

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A SUB-PETITION OF CELLCO	:	SUB-PETITION NO. 1133
PARTNERSHIP D/B/A VERIZON WIRELESS	:	99 MEADOW STREET
FOR THE SHARED USE OF AN EXISTING	:	HARTFORD, CT
WIRELESS TELECOMMUNICATIONS	:	
FACILITY AT 99 MEADOW STREET,	:	
HARTFORD , CONNECTICUT	:	AUGUST 23, 2016

SUB-PETITION FOR DECLARATORY RULING:
ELIGIBLE FACILITIES REQUEST FOR MODIFICATIONS
THAT WILL NOT SUBSTANTIALLY CHANGE THE
PHYSICAL DIMENSIONS OF AN EXISTING BASE STATION

I. Introduction

Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified at 47 U.S.C. § 1455(a) (“Section 6409(a)”) and the October 21, 2014 Report and Order (FCC-14-153) issued by the Federal Communications Commission (“FCC”) (the “FCC Order”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Sub-Petition”) that the installation of antennas and related telecommunications equipment at the existing wireless telecommunications base station at 99 Meadow Street in Hartford, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its “Hartford S 5 Facility”.

II. Factual Background

The Property is a 2.85-acre parcel in Hartford’s Industrial (I-2) zoning district. The Property is surrounded by commercial and industrial uses along Meadow Street, Locust Street and Ledyard Street in Hartford. See Attachment 1 – Site Vicinity Map and Site Schematic

(Aerial Photograph). The tower is currently shared by AT&T, with antennas at the 135-foot level; T-Mobile, with antennas at the 133-foot level; MetroPCS, with antennas at the 113-foot level; Sprint, with antennas at the 98-foot level; and Clearwire, with antennas at the 89-foot level of the tower. The tower received its certificate of occupancy on June 16, 2000, Building Permit No. B19995169. (See Attachment 2). Towers are permitted in I-2 Industrial subject to approval of a building permit.

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Hartford and throughout the State of Connecticut. The proposed Hartford S 5 Facility described in this filing is designed to provide coverage and capacity relief to Cellco's existing wireless network in Hartford.

III. Proposed Woodstock Valley Facility

Cellco intends to install twelve (12) antennas and nine (9) remote radio heads ("RRHs") at the 79-foot level on the 147.9-foot tower. Cellco will also install associated equipment inside the abandoned Nextel (10' x 20') shelter. Power and telephone service will extend from the existing utility backboard at the Property. Project Plans for the Hartford S 5 Facility are included in Attachment 3. Specifications for Cellco's antennas, RRHs and equipment are included in Attachment 4. A Structural Analysis Report confirming that the tower can support Cellco's antenna and related equipment is included in Attachment 5.

IV. Discussion

A. The Proposed Modification Will Not Cause a Substantial Change to the Physical Dimensions of the Existing Base Station

Section 6409(a) provides, in relevant part, that "a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or

base station.” Pursuant to the FCC Order, the proposed modification does not substantially change the physical dimensions of the base station if the following criteria are satisfied.

1. *The proposed modified facility will not increase the height of the tower by more than ten (10) percent of the height.* Cellco does not intend to increase the height of the existing tower. Cellco’s antennas will be located at the 79-foot level on the existing 147.9-foot tower.
2. *The proposed facility modification will not protrude from the edge of the structure more than six (6) feet.* Cellco’s antennas will not protrude more than six (6) feet from the face of the tower.
3. *The proposed facility does not involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets.* Cellco intends to utilize an existing abandoned equipment shelter within the fenced compound.
4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* Cellco’s proposed facility modifications will remain within the limits of the existing fenced compound at the Property.
5. *The proposed facility does not defeat the existing concealment elements of the base station.* There are no concealment elements incorporated into the existing base station design.
6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* Hartford Zoning Regulations permit the construction of towers in the I-2 zone subject only to the issuance of a building permit.

B. FCC Compliance

Included in Attachment 6 is a cumulative worst case General Power Density table for Cellco's proposed antennas and all other existing antennas confirming that the facility will operate within the FCC safety standards for radio frequency emissions.

C. Notice to the Town, Property Owner and Abutting Landowners


On August 23, 2016, a copy of this Sub-Petition was sent to Hartford's Mayor, Luke Bronin; Jamie Bratt, Hartford's Director of Planning and Economic Development; Meadow Street Realty, the Property owner; and ATC, the tower owner. Copies of the letters sent to Mr. Bronin, Mr. Bratt, Meadow Street Realty and ATC are included in Attachment 7. A copy of this Sub-Petition was also sent to the owners of land that abuts the Property. A sample abutter's cover letter and the list of those abutting landowners who were sent notice and a copy of this filing is included in Attachment 8.

V. Conclusion

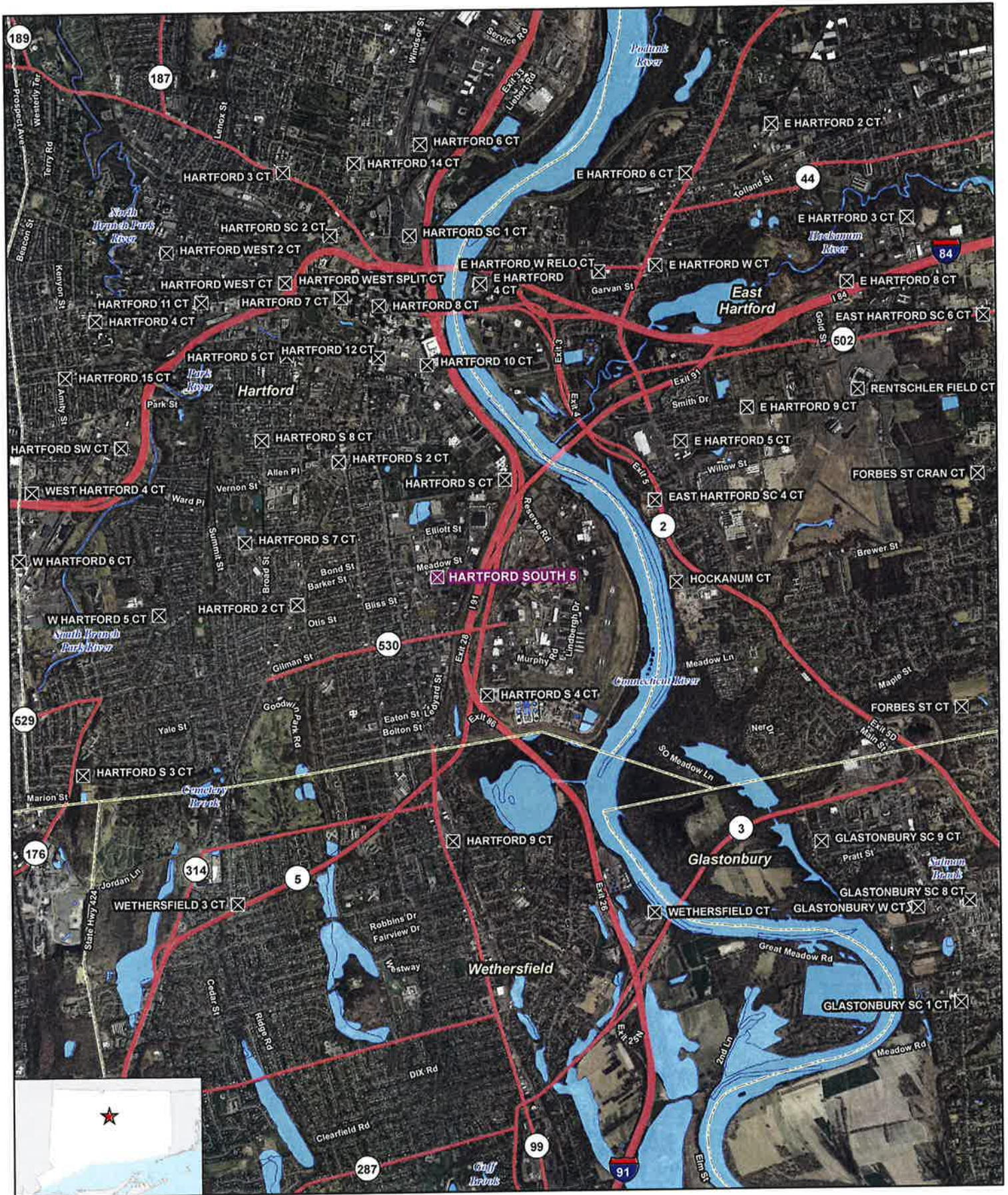
Based on the information provided above, Cellco respectfully submits that the proposed modification of the existing base station at the Property constitutes an "eligible facilities request" under Section 6409(a) and the FCC Order.

Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By 
Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

ATTACHMENT 1



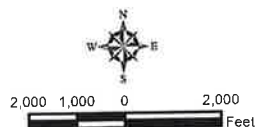
Legend

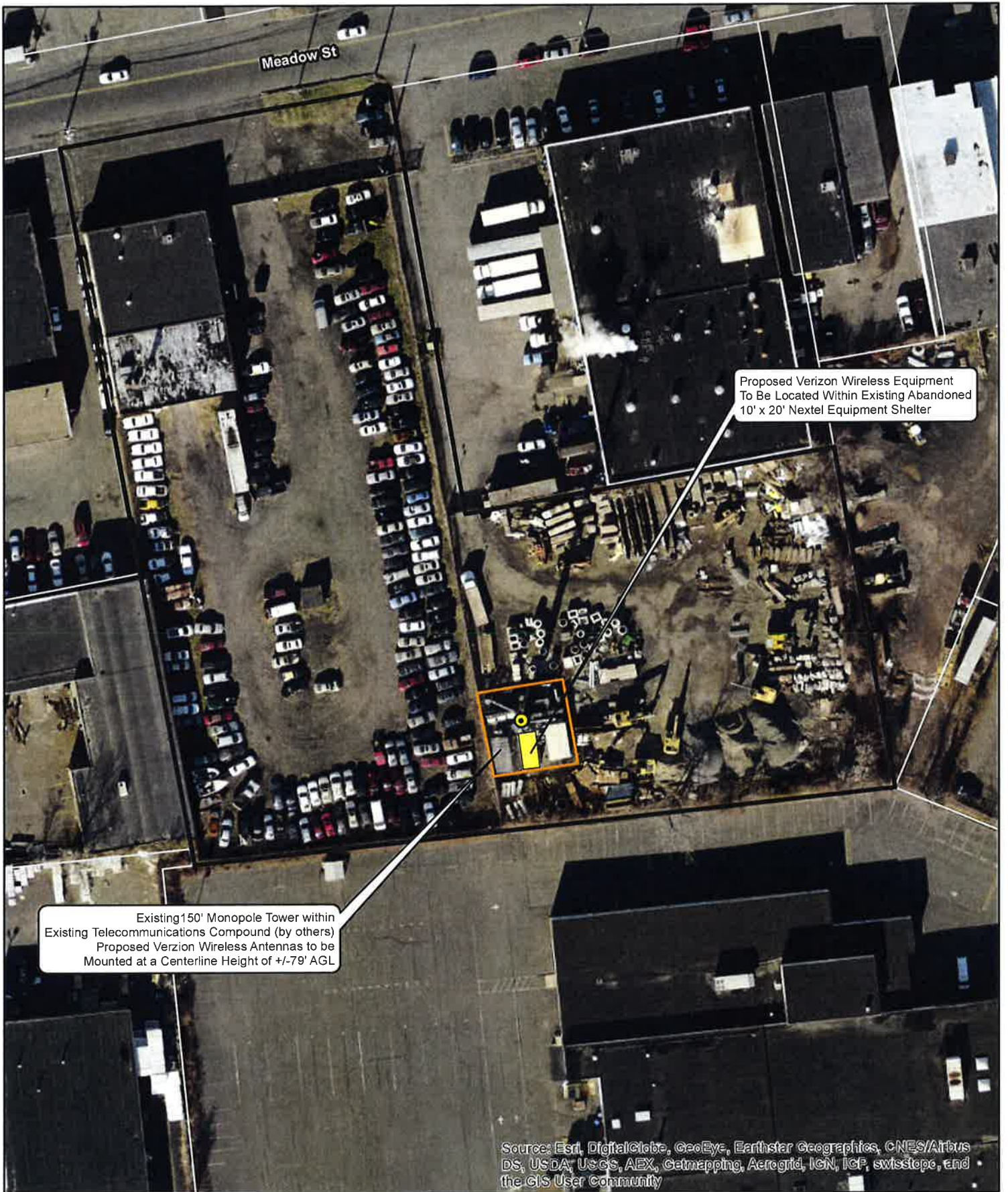
- Proposed Verizon Wireless Facility
- Surrounding Verizon Wireless Facilities
- Municipal Boundary
- Waterbody

Site Vicinity Map

Proposed Wireless
Telecommunications Facility
Hartford South 5
99 Meadow Street
Hartford, Connecticut






Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 4,000 feet
Map Date: August 2016





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

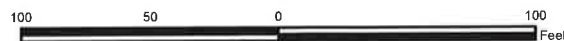
Legend

-  Existing Monopole Tower (By Others)
-  Proposed Verizon Wireless Equipment (Within Existing Abandoned Shelter)
-  Existing Compound Area (By Others)
-  Subject Property
-  Approximate Parcel Boundary (CTDEEP GIS Parcels Last Updated 2010)

Site Schematic

Proposed Wireless Telecommunications Facility
 Hartford South 5
 99 Meadow Street
 Hartford, Connecticut

Map Notes:
 Base Map Source: ESRI World Imagery
 Map Scale: 1 inch = 75 feet
 Map Date: August 2016



ATTACHMENT 2

BUREAU OF LICENSES AND PERMITS
CITY OF HARTFORD

No 13069

CERTIFICATE OF OCCUPANCY

Zone I-2 Dated June 16, 2000

THIS IS TO CERTIFY THAT building at 99 Meadow Street
as constructed under Permit No. B 19995169 HC 12/15/99 conforms substantially to the
requirements of the Building Code and the Zone Ordinance of the City of Hartford and is hereby approved for occupancy
as indicated below.

Approved for occupancy Telecommunications Tower
Use Group Business

Joseph Heenes a jb Building Supervisor

Notice: — If this certificate is lost or destroyed, a duplicate should be immediately obtained from the Department of Licenses and
Inspections. Any change or extension of the use herein approved requires a new certificate of occupancy.
Copies of this certificate may be obtained at the Department of Licenses and Inspections at a charge of seventy-five cents each.

Receipt No.

