

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:

A SUB-PETITION OF CELLCO	:	SUB-PETITION NO. 1133
PARTNERSHIP D/B/A VERIZON WIRELESS	:	401 LOPUS ROAD
FOR THE SHARED USE OF AN EXISTING	:	BEACON FALLS, CT
WIRELESS TELECOMMUNICATIONS	:	
FACILITY AT 401 LOPUS ROAD, BEACON	:	
FALLS, CONNECTICUT	:	JANUARY 5, 2017

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-14-533) 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 401 Lopus Road in Beacon Falls, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its “Beacon Falls 2 Facility”.

II. Factual Background

The Property is a 3.06-acre parcel, owned by the Town of Beacon Falls (“Town”) and used by the Town’s Public Works Department as its maintenance and materials storage facility. The Property is surrounded by commercial and industrial uses along Lopus Road and Railroad

Avenue. See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph). The existing 150-foot monopole tower at the Property was originally constructed by AT&T Wireless for the Town. American Tower Corporation (“ATC”) acquired the tower in 2012. The tower is currently shared by AT&T with antennas at the 145-foot level; T-Mobile with antennas at the 135-foot level; and Metro PCS with antennas at the 125-foot level. The tower and existing equipment structures are located within a 46’-5” x 43’ compound.

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Beacon Falls and throughout the State of Connecticut. The proposed Beacon Falls 2 Facility described in this filing will provide wireless service in all of Cellco’s frequency ranges and is designed to provide coverage and capacity relief to Cellco’s existing wireless network in Beacon Falls and the surrounding Towns of Seymour and Oxford.

III. Proposed Beacon Falls 2 Facility

Cellco proposes to install a total of eight (8) antennas (two (2) sectors of four (4) antennas each) at the 115-foot level on the 150-foot tower. Cellco will also install four (4) remote radio heads (two (2) per sector) (“RRHs”), behind its antennas. Two equipment cabinets, a battery cabinet and a 15 kw propane-fueled (DC) back-up generator will be located on a 15’-5” x 12’ concrete pad, beneath a steel canopy structure within the fenced compound area. A 250 gallon, vertically-mounted propane tank will be located adjacent to Cellco’s equipment pad, also within the fenced compound. Power and telephone service will extend from existing service at the site. Project Plans for the Beacon Falls 2 Facility are included in Attachment 2. Specifications for Cellco’s antennas, RRHs and generator are included in Attachment 3. A Structural Analysis Report confirming that the tower and its foundation can support Cellco’s antennas and related

equipment is included in Attachment 4.

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 in any way. Cellco’s antennas will be located at the 115-foot level on the existing 150-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 edge 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 install only two (2) equipment cabinets and a back-up battery cabinet on a concrete pad near the base of the tower.

4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* Cellco’s facility modification will not require expansion to the existing fenced compound.

5. *The proposed facility does not defeat the existing concealment elements of the base station.* No concealment elements have been incorporated into the existing antenna support structure.

6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* Cellco has searched local land use and Building Department files and has spoken with James Baldwin, Beacon Falls' Building Official. No records of any local approvals was discovered.

B. FCC Compliance

Radio frequency ("RF") emissions from Cellco's proposed installation will be far below the standards adopted by the FCC. Included in Attachment 5 is a cumulative worst case power density table for existing and Cellco's antennas confirming that the facility will operate well within the FCC safety standards.

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

On January 5, 2017, a copy of this Sub-Petition was sent to Beacon Falls' First Selectman Christopher Bielik. A copy of the letter sent to Mr. Bielik is included in Attachment 6. 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 7.

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.

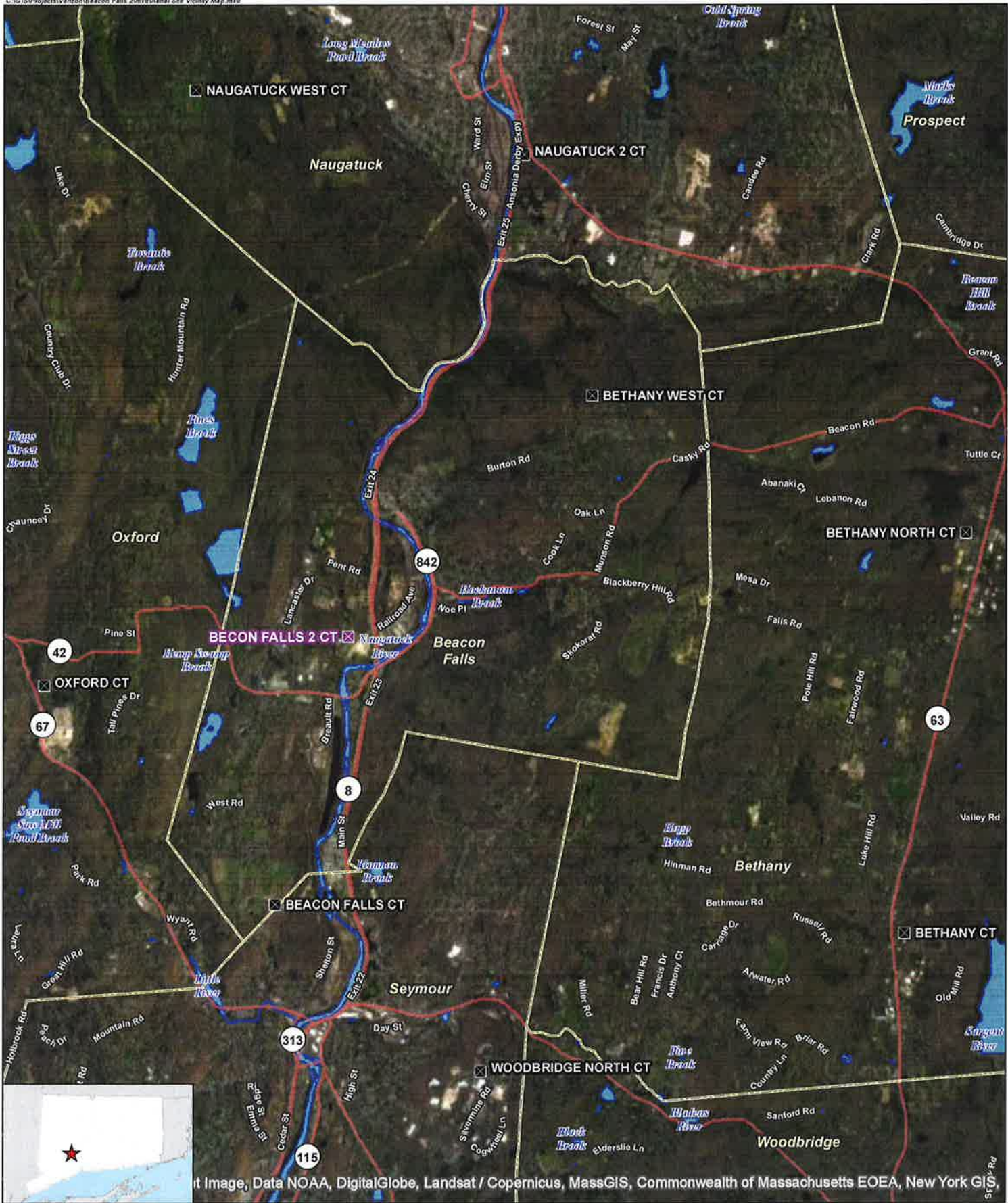
Respectfully submitted,

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



Image, Data NOAA, DigitalGlobe, Landsat / Copernicus, MassGIS, Commonwealth of Massachusetts EOE, New York GIS

Legend

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

Site Vicinity Map

Proposed Wireless Telecommunications Facility
 Beacon Falls 2 CT
 401 Lopus Road
 Beacon Falls, Connecticut

Base Map Source: 2016 Google Imagery
 Map Scale: 1 inch = 4,500 feet
 Map Date: December 2016





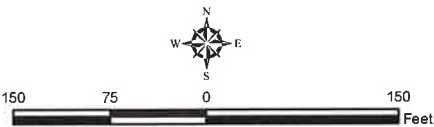
Existing 150' Tall Monopole Tower within Existing 46'-5"x43' Compound (by Others)
Proposed Verizon Wireless Antennas Mounted at a Centerline Height of 115' AGL

Proposed Verizon Wireless 250 Gallon Vertical Propane Tank on 3'-6"x3'-6" Concrete Pad/Lease Area

Proposed Verizon Wireless 15'-6"x12' Concrete Pad for Equipment/Lease Area

- Legend**
- Subject Property
 - Existing Fenced Tower Facility Compound (by Others)
 - Proposed Verizon Wireless Equipment
 - Approximate Parcel Boundary (CTDEEP GIS)

Map Notes:
Base Map Source: 2016 Google Imagery
Map Scale: 1 inch = 150 feet
Map Date: December 2016



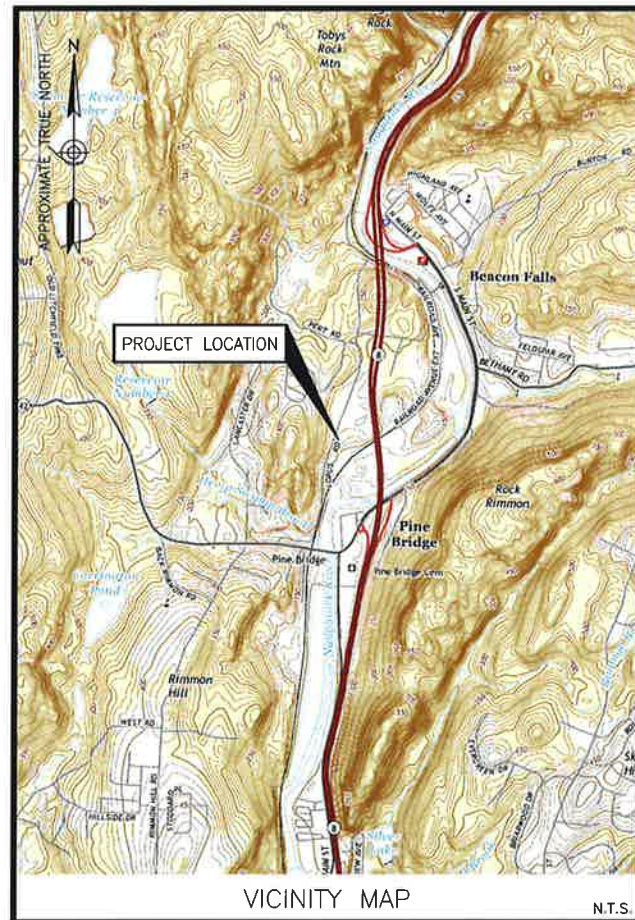
Site Schematic
Proposed Wireless Telecommunications Facility
Beacon Falls 2 CT
401 Lopus Road
Beacon Falls, Connecticut



ATTACHMENT 2

CELLCO PARTNERSHIP d/b/a **verizon** WIRELESS

PROPOSED WIRELESS FACILITY SITE NAME: BEACON FALLS 2 CT 401 LOPUS ROAD BEACON FALLS, CT 06403



DIRECTIONS FROM 99 EAST RIVER DRIVE, EAST HARTFORD, CT:

TAKE I-84 WEST TOWARD HARTFORD. CONTINUE ON I-84 WEST AND TAKE EXIT 19 FOR CT-8 SOUTH TOWARD BRIDGEPORT/NAUGATUCK. CONTINUE ON CT-8 SOUTH TO EXIT 24. FOLLOW EXIT RAMP AND TURN RIGHT ONTO NORTH MAIN STREET/STATE HWY 852 SOUTH. TURN RIGHT ONTO DEPOT STREET. TURN RIGHT ONTO RAILROAD AVENUE. TURN LEFT ONTO LOPUS ROAD. TURN LEFT ONTO LOPUS ROAD EXTENSION. SITE WILL BE ON THE LEFT SIDE.

SITE COORDINATES:
LATITUDE: 41° 25' 57.966" N
LONGITUDE: 73° 04' 13.135" W
(PER FAA 1-A)

ELEVATION DATA
GRADE ELEVATION AT MONOPOLE = 161.9' ± A.M.S.L.
(PER FAA 1-A)

ELEVATION (TO C.L. OF ANTENNAS)
ELEVATION = 115.0' ± A.G.L., 276.9' ± A.M.S.L.

SITE INFORMATION

THE SCOPE OF WORK SHALL INCLUDE:

1. THE INSTALLATION OF A PROPOSED CELLCO PARTNERSHIP OUTDOOR EQUIPMENT ON A PROPOSED CONCRETE PAD IN AN EXISTING COMPOUND.
2. A TOTAL OF UP TO EIGHT (8) PROPOSED CELLCO PARTNERSHIP ANTENNAS AND ASSOCIATED APPURTENANCES ARE TO BE MOUNTED TO THE EXISTING MONOPOLE AT A CENTERLINE ELEVATION OF 115'-0" ± A.G.L.
3. THE INSTALLATION OF A PROPOSED CELLCO PARTNERSHIP PROPANE TANK IN AN EXISTING COMPOUND.
4. THE INSTALLATION OF A PROPOSED BACKUP GENERATOR ON A PROPOSED CONCRETE PAD.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.

SCOPE OF WORK

SITE NAME:
BEACON FALLS 2 CT

SITE ADDRESS:
401 LOPUS ROAD
BEACON FALLS, CT 06403
NEW HAVEN COUNTY

PROPERTY OWNER:
TOWN OF BEACON FALLS
10 MAPLE AVENUE
BEACON FALLS, CT 06403

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

SITE ACQUISITION CONTACT:
JAMES SMITH
STRUCTURAL CONSULTING SERVICES, P.C.
(203) 740-7578

LEGAL/REGULATORY CONTACT:
KENNETH C. BALDWIN, ESQ.
ROBINSON & COLE
(860) 275-8345

PROJECT INFORMATION

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
C-1	ABUTTERS MAP
C-2	PARTIAL SITE PLAN
C-3	NORTHEAST ELEVATION
C-4	CABINET DETAILS

CELLCO PARTNERSHIP
d/b/a **verizon** WIRELESS

BEACON FALLS 2 CT

CSC DRAWINGS

2	01/04/17	ISSUED AS FINAL
1	12/27/16	ISSUED AS FINAL
0	12/16/16	ISSUED AS FINAL
D	12/15/16	FOR COMMENT
C	02/19/16	FOR COMMENT
B	02/17/16	FOR COMMENT
A	01/29/16	FOR COMMENT

Dewberry
Dewberry Engineers Inc.

800 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710

JIANG YU, P.E.
CONNECTICUT LICENSE NO. 0023222

DRAWN BY: AL

REVIEWED BY: GHN

CHECKED BY: GHN

PROJECT NUMBER: 50067815

JOB NUMBER: 50067829

SITE ADDRESS:

401 LOPUS ROAD
BEACON FALLS, CT 06403

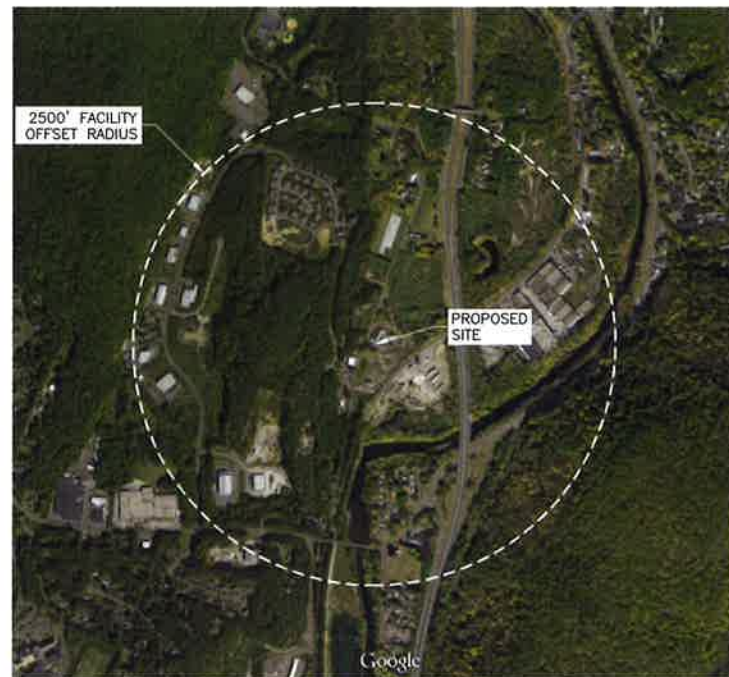
SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

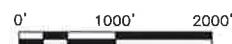
APPROXIMATE TRUE NORTH



NOTE:
1. MUNICIPALITY NOTIFICATION LIMIT MAP OBTAINED FROM GOOGLE MAPS.

MUNICIPALITY NOTIFICATION LIMIT MAP

SCALE: 1"=2000' FOR 11"x17"
1"=1000' FOR 22"x34"



1

APPROXIMATE TRUE NORTH

LOPUS ROAD
MAP: 3 LOT: 18A
PARCEL ID: 003-001-0016-A
TOWN OF BEACON FALLS
10 MAPLE AVENUE
BEACON FALLS, CT 06403

392 LOPUS ROAD
MAP: 3 LOT: 1
PARCEL ID: 003-001-0001
DEGEORGE, ELIZABETH C
392 LOPUS ROAD
BEACON FALLS, CT 06403

450 LOPUS ROAD
MAP: 3 LOT: 5B
PARCEL ID: 003-001-0003-B
POSICK, ROBERT
139 WEST ROAD
BEACON FALLS, CT 06403

411 LOPUS ROAD
MAP: 3 LOT: 16B
PARCEL ID: 003-001-0016-B
TOWN OF BEACON FALLS
10 MAPLE AVENUE
BEACON FALLS, CT 06403

BRFAULT ROAD
MAP: 2 LOT: 12
PARCEL ID: 002-001-0012
SEYMOUR BEACON FALLS LLC
300 PROGRESSIVE DRIVE
SEYMOUR, CT 06483

LOPUS ROAD EXT.

CENTERLINE OF ACCESS
SITE LOCATION

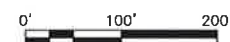
401 LOPUS ROAD
SUBJECT PROPERTY
MAP: 3 LOT: 16
PARCEL ID: 003-001-0016
TOWN OF BEACON FALLS
10 MAPLE AVENUE
BEACON FALLS, CT 06403

RAILROAD AVE

NOTE:
1. ABUTTERS MAP BASED ON INFORMATION OBTAINED FROM THE TOWN OF BEACON FALLS PROPERTY MAPS & TAX ASSESSOR INFORMATION.

ABUTTERS MAP

SCALE: 1"=200' FOR 11"x17"
1"=100' FOR 22"x34"



2

CELLCO PARTNERSHIP
d/b/a **verizon** WIRELESS

BEACON FALLS 2 CT

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BEACON FALLS, CT 06403

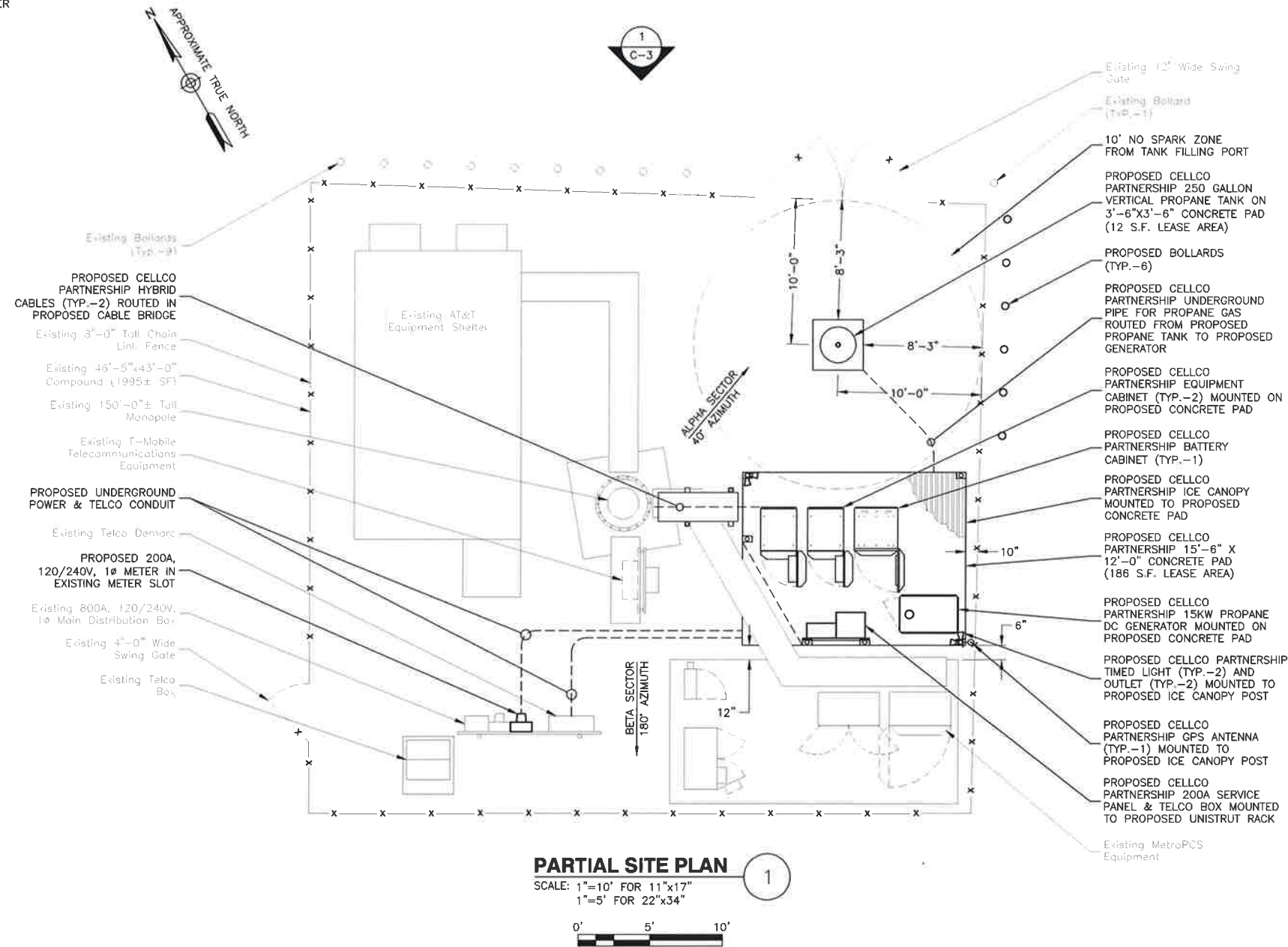
SHEET TITLE

ABUTTERS MAP

SHEET NUMBER

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. THESE DRAWINGS ARE PROVIDED FOR SITING COUNCIL REVIEW. CONSTRUCTION LEVEL DRAWINGS WILL BE DEVELOPED SUBSEQUENT TO THE APPROVAL OF THESE DRAWINGS.
4. LOCATION & ORIENTATION OF ALL ANTENNAS, COAX & EQUIPMENT PENDING STRUCTURAL ANALYSIS BY OTHERS.
5. EXISTING GROUND RING WILL BE UTILIZED TO GROUND PROPOSED EQUIPMENT.
6. SITE PLAN & ELEVATION BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 01/14/15 AND 08/11/16, AND EXISTING TOWER ELEVATION DRAWING BY SITEMASTER DATED 01/22/14 AND PROPERTY SURVEY DRAWING BY GEOLINE SURVEYING INC. DATED 08/28/12.



