.0	127.1	16.7	285.5	0.0	0.0
49.00		16.7	157.6					0.0	127.1	16.7	284.7	0.0	0.0
50.00		16.7	156.8					0.0	127.1	16.7	284.0	0.0	0.0
51.00		16.8	156.0					0.0	127.1	16.8	283.2	0.0	0.0
52.00		16.8	155.2					0.0	127.1	16.8	282.4	0.0	0.0
53.00		16.8	154.4					0.0	127.1	16.8	281.6	0.0	0.0
54.00		16.8	153.6					0.0	127.1	16.8	280.8	0.0	0.0
55.00		16.8	152.9					0.0	127.1	16.8	280.0	0.0	0.0
56.00		16.8	152.1					0.0	127.1	16.8	279.2	0.0	0.0
57.00		16.8	151.3					0.0	127.1	16.8	278.4	0.0	0.0
58.00		16.8	150.5					0.0	127.1	16.8	277.6	0.0	0.0
59.00		16.8	149.7					0.0	127.1	16.8	276.8	0.0	0.0
60.00		16.8	148.9					0.0	127.1	16.8	276.1	0.0	0.0
61.00		16.7	148.1					0.0	127.1	16.7	275.3	0.0	0.0
62.00		16.7	147.3					0.0	127.1	16.7	274.5	0.0	0.0
63.00		16.7	146.5					0.0	127.1	16.7	273.7	0.0	0.0
64.00		16.7	145.7					0.0	127.1	16.7	272.9	0.0	0.0
65.00		16.7	145.0					0.0	127.1	16.7	272.1	0.0	0.0
66.00		16.7	144.2					0.0	127.1	16.7	271.3	0.0	0.0
67.00		16.7	143.4					0.0	127.1	16.7	270.5	0.0	0.0
68.00		16.6	142.6					0.0	127.1	16.6	269.7	0.0	0.0
69.00		16.6	141.8					0.0	127.1	16.6	268.9	0.0	0.0
70.00		16.6	141.0					0.0	127.1	16.6	268.2	0.0	0.0
71.00		16.6	140.2					0.0	127.1	16.6	267.4	0.0	0.0
72.00		16.5	139.4					0.0	127.1	16.5	266.6	0.0	0.0
73.00		16.5	138.6					0.0	127.1	16.5	265.8	0.0	0.0
74.00		16.5	137.8					0.0	127.1	16.5	265.0	0.0	0.0
75.00	Appertunance(s)	16.5	137.1	46.4	0.0	0.0	150.6	0.0	127.1	62.8	414.8	0.0	0.0
76.00		16.4	136.3					0.0	127.0	16.4	263.3	0.0	0.0
77.00		16.4	135.5					0.0	127.0	16.4	262.5	0.0	0.0
78.00		16.4	134.7					0.0	127.0	16.4	261.7	0.0	0.0
79.00		16.3	133.9					0.0	127.0	16.3	260.9	0.0	0.0
80.00		16.3	133.1					0.0	127.0	16.3	260.1	0.0	0.0
81.00		12.1	132.3					0.0	127.0	12.1	259.3	0.0	0.0
81.49	Bot - Section 3	8.2	64.7					0.0	62.4	8.2	127.1	0.0	0.0
82.00		12.4	123.6					0.0	64.6	12.4	188.2	0.0	0.0
83.00		16.5	242.0					0.0	127.0	16.5	369.0	0.0	0.0
84.00		16.4	240.5					0.0	127.0	16.4	367.5	0.0	0.0
85.00		16.4	239.1					0.0	127.0	16.4	366.1	0.0	0.0
86.00		9.6	237.6					0.0	127.0	9.6	364.6	0.0	0.0
86.18	Top - Section 2	8.2	41.7					0.0	22.4	8.2	64.1	0.0	0.0
87.00		14.9	89.4					0.0	104.6	14.9	194.0	0.0	0.0
88.00		16.3	108.0					0.0	127.0	16.3	235.0	0.0	0.0
89.00		16.2	107.3					0.0	127.0	16.2	234.3	0.0	0.0
90.00		16.2	106.7					0.0	127.0	16.2	233.7	0.0	0.0
91.00		16.1	106.0					0.0	127.0	16.1	233.0	0.0	0.0
92.00		16.1	105.3					0.0	127.0	16.1	232.3	0.0	0.0
93.00		16.0	104.7					0.0	127.0	16.0	231.7	0.0	0.0
94.00		16.0	104.0					0.0	127.0	16.0	231.0	0.0	0.0
95.00		15.9	103.4					0.0	127.0	15.9	230.4	0.0	0.0
96.00		15.9	102.7					0.0	127.0	15.9	229.7	0.0	0.0
97.00		15.8	102.0					0.0	127.0	15.8	229.0	0.0	0.0
98.00		15.7	101.4					0.0	127.0	15.7	228.4	0.0	0.0
99.00		15.7	100.7					0.0	127.0	15.7	227.7	0.0	0.0
100.00	Appertunance(s)	15.6	100.1	87.9	0.0	139.9	176.5	0.0	127.0	103.6	403.6	0.0	0.0

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.0D + 1.0W — Serviceability 60 mph — 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

101.00		15.6	99.4					0.0	126.7	15.6	226.1	0.0	0.0
102.00		15.5	98.8					0.0	126.7	15.5	225.4	0.0	0.0
103.00		15.5	98.1					0.0	126.7	15.5	224.8	0.0	0.0
104.00		15.4	97.4					0.0	126.7	15.4	224.1	0.0	0.0
105.00	Reinf. Top	15.3	96.8					0.0	126.7	15.3	223.4	0.0	0.0
106.00		15.3	96.1					0.0	59.9	15.3	156.0	0.0	0.0
107.00		15.2	95.5					0.0	59.9	15.2	155.3	0.0	0.0
108.00		15.1	94.8					0.0	59.9	15.1	154.7	0.0	0.0
109.00		15.1	94.1					0.0	59.9	15.1	154.0	0.0	0.0
110.00	Appertunance(s)	15.0	93.5	94.0	0.0	0.0	304.6	0.0	59.9	109.0	458.0	0.0	0.0
111.00		14.9	92.8					0.0	59.6	14.9	152.4	0.0	0.0
112.00		14.9	92.2					0.0	59.6	14.9	151.7	0.0	0.0
113.00		14.8	91.5					0.0	59.6	14.8	151.1	0.0	0.0
114.00		14.7	90.9					0.0	59.6	14.7	150.4	0.0	0.0
115.00		14.7	90.2					0.0	59.6	14.7	149.8	0.0	0.0
116.00		14.6	89.5					0.0	59.6	14.6	149.1	0.0	0.0
117.00		14.5	88.9					0.0	59.6	14.5	148.4	0.0	0.0
118.00		14.5	88.2					0.0	59.6	14.5	147.8	0.0	0.0
119.00		14.4	87.6					0.0	59.6	14.4	147.1	0.0	0.0
120.00	Appertunance(s)	14.3	86.9	702.9	0.0	0.0	2,504.7	0.0	59.6	717.2	2,651.2	0.0	0.0
121.00		14.2	86.2					0.0	55.6	14.2	141.8	0.0	0.0
122.00		14.2	85.6					0.0	55.6	14.2	141.2	0.0	0.0
123.00		14.1	84.9					0.0	55.6	14.1	140.5	0.0	0.0
124.00		14.0	84.3					0.0	55.6	14.0	139.8	0.0	0.0
124.99	Bot - Section 4	7.0	83.1					0.0	55.2	7.0	138.3	0.0	0.0
125.00		7.1	0.9					0.0	0.3	7.1	1.3	0.0	0.0
126.00		14.1	150.8					0.0	55.6	14.1	206.4	0.0	0.0
127.00		14.1	149.6					0.0	55.6	14.1	205.2	0.0	0.0
128.00		11.8	148.5					0.0	55.6	11.8	204.0	0.0	0.0
128.68	Top - Section 3	7.0	100.5					0.0	37.9	7.0	138.4	0.0	0.0
129.00		9.2	21.1					0.0	17.7	9.2	38.8	0.0	0.0
130.00		13.8	65.8					0.0	55.6	13.8	121.3	0.0	0.0
131.00	Appertunance(s)	13.8	65.2	586.7	0.0	24.0	1,716.3	0.0	55.6	600.5	1,837.1	0.0	0.0
132.00		13.7	64.7					0.0	45.0	13.7	109.7	0.0	0.0
133.00		13.6	64.2					0.0	45.0	13.6	109.2	0.0	0.0
134.00		13.5	63.7					0.0	45.0	13.5	108.6	0.0	0.0
135.00		13.4	63.1					0.0	45.0	13.4	108.1	0.0	0.0
136.00		13.3	62.6					0.0	45.0	13.3	107.6	0.0	0.0
137.00	Appertunance(s)	13.3	62.1	261.5	0.0	0.0	809.0	0.0	45.0	274.8	916.1	0.0	0.0
138.00		13.2	61.6					0.0	40.9	13.2	102.4	0.0	0.0
139.00		13.1	61.0					0.0	40.9	13.1	101.9	0.0	0.0
140.00		13.0	60.5					0.0	40.9	13.0	101.4	0.0	0.0
141.00	Appertunance(s)	12.9	60.0	1,171.7	0.0	-288.6	2,783.4	0.0	40.9	1,184.6	2,884.3	0.0	0.0
142.00		12.8	59.4					0.0	28.4	12.8	87.9	0.0	0.0
143.00		12.7	58.9					0.0	28.4	12.7	87.4	0.0	0.0
144.00		12.7	58.4					0.0	28.4	12.7	86.8	0.0	0.0
145.00		12.6	57.9					0.0	28.4	12.6	86.3	0.0	0.0
146.00		12.5	57.3					0.0	28.4	12.5	85.8	0.0	0.0
147.00		12.4	56.8					0.0	28.4	12.4	85.3	0.0	0.0
148.00	Appertunance(s)	6.2	56.3	51.1	0.0	0.0	200.0	0.0	28.4	57.3	284.7	0.0	0.0
								Totals:		5,327.06	45,553.9	0.00	0.00

