

Alex Murshteyn, Site Acquisition Consultant  
c/o Cellco Partnership d/b/a Verizon Wireless  
Centerline Communications, LLC  
750 West Center Street, Floor 3  
West Bridgewater, MA 02379  
Mobile: (508) 821-0159  
[AMurshteyn@centerlinecommunications.com](mailto:AMurshteyn@centerlinecommunications.com)

February 10, 2020

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

**RE: Notice of Exempt Modification // Site: Beacon Falls 2 CT (ATC: 370641)  
401 Lopus Road, Beacon Falls, CT 06403  
N 41.4328 // W 73.0703**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 8 antennas at the 115-foot mount on the existing 149-foot monopole tower, located at 401 Lopus Road, Beacon Falls, CT. The Council approved Verizon Wireless use of the existing tower in 2017. The property is owned by the Town of Beacon Falls. The tower is owned by American Tower. Verizon Wireless now intends to remove 8 of its existing antennas to replace with 4 and install them on side-by-side mounts for the LTE (700/850/1900 MHz) replacements for its PCS/LTE upgrade. Additionally, Verizon Wireless will replace all of its remote radio head units (RRUs) with 4 new RRUs; altogether updating leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Gerard Smith, First Selectman for the Town of Beacon Falls, the ground owner, its Zoning Enforcement Officer, Mike Mormile and American Tower, the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are construction drawings dated January 29, 2020, a structural analysis dated November 25, 2019 plus structural mount analysis dated December 20, 2019 by A.T. Engineering Service, PLLC, and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural and mount analyses by A.T. Engineering, PLLC, dated November 25 and December 20, 2019, respectively.

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

Sincerely,



---

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#### Attachments

cc: Gerard Smith, First Selectman - as chief elected official & property owner  
Mike Mormile, Zoning Enforcement Officer - as P&Z official  
American Tower Corporation - as tower owner

**UPS CampusShip: View/Print Label**

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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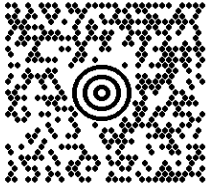
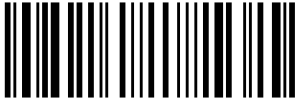
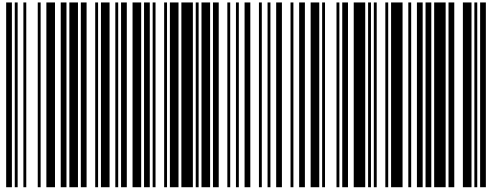

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FOLD HERE

ALEX MURSHTEYN 5088210159 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 023791518	<b>1 LBS</b>	<b>1 OF 1</b>
DWT: 14,11,1		
<b>SHIP TO:</b> GERARD SMITH, FIRST SELECTMAN BEACON FALLS TOWN HALL 10 MAPLE AVENUE BEACON FALLS CT 06403-1114		
	<b>CT 067 9-04</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 1467 9783		
		
BILLING: P/P		
Reference # 1: 370641 aka Beacon Falls 2 CT Reference # 2: GSC EM - CEO / 13000423 & PO	 <small>TM</small>	
<small>CS 22.0.11. WNTNV50 83.0A 12/2019</small>		

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DWT: 14,11,1		
<b>SHIP TO:</b> MIKE MORMILE ZONING ENFORCEMENT OFFICER BEACON FALLS TOWN HALL 10 MAPLE AVENUE BEACON FALLS CT 06403-1114		
	<b>CT 067 9-04</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 1839 9800		
		
BILLING: P/P		
Reference # 1: 370641 aka Beacon Falls 2 CT Reference # 2: CSC EM - P&Z / 13000423		
<small>CS 22.0.11. WNTNV50 83.0A 12/2019</small>		

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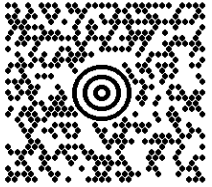

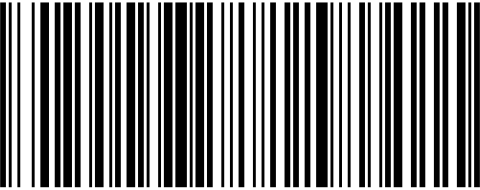

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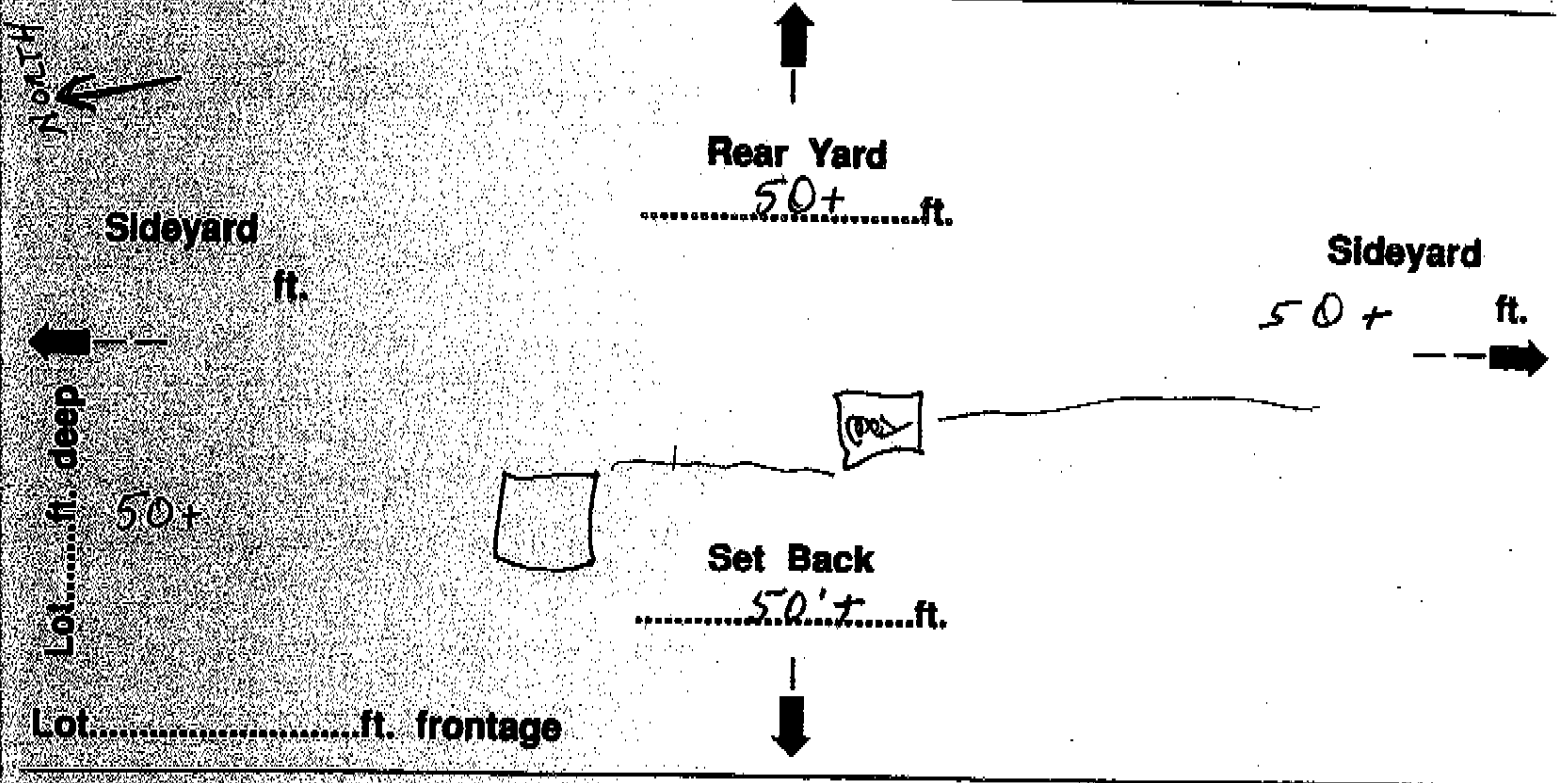
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DWT: 14,11,1		
<b>SHIP TO:</b> BLAKE PAYNTER AMERICAN TOWER CORP 10 PRESIDENTIAL WAY <b>WOBURN MA 01801-1053</b>		
	<b>MA 018 9-04</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 0086 3742		
		