BEACON FALLS 2 CT

CSC DRAWINGS		
2	01/04/17	ISSUED AS FINAL
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0	12/16/16	ISSUED AS FINAL
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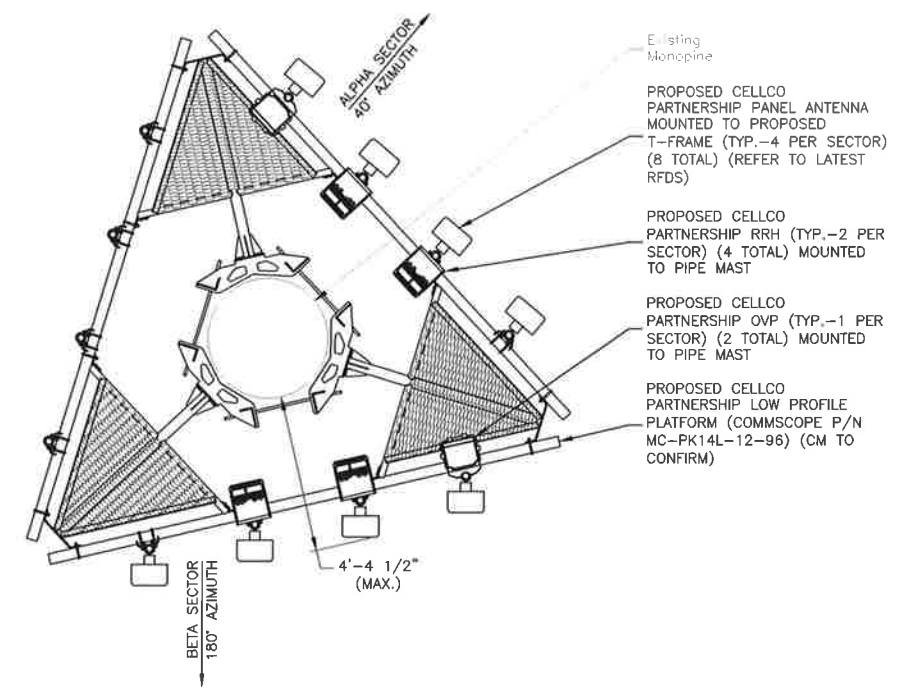
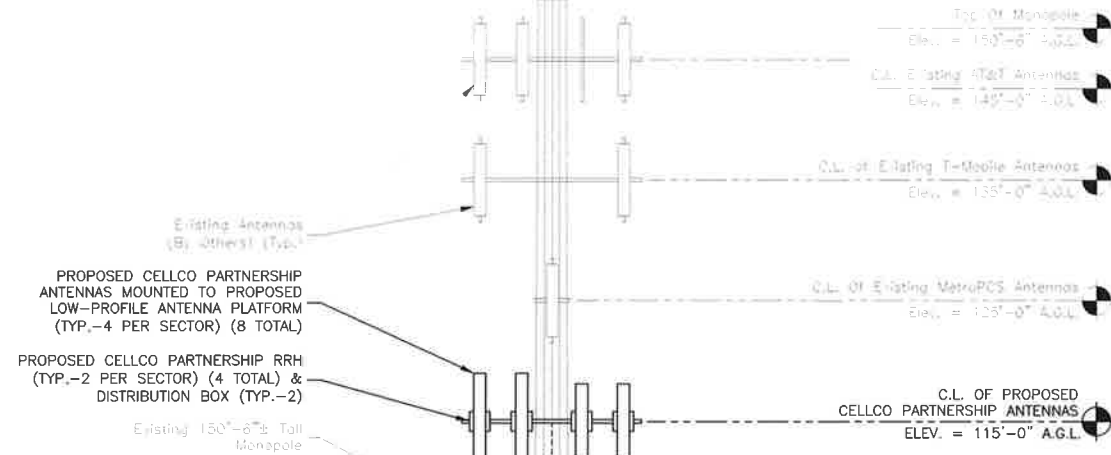
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PARTIAL SITE PLAN

SHEET NUMBER

NOTES:

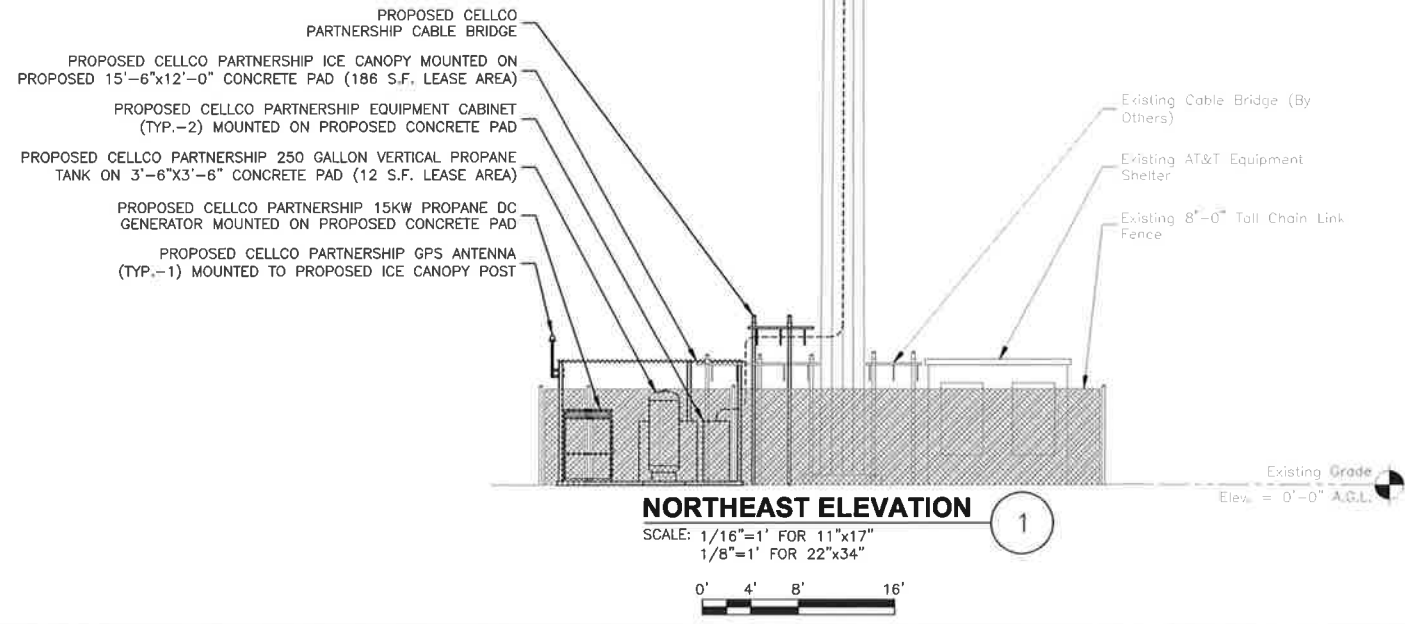
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ANTENNA PLAN 2

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'



CELLCO PARTNERSHIP
d/b/a **verizon** WIRELESS

BEACON FALLS 2 CT

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SHEET TITLE
NORTHEAST ELEVATION

SHEET NUMBER

BEACON FALLS 2 CT

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DRAWN BY:

REVIEWED BY:

CHECKED BY:

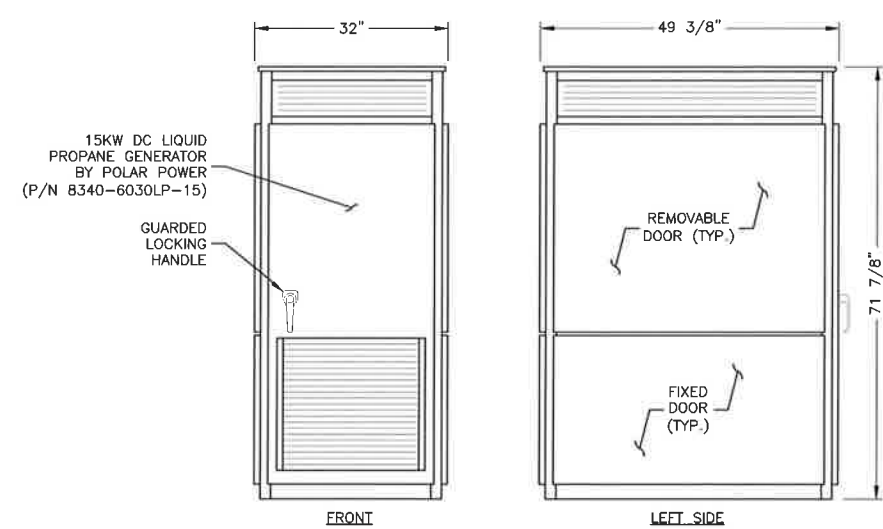
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JOB NUMBER:

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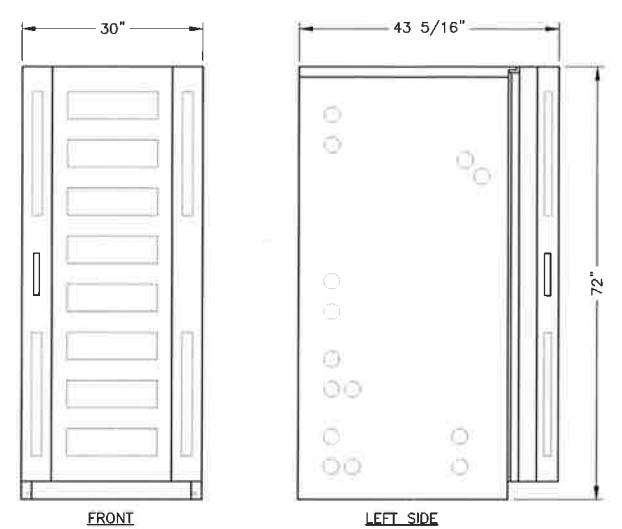
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SHEET NUMBER:



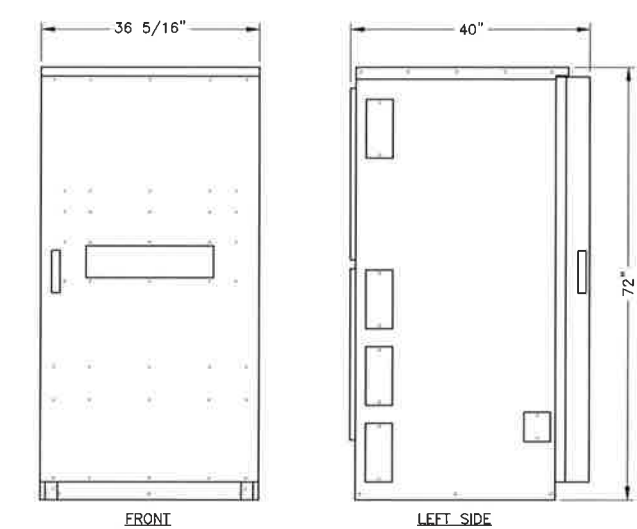
NOTES:
1. INSTALL GENERATOR PER MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.

BACKUP GENERATOR DETAIL ①
SCALE: N.T.S.



NOTES:
1. INSTALL EQUIPMENT CABINET PER MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.

RBA72-30 EQUIPMENT CABINET DETAIL ②
SCALE: N.T.S.



NOTES:
1. INSTALL BATTERY CABINET PER MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.

RBA72-36 BATTERY CABINET DETAIL ③
SCALE: N.T.S.

ATTACHMENT 3



LN-6515DS-VTM | LN-6515DS-A1M

Single Band Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

- Excellent choice to maximize both coverage and capacity in suburban and rural applications
- Fully compatible with Andrew remote electrical tilt system for greater OpEx savings
- Exceptional horizontal pattern roll-off and strong front-to-back ratio
- Extended bandwidth allows one antenna to serve multiple frequency allocations
- Great solution to maximize network coverage and capacity
- The RF connectors are designed for IP67 rating and the radome for IP56 rating

Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	16.7	17.6
Beamwidth, Horizontal, degrees	65	64
Beamwidth, Vertical, degrees	9.7	8.6
Beam Tilt, degrees	0–8	0–8
USLS (First Lobe), dB	17	17
Front-to-Back Ratio at 180°, dB	32	27
CPR at Boresight, dB	24	27
CPR at Sector, dB	15	13
Isolation, dB	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°
Impedance	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896
Gain by all Beam Tilts, average, dBi	16.6	16.9
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3
Gain by Beam Tilt, average, dBi	0° 16.6	0° 17.0
	4° 16.6	4° 17.0
	8° 16.4	8° 16.8
Beamwidth, Horizontal Tolerance, degrees	±1	±0.9
Beamwidth, Vertical Tolerance, degrees	±0.6	±0.4
USLS, beampeak to 20° above beampeak, dB	18	18
Front-to-Back Total Power at 180° ± 30°, dB	25	23
CPR at Boresight, dB	24	27
CPR at Sector, dB	15	13

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

General Specifications

Antenna Type	Sector
Band	Single band
Brand	DualPol®
Operating Frequency Band	698 – 896 MHz

LNX-6515DS-VTM | LNX-6515DS-A1M

Performance Note

Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	2
Wind Loading, frontal	878.0 N @ 150 km/h 197.4 lbf @ 150 km/h
Wind Loading, lateral	273.0 N @ 150 km/h 61.4 lbf @ 150 km/h
Wind Loading, rear	1033.0 N @ 150 km/h 232.2 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Depth	180.5 mm 7.1 in
Length	2453.0 mm 96.6 in
Width	301.0 mm 11.9 in
Net Weight, without mounting kit	19.8 kg 43.7 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator LNX-6515DS-A1M

Packed Dimensions

Depth	295.0 mm 11.6 in
Length	2718.0 mm 107.0 in
Width	392.0 mm 15.4 in
Shipping Weight	36.9 kg 81.4 lb

Regulatory Compliance/Certifications

Agency

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

Classification

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



Included Products

DB380-3 — Pipe Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Used for wide panel antennas. Includes

LNX-6515DS-VTM | LNX-6515DS-A1M

three clamp sets.

DB5083D — Downtilt Mounting Kit for 2.4"-4.5" (60-115 mm) OD round members. Consists of two DB5083 heavy-duty, galvanized steel downtilt mounting brackets. This kit is compatible with the DB380-3 pipe mount for panel antennas with three mounting points.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance



HBXX-6517DS-VTM

Andrew® Quad Port Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible

- Superior azimuth tracking and pattern symmetry with excellent passive intermodulation suppression

Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain, dBi	19.0	19.1	19.2
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	18	18
Front-to-Back Ratio at 180°, dB	30	30	30
CPR at Boresight, dB	21	22	21
CPR at Sector, dB	10	11	9
Isolation, dB	30	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	18.5	18.6	18.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	0° 18.4	0° 18.4	0° 18.7
	3° 18.7	3° 18.7	3° 18.9
	6° 18.4	6° 18.5	6° 18.6
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	25	26	26
CPR at Boresight, dB	22	23	22
CPR at Sector, dB	10	10	9

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

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® quad
Band	Single band
Brand	DualPol® Teletilt®
Operating Frequency Band	1710 – 2180 MHz

HBXX-6517DS-VTM

POWERED BY



Performance Note

Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Low loss circuit board
Radome Material	PVC, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	4
Wind Loading, maximum	668.0 N @ 150 km/h 150.2 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Depth	166.0 mm 6.5 in
Length	1903.0 mm 74.9 in
Width	305.0 mm 12.0 in
Net Weight	19.5 kg 43.0 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator	HBXX-6517DS-A2M
RET System	Teletilt®

Packed Dimensions

Depth	292.0 mm 11.5 in
Length	2219.0 mm 87.4 in
Width	409.0 mm 16.1 in
Shipping Weight	29.3 kg 64.6 lb

Regulatory Compliance/Certifications

Agency

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

Classification

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



Included Products

600899A-2 — 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.

Product Specifications

COMMSCOPE®

HBXX-6517DS-VTM

POWERED BY



* 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.

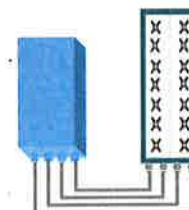


FEATURES

- 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 B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

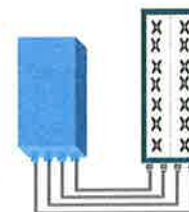


FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx 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	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (In 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
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 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 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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B25 RRH4x30

ALCATEL-LUCENT DATA SHEET REV1.1 – JANUARY 2015

ALCATEL-LUCENT B66A RRH4X45

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

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

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



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

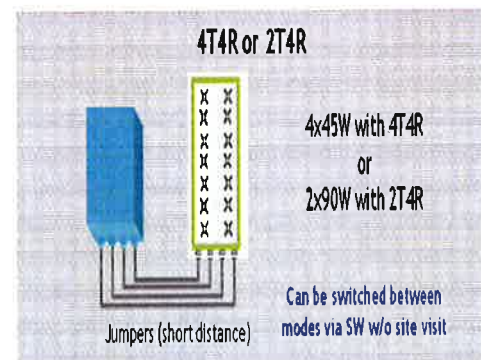
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

FEATURES

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

BENEFITS

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



TECHNICAL SPECIFICATIONS

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

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8220-603 series

Reliability through Simplicity



Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.

Intertek 4003706

Conforms to UL STD 2200

Certified to CSA STD C22.2 No. 100

Meets EPA Emission Regulations
CA/MA Emissions Compliant

2 year standard warranty, extended 5-10 year warranty available

Available Models:

- **8220-603-NG-12** Natural Gas 12 kW -48 VDC
- **8340-603-NG-15** Natural Gas 15 kW -48 VDC
- **8220-603-LP-12** LPG 12 kW -48 VDC
- **8340-603-LP-15** LPG 15 kW -48 VDC



The concepts and features behind Polar's backup generator for telecommunications include:

SMALL FOOTPRINT. Polar's DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

LOW ACOUSTIC NOISE. <59 dBA @ 7 meters, and low vibration so as not to disturb the local residents or building landlords. Quieter than other generators with lower noise ratings.

LIGHTWEIGHT. Up to 1/3 the weight of a comparable AC generator. Facilitates roof top installations.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines for increased reliability and safety.

CORROSION RESISTANT. All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

SUPERCAPACITOR STARTER. Failure to start is the number one problem plaguing generator reliability. Polar's unique design has replaced the starting battery with a Super Capacitor. Capacitors are more reliable and last longer than batteries (10-15 year life).

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. Controls and wire harness are easily replaceable.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with optional SNMP.

SIMPLICITY. Transfer switch, rectifier, and starting battery are not required.