Site Number: 302515 Code: ANSI/TIA-222-G © 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: SMFR - North, CT Engineering Number: 64559325 2/18/2016 3:40:23 PM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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	-48.89	-6.60	0.00	-785.63	0.00	785.63	4,773.35	2,386.68	9,316.44	4,665.14	0.00	0.00	0.129
1.00	-48.60	-6.59	0.00	-779.03	0.00	779.03	4,759.25	2,379.62	9,250.46	4,632.10	0.00	-0.01	0.129
2.00	-48.31	-6.58	0.00	-772.44	0.00	772.44	4,745.10	2,372.55	9,184.62	4,599.13	0.00	-0.02	0.128
3.00	-48.02	-6.56	0.00	-765.87	0.00	765.87	4,730.90	2,365.45	9,118.92	4,566.24	0.01	-0.03	0.128
4.00	-47.73	-6.55	0.00	-759.30	0.00	759.30	4,716.66	2,358.33	9,053.36	4,533.41	0.01	-0.03	0.127
5.00	-47.44	-6.54	0.00	-752.75	0.00	752.75	4,702.37	2,351.19	8,987.95	4,500.66	0.02	-0.04	0.127
6.00	-47.15	-6.53	0.00	-746.21	0.00	746.21	4,688.04	2,344.02	8,922.68	4,467.97	0.03	-0.05	0.127
7.00	-46.87	-6.52	0.00	-739.67	0.00	739.67	4,673.67	2,336.83	8,857.56	4,435.36	0.04	-0.06	0.126
8.00	-46.58	-6.51	0.00	-733.15	0.00	733.15	4,659.25	2,329.62	8,792.59	4,402.83	0.06	-0.07	0.126
9.00	-46.29	-6.50	0.00	-726.64	0.00	726.64	4,644.78	2,322.39	8,727.76	4,370.37	0.07	-0.08	0.125
10.00	-46.01	-6.49	0.00	-720.14	0.00	720.14	4,630.27	2,315.13	8,663.09	4,337.98	0.09	-0.09	0.125
11.00	-45.67	-6.48	0.00	-713.65	0.00	713.65	4,615.71	2,307.86	8,598.56	4,305.67	0.11	-0.09	0.125
12.00	-45.33	-6.47	0.00	-707.17	0.00	707.17	4,601.11	2,300.55	8,534.19	4,273.44	0.13	-0.10	0.124
13.00	-44.98	-6.46	0.00	-700.70	0.00	700.70	4,586.46	2,293.23	8,469.97	4,241.28	0.15	-0.11	0.124
14.00	-44.64	-6.45	0.00	-694.24	0.00	694.24	4,571.77	2,285.88	8,405.90	4,209.20	0.18	-0.12	0.123
15.00	-44.30	-6.44	0.00	-687.79	0.00	687.79	4,557.03	2,278.52	8,341.98	4,177.19	0.20	-0.13	0.123
16.00	-43.97	-6.43	0.00	-681.35	0.00	681.35	4,542.25	2,271.13	8,278.23	4,145.27	0.23	-0.14	0.122
17.00	-43.63	-6.42	0.00	-674.92	0.00	674.92	4,527.42	2,263.71	8,214.63	4,113.42	0.26	-0.15	0.122
18.00	-43.29	-6.41	0.00	-668.51	0.00	668.51	4,512.55	2,256.28	8,151.19	4,081.65	0.29	-0.16	0.122
19.00	-42.96	-6.39	0.00	-662.10	0.00	662.10	4,497.63	2,248.82	8,087.91	4,049.96	0.33	-0.16	0.121
20.00	-42.62	-6.38	0.00	-655.71	0.00	655.71	4,482.67	2,241.34	8,024.78	4,018.36	0.36	-0.17	0.121
21.00	-42.29	-6.37	0.00	-649.32	0.00	649.32	4,467.66	2,233.83	7,961.82	3,986.83	0.40	-0.18	0.120
22.00	-41.95	-6.36	0.00	-642.95	0.00	642.95	4,452.61	2,226.31	7,899.03	3,955.38	0.44	-0.19	0.120
23.00	-41.62	-6.35	0.00	-636.59	0.00	636.59	4,437.51	2,218.76	7,836.39	3,924.02	0.48	-0.20	0.119
24.00	-41.29	-6.34	0.00	-630.24	0.00	630.24	4,422.37	2,211.19	7,773.92	3,892.74	0.52	-0.21	0.119
25.00	-40.96	-6.33	0.00	-623.89	0.00	623.89	4,403.56	2,201.78	7,705.28	3,858.37	0.57	-0.22	0.118
26.00	-40.63	-6.32	0.00	-617.56	0.00	617.56	4,383.43	2,191.72	7,634.65	3,823.00	0.61	-0.23	0.118
27.00	-40.30	-6.31	0.00	-611.25	0.00	611.25	4,363.30	2,181.65	7,564.34	3,787.79	0.66	-0.24	0.118
28.00	-39.98	-6.30	0.00	-604.94	0.00	604.94	4,343.18	2,171.59	7,494.36	3,752.75	0.71	-0.24	0.117
29.00	-39.65	-6.29	0.00	-598.64	0.00	598.64	4,323.05	2,161.52	7,424.70	3,717.87	0.76	-0.25	0.117
30.00	-39.32	-6.28	0.00	-592.35	0.00	592.35	4,302.92	2,151.46	7,355.37	3,683.15	0.82	-0.26	0.117
31.00	-39.00	-6.26	0.00	-586.08	0.00	586.08	4,282.79	2,141.40	7,286.37	3,648.60	0.87	-0.27	0.116
32.00	-38.68	-6.25	0.00	-579.81	0.00	579.81	4,262.67	2,131.33	7,217.68	3,614.21	0.93	-0.28	0.116
33.00	-38.35	-6.24	0.00	-573.56	0.00	573.56	4,242.54	2,121.27	7,149.33	3,579.98	0.99	-0.29	0.116
34.00	-38.03	-6.23	0.00	-567.32	0.00	567.32	4,222.41	2,111.21	7,081.30	3,545.91	1.05	-0.30	0.115
35.00	-37.71	-6.22	0.00	-561.09	0.00	561.09	4,202.28	2,101.14	7,013.59	3,512.01	1.12	-0.31	0.115
36.00	-37.39	-6.21	0.00	-554.87	0.00	554.87	4,182.16	2,091.08	6,946.22	3,478.27	1.18	-0.32	0.114
37.00	-37.07	-6.19	0.00	-548.66	0.00	548.66	4,162.03	2,081.01	6,879.16	3,444.69	1.25	-0.33	0.114
38.00	-36.75	-6.18	0.00	-542.47	0.00	542.47	4,141.90	2,070.95	6,812.43	3,411.28	1.32	-0.33	0.113
39.00	-36.43	-6.17	0.00	-536.29	0.00	536.29	4,121.77	2,060.89	6,746.03	3,378.03	1.39	-0.34	0.113
40.00	-36.12	-6.16	0.00	-530.12	0.00	530.12	4,101.65	2,050.82	6,679.95	3,344.94	1.46	-0.35	0.113
41.00	-35.80	-6.15	0.00	-523.96	0.00	523.96	4,081.52	2,040.76	6,614.19	3,312.01	1.54	-0.36	0.112
41.04	-35.79	-6.15	0.00	-523.73	0.00	523.73	4,080.79	2,040.40	6,611.82	3,310.82	1.54	-0.36	0.112
42.00	-35.33	-6.13	0.00	-517.81	0.00	517.81	4,061.39	2,030.70	6,548.77	3,279.25	1.61	-0.37	0.111
43.00	-34.86	-6.12	0.00	-511.68	0.00	511.68	4,041.26	2,020.63	6,483.66	3,246.65	1.69	-0.38	0.110
44.00	-34.38	-6.10	0.00	-505.56	0.00	505.56	4,021.14	2,010.57	6,418.89	3,214.21	1.77	-0.39	0.110
45.00	-33.91	-6.09	0.00	-499.46	0.00	499.46	4,001.01	2,000.51	6,354.43	3,181.94	1.86	-0.40	0.109
46.00	-33.44	-6.08	0.00	-493.37	0.00	493.37	3,980.88	1,990.44	6,290.31	3,149.83	1.94	-0.41	0.108
46.63	-33.14	-6.07	0.00	-489.55	0.00	489.55	3,413.42	1,706.71	5,499.77	2,753.97	1.99	-0.41	0.119
47.00	-33.04	-6.06	0.00	-487.30	0.00	487.30	3,408.82	1,704.41	5,482.17	2,745.16	2.03	-0.42	0.119
48.00	-32.75	-6.05	0.00	-481.24	0.00	481.24	3,396.37	1,698.19	5,434.70	2,721.39	2.12	-0.43	0.118

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.0D + 1.0W — Serviceability 60 mph — 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00
Wind Importance Factor : 1.00

49.00	-32.46	-6.03	0.00	-475.19	0.00	475.19	3,383.87	1,691.93	5,387.36	2,697.69	2.21	-0.44	0.117
50.00	-32.18	-6.02	0.00	-469.16	0.00	469.16	3,371.32	1,685.66	5,340.15	2,674.04	2.30	-0.44	0.117
51.00	-31.90	-6.01	0.00	-463.14	0.00	463.14	3,358.73	1,679.37	5,293.07	2,650.47	2.39	-0.45	0.116
52.00	-31.61	-5.99	0.00	-457.14	0.00	457.14	3,346.10	1,673.05	5,246.13	2,626.96	2.49	-0.46	0.115
53.00	-31.33	-5.98	0.00	-451.15	0.00	451.15	3,333.42	1,666.71	5,199.32	2,603.52	2.59	-0.47	0.114
54.00	-31.05	-5.96	0.00	-445.17	0.00	445.17	3,320.69	1,660.35	5,152.64	2,580.15	2.69	-0.48	0.113
55.00	-30.77	-5.95	0.00	-439.20	0.00	439.20	3,307.92	1,653.96	5,106.10	2,556.84	2.79	-0.49	0.113
56.00	-30.49	-5.94	0.00	-433.25	0.00	433.25	3,295.11	1,647.55	5,059.70	2,533.61	2.89	-0.50	0.112
57.00	-30.21	-5.92	0.00	-427.32	0.00	427.32	3,282.25	1,641.12	5,013.43	2,510.44	3.00	-0.51	0.111
58.00	-29.93	-5.91	0.00	-421.40	0.00	421.40	3,269.34	1,634.67	4,967.30	2,487.34	3.11	-0.52	0.110
59.00	-29.65	-5.89	0.00	-415.49	0.00	415.49	3,256.39	1,628.19	4,921.32	2,464.32	3.22	-0.53	0.109
60.00	-29.37	-5.88	0.00	-409.60	0.00	409.60	3,242.50	1,621.25	4,874.14	2,440.69	3.33	-0.54	0.109
61.00	-29.10	-5.86	0.00	-403.72	0.00	403.72	3,225.25	1,612.62	4,822.15	2,414.66	3.45	-0.55	0.108
62.00	-28.82	-5.85	0.00	-397.85	0.00	397.85	3,208.00	1,604.00	4,770.44	2,388.76	3.56	-0.56	0.107
63.00	-28.55	-5.83	0.00	-392.01	0.00	392.01	3,190.75	1,595.37	4,719.00	2,363.01	3.68	-0.57	0.106
64.00	-28.28	-5.82	0.00	-386.17	0.00	386.17	3,173.49	1,586.75	4,667.85	2,337.39	3.80	-0.58	0.106
65.00	-28.00	-5.81	0.00	-380.35	0.00	380.35	3,156.24	1,578.12	4,616.98	2,311.92	3.92	-0.59	0.105
66.00	-27.73	-5.79	0.00	-374.55	0.00	374.55	3,138.99	1,569.49	4,566.38	2,286.58	4.05	-0.60	0.104
67.00	-27.46	-5.78	0.00	-368.76	0.00	368.76	3,121.74	1,560.87	4,516.06	2,261.39	4.17	-0.61	0.103
68.00	-27.19	-5.76	0.00	-362.98	0.00	362.98	3,104.48	1,552.24	4,466.02	2,236.33	4.30	-0.62	0.103
69.00	-26.92	-5.75	0.00	-357.22	0.00	357.22	3,087.23	1,543.62	4,416.26	2,211.41	4.43	-0.63	0.102
70.00	-26.65	-5.73	0.00	-351.48	0.00	351.48	3,069.98	1,534.99	4,366.78	2,186.64	4.56	-0.63	0.101
71.00	-26.38	-5.71	0.00	-345.75	0.00	345.75	3,052.73	1,526.36	4,317.58	2,162.00	4.70	-0.64	0.100
72.00	-26.11	-5.70	0.00	-340.03	0.00	340.03	3,035.48	1,517.74	4,268.66	2,137.50	4.83	-0.65	0.099
73.00	-25.85	-5.68	0.00	-334.33	0.00	334.33	3,018.22	1,509.11	4,220.01	2,113.14	4.97	-0.66	0.099
74.00	-25.58	-5.67	0.00	-328.65	0.00	328.65	3,000.97	1,500.49	4,171.65	2,088.92	5.11	-0.67	0.098
75.00	-25.17	-5.60	0.00	-322.98	0.00	322.98	2,983.72	1,491.86	4,123.56	2,064.84	5.25	-0.68	0.097
76.00	-24.90	-5.59	0.00	-317.38	0.00	317.38	2,966.47	1,483.23	4,075.75	2,040.90	5.40	-0.69	0.096
77.00	-24.64	-5.57	0.00	-311.79	0.00	311.79	2,949.22	1,474.61	4,028.22	2,017.11	5.54	-0.70	0.095
78.00	-24.38	-5.56	0.00	-306.21	0.00	306.21	2,931.96	1,465.98	3,980.97	1,993.44	5.69	-0.71	0.094
79.00	-24.12	-5.54	0.00	-300.65	0.00	300.65	2,914.71	1,457.36	3,934.00	1,969.92	5.84	-0.72	0.093
80.00	-23.86	-5.53	0.00	-295.11	0.00	295.11	2,897.46	1,448.73	3,887.31	1,946.54	5.99	-0.73	0.092
81.00	-23.60	-5.51	0.00	-289.59	0.00	289.59	2,880.21	1,440.10	3,840.89	1,923.30	6.14	-0.74	0.091
81.49	-23.47	-5.51	0.00	-286.88	0.00	286.88	2,871.73	1,435.86	3,818.18	1,911.93	6.22	-0.74	0.091
82.00	-23.28	-5.49	0.00	-284.08	0.00	284.08	2,862.96	1,431.48	3,794.76	1,900.20	6.30	-0.74	0.089
83.00	-22.91	-5.48	0.00	-278.58	0.00	278.58	2,845.70	1,422.85	3,748.90	1,877.24	6.46	-0.75	0.088
84.00	-22.54	-5.46	0.00	-273.11	0.00	273.11	2,828.45	1,414.23	3,703.32	1,854.41	6.62	-0.76	0.087
85.00	-22.18	-5.44	0.00	-267.65	0.00	267.65	2,811.20	1,405.60	3,658.02	1,831.73	6.78	-0.77	0.086
86.00	-21.81	-5.43	0.00	-262.21	0.00	262.21	2,793.95	1,396.97	3,613.00	1,809.19	6.94	-0.78	0.085
86.18	-21.75	-5.42	0.00	-261.25	0.00	261.25	2,344.74	1,172.37	3,101.47	1,553.04	6.97	-0.78	0.094
87.00	-21.55	-5.41	0.00	-256.79	0.00	256.79	2,336.11	1,168.06	3,074.51	1,539.54	7.10	-0.79	0.093
88.00	-21.32	-5.39	0.00	-251.38	0.00	251.38	2,325.60	1,162.80	3,041.88	1,523.20	7.27	-0.80	0.091
89.00	-21.08	-5.37	0.00	-245.99	0.00	245.99	2,315.03	1,157.52	3,009.36	1,506.91	7.44	-0.81	0.090
90.00	-20.85	-5.36	0.00	-240.62	0.00	240.62	2,304.43	1,152.21	2,976.95	1,490.69	7.61	-0.82	0.089
91.00	-20.61	-5.34	0.00	-235.26	0.00	235.26	2,293.77	1,146.89	2,944.66	1,474.52	7.78	-0.82	0.087
92.00	-20.38	-5.32	0.00	-229.92	0.00	229.92	2,283.08	1,141.54	2,912.48	1,458.40	7.95	-0.83	0.086
93.00	-20.15	-5.31	0.00	-224.60	0.00	224.60	2,272.33	1,136.17	2,880.41	1,442.35	8.13	-0.84	0.085
94.00	-19.92	-5.29	0.00	-219.29	0.00	219.29	2,261.54	1,130.77	2,848.47	1,426.35	8.31	-0.85	0.083
95.00	-19.69	-5.28	0.00	-214.00	0.00	214.00	2,249.56	1,124.78	2,815.20	1,409.69	8.49	-0.86	0.082
96.00	-19.46	-5.26	0.00	-208.72	0.00	208.72	2,235.18	1,117.59	2,779.15	1,391.64	8.67	-0.87	0.081
97.00	-19.23	-5.24	0.00	-203.46	0.00	203.46	2,220.81	1,110.40	2,743.33	1,373.70	8.85	-0.88	0.079
98.00	-19.00	-5.23	0.00	-198.22	0.00	198.22	2,206.43	1,103.21	2,707.75	1,355.89	9.03	-0.88	0.078
99.00	-18.77	-5.21	0.00	-192.99	0.00	192.99	2,192.05	1,096.03	2,672.39	1,338.18	9.22	-0.89	0.077
100.00	-18.37	-5.10	0.00	-187.64	0.00	187.64	2,177.68	1,088.84	2,637.27	1,320.60	9.41	-0.90	0.075
101.00	-18.14	-5.09	0.00	-182.54	0.00	182.54	2,163.30	1,081.65	2,602.39	1,303.13	9.60	-0.91	0.074
102.00	-17.91	-5.07	0.00	-177.46	0.00	177.46	2,148.92	1,074.46	2,567.73	1,285.77	9.79	-0.92	0.072
103.00	-17.69	-5.05	0.00	-172.39	0.00	172.39	2,134.54	1,067.27	2,533.31	1,268.54	9.98	-0.92	0.071