ATTACHMENT 3



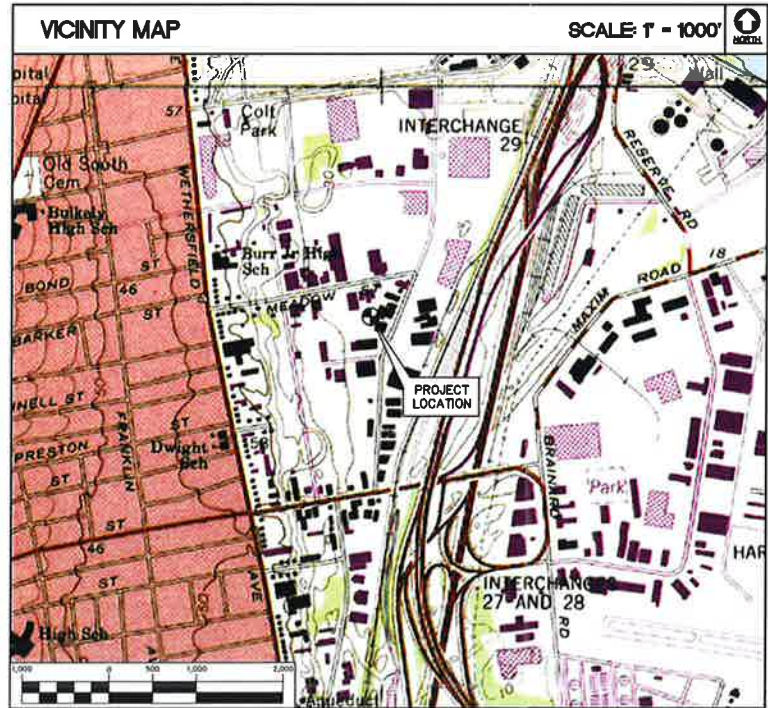
WIRELESS COMMUNICATIONS FACILITY

HARTFORD SOUTH 5
 99 MEADOW STREET
 HARTFORD, CT 06114

SITE DIRECTIONS	
FROM: 99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	TO: 99 MEADOW STREET HARTFORD, CONNECTICUT
1. Head Northeast on E River Dr toward Darlin St	0.2 mi
2. Turn right onto Darlin St	0.6 mi
3. Merge onto CT-2 W	0.6 mi
4. Turn left onto Columbus Blvd	0.5 mi
5. Columbus Blvd becomes Wyllys St	0.4 mi
6. Turn left onto Wethersfield Ave	0.9 mi
7. Turn left onto Meadow St, destination will be on the right	0.2 mi

GENERAL NOTES
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

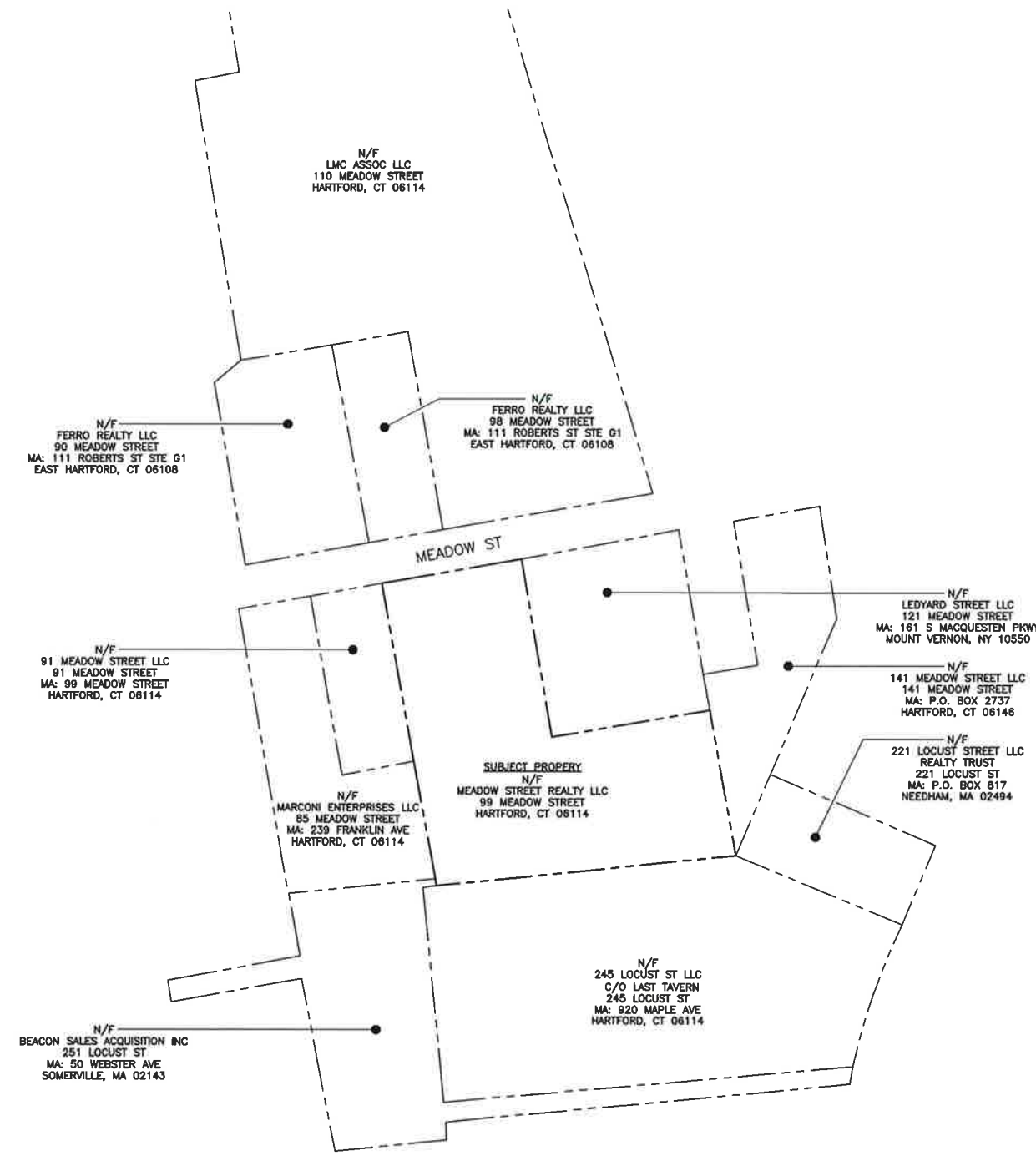
PROJECT SCOPE
1. THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE RENOVATION OF A PREVIOUSLY INSTALLED 10'x20' NEXEL PREFABRICATED WIRELESS EQUIPMENT SHELTER TO BE REPURPOSED FOR USE BY CELCO PARTNERSHIP LOCATED WITHIN THE EXISTING WIRELESS COMMUNICATIONS LEASE AREA.
2. A TOTAL OF TWELVE (12) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED ON AN EXISTING 147'-11" TALL MONOPOLE TOWER AT A CENTERLINE ELEVATION OF 79'.
3. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND TO THE PROPOSED EQUIPMENT SHELTER FROM AN EXISTING UTILITY BACKBOARD LOCATED ADJACENT TO FENCED COMPOUND.
4. CELCO PARTNERSHIP TO TIE INTO EXISTING ATC GENERATOR.



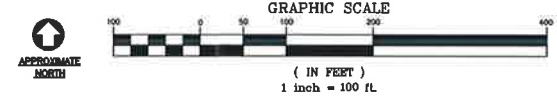
PROJECT SUMMARY	
SITE NAME:	HARTFORD SOUTH 5
SITE ADDRESS:	99 MEADOW STREET HARTFORD, CT 06114
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	STEVE SCHADLER CELCO PARTNERSHIP (508) 887-0357
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE LLP (860) 275-8345
TOWER COORDINATES:	LATITUDE: 41°-44'-35.5" LONGITUDE: 72°-40'-03.1" GROUND ELEVATION: 40'± A.M.S.L. COORDINATES & GROUND ELEVATION ARE BASED ON CONNECTICUT SITING COUNCIL DATABASE.

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
C-1	ABUTTERS MAP	1
C-2	COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION	1

		Celco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY HARTFORD SOUTH 5 99 MEADOW STREET HARTFORD, CT 06114	(203) 498-0580 (203) 498-6587 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	PROFESSIONAL ENGINEER SEAL ISSUED FOR CT SITING COUNCIL ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW DATE FROM BY CHK'D BY DESCRIPTION 1 08/15/16 ASC HMR 0 08/08/16 LSC HMR REV. DATE FROM BY CHK'D BY DESCRIPTION
TITLE SHEET			T-1 Sheet No. 1 of 3	



1
C-1
ABUTTERS MAP
SCALE: 1" = 100'

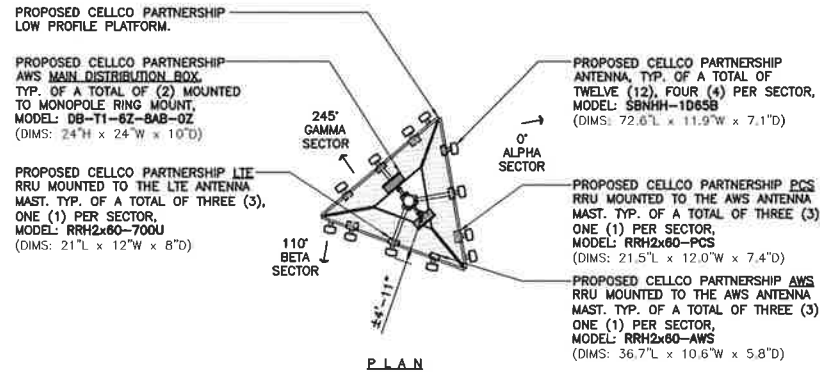


MAP REFERENCE NOTE:
PROPERTY LINES AND PROPERTY OWNER INFORMATION SHOWN HEREIN ARE REFERENCED FROM THE CITY OF HARTFORD ONLINE GIS SERVICES.

<p>203) 486-0580 203) 486-6567 Fax 652 North Branford Road Branford, CT 06405 www.CentekEng.com</p>	
<p>Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY HARTFORD SOUTH 5 99 MEADOW STREET HARTFORD, CT 06114</p>	
DATE:	08/08/16
SCALE:	AS NOTED
JOB NO.	15246.00
<p>ABUTTERS MAP</p>	
<p>C-1</p>	
<p>Sheet No. 2 of 3</p>	

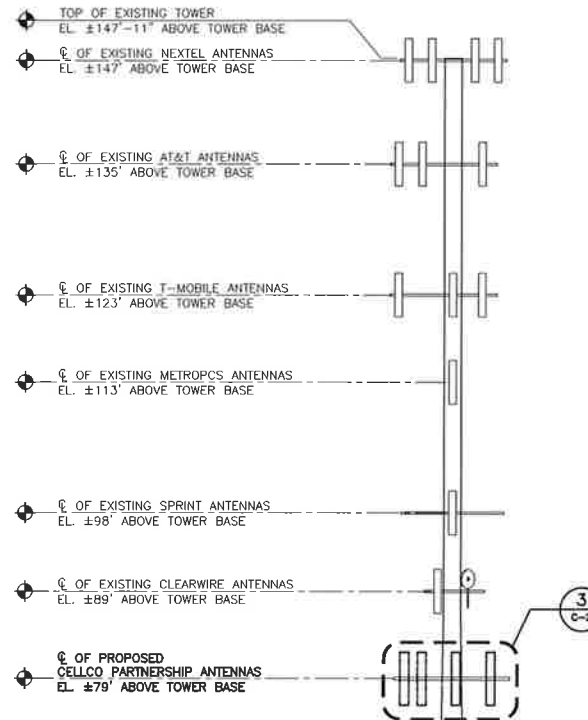
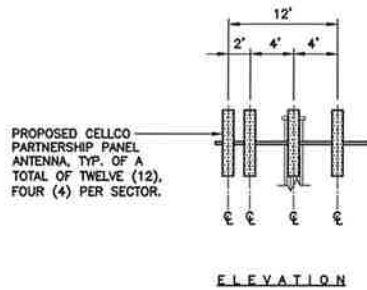
REV.	DATE	BY	CHK'D BY	DESCRIPTION
1	08/15/16	ASC		ISSUED FOR CT SITING COUNCIL
0	08/08/16	LAL		ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

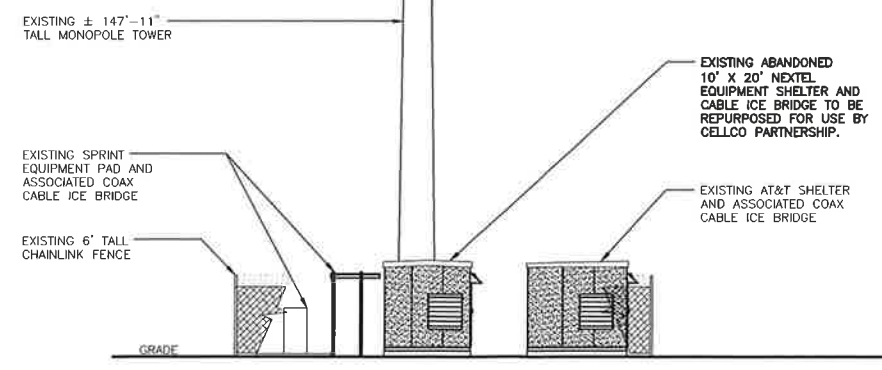


PLAN

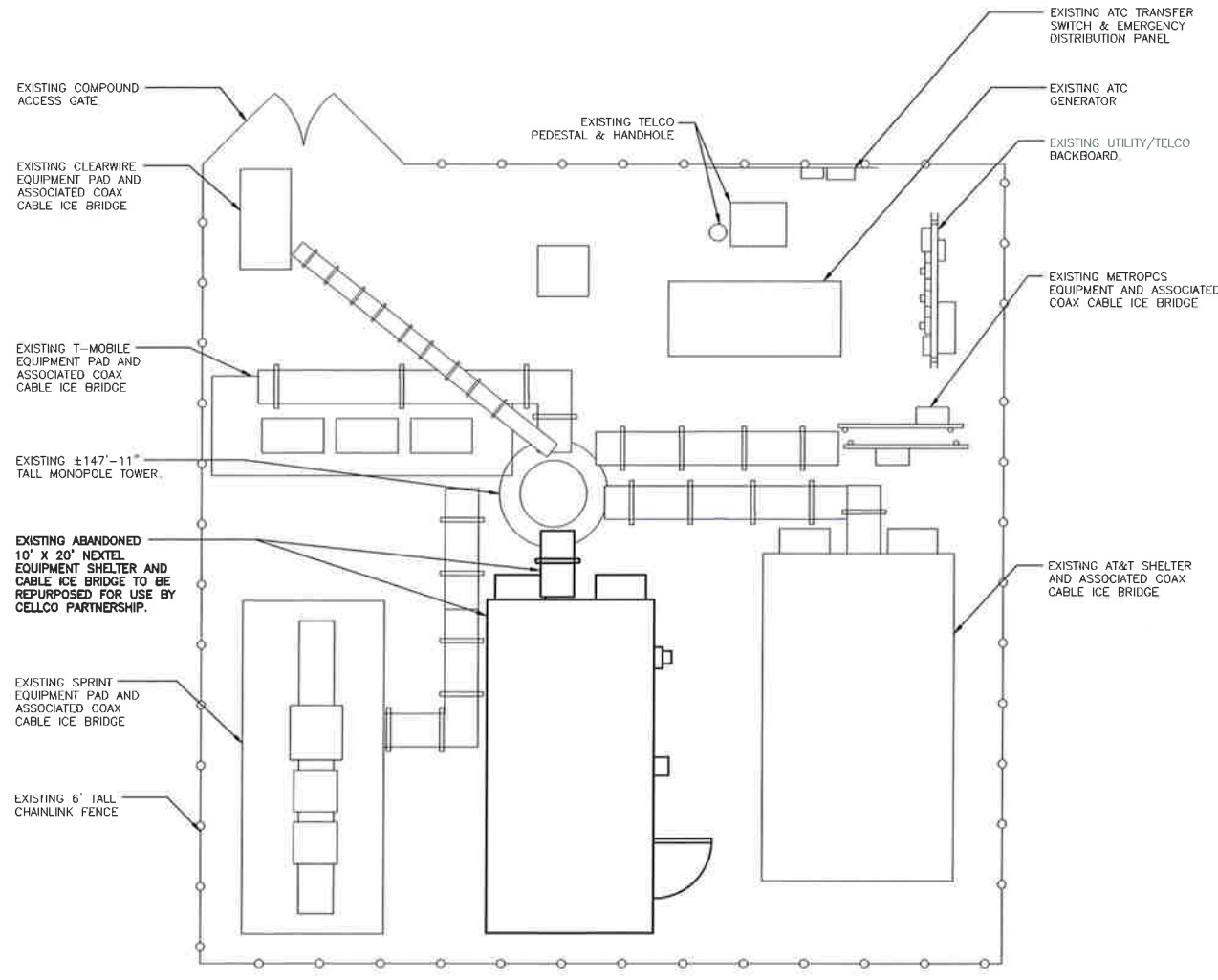
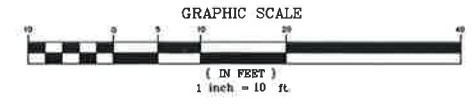
3 ANTENNA MOUNTING CONFIGURATION
SCALE: 1/8" = 1'