COMPARING THE COST OF AC vs DC

	AC	DC
Transfer switch required	Yes	No
Permitting costs	\$\$	\$
Shipping to site and installation cost	\$\$	\$
Site preparation/reinforcing structures	\$\$\$	\$
Ethernet/RS232 remote control and monitoring	Extra	Standard

8220 ALTERNATOR FEATURES

- No mechanical adjustments
- Very lightweight
- High quality electrical output
- Voltage and current regulation
- Up to 94% efficiency
- Class 220° C insulation
- Anodized type III process for aluminum parts
- Nickel plating for steel parts
- Stator is varnished

8220 ALTERNATOR SPECIFICATIONS

Type	Permanent Magnets, NdFeB
Weight (lb/kg)	46.5/21
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	12 kW - 250 15 kW - 350
Disconnect Means	Pull fuse block, sized for each generator kW
Voltage Range (VDC)	44 to 62
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

ENCLOSURE

Model	88-25-0603
Type	Weather Protective
Materials	Marine Grade Aluminum
Door Hardware	Three Point with Padlock Hasp, and Removable Side Panels
Mounting	Secure Mounting Tabs

WEIGHTS AND DIMENSIONS

	Natural Gas	LPG
Dry Weight (lb/kg)	765/347	770/350
Dimensions (LxWxH) (in/cm)	32 x 50 x 72 / 81.3 x 127 x 183	

PERMITTING IS FACILITATED

- Small engine horsepower
- DC generator is fully isolated from the utility grid
- No transfer switch
- Low acoustic noise
- Incorporates all requirements made by local Fire Marshals

STARTER SUPERCAPACITOR SPECIFICATIONS

Model	20-16-0001
Storage Rating (Farads)	500
Voltage (VDC)	13-14.4
Weight (lb/kg)	12.1/5.5
Operating Temperature (°C/°F)	-40 to 65 / -40 to 149
Service Life (year)	10 to 15

CHARGER SPECIFICATIONS

Model	00-10-0015
Input Voltage (VDC)	28.8 to 60
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

SOUND EMISSIONS

Contact us for current sound data.

ENGINE SPECIFICATIONS: 12 - 15 KW NATURAL GAS and LPG

Engine Model	Natural Gas - Kubota DG972 LPG - Kubota WG972
Cylinders	3 In-line
Displacement (L)	0.962
Bore (in./mm)	2.93/74.5
Stroke (in./mm)	2.9/73.6
Intake Air System	Naturally Aspirated
Engine HP	18
Emissions Compliance	EPA and CARB Certified
Variable RPM	2300 to 3150

ENVIRONMENTAL

Operating Temperature (°C/°F)	-40 to 72 or -40 to 162
Operating Humidity %	100
Cold Start Aids	Glow Plugs

PROPANE ENGINE FUEL CONSUMPTION

	Output (kW)	gal/hr	L/hr
Kubota 972	4	0.97	3.67
	5	1.1	4.16
	6	1.26	4.77
	7	1.475	5.58
	8	1.69	6.4
	9	1.945	7.36
	10	2.2	8.33
	12	2.52	9.54
	15	3.55	13.44

ENGINE LUBRICATION SYSTEM

Oil Filter Type	Full flow spin-on canister
Oil Capacity	3.7 L - DG972/WG972
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

ENGINE COOLING SYSTEM

Type	Pressurized Aluminum Radiator
Water Pump	Belt-driven, Pre-lubed, self-sealing
Fan Type	Electric Fans
Airflow CFM or M³/hr	1300 or 2200
Fan Mode	Pusher
Temperature Switch	Yes

FUEL SYSTEM

Type	Natural Gas or Propane
Fuel Tank/Line	Supplied By Customer
Max Fuel Flow Rate (BTU/hr)	12 kW - 241,000 15 kW - 340,000



Pressure Chart

Minimum	Recommended	Maximum
0.14 psi	0.39 psi	0.5 psi
4 in H2O	11 in H2O	13.9 in H2O
10 mbar	27.4 mbar	34.5 mbar

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration	1% derate for every 5.6 °C (10 °F) above 25 °C (77 °F)
Altitude Deration	3% derate for every 300 m (1000 ft) above 91 m (300 ft)

ENGINE COOLING

	Natural Gas	LPG
System coolant capacity (gal/L)	2.2/8.3	
Maximum operation air temperature on radiator (°C/°F)	54/129	
Maximum ambient temperature (°C/°F)	49/120	

COMBUSTION REQUIREMENTS

	Natural Gas	LPG
Flow at rated power (cfm/cmm)	47/1.34	

EXHAUST

	Natural Gas	LPG
Exhaust flow at rated output (cfm/cmm)	90/2.55	
Exhaust temperature at rated output (°C/°F)	480/900	

CONTROLLER FEATURES

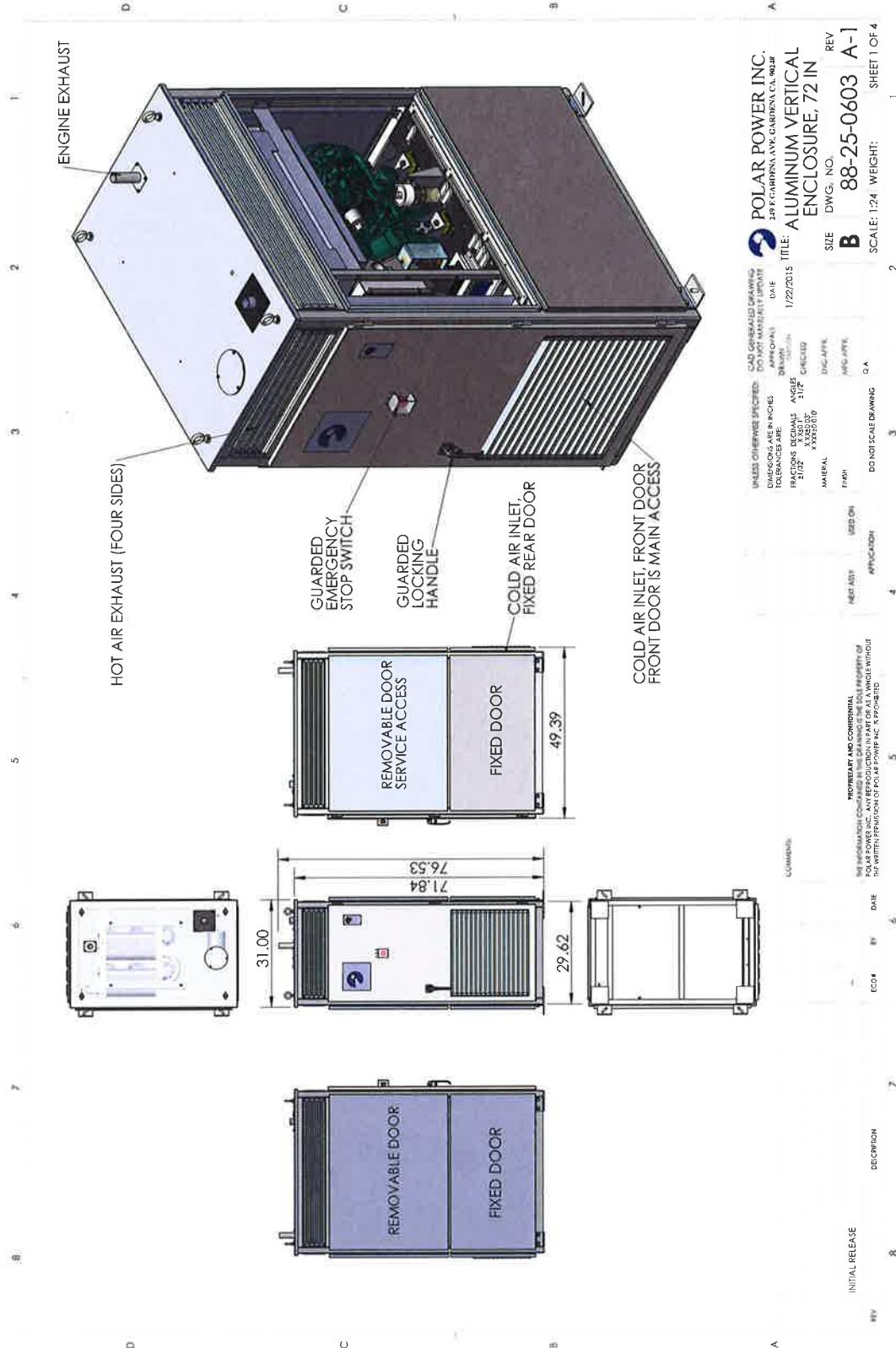
Controller Type.....	Supra Model 250
4-Line Plain Text LCD Display.....	Simple user interface for ease of operation
Engine Run Hours Indication.....	Standard
Programmable Start Delay.....	Standard
Run/Alarm/Maintenance Logs.....	Standard
Engine Start Sequence.....	Cyclic cranking: 5 sec on, 45 sec rest (3 attempts maximum)
Starter Supercapacitor Charger.....	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection.....	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown.....	Standard
Overcrank/Overspeed.....	Standard
Automatic High Engine Temperature Shutdown.....	Standard
Field Upgradeable Firmware.....	Standard
Glow Plug Delay	Automatic With Temperature
Engine Start Delay.....	Adjustable, Set at 60 sec
Return to Utility Delay.....	Adjustable, Set at 60 sec
Engine Cooldown.....	Adjustable, Set at 60 sec
Exerciser.....	Programmable, weekly/bi-weekly

WARNING ALARMS

Low Diesel Fuel Level.....	Standard
Diesel Fuel Tank Rapture Basin.....	Standard
Low/High Supercapacitor Voltage.....	Standard
High Water Temperature.....	Standard
Low Oil Pressure.....	Standard

CONTACT CLOSURE FOR REMOTE INDICATION (PN 84-12-0640)

Shutdown Alarm.....	Optional
Warning Alarm.....	Optional
Engine Run.....	Optional
Low Diesel Fuel Level.....	Optional
Diesel Fuel Leak.....	Optional
E-Stop Depressed.....	Optional
Fuel Level Over 90%.....	Optional



POLAR POWER INC.
 239 F. GARDENA AVE. GARDENA CA. 90248

ALUMINUM VERTICAL ENCLOSURE: 72 IN

REV **A-1**

SIZE **B** DWG. NO. **88-25-0603** WEIGHT: SCALE: 1:24

SHEET 1 OF 4

CAD GENERATED DRAWING
 DO NOT MANUALLY EDIT
 DATE 1/22/2015

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 FRACTIONS DECIMALS ANGLES
 3/32 0.031 31/2

MATERIAL FINISH
 AL 6061 T6

DO NOT SCALE DRAWING

APPROVALS
 DESIGNED BY
 CHECKED BY
 DATE

INC. APPL. INC. APPL. DATE

USED ON APPLICATION

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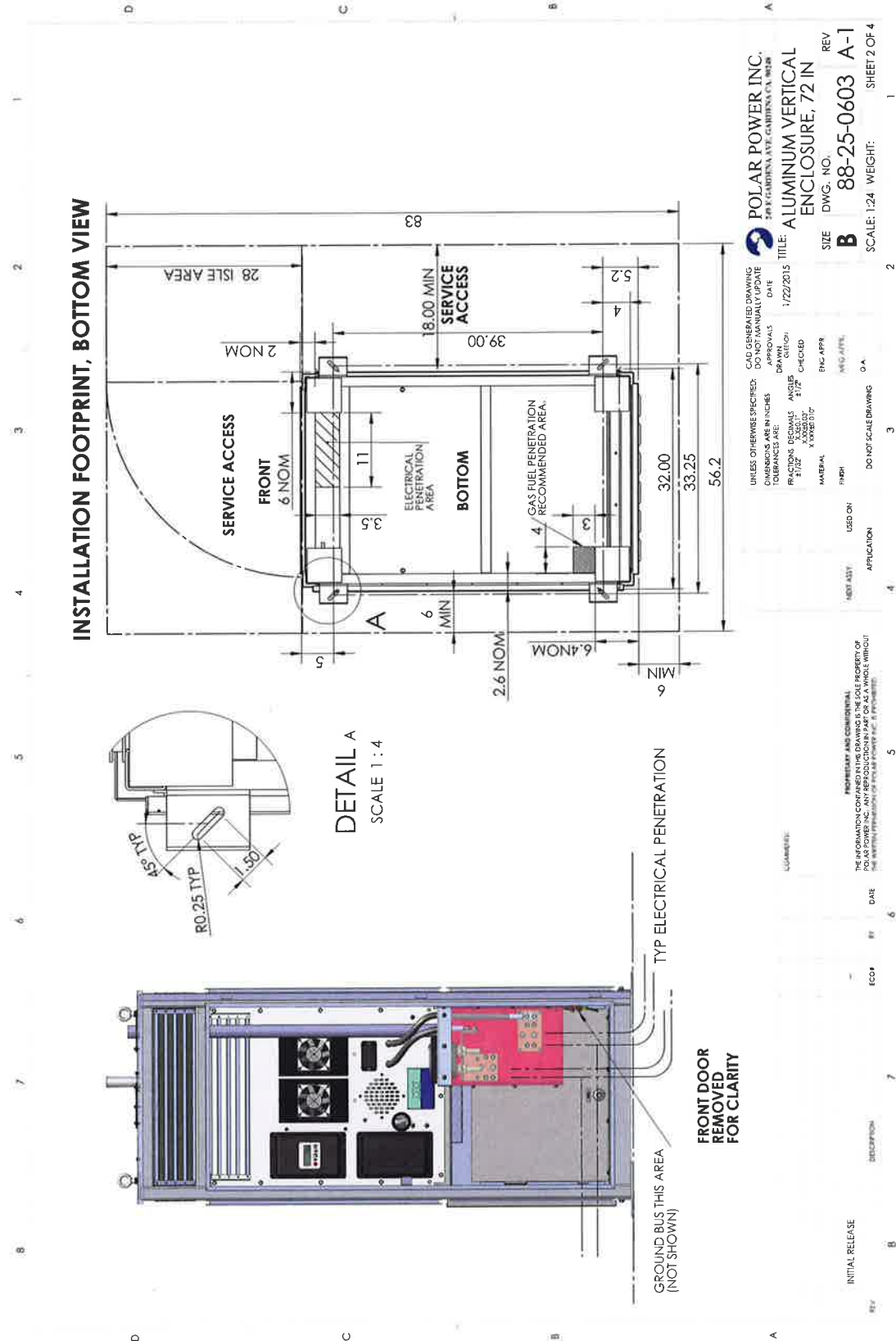
COMMENTS

DATE

DESCRIPTION

INITIAL RELEASE

REV



ATTACHMENT 4



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

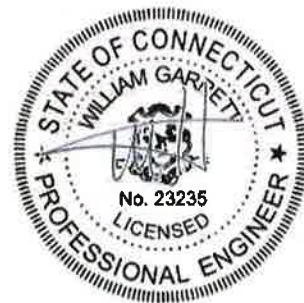
Structure : 149 ft Monopole
ATC Site Name : Beacon Falls CT, CT
ATC Site Number : 370641
Engineering Number : OAA597776_C3_10
Proposed Carrier : Verizon
Carrier Site Name : Beacon Falls 2 CT
Carrier Site Number : 296956
Site Location : 401-411 Lopus Road
Beacon Falls, CT 06403-0000
41.432833,-73.070222
County : New Haven
Date : October 31, 2016
Max Usage : 35%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer

Prepared By:
Felix Buabeng

Reviewed By:

Felix Buabeng



Nov 4 2016 3:42 PM

cosign

COA: PEC.0001553



Table of Contents

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Supporting Documents	1
Analysis	1
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Calculations	Attached



Introduction

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

Supporting Documents

Tower Drawings	EI Job #13674, dated October 19, 2005
Foundation Drawing	EI Job #13674, dated October 19, 2005
Geotechnical Report	Tectonic Project #3917.BEACON, dated August 17, 2005

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.19$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
145.5	145.5	6	Powerwave Allgon LGP13519	Low Profile Platform	(2) 0.78" 8 AWG 6 (12) 1 5/8" Coax (1) 0.39" Fiber Trunk (1) 2" Conduit ...	AT&T Mobility
		1	Raycap DC6-48-60-18-8F ("Squid")			
	141.0	6	Powerwave Allgon LGP21401			
		6	Ericsson RRUS 11 (Band 12)			
		6	Allgon 7770.00			
		3	KMW AM-X-CD-16-65-00T-RET			
130.0	130.0	3	Ericsson KRY 112 144/1	T-Arms	(12) 1 5/8" Coax (1) 1.57" Hybrid	T-Mobile
		6	Ericsson AIR 21			
121.0	121.0	9	RFS APX16DWV-16DWVS-C-A20	Flush	(9) 1 5/8" Coax	Youghiogheny

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					
115.0	115.0	2	Alcatel-Lucent RRH2X60-1900	Low Profile Platform	(2) 1 5/8" Hybriflex Cable	Verizon
		2	Alcatel-Lucent RRH2x60 700			
		1	RFS DB-B1-6C-12AB-0Z			
		2	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
		4	Andrew HBXX-6517DS-A2M (43 lbs)			
		4	Commscope LNX-6515DS-A1M (50.3 lb)			

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 inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	32%	Pass
Shaft	35%	Pass
Base Plate	33%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,762.3	5,079.1	2,083.6	41%
Shear (Kips)	34.9	47.1	20.5	44%

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

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
115.0	Alcatel-Lucent RRH2X60-1900	Verizon	0.620	0.660
	Alcatel-Lucent RRH2x60 700			
	RFS DB-B1-6C-12AB-0Z			
	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
	Andrew HBXX-6517DS-A2M (43 lbs)			
	Commscope LNX-6515DS-A1M (50.3 lb)			

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



Standard Conditions

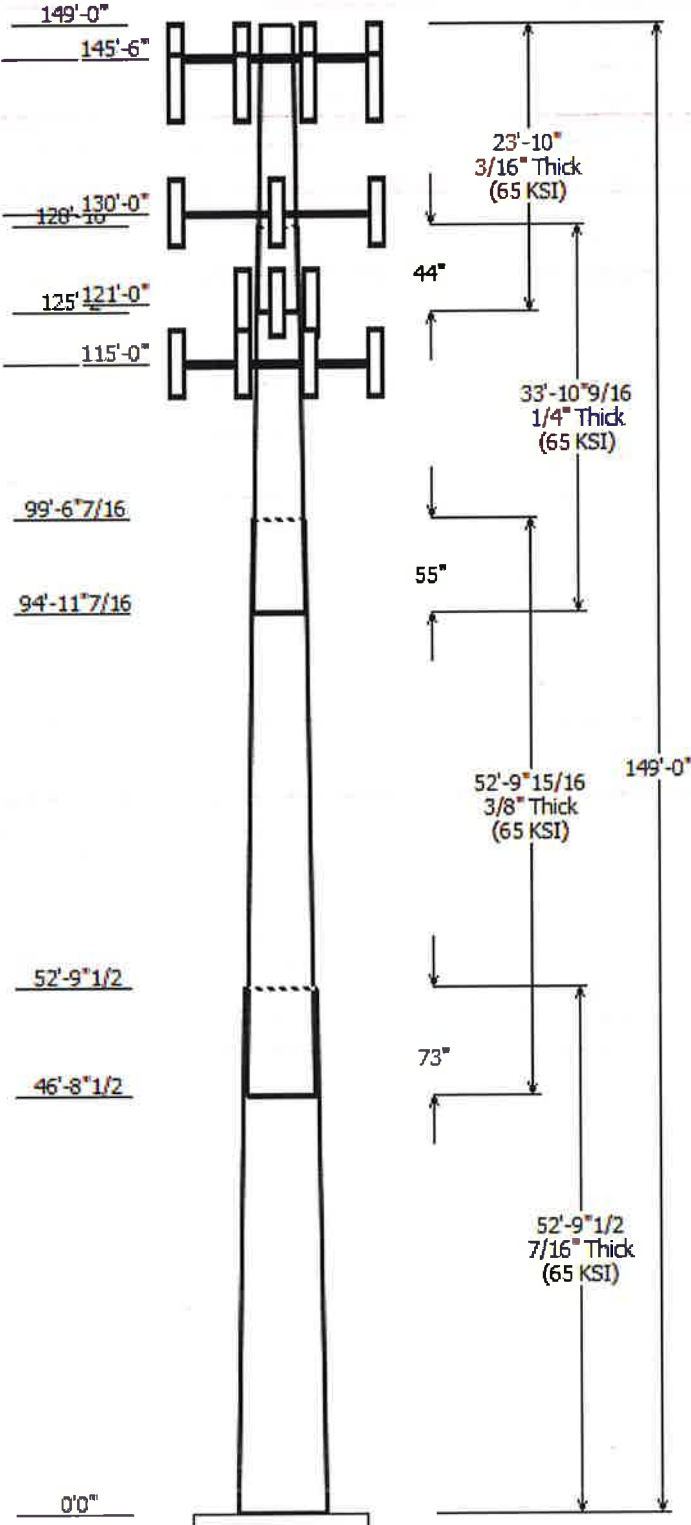
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