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00
Wind Importance Factor : 1.00

104.00	-17.46	-5.04	0.00	-167.33	0.00	167.33	2,120.17	1,060.08	2,499.12	1,251.42	10.18	-0.93	0.070
105.00	-17.24	-5.02	0.00	-162.30	0.00	162.30	2,105.79	1,052.90	2,465.16	1,234.41	10.37	-0.94	0.068
105.00	-17.24	-5.02	0.00	-162.30	0.00	162.30	2,105.79	1,052.90	2,465.16	1,234.41	10.37	-0.94	0.140
106.00	-17.08	-5.00	0.00	-157.28	0.00	157.28	2,091.41	1,045.71	2,431.43	1,217.52	10.57	-0.95	0.137
107.00	-16.93	-4.99	0.00	-152.27	0.00	152.27	2,077.04	1,038.52	2,397.94	1,200.75	10.77	-0.96	0.135
108.00	-16.77	-4.98	0.00	-147.28	0.00	147.28	2,062.66	1,031.33	2,364.68	1,184.10	10.97	-0.98	0.133
109.00	-16.62	-4.96	0.00	-142.30	0.00	142.30	2,048.28	1,024.14	2,331.65	1,167.56	11.18	-0.99	0.130
110.00	-16.16	-4.85	0.00	-137.34	0.00	137.34	2,033.91	1,016.95	2,298.85	1,151.13	11.39	-1.01	0.127
111.00	-16.01	-4.84	0.00	-132.49	0.00	132.49	2,019.53	1,009.77	2,266.28	1,134.83	11.60	-1.02	0.125
112.00	-15.85	-4.82	0.00	-127.65	0.00	127.65	2,005.15	1,002.58	2,233.95	1,118.64	11.82	-1.04	0.122
113.00	-15.70	-4.81	0.00	-122.83	0.00	122.83	1,990.78	995.39	2,201.85	1,102.56	12.04	-1.05	0.119
114.00	-15.55	-4.80	0.00	-118.01	0.00	118.01	1,976.40	988.20	2,169.98	1,086.60	12.26	-1.06	0.116
115.00	-15.40	-4.78	0.00	-113.22	0.00	113.22	1,962.02	981.01	2,138.35	1,070.76	12.48	-1.08	0.114
116.00	-15.25	-4.77	0.00	-108.43	0.00	108.43	1,947.65	973.82	2,106.94	1,055.04	12.71	-1.09	0.111
117.00	-15.10	-4.76	0.00	-103.66	0.00	103.66	1,933.27	966.64	2,075.77	1,039.43	12.94	-1.10	0.108
118.00	-14.95	-4.74	0.00	-98.91	0.00	98.91	1,918.89	959.45	2,044.84	1,023.94	13.17	-1.12	0.104
119.00	-14.80	-4.73	0.00	-94.17	0.00	94.17	1,904.52	952.26	2,014.13	1,008.56	13.41	-1.13	0.101
120.00	-12.17	-3.96	0.00	-89.44	0.00	89.44	1,890.14	945.07	1,983.66	993.30	13.65	-1.14	0.096
121.00	-12.02	-3.95	0.00	-85.48	0.00	85.48	1,875.76	937.88	1,953.41	978.16	13.89	-1.15	0.094
122.00	-11.88	-3.93	0.00	-81.53	0.00	81.53	1,861.39	930.69	1,923.40	963.13	14.13	-1.17	0.091
123.00	-11.74	-3.92	0.00	-77.60	0.00	77.60	1,847.01	923.50	1,893.63	948.22	14.38	-1.18	0.088
124.00	-11.60	-3.90	0.00	-73.69	0.00	73.69	1,832.63	916.32	1,864.08	933.43	14.62	-1.19	0.085
124.99	-11.46	-3.89	0.00	-69.81	0.00	69.81	1,818.34	909.17	1,834.95	918.84	14.87	-1.20	0.082
125.00	-11.46	-3.89	0.00	-69.79	0.00	69.79	1,818.26	909.13	1,834.77	918.75	14.87	-1.20	0.082
126.00	-11.26	-3.87	0.00	-65.90	0.00	65.90	1,803.88	901.94	1,805.69	904.19	15.13	-1.21	0.079
127.00	-11.05	-3.85	0.00	-62.03	0.00	62.03	1,789.50	894.75	1,776.84	889.74	15.38	-1.22	0.076
128.00	-10.85	-3.84	0.00	-58.17	0.00	58.17	1,775.13	887.56	1,748.23	875.41	15.64	-1.23	0.073
128.68	-10.71	-3.83	0.00	-55.56	0.00	55.56	1,444.76	722.38	1,452.22	727.19	15.81	-1.23	0.084
129.00	-10.67	-3.82	0.00	-54.34	0.00	54.34	1,441.76	720.88	1,445.49	723.82	15.90	-1.24	0.082
130.00	-10.55	-3.81	0.00	-50.52	0.00	50.52	1,430.26	715.13	1,422.41	712.26	16.16	-1.25	0.078
131.00	-8.72	-3.17	0.00	-46.69	0.00	46.69	1,418.76	709.38	1,399.51	700.79	16.42	-1.26	0.073
132.00	-8.61	-3.15	0.00	-43.52	0.00	43.52	1,407.25	703.63	1,376.79	689.42	16.68	-1.27	0.069
133.00	-8.50	-3.14	0.00	-40.37	0.00	40.37	1,395.75	697.88	1,354.26	678.14	16.95	-1.27	0.066
134.00	-8.39	-3.12	0.00	-37.23	0.00	37.23	1,384.25	692.13	1,331.92	666.95	17.22	-1.28	0.062
135.00	-8.29	-3.11	0.00	-34.10	0.00	34.10	1,372.75	686.38	1,309.76	655.86	17.49	-1.29	0.058
136.00	-8.18	-3.09	0.00	-30.99	0.00	30.99	1,361.25	680.62	1,287.79	644.85	17.76	-1.30	0.054
137.00	-7.27	-2.80	0.00	-27.90	0.00	27.90	1,349.75	674.87	1,266.01	633.94	18.03	-1.30	0.049
138.00	-7.17	-2.78	0.00	-25.10	0.00	25.10	1,338.25	669.12	1,244.41	623.13	18.30	-1.31	0.046
139.00	-7.06	-2.77	0.00	-22.32	0.00	22.32	1,326.75	663.37	1,222.99	612.41	18.58	-1.32	0.042
140.00	-6.96	-2.76	0.00	-19.55	0.00	19.55	1,315.24	657.62	1,201.77	601.78	18.86	-1.32	0.038
141.00	-4.11	-1.50	0.00	-16.79	0.00	16.79	1,303.74	651.87	1,180.73	591.24	19.13	-1.33	0.032
142.00	-4.02	-1.49	0.00	-15.29	0.00	15.29	1,292.24	646.12	1,159.87	580.80	19.41	-1.33	0.029
143.00	-3.93	-1.48	0.00	-13.80	0.00	13.80	1,280.74	640.37	1,139.20	570.45	19.69	-1.33	0.027
144.00	-3.85	-1.46	0.00	-12.32	0.00	12.32	1,269.24	634.62	1,118.72	560.19	19.97	-1.34	0.025
145.00	-3.76	-1.45	0.00	-10.86	0.00	10.86	1,257.74	628.87	1,098.42	550.03	20.25	-1.34	0.023
146.00	-3.67	-1.43	0.00	-9.41	0.00	9.41	1,246.24	623.12	1,078.30	539.95	20.53	-1.34	0.020
147.00	-3.59	-1.42	0.00	-7.98	0.00	7.98	1,234.73	617.37	1,058.38	529.98	20.82	-1.35	0.018
148.00	0.00	-1.33	0.00	-6.56	0.00	6.56	1,223.23	611.62	1,038.64	520.09	21.10	-1.35	0.013

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.25	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.26	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.42	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.96	
Total Unfactored Dead Load:	48.89	k
Seismic Base Shear (E):	1.93	k

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.25
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
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}):	0.26
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	2.42
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
154	147.50	85	1.877	1.913	1.116	0.483	35	72
153	146.50	85	1.852	1.785	1.069	0.461	34	72
152	145.50	86	1.827	1.663	1.024	0.439	33	73
151	144.50	86	1.802	1.546	0.980	0.418	31	73
150	143.50	87	1.777	1.435	0.938	0.397	30	74
149	142.50	87	1.752	1.330	0.897	0.377	29	74
148	141.50	88	1.728	1.230	0.858	0.357	27	74
147	140.50	101	1.703	1.135	0.820	0.338	30	85
146	139.50	101	1.679	1.045	0.783	0.319	28	86
145	138.50	102	1.655	0.959	0.748	0.300	27	86
144	137.50	102	1.631	0.879	0.713	0.282	25	87
143	136.50	107	1.608	0.803	0.681	0.265	25	91
142	135.50	108	1.584	0.730	0.649	0.248	23	91
141	134.50	108	1.561	0.663	0.618	0.231	22	92
140	133.50	109	1.538	0.599	0.589	0.215	20	92
139	132.50	109	1.515	0.538	0.561	0.199	19	93
138	131.50	110	1.492	0.482	0.533	0.184	18	93
137	130.50	121	1.469	0.429	0.507	0.169	18	102
136	129.50	121	1.447	0.379	0.482	0.155	16	103
135	128.84	39	1.432	0.348	0.466	0.146	5	33
134	128.34	138	1.421	0.325	0.454	0.139	17	117
133	127.50	204	1.403	0.289	0.435	0.127	23	173
132	126.50	205	1.381	0.248	0.412	0.114	20	174
131	125.50	206	1.359	0.211	0.391	0.102	18	175
130	125.00	1	1.348	0.193	0.380	0.096	0	1
129	124.50	138	1.337	0.176	0.370	0.090	11	117
128	123.50	140	1.316	0.143	0.350	0.078	9	119
127	122.50	140	1.295	0.113	0.332	0.066	8	119
126	121.50	141	1.274	0.086	0.313	0.056	7	120
125	120.50	142	1.253	0.060	0.296	0.045	6	120
124	119.50	146	1.232	0.037	0.279	0.035	4	124
123	118.50	147	1.212	0.016	0.264	0.025	3	125
122	117.50	148	1.191	-0.003	0.248	0.016	2	125
121	116.50	148	1.171	-0.021	0.234	0.007	1	126

© 2007 - 2016 by ATC IP LLC. All rights reserved.

120	115.50	149	1.151	-0.037	0.220	-0.001	0	126
119	114.50	150	1.131	-0.051	0.207	-0.009	-1	127
118	113.50	150	1.112	-0.063	0.194	-0.016	-2	127
117	112.50	151	1.092	-0.074	0.182	-0.024	-3	128
116	111.50	152	1.073	-0.084	0.171	-0.030	-4	129
115	110.50	152	1.054	-0.092	0.160	-0.037	-5	129
114	109.50	153	1.035	-0.100	0.149	-0.042	-6	130
113	108.50	154	1.016	-0.106	0.139	-0.048	-6	131
112	107.50	155	0.997	-0.111	0.130	-0.053	-7	131
111	106.50	155	0.979	-0.115	0.121	-0.057	-8	132
110	105.50	156	0.960	-0.118	0.113	-0.062	-8	132
109	104.50	223	0.942	-0.120	0.105	-0.065	-13	189
108	103.50	224	0.924	-0.121	0.097	-0.069	-13	190
107	102.50	225	0.907	-0.122	0.090	-0.071	-14	190
106	101.50	225	0.889	-0.122	0.083	-0.074	-14	191
105	100.50	226	0.872	-0.121	0.077	-0.076	-15	192
104	99.50	227	0.854	-0.120	0.071	-0.078	-15	192
103	98.50	228	0.837	-0.118	0.065	-0.079	-16	193
102	97.50	228	0.820	-0.115	0.060	-0.079	-16	194
101	96.50	229	0.804	-0.113	0.055	-0.080	-16	194
100	95.50	230	0.787	-0.109	0.050	-0.079	-16	195
99	94.50	230	0.771	-0.106	0.046	-0.079	-16	195
98	93.50	231	0.754	-0.102	0.042	-0.078	-16	196
97	92.50	232	0.738	-0.098	0.038	-0.076	-15	196
96	91.50	232	0.722	-0.093	0.034	-0.074	-15	197
95	90.50	233	0.707	-0.089	0.031	-0.072	-14	197
94	89.50	234	0.691	-0.084	0.028	-0.069	-14	198
93	88.50	234	0.676	-0.079	0.025	-0.066	-13	199
92	87.50	235	0.661	-0.074	0.023	-0.062	-13	199
91	86.59	194	0.647	-0.070	0.021	-0.058	-10	164
90	86.09	64	0.639	-0.067	0.020	-0.056	-3	54
89	85.50	365	0.631	-0.064	0.018	-0.054	-17	309
88	84.50	366	0.616	-0.059	0.016	-0.049	-16	310
87	83.50	368	0.602	-0.054	0.015	-0.044	-14	312
86	82.50	369	0.587	-0.048	0.013	-0.039	-12	313
85	81.75	188	0.577	-0.044	0.012	-0.034	-6	160
84	81.25	127	0.570	-0.042	0.011	-0.032	-3	108
83	80.50	259	0.559	-0.038	0.011	-0.027	-6	220
82	79.50	260	0.545	-0.033	0.010	-0.022	-5	220
81	78.50	261	0.532	-0.028	0.009	-0.016	-4	221
80	77.50	262	0.518	-0.023	0.008	-0.010	-2	222
79	76.50	262	0.505	-0.018	0.007	-0.004	-1	222
78	75.50	263	0.492	-0.013	0.007	0.002	1	223
77	74.50	264	0.479	-0.009	0.006	0.008	2	224
76	73.50	265	0.466	-0.004	0.006	0.014	3	225
75	72.50	266	0.454	0.000	0.006	0.019	4	225
74	71.50	267	0.441	0.005	0.006	0.025	6	226
73	70.50	267	0.429	0.009	0.006	0.030	7	227
72	69.50	268	0.417	0.013	0.006	0.035	8	227
71	68.50	269	0.405	0.017	0.006	0.039	9	228
70	67.50	270	0.393	0.020	0.007	0.044	10	229
69	66.50	271	0.382	0.024	0.007	0.048	11	229
68	65.50	271	0.370	0.027	0.008	0.052	12	230
67	64.50	272	0.359	0.030	0.008	0.055	13	231
66	63.50	273	0.348	0.033	0.009	0.058	14	231
65	62.50	274	0.337	0.036	0.009	0.061	15	232
64	61.50	274	0.326	0.039	0.010	0.064	15	233
63	60.50	275	0.316	0.042	0.011	0.066	16	233
62	59.50	276	0.305	0.044	0.012	0.068	16	234
61	58.50	277	0.295	0.046	0.013	0.070	17	235
60	57.50	278	0.285	0.048	0.014	0.072	17	235
59	56.50	278	0.275	0.051	0.014	0.073	18	236
58	55.50	279	0.266	0.052	0.015	0.074	18	237
57	54.50	280	0.256	0.054	0.016	0.075	18	237

© 2007 - 2016 by ATC IP LLC. All rights reserved.