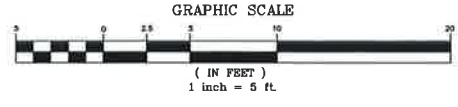
TOWER NOTES:
1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY AMERICAN TOWER CORPORATION, ATC SITE NUMBER: 302468 DATED: AUGUST 19, 2013



2 SOUTH ELEVATION
SCALE: 1" = 10'



1 COMPOUND PLAN
SCALE: 1" = 5'



ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW	DATE	08/19/16	ASC	ASC	DATE	08/26/16	CHK'D BY	DATE	08/26/16	DESCRIPTION
ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW	DATE	08/26/16	CHK'D BY	CHK'D BY	DATE	08/26/16	DESCRIPTION			
<p>PROFESSIONAL ENGINEER SEAL</p> <p>verizon</p> <p>Centek engineering Centered on Solutions™ (203) 488-0580 (203) 488-6587 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com</p> <p>Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY HARTFORD SOUTH 5 99 MEADOW STREET HARTFORD, CT 06114</p>										
<p>DATE: 06/08/16</p> <p>SCALE: AS NOTED</p> <p>JOB NO. 15246.00</p> <p>COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.</p> <p>C-2</p> <p>Sheet No. 3 of 3</p>										

ATTACHMENT 4



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
	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
Gain by Beam Tilt, average, dBi	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

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



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

ALCATEL-LUCENT B13 RRH4X30-4R

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

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

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

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

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

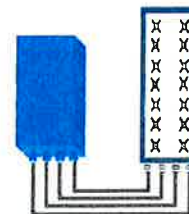


FEATURES

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

BENEFITS

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



4x30W with 4T4R
or
2x60W with 2T4R

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

TECHNICAL SPECIFICATIONS

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

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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).

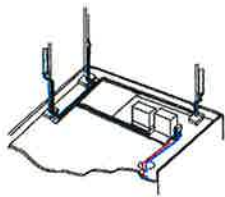
The Alcatel-Lucent RRH2x60-1900A-4R is a very cost-effective solution to deploy LTE MIMO.

EASY INSTALLATION

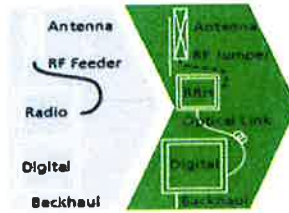
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-1900A-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

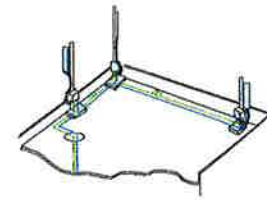
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-190A-4R is compact and weighs about 21 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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 daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 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

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ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET B4 RRH2X60-4R FOR AWS BAND APPLICATIONS

The Alcatel-Lucent B4 RRH2x60-4R is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



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

The Alcatel-Lucent B4 RRH2x60-4R 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 B4 RRH2x60-4R 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.

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

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

OPTIMIZED TCO

The Alcatel-Lucent B4 RRH2x60-4R 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 B4 RRH2x60-4R is a very cost-effective solution to deploy LTE MIMO.

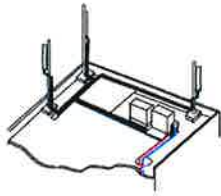
EASY INSTALLATION

The B4 RRH2x60-4R includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

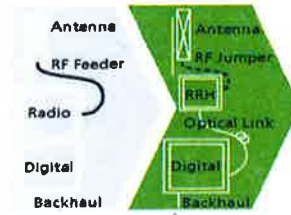
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent B4 RRH2x60-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent B4 RRH2x60-4R is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

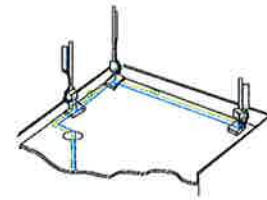
Installation can easily be done by a single person as the Alcatel-Lucent B4 RRH2x60-4R is compact and weighs about 25 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- B4 RRH2x60-4R integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- B4 RRH2x60-4R is optimized for LTE operation
- B4 RRH2x60-4R is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

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

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

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

TECHNICAL SPECIFICATIONS

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

Dimensions and weights

- HxWxD : 930x270x146 mm (with solar shield)
- Weight : 25 kg (55 lbs) (with solar shield)

Electrical Data

- Power Supply : -48V DC (-38 to -57V)
- Power Consumption: 346W typ. @2x30W (100%RF), 560W typ. @2x60W (100%RF)

RF Characteristics

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

Connectivity

- Two CPRI (3-6) optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 300m using MM fiber, up to 15km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Four external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

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

- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B
- Health : EN 50385

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ATTACHMENT 5



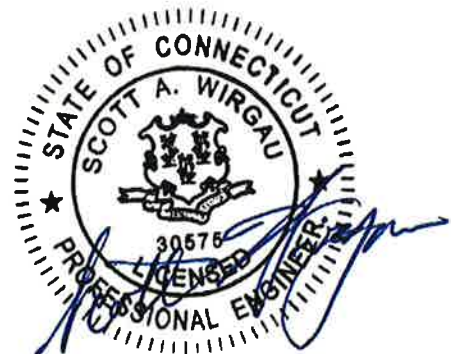
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 147.9 ft Monopole
ATC Site Name : Petro Lock, CT
ATC Site Number : 302468
Engineering Number : 540577211
Proposed Carrier : Verizon
Carrier Site Name : Hartford S 5, CT
Carrier Site Number : NA
Site Location : 99 Meadow St
Hartford, CT 06114-1598
41.743197,-72.667500
County : Hartford
Date : April 11, 2016
Max Usage : 90%
Result : Pass

Reviewed by:
Scott Wirgau, PE
Structural Team Leader

Prepared By:
Amir H. Tabarestani, E.I.
Structural Engineer II



Apr 11 2016 4:23 PM

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
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Existing and Reserved Equipment	2
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Introduction

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

Supporting Documents

Tower Drawings	FWT Job #21719000 Rev. 1, dated July 18, 2000
Foundation Drawing	FWT Job #21719000 Rev. 1, dated July 18, 2000
Geotechnical Report	Osprey Environmental Engineering Job #98083-01, dated August 28, 1998

Analysis

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

Basic Wind Speed:	80 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

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						
149.0	149.0	4	Decibel DB844H90E-XY	Platform w/ Handrails	(12) 1 5/8" Coax (1) 1/2" Coax	Sprint Nextel	
		8	Andrew 844G65VTZASX				
135.0	137.0	6	Powerwave LGP21401	Platform w/ Handrails	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Cable (1) 3" Conduit	AT&T Mobility	
		3	Ericsson RRUS 11 (Band 12) (55 lb)				
		3	Ericsson RRUS 11 w/ RRUS A2				
		3	Ericsson RRUS-32				
		3	Powerwave 7750.00				
		2	KMW AM-X-CD-16-65-00T-RET				
		2	Quintel QS66512-3 (112 lbs.)				
	135.0	135.0	1				Andrew SBNH-1D6565C
			1				CCI TPA-65R-LCUUUU-H8
			6				CCI TPX-070821
123.0	123.0	2	Raycap DC6-48-60-18-8F	T-Arms	(12) 1 5/8" Coax	T-Mobile	
		3	Kathrein Smart Bias Tee				
		3	RFS APX16DWV-16DWVS-E-A20				
	121.0	3	Andrew LNX-6515DS-VTM				
		3	Ericsson KRY 112 144/1				
113.0	113.0	3	Ericsson KRY 112 489/1				
		3	RFS APXV18-206517	Flush	(6) 1 5/8" Coax	Metro PCS	
98.0	98.0	3	RFS IBC1900BB-1	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel	
		3	RFS IBC1900HG-2A				
		3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter				
		3	Alcatel-Lucent 4x40W RRH (88 lb)				
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield				
		3	RFS APXVTM14-C-I20				
		3	RFS APXVSP18-C-A20				
89.0	89.0	3	DragonWave Horizon Compact	Side Arms	(6) 5/16" Coax (3) 1/2" Coax (1) 2" Conduit	Clearwire	
		3	NextNet BTS-2500				
		2	DragonWave A-ANT-18G-2-C				
		3	Argus LLPX310R				
		1	DragonWave A-ANT-11G-2.5-C				
20.0	20.0	1	Lucent KS-24019	Flush	(1) 1/2" Coax	Sprint Nextel	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
79.0	79.0	3	Alcatel-Lucent RRH2X60-AWS	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH2x60			
		2	RFS DB-T1-6Z-8AB-OZ			
		12	Commscope SBNHH-1D65B			

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

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	88%	Pass
Shaft	90%	Pass
Base Plate	47%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,551.1	29%
Axial (Kips)	52.3	14%
Shear (Kips)	34.6	72%

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) (°)
89.0	DragonWave A-ANT-18G-2-C	Clearwire	0.995	1.223
	DragonWave A-ANT-11G-2.5-C			
79.0	Alcatel-Lucent RRH2X60-AWS	Verizon	0.791	1.111
	Alcatel-Lucent RRH2x60 700			
	Alcatel-Lucent RRH2x60			
	RFS DB-T1-6Z-8AB-OZ			
	Commscope SBNHH-1D65B			

*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.



Standard Conditions

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

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

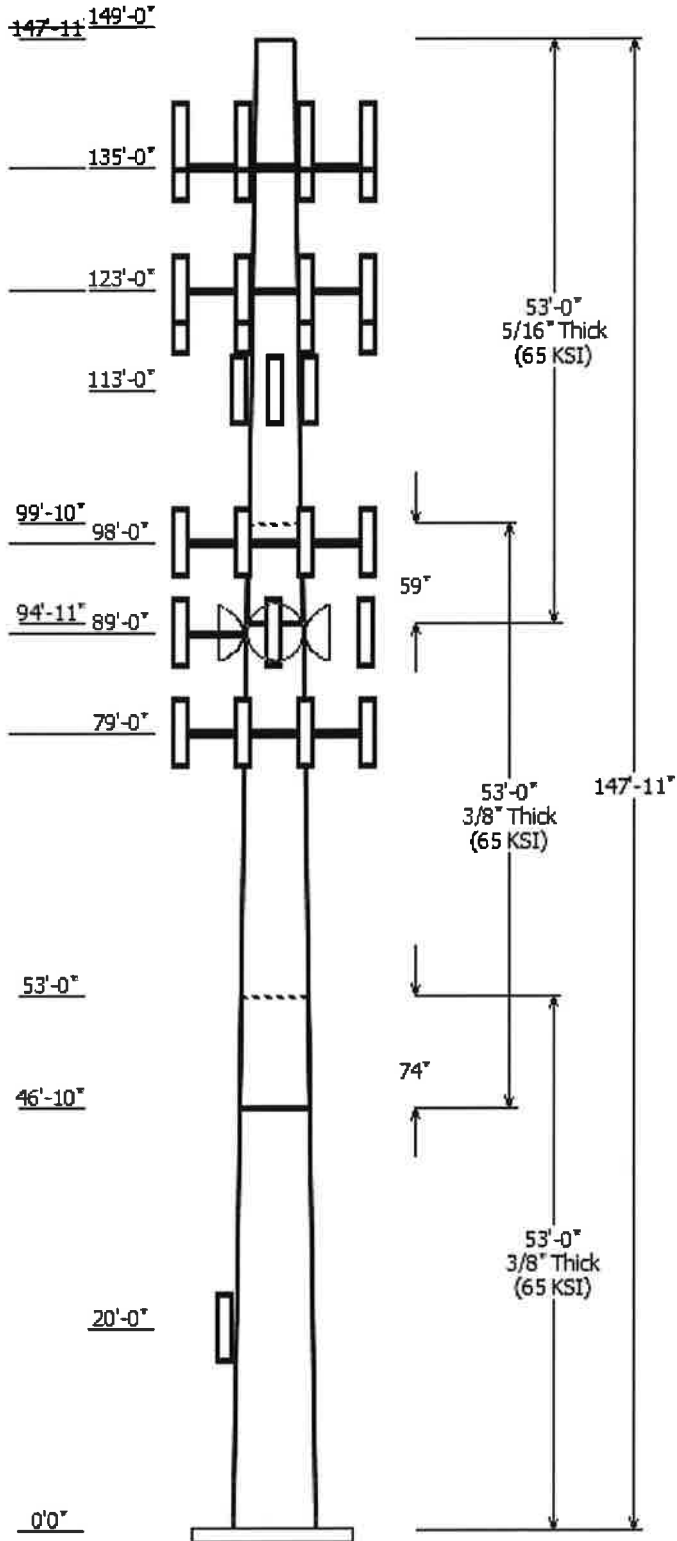
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance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

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

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

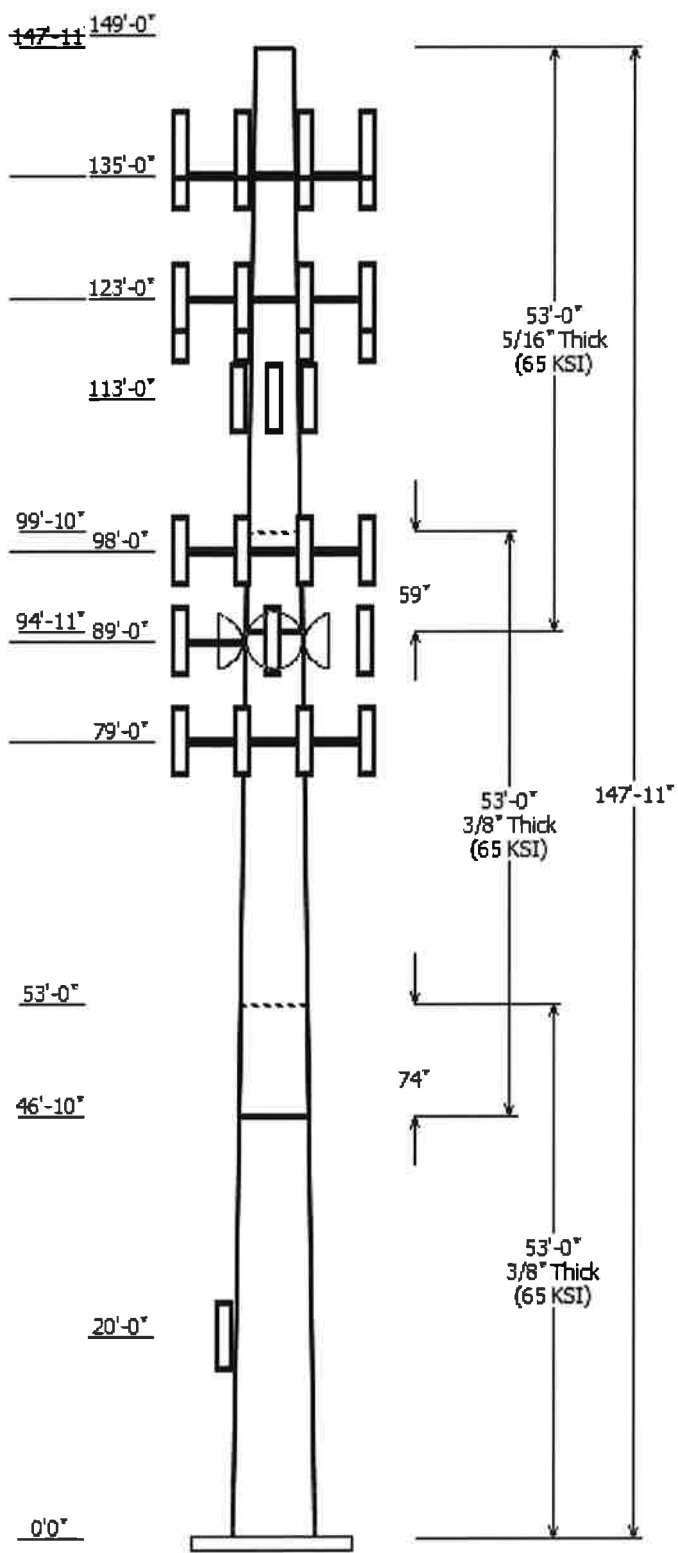
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Job Information	
Pole :	302468
Code :	TIA/EA-222-F
Description :	148' FWT Monopole
Client :	VERIZON WIRELESS
Location :	Petro Lock, CT
Shape :	18 Sides
Height :	147.92 (ft)
Base Elev (ft):	0.00
Taper:	0.21456(in/ft)