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

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

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

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



Job Information	
Pole :	370641
Code:	ANSI/TIA-222-G
Description :	149 ft EEI Monopole
Client :	Verizon Wireless
Struct Class :	II
Location :	Beacon Falls CT, CT
Shape :	18 Sides
Exposure :	B
Height :	149.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.262584(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom					
1	52.790	42.13	56.00	0.438		0.000	0.262600	65
2	52.830	30.61	44.48	0.375	Slip Joint	73.000	0.262600	65
3	33.880	23.42	32.31	0.250	Slip Joint	55.000	0.262600	65
4	23.833	18.50	24.75	0.188	Slip Joint	44.000	0.262600	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
145.500	141.000	3	KMW AM-X-CD-16-65-00T-RET	
145.500	145.500	1	Raycap DC6-48-60-18-8F	
145.500	141.000	6	Allgon 7770.00	
145.500	141.000	6	Ericsson RRUS 11 (Band 12)	
145.500	141.000	6	Powerwave Allgon LGP21401	
145.500	145.500	6	Powerwave Allgon LGP13519	
145.500	145.500	1	Flat Low Profile Platform	
130.000	130.000	3	Round T-Arm	
130.000	130.000	6	Ericsson AIR 21	
130.000	130.000	3	Ericsson KRY 112 144/1	
121.000	121.000	9	RFS APX16DWV-16DWVS-C-A20	
115.000	115.000	2	Alcatel-Lucent B66A RRH4x45-	
115.000	115.000	4	Commscope LNX-6515DS-A1M	
115.000	115.000	4	Andrew HBXX-6517DS-A2M (43	
115.000	115.000	1	RFS DB-B1-6C-12AB-0Z	
115.000	115.000	2	Alcatel-Lucent RRH2x60 700	
115.000	115.000	2	Alcatel-Lucent RRH2X60-1900	
115.000	115.000	1	Flat Low Profile Platform	

Linear Appurtenance				
Elev (ft)		Description	Exposed To Wind	
From	To			
0.000	115.0	1 5/8" Hybriflex	No	
0.000	121.0	1 5/8" Coax	No	
0.000	130.0	1 5/8" Coax	No	
0.000	130.0	1.57" Hybrid	No	
0.000	145.5	0.39" Fiber Trunk	No	
0.000	145.5	0.78" 8 AWG 6	No	
0.000	145.5	1 5/8" Coax	No	
0.000	145.5	2" Conduit	No	

Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal

1.0D + 1.0W

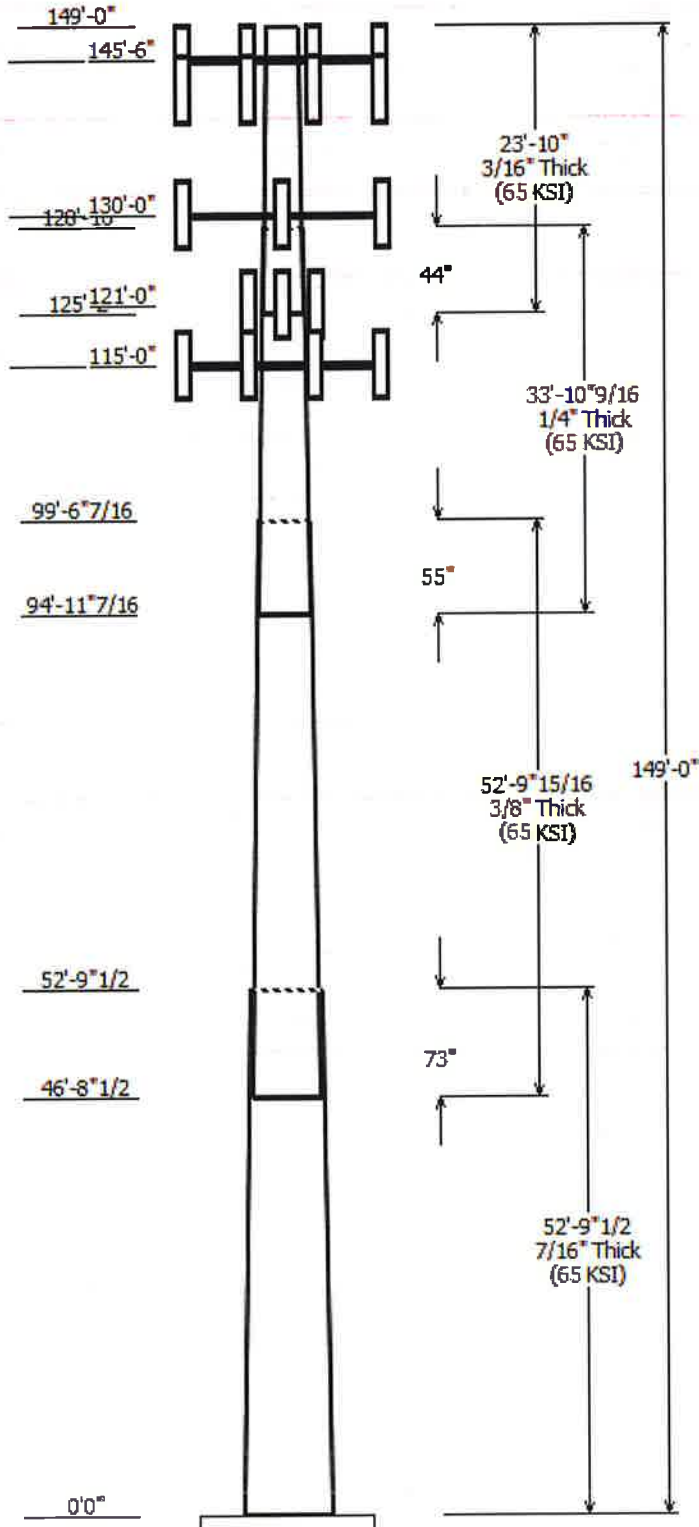
Serviceability 60 mph

Reactions

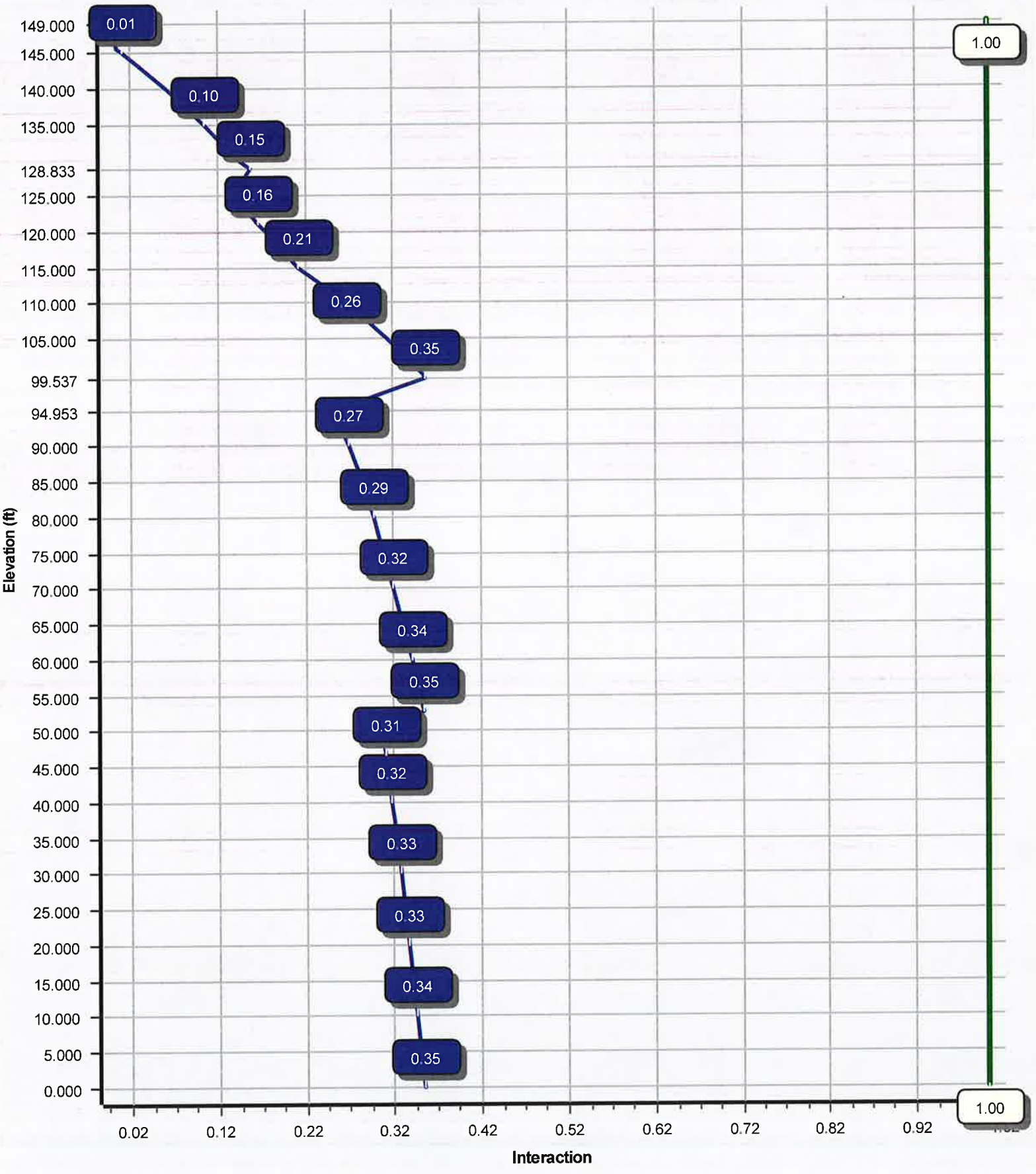
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2083.60	20.50	41.51
0.9D + 1.6W	2068.86	20.49	31.13
1.2D + 1.0Di + 1.0Wi	567.05	5.75	60.40
(1.2 + 0.2Sds) * DL + E ELFM	187.60	1.70	41.12
(1.2 + 0.2Sds) * DL + E EMAM	186.08	1.78	41.12
(0.9 - 0.2Sds) * DL + E ELFM	186.01	1.70	28.45
(0.9 - 0.2Sds) * DL + E EMAM	184.37	1.78	28.45
1.0D + 1.0W	496.03	4.90	34.60

Dish Deflections

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



Load Case : 1.2D + 1.6W
Max Ratio 35.47% at 99.5 ft



Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Analysis Parameters

Location:	New Haven County, CT	Height (ft):	149
Code:	ANSI/TIA-222-G	Base Diameter (in):	56.00
Shape:	18 Sides	Top Diameter (in):	18.50
Pole Type:	Taper	Taper (in/ft) :	0.263
Pole Manufacturer:	EEI		

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	1.80		
T _L (sec):	6	p:	1.3
S _s :	0.193	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.206	S _{d1} :	0.102
		C _s :	0.038
		C _s Max:	0.038
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in 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	52.790	0.4375	65		0.00	12,130	56.00	0.00	77.15	30093.2	21.16	128.00	42.13	52.79	57.90	12721.9	15.57	96.32	0.262584
2-18	52.830	0.3750	65	Slip	73.00	7,954	44.48	46.71	52.50	12906.4	19.51	118.63	30.61	99.54	35.99	4157.6	12.98	81.64	0.262584
3-18	33.880	0.2500	65	Slip	55.00	2,526	32.31	94.95	25.44	3305.6	21.38	129.27	23.42	128.83	18.39	1247.1	15.11	93.68	0.262584
4-18	23.833	0.1875	65	Slip	44.00	1,035	24.75	125.17	14.62	1115.3	21.87	132.04	18.50	149.00	10.90	461.7	15.99	98.67	0.262584
Shaft Weight						23,646													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
145.50	Allgon 7770.00	6	35.00	5.510	0.77	169.64	6.562	0.77	0.000	-4.500
145.50	Ericsson RRUS 11 (Band 12)	6	50.00	2.570	0.67	131.05	3.212	0.67	0.000	-4.500
145.50	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,147.13	45.170	1.00	0.000	0.000
145.50	KMW AM-X-CD-16-65-00T-	3	48.50	8.020	0.79	236.59	9.310	0.79	0.000	-4.500
145.50	Powerwave Allgon LGP13519	6	5.30	0.340	0.50	20.28	0.560	0.50	0.000	0.000
145.50	Powerwave Allgon LGP21401	6	14.10	1.100	0.50	47.60	1.562	0.50	0.000	-4.500
145.50	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	124.39	2.851	1.00	0.000	0.000
130.00	Ericsson AIR 21	6	91.00	6.050	0.86	256.29	7.131	0.86	0.000	0.000
130.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	27.02	0.630	0.50	0.000	0.000
130.00	Round T-Arm	3	250.00	9.700	0.67	456.36	17.840	0.67	0.000	0.000
121.00	RFS APX16DWV-16DWVS-C-	9	40.70	6.460	0.66	173.30	7.551	0.66	0.000	0.000
115.00	Alcatel-Lucent B66A	2	56.80	2.540	0.67	125.12	2.476	0.67	0.000	0.000
115.00	Alcatel-Lucent RRH2x60 700	2	56.70	2.150	0.67	125.02	2.476	0.67	0.000	0.000
115.00	Alcatel-Lucent RRH2X60-	2	43.00	1.880	0.50	107.60	2.441	0.50	0.000	0.000
115.00	Andrew HBXX-6517DS-A2M	4	43.00	8.530	0.81	214.24	11.359	0.81	0.000	0.000
115.00	Commscope LNX-6515DS-	4	50.30	11.440	0.84	305.07	13.055	0.84	0.000	0.000
115.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,130.81	44.688	1.00	0.000	0.000
115.00	RFS DB-B1-6C-12AB-OZ	1	21.40	2.510	0.67	160.35	5.647	0.67	0.000	0.000
Totals		66	6206.60			14,824.18			Number of Loadings : 18	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width (in)	Exposed To Wind	Carrier
0.00	145.50	1	0.39" Fiber Trunk	0.39	0.06	N 0.00	N	AT&T Mobility
0.00	145.50	2	0.78" 8 AWG 6	0.78	0.59	N 0.00	N	AT&T Mobility
0.00	145.50	12	1 5/8" Coax	1.98	0.82	N 0.00	N	AT&T Mobility
0.00	145.50	1	2" Conduit	2.38	3.65	N 0.00	N	AT&T Mobility
0.00	130.00	12	1 5/8" Coax	1.98	0.82	N 0.00	N	T-Mobile
0.00	130.00	1	1.57" Hybrid	1.57	1.07	N 0.00	N	T-Mobile
0.00	121.00	9	1 5/8" Coax	1.98	0.82	N 0.00	N	Youghiogheny
0.00	115.00	2	1 5/8" Hybriflex	1.98	1.30	N 0.00	N	Verizon

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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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	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.4375	56.000	77.153	30,093.2	21.16	128.00	76.5	1058.	0.0	0.0
5.00		0.4375	54.687	75.330	28,009.9	20.63	125.00	77.1	1008.	0.0	1,297.2
10.00		0.4375	53.374	73.507	26,025.1	20.10	122.00	77.8	960.4	0.0	1,266.1
15.00		0.4375	52.061	71.683	24,136.3	19.57	119.00	78.4	913.1	0.0	1,235.1
20.00		0.4375	50.748	69.860	22,341.2	19.04	116.00	79.0	867.1	0.0	1,204.1
25.00		0.4375	49.435	68.037	20,637.4	18.51	113.00	79.6	822.2	0.0	1,173.1
30.00		0.4375	48.122	66.214	19,022.5	17.98	109.99	80.2	778.6	0.0	1,142.1
35.00		0.4375	46.810	64.391	17,494.1	17.46	106.99	80.9	736.1	0.0	1,111.1
40.00		0.4375	45.497	62.568	16,049.9	16.93	103.99	81.5	694.8	0.0	1,080.0
45.00		0.4375	44.184	60.745	14,687.4	16.40	100.99	82.1	654.7	0.0	1,049.0
46.71	Bot - Section 2	0.4375	43.736	60.123	14,240.6	16.22	99.97	82.3	641.3	0.0	351.0
50.00		0.4375	42.871	58.922	13,404.3	15.87	97.99	82.6	615.8	0.0	1,249.6
52.79	Top - Section 1	0.3750	42.888	50.600	11,554.4	18.76	114.37	79.3	530.6	0.0	1,039.1
55.00		0.3750	42.308	49.909	11,087.7	18.48	112.82	79.7	516.2	0.0	377.9
60.00		0.3750	40.995	48.346	10,078.5	17.87	109.32	80.4	484.2	0.0	835.8
65.00		0.3750	39.682	46.784	9,132.4	17.25	105.82	81.1	453.3	0.0	809.3
70.00		0.3750	38.369	45.221	8,247.6	16.63	102.32	81.8	423.4	0.0	782.7
75.00		0.3750	37.056	43.658	7,421.8	16.01	98.82	82.6	394.5	0.0	756.1
80.00		0.3750	35.743	42.096	6,653.0	15.40	95.32	82.6	366.6	0.0	729.5
85.00		0.3750	34.430	40.533	5,939.3	14.78	91.81	82.6	339.8	0.0	702.9
90.00		0.3750	33.117	38.970	5,278.5	14.16	88.31	82.6	313.9	0.0	676.3
94.95	Bot - Section 3	0.3750	31.817	37.422	4,674.1	13.55	84.84	82.6	289.3	0.0	643.8
95.00		0.3750	31.805	37.408	4,668.6	13.54	84.81	82.6	289.1	0.0	10.0
99.54	Top - Section 2	0.2500	31.113	24.489	2,947.2	20.53	124.45	77.2	186.6	0.0	951.9
100.0		0.2500	30.992	24.393	2,912.5	20.45	123.97	77.4	185.1	0.0	38.5
105.0		0.2500	29.679	23.351	2,555.0	19.52	118.71	78.4	169.6	0.0	406.2
110.0		0.2500	28.366	22.309	2,228.1	18.60	113.46	79.5	154.7	0.0	388.4
115.0		0.2500	27.053	21.267	1,930.3	17.67	108.21	80.6	140.5	0.0	370.7
120.0		0.2500	25.740	20.226	1,660.3	16.74	102.96	81.7	127.0	0.0	353.0
121.0		0.2500	25.477	20.017	1,609.5	16.56	101.91	81.9	124.4	0.0	68.5
125.0		0.2500	24.427	19.184	1,416.7	15.82	97.71	82.6	114.2	0.0	266.8
125.1	Bot - Section 4	0.2500	24.383	19.149	1,409.1	15.79	97.53	82.6	113.8	0.0	10.9
128.8	Top - Section 3	0.1875	23.795	14.049	989.3	20.97	126.91	76.7	81.9	0.0	413.0
130.0		0.1875	23.489	13.867	951.3	20.68	125.28	77.1	79.8	0.0	55.4
135.0		0.1875	22.176	13.086	799.4	19.44	118.27	78.5	71.0	0.0	229.3
140.0		0.1875	20.863	12.304	664.6	18.21	111.27	80.0	62.7	0.0	216.0
145.0		0.1875	19.550	11.523	545.8	16.97	104.27	81.4	55.0	0.0	202.7
145.5		0.1875	19.419	11.445	534.8	16.85	103.57	81.6	54.2	0.0	19.5
149.0		0.1875	18.500	10.898	461.7	15.99	98.67	82.6	49.2	0.0	133.0
23,645.5											