56	53.50	281	0.247	0.056	0.017	0.076	19	238
55	52.50	282	0.238	0.057	0.018	0.077	19	239
54	51.50	282	0.229	0.059	0.020	0.077	19	239
53	50.50	283	0.220	0.060	0.021	0.078	19	240
52	49.50	284	0.211	0.061	0.022	0.078	19	241
51	48.50	285	0.203	0.062	0.023	0.078	19	241
50	47.50	286	0.195	0.063	0.024	0.078	19	242
49	46.82	106	0.189	0.064	0.025	0.078	7	90
48	46.32	295	0.185	0.065	0.025	0.078	20	250
47	45.50	470	0.179	0.065	0.026	0.078	32	398
46	44.50	472	0.171	0.066	0.027	0.078	32	400
45	43.50	473	0.163	0.067	0.028	0.078	32	401
44	42.50	475	0.156	0.067	0.029	0.078	32	403
43	41.52	459	0.149	0.068	0.030	0.077	31	389
42	41.02	11	0.145	0.068	0.031	0.077	1	10
41	40.50	315	0.142	0.069	0.031	0.077	21	267
40	39.50	315	0.135	0.069	0.032	0.077	21	267
39	38.50	316	0.128	0.069	0.033	0.076	21	268
38	37.50	317	0.121	0.070	0.034	0.076	21	269
37	36.50	318	0.115	0.070	0.035	0.076	21	270
36	35.50	319	0.109	0.071	0.036	0.075	21	270
35	34.50	320	0.103	0.071	0.037	0.075	21	271
34	33.50	321	0.097	0.071	0.038	0.075	21	272
33	32.50	322	0.091	0.071	0.038	0.074	21	273
32	31.50	323	0.086	0.071	0.039	0.074	21	274
31	30.50	324	0.080	0.072	0.040	0.074	21	274
30	29.50	325	0.075	0.072	0.040	0.073	21	275
29	28.50	326	0.070	0.072	0.041	0.073	21	276
28	27.50	327	0.065	0.072	0.041	0.072	21	277
27	26.50	327	0.061	0.072	0.041	0.072	20	278
26	25.50	328	0.056	0.071	0.042	0.072	20	278
25	24.50	329	0.052	0.071	0.042	0.071	20	279
24	23.50	330	0.048	0.071	0.042	0.071	20	280
23	22.50	331	0.044	0.071	0.042	0.070	20	281
22	21.50	332	0.040	0.070	0.042	0.070	20	281
21	20.50	333	0.036	0.070	0.041	0.069	20	282
20	19.50	334	0.033	0.069	0.041	0.069	20	283
19	18.50	335	0.030	0.068	0.040	0.068	20	284
18	17.50	336	0.026	0.067	0.040	0.067	20	285
17	16.50	337	0.023	0.066	0.039	0.066	19	285
16	15.50	338	0.021	0.064	0.038	0.065	19	286
15	14.50	339	0.018	0.063	0.037	0.064	19	287
14	13.50	339	0.016	0.061	0.036	0.063	19	288
13	12.50	340	0.013	0.059	0.035	0.061	18	288
12	11.50	341	0.011	0.057	0.033	0.060	18	289
11	10.50	342	0.010	0.054	0.031	0.058	17	290
10	9.50	283	0.008	0.051	0.029	0.055	14	240
9	8.50	284	0.006	0.048	0.027	0.053	13	240
8	7.50	285	0.005	0.044	0.025	0.050	12	241
7	6.50	286	0.004	0.040	0.022	0.046	11	242
6	5.50	286	0.003	0.035	0.020	0.042	10	243
5	4.50	287	0.002	0.030	0.017	0.037	9	244
4	3.50	288	0.001	0.025	0.013	0.031	8	244
3	2.50	289	0.001	0.018	0.010	0.024	6	245
2	1.50	290	0.000	0.012	0.006	0.016	4	246
1	0.50	291	0.000	0.004	0.002	0.006	1	247
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.801	30	37
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.801	27	33
Andrew ADFD1820-9090	160.00	44	2.209	4.120	1.851	0.801	31	37
Andrew TMZXXX-6516-	160.00	35	2.209	4.120	1.851	0.801	24	30
Powerwave Allgon LGP	152.00	169	1.994	2.572	1.347	0.589	86	143
Raycap DC6-48-60-18-	152.00	40	1.994	2.572	1.347	0.589	20	34
Ericsson RRUS 11 (Ba	152.00	330	1.994	2.572	1.347	0.589	168	280
Ericsson RRUS 32	152.00	152	1.994	2.572	1.347	0.589	78	129

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Powerwave Allgon 777	152.00	105	1.994	2.572	1.347	0.589	54	89
Powerwave Allgon P65	152.00	159	1.994	2.572	1.347	0.589	81	135
CCI OPA-65R-LCUU-H6	152.00	219	1.994	2.572	1.347	0.589	112	186
Flat Platform w/ Han	152.00	2,000	1.994	2.572	1.347	0.589	1,020	1,695
Pipe	148.00	200	1.890	1.980	1.140	0.494	86	170
RFS FD9R6004	141.00	19	1.715	1.182	0.838	0.347	6	16
Alcatel-Lucent RRH2X	141.00	172	1.715	1.182	0.838	0.347	52	146
Alcatel-Lucent RRH2x	141.00	227	1.715	1.182	0.838	0.347	68	192
Alcatel-Lucent RRH4x	141.00	253	1.715	1.182	0.838	0.347	76	215
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
Antel BXA-80063-6BF-	141.00	19	1.715	1.182	0.838	0.347	6	16
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-80080/6CF	141.00	22	1.715	1.182	0.838	0.347	7	19
Commscope SBNHH-	141.00	203	1.715	1.182	0.838	0.347	61	172
Commscope SBNHH-	141.00	247	1.715	1.182	0.838	0.347	74	209
Flat Low Profile Pla	141.00	1,500	1.715	1.182	0.838	0.347	451	1,271
DragonWave Horizon C	137.00	11	1.619	0.840	0.697	0.274	3	9
NextNet BTS-2500	137.00	105	1.619	0.840	0.697	0.274	25	89
Argus LLPX310R	137.00	86	1.619	0.840	0.697	0.274	20	73
DragonWave A-ANT-18G	137.00	48	1.619	0.840	0.697	0.274	11	40
Side Arms	137.00	560	1.619	0.840	0.697	0.274	133	475
KMW KMDAPS2040000	131.00	48	1.481	0.455	0.520	0.177	7	40
KMW AM-X-WM-17-65-	131.00	43	1.481	0.455	0.520	0.177	7	36
Decibel DB844H90E-XY	131.00	126	1.481	0.455	0.520	0.177	19	107
Flat Low Profile Pla	131.00	1,500	1.481	0.455	0.520	0.177	230	1,271
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.040	7	163
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.040	9	231
Alcatel-Lucent TD-RR	120.00	210	1.243	0.049	0.288	0.040	7	178
RFS APXVTM14-C-I20	120.00	159	1.243	0.049	0.288	0.040	6	135
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.040	6	145
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.040	52	1,271
Diamond X50A	110.00	5	1.044	-0.096	0.154	-0.040	0	4
Flat Side Arm	110.00	300	1.044	-0.096	0.154	-0.040	-10	254
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.077	-2	22
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.077	-10	127
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.005	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.005	1	127
		48,891	172.797	82.513	62.665	24.607	4,664	41,436

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
154	147.50	85	1.877	1.913	1.116	0.483	35	72
153	146.50	85	1.852	1.785	1.069	0.461	34	72
152	145.50	86	1.827	1.663	1.024	0.439	33	73
151	144.50	86	1.802	1.546	0.980	0.418	31	73
150	143.50	87	1.777	1.435	0.938	0.397	30	74
149	142.50	87	1.752	1.330	0.897	0.377	29	74
148	141.50	88	1.728	1.230	0.858	0.357	27	74
147	140.50	101	1.703	1.135	0.820	0.338	30	85
146	139.50	101	1.679	1.045	0.783	0.319	28	86
145	138.50	102	1.655	0.959	0.748	0.300	27	86
144	137.50	102	1.631	0.879	0.713	0.282	25	87
143	136.50	107	1.608	0.803	0.681	0.265	25	91
142	135.50	108	1.584	0.730	0.649	0.248	23	91
141	134.50	108	1.561	0.663	0.618	0.231	22	92
140	133.50	109	1.538	0.599	0.589	0.215	20	92

© 2007 - 2016 by ATC IP LLC. All rights reserved.

139	132.50	109	1.515	0.538	0.561	0.199	19	93
138	131.50	110	1.492	0.482	0.533	0.184	18	93
137	130.50	121	1.469	0.429	0.507	0.169	18	102
136	129.50	121	1.447	0.379	0.482	0.155	16	103
135	128.84	39	1.432	0.348	0.466	0.146	5	33
134	128.34	138	1.421	0.325	0.454	0.139	17	117
133	127.50	204	1.403	0.289	0.435	0.127	23	173
132	126.50	205	1.381	0.248	0.412	0.114	20	174
131	125.50	206	1.359	0.211	0.391	0.102	18	175
130	125.00	1	1.348	0.193	0.380	0.096	0	1
129	124.50	138	1.337	0.176	0.370	0.090	11	117
128	123.50	140	1.316	0.143	0.350	0.078	9	119
127	122.50	140	1.295	0.113	0.332	0.066	8	119
126	121.50	141	1.274	0.086	0.313	0.056	7	120
125	120.50	142	1.253	0.060	0.296	0.045	6	120
124	119.50	146	1.232	0.037	0.279	0.035	4	124
123	118.50	147	1.212	0.016	0.264	0.025	3	125
122	117.50	148	1.191	-0.003	0.248	0.016	2	125
121	116.50	148	1.171	-0.021	0.234	0.007	1	126
120	115.50	149	1.151	-0.037	0.220	-0.001	0	126
119	114.50	150	1.131	-0.051	0.207	-0.009	-1	127
118	113.50	150	1.112	-0.063	0.194	-0.016	-2	127
117	112.50	151	1.092	-0.074	0.182	-0.024	-3	128
116	111.50	152	1.073	-0.084	0.171	-0.030	-4	129
115	110.50	152	1.054	-0.092	0.160	-0.037	-5	129
114	109.50	153	1.035	-0.100	0.149	-0.042	-6	130
113	108.50	154	1.016	-0.106	0.139	-0.048	-6	131
112	107.50	155	0.997	-0.111	0.130	-0.053	-7	131
111	106.50	155	0.979	-0.115	0.121	-0.057	-8	132
110	105.50	156	0.960	-0.118	0.113	-0.062	-8	132
109	104.50	223	0.942	-0.120	0.105	-0.065	-13	189
108	103.50	224	0.924	-0.121	0.097	-0.069	-13	190
107	102.50	225	0.907	-0.122	0.090	-0.071	-14	190
106	101.50	225	0.889	-0.122	0.083	-0.074	-14	191
105	100.50	226	0.872	-0.121	0.077	-0.076	-15	192
104	99.50	227	0.854	-0.120	0.071	-0.078	-15	192
103	98.50	228	0.837	-0.118	0.065	-0.079	-16	193
102	97.50	228	0.820	-0.115	0.060	-0.079	-16	194
101	96.50	229	0.804	-0.113	0.055	-0.080	-16	194
100	95.50	230	0.787	-0.109	0.050	-0.079	-16	195
99	94.50	230	0.771	-0.106	0.046	-0.079	-16	195
98	93.50	231	0.754	-0.102	0.042	-0.078	-16	196
97	92.50	232	0.738	-0.098	0.038	-0.076	-15	196
96	91.50	232	0.722	-0.093	0.034	-0.074	-15	197
95	90.50	233	0.707	-0.089	0.031	-0.072	-14	197
94	89.50	234	0.691	-0.084	0.028	-0.069	-14	198
93	88.50	234	0.676	-0.079	0.025	-0.066	-13	199
92	87.50	235	0.661	-0.074	0.023	-0.062	-13	199
91	86.59	194	0.647	-0.070	0.021	-0.058	-10	164
90	86.09	64	0.639	-0.067	0.020	-0.056	-3	54
89	85.50	365	0.631	-0.064	0.018	-0.054	-17	309
88	84.50	366	0.616	-0.059	0.016	-0.049	-16	310
87	83.50	368	0.602	-0.054	0.015	-0.044	-14	312
86	82.50	369	0.587	-0.048	0.013	-0.039	-12	313
85	81.75	188	0.577	-0.044	0.012	-0.034	-6	160
84	81.25	127	0.570	-0.042	0.011	-0.032	-3	108
83	80.50	259	0.559	-0.038	0.011	-0.027	-6	220
82	79.50	260	0.545	-0.033	0.010	-0.022	-5	220
81	78.50	261	0.532	-0.028	0.009	-0.016	-4	221
80	77.50	262	0.518	-0.023	0.008	-0.010	-2	222
79	76.50	262	0.505	-0.018	0.007	-0.004	-1	222
78	75.50	263	0.492	-0.013	0.007	0.002	1	223
77	74.50	264	0.479	-0.009	0.006	0.008	2	224
76	73.50	265	0.466	-0.004	0.006	0.014	3	225

© 2007 - 2016 by ATC IP LLC. All rights reserved.