BILLING: P/P		
Reference # 1: 311014 aka Norwich West CT Reference # 2: 370641 aka Beacon Falls 2 CT		CS 22.0.11. WNTNV50 83.0A 12/2019

# PLOT PLAN

Indicate location of garage or accessory building with dashed lines



401 LOPUS ROAD Street

## Application for Certificate of Zoning Compliance

Date 10-27-05

NEW CINGULAR WIRELESS PCS, LLC of 500 ENTERPRISE DRIVE

Name of Applicant

Street Address

ROCKY HILL, CT 06067

hereby applies to the Beacon Falls Zoning Commission

City

State

for a certificate of Zoning Compliance for

CINGULAR CELL TOWER SITE AT BEACON FALLS PUBLIC WORKS

Size and Location - Zone

GARAGE ON LOPUS RD. MONOPOLE TOWER IN FENCED COMPOUND; EQUIPMENT SHELTER; COAXIAL CABLES; ANTENNAS. NEW CINGULAR WIRELESS PCS, LLC

BY [Signature]  
Applicant's Signature STEVEN L. LEVINE

10/27/05  
Date Approved

[Signature]  
Zoning Enforcement Officer

FEE: \$10.00

TOWN TO OWN



# Town of Beacon Falls

## Record of Building Permit

Nº 011

Owner Cingular

Owner's Address 500 Enterprise DR Rocky Hill

Site Location Lopus Road Town Garage

Construction: New  Alteration  Addition  Repair   
Garage  Shed  Other CELL TOWER

One family residence

Permit Number #P-11-6-2005 Date Issued Nov 3 2005

Value of Permit 250,000.00

Fee Paid \$ 1792.00 Pd check # 1072

Application Approved John Petersen  
Building Inspector





**APPLICATION FOR BUILDING PERMIT**  
**CONNECTICUT STATE BUILDING CODE (SBC 111.0)**  
**CITY/TOWN OF BEACON FALLS**



1. 10-27-05 (Please Print or Type All Entries)  
Date

2. PUBLIC WORKS GARAGE, LOPUS ROAD, B. FALLS 3. MAP 3 BLK 1 LOT 16  
Property Location Street Address Lot #

4. TOWN OF BEACON FALLS  
Owner's Name (As it appears in the Land Records)

5. TOWN HALL BEACON FALLS CT 06403  
Street Address Town State Zip Code

6. \_\_\_\_\_  
Home Phone # Work Phone # Fax # Mobile Phone #

7. NEW CINGULAR WIRELESS PCS, LLC (STEVE LEVINE)  
Applicant's Name

8. 500 ENTERPRISE DR. ROCKY HILL CT 06002  
Street Address Town State Zip Code

9. \_\_\_\_\_ 860-513-7636 860-513-7190 203-556-1655  
Home Phone # Work Phone # Fax # Mobile Phone #

10. TO BE DETERMINED 11. \_\_\_\_\_  
Contractor/General Contractor Registration #

12. Permit Type: a)  Building Permit Estimated Cost \$ 250,000<sup>00</sup>  
 Foundation  Superstructure  
 Tenant Fitout  Other  
b)  Electrical Permit Estimated Cost \_\_\_\_\_  
c)  Mechanical Permit Estimated Cost \_\_\_\_\_  
d)  Plumbing Permit Estimated Cost \_\_\_\_\_  
e)  Demolition Permit\* Estimated Cost \_\_\_\_\_  
f)  Other \_\_\_\_\_ Estimated Cost \_\_\_\_\_  
**TOTAL \$ 250,000<sup>00</sup>**

13. Project Type: CELL TOWER, FENCED COMPOUND, EQUIPMENT SHELTER, COAX CABLES, MOVE OIL TANK  
a)  New Construction f)  Relocation  
b)  Addition g)  Change of Use  
c)  Alteration h)  Article 32  
d)  Repair/Replacement i)  Designated Historic Structure  
e)  Demolition\*  
Is Structure within the 100 year flood plain  Yes  No

14. Construction Type:  1A  1B  2A  2B  2C  3A  3B  4  5A  5B

15. Use Group(s):  A-1  B  H-1  I-1  M  S-1  
 A-2  H-2  I-2  S-2 UNMANNED  
 A-3  F-1  H-3  I-3  R-1  
 A-4  F-2  H-4  R-2  U  
 A-5  R-3

Mixed Use: N/A  Yes  No  Separated  Nonseparated

STATE OF CONNECTICUT/OFFICE OF STATE BUILDING INSPECTOR  
(Over)



16. LOPUS ROAD - PUBLIC WORKS GARAGE 17. 3-1-16  
Property Location Street Address Lot #

18. Height of building: Stories: 1 Feet: 10'

19. Total Sq. Ft. of Building: 240 SQ. FT

20. List below the gross square footage of each story, above and below grade:

Story	Area in Sq. Ft.	Story	Area in Sq. Ft.	Story	Area in Sq. Ft.
<u>1</u>	<u>240</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

21. Architect's Information: (Attach as applicable) License # 22038

TELECOM ENGINEERING  
MIKE PATEL  
" "

22. Engineers Information: (Attach as applicable) License # 22038

23. Interior Design: (Attach as Applicable) Registration # N/A

24. Documents Submitted /Attached:

- Zoning  Building Plans  Site Plans  Building Sections  Building Elevations  Health
- Reports  Calculations  Details  Photographs  Threshold Review\*
- Correspondence  Authorization of Applicant Other Than Owner  Manufacturer's Literature
- Statement of Special Inspections\*  Other (describe) \_\_\_\_\_

25. Estimated Cost of Construction \$ 250,000.00  
(Value of Labor & Materials)

CERTIFICATION: I hereby certify that:  I am the owner of record of the named property or  that the proposed work is authorized by the owner of record and/or I have been authorized to make this application as an authorized agent, and we agree to conform to all applicable laws, regulations and ordinances. All information contained within is true and accurate to the best of my knowledge and belief.

NEW CINCINNATI WIRELESS PCS, LLC  
BY [Signature]  
Signature of Owner/Authorized Agent  
STEVEN L. LEVINE

**ITEMS 26 - 29 ARE FOR BUILDING OFFICIAL'S USE ONLY**

26. Building Permit Fee: \$ 1792.00

27. Plan Review Fee: 0.00

28. Certificate of Occupancy Fee: 0.00

29. Other Fees: 0.00

TOTAL FEE:  Cash  Check \$ 1792.00

#P-11-6-2005  
11/3/2005

Completed Application Received Date: 10/27/2005

[Signature] check # 1072

[Signature]  
(Signature Building Official)



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@po.state.ct.us](mailto:siting.council@po.state.ct.us)

[www.ct.gov/csc](http://www.ct.gov/csc)

October 24, 2005

Steven Levine  
Real Estate Consultant  
New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067-3900

RE: **TS-CING-006-051007** - New Cingular Wireless PCS, LLC. request for an order to approve tower sharing at an existing telecommunications facility located at Beacon Falls Public Works Department garage, Lopus Road, Beacon Falls, Connecticut.