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

97 mph with No Ice

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces			Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		214.5	0.0					0.0	0.0	214.5	0.0	0.0	0.0
5.00		424.0	1,556.6					0.0	213.7	424.0	1,770.3	0.0	0.0
10.00		413.8	1,519.4					0.0	213.7	413.8	1,733.1	0.0	0.0
15.00		403.6	1,482.1					0.0	213.7	403.6	1,695.9	0.0	0.0
20.00		393.5	1,444.9					0.0	213.7	393.5	1,658.6	0.0	0.0
25.00		383.3	1,407.7					0.0	213.7	383.3	1,621.4	0.0	0.0
30.00		377.5	1,370.5					0.0	213.7	377.5	1,584.2	0.0	0.0
35.00		379.3	1,333.3					0.0	213.7	379.3	1,547.0	0.0	0.0
40.00		383.0	1,296.0					0.0	213.7	383.0	1,509.8	0.0	0.0
45.00		257.9	1,258.8					0.0	213.7	257.9	1,472.5	0.0	0.0
46.71	Bot - Section 2	194.7	421.2					0.0	73.0	194.7	494.1	0.0	0.0
50.00		238.2	1,499.5					0.0	140.8	238.2	1,640.3	0.0	0.0
52.79	Top - Section 1	195.6	1,246.9					0.0	119.3	195.6	1,366.2	0.0	0.0
55.00		281.0	453.5					0.0	94.5	281.0	548.0	0.0	0.0
60.00		387.6	1,003.0					0.0	213.7	387.6	1,216.7	0.0	0.0
65.00		383.9	971.1					0.0	213.7	383.9	1,184.8	0.0	0.0
70.00		379.2	939.2					0.0	213.7	379.2	1,152.9	0.0	0.0
75.00		373.5	907.3					0.0	213.7	373.5	1,121.0	0.0	0.0
80.00		367.0	875.4					0.0	213.7	367.0	1,089.1	0.0	0.0
85.00		359.7	843.5					0.0	213.7	359.7	1,057.2	0.0	0.0
90.00		350.0	811.6					0.0	213.7	350.0	1,025.3	0.0	0.0
94.95	Bot - Section 3	173.8	772.6					0.0	211.7	173.8	984.3	0.0	0.0
95.00		157.8	12.0					0.0	2.0	157.8	14.0	0.0	0.0
99.54	Top - Section 2	171.9	1,142.3					0.0	193.9	171.9	1,336.2	0.0	0.0
100.00		182.9	46.2					0.0	19.8	182.9	66.0	0.0	0.0
105.00		329.3	487.4					0.0	213.7	329.3	701.1	0.0	0.0
110.00		319.0	466.1					0.0	213.7	319.0	679.8	0.0	0.0
115.00	Appertunance(s)	308.1	444.8	3,596.9	0.0	0.0	2,649.1	0.0	213.7	3,905.0	3,307.7	0.0	0.0
120.00		180.8	423.6					0.0	198.1	180.8	621.7	0.0	0.0
121.00	Appertunance(s)	145.5	82.2	1,612.7	0.0	0.0	439.6	0.0	39.6	1,758.2	561.3	0.0	0.0
125.00		120.6	320.1					0.0	123.1	120.6	443.2	0.0	0.0
125.17	Bot - Section 4	109.1	13.0					0.0	5.1	109.1	18.2	0.0	0.0
128.83	Top - Section 3	136.8	495.6					0.0	112.8	136.8	608.4	0.0	0.0
130.00	Appertunance(s)	167.9	66.5	1,719.7	0.0	0.0	1,594.8	0.0	35.9	1,887.6	1,697.2	0.0	0.0
135.00		264.4	275.1					0.0	88.4	264.4	363.5	0.0	0.0
140.00		251.3	259.2					0.0	88.4	251.3	347.6	0.0	0.0
145.00		134.2	243.2					0.0	88.4	134.2	331.6	0.0	0.0
145.50	Appertunance(s)	93.0	23.4	3,278.3	0.0	-9,182.3	2,764.4	0.0	8.8	3,371.3	2,796.7	0.0	0.0
149.00		81.1	159.7					0.0	0.0	81.1	159.7	0.0	0.0
Totals:										20,676.0	41,526.7	0.00	0.00

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:43 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.6W

97 mph with No Ice

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.51	-20.50	0.00	-2,083.60	0.00	2,083.60	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.351
5.00	-39.71	-20.14	0.00	-1,981.12	0.00	1,981.12	5,229.56	2,614.78	11,654.9	5,836.15	0.05	-0.10	0.347
10.00	-37.94	-19.79	0.00	-1,880.43	0.00	1,880.43	5,144.17	2,572.09	11,184.9	5,600.81	0.21	-0.19	0.343
15.00	-36.21	-19.44	0.00	-1,781.50	0.00	1,781.50	5,056.74	2,528.37	10,719.9	5,367.95	0.46	-0.29	0.339
20.00	-34.52	-19.10	0.00	-1,684.31	0.00	1,684.31	4,967.26	2,483.63	10,260.2	5,137.73	0.83	-0.40	0.335
25.00	-32.87	-18.76	0.00	-1,588.82	0.00	1,588.82	4,875.75	2,437.87	9,806.10	4,910.34	1.30	-0.50	0.330
30.00	-31.25	-18.43	0.00	-1,495.01	0.00	1,495.01	4,782.19	2,391.09	9,357.93	4,685.92	1.88	-0.61	0.326
35.00	-29.68	-18.09	0.00	-1,402.87	0.00	1,402.87	4,686.58	2,343.29	8,916.06	4,464.66	2.57	-0.72	0.321
40.00	-28.14	-17.74	0.00	-1,312.44	0.00	1,312.44	4,588.94	2,294.47	8,480.81	4,246.71	3.38	-0.83	0.315
45.00	-26.64	-17.49	0.00	-1,223.75	0.00	1,223.75	4,489.25	2,244.63	8,052.51	4,032.24	4.31	-0.94	0.309
46.71	-26.14	-17.32	0.00	-1,193.89	0.00	1,193.89	4,454.76	2,227.38	7,907.97	3,959.86	4.65	-0.98	0.307
50.00	-24.48	-17.08	0.00	-1,136.86	0.00	1,136.86	4,377.60	2,188.80	7,614.23	3,812.78	5.35	-1.05	0.304
52.79	-23.10	-16.88	0.00	-1,089.21	0.00	1,089.21	3,613.14	1,806.57	6,305.68	3,157.53	5.99	-1.12	0.351
55.00	-22.53	-16.63	0.00	-1,051.90	0.00	1,051.90	3,578.23	1,789.12	6,158.78	3,083.97	6.52	-1.17	0.347
60.00	-21.29	-16.26	0.00	-968.76	0.00	968.76	3,497.79	1,748.90	5,830.16	2,919.41	7.82	-1.30	0.338
65.00	-20.07	-15.90	0.00	-887.46	0.00	887.46	3,415.31	1,707.65	5,506.99	2,757.59	9.25	-1.43	0.328
70.00	-18.90	-15.53	0.00	-807.98	0.00	807.98	3,330.78	1,665.39	5,189.62	2,598.67	10.83	-1.57	0.317
75.00	-17.75	-15.17	0.00	-730.33	0.00	730.33	3,243.59	1,621.79	4,877.42	2,442.34	12.54	-1.70	0.305
80.00	-16.64	-14.80	0.00	-654.50	0.00	654.50	3,127.49	1,563.75	4,532.82	2,269.78	14.39	-1.83	0.294
85.00	-15.56	-14.45	0.00	-580.48	0.00	580.48	3,011.40	1,505.70	4,200.83	2,103.54	16.38	-1.96	0.281
90.00	-14.52	-14.09	0.00	-508.25	0.00	508.25	2,895.30	1,447.65	3,881.48	1,943.62	18.51	-2.09	0.267
94.95	-13.53	-13.90	0.00	-438.45	0.00	438.45	2,780.28	1,390.14	3,577.55	1,791.43	20.75	-2.22	0.250
95.00	-13.50	-13.75	0.00	-437.80	0.00	437.80	2,779.20	1,389.60	3,574.75	1,790.03	20.77	-2.22	0.250
99.54	-12.16	-13.54	0.00	-375.42	0.00	375.42	1,702.59	851.29	2,158.67	1,080.94	22.93	-2.33	0.355
100.00	-12.08	-13.37	0.00	-369.15	0.00	369.15	1,698.09	849.05	2,144.41	1,073.80	23.16	-2.35	0.351
105.00	-11.36	-13.05	0.00	-302.28	0.00	302.28	1,648.46	824.23	1,992.11	997.54	25.71	-2.51	0.310
110.00	-10.66	-12.72	0.00	-237.06	0.00	237.06	1,596.78	798.39	1,842.85	922.79	28.42	-2.66	0.264
115.00	-7.53	-8.68	0.00	-173.44	0.00	173.44	1,543.06	771.53	1,696.96	849.74	31.28	-2.79	0.209
120.00	-6.91	-8.48	0.00	-130.04	0.00	130.04	1,487.30	743.65	1,554.78	778.54	34.26	-2.90	0.172
121.00	-6.43	-6.70	0.00	-121.57	0.00	121.57	1,475.91	737.95	1,526.81	764.54	34.87	-2.92	0.163
125.00	-5.99	-6.56	0.00	-94.78	0.00	94.78	1,425.26	712.63	1,412.43	707.26	37.35	-3.00	0.138
125.17	-5.97	-6.45	0.00	-93.68	0.00	93.68	1,422.68	711.34	1,407.29	704.69	37.46	-3.00	0.137
128.83	-5.37	-6.29	0.00	-70.03	0.00	70.03	970.32	485.16	941.18	471.29	39.79	-3.06	0.154
130.00	-3.77	-4.31	0.00	-62.69	0.00	62.69	961.96	480.98	920.87	461.12	40.54	-3.08	0.140
135.00	-3.42	-4.03	0.00	-41.12	0.00	41.12	924.86	462.43	835.07	418.16	43.81	-3.16	0.102
140.00	-3.08	-3.77	0.00	-20.95	0.00	20.95	885.72	442.86	751.58	376.35	47.15	-3.21	0.059
145.00	-2.76	-3.61	0.00	-2.12	0.00	2.12	844.53	422.27	670.72	335.86	50.54	-3.24	0.010
145.50	-0.15	-0.09	0.00	-0.31	0.00	0.31	840.30	420.15	662.79	331.89	50.87	-3.24	0.001
149.00	0.00	-0.08	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	53.25	-3.24	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:43 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W	97 mph with No Ice (Reduced DL)	23 Iterations
Gust Response Factor :1.10		Wind Importance Factor 1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		214.5	0.0					0.0	0.0	214.5	0.0	0.0	0.0
5.00		424.0	1,167.4					0.0	160.3	424.0	1,327.7	0.0	0.0
10.00		413.8	1,139.5					0.0	160.3	413.8	1,299.8	0.0	0.0
15.00		403.6	1,111.6					0.0	160.3	403.6	1,271.9	0.0	0.0
20.00		393.5	1,083.7					0.0	160.3	393.5	1,244.0	0.0	0.0
25.00		383.3	1,055.8					0.0	160.3	383.3	1,216.1	0.0	0.0
30.00		377.5	1,027.9					0.0	160.3	377.5	1,188.2	0.0	0.0
35.00		379.3	999.9					0.0	160.3	379.3	1,160.2	0.0	0.0
40.00		383.0	972.0					0.0	160.3	383.0	1,132.3	0.0	0.0
45.00		257.9	944.1					0.0	160.3	257.9	1,104.4	0.0	0.0
46.71	Bot - Section 2	194.7	315.9					0.0	54.7	194.7	370.6	0.0	0.0
50.00		238.2	1,124.6					0.0	105.6	238.2	1,230.2	0.0	0.0
52.79	Top - Section 1	195.6	935.2					0.0	89.4	195.6	1,024.6	0.0	0.0
55.00		281.0	340.1					0.0	70.8	281.0	411.0	0.0	0.0
60.00		387.6	752.3					0.0	160.3	387.6	912.6	0.0	0.0
65.00		383.9	728.3					0.0	160.3	383.9	888.6	0.0	0.0
70.00		379.2	704.4					0.0	160.3	379.2	864.7	0.0	0.0
75.00		373.5	680.5					0.0	160.3	373.5	840.8	0.0	0.0
80.00		367.0	656.6					0.0	160.3	367.0	816.8	0.0	0.0
85.00		359.7	632.6					0.0	160.3	359.7	792.9	0.0	0.0
90.00		350.0	608.7					0.0	160.3	350.0	769.0	0.0	0.0
94.95	Bot - Section 3	173.8	579.4					0.0	158.8	173.8	738.2	0.0	0.0
95.00		157.8	9.0					0.0	1.5	157.8	10.5	0.0	0.0
99.54	Top - Section 2	171.9	856.7					0.0	145.4	171.9	1,002.1	0.0	0.0
100.00		182.9	34.7					0.0	14.9	182.9	49.5	0.0	0.0
105.00		329.3	365.5					0.0	160.3	329.3	525.8	0.0	0.0
110.00		319.0	349.6					0.0	160.3	319.0	509.9	0.0	0.0
115.00	Appertunance(s)	308.1	333.6	3,596.9	0.0	0.0	1,986.8	0.0	160.3	3,905.0	2,480.8	0.0	0.0
120.00		180.8	317.7					0.0	148.6	180.8	466.3	0.0	0.0
121.00	Appertunance(s)	145.5	61.6	1,612.7	0.0	0.0	329.7	0.0	29.7	1,758.2	421.0	0.0	0.0
125.00		120.6	240.1					0.0	92.3	120.6	332.4	0.0	0.0
125.17	Bot - Section 4	109.1	9.8					0.0	3.8	109.1	13.6	0.0	0.0
128.83	Top - Section 3	136.8	371.7					0.0	84.6	136.8	456.3	0.0	0.0
130.00	Appertunance(s)	167.9	49.9	1,719.7	0.0	0.0	1,196.1	0.0	26.9	1,887.6	1,272.9	0.0	0.0
135.00		264.4	206.4					0.0	66.3	264.4	272.6	0.0	0.0
140.00		251.3	194.4					0.0	66.3	251.3	260.7	0.0	0.0
145.00		134.2	182.4					0.0	66.3	134.2	248.7	0.0	0.0
145.50	Appertunance(s)	93.0	17.6	3,278.3	0.0	-9,182.3	2,073.3	0.0	6.6	3,371.3	2,097.5	0.0	0.0
149.00		81.1	119.7					0.0	0.0	81.1	119.7	0.0	0.0
Totals:										20,676.0	31,145.0	0.00	0.00

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:44 PM

Customer: Verizon Wireless

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-31.13	-20.49	0.00	-2,068.86	0.00	2,068.86	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.347
5.00	-29.77	-20.11	0.00	-1,966.43	0.00	1,966.43	5,229.56	2,614.78	11,654.9	5,836.15	0.05	-0.10	0.343
10.00	-28.43	-19.74	0.00	-1,865.87	0.00	1,865.87	5,144.17	2,572.09	11,184.9	5,600.81	0.20	-0.19	0.339
15.00	-27.13	-19.38	0.00	-1,767.15	0.00	1,767.15	5,056.74	2,528.37	10,719.9	5,367.95	0.46	-0.29	0.335
20.00	-25.85	-19.03	0.00	-1,670.23	0.00	1,670.23	4,967.26	2,483.63	10,260.2	5,137.73	0.82	-0.39	0.330
25.00	-24.61	-18.68	0.00	-1,575.10	0.00	1,575.10	4,875.75	2,437.87	9,806.10	4,910.34	1.29	-0.50	0.326
30.00	-23.39	-18.33	0.00	-1,481.70	0.00	1,481.70	4,782.19	2,391.09	9,357.93	4,685.92	1.86	-0.60	0.321
35.00	-22.20	-17.98	0.00	-1,390.02	0.00	1,390.02	4,686.58	2,343.29	8,916.06	4,464.66	2.55	-0.71	0.316
40.00	-21.04	-17.63	0.00	-1,300.10	0.00	1,300.10	4,588.94	2,294.47	8,480.81	4,246.71	3.35	-0.82	0.311
45.00	-19.91	-17.38	0.00	-1,211.97	0.00	1,211.97	4,489.25	2,244.63	8,052.51	4,032.24	4.27	-0.93	0.305
46.71	-19.53	-17.20	0.00	-1,182.31	0.00	1,182.31	4,454.76	2,227.38	7,907.97	3,959.86	4.61	-0.97	0.303
50.00	-18.28	-16.96	0.00	-1,125.68	0.00	1,125.68	4,377.60	2,188.80	7,614.23	3,812.78	5.31	-1.05	0.299
52.79	-17.25	-16.76	0.00	-1,078.36	0.00	1,078.36	3,613.14	1,806.57	6,305.68	3,157.53	5.94	-1.11	0.346
55.00	-16.81	-16.50	0.00	-1,041.32	0.00	1,041.32	3,578.23	1,789.12	6,158.78	3,083.97	6.46	-1.16	0.342
60.00	-15.87	-16.13	0.00	-958.82	0.00	958.82	3,497.79	1,748.90	5,830.16	2,919.41	7.75	-1.29	0.333
65.00	-14.96	-15.76	0.00	-878.18	0.00	878.18	3,415.31	1,707.65	5,506.99	2,757.59	9.17	-1.42	0.323
70.00	-14.07	-15.39	0.00	-799.39	0.00	799.39	3,330.78	1,665.39	5,189.62	2,598.67	10.73	-1.55	0.312
75.00	-13.20	-15.02	0.00	-722.45	0.00	722.45	3,243.59	1,621.79	4,877.42	2,442.34	12.43	-1.68	0.300
80.00	-12.37	-14.66	0.00	-647.34	0.00	647.34	3,127.49	1,563.75	4,532.82	2,269.78	14.26	-1.81	0.289
85.00	-11.55	-14.30	0.00	-574.05	0.00	574.05	3,011.40	1,505.70	4,200.83	2,103.54	16.23	-1.94	0.277
90.00	-10.77	-13.95	0.00	-502.55	0.00	502.55	2,895.30	1,447.65	3,881.48	1,943.62	18.34	-2.07	0.262
94.95	-10.02	-13.76	0.00	-433.47	0.00	433.47	2,780.28	1,390.14	3,577.55	1,791.43	20.56	-2.20	0.246
95.00	-10.00	-13.61	0.00	-432.83	0.00	432.83	2,779.20	1,389.60	3,574.75	1,790.03	20.58	-2.20	0.245
99.54	-8.99	-13.41	0.00	-371.09	0.00	371.09	1,702.59	851.29	2,158.67	1,080.94	22.73	-2.31	0.349
100.00	-8.93	-13.24	0.00	-364.88	0.00	364.88	1,698.09	849.05	2,144.41	1,073.80	22.95	-2.32	0.345
105.00	-8.38	-12.91	0.00	-298.71	0.00	298.71	1,648.46	824.23	1,992.11	997.54	25.47	-2.48	0.305
110.00	-7.86	-12.58	0.00	-234.17	0.00	234.17	1,596.78	798.39	1,842.85	922.79	28.16	-2.63	0.259
115.00	-5.55	-8.58	0.00	-171.25	0.00	171.25	1,543.06	771.53	1,696.96	849.74	30.99	-2.76	0.205
120.00	-5.08	-8.38	0.00	-128.36	0.00	128.36	1,487.30	743.65	1,554.78	778.54	33.94	-2.87	0.168
121.00	-4.74	-6.61	0.00	-119.98	0.00	119.98	1,475.91	737.95	1,526.81	764.54	34.54	-2.89	0.160
125.00	-4.41	-6.47	0.00	-93.55	0.00	93.55	1,425.26	712.63	1,412.43	707.26	37.00	-2.97	0.135
125.17	-4.40	-6.37	0.00	-92.47	0.00	92.47	1,422.68	711.34	1,407.29	704.69	37.11	-2.97	0.134
128.83	-3.95	-6.21	0.00	-69.13	0.00	69.13	970.32	485.16	941.18	471.29	39.41	-3.03	0.151
130.00	-2.77	-4.26	0.00	-61.88	0.00	61.88	961.96	480.98	920.87	461.12	40.16	-3.05	0.137
135.00	-2.51	-3.98	0.00	-40.59	0.00	40.59	924.86	462.43	835.07	418.16	43.39	-3.13	0.100
140.00	-2.26	-3.72	0.00	-20.68	0.00	20.68	885.72	442.86	751.58	376.35	46.70	-3.18	0.058
145.00	-2.02	-3.57	0.00	-2.09	0.00	2.09	844.53	422.27	670.72	335.86	50.05	-3.21	0.009
145.50	-0.12	-0.09	0.00	-0.31	0.00	0.31	840.30	420.15	662.79	331.89	50.38	-3.21	0.001
149.00	0.00	-0.08	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	52.73	-3.21	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:45 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