75	72.50	266	0.454	0.000	0.006	0.019	4	225
74	71.50	267	0.441	0.005	0.006	0.025	6	226
73	70.50	267	0.429	0.009	0.006	0.030	7	227
72	69.50	268	0.417	0.013	0.006	0.035	8	227
71	68.50	269	0.405	0.017	0.006	0.039	9	228
70	67.50	270	0.393	0.020	0.007	0.044	10	229
69	66.50	271	0.382	0.024	0.007	0.048	11	229
68	65.50	271	0.370	0.027	0.008	0.052	12	230
67	64.50	272	0.359	0.030	0.008	0.055	13	231
66	63.50	273	0.348	0.033	0.009	0.058	14	231
65	62.50	274	0.337	0.036	0.009	0.061	15	232
64	61.50	274	0.326	0.039	0.010	0.064	15	233
63	60.50	275	0.316	0.042	0.011	0.066	16	233
62	59.50	276	0.305	0.044	0.012	0.068	16	234
61	58.50	277	0.295	0.046	0.013	0.070	17	235
60	57.50	278	0.285	0.048	0.014	0.072	17	235
59	56.50	278	0.275	0.051	0.014	0.073	18	236
58	55.50	279	0.266	0.052	0.015	0.074	18	237
57	54.50	280	0.256	0.054	0.016	0.075	18	237
56	53.50	281	0.247	0.056	0.017	0.076	19	238
55	52.50	282	0.238	0.057	0.018	0.077	19	239
54	51.50	282	0.229	0.059	0.020	0.077	19	239
53	50.50	283	0.220	0.060	0.021	0.078	19	240
52	49.50	284	0.211	0.061	0.022	0.078	19	241
51	48.50	285	0.203	0.062	0.023	0.078	19	241
50	47.50	286	0.195	0.063	0.024	0.078	19	242
49	46.82	106	0.189	0.064	0.025	0.078	7	90
48	46.32	295	0.185	0.065	0.025	0.078	20	250
47	45.50	470	0.179	0.065	0.026	0.078	32	398
46	44.50	472	0.171	0.066	0.027	0.078	32	400
45	43.50	473	0.163	0.067	0.028	0.078	32	401
44	42.50	475	0.156	0.067	0.029	0.078	32	403
43	41.52	459	0.149	0.068	0.030	0.077	31	389
42	41.02	11	0.145	0.068	0.031	0.077	1	10
41	40.50	315	0.142	0.069	0.031	0.077	21	267
40	39.50	315	0.135	0.069	0.032	0.077	21	267
39	38.50	316	0.128	0.069	0.033	0.076	21	268
38	37.50	317	0.121	0.070	0.034	0.076	21	269
37	36.50	318	0.115	0.070	0.035	0.076	21	270
36	35.50	319	0.109	0.071	0.036	0.075	21	270
35	34.50	320	0.103	0.071	0.037	0.075	21	271
34	33.50	321	0.097	0.071	0.038	0.075	21	272
33	32.50	322	0.091	0.071	0.038	0.074	21	273
32	31.50	323	0.086	0.071	0.039	0.074	21	274
31	30.50	324	0.080	0.072	0.040	0.074	21	274
30	29.50	325	0.075	0.072	0.040	0.073	21	275
29	28.50	326	0.070	0.072	0.041	0.073	21	276
28	27.50	327	0.065	0.072	0.041	0.072	21	277
27	26.50	327	0.061	0.072	0.041	0.072	20	278
26	25.50	328	0.056	0.071	0.042	0.072	20	278
25	24.50	329	0.052	0.071	0.042	0.071	20	279
24	23.50	330	0.048	0.071	0.042	0.071	20	280
23	22.50	331	0.044	0.071	0.042	0.070	20	281
22	21.50	332	0.040	0.070	0.042	0.070	20	281
21	20.50	333	0.036	0.070	0.041	0.069	20	282
20	19.50	334	0.033	0.069	0.041	0.069	20	283
19	18.50	335	0.030	0.068	0.040	0.068	20	284
18	17.50	336	0.026	0.067	0.040	0.067	20	285
17	16.50	337	0.023	0.066	0.039	0.066	19	285
16	15.50	338	0.021	0.064	0.038	0.065	19	286
15	14.50	339	0.018	0.063	0.037	0.064	19	287
14	13.50	339	0.016	0.061	0.036	0.063	19	288
13	12.50	340	0.013	0.059	0.035	0.061	18	288
12	11.50	341	0.011	0.057	0.033	0.060	18	289

© 2007 - 2016 by ATC IP LLC. All rights reserved.

11	10.50	342	0.010	0.054	0.031	0.058	17	290
10	9.50	283	0.008	0.051	0.029	0.055	14	240
9	8.50	284	0.006	0.048	0.027	0.053	13	240
8	7.50	285	0.005	0.044	0.025	0.050	12	241
7	6.50	286	0.004	0.040	0.022	0.046	11	242
6	5.50	286	0.003	0.035	0.020	0.042	10	243
5	4.50	287	0.002	0.030	0.017	0.037	9	244
4	3.50	288	0.001	0.025	0.013	0.031	8	244
3	2.50	289	0.001	0.018	0.010	0.024	6	245
2	1.50	290	0.000	0.012	0.006	0.016	4	246
1	0.50	291	0.000	0.004	0.002	0.006	1	247
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.801	30	37
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.801	27	33
Andrew ADFD1820-9090	160.00	44	2.209	4.120	1.851	0.801	31	37
Andrew TMZXXX-6516-	160.00	35	2.209	4.120	1.851	0.801	24	30
Powerwave Allgon LGP	152.00	169	1.994	2.572	1.347	0.589	86	143
Raycap DC6-48-60-18-	152.00	40	1.994	2.572	1.347	0.589	20	34
Ericsson RRUS 11 (Ba	152.00	330	1.994	2.572	1.347	0.589	168	280
Ericsson RRUS 32	152.00	152	1.994	2.572	1.347	0.589	78	129
Powerwave Allgon 777	152.00	105	1.994	2.572	1.347	0.589	54	89
Powerwave Allgon P65	152.00	159	1.994	2.572	1.347	0.589	81	135
CCI OPA-65R-LCUU-H6	152.00	219	1.994	2.572	1.347	0.589	112	186
Flat Platform w/ Han	152.00	2,000	1.994	2.572	1.347	0.589	1,020	1,695
Pipe	148.00	200	1.890	1.980	1.140	0.494	86	170
RFS FD9R6004	141.00	19	1.715	1.182	0.838	0.347	6	16
Alcatel-Lucent RRH2X	141.00	172	1.715	1.182	0.838	0.347	52	146
Alcatel-Lucent RRH2x	141.00	227	1.715	1.182	0.838	0.347	68	192
Alcatel-Lucent RRH4x	141.00	253	1.715	1.182	0.838	0.347	76	215
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
Antel BXA-80063-6BF-	141.00	19	1.715	1.182	0.838	0.347	6	16
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-80080/6CF	141.00	22	1.715	1.182	0.838	0.347	7	19
Commscope SBNHH-	141.00	203	1.715	1.182	0.838	0.347	61	172
Commscope SBNHH-	141.00	247	1.715	1.182	0.838	0.347	74	209
Flat Low Profile Pla	141.00	1,500	1.715	1.182	0.838	0.347	451	1,271
DragonWave Horizon C	137.00	11	1.619	0.840	0.697	0.274	3	9
NextNet BTS-2500	137.00	105	1.619	0.840	0.697	0.274	25	89
Argus LLPX310R	137.00	86	1.619	0.840	0.697	0.274	20	73
DragonWave A-ANT-18G	137.00	48	1.619	0.840	0.697	0.274	11	40
Side Arms	137.00	560	1.619	0.840	0.697	0.274	133	475
KMW KMDAPS2040000	131.00	48	1.481	0.455	0.520	0.177	7	40
KMW AM-X-WM-17-65-	131.00	43	1.481	0.455	0.520	0.177	7	36
Decibel DB844H90E-XY	131.00	126	1.481	0.455	0.520	0.177	19	107
Flat Low Profile Pla	131.00	1,500	1.481	0.455	0.520	0.177	230	1,271
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.040	7	163
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.040	9	231
Alcatel-Lucent TD-RR	120.00	210	1.243	0.049	0.288	0.040	7	178
RFS APXVTM14-C-I20	120.00	159	1.243	0.049	0.288	0.040	6	135
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.040	6	145
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.040	52	1,271
Diamond X50A	110.00	5	1.044	-0.096	0.154	-0.040	0	4
Flat Side Arm	110.00	300	1.044	-0.096	0.154	-0.040	-10	254
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.077	-2	22
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.077	-10	127
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.005	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.005	1	127
		48,891	172.797	82.513	62.665	24.607	4,664	41,436

© 2007 - 2016 by ATC IP LLC. All rights reserved.

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
154	147.50	85	1.877	1.913	1.116	0.483	35	72
153	146.50	85	1.852	1.785	1.069	0.461	34	72
152	145.50	86	1.827	1.663	1.024	0.439	33	73
151	144.50	86	1.802	1.546	0.980	0.418	31	73
150	143.50	87	1.777	1.435	0.938	0.397	30	74
149	142.50	87	1.752	1.330	0.897	0.377	29	74
148	141.50	88	1.728	1.230	0.858	0.357	27	74
147	140.50	101	1.703	1.135	0.820	0.338	30	85
146	139.50	101	1.679	1.045	0.783	0.319	28	86
145	138.50	102	1.655	0.959	0.748	0.300	27	86
144	137.50	102	1.631	0.879	0.713	0.282	25	87
143	136.50	107	1.608	0.803	0.681	0.265	25	91
142	135.50	108	1.584	0.730	0.649	0.248	23	91
141	134.50	108	1.561	0.663	0.618	0.231	22	92
140	133.50	109	1.538	0.599	0.589	0.215	20	92
139	132.50	109	1.515	0.538	0.561	0.199	19	93
138	131.50	110	1.492	0.482	0.533	0.184	18	93
137	130.50	121	1.469	0.429	0.507	0.169	18	102
136	129.50	121	1.447	0.379	0.482	0.155	16	103
135	128.84	39	1.432	0.348	0.466	0.146	5	33
134	128.34	138	1.421	0.325	0.454	0.139	17	117
133	127.50	204	1.403	0.289	0.435	0.127	23	173
132	126.50	205	1.381	0.248	0.412	0.114	20	174
131	125.50	206	1.359	0.211	0.391	0.102	18	175
130	125.00	1	1.348	0.193	0.380	0.096	0	1
129	124.50	138	1.337	0.176	0.370	0.090	11	117
128	123.50	140	1.316	0.143	0.350	0.078	9	119
127	122.50	140	1.295	0.113	0.332	0.066	8	119
126	121.50	141	1.274	0.086	0.313	0.056	7	120
125	120.50	142	1.253	0.060	0.296	0.045	6	120
124	119.50	146	1.232	0.037	0.279	0.035	4	124
123	118.50	147	1.212	0.016	0.264	0.025	3	125
122	117.50	148	1.191	-0.003	0.248	0.016	2	125
121	116.50	148	1.171	-0.021	0.234	0.007	1	126
120	115.50	149	1.151	-0.037	0.220	-0.001	0	126
119	114.50	150	1.131	-0.051	0.207	-0.009	-1	127
118	113.50	150	1.112	-0.063	0.194	-0.016	-2	127
117	112.50	151	1.092	-0.074	0.182	-0.024	-3	128
116	111.50	152	1.073	-0.084	0.171	-0.030	-4	129
115	110.50	152	1.054	-0.092	0.160	-0.037	-5	129
114	109.50	153	1.035	-0.100	0.149	-0.042	-6	130
113	108.50	154	1.016	-0.106	0.139	-0.048	-6	131
112	107.50	155	0.997	-0.111	0.130	-0.053	-7	131
111	106.50	155	0.979	-0.115	0.121	-0.057	-8	132
110	105.50	156	0.960	-0.118	0.113	-0.062	-8	132
109	104.50	223	0.942	-0.120	0.105	-0.065	-13	189
108	103.50	224	0.924	-0.121	0.097	-0.069	-13	190
107	102.50	225	0.907	-0.122	0.090	-0.071	-14	190
106	101.50	225	0.889	-0.122	0.083	-0.074	-14	191
105	100.50	226	0.872	-0.121	0.077	-0.076	-15	192
104	99.50	227	0.854	-0.120	0.071	-0.078	-15	192
103	98.50	228	0.837	-0.118	0.065	-0.079	-16	193
102	97.50	228	0.820	-0.115	0.060	-0.079	-16	194
101	96.50	229	0.804	-0.113	0.055	-0.080	-16	194
100	95.50	230	0.787	-0.109	0.050	-0.079	-16	195
99	94.50	230	0.771	-0.106	0.046	-0.079	-16	195

© 2007 - 2016 by ATC IP LLC. All rights reserved.