Dear Mr. Levine:

At a public meeting held October 19, 2005, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

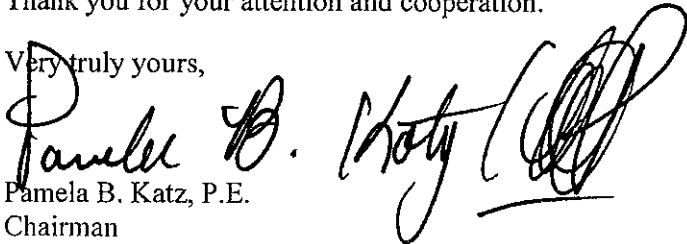
This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated October 7, 2005 and additional information received October 17, 2005, including the placement of all necessary equipment and shelters within the tower compound.

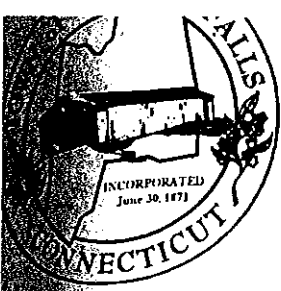
Thank you for your attention and cooperation.

Very truly yours,

  
Pamela B. Katz, P.E.  
Chairman

PBK/laf

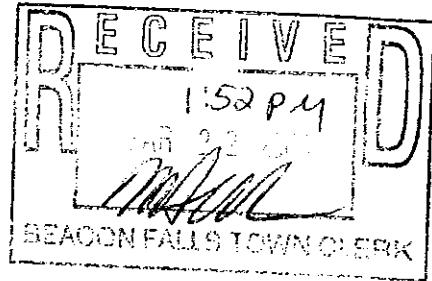
c: The Honorable Susan Ann Cable, First Selectman, Town of Beacon Falls  
Brian Herb, Zoning Enforcement Officer, Town of Beacon Falls



Town of BEACON FALLS  
*Connecticut*

Planning and Zoning Commission

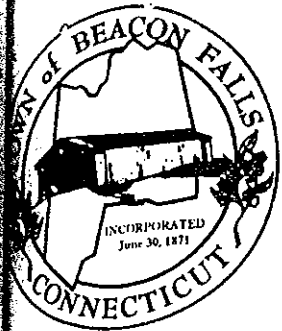
Board of Selectman  
10 Maple Avenue  
Beacon Falls, CT. 06403



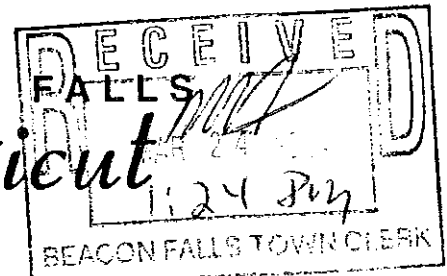
The Beacon Falls Planning and Zoning Commission, after review of site plan proposed by AT&T, respectfully recommends acceptance.

If you have any questions or concerns please contact Chairman Jeff Burkitt.

Mary Ellen Fernandes  
*Mary Ellen Fernandes*  
Clerk, P & Z Commission  
March 20, 2004



TOWN of BEACON FALLS  
*Connecticut*



**Planning and Zoning Commission  
Regular Meeting Minutes  
March 18, 2004  
Draft Minutes Subject to Modification**

**I Call to Order**

Chairman Burkitt called the regular meeting of the Beacon Falls Planning and Zoning Commission to order at 7:30 P.M.

Present: Chairman Burkitt, Commissioners Carl Vitale, Peter Betkoski, Richard Franco, David Chadderton and Bill Abromaitis.

Absent: Kevin McDuffie

**II Approval of Minutes**

A motion to approve the minutes of the Feb 2004 regular meeting as submitted was made by Comm. Abromaitis and 2<sup>nd</sup> by Comm. Franco. All in favor. A motion to approve the minutes of Public Hearing on 6 month moratorium was made by Comm. Vitale and 2<sup>nd</sup> by Comm. Abromaitis. All in favor. A motion to approve the minutes of the Public Hearing on Pond Spring was made by Comm. Abromaitis and 2<sup>nd</sup> by Comm. Franco. All in favor.

**III Comments from the Public**

John Smith, E.J. Smith Company came forward and requested an extension for filing of the mylar for application P-2003-115 Smith Farms-Section IV. Chairman Burkitt stated that this would be handled under Old Business.

**IV Zoning Enforcement Officers Report**

A written report was submitted. Discussion followed. A motion to accept report as submitted was made by Comm. Abromaitis and 2<sup>nd</sup> by Comm. McDuffie. All in favor. Charlie Edwards requested permission to have site trailer on project for 18 months. Comm. Chadderton made a motion to grant request for construction trailer for up to 18 months or more specifically September 18, 2005. Seconded by Comm. Abromaitis. All in favor.

**V Town Engineers Report**

An written report was submitted. Discussion followed. A motion to accept report as submitted was made by Comm. Abromaitis and was 2<sup>nd</sup> by Comm. Franco. All in favor.

**VI Comprehensive Plan of Conservation and Development**

No report.



**VII Old Business**

A joint discussion between the Board of Selectman, Atty. Civitello, Planning & Zoning and Atty. Buemi. After hearing from both attorneys, it was decided that this discussion does not belong before the Planning and Zoning Commission.

- 1) Application P-2003-114SP- Chatfield/Woodhaven – A motion to set a Public Hearing date for May 4, 2004 at 7:30 PM was made by Comm. Vitale and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.
- 3) Fawn Hill Estates – A motion to send a letter to Board of Selectman to recommend reducing the maintenance bond was made by Comm. Vitale and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.
- 2) Pond Spring Village – Site Plan – Accept for review.
- 4) E J Smith – A motion to grant request of extension to file mylar was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.

**VIII New Business**

- 1) Application P-2004-120- 6 month moratorium – A motion to table to April 15, 2004 was made by Comm. Vitale and 2<sup>nd</sup> by Comm. Betkoski. All in favor.
- 2) Joyce Van Lines – Application accepted under review.
- 3) Earth Works – Application accepted under review.

**IX New Applications**

- 1) ATT Cell Tower – A motion to recommend to Board of Selectman to accept was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.
- 2) Cotton Hollow Rd – Multi unit – A brief discussion resulted in a motion to Table until issues are resolved was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Franco. All in favor.
- 3) Oakwood Estates – A motion to set Public Hearing for May 4, 2004 at 7:00 PM was made by Comm. Abromaitis and 2<sup>nd</sup> by Comm. Franco. All in favor.
- 4) Westwind Estates – Resubdivision Lot 22 & 23 – Public Hearing date set for March 18, 2004 at 7:15 P.M.
- 5) Charlie Edwards – Lot Line Revisions – A motion to approve was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Vitale. All in favor.



**X Correspondence and Payment of Bills**

The following bills were submitted for payment:

- Nafis & Young \$ 552.50 / M.E. Fernandes \$ 192.00 / Wtby Republican \$102.90
- Nutmeg Printers \$394.00 / Fasano, Ippitio & Lee \$730.00 / Karen Wilson \$115.00. A motion to accept Payment of Bills as submitted was made by Comm. Abromaitis and 2<sup>nd</sup> by Comm. Franco. All in favor.
- A motion to accept all correspondence and place on file was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Franco. All in favor.