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

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	149.000	1	Flat Platform w/ Handrails
149.000	149.000	8	Andrew 844G65VTZASX
149.000	149.000	4	Decibel DB844H90E-XY
135.000	137.000	1	CCI TPA-65R-LCUUUU-H8
135.000	137.000	2	Quintel QS66512-3 (112 lbs.)
135.000	137.000	3	Ericsson RRUS-32
135.000	137.000	3	Ericsson RRUS 11 w/ RRUS A2
135.000	135.000	2	Raycap DC6-48-60-18-8F
135.000	137.000	3	Ericsson RRUS 11 (Band 12) (55
135.000	137.000	1	Andrew SBNH-1D6565C
135.000	137.000	2	KMW AM-X-CD-16-65-00T-RET
135.000	135.000	6	CCI TPX-070821
135.000	137.000	6	Powerwave LGP21401
135.000	135.000	1	Flat Platform w/ Handrails
135.000	137.000	3	Powerwave 7750.00
123.000	123.000	3	Andrew LNX-6515DS-VTM
123.000	123.000	3	RFS APX16DWV-16DWVS-E-A20
123.000	121.000	3	Ericsson KRY 112 489/1
123.000	121.000	3	Ericsson KRY 112 144/1
123.000	123.000	3	Kathrein Scala Smart Bias Tee
123.000	123.000	3	Round T-Arms
113.000	113.000	3	RFS APXV18-206517
98.000	98.000	3	RFS APXVTM14-C-I20
98.000	98.000	3	Alcatel-Lucent TD-RRH8x20-25
98.000	98.000	3	RFS IBC1900HG-2A
98.000	98.000	3	RFS IBC1900BB-1
98.000	98.000	3	Alcatel-Lucent 800 MHz 2X50W
98.000	98.000	3	Alcatel-Lucent 4x40W RRH (88 I
98.000	98.000	3	RFS APXVSP18-C-A20
98.000	98.000	1	Round Low Profile Platform
89.000	89.000	1	DragonWave A-ANT-11G-2.5-C
89.000	89.000	1	Side Arms
89.000	89.000	3	NextNet BTS-2500
89.000	89.000	3	Argus LLPX310R
89.000	89.000	3	DragonWave Horizon Compact
89.000	89.000	2	DragonWave A-ANT-18G-2-C
79.000	79.000	1	Flat Low Profile Platform
79.000	79.000	12	Commscope SBNHH-1D65B
79.000	79.000	2	RFS DB-T1-6Z-8AB-0Z
79.000	79.000	3	Alcatel-Lucent RRH2x60
79.000	79.000	3	Alcatel-Lucent RRH2x60-AWS
79.000	79.000	3	Alcatel-Lucent RRH2x60 700
20.000	20.000	1	Lucent KS-24019

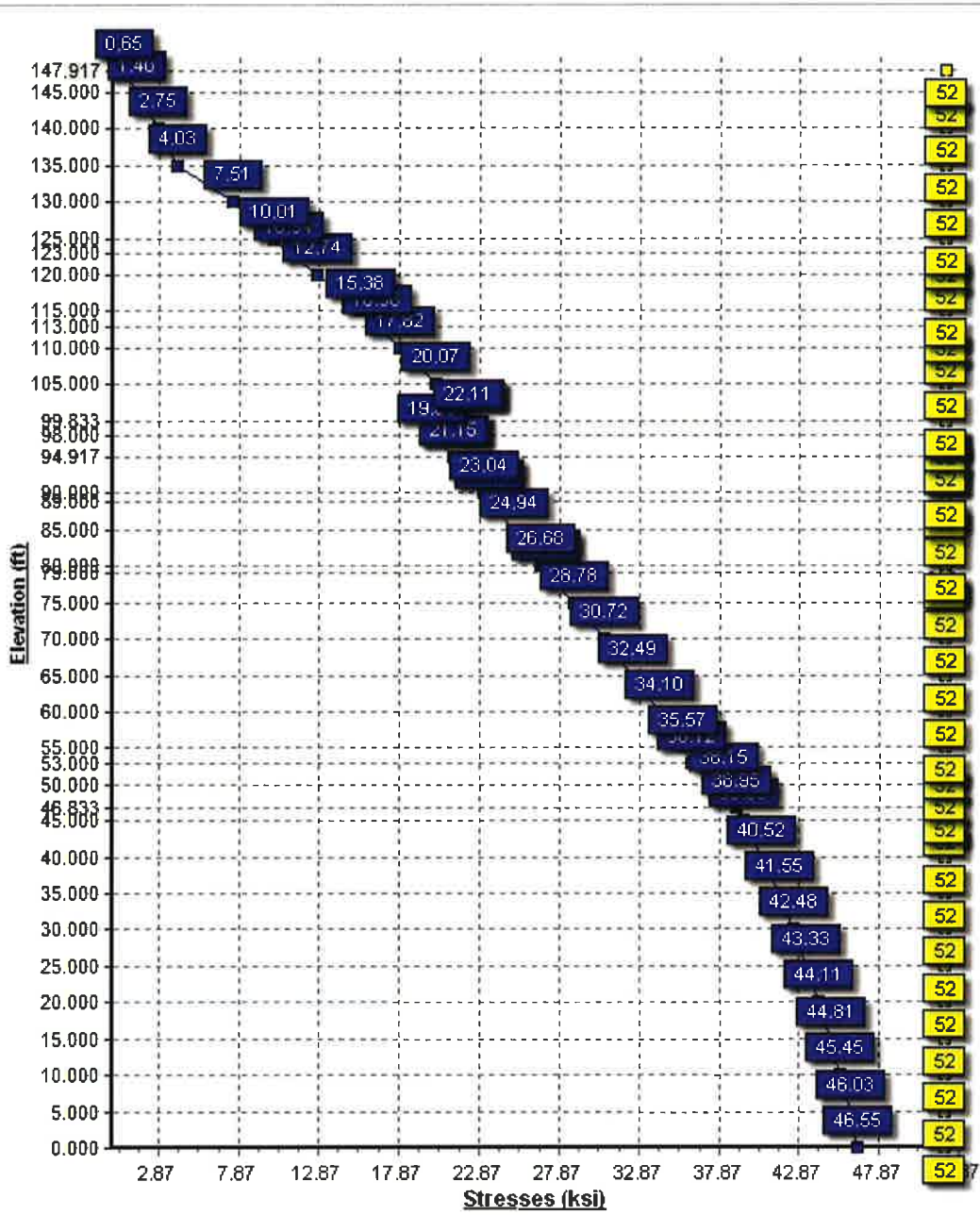


Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
5.000	20.000	1/2" Coax	No
5.000	79.000	1 5/8" Hybriflex	Yes
5.000	89.000	1/2" Coax	Yes
5.000	89.000	2" Conduit	Yes
5.000	89.000	5/16" Coax	No
5.000	98.000	1 1/4" Hybriflex	No
5.000	113.0	1 5/8" Coax	No
5.000	123.0	1 5/8" Coax	No
5.000	123.0	1 5/8" Coax	Yes
5.000	135.0	0.39" Cable	No
5.000	135.0	0.78" 8 AWG 6	No
5.000	135.0	1 5/8" Coax	No
5.000	135.0	3" Conduit	No
5.000	149.0	1 5/8" Coax	No
5.000	149.0	1/2" Coax	No

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3551.14	34.62	44.71
Ice	2689.28	25.73	52.31
Twist/Sway	1388.17	13.52	44.76

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	89.00	11.936	1.223
Twist/Sway	89.00	11.936	1.223



Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Analysis Parameters

Location: Hartford County, CT

Code: TIA/EIA-222-F

Height (ft): 147.

Shape: 18 Sides

Base Diameter (in): 56.58

Pole Type: Taper

Top Diameter (in): 26.22

Pole Manufacturer: FWT Inc

Taper (in/ft) : 0.215

Load Cases

No Ice 80.00 mph Wind with No Ice

Ice 69.28 mph Wind with Ice

Twist/Sway 50.00 mph Wind with No Ice

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom						Top						
				Joint Type	Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.000	0.3750	65		0.00	10,844	56.58	0.00	66.90	26698.9	24.84	150.88	45.20	53.00	53.36	13550.6	19.49	120.55	0.214568
2-18	53.000	0.3750	65	Slip	74.00	8,848	47.28	46.83	55.83	15518.7	20.47	126.08	35.90	99.83	42.29	6746.8	15.12	95.76	0.214568
3-18	53.000	0.3125	65	Slip	59.00	5,651	37.58	94.92	36.97	6490.6	19.45	120.28	26.21	147.92	25.69	2178.2	13.03	83.89	0.214568
Shaft Weight						25,342													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
149.00	Andrew 844G65VTZASX	8	16.00	5.890	0.84	54.72	6.500	0.84	0.000	0.000
149.00	Decibel DB844H90E-XY	4	14.00	3.733	0.91	40.30	4.288	0.91	0.000	0.000
149.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	2,450.00	48.400	1.00	0.000	0.000
135.00	Andrew SBNH-1D6565C	1	66.10	11.440	1.00	132.00	12.370	1.00	0.000	2.000
135.00	CCI TPA-65R-LCUUUU-H8	1	82.10	13.440	1.00	141.77	14.350	1.00	0.000	2.000
135.00	CCI TPX-070821	6	7.50	0.550	0.50	7.90	0.380	0.50	0.000	0.000
135.00	Ericsson RRUS 11 (Band 12)	3	55.00	2.940	0.67	74.30	3.290	0.67	0.000	2.000
135.00	Ericsson RRUS 11 w/ RRUS	3	72.00	3.260	0.67	0.00	0.000	0.67	0.000	2.000
135.00	Ericsson RRUS-32	3	77.00	3.870	0.67	104.90	4.300	0.67	0.000	2.000
135.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	2,450.00	48.400	1.00	0.000	0.000
135.00	KMW AM-X-CD-16-65-00T-	2	48.50	8.260	0.84	95.00	9.080	0.84	0.000	2.000
135.00	Powerwave 7750.00	3	27.00	5.920	0.76	65.67	6.540	0.76	0.000	2.000
135.00	Powerwave LGP21401	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	2.000
135.00	Quintel QS66512-3 (112 lbs.)	2	112.00	8.400	0.93	0.00	0.000	0.93	0.000	2.000
135.00	Raycap DC6-48-60-18-8F	2	20.00	1.260	1.00	35.10	1.460	1.00	0.000	0.000
123.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.84	117.10	12.360	0.84	0.000	0.000
123.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	-2.000
123.00	Ericsson KRY 112 489/1	3	15.40	0.650	0.50	20.40	0.830	0.50	0.000	-2.000
123.00	Kathrein Scala Smart Bias	3	3.30	0.090	0.50	0.00	0.000	0.50	0.000	0.000
123.00	RFS APX16DWV-16DWVS-E-	3	40.70	7.220	0.65	75.00	7.910	0.65	0.000	0.000
123.00	Round T-Arms	3	250.00	9.700	0.75	314.00	12.100	0.75	0.000	0.000
113.00	RFS APXV18-206517	3	26.40	5.050	0.80	48.13	5.700	0.80	0.000	0.000
98.00	Alcatel-Lucent 4x40W RRH	3	88.00	2.910	0.67	122.40	4.230	0.67	0.000	0.000
98.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.67	86.10	2.720	0.67	0.000	0.000
98.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.720	0.67	122.40	4.230	0.67	0.000	0.000
98.00	RFS APXVSP18-C-A20	3	57.00	8.260	0.82	106.50	9.080	0.82	0.000	0.000
98.00	RFS APXVTM14-C-I20	3	52.90	6.900	0.76	73.60	7.740	0.76	0.000	0.000
98.00	RFS IBC1900BB-1	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
98.00	RFS IBC1900HG-2A	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
98.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
89.00	Argus LLPX310R	3	28.60	4.830	0.70	54.50	5.360	0.70	0.000	0.000
89.00	DragonWave A-ANT-11G-2.5-	1	47.60	8.670	0.95	117.00	9.170	0.95	0.000	0.000
89.00	DragonWave A-ANT-18G-2-C	2	27.10	4.690	0.85	55.10	5.050	0.85	0.000	0.000
89.00	DragonWave Horizon	3	10.60	0.430	0.50	17.00	0.580	0.50	0.000	0.000
89.00	NextNet BTS-2500	3	35.00	2.120	0.67	48.30	2.430	0.67	0.000	0.000
89.00	Side Arms	1	560.00	8.500	1.00	680.00	10.500	1.00	0.000	0.000
79.00	Alcatel-Lucent RRH2x60	3	60.00	3.960	0.67	82.70	4.430	0.67	0.000	0.000
79.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.510	0.67	71.08	2.810	0.67	0.000	0.000
79.00	Alcatel-Lucent RRH2X60-	3	44.00	2.190	0.67	61.40	2.870	0.67	0.000	0.000
79.00	Commscope SBNHH-1D65B	12	50.70	8.380	0.69	0.00	0.000	0.69	0.000	0.000
79.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
79.00	RFS DB-T1-6Z-8AB-OZ	2	44.00	5.600	0.67	44.30	3.280	0.67	0.000	0.000
20.00	Lucent KS-24019	1	4.00	0.910	1.00	15.00	1.300	1.00	0.000	0.000
Totals		127	12904.70			16,016.22			Number of Loadings : 43	