98	93.50	231	0.754	-0.102	0.042	-0.078	-16	196
97	92.50	232	0.738	-0.098	0.038	-0.076	-15	196
96	91.50	232	0.722	-0.093	0.034	-0.074	-15	197
95	90.50	233	0.707	-0.089	0.031	-0.072	-14	197
94	89.50	234	0.691	-0.084	0.028	-0.069	-14	198
93	88.50	234	0.676	-0.079	0.025	-0.066	-13	199
92	87.50	235	0.661	-0.074	0.023	-0.062	-13	199
91	86.59	194	0.647	-0.070	0.021	-0.058	-10	164
90	86.09	64	0.639	-0.067	0.020	-0.056	-3	54
89	85.50	365	0.631	-0.064	0.018	-0.054	-17	309
88	84.50	366	0.616	-0.059	0.016	-0.049	-16	310
87	83.50	368	0.602	-0.054	0.015	-0.044	-14	312
86	82.50	369	0.587	-0.048	0.013	-0.039	-12	313
85	81.75	188	0.577	-0.044	0.012	-0.034	-6	160
84	81.25	127	0.570	-0.042	0.011	-0.032	-3	108
83	80.50	259	0.559	-0.038	0.011	-0.027	-6	220
82	79.50	260	0.545	-0.033	0.010	-0.022	-5	220
81	78.50	261	0.532	-0.028	0.009	-0.016	-4	221
80	77.50	262	0.518	-0.023	0.008	-0.010	-2	222
79	76.50	262	0.505	-0.018	0.007	-0.004	-1	222
78	75.50	263	0.492	-0.013	0.007	0.002	1	223
77	74.50	264	0.479	-0.009	0.006	0.008	2	224
76	73.50	265	0.466	-0.004	0.006	0.014	3	225
75	72.50	266	0.454	0.000	0.006	0.019	4	225
74	71.50	267	0.441	0.005	0.006	0.025	6	226
73	70.50	267	0.429	0.009	0.006	0.030	7	227
72	69.50	268	0.417	0.013	0.006	0.035	8	227
71	68.50	269	0.405	0.017	0.006	0.039	9	228
70	67.50	270	0.393	0.020	0.007	0.044	10	229
69	66.50	271	0.382	0.024	0.007	0.048	11	229
68	65.50	271	0.370	0.027	0.008	0.052	12	230
67	64.50	272	0.359	0.030	0.008	0.055	13	231
66	63.50	273	0.348	0.033	0.009	0.058	14	231
65	62.50	274	0.337	0.036	0.009	0.061	15	232
64	61.50	274	0.326	0.039	0.010	0.064	15	233
63	60.50	275	0.316	0.042	0.011	0.066	16	233
62	59.50	276	0.305	0.044	0.012	0.068	16	234
61	58.50	277	0.295	0.046	0.013	0.070	17	235
60	57.50	278	0.285	0.048	0.014	0.072	17	235
59	56.50	278	0.275	0.051	0.014	0.073	18	236
58	55.50	279	0.266	0.052	0.015	0.074	18	237
57	54.50	280	0.256	0.054	0.016	0.075	18	237
56	53.50	281	0.247	0.056	0.017	0.076	19	238
55	52.50	282	0.238	0.057	0.018	0.077	19	239
54	51.50	282	0.229	0.059	0.020	0.077	19	239
53	50.50	283	0.220	0.060	0.021	0.078	19	240
52	49.50	284	0.211	0.061	0.022	0.078	19	241
51	48.50	285	0.203	0.062	0.023	0.078	19	241
50	47.50	286	0.195	0.063	0.024	0.078	19	242
49	46.82	106	0.189	0.064	0.025	0.078	7	90
48	46.32	295	0.185	0.065	0.025	0.078	20	250
47	45.50	470	0.179	0.065	0.026	0.078	32	398
46	44.50	472	0.171	0.066	0.027	0.078	32	400
45	43.50	473	0.163	0.067	0.028	0.078	32	401
44	42.50	475	0.156	0.067	0.029	0.078	32	403
43	41.52	459	0.149	0.068	0.030	0.077	31	389
42	41.02	11	0.145	0.068	0.031	0.077	1	10
41	40.50	315	0.142	0.069	0.031	0.077	21	267
40	39.50	315	0.135	0.069	0.032	0.077	21	267
39	38.50	316	0.128	0.069	0.033	0.076	21	268
38	37.50	317	0.121	0.070	0.034	0.076	21	269
37	36.50	318	0.115	0.070	0.035	0.076	21	270
36	35.50	319	0.109	0.071	0.036	0.075	21	270
35	34.50	320	0.103	0.071	0.037	0.075	21	271

© 2007 - 2016 by ATC IP LLC. All rights reserved.

34	33.50	321	0.097	0.071	0.038	0.075	21	272
33	32.50	322	0.091	0.071	0.038	0.074	21	273
32	31.50	323	0.086	0.071	0.039	0.074	21	274
31	30.50	324	0.080	0.072	0.040	0.074	21	274
30	29.50	325	0.075	0.072	0.040	0.073	21	275
29	28.50	326	0.070	0.072	0.041	0.073	21	276
28	27.50	327	0.065	0.072	0.041	0.072	21	277
27	26.50	327	0.061	0.072	0.041	0.072	20	278
26	25.50	328	0.056	0.071	0.042	0.072	20	278
25	24.50	329	0.052	0.071	0.042	0.071	20	279
24	23.50	330	0.048	0.071	0.042	0.071	20	280
23	22.50	331	0.044	0.071	0.042	0.070	20	281
22	21.50	332	0.040	0.070	0.042	0.070	20	281
21	20.50	333	0.036	0.070	0.041	0.069	20	282
20	19.50	334	0.033	0.069	0.041	0.069	20	283
19	18.50	335	0.030	0.068	0.040	0.068	20	284
18	17.50	336	0.026	0.067	0.040	0.067	20	285
17	16.50	337	0.023	0.066	0.039	0.066	19	285
16	15.50	338	0.021	0.064	0.038	0.065	19	286
15	14.50	339	0.018	0.063	0.037	0.064	19	287
14	13.50	339	0.016	0.061	0.036	0.063	19	288
13	12.50	340	0.013	0.059	0.035	0.061	18	288
12	11.50	341	0.011	0.057	0.033	0.060	18	289
11	10.50	342	0.010	0.054	0.031	0.058	17	290
10	9.50	283	0.008	0.051	0.029	0.055	14	240
9	8.50	284	0.006	0.048	0.027	0.053	13	240
8	7.50	285	0.005	0.044	0.025	0.050	12	241
7	6.50	286	0.004	0.040	0.022	0.046	11	242
6	5.50	286	0.003	0.035	0.020	0.042	10	243
5	4.50	287	0.002	0.030	0.017	0.037	9	244
4	3.50	288	0.001	0.025	0.013	0.031	8	244
3	2.50	289	0.001	0.018	0.010	0.024	6	245
2	1.50	290	0.000	0.012	0.006	0.016	4	246
1	0.50	291	0.000	0.004	0.002	0.006	1	247
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.801	30	37
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.801	27	33
Andrew ADFD1820-9090	160.00	44	2.209	4.120	1.851	0.801	31	37
Andrew TMZXXX-6516-	160.00	35	2.209	4.120	1.851	0.801	24	30
Powerwave Allgon LGP	152.00	169	1.994	2.572	1.347	0.589	86	143
Raycap DC6-48-60-18-	152.00	40	1.994	2.572	1.347	0.589	20	34
Ericsson RRUS 11 (Ba	152.00	330	1.994	2.572	1.347	0.589	168	280
Ericsson RRUS 32	152.00	152	1.994	2.572	1.347	0.589	78	129
Powerwave Allgon 777	152.00	105	1.994	2.572	1.347	0.589	54	89
Powerwave Allgon P65	152.00	159	1.994	2.572	1.347	0.589	81	135
CCI OPA-65R-LCUU-H6	152.00	219	1.994	2.572	1.347	0.589	112	186
Flat Platform w/ Han	152.00	2,000	1.994	2.572	1.347	0.589	1,020	1,695
Pipe	148.00	200	1.890	1.980	1.140	0.494	86	170
RFS FD9R6004	141.00	19	1.715	1.182	0.838	0.347	6	16
Alcatel-Lucent RRH2X	141.00	172	1.715	1.182	0.838	0.347	52	146
Alcatel-Lucent RRH2x	141.00	227	1.715	1.182	0.838	0.347	68	192
Alcatel-Lucent RRH4x	141.00	253	1.715	1.182	0.838	0.347	76	215
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
Antel BXA-80063-6BF-	141.00	19	1.715	1.182	0.838	0.347	6	16
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-80080/6CF	141.00	22	1.715	1.182	0.838	0.347	7	19
Commscope SBNHH-	141.00	203	1.715	1.182	0.838	0.347	61	172
Commscope SBNHH-	141.00	247	1.715	1.182	0.838	0.347	74	209
Flat Low Profile Pla	141.00	1,500	1.715	1.182	0.838	0.347	451	1,271
DragonWave Horizon C	137.00	11	1.619	0.840	0.697	0.274	3	9
NextNet BTS-2500	137.00	105	1.619	0.840	0.697	0.274	25	89
Argus LLPX310R	137.00	86	1.619	0.840	0.697	0.274	20	73
DragonWave A-ANT-18G	137.00	48	1.619	0.840	0.697	0.274	11	40

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Side Arms	137.00	560	1.619	0.840	0.697	0.274	133	475
KMW KMDAPS2040000	131.00	48	1.481	0.455	0.520	0.177	7	40
KMW AM-X-WM-17-65-	131.00	43	1.481	0.455	0.520	0.177	7	36
Decibel DB844H90E-XY	131.00	126	1.481	0.455	0.520	0.177	19	107
Flat Low Profile Pla	131.00	1,500	1.481	0.455	0.520	0.177	230	1,271
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.040	7	163
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.040	9	231
Alcatel-Lucent TD-RR	120.00	210	1.243	0.049	0.288	0.040	7	178
RFS APXVTM14-C-I20	120.00	159	1.243	0.049	0.288	0.040	6	135
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.040	6	145
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.040	52	1,271
Diamond X50A	110.00	5	1.044	-0.096	0.154	-0.040	0	4
Flat Side Arm	110.00	300	1.044	-0.096	0.154	-0.040	-10	254
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.077	-2	22
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.077	-10	127
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.005	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.005	1	127
		48,891	172.797	82.513	62.665	24.607	4,664	41,436

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)
154	147.50	85	1.877	1.913	1.116	0.483	35	72
153	146.50	85	1.852	1.785	1.069	0.461	34	72
152	145.50	86	1.827	1.663	1.024	0.439	33	73
151	144.50	86	1.802	1.546	0.980	0.418	31	73
150	143.50	87	1.777	1.435	0.938	0.397	30	74
149	142.50	87	1.752	1.330	0.897	0.377	29	74
148	141.50	88	1.728	1.230	0.858	0.357	27	74
147	140.50	101	1.703	1.135	0.820	0.338	30	85
146	139.50	101	1.679	1.045	0.783	0.319	28	86
145	138.50	102	1.655	0.959	0.748	0.300	27	86
144	137.50	102	1.631	0.879	0.713	0.282	25	87
143	136.50	107	1.608	0.803	0.681	0.265	25	91
142	135.50	108	1.584	0.730	0.649	0.248	23	91
141	134.50	108	1.561	0.663	0.618	0.231	22	92
140	133.50	109	1.538	0.599	0.589	0.215	20	92
139	132.50	109	1.515	0.538	0.561	0.199	19	93
138	131.50	110	1.492	0.482	0.533	0.184	18	93
137	130.50	121	1.469	0.429	0.507	0.169	18	102
136	129.50	121	1.447	0.379	0.482	0.155	16	103
135	128.84	39	1.432	0.348	0.466	0.146	5	33
134	128.34	138	1.421	0.325	0.454	0.139	17	117
133	127.50	204	1.403	0.289	0.435	0.127	23	173
132	126.50	205	1.381	0.248	0.412	0.114	20	174
131	125.50	206	1.359	0.211	0.391	0.102	18	175
130	125.00	1	1.348	0.193	0.380	0.096	0	1
129	124.50	138	1.337	0.176	0.370	0.090	11	117
128	123.50	140	1.316	0.143	0.350	0.078	9	119
127	122.50	140	1.295	0.113	0.332	0.066	8	119
126	121.50	141	1.274	0.086	0.313	0.056	7	120
125	120.50	142	1.253	0.060	0.296	0.045	6	120
124	119.50	146	1.232	0.037	0.279	0.035	4	124
123	118.50	147	1.212	0.016	0.264	0.025	3	125
122	117.50	148	1.191	-0.003	0.248	0.016	2	125
121	116.50	148	1.171	-0.021	0.234	0.007	1	126
120	115.50	149	1.151	-0.037	0.220	-0.001	0	126
119	114.50	150	1.131	-0.051	0.207	-0.009	-1	127
118	113.50	150	1.112	-0.063	0.194	-0.016	-2	127

© 2007 - 2016 by ATC IP LLC. All rights reserved.