**XI Executive Session**

A motion to go into executive session was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Vitale. All in favor. A motion to come out of executive session was made by Comm. Vitale and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.

MAR 24 2004

**XII Petitions from Commissioners**

No activity

**XII Adjournment**

A motion to adjourn was made by Comm. Chadderton and 2<sup>nd</sup> by Comm. Abromaitis. All in favor.

Respectfully Submitted,

*Mary Ellen Fernandes*

Mary Ellen Fernandes

Clerk, March 20, 2004



**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 149 ft Monopole  
**ATC Site Name** : Beacon Falls CT, CT  
**ATC Asset Number** : 370641  
**Engineering Number** : 13000423\_C3\_02  
**Proposed Carrier** : Verizon Wireless  
**Carrier Site Name** : Beacon Falls 2 CT - Town Monopole  
**Carrier Site Number** : 470974  
**Site Location** : 401-411 Lopus Road  
Beacon Falls, CT 06403-0000  
41.432800, -73.070200  
**County** : New Haven  
**Date** : November 25, 2019  
**Max Usage** : 39%  
**Result** : Pass

Prepared By:  
Julio Benitez Santiago  
Structural Engineer I

Reviewed By:



Authorized by "EOR"  
Dec 2 2019 5:01 PM

COA: PEC.0001553



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## Introduction

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

## Supporting Documents

<b>Tower Drawings</b>	EEI Job #13674, dated October 19, 2005
<b>Foundation Drawing</b>	EEI Job #13674, dated October 19, 2005
<b>Geotechnical Report</b>	Tectonic Project #3917.BEACON, dated August 17, 2005
<b>Mount Analysis</b>	CLS Engineering PLLC Project #41124-12927148-01-MA-R1, dated July 3, 2019

## Analysis

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

<b>Basic Wind Speed:</b>	97 mph (3-Second Gust, $V_{asd}$ ) / 125 mph (3-Second Gust, $V_{ult}$ )
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.19$ , $S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

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

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



**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
145.0	6	Powerwave Allgon LGP21401	Low Profile Platform	(1) 3" conduit (1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 2" conduit	AT&T Mobility
	1	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 11 (Band 12)			
	3	Ericsson RRUS 32 B2			
	6	Allgon 7770.00			
	3	CCI HPA-65R-BUU-H6			
	6	Powerwave Allgon LGP13519			
	6	Powerwave Allgon 7020.00 Dual Band RET			
135.0	3	Ericsson Radio 4449 B12,B71	T-Arms	(1) 1 1/4" Hybriflex Cable (4) 1 5/8" (1.63"-41.3mm) Fiber (6) 1 5/8" Coax	T-Mobile
	3	Ericsson AIR 21 B4A B2P			
	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson KRY 112 144/1			
127.0	3	Generic 34" x 6" Panel	Flush	(6) 1 5/8" Coax	Metro Pcs Inc
115.0	1	RFS DB-B1-6C-12AB-0Z	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon Wireless

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
115.0	2	Alcatel-Lucent RRH2X60-1900	-	-	Verizon Wireless
	2	Alcatel-Lucent RRH2x60 700			
	4	Commscope LNX-6515DS-A1M (50.3 lb)			
	4	Andrew HBXX-6517DS-A2M (43 lbs)			
	2	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
115.0	2	Samsung B5/B13 RRH-BR04C	Low Profile Platform	-	Verizon Wireless
	2	Samsung B2/B66A RRH-BR049			
	4	JMA Wireless MX06FRO660-02			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	29%	Pass
Shaft	35%	Pass
Base Plate	17%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,762.3	5,079.1	1,883.1	37%
Shear (Kips)	34.9	47.1	18.6	39%

\* 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	Samsung B5/B13 RRH-BR04C	Verizon Wireless	0.506	0.556
	Samsung B2/B66A RRH-BR049			
	JMA Wireless MX06FRO660-02			

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



## **Standard Conditions**

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

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

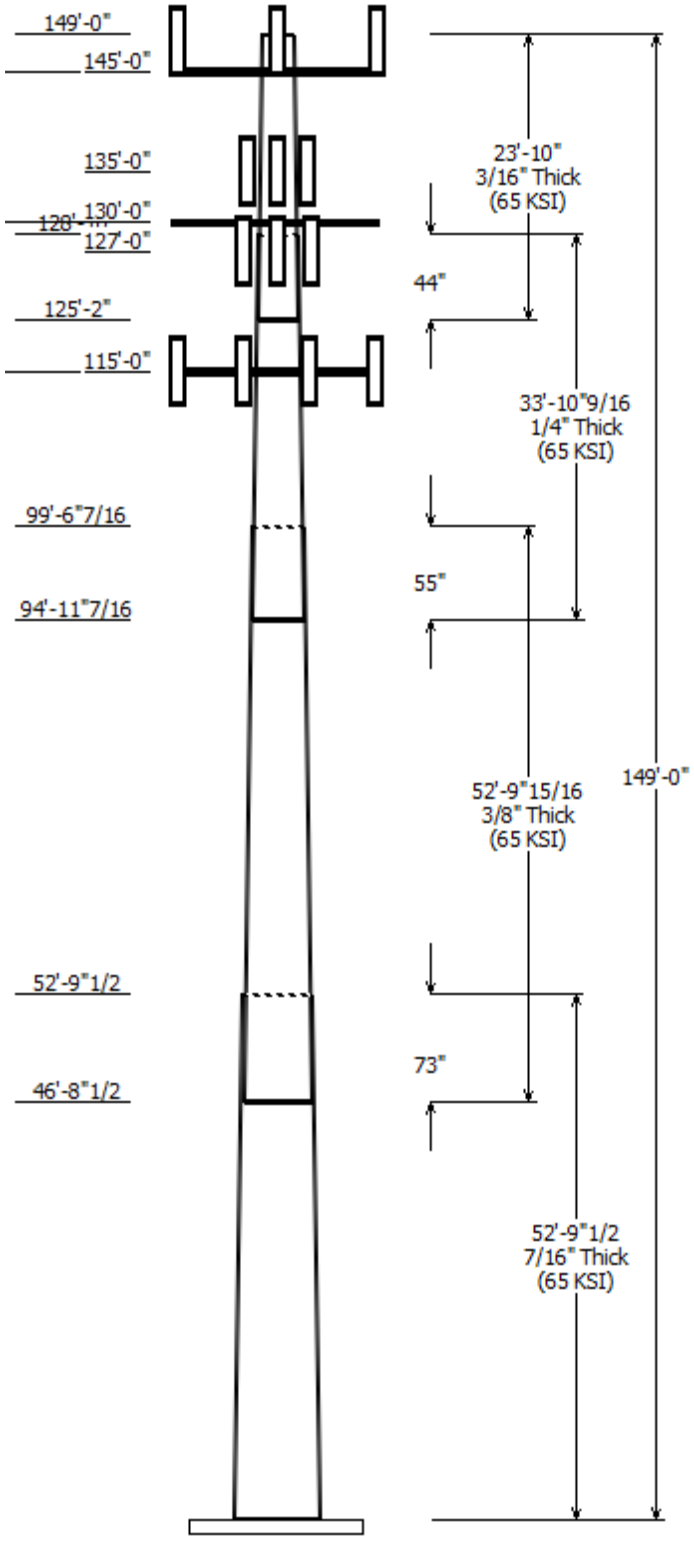
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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