22 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		68.5	0.0					0.0	0.0	68.5	0.0	0.0	0.0
5.00		135.7	1,962.0					0.0	213.7	135.7	2,175.7	0.0	0.0
10.00		133.1	1,962.3					0.0	213.7	133.1	2,176.0	0.0	0.0
15.00		130.2	1,937.7					0.0	213.7	130.2	2,151.4	0.0	0.0
20.00		127.3	1,904.9					0.0	213.7	127.3	2,118.6	0.0	0.0
25.00		124.3	1,867.8					0.0	213.7	124.3	2,081.5	0.0	0.0
30.00		122.8	1,828.0					0.0	213.7	122.8	2,041.8	0.0	0.0
35.00		123.7	1,786.4					0.0	213.7	123.7	2,000.2	0.0	0.0
40.00		125.2	1,743.5					0.0	213.7	125.2	1,957.2	0.0	0.0
45.00		84.4	1,699.4					0.0	213.7	84.4	1,913.1	0.0	0.0
46.71	Bot - Section 2	63.9	571.2					0.0	73.0	63.9	644.2	0.0	0.0
50.00		78.2	1,790.0					0.0	140.8	78.2	1,930.8	0.0	0.0
52.79	Top - Section 1	64.3	1,490.5					0.0	119.3	64.3	1,609.8	0.0	0.0
55.00		92.5	644.9					0.0	94.5	92.5	739.3	0.0	0.0
60.00		127.9	1,425.9					0.0	213.7	127.9	1,639.6	0.0	0.0
65.00		127.1	1,384.5					0.0	213.7	127.1	1,598.2	0.0	0.0
70.00		125.9	1,342.7					0.0	213.7	125.9	1,556.4	0.0	0.0
75.00		124.4	1,300.4					0.0	213.7	124.4	1,514.1	0.0	0.0
80.00		122.7	1,257.8					0.0	213.7	122.7	1,471.5	0.0	0.0
85.00		120.7	1,214.9					0.0	213.7	120.7	1,428.6	0.0	0.0
90.00		117.9	1,171.7					0.0	213.7	117.9	1,385.4	0.0	0.0
94.95	Bot - Section 3	58.6	1,117.9					0.0	211.7	58.6	1,329.6	0.0	0.0
95.00		53.4	15.3					0.0	2.0	53.4	17.3	0.0	0.0
99.54	Top - Section 2	58.2	1,453.5					0.0	193.9	58.2	1,647.5	0.0	0.0
100.00		62.2	78.0					0.0	19.8	62.2	97.8	0.0	0.0
105.00		112.3	817.3					0.0	213.7	112.3	1,031.0	0.0	0.0
110.00		109.3	783.8					0.0	213.7	109.3	997.5	0.0	0.0
115.00	Appertunance(s)	106.1	750.1	822.1	0.0	0.0	5,123.8	0.0	213.7	928.2	6,087.6	0.0	0.0
120.00		62.5	716.2					0.0	198.1	62.5	914.3	0.0	0.0
121.00	Appertunance(s)	50.6	140.3	313.1	0.0	0.0	1,633.0	0.0	39.6	363.6	1,812.9	0.0	0.0
125.00		42.0	544.1					0.0	123.1	42.0	667.2	0.0	0.0
125.17	Bot - Section 4	38.1	22.4					0.0	5.1	38.1	27.5	0.0	0.0
128.83	Top - Section 3	47.8	696.6					0.0	112.8	47.8	809.5	0.0	0.0
130.00	Appertunance(s)	59.1	129.8	406.7	0.0	0.0	3,061.7	0.0	35.9	465.7	3,227.4	0.0	0.0
135.00		93.5	533.0					0.0	88.4	93.5	621.4	0.0	0.0
140.00		89.7	503.9					0.0	88.4	89.7	592.2	0.0	0.0
145.00		48.1	474.6					0.0	88.4	48.1	562.9	0.0	0.0
145.50	Appertunance(s)	33.6	46.5	767.1	0.0	-1,836.8	5,453.4	0.0	8.8	800.8	5,508.7	0.0	0.0
149.00		29.4	314.1					0.0	0.0	29.4	314.1	0.0	0.0
Totals:										5,804.14	60,399.8	0.00	0.00

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:46 PM

Customer: Verizon Wireless

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

22 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-60.40	-5.75	0.00	-567.05	0.00	567.05	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.105
5.00	-58.22	-5.64	0.00	-538.30	0.00	538.30	5,229.56	2,614.78	11,654.9	5,836.15	0.01	-0.03	0.103
10.00	-56.04	-5.53	0.00	-510.10	0.00	510.10	5,144.17	2,572.09	11,184.9	5,600.81	0.06	-0.05	0.102
15.00	-53.89	-5.42	0.00	-482.45	0.00	482.45	5,056.74	2,528.37	10,719.9	5,367.95	0.13	-0.08	0.101
20.00	-51.77	-5.32	0.00	-455.33	0.00	455.33	4,967.26	2,483.63	10,260.2	5,137.73	0.22	-0.11	0.099
25.00	-49.68	-5.21	0.00	-428.73	0.00	428.73	4,875.75	2,437.87	9,806.10	4,910.34	0.35	-0.14	0.098
30.00	-47.64	-5.11	0.00	-402.66	0.00	402.66	4,782.19	2,391.09	9,357.93	4,685.92	0.51	-0.16	0.096
35.00	-45.64	-5.00	0.00	-377.11	0.00	377.11	4,686.58	2,343.29	8,916.06	4,464.66	0.70	-0.19	0.094
40.00	-43.68	-4.89	0.00	-352.09	0.00	352.09	4,588.94	2,294.47	8,480.81	4,246.71	0.92	-0.22	0.092
45.00	-41.76	-4.82	0.00	-327.62	0.00	327.62	4,489.25	2,244.63	8,052.51	4,032.24	1.17	-0.25	0.091
46.71	-41.12	-4.76	0.00	-319.40	0.00	319.40	4,454.76	2,227.38	7,907.97	3,959.86	1.26	-0.26	0.090
50.00	-39.19	-4.69	0.00	-303.72	0.00	303.72	4,377.60	2,188.80	7,614.23	3,812.78	1.45	-0.28	0.089
52.79	-37.58	-4.62	0.00	-290.64	0.00	290.64	3,613.14	1,806.57	6,305.68	3,157.53	1.62	-0.30	0.102
55.00	-36.83	-4.54	0.00	-280.42	0.00	280.42	3,578.23	1,789.12	6,158.78	3,083.97	1.76	-0.32	0.101
60.00	-35.19	-4.43	0.00	-257.70	0.00	257.70	3,497.79	1,748.90	5,830.16	2,919.41	2.11	-0.35	0.098
65.00	-33.59	-4.31	0.00	-235.56	0.00	235.56	3,415.31	1,707.65	5,506.99	2,757.59	2.50	-0.39	0.095
70.00	-32.03	-4.19	0.00	-214.01	0.00	214.01	3,330.78	1,665.39	5,189.62	2,598.67	2.92	-0.42	0.092
75.00	-30.52	-4.08	0.00	-193.04	0.00	193.04	3,243.59	1,621.79	4,877.42	2,442.34	3.38	-0.46	0.088
80.00	-29.05	-3.96	0.00	-172.66	0.00	172.66	3,127.49	1,563.75	4,532.82	2,269.78	3.88	-0.49	0.085
85.00	-27.62	-3.84	0.00	-152.86	0.00	152.86	3,011.40	1,505.70	4,200.83	2,103.54	4.41	-0.53	0.082
90.00	-26.23	-3.73	0.00	-133.65	0.00	133.65	2,895.30	1,447.65	3,881.48	1,943.62	4.98	-0.56	0.078
94.95	-24.90	-3.66	0.00	-115.19	0.00	115.19	2,780.28	1,390.14	3,577.55	1,791.43	5.58	-0.59	0.073
95.00	-24.88	-3.62	0.00	-115.02	0.00	115.02	2,779.20	1,389.60	3,574.75	1,790.03	5.58	-0.59	0.073
99.54	-23.23	-3.55	0.00	-98.62	0.00	98.62	1,702.59	851.29	2,158.67	1,080.94	6.16	-0.62	0.105
100.00	-23.14	-3.49	0.00	-96.97	0.00	96.97	1,698.09	849.05	2,144.41	1,073.80	6.22	-0.63	0.104
105.00	-22.10	-3.38	0.00	-79.51	0.00	79.51	1,648.46	824.23	1,992.11	997.54	6.90	-0.67	0.093
110.00	-21.11	-3.28	0.00	-62.59	0.00	62.59	1,596.78	798.39	1,842.85	922.79	7.62	-0.71	0.081
115.00	-15.03	-2.28	0.00	-46.20	0.00	46.20	1,543.06	771.53	1,696.96	849.74	8.39	-0.74	0.064
120.00	-14.12	-2.21	0.00	-34.80	0.00	34.80	1,487.30	743.65	1,554.78	778.54	9.18	-0.77	0.054
121.00	-12.31	-1.82	0.00	-32.59	0.00	32.59	1,475.91	737.95	1,526.81	764.54	9.34	-0.78	0.051
125.00	-11.64	-1.78	0.00	-25.29	0.00	25.29	1,425.26	712.63	1,412.43	707.26	10.01	-0.80	0.044
125.17	-11.61	-1.74	0.00	-25.00	0.00	25.00	1,422.68	711.34	1,407.29	704.69	10.03	-0.80	0.044
128.83	-10.80	-1.68	0.00	-18.62	0.00	18.62	970.32	485.16	941.18	471.29	10.65	-0.82	0.051
130.00	-7.58	-1.17	0.00	-16.66	0.00	16.66	961.96	480.98	920.87	461.12	10.85	-0.82	0.044
135.00	-6.96	-1.07	0.00	-10.80	0.00	10.80	924.86	462.43	835.07	418.16	11.73	-0.84	0.033
140.00	-6.37	-0.97	0.00	-5.45	0.00	5.45	885.72	442.86	751.58	376.35	12.62	-0.86	0.022
145.00	-5.81	-0.92	0.00	-0.58	0.00	0.58	844.53	422.27	670.72	335.86	13.52	-0.86	0.009
145.50	-0.31	-0.03	0.00	-0.12	0.00	0.12	840.30	420.15	662.79	331.89	13.61	-0.86	0.001
149.00	0.00	-0.03	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	14.24	-0.86	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

11/3/2016 4:35:46 PM

Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		51.3	0.0					0.0	0.0	51.3	0.0	0.0	0.0
5.00		101.4	1,297.2					0.0	178.1	101.4	1,475.3	0.0	0.0
10.00		99.0	1,266.1					0.0	178.1	99.0	1,444.2	0.0	0.0
15.00		96.5	1,235.1					0.0	178.1	96.5	1,413.2	0.0	0.0
20.00		94.1	1,204.1					0.0	178.1	94.1	1,382.2	0.0	0.0
25.00		91.7	1,173.1					0.0	178.1	91.7	1,351.2	0.0	0.0
30.00		90.3	1,142.1					0.0	178.1	90.3	1,320.2	0.0	0.0
35.00		90.7	1,111.1					0.0	178.1	90.7	1,289.2	0.0	0.0
40.00		91.6	1,080.0					0.0	178.1	91.6	1,258.1	0.0	0.0
45.00		61.7	1,049.0					0.0	178.1	61.7	1,227.1	0.0	0.0
46.71	Bot - Section 2	46.6	351.0					0.0	60.8	46.6	411.8	0.0	0.0
50.00		57.0	1,249.6					0.0	117.3	57.0	1,366.9	0.0	0.0
52.79	Top - Section 1	46.8	1,039.1					0.0	99.4	46.8	1,138.5	0.0	0.0
55.00		67.2	377.9					0.0	78.7	67.2	456.6	0.0	0.0
60.00		92.7	835.8					0.0	178.1	92.7	1,013.9	0.0	0.0
65.00		91.8	809.3					0.0	178.1	91.8	987.4	0.0	0.0
70.00		90.7	782.7					0.0	178.1	90.7	960.8	0.0	0.0
75.00		89.3	756.1					0.0	178.1	89.3	934.2	0.0	0.0
80.00		87.8	729.5					0.0	178.1	87.8	907.6	0.0	0.0
85.00		86.0	702.9					0.0	178.1	86.0	881.0	0.0	0.0
90.00		83.7	676.3					0.0	178.1	83.7	854.4	0.0	0.0
94.95	Bot - Section 3	41.6	643.8					0.0	176.4	41.6	820.2	0.0	0.0
95.00		37.7	10.0					0.0	1.7	37.7	11.6	0.0	0.0
99.54	Top - Section 2	41.1	951.9					0.0	161.6	41.1	1,113.5	0.0	0.0
100.00		43.7	38.5					0.0	16.5	43.7	55.0	0.0	0.0
105.00		78.8	406.2					0.0	178.1	78.8	584.3	0.0	0.0
110.00		76.3	388.4					0.0	178.1	76.3	566.5	0.0	0.0
115.00	Appertunance(s)	73.7	370.7	860.1	0.0	0.0	2,207.6	0.0	178.1	933.8	2,756.4	0.0	0.0
120.00		43.2	353.0					0.0	165.1	43.2	518.1	0.0	0.0
121.00	Appertunance(s)	34.8	68.5	385.6	0.0	0.0	366.3	0.0	33.0	420.4	467.8	0.0	0.0
125.00		28.9	266.8					0.0	102.6	28.9	369.3	0.0	0.0
125.17	Bot - Section 4	26.1	10.9					0.0	4.3	26.1	15.1	0.0	0.0
128.83	Top - Section 3	32.7	413.0					0.0	94.0	32.7	507.0	0.0	0.0
130.00	Appertunance(s)	40.2	55.4	411.2	0.0	0.0	1,329.0	0.0	29.9	451.4	1,414.3	0.0	0.0
135.00		63.2	229.3					0.0	73.7	63.2	302.9	0.0	0.0
140.00		60.1	216.0					0.0	73.7	60.1	289.6	0.0	0.0
145.00		32.1	202.7					0.0	73.7	32.1	276.3	0.0	0.0
145.50	Appertunance(s)	22.2	19.5	783.9	0.0	-2,195.8	2,303.7	0.0	7.4	806.2	2,330.6	0.0	0.0
149.00		19.4	133.0					0.0	0.0	19.4	133.0	0.0	0.0
Totals:									4,944.32	34,605.6	0.00	0.00	

Site Number: 370641

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.60	-4.90	0.00	-496.03	0.00	496.03	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.088
5.00	-33.13	-4.81	0.00	-471.54	0.00	471.54	5,229.56	2,614.78	11,654.9	5,836.15	0.01	-0.02	0.087
10.00	-31.68	-4.72	0.00	-447.48	0.00	447.48	5,144.17	2,572.09	11,184.9	5,600.81	0.05	-0.05	0.086
15.00	-30.27	-4.64	0.00	-423.86	0.00	423.86	5,056.74	2,528.37	10,719.9	5,367.95	0.11	-0.07	0.085
20.00	-28.88	-4.56	0.00	-400.66	0.00	400.66	4,967.26	2,483.63	10,260.2	5,137.73	0.20	-0.09	0.084
25.00	-27.53	-4.47	0.00	-377.89	0.00	377.89	4,875.75	2,437.87	9,806.10	4,910.34	0.31	-0.12	0.083
30.00	-26.21	-4.39	0.00	-355.52	0.00	355.52	4,782.19	2,391.09	9,357.93	4,685.92	0.45	-0.14	0.081
35.00	-24.92	-4.31	0.00	-333.56	0.00	333.56	4,686.58	2,343.29	8,916.06	4,464.66	0.61	-0.17	0.080
40.00	-23.66	-4.22	0.00	-312.02	0.00	312.02	4,588.94	2,294.47	8,480.81	4,246.71	0.80	-0.20	0.079
45.00	-22.43	-4.16	0.00	-290.90	0.00	290.90	4,489.25	2,244.63	8,052.51	4,032.24	1.02	-0.22	0.077
46.71	-22.02	-4.12	0.00	-283.79	0.00	283.79	4,454.76	2,227.38	7,907.97	3,959.86	1.11	-0.23	0.077
50.00	-20.65	-4.07	0.00	-270.22	0.00	270.22	4,377.60	2,188.80	7,614.23	3,812.78	1.27	-0.25	0.076
52.79	-19.51	-4.02	0.00	-258.87	0.00	258.87	3,613.14	1,806.57	6,305.68	3,157.53	1.42	-0.27	0.087
55.00	-19.05	-3.96	0.00	-249.99	0.00	249.99	3,578.23	1,789.12	6,158.78	3,083.97	1.55	-0.28	0.086
60.00	-18.04	-3.87	0.00	-230.21	0.00	230.21	3,497.79	1,748.90	5,830.16	2,919.41	1.86	-0.31	0.084
65.00	-17.05	-3.78	0.00	-210.87	0.00	210.87	3,415.31	1,707.65	5,506.99	2,757.59	2.20	-0.34	0.081
70.00	-16.08	-3.69	0.00	-191.97	0.00	191.97	3,330.78	1,665.39	5,189.62	2,598.67	2.58	-0.37	0.079
75.00	-15.15	-3.60	0.00	-173.51	0.00	173.51	3,243.59	1,621.79	4,877.42	2,442.34	2.98	-0.40	0.076
80.00	-14.24	-3.52	0.00	-155.49	0.00	155.49	3,127.49	1,563.75	4,532.82	2,269.78	3.42	-0.44	0.073
85.00	-13.36	-3.43	0.00	-137.90	0.00	137.90	3,011.40	1,505.70	4,200.83	2,103.54	3.90	-0.47	0.070
90.00	-12.50	-3.35	0.00	-120.74	0.00	120.74	2,895.30	1,447.65	3,881.48	1,943.62	4.40	-0.50	0.066
94.95	-11.68	-3.30	0.00	-104.15	0.00	104.15	2,780.28	1,390.14	3,577.55	1,791.43	4.93	-0.53	0.062
95.00	-11.67	-3.27	0.00	-104.00	0.00	104.00	2,779.20	1,389.60	3,574.75	1,790.03	4.94	-0.53	0.062
99.54	-10.56	-3.22	0.00	-89.17	0.00	89.17	1,702.59	851.29	2,158.67	1,080.94	5.45	-0.55	0.089
100.00	-10.50	-3.18	0.00	-87.68	0.00	87.68	1,698.09	849.05	2,144.41	1,073.80	5.51	-0.56	0.088
105.00	-9.91	-3.10	0.00	-71.79	0.00	71.79	1,648.46	824.23	1,992.11	997.54	6.11	-0.60	0.078
110.00	-9.35	-3.02	0.00	-56.29	0.00	56.29	1,596.78	798.39	1,842.85	922.79	6.76	-0.63	0.067
115.00	-6.60	-2.06	0.00	-41.17	0.00	41.17	1,543.06	771.53	1,696.96	849.74	7.44	-0.66	0.053
120.00	-6.08	-2.01	0.00	-30.87	0.00	30.87	1,487.30	743.65	1,554.78	778.54	8.15	-0.69	0.044
121.00	-5.62	-1.59	0.00	-28.85	0.00	28.85	1,475.91	737.95	1,526.81	764.54	8.29	-0.69	0.042
125.00	-5.25	-1.56	0.00	-22.50	0.00	22.50	1,425.26	712.63	1,412.43	707.26	8.88	-0.71	0.035
125.17	-5.24	-1.53	0.00	-22.24	0.00	22.24	1,422.68	711.34	1,407.29	704.69	8.91	-0.71	0.035
128.83	-4.73	-1.49	0.00	-16.62	0.00	16.62	970.32	485.16	941.18	471.29	9.46	-0.73	0.040
130.00	-3.32	-1.02	0.00	-14.88	0.00	14.88	961.96	480.98	920.87	461.12	9.64	-0.73	0.036
135.00	-3.02	-0.96	0.00	-9.76	0.00	9.76	924.86	462.43	835.07	418.16	10.42	-0.75	0.027
140.00	-2.73	-0.89	0.00	-4.97	0.00	4.97	885.72	442.86	751.58	376.35	11.21	-0.76	0.016
145.00	-2.45	-0.86	0.00	-0.50	0.00	0.50	844.53	422.27	670.72	335.86	12.02	-0.77	0.004
145.50	-0.13	-0.02	0.00	-0.07	0.00	0.07	840.30	420.15	662.79	331.89	12.10	-0.77	0.000
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	12.66	-0.77	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_a):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_{a1}):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.80
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.65
Total Unfactored Dead Load:	34.61 k
Seismic Base Shear (E):	1.70 k

Load Case (1.2 + 0.2S_{ds}) * DL + E EFLM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147.25	133	507	0.011	18	165
37	145.25	27	100	0.002	4	33
36	142.50	276	998	0.021	36	343
35	137.50	290	986	0.021	36	359
34	132.50	303	970	0.021	35	376
33	129.42	85	263	0.006	9	106
32	127.00	507	1,514	0.032	55	629
31	125.08	15	44	0.001	2	19
30	123.00	369	1,046	0.022	38	458
29	120.50	101	278	0.006	10	126
28	117.50	518	1,360	0.029	49	643
27	112.50	549	1,341	0.028	48	681
26	107.50	567	1,284	0.027	46	703
25	102.50	584	1,224	0.026	44	725
24	99.77	55	110	0.002	4	68
23	97.27	1,113	2,140	0.045	77	1,382
22	94.98	12	21	0.000	1	14
21	92.48	820	1,450	0.031	52	1,018
20	87.50	854	1,379	0.029	50	1,060
19	82.50	881	1,290	0.027	47	1,093
18	77.50	908	1,199	0.025	43	1,126
17	72.50	934	1,105	0.023	40	1,159
16	67.50	961	1,010	0.021	36	1,192

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

15	62.50	987	914	0.019	33	1,225
14	57.50	1,014	818	0.017	30	1,258
13	53.90	457	331	0.007	12	567
12	51.40	1,138	763	0.016	28	1,413
11	48.35	1,367	828	0.018	30	1,697
10	45.85	412	229	0.005	8	511
9	42.50	1,227	601	0.013	22	1,523
8	37.50	1,258	501	0.011	18	1,562
7	32.50	1,289	405	0.009	15	1,600
6	27.50	1,320	315	0.007	11	1,639
5	22.50	1,351	231	0.005	8	1,677
4	17.50	1,382	156	0.003	6	1,716
3	12.50	1,413	92	0.002	3	1,754
2	7.50	1,444	40	0.001	1	1,793
1	2.50	1,475	7	0.000	0	1,831
Powerwave Allgon LGP	145.50	32	119	0.003	4	39
Powerwave Allgon LGP	145.50	85	316	0.007	11	105
Raycap DC6-48-60-18-	145.50	32	119	0.003	4	39
Ericsson RRUS 11 (Ba	145.50	300	1,121	0.024	40	372
Allgon 7770.00	145.50	210	785	0.017	28	261
KMW AM-X-CD-16-65-00	145.50	146	544	0.012	20	181
Flat Low Profile Pla	145.50	1,500	5,607	0.119	202	1,862
Ericsson KRY 112 144	130.00	33	102	0.002	4	41
Ericsson AIR 21	130.00	546	1,694	0.036	61	678
Round T-Arm	130.00	750	2,327	0.049	84	931
RFS APX16DWV-16DWVS-	121.00	366	1,010	0.021	36	455
Alcatel-Lucent RRH2X	115.00	86	218	0.005	8	107
Alcatel-Lucent RRH2x	115.00	113	287	0.006	10	141
RFS DB-B1-6C-12AB-0Z	115.00	21	54	0.001	2	27
Alcatel-Lucent B66A	115.00	114	288	0.006	10	141
Andrew HBXX-6517DS-A	115.00	172	436	0.009	16	213
Commscope LNX-6515DS	115.00	201	510	0.011	18	250
Flat Low Profile Pla	115.00	1,500	3,801	0.081	137	1,862
		34,606	47,189	1.000	1,703	42,952