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	No Ice		Ice		Exposed To Wind
				Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
5.00	149.00	12	1 5/8" Coax	9.84	0.00	0.00	0.00	N
5.00	149.00	1	1/2" Coax	0.15	0.00	0.00	0.00	N
5.00	135.00	1	0.39" Cable	0.07	0.00	0.00	0.00	N
5.00	135.00	2	0.78" 8 AWG6	1.18	0.00	0.00	0.00	N
5.00	135.00	12	1 5/8" Coax	9.84	0.00	0.00	0.00	N
5.00	135.00	1	3" Conduit	7.58	0.00	0.00	0.00	N
5.00	123.00	6	1 5/8" Coax	4.92	0.00	0.00	0.00	N
5.00	123.00	6	1 5/8" Coax	4.92	0.20	9.46	0.25	Y
5.00	113.00	6	1 5/8" Coax	4.92	0.00	0.00	0.00	N
5.00	98.00	4	1 1/4" Hybriflex Cable	5.20	0.00	0.00	0.00	N
5.00	89.00	3	1/2" Coax	0.45	0.00	0.00	0.00	Y
5.00	89.00	1	2" Conduit	3.65	0.24	4.53	0.29	Y
5.00	89.00	6	5/16" Coax	0.24	0.00	0.00	0.00	N
5.00	79.00	2	1 5/8" Hybriflex	1.64	0.20	3.15	0.25	Y
5.00	20.00	1	1/2" Coax	0.15	0.00	0.00	0.00	N
Total Weight				6,529.91 (lb)		1,729.90 (lb)		

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Fa (ksi)	Weight (lb)
0.00		0.3750	56.580	66.895	26,698.9	24.84	150.88	65	52	0	0.0
5.00		0.3750	55.507	65.618	25,199.0	24.34	148.02	65	52	0	1,127.3
10.00		0.3750	54.434	64.341	23,756.4	23.83	145.16	65	52	0	1,105.6
15.00		0.3750	53.361	63.065	22,369.9	23.33	142.30	65	52	0	1,083.8
20.00		0.3750	52.288	61.788	21,038.4	22.82	139.44	65	52	0	1,062.1
25.00		0.3750	51.216	60.511	19,760.8	22.32	136.57	65	52	0	1,040.4
30.00		0.3750	50.143	59.234	18,536.1	21.81	133.71	65	52	0	1,018.7
35.00		0.3750	49.070	57.957	17,363.0	21.31	130.85	65	52	0	996.9
40.00		0.3750	47.997	56.680	16,240.5	20.81	127.99	65	52	0	975.2
45.00		0.3750	46.924	55.403	15,167.4	20.30	125.13	65	52	0	953.5
46.83	Bot - Section 2	0.3750	46.531	54.935	14,786.1	20.12	124.08	65	52	0	344.2
50.00		0.3750	45.851	54.126	14,142.7	19.80	122.27	65	52	0	1,184.8
53.00	Top - Section 1	0.3750	45.958	54.253	14,242.1	19.85	122.55	65	52	0	1,106.4
55.00		0.3750	45.528	53.742	13,843.6	19.64	121.41	65	52	0	367.5
60.00		0.3750	44.456	52.465	12,880.1	19.14	118.55	65	52	0	903.5
65.00		0.3750	43.383	51.188	11,962.4	18.64	115.69	65	52	0	881.8
70.00		0.3750	42.310	49.911	11,089.3	18.13	112.83	65	52	0	860.0
75.00		0.3750	41.237	48.634	10,259.8	17.63	109.97	65	52	0	838.3
79.00		0.3750	40.379	47.613	9,626.8	17.22	107.68	65	52	0	655.0
80.00		0.3750	40.164	47.357	9,472.7	17.12	107.10	65	52	0	161.6
85.00		0.3750	39.091	46.081	8,726.9	16.62	104.24	65	52	0	794.9
89.00		0.3750	38.233	45.059	8,159.3	16.21	101.96	65	52	0	620.3
90.00		0.3750	38.019	44.804	8,021.4	16.11	101.38	65	52	0	152.9
94.92	Bot - Section 3	0.3750	36.964	43.548	7,365.7	15.62	98.57	65	52	0	739.1
95.00		0.3750	36.946	43.527	7,354.9	15.61	98.52	65	52	0	22.8
98.00		0.3750	36.302	42.761	6,973.3	15.31	96.81	65	52	0	814.4
99.83	Top - Section 2	0.3125	36.534	35.926	5,955.0	18.85	116.91	65	52	0	490.6
100.0		0.3125	36.498	35.890	5,937.4	18.83	116.79	65	52	0	20.4
105.0		0.3125	35.425	34.826	5,424.8	18.23	113.36	65	52	0	601.6
110.0		0.3125	34.352	33.762	4,942.6	17.62	109.93	65	52	0	583.5
113.0		0.3125	33.709	33.124	4,667.5	17.26	107.87	65	52	0	341.4
115.0		0.3125	33.279	32.698	4,489.8	17.01	106.49	65	52	0	224.0
120.0		0.3125	32.207	31.634	4,065.6	16.41	103.06	65	52	0	547.3
123.0		0.3125	31.563	30.995	3,824.4	16.05	101.00	65	52	0	319.7
125.0		0.3125	31.134	30.570	3,669.0	15.80	99.63	65	52	0	209.5
130.0		0.3125	30.061	29.506	3,299.0	15.20	96.19	65	52	0	511.1
135.0		0.3125	28.988	28.442	2,954.8	14.59	92.76	65	52	0	493.0
140.0		0.3125	27.915	27.377	2,635.4	13.99	89.33	65	52	0	474.8
145.0		0.3125	26.842	26.313	2,339.9	13.38	85.90	65	52	0	456.7
147.9		0.3125	26.216	25.693	2,178.2	13.03	83.89	65	52	0	258.1
											25,342.4

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: No Ice

80.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion Moment MY (lb-ft)	Torsion Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion Moment MY (lb-ft)	Torsion Moment MZ (lb)
0.00		210.1	0.0					0.0	0.0	210.1	0.0	0.0	0.0
5.00		416.3	1,127.3					0.0	0.0	416.3	1,127.3	0.0	0.0
10.00		408.2	1,105.6					88.6	273.8	496.8	1,379.3	0.0	0.0
15.00		400.2	1,083.8					88.6	273.8	488.8	1,357.6	0.0	0.0
20.00	Appertunance(s)	392.1	1,062.1	25.2	0.0	0.0	4.0	88.6	273.8	505.9	1,339.9	0.0	0.0
25.00		384.1	1,040.4					88.6	273.0	472.7	1,313.4	0.0	0.0
30.00		376.0	1,018.7					88.6	273.0	464.6	1,291.7	0.0	0.0
35.00		374.7	996.9					88.6	273.0	463.4	1,269.9	0.0	0.0
40.00		380.0	975.2					91.9	273.0	471.9	1,248.2	0.0	0.0
45.00		261.9	953.5					95.2	273.0	357.1	1,226.5	0.0	0.0
46.83	Bot - Section 2	195.0	344.2					35.7	100.1	230.7	444.3	0.0	0.0
50.00		242.6	1,184.8					62.6	172.9	305.2	1,357.7	0.0	0.0
53.00	Top - Section 1	197.2	1,106.4					60.4	163.8	257.6	1,270.2	0.0	0.0
55.00		276.7	367.5					40.8	109.2	317.5	476.7	0.0	0.0
60.00		395.3	903.5					103.8	273.0	499.2	1,176.5	0.0	0.0
65.00		394.7	881.8					106.3	273.0	501.1	1,154.8	0.0	0.0
70.00		393.2	860.0					108.7	273.0	501.9	1,133.0	0.0	0.0
75.00		352.1	838.3					110.9	273.0	463.0	1,111.3	0.0	0.0
79.00	Appertunance(s)	194.8	655.0	4,278.0	0.0	0.0	2,678.5	90.3	218.4	4,563.1	3,551.9	0.0	0.0
80.00		231.9	161.6					15.7	53.0	247.5	214.5	0.0	0.0
85.00		346.0	794.9					79.1	264.8	425.2	1,059.7	0.0	0.0
89.00	Appertunance(s)	191.0	620.3	1,461.7	0.0	0.0	884.4	64.3	211.8	1,716.9	1,716.5	0.0	0.0
90.00		223.6	152.9					7.4	48.6	230.9	201.5	0.0	0.0
94.92	Bot - Section 3	188.7	739.1					36.5	239.0	225.3	978.1	0.0	0.0
95.00		117.0	22.8					0.6	4.1	117.7	26.9	0.0	0.0
98.00	Appertunance(s)	183.0	814.4	3,072.3	0.0	0.0	2,627.7	22.6	145.9	3,277.9	3,588.0	0.0	0.0
99.83	Top - Section 2	75.4	490.6					13.9	79.6	89.3	570.2	0.0	0.0
100.00		192.7	20.4					1.3	7.2	193.9	27.6	0.0	0.0
105.00		369.7	601.6					38.3	217.1	408.0	818.7	0.0	0.0
110.00		291.7	583.5					38.8	217.1	330.5	800.6	0.0	0.0
113.00	Appertunance(s)	180.0	341.4	477.0	0.0	0.0	79.2	23.5	130.3	680.5	550.9	0.0	0.0
115.00		248.1	224.0					15.8	77.0	263.8	301.0	0.0	0.0
120.00		280.6	547.3					39.8	192.5	320.4	739.8	0.0	0.0
123.00	Appertunance(s)	172.7	319.7	2,678.5	0.0	-127.6	1,115.1	24.1	115.5	2,875.3	1,550.3	0.0	0.0
125.00		237.4	209.5					0.0	57.3	237.4	266.8	0.0	0.0
130.00		333.5	511.1					0.0	143.3	333.5	654.4	0.0	0.0
135.00	Appertunance(s)	325.1	493.0	5,753.9	0.0	7,650.7	3,331.8	0.0	143.3	6,078.9	3,968.1	0.0	0.0
140.00		316.3	474.8					0.0	50.0	316.3	524.8	0.0	0.0
145.00		244.8	456.7					0.0	50.0	244.8	506.7	0.0	0.0
147.92		88.8	258.1					0.0	29.1	88.8	287.2	0.0	0.0
Totals:										30,689.8	42,582.2	0.00	0.00

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: No Ice

80.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-34.623	-44.709	0.000	0.000	0.000	-3,551.140	0.000	0.000	0.000	0.000
5.00	-34.346	-43.471	0.000	0.000	0.000	-3,378.027	-0.100	0.000	0.100	-0.185
10.00	-33.979	-41.984	0.000	0.000	0.000	-3,206.301	-0.393	0.000	0.393	-0.370
15.00	-33.612	-40.521	0.000	0.000	0.000	-3,036.409	-0.882	0.000	0.882	-0.557
20.00	-33.219	-39.078	0.000	0.000	0.000	-2,868.352	-1.567	0.000	1.567	-0.745
25.00	-32.852	-37.664	0.000	0.000	0.000	-2,702.258	-2.449	0.000	2.449	-0.933
30.00	-32.483	-36.274	0.000	0.000	0.000	-2,538.004	-3.529	0.000	3.529	-1.122
35.00	-32.108	-34.909	0.000	0.000	0.000	-2,375.590	-4.806	0.000	4.806	-1.311
40.00	-31.716	-33.569	0.000	0.000	0.000	-2,215.053	-6.280	0.000	6.280	-1.499
45.00	-31.397	-32.283	0.000	0.000	0.000	-2,056.478	-7.950	0.000	7.950	-1.686
46.83	-31.205	-31.795	0.000	0.000	0.000	-1,998.918	-8.612	0.000	8.612	-1.755
50.00	-30.918	-30.385	0.000	0.000	0.000	-1,900.104	-9.817	0.000	9.817	-1.874
53.00	-30.665	-29.075	0.000	0.000	0.000	-1,807.351	-11.031	0.000	11.031	-1.986
55.00	-30.393	-28.544	0.000	0.000	0.000	-1,746.023	-11.880	0.000	11.880	-2.061
60.00	-29.931	-27.298	0.000	0.000	0.000	-1,594.060	-14.130	0.000	14.130	-2.232
65.00	-29.459	-26.080	0.000	0.000	0.000	-1,444.408	-16.559	0.000	16.559	-2.400
70.00	-28.978	-24.888	0.000	0.000	0.000	-1,297.115	-19.161	0.000	19.161	-2.563
75.00	-28.522	-23.731	0.000	0.000	0.000	-1,152.226	-21.930	0.000	21.930	-2.720
79.00	-23.818	-20.374	0.000	0.000	0.000	-1,038.140	-24.262	0.000	24.262	-2.842
80.00	-23.592	-20.135	0.000	0.000	0.000	-1,014.322	-24.860	0.000	24.860	-2.872
85.00	-23.155	-19.048	0.000	0.000	0.000	-896.366	-27.945	0.000	27.945	-3.015
89.00	-21.369	-17.400	0.000	0.000	0.000	-803.749	-30.519	0.000	30.519	-3.126
90.00	-21.151	-17.183	0.000	0.000	0.000	-782.381	-31.177	0.000	31.177	-3.154
94.92	-20.889	-16.196	0.000	0.000	0.000	-678.390	-34.492	0.000	34.492	-3.281
95.00	-20.781	-16.161	0.000	0.000	0.000	-676.649	-34.549	0.000	34.549	-3.284
98.00	-17.314	-12.752	0.000	0.000	0.000	-614.307	-36.636	0.000	36.636	-3.358
99.83	-17.196	-12.180	0.000	0.000	0.000	-582.565	-37.934	0.000	37.934	-3.403
100.0	-17.016	-12.144	0.000	0.000	0.000	-579.699	-38.053	0.000	38.053	-3.407
105.0	-16.583	-11.316	0.000	0.000	0.000	-494.621	-41.690	0.000	41.690	-3.536
110.0	-16.220	-10.512	0.000	0.000	0.000	-411.705	-45.456	0.000	45.456	-3.655
113.0	-15.515	-9.991	0.000	0.000	0.000	-363.045	-47.774	0.000	47.774	-3.722
115.0	-15.244	-9.689	0.000	0.000	0.000	-332.015	-49.341	0.000	49.341	-3.764
120.0	-14.886	-8.954	0.000	0.000	0.000	-255.797	-53.333	0.000	53.333	-3.857
123.0	-11.918	-7.594	0.000	0.000	0.000	-211.139	-55.772	0.000	55.772	-3.906
125.0	-11.668	-7.335	0.000	0.000	0.000	-187.304	-57.413	0.000	57.413	-3.936
130.0	-11.297	-6.695	0.000	0.000	0.000	-128.962	-61.567	0.000	61.567	-3.997
135.0	-4.956	-3.160	0.000	0.000	0.000	-64.829	-65.776	0.000	65.776	-4.041
140.0	-4.605	-2.657	0.000	0.000	0.000	-40.047	-70.019	0.000	70.019	-4.066
145.0	-4.325	-2.169	0.000	0.000	0.000	-17.024	-74.283	0.000	74.283	-4.081
147.9	-4.159	0.000	0.000	0.000	0.000	-4.409	-76.776	0.000	76.776	-4.085