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

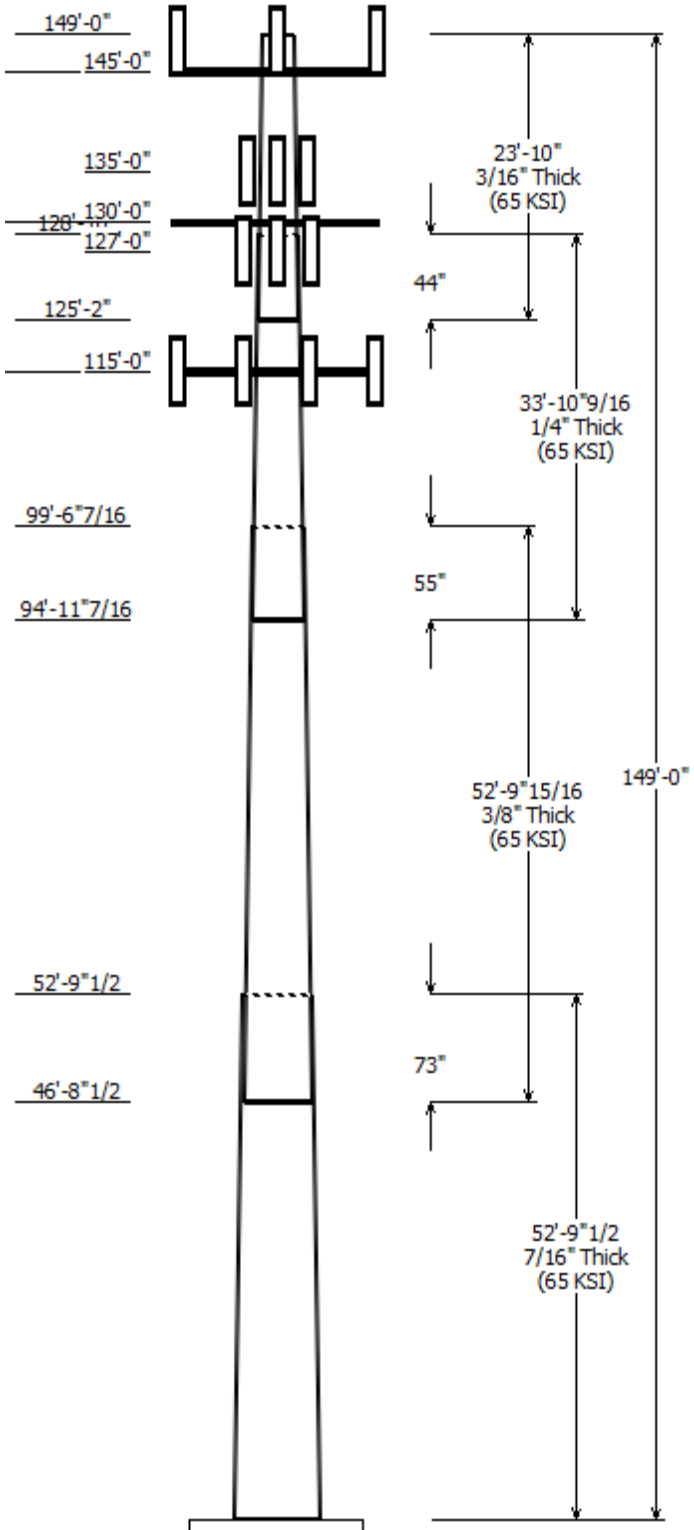
Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Accross Top	Flats Bottom				
1	52.790	42.13	56.00	0.438		0.000	18 Sides 65
2	52.830	30.61	44.48	0.375	Slip Joint	73.000	18 Sides 65
3	33.880	23.42	32.31	0.250	Slip Joint	55.000	18 Sides 65
4	23.833	18.50	24.75	0.188	Slip Joint	44.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.000	145.000	1	Flat Low Profile Platform
145.000	147.000	3	CCI HPA-65R-BUU-H6
145.000	147.000	6	Allgon 7770.00
145.000	145.000	3	Ericsson RRUS 32 B2
145.000	147.000	3	Ericsson RRUS 11 (Band 12)
145.000	147.000	1	Raycap DC6-48-60-18-8F
145.000	147.000	6	Powerwave Allgon LGP21401
145.000	145.000	6	Powerwave Allgon 7020.00
145.000	147.000	6	Powerwave Allgon LGP13519
135.000	135.000	3	RFS APXVAARR24_43-U-NA20
135.000	135.000	3	Ericsson AIR 21, 1.3M, B2A B4P
135.000	135.000	3	Ericsson AIR 21 B4A B2P
135.000	135.000	3	Ericsson Radio 4449 B12,B71
135.000	137.000	3	Ericsson KRY 112 144/1
130.000	130.000	3	Round T-Arm
127.000	127.000	3	Generic 34" x 6" Panel
115.000	115.000	1	Generic Round Low Profile
115.000	115.000	4	JMA Wireless MX06FRO660-02
115.000	117.000	1	RFS DB-B1-6C-12AB-0Z
115.000	115.000	2	Samsung B2/B66A RRH-BR049
115.000	115.000	2	Samsung B5/B13 RRH-BR04C

Linear Appurtenance			
Elev (ft)			
From	To	Description	Exposed To Wind
0.000	115.0	1 5/8" Hybriflex	No
0.000	127.0	1 5/8" Coax	No
0.000	135.0	1 5/8" (1.63"-	No
0.000	135.0	1 5/8" Coax	No
0.000	137.0	1 1/4" Hybriflex	No
0.000	145.0	0.39" (10mm)	No
0.000	145.0	0.78" (19.7mm) 8	No
0.000	145.0	1 5/8" Coax	No
0.000	145.0	2" conduit	No
0.000	147.0	3" conduit	No

Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)