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147.25	133	507	0.011	18	114
37	145.25	27	100	0.002	4	23
36	142.50	276	998	0.021	36	237
35	137.50	290	986	0.021	36	249
34	132.50	303	970	0.021	35	260
33	129.42	85	263	0.006	9	73
32	127.00	507	1,514	0.032	55	435
31	125.08	15	44	0.001	2	13
30	123.00	369	1,046	0.022	38	317
29	120.50	101	278	0.006	10	87
28	117.50	518	1,360	0.029	49	445
27	112.50	549	1,341	0.028	48	471
26	107.50	567	1,284	0.027	46	487
25	102.50	584	1,224	0.026	44	502
24	99.77	55	110	0.002	4	47
23	97.27	1,113	2,140	0.045	77	956
22	94.98	12	21	0.000	1	10
21	92.48	820	1,450	0.031	52	704
20	87.50	854	1,379	0.029	50	734
19	82.50	881	1,290	0.027	47	757
18	77.50	908	1,199	0.025	43	779

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Site Name: Beacon Falls CT, CT

Engineering Number:OAA597776_C3_10

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Customer: Verizon Wireless

17	72.50	934	1,105	0.023	40	802
16	67.50	961	1,010	0.021	36	825
15	62.50	987	914	0.019	33	848
14	57.50	1,014	818	0.017	30	871
13	53.90	457	331	0.007	12	392
12	51.40	1,138	763	0.016	28	978
11	48.35	1,367	828	0.018	30	1,174
10	45.85	412	229	0.005	8	354
9	42.50	1,227	601	0.013	22	1,054
8	37.50	1,258	501	0.011	18	1,081
7	32.50	1,289	405	0.009	15	1,107
6	27.50	1,320	315	0.007	11	1,134
5	22.50	1,351	231	0.005	8	1,160
4	17.50	1,382	156	0.003	6	1,187
3	12.50	1,413	92	0.002	3	1,214
2	7.50	1,444	40	0.001	1	1,240
1	2.50	1,475	7	0.000	0	1,267
Powerwave Allgon LGP	145.50	32	119	0.003	4	27
Powerwave Allgon LGP	145.50	85	316	0.007	11	73
Raycap DC6-48-60-18-	145.50	32	119	0.003	4	27
Ericsson RRUS 11 (Ba	145.50	300	1,121	0.024	40	258
Allgon 7770.00	145.50	210	785	0.017	28	180
KMW AM-X-CD-16-65-00	145.50	146	544	0.012	20	125
Flat Low Profile Pla	145.50	1,500	5,607	0.119	202	1,288
Ericsson KRY 112 144	130.00	33	102	0.002	4	28
Ericsson AIR 21	130.00	546	1,694	0.036	61	469
Round T-Arm	130.00	750	2,327	0.049	84	644
RFS APX16DWV-16DWVS-	121.00	366	1,010	0.021	36	315
Alcatel-Lucent RRH2X	115.00	86	218	0.005	8	74
Alcatel-Lucent RRH2x	115.00	113	287	0.006	10	97
RFS DB-B1-6C-12AB-0Z	115.00	21	54	0.001	2	18
Alcatel-Lucent B66A	115.00	114	288	0.006	10	98
Andrew HBXX-6517DS-A	115.00	172	436	0.009	16	148
Commscope LNX-6515DS	115.00	201	510	0.011	18	173
Flat Low Profile Pla	115.00	1,500	3,801	0.081	137	1,288
		34,606	47,189	1.000	1,703	29,720

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

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

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.12	-1.70	0.00	-187.60	0.00	187.60	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.039
5.00	-39.33	-1.71	0.00	-179.07	0.00	179.07	5,229.56	2,614.78	11,654.9	5,836.15	0.00	-0.01	0.038
10.00	-37.57	-1.71	0.00	-170.53	0.00	170.53	5,144.17	2,572.09	11,184.9	5,600.81	0.02	-0.02	0.038
15.00	-35.86	-1.71	0.00	-161.97	0.00	161.97	5,056.74	2,528.37	10,719.9	5,367.95	0.04	-0.03	0.037
20.00	-34.18	-1.71	0.00	-153.41	0.00	153.41	4,967.26	2,483.63	10,260.2	5,137.73	0.07	-0.04	0.037
25.00	-32.54	-1.70	0.00	-144.88	0.00	144.88	4,875.75	2,437.87	9,806.10	4,910.34	0.12	-0.05	0.036
30.00	-30.94	-1.69	0.00	-136.38	0.00	136.38	4,782.19	2,391.09	9,357.93	4,685.92	0.17	-0.06	0.036
35.00	-29.38	-1.67	0.00	-127.93	0.00	127.93	4,686.58	2,343.29	8,916.06	4,464.66	0.23	-0.06	0.035
40.00	-27.86	-1.66	0.00	-119.55	0.00	119.55	4,588.94	2,294.47	8,480.81	4,246.71	0.31	-0.08	0.034
45.00	-27.34	-1.65	0.00	-111.27	0.00	111.27	4,489.25	2,244.63	8,052.51	4,032.24	0.39	-0.09	0.034
46.71	-25.65	-1.62	0.00	-108.45	0.00	108.45	4,454.76	2,227.38	7,907.97	3,959.86	0.42	-0.09	0.033
50.00	-24.23	-1.59	0.00	-103.12	0.00	103.12	4,377.60	2,188.80	7,614.23	3,812.78	0.49	-0.10	0.033
52.79	-23.67	-1.58	0.00	-98.67	0.00	98.67	3,613.14	1,806.57	6,305.68	3,157.53	0.54	-0.10	0.038
55.00	-22.41	-1.55	0.00	-95.17	0.00	95.17	3,578.23	1,789.12	6,158.78	3,083.97	0.59	-0.11	0.037
60.00	-21.18	-1.52	0.00	-87.40	0.00	87.40	3,497.79	1,748.90	5,830.16	2,919.41	0.71	-0.12	0.036
65.00	-19.99	-1.49	0.00	-79.79	0.00	79.79	3,415.31	1,707.65	5,506.99	2,757.59	0.84	-0.13	0.035
70.00	-18.83	-1.45	0.00	-72.34	0.00	72.34	3,330.78	1,665.39	5,189.62	2,598.67	0.98	-0.14	0.033
75.00	-17.70	-1.41	0.00	-65.10	0.00	65.10	3,243.59	1,621.79	4,877.42	2,442.34	1.14	-0.15	0.032
80.00	-16.61	-1.36	0.00	-58.06	0.00	58.06	3,127.49	1,563.75	4,532.82	2,269.78	1.31	-0.17	0.031
85.00	-15.55	-1.31	0.00	-51.25	0.00	51.25	3,011.40	1,505.70	4,200.83	2,103.54	1.49	-0.18	0.030
90.00	-14.53	-1.26	0.00	-44.70	0.00	44.70	2,895.30	1,447.65	3,881.48	1,943.62	1.68	-0.19	0.028
94.95	-14.52	-1.26	0.00	-38.46	0.00	38.46	2,780.28	1,390.14	3,577.55	1,791.43	1.88	-0.20	0.027
95.00	-13.14	-1.18	0.00	-38.41	0.00	38.41	2,779.20	1,389.60	3,574.75	1,790.03	1.88	-0.20	0.026
99.54	-13.07	-1.18	0.00	-33.06	0.00	33.06	1,702.59	851.29	2,158.67	1,080.94	2.08	-0.21	0.038
100.00	-12.34	-1.13	0.00	-32.52	0.00	32.52	1,698.09	849.05	2,144.41	1,073.80	2.10	-0.21	0.038
105.00	-11.64	-1.08	0.00	-26.87	0.00	26.87	1,648.46	824.23	1,992.11	997.54	2.33	-0.23	0.034
110.00	-10.96	-1.04	0.00	-21.45	0.00	21.45	1,596.78	798.39	1,842.85	922.79	2.57	-0.24	0.030
115.00	-7.58	-0.77	0.00	-16.27	0.00	16.27	1,543.06	771.53	1,696.96	849.74	2.83	-0.25	0.024
120.00	-7.45	-0.76	0.00	-12.41	0.00	12.41	1,487.30	743.65	1,554.78	778.54	3.10	-0.26	0.021
121.00	-6.54	-0.68	0.00	-11.65	0.00	11.65	1,475.91	737.95	1,526.81	764.54	3.15	-0.26	0.020
125.00	-6.52	-0.68	0.00	-8.91	0.00	8.91	1,425.26	712.63	1,412.43	707.26	3.37	-0.27	0.017
125.17	-5.89	-0.63	0.00	-8.80	0.00	8.80	1,422.68	711.34	1,407.29	704.69	3.38	-0.27	0.017
128.83	-5.78	-0.62	0.00	-6.51	0.00	6.51	970.32	485.16	941.18	471.29	3.59	-0.28	0.020
130.00	-3.76	-0.42	0.00	-5.79	0.00	5.79	961.96	480.98	920.87	461.12	3.66	-0.28	0.016
135.00	-3.40	-0.39	0.00	-3.68	0.00	3.68	924.86	462.43	835.07	418.16	3.96	-0.29	0.012
140.00	-3.06	-0.35	0.00	-1.75	0.00	1.75	885.72	442.86	751.58	376.35	4.26	-0.29	0.008
145.00	-0.17	-0.02	0.00	-0.01	0.00	0.01	844.53	422.27	670.72	335.86	4.57	-0.29	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	840.30	420.15	662.79	331.89	4.60	-0.29	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	4.81	-0.29	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.45	-1.70	0.00	-186.01	0.00	186.01	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.036
5.00	-27.21	-1.71	0.00	-177.49	0.00	177.49	5,229.56	2,614.78	11,654.9	5,836.15	0.00	-0.01	0.036
10.00	-26.00	-1.71	0.00	-168.96	0.00	168.96	5,144.17	2,572.09	11,184.9	5,600.81	0.02	-0.02	0.035
15.00	-24.81	-1.70	0.00	-160.42	0.00	160.42	5,056.74	2,528.37	10,719.9	5,367.95	0.04	-0.03	0.035
20.00	-23.65	-1.70	0.00	-151.90	0.00	151.90	4,967.26	2,483.63	10,260.2	5,137.73	0.07	-0.04	0.034
25.00	-22.52	-1.69	0.00	-143.40	0.00	143.40	4,875.75	2,437.87	9,806.10	4,910.34	0.12	-0.04	0.034
30.00	-21.41	-1.68	0.00	-134.94	0.00	134.94	4,782.19	2,391.09	9,357.93	4,685.92	0.17	-0.05	0.033
35.00	-20.33	-1.66	0.00	-126.55	0.00	126.55	4,686.58	2,343.29	8,916.06	4,464.66	0.23	-0.06	0.033
40.00	-19.27	-1.64	0.00	-118.23	0.00	118.23	4,588.94	2,294.47	8,480.81	4,246.71	0.30	-0.07	0.032
45.00	-18.92	-1.64	0.00	-110.01	0.00	110.01	4,489.25	2,244.63	8,052.51	4,032.24	0.39	-0.08	0.031
46.71	-17.75	-1.61	0.00	-107.21	0.00	107.21	4,454.76	2,227.38	7,907.97	3,959.86	0.42	-0.09	0.031
50.00	-16.77	-1.58	0.00	-101.92	0.00	101.92	4,377.60	2,188.80	7,614.23	3,812.78	0.48	-0.09	0.031
52.79	-16.38	-1.57	0.00	-97.51	0.00	97.51	3,613.14	1,806.57	6,305.68	3,157.53	0.54	-0.10	0.035
55.00	-15.51	-1.54	0.00	-94.04	0.00	94.04	3,578.23	1,789.12	6,158.78	3,083.97	0.59	-0.11	0.035
60.00	-14.66	-1.51	0.00	-86.34	0.00	86.34	3,497.79	1,748.90	5,830.16	2,919.41	0.70	-0.12	0.034
65.00	-13.83	-1.47	0.00	-78.80	0.00	78.80	3,415.31	1,707.65	5,506.99	2,757.59	0.83	-0.13	0.033
70.00	-13.03	-1.43	0.00	-71.43	0.00	71.43	3,330.78	1,665.39	5,189.62	2,598.67	0.97	-0.14	0.031
75.00	-12.25	-1.39	0.00	-64.26	0.00	64.26	3,243.59	1,621.79	4,877.42	2,442.34	1.13	-0.15	0.030
80.00	-11.49	-1.35	0.00	-57.30	0.00	57.30	3,127.49	1,563.75	4,532.82	2,269.78	1.29	-0.16	0.029
85.00	-10.76	-1.30	0.00	-50.57	0.00	50.57	3,011.40	1,505.70	4,200.83	2,103.54	1.47	-0.18	0.028
90.00	-10.05	-1.24	0.00	-44.09	0.00	44.09	2,895.30	1,447.65	3,881.48	1,943.62	1.66	-0.19	0.026
94.95	-10.04	-1.24	0.00	-37.94	0.00	37.94	2,780.28	1,390.14	3,577.55	1,791.43	1.86	-0.20	0.025
95.00	-9.09	-1.16	0.00	-37.88	0.00	37.88	2,779.20	1,389.60	3,574.75	1,790.03	1.86	-0.20	0.024
99.54	-9.04	-1.16	0.00	-32.60	0.00	32.60	1,702.59	851.29	2,158.67	1,080.94	2.05	-0.21	0.035
100.00	-8.54	-1.12	0.00	-32.06	0.00	32.06	1,698.09	849.05	2,144.41	1,073.80	2.07	-0.21	0.035
105.00	-8.05	-1.07	0.00	-26.49	0.00	26.49	1,648.46	824.23	1,992.11	997.54	2.30	-0.22	0.031
110.00	-7.58	-1.02	0.00	-21.14	0.00	21.14	1,596.78	798.39	1,842.85	922.79	2.54	-0.24	0.028
115.00	-5.24	-0.76	0.00	-16.04	0.00	16.04	1,543.06	771.53	1,696.96	849.74	2.80	-0.25	0.022
120.00	-5.15	-0.75	0.00	-12.24	0.00	12.24	1,487.30	743.65	1,554.78	778.54	3.06	-0.26	0.019
121.00	-4.52	-0.67	0.00	-11.49	0.00	11.49	1,475.91	737.95	1,526.81	764.54	3.12	-0.26	0.018
125.00	-4.51	-0.67	0.00	-8.79	0.00	8.79	1,425.26	712.63	1,412.43	707.26	3.34	-0.27	0.016
125.17	-4.07	-0.62	0.00	-8.68	0.00	8.68	1,422.68	711.34	1,407.29	704.69	3.35	-0.27	0.015
128.83	-4.00	-0.61	0.00	-6.42	0.00	6.42	970.32	485.16	941.18	471.29	3.55	-0.27	0.018
130.00	-2.60	-0.42	0.00	-5.71	0.00	5.71	961.96	480.98	920.87	461.12	3.62	-0.28	0.015
135.00	-2.35	-0.38	0.00	-3.63	0.00	3.63	924.86	462.43	835.07	418.16	3.91	-0.28	0.011
140.00	-2.11	-0.34	0.00	-1.72	0.00	1.72	885.72	442.86	751.58	376.35	4.21	-0.29	0.007
145.00	-0.11	-0.02	0.00	-0.01	0.00	0.01	844.53	422.27	670.72	335.86	4.51	-0.29	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	840.30	420.15	662.79	331.89	4.54	-0.29	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	4.75	-0.29	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.80
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2S_{ds}) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	S _{az}	Horizontal Force (lb)	Vertical Force (lb)
38	147.25	133	1.846	1.755	1.058	0.366	42	165
37	145.25	27	1.796	1.521	0.970	0.333	8	33
36	142.50	276	1.729	1.234	0.859	0.291	70	343
35	137.50	290	1.610	0.808	0.683	0.220	55	359
34	132.50	303	1.495	0.488	0.536	0.158	42	376
33	129.42	85	1.426	0.335	0.459	0.125	9	106
32	127.00	507	1.373	0.235	0.405	0.101	44	629
31	125.08	15	1.332	0.167	0.365	0.083	1	19
30	123.00	369	1.288	0.104	0.326	0.066	21	458
29	120.50	101	1.236	0.041	0.283	0.047	4	126
28	117.50	518	1.175	-0.017	0.237	0.027	12	643
27	112.50	549	1.077	-0.082	0.173	0.000	0	681
26	107.50	567	0.984	-0.114	0.123	-0.018	-9	703
25	102.50	584	0.894	-0.122	0.085	-0.028	-14	725
24	99.77	55	0.847	-0.119	0.068	-0.029	-1	68
23	97.27	1,113	0.805	-0.113	0.055	-0.029	-28	1,382
22	94.98	12	0.768	-0.105	0.045	-0.028	0	14
21	92.48	820	0.728	-0.095	0.036	-0.024	-17	1,018
20	87.50	854	0.652	-0.071	0.021	-0.014	-11	1,060
19	82.50	881	0.579	-0.045	0.012	-0.001	-1	1,093
18	77.50	908	0.511	-0.020	0.008	0.013	10	1,126
17	72.50	934	0.447	0.002	0.006	0.026	21	1,159
16	67.50	961	0.388	0.022	0.007	0.037	31	1,192
15	62.50	987	0.333	0.037	0.010	0.044	38	1,225
14	57.50	1,014	0.281	0.049	0.014	0.049	43	1,258
13	53.90	457	0.247	0.056	0.017	0.050	20	567
12	51.40	1,138	0.225	0.059	0.020	0.051	50	1,413
11	48.35	1,367	0.199	0.063	0.023	0.051	60	1,697
10	45.85	412	0.179	0.065	0.026	0.051	18	511
9	42.50	1,227	0.154	0.068	0.030	0.050	53	1,523
8	37.50	1,258	0.120	0.070	0.034	0.049	53	1,562
7	32.50	1,289	0.090	0.071	0.038	0.048	53	1,600
6	27.50	1,320	0.064	0.072	0.041	0.046	53	1,639
5	22.50	1,351	0.043	0.071	0.042	0.044	52	1,677

Site Number: 370641

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

4	17.50	1,382	0.026	0.067	0.040	0.042	50	1,716
3	12.50	1,413	0.013	0.059	0.034	0.037	45	1,754
2	7.50	1,444	0.005	0.044	0.025	0.029	36	1,793
1	2.50	1,475	0.001	0.018	0.010	0.013	16	1,831
Powerwave Allgon LGP	145.50	32	1.802	1.549	0.981	0.338	9	39
Powerwave Allgon LGP	145.50	85	1.802	1.549	0.981	0.338	25	105
Raycap DC6-48-60-18-	145.50	32	1.802	1.549	0.981	0.338	9	39
Ericsson RRUS 11 (Ba	145.50	300	1.802	1.549	0.981	0.338	88	372
Allgon 7770.00	145.50	210	1.802	1.549	0.981	0.338	61	261
KMW AM-X-CD-16-65-00	145.50	146	1.802	1.549	0.981	0.338	43	181
Flat Low Profile Pla	145.50	1,500	1.802	1.549	0.981	0.338	439	1,862
Ericsson KRY 112 144	130.00	33	1.439	0.361	0.473	0.131	4	41
Ericsson AIR 21	130.00	546	1.439	0.361	0.473	0.131	62	678
Round T-Arm	130.00	750	1.439	0.361	0.473	0.131	85	931
RFS APX16DWV-	121.00	366	1.246	0.053	0.291	0.050	16	455
Alcatel-Lucent RRH2X	115.00	86	1.126	-0.054	0.203	0.012	1	107
Alcatel-Lucent RRH2x	115.00	113	1.126	-0.054	0.203	0.012	1	141
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	0.012	0	27
Alcatel-Lucent B66A	115.00	114	1.126	-0.054	0.203	0.012	1	141
Andrew HBXX-6517DS-A	115.00	172	1.126	-0.054	0.203	0.012	2	213
Commscope LNX-	115.00	201	1.126	-0.054	0.203	0.012	2	250
Flat Low Profile Pla	115.00	1,500	1.126	-0.054	0.203	0.012	16	1,862
		34,606	53.026	18.277	17.226	5.265	1,794	42,952