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: No Ice

80.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)					
0.00	0.67	1.04	0.00	0.00	0.00	45.85	46.55	52.0	0.0	0.896	
5.00	0.66	1.05	0.00	0.00	0.00	45.33	46.03	52.0	0.0	0.886	
10.00	0.65	1.06	0.00	0.00	0.00	44.76	45.45	52.0	0.0	0.874	
15.00	0.64	1.07	0.00	0.00	0.00	44.13	44.81	52.0	0.0	0.862	
20.00	0.63	1.08	0.00	0.00	0.00	43.43	44.11	52.0	0.0	0.849	
25.00	0.62	1.09	0.00	0.00	0.00	42.67	43.33	52.0	0.0	0.834	
30.00	0.61	1.11	0.00	0.00	0.00	41.83	42.48	52.0	0.0	0.817	
35.00	0.60	1.12	0.00	0.00	0.00	40.90	41.55	52.0	0.0	0.799	
40.00	0.59	1.13	0.00	0.00	0.00	39.88	40.52	52.0	0.0	0.780	
45.00	0.58	1.14	0.00	0.00	0.00	38.76	39.39	52.0	0.0	0.758	
46.83	0.58	1.14	0.00	0.00	0.00	38.32	38.95	52.0	0.0	0.749	
50.00	0.56	1.15	0.00	0.00	0.00	37.53	38.15	52.0	0.0	0.734	
53.00	0.54	1.14	0.00	0.00	0.00	35.53	36.12	52.0	0.0	0.695	
55.00	0.53	1.14	0.00	0.00	0.00	34.99	35.57	52.0	0.0	0.684	
60.00	0.52	1.15	0.00	0.00	0.00	33.52	34.10	52.0	0.0	0.656	
65.00	0.51	1.16	0.00	0.00	0.00	31.91	32.49	52.0	0.0	0.625	
70.00	0.50	1.17	0.00	0.00	0.00	30.15	30.72	52.0	0.0	0.591	
75.00	0.49	1.18	0.00	0.00	0.00	28.22	28.78	52.0	0.0	0.554	
79.00	0.43	1.01	0.00	0.00	0.00	26.53	27.01	52.0	0.0	0.520	
80.00	0.43	1.00	0.00	0.00	0.00	26.20	26.68	52.0	0.0	0.513	
85.00	0.41	1.01	0.00	0.00	0.00	24.46	24.94	52.0	0.0	0.480	
89.00	0.39	0.96	0.00	0.00	0.00	22.95	23.39	52.0	0.0	0.450	
90.00	0.38	0.95	0.00	0.00	0.00	22.59	23.04	52.0	0.0	0.443	
94.92	0.37	0.97	0.00	0.00	0.00	20.74	21.18	52.0	0.0	0.407	
95.00	0.37	0.96	0.00	0.00	0.00	20.71	21.15	52.0	0.0	0.407	
98.00	0.30	0.82	0.00	0.00	0.00	19.48	19.83	52.0	0.0	0.382	
99.83	0.34	0.96	0.00	0.00	0.00	21.77	22.18	52.0	0.0	0.427	
100.00	0.34	0.96	0.00	0.00	0.00	21.71	22.11	52.0	0.0	0.425	
105.00	0.32	0.96	0.00	0.00	0.00	19.68	20.07	52.0	0.0	0.386	
110.00	0.31	0.97	0.00	0.00	0.00	17.43	17.82	52.0	0.0	0.343	
113.00	0.30	0.94	0.00	0.00	0.00	15.97	16.36	52.0	0.0	0.315	
115.00	0.30	0.94	0.00	0.00	0.00	14.99	15.38	52.0	0.0	0.296	
120.00	0.28	0.95	0.00	0.00	0.00	12.35	12.74	52.0	0.0	0.245	
123.00	0.25	0.77	0.00	0.00	0.00	10.62	10.94	52.0	0.0	0.211	
125.00	0.24	0.77	0.00	0.00	0.00	9.68	10.01	52.0	0.0	0.193	
130.00	0.23	0.77	0.00	0.00	0.00	7.16	7.51	52.0	0.0	0.144	
135.00	0.11	0.35	0.00	0.00	0.00	3.87	4.03	52.0	0.0	0.078	
140.00	0.10	0.34	0.00	0.00	0.00	2.58	2.75	52.0	0.0	0.053	
145.00	0.08	0.33	0.00	0.00	0.00	1.19	1.40	52.0	0.0	0.027	
147.92	0.00	0.33	0.00	0.00	0.00	0.32	0.65	52.0	0.0	0.013	

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

4/11/2016 2:11:42 PM

Customer: VERIZON WIRELESS

Load Case: Ice	69.28 mph Wind with Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion Moment MY (lb-ft)	Torsion Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion Moment MY (lb-ft)	Torsion Moment MZ (lb)
0.00		160.4	0.0					0.0	0.0	160.4	0.0	0.0	0.0
5.00		317.8	1,300.1					0.0	0.0	317.8	1,300.1	0.0	0.0
10.00		311.8	1,275.1					82.0	306.2	393.8	1,581.2	0.0	0.0
15.00		305.7	1,250.0					82.0	306.2	387.8	1,556.2	0.0	0.0
20.00	Appertunance(s)	299.7	1,225.0	27.0	0.0	0.0	15.0	82.0	306.2	408.7	1,546.2	0.0	0.0
25.00		293.7	1,200.0					82.0	305.4	375.7	1,505.4	0.0	0.0
30.00		287.6	1,174.9					82.0	305.4	369.6	1,480.3	0.0	0.0
35.00		286.8	1,149.9					82.0	305.4	368.8	1,455.3	0.0	0.0
40.00		291.0	1,124.9					85.1	305.4	376.0	1,430.3	0.0	0.0
45.00		200.6	1,099.8					88.2	305.4	288.7	1,405.2	0.0	0.0
46.83	Bot - Section 2	149.3	397.4					33.1	112.0	182.4	509.4	0.0	0.0
50.00		185.8	1,276.9					58.0	193.4	243.8	1,470.3	0.0	0.0
53.00	Top - Section 1	151.1	1,192.4					55.9	183.2	207.0	1,375.6	0.0	0.0
55.00		212.1	424.3					37.8	122.2	249.9	546.5	0.0	0.0
60.00		303.2	1,042.2					96.1	305.4	399.3	1,347.6	0.0	0.0
65.00		302.9	1,017.2					98.4	305.4	401.3	1,322.6	0.0	0.0
70.00		301.9	992.1					100.6	305.4	402.5	1,297.5	0.0	0.0
75.00		270.4	967.1					102.7	305.4	373.1	1,272.5	0.0	0.0
79.00	Appertunance(s)	149.7	755.9	1,500.7	0.0	0.0	2,434.1	83.6	244.3	1,733.9	3,434.4	0.0	0.0
80.00		178.3	186.7					14.4	57.9	192.7	244.6	0.0	0.0
85.00		266.1	917.0					72.8	289.7	339.0	1,206.7	0.0	0.0
89.00	Appertunance(s)	147.0	715.9	1,235.4	0.0	0.0	1,266.6	59.2	231.7	1,441.5	2,214.2	0.0	0.0
90.00		172.1	176.7					6.9	53.2	179.0	229.8	0.0	0.0
94.92	Bot - Section 3	145.3	852.8					34.3	261.4	179.6	1,114.1	0.0	0.0
95.00		90.1	24.8					0.6	4.4	90.7	29.2	0.0	0.0
98.00	Appertunance(s)	140.9	883.7	2,656.5	0.0	0.0	3,591.8	21.2	159.5	2,818.6	4,635.0	0.0	0.0
99.83	Top - Section 2	58.1	532.5					13.0	87.9	71.1	620.5	0.0	0.0
100.00		148.5	24.2					1.2	8.0	149.7	32.2	0.0	0.0
105.00		285.1	712.4					35.9	239.8	321.0	952.2	0.0	0.0
110.00		225.1	691.0					36.4	239.8	261.5	930.8	0.0	0.0
113.00	Appertunance(s)	139.0	404.7	403.8	0.0	0.0	144.4	22.1	143.9	564.8	693.0	0.0	0.0
115.00		191.7	265.7					14.8	86.1	206.5	351.7	0.0	0.0
120.00		216.9	648.2					37.3	215.2	254.2	863.4	0.0	0.0
123.00	Appertunance(s)	133.6	379.0	2,294.0	0.0	-124.6	1,621.8	22.6	129.1	2,450.2	2,130.0	0.0	0.0
125.00		183.8	248.5					0.0	57.3	183.8	305.9	0.0	0.0
130.00		258.4	605.4					0.0	143.3	258.4	748.7	0.0	0.0
135.00	Appertunance(s)	252.2	583.9	4,022.2	0.0	4,786.0	3,893.5	0.0	143.3	4,274.4	4,620.8	0.0	0.0
140.00		245.7	562.5					0.0	50.0	245.7	612.5	0.0	0.0
145.00		190.3	541.1					0.0	50.0	190.3	591.1	0.0	0.0
147.92		69.1	306.2					0.0	29.1	69.1	335.3	0.0	0.0
Totals:										22,382.4	49,298.0	0.00	0.00

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

4/11/2016 2:11:44 PM

Customer: VERIZON WIRELESS

Load Case: Ice

69.28 mph Wind with Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-25.727	-52.315	0.000	0.000	0.000	-2,689.282	0.000	0.000	0.000	0.000
5.00	-25.532	-50.953	0.000	0.000	0.000	-2,560.652	-0.075	0.000	0.075	-0.140
10.00	-25.255	-49.311	0.000	0.000	0.000	-2,432.993	-0.298	0.000	0.298	-0.281
15.00	-24.976	-47.695	0.000	0.000	0.000	-2,306.724	-0.669	0.000	0.669	-0.423
20.00	-24.669	-46.091	0.000	0.000	0.000	-2,181.848	-1.188	0.000	1.188	-0.565
25.00	-24.388	-44.529	0.000	0.000	0.000	-2,058.507	-1.858	0.000	1.858	-0.709
30.00	-24.106	-42.993	0.000	0.000	0.000	-1,936.570	-2.678	0.000	2.678	-0.853
35.00	-23.818	-41.484	0.000	0.000	0.000	-1,816.041	-3.648	0.000	3.648	-0.997
40.00	-23.516	-40.003	0.000	0.000	0.000	-1,696.952	-4.770	0.000	4.770	-1.140
45.00	-23.264	-38.564	0.000	0.000	0.000	-1,579.374	-6.042	0.000	6.042	-1.284
46.83	-23.118	-38.030	0.000	0.000	0.000	-1,536.725	-6.546	0.000	6.546	-1.338
50.00	-22.895	-36.530	0.000	0.000	0.000	-1,463.520	-7.464	0.000	7.464	-1.429
53.00	-22.697	-35.132	0.000	0.000	0.000	-1,394.836	-8.390	0.000	8.390	-1.515
55.00	-22.490	-34.555	0.000	0.000	0.000	-1,349.443	-9.038	0.000	9.038	-1.573
60.00	-22.129	-33.169	0.000	0.000	0.000	-1,236.993	-10.757	0.000	10.757	-1.706
65.00	-21.759	-31.810	0.000	0.000	0.000	-1,126.351	-12.614	0.000	12.614	-1.836
70.00	-21.380	-30.480	0.000	0.000	0.000	-1,017.559	-14.606	0.000	14.606	-1.964
75.00	-21.018	-29.181	0.000	0.000	0.000	-910.660	-16.730	0.000	16.730	-2.087
79.00	-19.184	-25.794	0.000	0.000	0.000	-826.589	-18.520	0.000	18.520	-2.184
80.00	-19.014	-25.534	0.000	0.000	0.000	-807.405	-18.980	0.000	18.980	-2.208
85.00	-18.670	-24.309	0.000	0.000	0.000	-712.339	-21.354	0.000	21.354	-2.322
89.00	-17.159	-22.140	0.000	0.000	0.000	-637.661	-23.338	0.000	23.338	-2.410
90.00	-16.994	-21.899	0.000	0.000	0.000	-620.502	-23.845	0.000	23.845	-2.432
94.92	-16.785	-20.779	0.000	0.000	0.000	-536.948	-26.403	0.000	26.403	-2.533
95.00	-16.704	-20.745	0.000	0.000	0.000	-535.549	-26.448	0.000	26.448	-2.535
98.00	-13.694	-16.230	0.000	0.000	0.000	-485.437	-28.059	0.000	28.059	-2.594
99.83	-13.600	-15.608	0.000	0.000	0.000	-460.331	-29.062	0.000	29.062	-2.629
100.0	-13.464	-15.570	0.000	0.000	0.000	-458.065	-29.154	0.000	29.154	-2.632
105.0	-13.124	-14.612	0.000	0.000	0.000	-390.746	-31.966	0.000	31.966	-2.734
110.0	-12.835	-13.679	0.000	0.000	0.000	-325.128	-34.880	0.000	34.880	-2.828
113.0	-12.246	-13.006	0.000	0.000	0.000	-286.625	-36.674	0.000	36.674	-2.881
115.0	-12.034	-12.653	0.000	0.000	0.000	-262.134	-37.888	0.000	37.888	-2.914
120.0	-11.747	-11.793	0.000	0.000	0.000	-201.965	-40.980	0.000	40.980	-2.988
123.0	-9.194	-9.789	0.000	0.000	0.000	-166.724	-42.870	0.000	42.870	-3.026
125.0	-9.000	-9.488	0.000	0.000	0.000	-148.337	-44.142	0.000	44.142	-3.050
130.0	-8.708	-8.748	0.000	0.000	0.000	-103.338	-47.363	0.000	47.363	-3.099
135.0	-4.191	-4.364	0.000	0.000	0.000	-55.011	-50.627	0.000	50.627	-3.134
140.0	-3.913	-3.765	0.000	0.000	0.000	-34.057	-53.920	0.000	53.920	-3.155
145.0	-3.691	-3.185	0.000	0.000	0.000	-14.492	-57.231	0.000	57.231	-3.168
147.9	-3.509	0.000	0.000	0.000	0.000	-3.725	-59.167	0.000	59.167	-3.172

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: Ice 69.28 mph Wind with Ice 22 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)					
0.00	0.78	0.78	0.00	0.00	0.00	34.72	35.53	52.0	0.0	0.684	
5.00	0.78	0.78	0.00	0.00	0.00	34.36	35.17	52.0	0.0	0.677	
10.00	0.77	0.79	0.00	0.00	0.00	33.96	34.76	52.0	0.0	0.669	
15.00	0.76	0.80	0.00	0.00	0.00	33.52	34.31	52.0	0.0	0.660	
20.00	0.75	0.80	0.00	0.00	0.00	33.04	33.81	52.0	0.0	0.650	
25.00	0.74	0.81	0.00	0.00	0.00	32.50	33.27	52.0	0.0	0.640	
30.00	0.73	0.82	0.00	0.00	0.00	31.92	32.67	52.0	0.0	0.629	
35.00	0.72	0.83	0.00	0.00	0.00	31.27	32.02	52.0	0.0	0.616	
40.00	0.71	0.84	0.00	0.00	0.00	30.56	31.29	52.0	0.0	0.602	
45.00	0.70	0.85	0.00	0.00	0.00	29.77	30.50	52.0	0.0	0.587	
46.83	0.69	0.85	0.00	0.00	0.00	29.46	30.19	52.0	0.0	0.581	
50.00	0.67	0.85	0.00	0.00	0.00	28.91	29.62	52.0	0.0	0.570	
53.00	0.65	0.84	0.00	0.00	0.00	27.42	28.11	52.0	0.0	0.541	
55.00	0.64	0.84	0.00	0.00	0.00	27.04	27.72	52.0	0.0	0.533	
60.00	0.63	0.85	0.00	0.00	0.00	26.01	26.68	52.0	0.0	0.513	
65.00	0.62	0.86	0.00	0.00	0.00	24.89	25.55	52.0	0.0	0.492	
70.00	0.61	0.86	0.00	0.00	0.00	23.65	24.31	52.0	0.0	0.468	
75.00	0.60	0.87	0.00	0.00	0.00	22.30	22.95	52.0	0.0	0.442	
79.00	0.54	0.81	0.00	0.00	0.00	21.12	21.71	52.0	0.0	0.418	
80.00	0.54	0.81	0.00	0.00	0.00	20.86	21.44	52.0	0.0	0.413	
85.00	0.53	0.82	0.00	0.00	0.00	19.44	20.02	52.0	0.0	0.385	
89.00	0.49	0.77	0.00	0.00	0.00	18.20	18.74	52.0	0.0	0.361	
90.00	0.49	0.76	0.00	0.00	0.00	17.92	18.45	52.0	0.0	0.355	
94.92	0.48	0.78	0.00	0.00	0.00	16.42	16.95	52.0	0.0	0.326	
95.00	0.48	0.77	0.00	0.00	0.00	16.39	16.92	52.0	0.0	0.326	
98.00	0.38	0.65	0.00	0.00	0.00	15.40	15.82	52.0	0.0	0.304	
99.83	0.43	0.76	0.00	0.00	0.00	17.21	17.69	52.0	0.0	0.340	
100.00	0.43	0.76	0.00	0.00	0.00	17.16	17.64	52.0	0.0	0.339	
105.00	0.42	0.76	0.00	0.00	0.00	15.55	16.02	52.0	0.0	0.308	
110.00	0.41	0.77	0.00	0.00	0.00	13.77	14.23	52.0	0.0	0.274	
113.00	0.39	0.75	0.00	0.00	0.00	12.61	13.07	52.0	0.0	0.251	
115.00	0.39	0.74	0.00	0.00	0.00	11.84	12.29	52.0	0.0	0.236	
120.00	0.37	0.75	0.00	0.00	0.00	9.75	10.20	52.0	0.0	0.196	
123.00	0.32	0.60	0.00	0.00	0.00	8.38	8.76	52.0	0.0	0.169	
125.00	0.31	0.59	0.00	0.00	0.00	7.67	8.05	52.0	0.0	0.155	
130.00	0.30	0.59	0.00	0.00	0.00	5.74	6.12	52.0	0.0	0.118	
135.00	0.15	0.30	0.00	0.00	0.00	3.29	3.48	52.0	0.0	0.067	
140.00	0.14	0.29	0.00	0.00	0.00	2.20	2.39	52.0	0.0	0.046	
145.00	0.12	0.28	0.00	0.00	0.00	1.01	1.24	52.0	0.0	0.024	
147.92	0.00	0.28	0.00	0.00	0.00	0.27	0.55	52.0	0.0	0.011	