117	112.50	151	1.092	-0.074	0.182	-0.024	-3	128
116	111.50	152	1.073	-0.084	0.171	-0.030	-4	129
115	110.50	152	1.054	-0.092	0.160	-0.037	-5	129
114	109.50	153	1.035	-0.100	0.149	-0.042	-6	130
113	108.50	154	1.016	-0.106	0.139	-0.048	-6	131
112	107.50	155	0.997	-0.111	0.130	-0.053	-7	131
111	106.50	155	0.979	-0.115	0.121	-0.057	-8	132
110	105.50	156	0.960	-0.118	0.113	-0.062	-8	132
109	104.50	223	0.942	-0.120	0.105	-0.065	-13	189
108	103.50	224	0.924	-0.121	0.097	-0.069	-13	190
107	102.50	225	0.907	-0.122	0.090	-0.071	-14	190
106	101.50	225	0.889	-0.122	0.083	-0.074	-14	191
105	100.50	226	0.872	-0.121	0.077	-0.076	-15	192
104	99.50	227	0.854	-0.120	0.071	-0.078	-15	192
103	98.50	228	0.837	-0.118	0.065	-0.079	-16	193
102	97.50	228	0.820	-0.115	0.060	-0.079	-16	194
101	96.50	229	0.804	-0.113	0.055	-0.080	-16	194
100	95.50	230	0.787	-0.109	0.050	-0.079	-16	195
99	94.50	230	0.771	-0.106	0.046	-0.079	-16	195
98	93.50	231	0.754	-0.102	0.042	-0.078	-16	196
97	92.50	232	0.738	-0.098	0.038	-0.076	-15	196
96	91.50	232	0.722	-0.093	0.034	-0.074	-15	197
95	90.50	233	0.707	-0.089	0.031	-0.072	-14	197
94	89.50	234	0.691	-0.084	0.028	-0.069	-14	198
93	88.50	234	0.676	-0.079	0.025	-0.066	-13	199
92	87.50	235	0.661	-0.074	0.023	-0.062	-13	199
91	86.59	194	0.647	-0.070	0.021	-0.058	-10	164
90	86.09	64	0.639	-0.067	0.020	-0.056	-3	54
89	85.50	365	0.631	-0.064	0.018	-0.054	-17	309
88	84.50	366	0.616	-0.059	0.016	-0.049	-16	310
87	83.50	368	0.602	-0.054	0.015	-0.044	-14	312
86	82.50	369	0.587	-0.048	0.013	-0.039	-12	313
85	81.75	188	0.577	-0.044	0.012	-0.034	-6	160
84	81.25	127	0.570	-0.042	0.011	-0.032	-3	108
83	80.50	259	0.559	-0.038	0.011	-0.027	-6	220
82	79.50	260	0.545	-0.033	0.010	-0.022	-5	220
81	78.50	261	0.532	-0.028	0.009	-0.016	-4	221
80	77.50	262	0.518	-0.023	0.008	-0.010	-2	222
79	76.50	262	0.505	-0.018	0.007	-0.004	-1	222
78	75.50	263	0.492	-0.013	0.007	0.002	1	223
77	74.50	264	0.479	-0.009	0.006	0.008	2	224
76	73.50	265	0.466	-0.004	0.006	0.014	3	225
75	72.50	266	0.454	0.000	0.006	0.019	4	225
74	71.50	267	0.441	0.005	0.006	0.025	6	226
73	70.50	267	0.429	0.009	0.006	0.030	7	227
72	69.50	268	0.417	0.013	0.006	0.035	8	227
71	68.50	269	0.405	0.017	0.006	0.039	9	228
70	67.50	270	0.393	0.020	0.007	0.044	10	229
69	66.50	271	0.382	0.024	0.007	0.048	11	229
68	65.50	271	0.370	0.027	0.008	0.052	12	230
67	64.50	272	0.359	0.030	0.008	0.055	13	231
66	63.50	273	0.348	0.033	0.009	0.058	14	231
65	62.50	274	0.337	0.036	0.009	0.061	15	232
64	61.50	274	0.326	0.039	0.010	0.064	15	233
63	60.50	275	0.316	0.042	0.011	0.066	16	233
62	59.50	276	0.305	0.044	0.012	0.068	16	234
61	58.50	277	0.295	0.046	0.013	0.070	17	235
60	57.50	278	0.285	0.048	0.014	0.072	17	235
59	56.50	278	0.275	0.051	0.014	0.073	18	236
58	55.50	279	0.266	0.052	0.015	0.074	18	237
57	54.50	280	0.256	0.054	0.016	0.075	18	237
56	53.50	281	0.247	0.056	0.017	0.076	19	238
55	52.50	282	0.238	0.057	0.018	0.077	19	239
54	51.50	282	0.229	0.059	0.020	0.077	19	239

© 2007 - 2016 by ATC IP LLC. All rights reserved.

53	50.50	283	0.220	0.060	0.021	0.078	19	240
52	49.50	284	0.211	0.061	0.022	0.078	19	241
51	48.50	285	0.203	0.062	0.023	0.078	19	241
50	47.50	286	0.195	0.063	0.024	0.078	19	242
49	46.82	106	0.189	0.064	0.025	0.078	7	90
48	46.32	295	0.185	0.065	0.025	0.078	20	250
47	45.50	470	0.179	0.065	0.026	0.078	32	398
46	44.50	472	0.171	0.066	0.027	0.078	32	400
45	43.50	473	0.163	0.067	0.028	0.078	32	401
44	42.50	475	0.156	0.067	0.029	0.078	32	403
43	41.52	459	0.149	0.068	0.030	0.077	31	389
42	41.02	11	0.145	0.068	0.031	0.077	1	10
41	40.50	315	0.142	0.069	0.031	0.077	21	267
40	39.50	315	0.135	0.069	0.032	0.077	21	267
39	38.50	316	0.128	0.069	0.033	0.076	21	268
38	37.50	317	0.121	0.070	0.034	0.076	21	269
37	36.50	318	0.115	0.070	0.035	0.076	21	270
36	35.50	319	0.109	0.071	0.036	0.075	21	270
35	34.50	320	0.103	0.071	0.037	0.075	21	271
34	33.50	321	0.097	0.071	0.038	0.075	21	272
33	32.50	322	0.091	0.071	0.038	0.074	21	273
32	31.50	323	0.086	0.071	0.039	0.074	21	274
31	30.50	324	0.080	0.072	0.040	0.074	21	274
30	29.50	325	0.075	0.072	0.040	0.073	21	275
29	28.50	326	0.070	0.072	0.041	0.073	21	276
28	27.50	327	0.065	0.072	0.041	0.072	21	277
27	26.50	327	0.061	0.072	0.041	0.072	20	278
26	25.50	328	0.056	0.071	0.042	0.072	20	278
25	24.50	329	0.052	0.071	0.042	0.071	20	279
24	23.50	330	0.048	0.071	0.042	0.071	20	280
23	22.50	331	0.044	0.071	0.042	0.070	20	281
22	21.50	332	0.040	0.070	0.042	0.070	20	281
21	20.50	333	0.036	0.070	0.041	0.069	20	282
20	19.50	334	0.033	0.069	0.041	0.069	20	283
19	18.50	335	0.030	0.068	0.040	0.068	20	284
18	17.50	336	0.026	0.067	0.040	0.067	20	285
17	16.50	337	0.023	0.066	0.039	0.066	19	285
16	15.50	338	0.021	0.064	0.038	0.065	19	286
15	14.50	339	0.018	0.063	0.037	0.064	19	287
14	13.50	339	0.016	0.061	0.036	0.063	19	288
13	12.50	340	0.013	0.059	0.035	0.061	18	288
12	11.50	341	0.011	0.057	0.033	0.060	18	289
11	10.50	342	0.010	0.054	0.031	0.058	17	290
10	9.50	283	0.008	0.051	0.029	0.055	14	240
9	8.50	284	0.006	0.048	0.027	0.053	13	240
8	7.50	285	0.005	0.044	0.025	0.050	12	241
7	6.50	286	0.004	0.040	0.022	0.046	11	242
6	5.50	286	0.003	0.035	0.020	0.042	10	243
5	4.50	287	0.002	0.030	0.017	0.037	9	244
4	3.50	288	0.001	0.025	0.013	0.031	8	244
3	2.50	289	0.001	0.018	0.010	0.024	6	245
2	1.50	290	0.000	0.012	0.006	0.016	4	246
1	0.50	291	0.000	0.004	0.002	0.006	1	247
Andrew E15S09P94	160.00	44	2.209	4.120	1.851	0.801	30	37
RFS ATMAP1412D-1A20	160.00	39	2.209	4.120	1.851	0.801	27	33
Andrew ADFD1820-9090	160.00	44	2.209	4.120	1.851	0.801	31	37
Andrew TMZXXX-6516-	160.00	35	2.209	4.120	1.851	0.801	24	30
Powerwave Allgon LGP	152.00	169	1.994	2.572	1.347	0.589	86	143
Raycap DC6-48-60-18-	152.00	40	1.994	2.572	1.347	0.589	20	34
Ericsson RRUS 11 (Ba	152.00	330	1.994	2.572	1.347	0.589	168	280
Ericsson RRUS 32	152.00	152	1.994	2.572	1.347	0.589	78	129
Powerwave Allgon 777	152.00	105	1.994	2.572	1.347	0.589	54	89
Powerwave Allgon P65	152.00	159	1.994	2.572	1.347	0.589	81	135
CCI OPA-65R-LCUU-H6	152.00	219	1.994	2.572	1.347	0.589	112	186

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Flat Platform w/ Han	152.00	2,000	1.994	2.572	1.347	0.589	1,020	1,695
Pipe	148.00	200	1.890	1.980	1.140	0.494	86	170
RFS FD9R6004	141.00	19	1.715	1.182	0.838	0.347	6	16
Alcatel-Lucent RRH2X	141.00	172	1.715	1.182	0.838	0.347	52	146
Alcatel-Lucent RRH2x	141.00	227	1.715	1.182	0.838	0.347	68	192
Alcatel-Lucent RRH4x	141.00	253	1.715	1.182	0.838	0.347	76	215
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
RFS DB-T1-6Z-8AB-0Z	141.00	44	1.715	1.182	0.838	0.347	13	37
Antel BXA-80063-6BF-	141.00	19	1.715	1.182	0.838	0.347	6	16
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-70063/6CF	141.00	17	1.715	1.182	0.838	0.347	5	14
Antel BXA-80080/6CF	141.00	22	1.715	1.182	0.838	0.347	7	19
Commscope SBNHH-	141.00	203	1.715	1.182	0.838	0.347	61	172
Commscope SBNHH-	141.00	247	1.715	1.182	0.838	0.347	74	209
Flat Low Profile Pla	141.00	1,500	1.715	1.182	0.838	0.347	451	1,271
DragonWave Horizon C	137.00	11	1.619	0.840	0.697	0.274	3	9
NextNet BTS-2500	137.00	105	1.619	0.840	0.697	0.274	25	89
Argus LLPX310R	137.00	86	1.619	0.840	0.697	0.274	20	73
DragonWave A-ANT-18G	137.00	48	1.619	0.840	0.697	0.274	11	40
Side Arms	137.00	560	1.619	0.840	0.697	0.274	133	475
KMW KMDAPS2040000	131.00	48	1.481	0.455	0.520	0.177	7	40
KMW AM-X-WM-17-65-	131.00	43	1.481	0.455	0.520	0.177	7	36
Decibel DB844H90E-XY	131.00	126	1.481	0.455	0.520	0.177	19	107
Flat Low Profile Pla	131.00	1,500	1.481	0.455	0.520	0.177	230	1,271
Alcatel-Lucent 800 M	120.00	192	1.243	0.049	0.288	0.040	7	163
Alcatel-Lucent 4x40W	120.00	273	1.243	0.049	0.288	0.040	9	231
Alcatel-Lucent TD-RR	120.00	210	1.243	0.049	0.288	0.040	7	178
RFS APXVTM14-C-I20	120.00	159	1.243	0.049	0.288	0.040	6	135
RFS APXVSPP18-C-A20	120.00	171	1.243	0.049	0.288	0.040	6	145
Flat Low Profile Pla	120.00	1,500	1.243	0.049	0.288	0.040	52	1,271
Diamond X50A	110.00	5	1.044	-0.096	0.154	-0.040	0	4
Flat Side Arm	110.00	300	1.044	-0.096	0.154	-0.040	-10	254
Antel BCD-87010 ___	100.00	26	0.863	-0.120	0.074	-0.077	-2	22
Flat Side Arm	100.00	150	0.863	-0.120	0.074	-0.077	-10	127
PCTEL GPS-TMG-HR-	75.00	1	0.485	-0.011	0.007	0.005	0	1
Round Side Arm	75.00	150	0.485	-0.011	0.007	0.005	1	127
		48,891	172.797	82.513	62.665	24.607	4,664	41,436

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	33.80	0.00	58.65	0.00	0.00	4014.14	105.00	0.67
0.9D + 1.6W	32.33	0.00	43.99	0.00	0.00	3826.88	105.00	0.64
1.2D + 1.0Di + 1.0Wi	7.31	0.00	94.30	0.00	0.00	868.67	105.00	0.16
(1.2 + 0.2Sds) * DL + E ELFM	1.57	0.00	56.69	0.00	0.00	184.74	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.93	0.00	56.69	0.00	0.00	304.19	105.00	0.07
(0.9 - 0.2Sds) * DL + E ELFM	1.57	0.00	38.36	0.00	0.00	182.29	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	2.93	0.00	38.36	0.00	0.00	299.96	105.00	0.06
1.0D + 1.0W	6.60	0.00	48.89	0.00	0.00	785.63	105.00	0.14

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	105.	(4) SOL-#20 All Thre	367.4	11.0	16.8	141.4	12.0	12	24	0.0	12.0	0	0	250.3	330.5	0.757

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	48	in
	Pole Thickness	0.4375	in
	Plate Diameter	63	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	1480.94	k-in
	Applied	443.95	k-in
Stiffeners	#	***16***	***Show***
	Thickness	0.75	in
	Length	6	in
	Height	12	in
	Chamfer	1	in
	Offset Angle	22.5	°
	Fy	36	ksi

Bolts	#	***16***	
	Bolt Circle	57	in
	(R)adial / (S)quare	R	
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	154.42	k
Reinforcement ●	#	***4***	
	DYW. Circle	54.9	in
	Offset Angle	11	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	ϕ_s Resistance	392.70	k
	Applied	246.07	k
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 4014.1 k-ft
Axial 58.7 k

Date 2/16/2016
Engineer D. Hinshaw
Site # 302515
Carrier Verizon

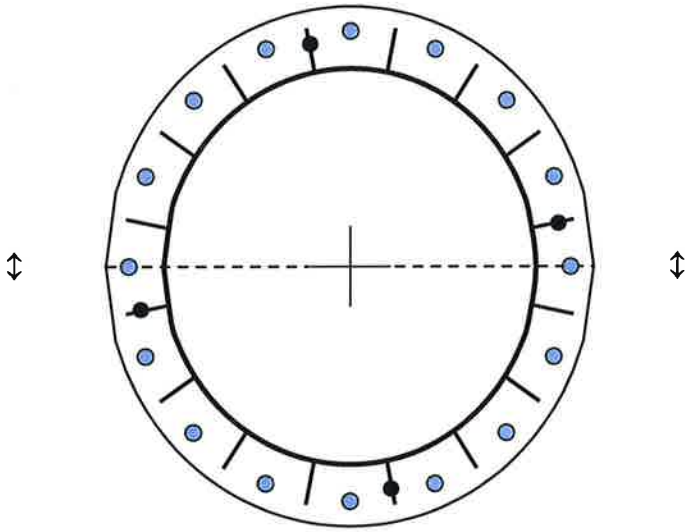
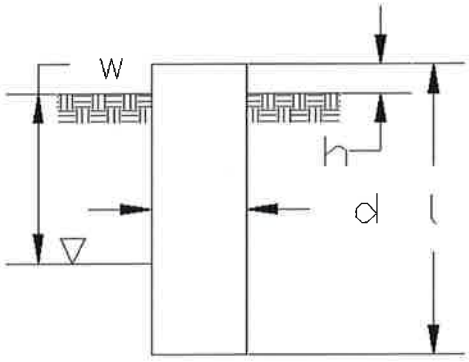


Plate Stress Ratio:
0.30 (Pass)