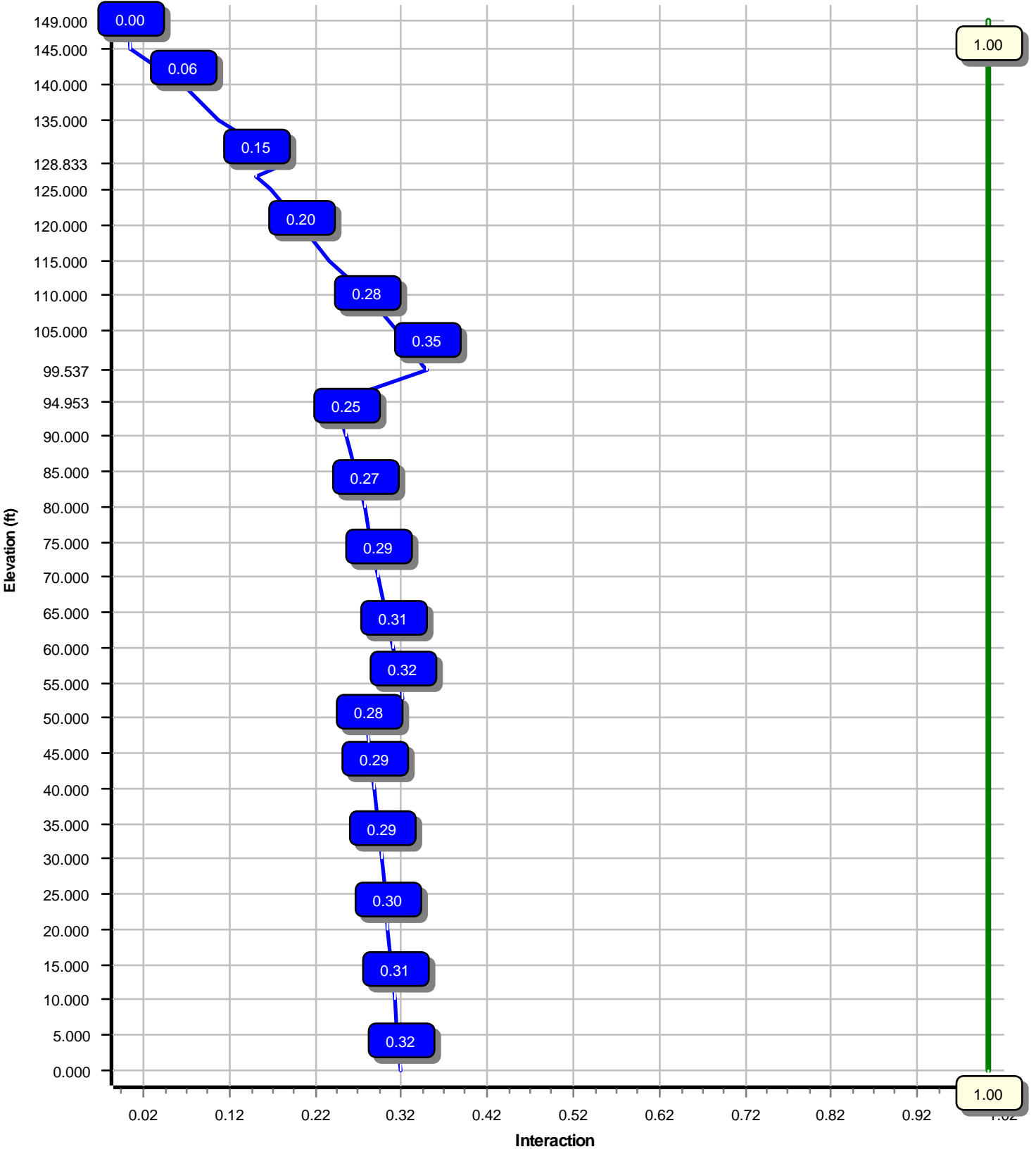
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph



Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1883.11	18.57	43.43
0.9D + 1.6W	1868.44	18.56	32.57
1.2D + 1.0Di + 1.0Wi	546.41	5.46	68.85
(1.2 + 0.2Sds) * DL + E ELFM	146.67	1.31	43.07
(1.2 + 0.2Sds) * DL + E EMAM	157.57	1.48	43.07
(0.9 - 0.2Sds) * DL + E ELFM	145.31	1.31	29.80
(0.9 - 0.2Sds) * DL + E EMAM	155.99	1.48	29.80
1.0D + 1.0W	400.83	3.97	36.21

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 34.64% at 99.5 ft



Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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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 :	EEl	Rotation (deg) :	0.00

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 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): 1.89

$T_L$ (sec):	6	$p$ :	1	$C_s$ :	0.036
$S_s$ :	0.193	$S_1$ :	0.064	$C_s$ Max:	0.036
$F_a$ :	1.600	$F_v$ :	2.400	$C_s$ Min:	0.030
$S_{ds}$ :	0.206	$S_{d1}$ :	0.102		

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 ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	52.790	0.4375	65		0.00	12,130	56.00	0.00	77.15	30093.2	20.81	128.00	42.13	52.79	57.90	12721.9	15.22	96.32	0.262584
2-18	52.830	0.3750	65	Slip	73.00	7,954	44.48	46.71	52.50	12906.4	19.15	118.63	30.61	99.54	35.99	4157.6	12.63	81.64	0.262584
3-18	33.880	0.2500	65	Slip	55.00	2,526	32.31	94.95	25.44	3305.6	21.03	129.27	23.42	128.83	18.39	1247.1	14.76	93.68	0.262584
4-18	23.833	0.1875	65	Slip	44.00	1,035	24.75	125.17	14.62	1115.3	21.52	132.04	18.50	149.00	10.90	461.7	15.63	98.67	0.262584
Shaft Weight						23,646													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
145.00	Powerwave Allgon LGP13519	6	0.80	2.000	5.30	0.290	0.50	14.75	0.675	0.50
145.00	Powerwave Allgon 7020.00 Dual	6	0.80	0.000	2.20	0.340	0.50	12.38	0.749	0.50
145.00	Powerwave Allgon LGP21401	6	0.80	2.000	14.10	1.100	0.50	38.97	1.809	0.50
145.00	Raycap DC6-48-60-18-8F	1	0.80	2.000	31.80	1.470	1.00	93.31	2.166	1.00
145.00	Ericsson RRUS 11 (Band 12)	3	0.80	2.000	50.00	2.570	0.50	117.96	3.616	0.50
145.00	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.740	0.67	126.32	3.905	0.67
145.00	Allgon 7770.00	6	0.80	2.000	35.00	5.510	0.65	169.32	6.559	0.65
145.00	CCI HPA-65R-BUU-H6	3	0.80	2.000	51.00	9.660	0.69	269.72	12.424	0.69
145.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,145.90	45.133	1.00
135.00	Ericsson KRY 112 144/1	3	0.80	2.000	11.00	0.350	0.50	21.65	0.751	0.50
135.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	129.41	2.476	0.50
135.00	Ericsson AIR 21 B4A B2P	3	0.80	0.000	90.00	5.800	0.71	229.74	7.867	0.71
135.00	Ericsson AIR 21, 1.3M, B2A B4P	3	0.80	0.000	91.50	6.040	0.70	235.59	8.164	0.70
135.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	516.44	23.910	0.63
130.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	456.36	17.840	0.67
127.00	Generic 34" x 6" Panel	3	1.00	0.000	20.00	1.900	0.50	60.90	3.210	0.50
115.00	Samsung B5/B13 RRH-BR04C	2	0.80	0.000	70.30	1.880	0.50	125.99	2.761	0.50
115.00	Samsung B2/B66A RRH-BR049	2	0.80	0.000	84.40	1.880	0.50	146.51	2.761	0.50
115.00	RFS DB-B1-6C-12AB-0Z	1	0.80	2.000	21.40	2.510	1.00	99.12	3.523	1.00
115.00	JMA Wireless MX06FRO660-02	4	0.80	0.000	46.00	9.870	0.71	279.45	12.541	0.71
115.00	Generic Round Low Profile	1	1.00	0.000	1,875.00	21.700	1.00	2,663.51	40.393	1.00
Totals	Num Loadings:21	66			6,716.40			14,569.52		

**Linear Appurtenance Properties**

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Dist To Wind Carrier (in)	Exposed
0.00	147.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N AT&T MOBILITY
0.00	145.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N AT&T MOBILITY
0.00	145.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N AT&T MOBILITY
0.00	145.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N AT&T MOBILITY
0.00	145.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N AT&T MOBILITY
0.00	137.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N T-MOBILE
0.00	135.00	4	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N T-MOBILE
0.00	135.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N T-MOBILE
0.00	127.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N METRO PCS INC
0.00	115.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N VERIZON WIRELESS



Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.4375	56.000	77.153	30,093.2	20.81	128.00	76.9	1058.	0.0	0.0
5.00		0.4375	54.687	75.330	28,009.9	20.28	125.00	77.6	1008.	0.0	1,297.2
10.00		0.4375	53.374	73.507	26,025.1	19.75	122.00	78.2	960.4	0.0	1,266.1
15.00		0.4375	52.061	71.683	24,136.3	19.22	119.00	78.8	913.1	0.0	1,235.1
20.00		0.4375	50.748	69.860	22,341.2	18.69	116.00	79.4	867.1	0.0	1,204.1
25.00		0.4375	49.435	68.037	20,637.4	18.16	113.00	80.0	822.2	0.0	1,173.1
30.00		0.4375	48.122	66.214	19,022.5	17.63	109.99	80.7	778.6	0.0	1,142.1
35.00		0.4375	46.810	64.391	17,494.1	17.10	106.99	81.3	736.1	0.0	1,111.1
40.00		0.4375	45.497	62.568	16,049.9	16.57	103.99	81.9	694.8	0.0	1,080.0
45.00		0.4375	44.184	60.745	14,687.4	16.04	100.99	82.5	654.7	0.0	1,049.0
46.71	Bot - Section 2	0.4375	43.736	60.123	14,240.6	15.86	99.97	82.6	641.3	0.0	351.0
50.00		0.4375	42.871	58.922	13,404.3	15.52	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	18.40	114.37	79.8	530.6	0.0	1,039.1
55.00		0.3750	42.308	49.909	11,087.7	18.13	112.82	80.1	516.2	0.0	377.9
60.00		0.3750	40.995	48.346	10,078.5	17.51	109.32	80.8	484.2	0.0	835.8
65.00		0.3750	39.682	46.784	9,132.4	16.90	105.82	81.5	453.3	0.0	809.3
70.00		0.3750	38.369	45.221	8,247.6	16.28	102.32	82.3	423.4	0.0	782.7
75.00		0.3750	37.056	43.658	7,421.8	15.66	98.82	82.6	394.5	0.0	756.1
80.00		0.3750	35.743	42.096	6,653.0	15.04	95.32	82.6	366.6	0.0	729.5
85.00		0.3750	34.430	40.533	5,939.3	14.43	91.81	82.6	339.8	0.0	702.9
90.00		0.3750	33.117	38.970	5,278.5	13.81	88.31	82.6	313.9	0.0	676.3
94.95	Bot - Section 3	0.3750	31.817	37.422	4,674.1	13.20	84.84	82.6	289.3	0.0	643.8
95.00		0.3750	31.805	37.408	4,668.6	13.19	84.81	82.6	289.1	0.0	10.0
99.54	Top - Section 2	0.2500	31.113	24.489	2,947.2	20.18	124.45	77.7	186.6	0.0	951.9
100.0		0.2500	30.992	24.393	2,912.5	20.10	123.97	77.8	185.1	0.0	38.5
105.0		0.2500	29.679	23.351	2,555.0	19.17	118.71	78.9	169.6	0.0	406.2
110.0		0.2500	28.366	22.309	2,228.1	18.24	113.46	79.9	154.7	0.0	388.4
115.0		0.2500	27.053	21.267	1,930.3	17.32	108.21	81.0	140.5	0.0	370.7
120.0		0.2500	25.740	20.226	1,660.3	16.39	102.96	82.1	127.0	0.0	353.0
125.0		0.2500	24.427	19.184	1,416.7	15.47	97.71	82.6	114.2	0.0	335.3
125.1	Bot - Section 4	0.2500	24.383	19.149	1,409.1	15.43	97.53	82.6	113.8	0.0	10.9
127.0		0.2500	23.902	18.767	1,326.4	15.09	95.61	82.6	109.3	0.0	208.6
128.8	Top - Section 3	0.1875	23.795	14.049	989.3	20.61	126.91	77.2	81.9	0.0	204.4
130.0		0.1875	23.489	13.867	951.3	20.33	125.28	77.5	79.8	0.0	55.4
135.0		0.1875	22.176	13.086	799.4	19.09	118.27	78.9	71.0	0.0	229.3
140.0		0.1875	20.863	12.304	664.6	17.86	111.27	80.4	62.7	0.0	216.0
145.0		0.1875	19.550	11.523	545.8	16.62	104.27	81.8	55.0	0.0	202.7
149.0		0.1875	18.500	10.898	461.7	15.63	98.67	82.6	49.2	0.0	152.6
23,645.5											

<b>Load Case:</b> 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	253.1	424.0	1,809.7	0.0	0.0
10.00		413.8	1,519.4					0.0	253.1	413.8	1,772.5	0.0	0.0
15.00		403.6	1,482.1					0.0	253.1	403.6	1,735.3	0.0	0.0
20.00		393.5	1,444.9					0.0	253.1	393.5	1,698.1	0.0	0.0
25.00		383.3	1,407.7					0.0	253.1	383.3	1,660.8	0.0	0.0
30.00		377.5	1,370.5					0.0	253.1	377.5	1,623.6	0.0	0.0
35.00		379.3	1,333.3					0.0	253.1	379.3	1,586.4	0.0	0.0
40.00		383.0	1,296.0					0.0	253.1	383.0	1,549.2	0.0	0.0
45.00		257.9	1,258.8					0.0	253.1	257.9	1,512.0	0.0	0.0
46.71	Bot - Section 2	194.7	421.2					0.0	86.4	194.7	507.6	0.0	0.0
50.00		238.2	1,499.5					0.0	166.7	238.2	1,666.3	0.0	0.0
52.79	Top - Section 1	195.6	1,246.9					0.0	141.3	195.6	1,388.2	0.0	0.0
55.00		281.0	453.5					0.0	111.9	281.0	565.4	0.0	0.0
60.00		387.6	1,003.0					0.0	253.1	387.6	1,256.2	0.0	0.0
65.00		383.9	971.1					0.0	253.1	383.9	1,224.3	0.0	0.0
70.00		379.2	939.2					0.0	253.1	379.2	1,192.4	0.0	0.0
75.00		373.5	907.3					0.0	253.1	373.5	1,160.4	0.0	0.0
80.00		367.0	875.4					0.0	253.1	367.0	1,128.5	0.0	0.0
85.00		359.7	843.5					0.0	253.1	359.7	1,096.6	0.0	0.0
90.00		350.0	811.6					0.0	253.1	350.0	1,064.7	0.0	0.0
94.95	Bot - Section 3	173.8	772.6					0.0	250.8	173.8	1,023.3	0.0	0.0
95.00		157.8	12.0					0.0	2.4	157.8	14.3	0.0	0.0
99.54	Top - Section 2	171.9	1,142.3					0.0	229.7	171.9	1,371.9	0.0	0.0
100.00		182.9	46.2					0.0	23.5	182.9	69.7	0.0	0.0
105.00		329.3	487.4					0.0	253.1	329.3	740.5	0.0	0.0
110.00		319.0	466.1					0.0	253.1	319.0	719.3	0.0	0.0
115.00	Appurtenance(s)	308.1	444.8	2,035.9	0.0	167.2	2,867.8	0.0	253.1	2,344.0	3,565.7	0.0	0.0
120.00		296.7	423.6					0.0	237.5	296.7	661.1	0.0	0.0
125.00		150.2	402.3					0.0	237.5	150.2	639.8	0.0	0.0
125.17	Bot - Section 4	57.3	13.0					0.0	7.9	57.3	21.0	0.0	0.0
127.00	Appurtenance(s)	104.3	250.3	121.4	0.0	0.0	72.0	0.0	87.1	225.8	409.4	0.0	0.0
128.83	Top - Section 3	84.2	245.3					0.0	76.3	84.2	321.6	0.0	0.0
130.00	Appurtenance(s)	167.9	66.5	627.3	0.0	0.0	900.0	0.0	48.5	795.2	1,015.0	0.0	0.0
135.00	Appurtenance(s)	264.4	275.1	2,299.2	0.0	36.6	1,419.8	0.0	208.0	2,563.6	1,903.0	0.0	0.0
140.00		251.3	259.2					0.0	136.3	251.3	395.4	0.0	0.0
145.00	Appurtenance(s)	215.3	243.2	3,198.3	0.0	3,624.1	2,800.1	0.0	133.9	3,413.6	3,177.2	0.0	0.0
149.00		93.0	183.1					0.0	18.2	93.0	201.3	0.0	0.0
<b>Totals:</b>										18,750.5	43,447.7	0.00	0.00