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: Twist/Sway	50.00 mph Wind with No Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion Moment MY (lb-ft)	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		82.1	0.0					0.0	0.0	82.1	0.0	0.0	0.0
5.00		162.6	1,127.3					0.0	0.0	162.6	1,127.3	0.0	0.0
10.00		159.5	1,105.6					34.6	273.8	194.1	1,379.3	0.0	0.0
15.00		156.3	1,083.8					34.6	273.8	190.9	1,357.6	0.0	0.0
20.00	Appertunance(s)	153.2	1,062.1	9.8	0.0	0.0	4.0	34.6	273.8	197.6	1,339.9	0.0	0.0
25.00		150.0	1,040.4					34.6	273.0	184.6	1,313.4	0.0	0.0
30.00		146.9	1,018.7					34.6	273.0	181.5	1,291.7	0.0	0.0
35.00		146.4	996.9					34.6	273.0	181.0	1,269.9	0.0	0.0
40.00		148.5	975.2					35.9	273.0	184.4	1,248.2	0.0	0.0
45.00		102.3	953.5					37.2	273.0	139.5	1,226.5	0.0	0.0
46.83	Bot - Section 2	76.2	344.2					13.9	100.1	90.1	444.3	0.0	0.0
50.00		94.8	1,184.8					24.5	172.9	119.2	1,357.7	0.0	0.0
53.00	Top - Section 1	77.0	1,106.4					23.6	163.8	100.6	1,270.2	0.0	0.0
55.00		108.1	367.5					15.9	109.2	124.0	476.7	0.0	0.0
60.00		154.4	903.5					40.6	273.0	195.0	1,176.5	0.0	0.0
65.00		154.2	881.8					41.5	273.0	195.7	1,154.8	0.0	0.0
70.00		153.6	860.0					42.5	273.0	196.1	1,133.0	0.0	0.0
75.00		137.5	838.3					43.3	273.0	180.9	1,111.3	0.0	0.0
79.00	Appertunance(s)	76.1	655.0	1,671.1	0.0	0.0	2,678.5	35.3	218.4	1,782.4	3,551.9	0.0	0.0
80.00		90.6	161.6					6.1	53.0	96.7	214.5	0.0	0.0
85.00		135.2	794.9					30.9	264.8	166.1	1,059.7	0.0	0.0
89.00	Appertunance(s)	74.6	620.3	571.0	0.0	0.0	884.4	25.1	211.8	670.7	1,716.5	0.0	0.0
90.00		87.3	152.9					2.9	48.6	90.2	201.5	0.0	0.0
94.92	Bot - Section 3	73.7	739.1					14.3	239.0	88.0	978.1	0.0	0.0
95.00		45.7	22.8					0.2	4.1	46.0	26.9	0.0	0.0
98.00	Appertunance(s)	71.5	814.4	1,200.1	0.0	0.0	2,627.7	8.8	145.9	1,280.4	3,588.0	0.0	0.0
99.83	Top - Section 2	29.4	490.6					5.4	79.6	34.9	570.2	0.0	0.0
100.00		75.3	20.4					0.5	7.2	75.8	27.6	0.0	0.0
105.00		144.4	601.6					15.0	217.1	159.4	818.7	0.0	0.0
110.00		114.0	583.5					15.2	217.1	129.1	800.6	0.0	0.0
113.00	Appertunance(s)	70.3	341.4	186.3	0.0	0.0	79.2	9.2	130.3	265.8	550.9	0.0	0.0
115.00		96.9	224.0					6.2	77.0	103.1	301.0	0.0	0.0
120.00		109.6	547.3					15.5	192.5	125.1	739.8	0.0	0.0
123.00	Appertunance(s)	67.5	319.7	1,046.3	0.0	-49.9	1,115.1	9.4	115.5	1,123.2	1,550.3	0.0	0.0
125.00		92.7	209.5					0.0	57.3	92.7	266.8	0.0	0.0
130.00		130.3	511.1					0.0	143.3	130.3	654.4	0.0	0.0
135.00	Appertunance(s)	127.0	493.0	2,247.6	0.0	2,988.6	3,331.8	0.0	143.3	2,374.6	3,968.1	0.0	0.0
140.00		123.6	474.8					0.0	50.0	123.6	524.8	0.0	0.0
145.00		95.6	456.7					0.0	50.0	95.6	506.7	0.0	0.0
147.92		34.7	258.1					0.0	29.1	34.7	287.2	0.0	0.0
Totals:										11,988.2	42,582.2	0.00	0.00

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

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Customer: VERIZON WIRELESS

Load Case: Twist/Sway

50.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-13.525	-44.757	0.000	0.000	0.000	-1,388.166	0.000	0.000	0.000	0.000
5.00	-13.417	-43.613	0.000	0.000	0.000	-1,320.543	-0.039	0.000	0.039	-0.072
10.00	-13.274	-42.218	0.000	0.000	0.000	-1,253.462	-0.154	0.000	0.154	-0.145
15.00	-13.131	-40.844	0.000	0.000	0.000	-1,187.095	-0.345	0.000	0.345	-0.218
20.00	-12.978	-39.488	0.000	0.000	0.000	-1,121.443	-0.613	0.000	0.613	-0.291
25.00	-12.835	-38.159	0.000	0.000	0.000	-1,056.556	-0.957	0.000	0.957	-0.365
30.00	-12.692	-36.853	0.000	0.000	0.000	-992.384	-1.379	0.000	1.379	-0.439
35.00	-12.546	-35.568	0.000	0.000	0.000	-928.928	-1.879	0.000	1.879	-0.512
40.00	-12.393	-34.306	0.000	0.000	0.000	-866.201	-2.455	0.000	2.455	-0.586
45.00	-12.269	-33.071	0.000	0.000	0.000	-804.236	-3.108	0.000	3.108	-0.659
46.83	-12.195	-32.619	0.000	0.000	0.000	-781.743	-3.367	0.000	3.367	-0.686
50.00	-12.084	-31.254	0.000	0.000	0.000	-743.126	-3.838	0.000	3.838	-0.733
53.00	-11.985	-29.978	0.000	0.000	0.000	-706.876	-4.313	0.000	4.313	-0.777
55.00	-11.880	-29.493	0.000	0.000	0.000	-682.906	-4.645	0.000	4.645	-0.806
60.00	-11.700	-28.306	0.000	0.000	0.000	-623.509	-5.525	0.000	5.525	-0.873
65.00	-11.517	-27.141	0.000	0.000	0.000	-565.009	-6.475	0.000	6.475	-0.938
70.00	-11.330	-25.999	0.000	0.000	0.000	-507.426	-7.493	0.000	7.493	-1.002
75.00	-11.153	-24.881	0.000	0.000	0.000	-450.777	-8.576	0.000	8.576	-1.064
79.00	-9.314	-21.358	0.000	0.000	0.000	-406.166	-9.488	0.000	9.488	-1.111
80.00	-9.226	-21.140	0.000	0.000	0.000	-396.852	-9.722	0.000	9.722	-1.123
85.00	-9.056	-20.076	0.000	0.000	0.000	-350.724	-10.929	0.000	10.929	-1.179
89.00	-8.358	-18.370	0.000	0.000	0.000	-314.500	-11.936	0.000	11.936	-1.223
90.00	-8.273	-18.166	0.000	0.000	0.000	-306.142	-12.193	0.000	12.193	-1.233
94.92	-8.171	-17.187	0.000	0.000	0.000	-265.466	-13.490	0.000	13.490	-1.283
95.00	-8.129	-17.159	0.000	0.000	0.000	-264.785	-13.513	0.000	13.513	-1.284
98.00	-6.773	-13.598	0.000	0.000	0.000	-240.397	-14.329	0.000	14.329	-1.313
99.83	-6.727	-13.028	0.000	0.000	0.000	-227.980	-14.837	0.000	14.837	-1.331
100.0	-6.657	-12.999	0.000	0.000	0.000	-226.859	-14.884	0.000	14.884	-1.333
105.0	-6.489	-12.179	0.000	0.000	0.000	-193.573	-16.307	0.000	16.307	-1.383
110.0	-6.347	-11.378	0.000	0.000	0.000	-161.130	-17.781	0.000	17.781	-1.429
113.0	-6.072	-10.831	0.000	0.000	0.000	-142.088	-18.688	0.000	18.688	-1.456
115.0	-5.966	-10.530	0.000	0.000	0.000	-129.945	-19.301	0.000	19.301	-1.472
120.0	-5.826	-9.791	0.000	0.000	0.000	-100.116	-20.863	0.000	20.863	-1.509
123.0	-4.665	-8.270	0.000	0.000	0.000	-82.638	-21.818	0.000	21.818	-1.528
125.0	-4.567	-8.004	0.000	0.000	0.000	-73.309	-22.460	0.000	22.460	-1.539
130.0	-4.422	-7.352	0.000	0.000	0.000	-50.472	-24.086	0.000	24.086	-1.563
135.0	-1.940	-3.450	0.000	0.000	0.000	-25.374	-25.733	0.000	25.733	-1.580
140.0	-1.803	-2.929	0.000	0.000	0.000	-15.673	-27.394	0.000	27.394	-1.590
145.0	-1.693	-2.425	0.000	0.000	0.000	-6.661	-29.063	0.000	29.063	-1.596
147.9	-1.625	0.000	0.000	0.000	0.000	-1.722	-30.039	0.000	30.039	-1.598

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

4/11/2016 2:11:46 PM

Customer: VERIZON WIRELESS

Load Case: Twist/Sway

50.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)					
0.00	0.67	0.41	0.00	0.00	0.00	17.92	18.61	52.0	0.0	0.358	
5.00	0.66	0.41	0.00	0.00	0.00	17.72	18.40	52.0	0.0	0.354	
10.00	0.66	0.42	0.00	0.00	0.00	17.50	18.17	52.0	0.0	0.350	
15.00	0.65	0.42	0.00	0.00	0.00	17.25	17.91	52.0	0.0	0.345	
20.00	0.64	0.42	0.00	0.00	0.00	16.98	17.64	52.0	0.0	0.339	
25.00	0.63	0.43	0.00	0.00	0.00	16.68	17.33	52.0	0.0	0.333	
30.00	0.62	0.43	0.00	0.00	0.00	16.36	16.99	52.0	0.0	0.327	
35.00	0.61	0.44	0.00	0.00	0.00	15.99	16.63	52.0	0.0	0.320	
40.00	0.61	0.44	0.00	0.00	0.00	15.60	16.22	52.0	0.0	0.312	
45.00	0.60	0.45	0.00	0.00	0.00	15.16	15.77	52.0	0.0	0.303	
46.83	0.59	0.45	0.00	0.00	0.00	14.99	15.60	52.0	0.0	0.300	
50.00	0.58	0.45	0.00	0.00	0.00	14.68	15.28	52.0	0.0	0.294	
53.00	0.55	0.45	0.00	0.00	0.00	13.90	14.47	52.0	0.0	0.278	
55.00	0.55	0.45	0.00	0.00	0.00	13.68	14.25	52.0	0.0	0.274	
60.00	0.54	0.45	0.00	0.00	0.00	13.11	13.67	52.0	0.0	0.263	
65.00	0.53	0.45	0.00	0.00	0.00	12.48	13.04	52.0	0.0	0.251	
70.00	0.52	0.46	0.00	0.00	0.00	11.80	12.34	52.0	0.0	0.237	
75.00	0.51	0.46	0.00	0.00	0.00	11.04	11.58	52.0	0.0	0.223	
79.00	0.45	0.39	0.00	0.00	0.00	10.38	10.85	52.0	0.0	0.209	
80.00	0.45	0.39	0.00	0.00	0.00	10.25	10.72	52.0	0.0	0.206	
85.00	0.44	0.40	0.00	0.00	0.00	9.57	10.03	52.0	0.0	0.193	
89.00	0.41	0.37	0.00	0.00	0.00	8.98	9.41	52.0	0.0	0.181	
90.00	0.41	0.37	0.00	0.00	0.00	8.84	9.27	52.0	0.0	0.178	
94.92	0.39	0.38	0.00	0.00	0.00	8.12	8.54	52.0	0.0	0.164	
95.00	0.39	0.38	0.00	0.00	0.00	8.10	8.52	52.0	0.0	0.164	
98.00	0.32	0.32	0.00	0.00	0.00	7.62	7.96	52.0	0.0	0.153	
99.83	0.36	0.38	0.00	0.00	0.00	8.52	8.91	52.0	0.0	0.171	
100.00	0.36	0.37	0.00	0.00	0.00	8.50	8.88	52.0	0.0	0.171	
105.00	0.35	0.38	0.00	0.00	0.00	7.70	8.08	52.0	0.0	0.155	
110.00	0.34	0.38	0.00	0.00	0.00	6.82	7.19	52.0	0.0	0.138	
113.00	0.33	0.37	0.00	0.00	0.00	6.25	6.61	52.0	0.0	0.127	
115.00	0.32	0.37	0.00	0.00	0.00	5.87	6.22	52.0	0.0	0.120	
120.00	0.31	0.37	0.00	0.00	0.00	4.83	5.18	52.0	0.0	0.100	
123.00	0.27	0.30	0.00	0.00	0.00	4.16	4.45	52.0	0.0	0.086	
125.00	0.26	0.30	0.00	0.00	0.00	3.79	4.09	52.0	0.0	0.079	
130.00	0.25	0.30	0.00	0.00	0.00	2.80	3.10	52.0	0.0	0.060	
135.00	0.12	0.14	0.00	0.00	0.00	1.52	1.66	52.0	0.0	0.032	
140.00	0.11	0.13	0.00	0.00	0.00	1.01	1.14	52.0	0.0	0.022	
145.00	0.09	0.13	0.00	0.00	0.00	0.47	0.60	52.0	0.0	0.012	
147.92	0.00	0.13	0.00	0.00	0.00	0.13	0.25	52.0	0.0	0.005	