Bolt Stress Ratio:
0.59 (Pass)

Reinforcement Stress Ratio:
0.63 (Pass)

Site Name:	SMFR - North, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302515	*American Tower Corporation*	
Engineer:	D. Hinshaw		
Engineering Number:	64559325		
Date:	02/16/16		



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

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	4014.1	k-ft
Shear/Leg (V):	33.8	k
Axial Load (P):	58.7	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	6.5	ft
Caisson Embedment (L-h):	24.0	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	99.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

Soil Mechanical Properties

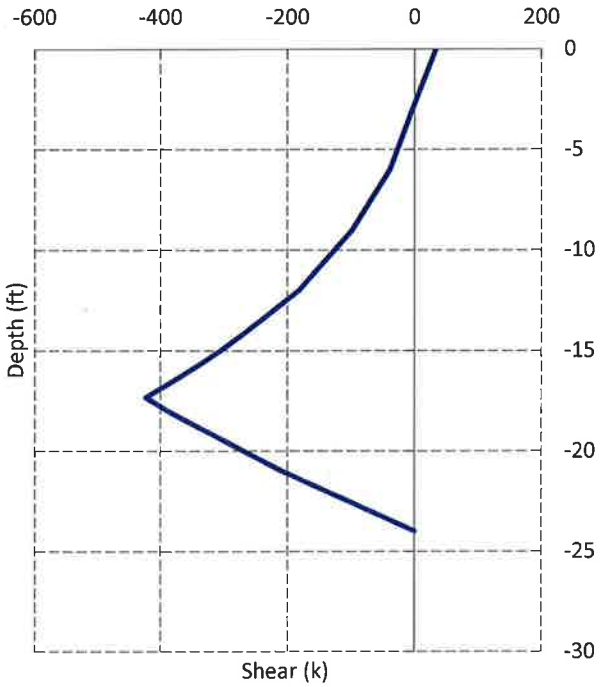
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	2.0	115	0	0	0	0
2.0	10.0	120	0	33	400	0
10.0	22.0	125	0	36	1400	0
22.0	27.0	130	6250	0	3125	20000

Required Embedment:	21.2	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	829.6	ft^3 = 30.7 yd^3
Weight of Concrete (Buoyancy Effect Considered):	124.4	k
Average Soil Unit Weight:	122.9	pcf
Skin Friction Resistance:	536.0	k
Compressive Bearing Resistance:	663.7	k
Pullout Weight (Minus Concrete Weight):	1010.5	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	495.4	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	899.8	k
P_u:	84.5	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.09	Result: OK
Total Lateral Resistance:	2131.0	k
Inflection Point (Below Ground Surface):	17.3	ft
Design Overturning Moment At Inflection Point (M_D):	4633.8	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	7094.2	k-ft
$M_D/\phi_s M_n$:	0.65	Result: OK
ϕ_s:	0.75	

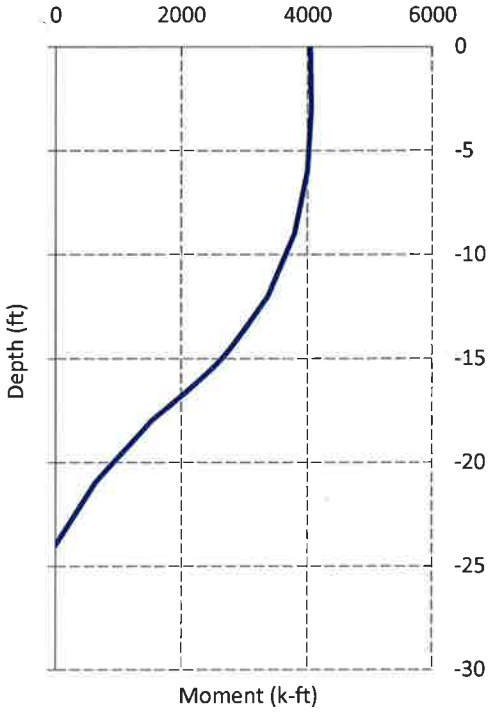
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	21	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	70.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	4062.9	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	4571.5	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.89	Result: OK
Design Shear (V_u):	423.0	k
Nominal Shear Capacity ($\phi_V V_n$):	456.1	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.93	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	1769.0	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	84.5	k
Nominal Compression Capacity ($\phi_P P_n$):	8390.2	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.007	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.89	Result: OK

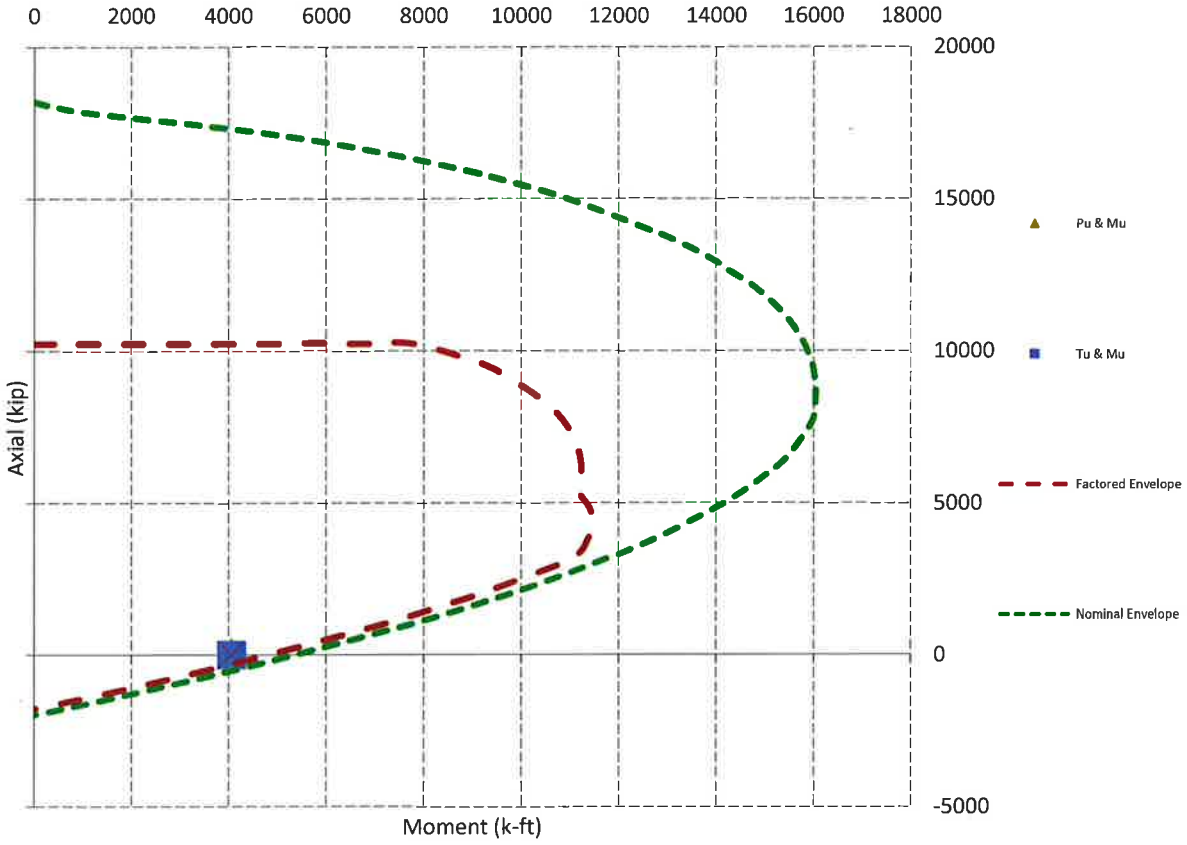
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads



ATTACHMENT 4

EASTOVER ROAD

Location	EASTOVER ROAD	**Mblu**	004/ 2955/ / /
Acct#	004-2955	**Owner**	CELLCO PARTNERSHIP
Assessment	$653,420	**Appraisal**	$933,450
PID	183864	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$394,720	$538,730	$933,450
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$276,310	$377,110	$653,420

Owner of Record

Owner	CELLCO PARTNERSHIP
Co-Owner	VERIZON WIRELESS
Address	P.O. BOX 2549 ADDISON, TX 75001

Sale Price	$594,710
Certificate	
Book & Page	4954/ 250
Sale Date	03/30/1998
Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
CELLCO PARTNERSHIP	$594,710		4954/ 250	00	03/30/1998
METRO MOBILE CTS OF FAIRFIELD	$0		3571/ 172	00	05/23/1990

Building Information

Building 1 : Section 1

Year Built: 1994
Living Area: 415

Building Attributes	
Field	**Description**
STYLE	Telephone Bldg
Stories:	1

Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Radiant
AC Type	None
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	None
Frame Type	Wood Frame
Baths/Plumbing	None
Ceiling/Wall	Ceil & Mn Wall
Rooms/Prtns	Light
Wall Height	9
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\12\83/

Building Layout

BAS[415]

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	415	415
		415	415

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	200
Description	Commercial MDL-94
Zone	RA1
Neighborhood	0100

Land Line Valuation

Size (Acres)	3.46
Depth	
Assessed Value	$377,110
Appraised Value	$538,730

Alt Land Appr No
Category

Outbuildings

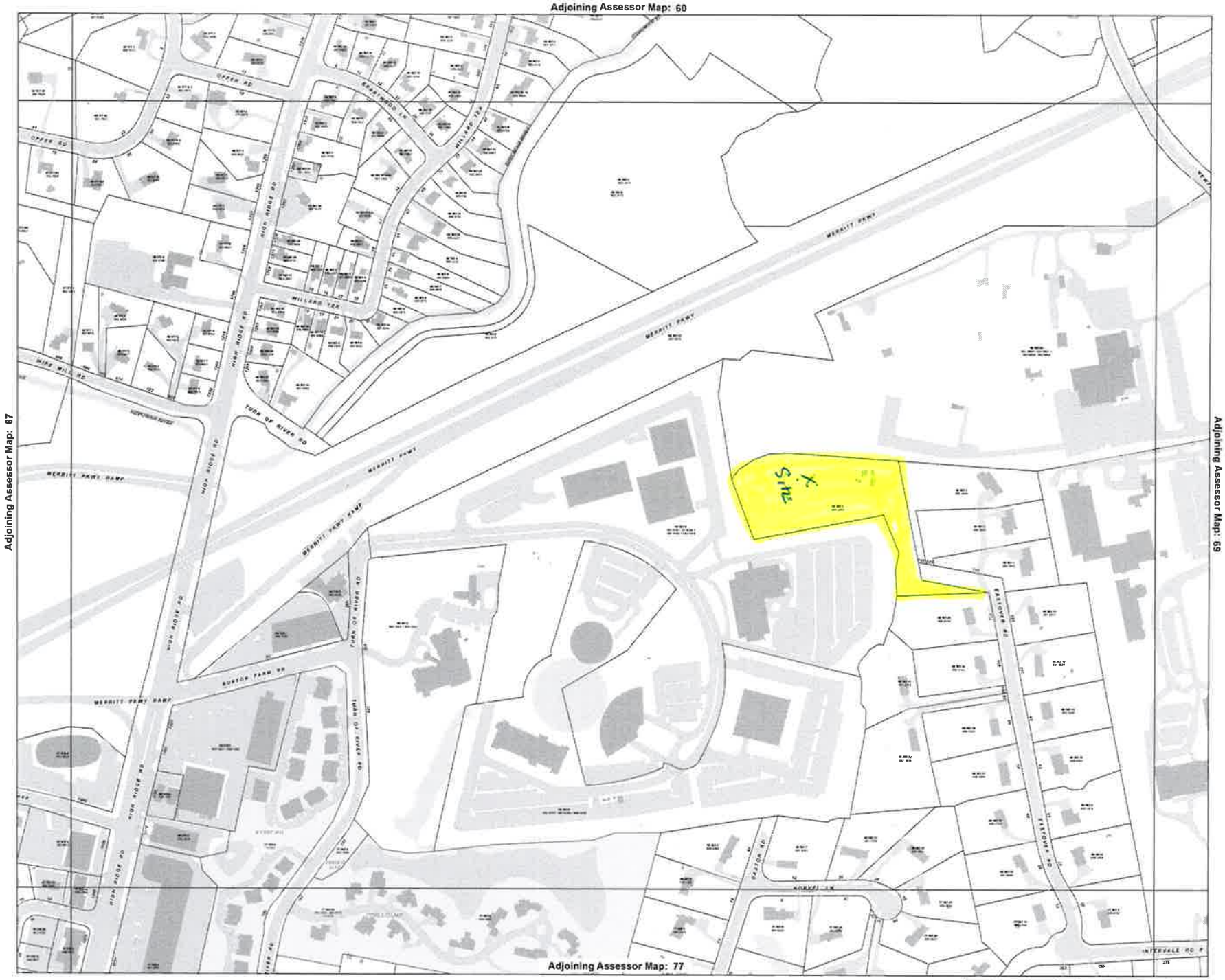
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
AP1	Fence Chn Lk			1596 L.F.	$13,170	1
CEL1	Cell Tower			2 SITES	$354,350	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$394,720	$538,730	$933,450
2014	$394,720	$538,730	$933,450
2013	$394,720	$538,730	$933,450

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$276,310	$377,110	$653,420
2014	$276,310	$377,110	$653,420
2013	$276,310	$377,110	$653,420

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



Map: 68

Disclaimer:
This map is for informational purposes only. All information is subject to revocation by any user. The City of Stamford and its mapping contributors assume no legal responsibility for the information contained in here.
This map is not intended as represent survey accuracy.

Map Produced September 2010

1 inch = 100 feet

0 100 200 300 400 500 Feet

City of Stamford, Connecticut

Assessment Parcel Map

Parcel data current as of October 2009
Buildings and Paved Roads based on aerial flight from April 2005
Map Coordinates based on NAD 83 Connecticut State Plane Feet

111 216 64	Map Block Lot	City Boundaries		Buildings	
12	Address	Water Bodies		Paved Roads	
003-0569	Parcel Id	Streams and Rivers		Railroad	
	Parcels	Residential Condos		Parks	

51	52	53
59	60	61
67	68	69
76	77	78
83	84	85

Map: 68