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

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	147.25	133	1.846	1.755	1.058	0.366	42	114
37	145.25	27	1.796	1.521	0.970	0.333	8	23
36	142.50	276	1.729	1.234	0.859	0.291	70	237
35	137.50	290	1.610	0.808	0.683	0.220	55	249
34	132.50	303	1.495	0.488	0.536	0.158	42	260
33	129.42	85	1.426	0.335	0.459	0.125	9	73
32	127.00	507	1.373	0.235	0.405	0.101	44	435
31	125.08	15	1.332	0.167	0.365	0.083	1	13
30	123.00	369	1.288	0.104	0.326	0.066	21	317
29	120.50	101	1.236	0.041	0.283	0.047	4	87
28	117.50	518	1.175	-0.017	0.237	0.027	12	445
27	112.50	549	1.077	-0.082	0.173	0.000	0	471
26	107.50	567	0.984	-0.114	0.123	-0.018	-9	487
25	102.50	584	0.894	-0.122	0.085	-0.028	-14	502
24	99.77	55	0.847	-0.119	0.068	-0.029	-1	47
23	97.27	1,113	0.805	-0.113	0.055	-0.029	-28	956
22	94.98	12	0.768	-0.105	0.045	-0.028	0	10
21	92.48	820	0.728	-0.095	0.036	-0.024	-17	704
20	87.50	854	0.652	-0.071	0.021	-0.014	-11	734
19	82.50	881	0.579	-0.045	0.012	-0.001	-1	757
18	77.50	908	0.511	-0.020	0.008	0.013	10	779
17	72.50	934	0.447	0.002	0.006	0.026	21	802
16	67.50	961	0.388	0.022	0.007	0.037	31	825
15	62.50	987	0.333	0.037	0.010	0.044	38	848
14	57.50	1,014	0.281	0.049	0.014	0.049	43	871
13	53.90	457	0.247	0.056	0.017	0.050	20	392
12	51.40	1,138	0.225	0.059	0.020	0.051	50	978
11	48.35	1,367	0.199	0.063	0.023	0.051	60	1,174
10	45.85	412	0.179	0.065	0.026	0.051	18	354
9	42.50	1,227	0.154	0.068	0.030	0.050	53	1,054
8	37.50	1,258	0.120	0.070	0.034	0.049	53	1,081

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number:OAA597776_C3_10

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Customer: Verizon Wireless

7	32.50	1,289	0.090	0.071	0.038	0.048	53	1,107
6	27.50	1,320	0.064	0.072	0.041	0.046	53	1,134
5	22.50	1,351	0.043	0.071	0.042	0.044	52	1,160
4	17.50	1,382	0.026	0.067	0.040	0.042	50	1,187
3	12.50	1,413	0.013	0.059	0.034	0.037	45	1,214
2	7.50	1,444	0.005	0.044	0.025	0.029	36	1,240
1	2.50	1,475	0.001	0.018	0.010	0.013	16	1,267
Powerwave Allgon LGP	145.50	32	1.802	1.549	0.981	0.338	9	27
Powerwave Allgon LGP	145.50	85	1.802	1.549	0.981	0.338	25	73
Raycap DC6-48-60-18-	145.50	32	1.802	1.549	0.981	0.338	9	27
Ericsson RRUS 11 (Ba	145.50	300	1.802	1.549	0.981	0.338	88	258
Allgon 7770.00	145.50	210	1.802	1.549	0.981	0.338	61	180
KMW AM-X-CD-16-65-00	145.50	146	1.802	1.549	0.981	0.338	43	125
Flat Low Profile Pla	145.50	1,500	1.802	1.549	0.981	0.338	439	1,288
Ericsson KRY 112 144	130.00	33	1.439	0.361	0.473	0.131	4	28
Ericsson AIR 21	130.00	546	1.439	0.361	0.473	0.131	62	469
Round T-Arm	130.00	750	1.439	0.361	0.473	0.131	85	644
RFS APX16DWV-	121.00	366	1.246	0.053	0.291	0.050	16	315
Alcatel-Lucent RRH2X	115.00	86	1.126	-0.054	0.203	0.012	1	74
Alcatel-Lucent RRH2x	115.00	113	1.126	-0.054	0.203	0.012	1	97
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	0.012	0	18
Alcatel-Lucent B66A	115.00	114	1.126	-0.054	0.203	0.012	1	98
Andrew HBXX-6517DS-A	115.00	172	1.126	-0.054	0.203	0.012	2	148
Commscope LNX-	115.00	201	1.126	-0.054	0.203	0.012	2	173
Flat Low Profile Pla	115.00	1,500	1.126	-0.054	0.203	0.012	16	1,288
		34,606	53.026	18.277	17.226	5.265	1,794	29,720

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

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

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.12	-1.78	0.00	-186.08	0.00	186.08	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.038
5.00	-39.33	-1.75	0.00	-177.18	0.00	177.18	5,229.56	2,614.78	11,654.9	5,836.15	0.00	-0.01	0.038
10.00	-37.57	-1.71	0.00	-168.43	0.00	168.43	5,144.17	2,572.09	11,184.9	5,600.81	0.02	-0.02	0.037
15.00	-35.86	-1.66	0.00	-159.88	0.00	159.88	5,056.74	2,528.37	10,719.9	5,367.95	0.04	-0.03	0.037
20.00	-34.18	-1.62	0.00	-151.56	0.00	151.56	4,967.26	2,483.63	10,260.2	5,137.73	0.07	-0.04	0.036
25.00	-32.54	-1.57	0.00	-143.47	0.00	143.47	4,875.75	2,437.87	9,806.10	4,910.34	0.12	-0.04	0.036
30.00	-30.94	-1.52	0.00	-135.63	0.00	135.63	4,782.19	2,391.09	9,357.93	4,685.92	0.17	-0.05	0.035
35.00	-29.38	-1.47	0.00	-128.03	0.00	128.03	4,686.58	2,343.29	8,916.06	4,464.66	0.23	-0.06	0.035
40.00	-27.86	-1.42	0.00	-120.68	0.00	120.68	4,588.94	2,294.47	8,480.81	4,246.71	0.30	-0.07	0.034
45.00	-27.34	-1.40	0.00	-113.58	0.00	113.58	4,489.25	2,244.63	8,052.51	4,032.24	0.39	-0.08	0.034
46.71	-25.65	-1.34	0.00	-111.19	0.00	111.19	4,454.76	2,227.38	7,907.97	3,959.86	0.42	-0.09	0.034
50.00	-24.24	-1.29	0.00	-106.76	0.00	106.76	4,377.60	2,188.80	7,614.23	3,812.78	0.48	-0.10	0.034
52.79	-23.67	-1.28	0.00	-103.15	0.00	103.15	3,613.14	1,806.57	6,305.68	3,157.53	0.54	-0.10	0.039
55.00	-22.41	-1.23	0.00	-100.33	0.00	100.33	3,578.23	1,789.12	6,158.78	3,083.97	0.59	-0.11	0.039
60.00	-21.18	-1.20	0.00	-94.16	0.00	94.16	3,497.79	1,748.90	5,830.16	2,919.41	0.71	-0.12	0.038
65.00	-19.99	-1.17	0.00	-88.17	0.00	88.17	3,415.31	1,707.65	5,506.99	2,757.59	0.84	-0.13	0.038
70.00	-18.83	-1.15	0.00	-82.32	0.00	82.32	3,330.78	1,665.39	5,189.62	2,598.67	0.98	-0.15	0.037
75.00	-17.70	-1.14	0.00	-76.57	0.00	76.57	3,243.59	1,621.79	4,877.42	2,442.34	1.14	-0.16	0.037
80.00	-16.61	-1.14	0.00	-70.86	0.00	70.86	3,127.49	1,563.75	4,532.82	2,269.78	1.32	-0.17	0.037
85.00	-15.55	-1.15	0.00	-65.15	0.00	65.15	3,011.40	1,505.70	4,200.83	2,103.54	1.51	-0.19	0.036
90.00	-14.53	-1.17	0.00	-59.38	0.00	59.38	2,895.30	1,447.65	3,881.48	1,943.62	1.71	-0.20	0.036
94.95	-14.52	-1.17	0.00	-53.57	0.00	53.57	2,780.28	1,390.14	3,577.55	1,791.43	1.93	-0.22	0.035
95.00	-13.14	-1.20	0.00	-53.52	0.00	53.52	2,779.20	1,389.60	3,574.75	1,790.03	1.93	-0.22	0.035
99.54	-13.07	-1.20	0.00	-48.08	0.00	48.08	1,702.59	851.29	2,158.67	1,080.94	2.15	-0.23	0.052
100.00	-12.34	-1.22	0.00	-47.52	0.00	47.52	1,698.09	849.05	2,144.41	1,073.80	2.17	-0.23	0.052
105.00	-11.64	-1.23	0.00	-41.44	0.00	41.44	1,648.46	824.23	1,992.11	997.54	2.43	-0.26	0.049
110.00	-10.96	-1.23	0.00	-35.32	0.00	35.32	1,596.78	798.39	1,842.85	922.79	2.71	-0.28	0.045
115.00	-7.57	-1.18	0.00	-29.18	0.00	29.18	1,543.06	771.53	1,696.96	849.74	3.01	-0.30	0.039
120.00	-7.45	-1.17	0.00	-23.30	0.00	23.30	1,487.30	743.65	1,554.78	778.54	3.33	-0.32	0.035
121.00	-6.53	-1.13	0.00	-22.13	0.00	22.13	1,475.91	737.95	1,526.81	764.54	3.40	-0.32	0.033
125.00	-6.51	-1.13	0.00	-17.60	0.00	17.60	1,425.26	712.63	1,412.43	707.26	3.67	-0.33	0.029
125.17	-5.89	-1.08	0.00	-17.41	0.00	17.41	1,422.68	711.34	1,407.29	704.69	3.68	-0.34	0.029
128.83	-5.78	-1.08	0.00	-13.43	0.00	13.43	970.32	485.16	941.18	471.29	3.95	-0.35	0.034
130.00	-3.75	-0.87	0.00	-12.18	0.00	12.18	961.96	480.98	920.87	461.12	4.03	-0.35	0.030
135.00	-3.40	-0.82	0.00	-7.82	0.00	7.82	924.86	462.43	835.07	418.16	4.41	-0.37	0.022
140.00	-3.05	-0.74	0.00	-3.74	0.00	3.74	885.72	442.86	751.58	376.35	4.79	-0.38	0.013
145.00	-0.16	-0.04	0.00	-0.02	0.00	0.02	844.53	422.27	670.72	335.86	5.19	-0.38	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	840.30	420.15	662.79	331.89	5.23	-0.38	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	5.51	-0.38	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

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

Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.45	-1.78	0.00	-184.37	0.00	184.37	5,312.91	2,656.45	12,129.5	6,073.81	0.00	0.00	0.036
5.00	-27.21	-1.75	0.00	-175.48	0.00	175.48	5,229.56	2,614.78	11,654.9	5,836.15	0.00	-0.01	0.035
10.00	-26.00	-1.71	0.00	-166.75	0.00	166.75	5,144.17	2,572.09	11,184.9	5,600.81	0.02	-0.02	0.035
15.00	-24.81	-1.66	0.00	-158.22	0.00	158.22	5,056.74	2,528.37	10,719.9	5,367.95	0.04	-0.03	0.034
20.00	-23.65	-1.61	0.00	-149.93	0.00	149.93	4,967.26	2,483.63	10,260.2	5,137.73	0.07	-0.04	0.034
25.00	-22.52	-1.56	0.00	-141.88	0.00	141.88	4,875.75	2,437.87	9,806.10	4,910.34	0.11	-0.04	0.034
30.00	-21.41	-1.51	0.00	-134.08	0.00	134.08	4,782.19	2,391.09	9,357.93	4,685.92	0.17	-0.05	0.033
35.00	-20.33	-1.46	0.00	-126.53	0.00	126.53	4,686.58	2,343.29	8,916.06	4,464.66	0.23	-0.06	0.033
40.00	-19.27	-1.41	0.00	-119.24	0.00	119.24	4,588.94	2,294.47	8,480.81	4,246.71	0.30	-0.07	0.032
45.00	-18.92	-1.39	0.00	-112.20	0.00	112.20	4,489.25	2,244.63	8,052.51	4,032.24	0.38	-0.08	0.032
46.71	-17.75	-1.33	0.00	-109.83	0.00	109.83	4,454.76	2,227.38	7,907.97	3,959.86	0.41	-0.09	0.032
50.00	-16.77	-1.28	0.00	-105.44	0.00	105.44	4,377.60	2,188.80	7,614.23	3,812.78	0.48	-0.09	0.031
52.79	-16.38	-1.26	0.00	-101.87	0.00	101.87	3,613.14	1,806.57	6,305.68	3,157.53	0.53	-0.10	0.037
55.00	-15.51	-1.22	0.00	-99.08	0.00	99.08	3,578.23	1,789.12	6,158.78	3,083.97	0.58	-0.11	0.036
60.00	-14.66	-1.18	0.00	-92.98	0.00	92.98	3,497.79	1,748.90	5,830.16	2,919.41	0.70	-0.12	0.036
65.00	-13.83	-1.15	0.00	-87.06	0.00	87.06	3,415.31	1,707.65	5,506.99	2,757.59	0.83	-0.13	0.036
70.00	-13.03	-1.13	0.00	-81.29	0.00	81.29	3,330.78	1,665.39	5,189.62	2,598.67	0.97	-0.14	0.035
75.00	-12.25	-1.13	0.00	-75.61	0.00	75.61	3,243.59	1,621.79	4,877.42	2,442.34	1.13	-0.16	0.035
80.00	-11.49	-1.13	0.00	-69.99	0.00	69.99	3,127.49	1,563.75	4,532.82	2,269.78	1.30	-0.17	0.035
85.00	-10.76	-1.14	0.00	-64.36	0.00	64.36	3,011.40	1,505.70	4,200.83	2,103.54	1.49	-0.19	0.034
90.00	-10.05	-1.16	0.00	-58.67	0.00	58.67	2,895.30	1,447.65	3,881.48	1,943.62	1.69	-0.20	0.034
94.95	-10.04	-1.16	0.00	-52.95	0.00	52.95	2,780.28	1,390.14	3,577.55	1,791.43	1.91	-0.22	0.033
95.00	-9.09	-1.18	0.00	-52.89	0.00	52.89	2,779.20	1,389.60	3,574.75	1,790.03	1.91	-0.22	0.033
99.54	-9.04	-1.18	0.00	-47.53	0.00	47.53	1,702.59	851.29	2,158.67	1,080.94	2.12	-0.23	0.049
100.00	-8.54	-1.20	0.00	-46.98	0.00	46.98	1,698.09	849.05	2,144.41	1,073.80	2.15	-0.23	0.049
105.00	-8.05	-1.21	0.00	-40.99	0.00	40.99	1,648.46	824.23	1,992.11	997.54	2.40	-0.25	0.046
110.00	-7.58	-1.21	0.00	-34.95	0.00	34.95	1,596.78	798.39	1,842.85	922.79	2.68	-0.27	0.043
115.00	-5.24	-1.16	0.00	-28.90	0.00	28.90	1,543.06	771.53	1,696.96	849.74	2.97	-0.29	0.037
120.00	-5.15	-1.16	0.00	-23.08	0.00	23.08	1,487.30	743.65	1,554.78	778.54	3.29	-0.31	0.033
121.00	-4.52	-1.12	0.00	-21.92	0.00	21.92	1,475.91	737.95	1,526.81	764.54	3.36	-0.32	0.032
125.00	-4.51	-1.12	0.00	-17.44	0.00	17.44	1,425.26	712.63	1,412.43	707.26	3.63	-0.33	0.028
125.17	-4.07	-1.07	0.00	-17.25	0.00	17.25	1,422.68	711.34	1,407.29	704.69	3.64	-0.33	0.027
128.83	-4.00	-1.06	0.00	-13.32	0.00	13.32	970.32	485.16	941.18	471.29	3.90	-0.34	0.032
130.00	-2.60	-0.86	0.00	-12.07	0.00	12.07	961.96	480.98	920.87	461.12	3.98	-0.35	0.029
135.00	-2.35	-0.81	0.00	-7.75	0.00	7.75	924.86	462.43	835.07	418.16	4.36	-0.36	0.021
140.00	-2.11	-0.74	0.00	-3.71	0.00	3.71	885.72	442.86	751.58	376.35	4.74	-0.37	0.012
145.00	-0.11	-0.04	0.00	-0.02	0.00	0.02	844.53	422.27	670.72	335.86	5.13	-0.38	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	840.30	420.15	662.79	331.89	5.17	-0.38	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	5.45	-0.38	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	20.50	0.00	41.51	0.00	0.00	2083.60	99.54	0.35
0.9D + 1.6W	20.49	0.00	31.13	0.00	0.00	2068.86	99.54	0.35
1.2D + 1.0Di + 1.0Wi	5.75	0.00	60.40	0.00	0.00	567.05	99.54	0.10
(1.2 + 0.2Sds) * DL + E ELFM	1.70	0.00	41.12	0.00	0.00	187.60	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.78	0.00	41.12	0.00	0.00	186.08	99.54	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.70	0.00	28.45	0.00	0.00	186.01	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	1.78	0.00	28.45	0.00	0.00	184.37	99.54	0.05
1.0D + 1.0W	4.90	0.00	34.60	0.00	0.00	496.03	99.54	0.09

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Site Name: Beacon Falls CT, CT

Engineering Number: OAA597776_C3_10

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Customer: Verizon Wireless

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
3,762.30	38.90	34.90	2,083.60	60.40	20.50	41.02

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
60.0	2.500	71.000	Round	0	0.00	8.887	249.69	749.83	0.33

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
65.00	20	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	79.95	260.00	0.32	73.91	260.00	0.29

ATTACHMENT 5

Site Name: Beacon Falls 2 Tower Height: 150'		General		Power		Density					
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total			
*AT&T	2	565	145.5	0.0209	880	0.5867	0.36%				
*AT&T	2	875	145.5	0.0323	1900	1.0000	0.32%				
*AT&T	1	283	145.5	0.0052	880	0.5867	0.09%				
*AT&T	4	525	145.5	0.0388	1900	1.0000	0.39%				
*AT&T	1	1313	145.5	0.0243	734	0.4893	0.50%				
*Town of Beacon Falls to be determined											
*Pocket (now MetroPCS)	3	631	125	0.0481	2130	1.0000	0.48%				
*T-Mobile	8	190	135	0.0328	1935	1.0000	0.33%				
*T-Mobile	2	760	135	0.0328	2100	1.0000	0.33%				
Verizon	7	426	115	0.0811	1970	1.0000	8.11%				
Verizon	9	447	115	0.1094	869	0.5793	18.88%				
Verizon	1	2812	115	0.0765	2145	1.0000	7.65%				
Verizon	1	1645	115	0.0447	746	0.4973	8.99%				
								46.4%			
* Source: Siting Council											

ATTACHMENT 6

January 5, 2017

Via Certificate of Mailing

Christopher Bielik, First Selectman
Town of Beacon Falls
10 Maple Avenue
Beacon Falls, CT 06403

Re: Proposed Shared Use of an Existing Telecommunications Facility at 401 Lopus Road, Beacon Falls, Connecticut

Dear First Selectman Bielik:

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 for shared use of an existing telecommunications facility at 401 Lopus Road in Beacon Falls (the “Property”). Cellco intends to install eight (8) antennas and six (6) remote radio heads on a low-profile platform at a height of 115 feet AGL. Equipment cabinets associated with Cellco’s antennas and a back-up generator will be located on a 16’ x 12’ concrete pad near the base of the tower. A 1,000 gallon propane tank will be installed within the 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-14-533). 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.

Robinson + Cole

Christopher Bielik

January 5, 2017

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 7

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

January 5, 2017

Via Certificate of Mailing

«Name_and_Address»

Re: Proposed Shared Use of an Existing Telecommunications Facility at 401 Lopus Road, Beacon Falls, 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 for shared use of an existing telecommunications facility at 401 Lopus Road in Beacon Falls (the “Property”). Cellco intends to install eight (8) antennas and six (6) remote radio heads on a low-profile platform at a height of 115 feet AGL. Equipment cabinets associated with Cellco’s antennas and a back-up generator will be located on a 16’ x 12’ concrete pad near the base of the tower. A 1,000 gallon propane tank will be installed within the 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-14-533). A copy of the full Sub-Petition is attached for your review.

January 5, 2017
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.

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". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTERS LIST

**401 LOPUS ROAD
BEACON FALLS, CONNECTICUT**

	<u>Property Address</u>	<u>Owner and Mailing Address</u>
1.	Lopus Road	Town of Beacon Falls 10 Maple Avenue Beacon Falls, CT 06403
2.	392 Lopus Road	Elizabeth C. DeGeorge 392 Lopus Road Beacon Falls, CT 06403
3.	450 Lopus Road	Robert Posick 139 Weset Road Beacon Falls, CT 06403
4.	411 Lopus Road	Town of Beacon Falls 10 Maple Avenue Beacon Falls, CT 06403
5.	Breault Road	Seymour Beacon Falls LLC 30C Progress Drive Seymour, CT 06483