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

4/11/2016 2:11:46 PM

Customer: VERIZON WIRELESS

Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	34.6	0.00	44.71	0.00	0.00	3551.14	46.55	52.0	0.00	0.896
Ice	25.7	0.00	52.31	0.00	0.00	2689.28	35.53	52.0	0.00	0.684
Twist/Sway	13.5	0.00	44.76	0.00	0.00	1388.17	18.61	52.0	0.00	0.358

Site Number: 302468

Code: TIA/EIA-222-F

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Site Name: Petro Lock, CT

Engineering Number: 540577211

4/11/2016 2:11:46 PM

Customer: VERIZON WIRELESS

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
2,489.00	36.10	23.90	3,551.14	52.31	34.62	142.67

Base Plate

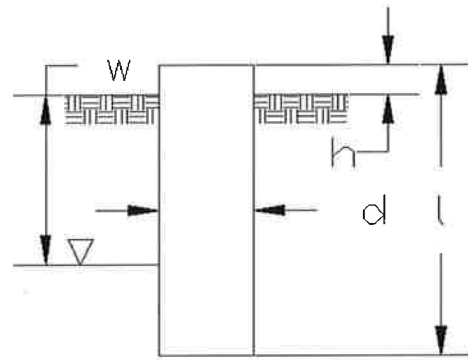
Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Moment (kip-in)	Allow Stress (ksi)	Applied Stress (ksi)	Stress Ratio
60.0	2.500	69.000	Round	0	0.00	11.224	332.00	60.00	28.40	0.47

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
63.00	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	172.37	195.00	0.88	165.83	195.00	0.85

Site Name: Petro Lock, CT
 Site Number: 302468
 Engineer: AT
 Engineering Number: 54057211
 Date: 04/11/15

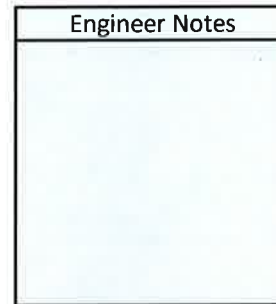
Program Last Updated: 5/13/2014
 American Tower Corporation



Design Base Loads (Unfactored) - Analysis per TIA-222-F Standards

Analyze or Design a Foundation? Analyze
 Foundation Mapped: N
 Moment (M): 3551.1 k-ft
 Shear/Leg (V): 34.6 k
 Axial Load (P): 44.7 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d): 7.0 ft
 Caisson Embedment (L-h): 33.5 ft
 Caisson Height Above Ground (h): 0.5 ft
 Depth Below Ground Surface to Water Table (w): 7.0 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



Soil Mechanical Properties

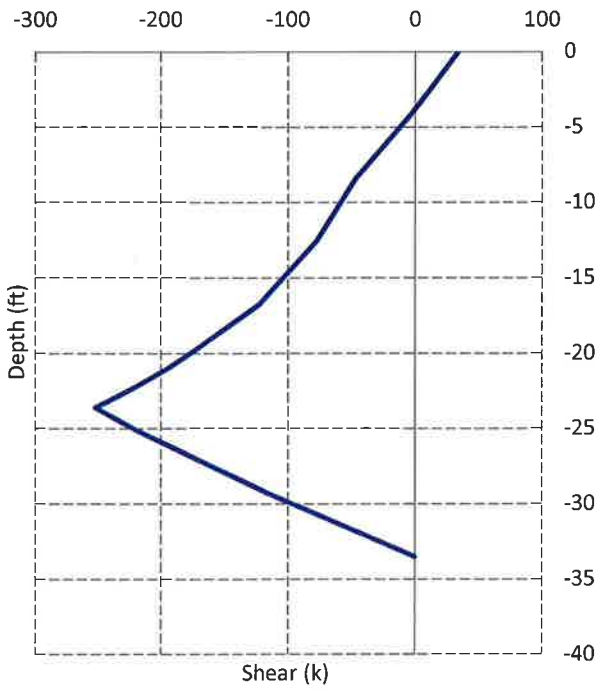
Depth (ft)		γ_{Soil}	Cohesion	ϕ	Allowable Skin	Allowable Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	2.0	100	0	0	0	0
2.0	7.0	110		38	170	
7.0	10.0	110	375		188	
10.0	14.0	110	625		313	
14.0	17.0	110		32	606	
17.0	33.5	110		35	780	7619

Required Embedment: 26.8 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 1308.5 ft³ = 48.5 yd³
 Weight of Concrete (Buoyancy Effect Considered): 132.6 k
 Average Soil Unit Weight: 60.0 pcf
 Skin Friction Resistance: 381.6 k
 Compressive Bearing Resistance: 293.2 k
 Pullout Weight (Minus Concrete Weight): 1215.7 k
 Allowable Uplift Capacity (U_{Allow}): 487.7 k
 Allowable Compressive Capacity (P_{Allow}): 674.8 k
 Compressive Design Load (P): 97.0 k
 U / U_{Allow} : 0.00 Result: OK
 P / P_{Allow} : 0.14 Result: OK
 Total Lateral Resistance: 2244.9 k
 Inflection Point (Below Ground Surface): 23.6 ft
 Design Overturning Moment At Inflection Point (M_D): 4385.2 k-ft
 Nominal Moment Capacity (M_{Allow}): 14892.4 k-ft
 M_{Allow} / M_D Factor of Safety: 3.40 Result: OK

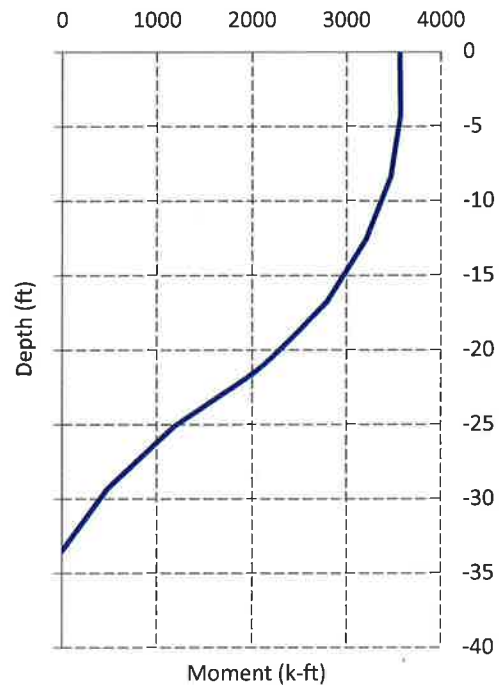
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
Design # of Vertical Steel Rebars:	21
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in ²
Design Horizontal Tie / Stirrup Spacing:	18.0 in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60 ksi
Rebar Cage Diameter:	76.0 in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_C):	0.65 ACI318-05 - 9.3.2.2
Wind Design Factor:	1.30 ACI318-05 - 9.2.1
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	4651.1 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	4963.4 k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.94 Result: OK
Design Shear (V_u):	327.6 k
Nominal Shear Capacity ($\phi_V V_n$):	457.1 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.72 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):	126.2 k
Nominal Compression Capacity ($\phi_P P_n$):	7304.9 k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.02 Result: OK
Bending Reinforcement Ratio:	0.006 ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.94 Result: OK

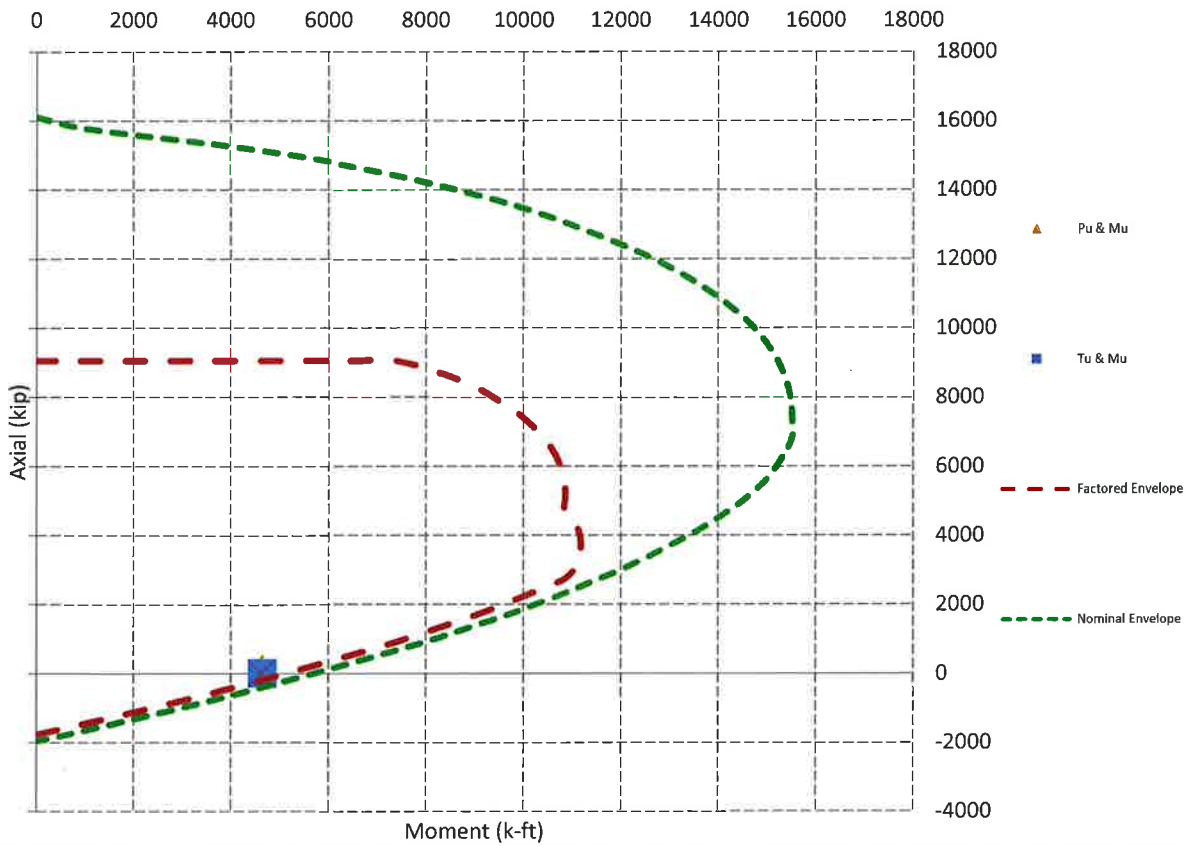
Design Unfactored Shear / Depth



Design Unfactored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads



ATTACHMENT 6

ATTACHMENT 7

August 23, 2016

Via Certificate of Mailing

Luke Bronin, Mayor
City of Hartford
550 Main Street
Hartford, CT 06103

Re: Proposed Modifications to a Telecommunications Facility at 99 Meadow Street in Hartford, Connecticut

Dear Mr. Bronin:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 147.9-foot monopole tower at 99 Meadow Street in Hartford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 79-foot level on the tower. Equipment associated with Cellco’s antennas will be installed in an abandoned equipment shelter within the fenced compound.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

15085948-v1

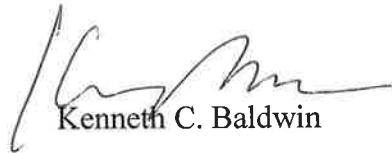
Robinson + Cole

Luke Bronin
August 23, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

Attachment

August 23, 2016

Via Certificate of Mailing

Jamie Bratt
Director of Planning and Economic Development
City of Hartford
550 Main Street
Hartford, CT 06103

Re: **Proposed Modifications to a Telecommunications Facility at 99 Meadow Street in Hartford, Connecticut**

Dear Mr. Bratt:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 147.9-foot monopole tower at 99 Meadow Street in Hartford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 79-foot level on the tower. Equipment associated with Cellco’s antennas will be installed in an abandoned equipment shelter within the fenced compound.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

15136899-v1

Jamie Bratt
August 23, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

Attachment

August 23, 2016

Via Certificate of Mailing

Meadow Street Realty LLC
99 Meadow Street
Hartford, CT 06114

Re: Proposed Modifications to a Telecommunications Facility at 99 Meadow Street in Hartford, Connecticut

Dear Sir or Madam:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 147.9-foot monopole tower at 99 Meadow Street in Hartford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 79-foot level on the tower. Equipment associated with Cellco’s antennas will be installed in an abandoned equipment shelter within the fenced compound.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

15085973-v1


Robinson + Cole

Meadow Street Realty LLC
August 23, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Baldwin', written over the printed name.

Kenneth C. Baldwin

Attachment

August 23, 2016

Via Certificate of Mailing

Heather Douglas Wilkins
Territory Manager-Business Development
Northeast (New England/NY)
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Re: **Proposed Modifications to a Telecommunications Facility at 99 Meadow Street in Hartford, Connecticut**

Dear Ms. Wilkins:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 147.9-foot monopole tower at 99 Meadow Street in Hartford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 79-foot level on the tower. Equipment associated with Cellco’s antennas will be installed in an abandoned equipment shelter within the fenced compound.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

15085958-v1

Robinson + Cole

Heather Douglas Wilkins
August 23, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

Attachment

ATTACHMENT 8

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 23, 2016

Via Certificate of Mailing

«Name_and_Address»

Re: **Proposed Telecommunications Facility at 99 Meadow Street in Hartford,
Connecticut**

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 147.9-foot monopole tower at 99 Meadow Street in Hartford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 79-foot level on the tower. Equipment associated with Cellco’s antennas will be installed in an abandoned equipment shelter within the fenced compound.

As presented in the Sub-Petition, the proposed facility improvements at the Property constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review.

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the Sub-Petition.

August 23, 2016
Page 2

This notice is being sent to you because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Sub-Petition, the Council's process for reviewing the Sub-Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin", with a long horizontal flourish extending to the right.

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTING PROPERTY OWNERS

**99 MEADOW STREET
HARTFORD, CONNECTICUT**

	Property Address	Owner's and Mailing Address
1.	110 Meadow Street	LMC Associates LLC 110 Meadow Street Hartford, CT 06114-1505
2.	98 Meadow Street	Ferro Realty LLC c/o Reliable Property Management 111 Roberts Street, Suite G1 East Hartford, CT 06108-3666
3.	90 Meadow Street	Ferro Realty LLC c/o Reliable Property Management 111 Roberts Street, Suite G1 East Hartford, CT 06108-3666
4.	91 Meadow Street	91 Meadow Street LLC 99 Meadow Street Hartford, CT 06114
5.	83/85 Meadow Street	Marconi Enterprises LLC 239 Franklin Avenue Hartford, CT 06114
6.	251 Locust Street	Beacon Sales Acquisition Inc. 50 Webster Avenue Somerville, MA 02143
7.	245 Locust Street	245 Locust Street LLC c/o Last Tavern 920 Maple Avenue Hartford, CT 06114-2723
8.	221 Locust Street	221 Locust Street Realty Trust LLC P.O. Box 817 Needham, MA 02494-0013
9.	141 Meadow Street	141 Meadow Street LLC P.O. Box 2737 Hartford, CT 06146
10.	121 Meadow Street	Ledyard Street LLC 161 S. Macquesten Parkway Mount Vernon, NY 10550-1724