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	-43.43	-18.57	0.00	-1,883.11	0.00	1,883.11	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.317
5.00	-41.60	-18.21	0.00	-1,790.27	0.00	1,790.27	5,257.68	2,628.84	11,717.6	5,867.53	0.05	-0.09	0.313
10.00	-39.80	-17.85	0.00	-1,699.23	0.00	1,699.23	5,171.61	2,585.81	11,244.6	5,630.68	0.19	-0.18	0.310
15.00	-38.04	-17.50	0.00	-1,609.97	0.00	1,609.97	5,083.50	2,541.75	10,776.6	5,396.35	0.42	-0.27	0.306
20.00	-36.31	-17.16	0.00	-1,522.46	0.00	1,522.46	4,993.34	2,496.67	10,314.0	5,164.71	0.75	-0.36	0.302
25.00	-34.63	-16.82	0.00	-1,436.67	0.00	1,436.67	4,901.14	2,450.57	9,857.18	4,935.92	1.17	-0.45	0.298
30.00	-32.98	-16.49	0.00	-1,352.56	0.00	1,352.56	4,806.90	2,403.45	9,406.30	4,710.14	1.70	-0.55	0.294
35.00	-31.37	-16.14	0.00	-1,270.13	0.00	1,270.13	4,710.62	2,355.31	8,961.79	4,487.55	2.33	-0.65	0.290
40.00	-29.79	-15.79	0.00	-1,189.41	0.00	1,189.41	4,612.30	2,306.15	8,523.97	4,268.32	3.06	-0.75	0.285
45.00	-28.27	-15.55	0.00	-1,110.44	0.00	1,110.44	4,511.93	2,255.96	8,093.18	4,052.61	3.89	-0.85	0.280
46.71	-27.75	-15.37	0.00	-1,083.90	0.00	1,083.90	4,466.81	2,233.41	7,929.36	3,970.57	4.20	-0.88	0.279
50.00	-26.07	-15.14	0.00	-1,033.27	0.00	1,033.27	4,377.60	2,188.80	7,614.23	3,812.78	4.84	-0.95	0.277
52.79	-24.67	-14.94	0.00	-991.04	0.00	991.04	3,632.02	1,816.01	6,338.65	3,174.03	5.41	-1.01	0.319
55.00	-24.09	-14.69	0.00	-958.02	0.00	958.02	3,596.86	1,798.43	6,190.85	3,100.03	5.90	-1.06	0.316
60.00	-22.81	-14.32	0.00	-884.60	0.00	884.60	3,515.84	1,757.92	5,860.24	2,934.48	7.07	-1.18	0.308
65.00	-21.57	-13.96	0.00	-812.99	0.00	812.99	3,432.77	1,716.39	5,535.16	2,771.69	8.37	-1.30	0.300
70.00	-20.35	-13.59	0.00	-743.21	0.00	743.21	3,347.66	1,673.83	5,215.92	2,611.84	9.80	-1.42	0.291
75.00	-19.18	-13.23	0.00	-675.26	0.00	675.26	3,243.59	1,621.79	4,877.42	2,442.34	11.36	-1.54	0.282
80.00	-18.03	-12.87	0.00	-609.11	0.00	609.11	3,127.49	1,563.75	4,532.82	2,269.78	13.04	-1.67	0.274
85.00	-16.92	-12.51	0.00	-544.76	0.00	544.76	3,011.40	1,505.70	4,200.83	2,103.54	14.85	-1.79	0.265
90.00	-15.84	-12.16	0.00	-482.20	0.00	482.20	2,895.30	1,447.65	3,881.48	1,943.62	16.79	-1.91	0.254
94.95	-14.81	-11.97	0.00	-421.95	0.00	421.95	2,780.28	1,390.14	3,577.55	1,791.43	18.84	-2.03	0.241
95.00	-14.79	-11.83	0.00	-421.39	0.00	421.39	2,779.20	1,389.60	3,574.75	1,790.03	18.86	-2.04	0.241
99.54	-13.41	-11.62	0.00	-367.74	0.00	367.74	1,711.73	855.87	2,170.26	1,086.74	20.85	-2.14	0.346
100.00	-13.33	-11.45	0.00	-362.36	0.00	362.36	1,707.20	853.60	2,155.91	1,079.56	21.06	-2.16	0.344
105.00	-12.57	-11.13	0.00	-305.09	0.00	305.09	1,657.18	828.59	2,002.65	1,002.81	23.41	-2.32	0.312
110.00	-11.84	-10.81	0.00	-249.44	0.00	249.44	1,605.11	802.56	1,852.46	927.61	25.92	-2.47	0.276
115.00	-8.36	-8.33	0.00	-195.22	0.00	195.22	1,551.00	775.50	1,705.69	854.11	28.59	-2.62	0.234
120.00	-7.70	-8.02	0.00	-153.56	0.00	153.56	1,494.85	747.43	1,562.67	782.50	31.40	-2.74	0.202
125.00	-7.06	-7.85	0.00	-113.45	0.00	113.45	1,425.26	712.63	1,412.43	707.26	34.33	-2.86	0.165
125.17	-7.04	-7.79	0.00	-112.15	0.00	112.15	1,422.68	711.34	1,407.29	704.69	34.43	-2.86	0.164
127.00	-6.64	-7.55	0.00	-97.86	0.00	97.86	1,394.30	697.15	1,351.43	676.72	35.54	-2.90	0.149
128.83	-6.32	-7.45	0.00	-84.02	0.00	84.02	975.56	487.78	946.27	473.84	36.66	-2.94	0.184
130.00	-5.34	-6.61	0.00	-75.33	0.00	75.33	967.13	483.57	925.83	463.60	37.38	-2.96	0.168
135.00	-3.57	-3.96	0.00	-42.24	0.00	42.24	929.74	464.87	839.48	420.37	40.53	-3.05	0.104
140.00	-3.18	-3.69	0.00	-22.47	0.00	22.47	890.31	445.15	755.47	378.30	43.75	-3.10	0.063
145.00	-0.20	-0.10	0.00	-0.42	0.00	0.42	848.83	424.42	674.13	337.57	47.02	-3.13	0.001
149.00	0.00	-0.09	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	49.64	-3.13	0.000

<b>Load Case:</b> 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	189.9	424.0	1,357.3	0.0	0.0
10.00		413.8	1,139.5					0.0	189.9	413.8	1,329.4	0.0	0.0
15.00		403.6	1,111.6					0.0	189.9	403.6	1,301.5	0.0	0.0
20.00		393.5	1,083.7					0.0	189.9	393.5	1,273.5	0.0	0.0
25.00		383.3	1,055.8					0.0	189.9	383.3	1,245.6	0.0	0.0
30.00		377.5	1,027.9					0.0	189.9	377.5	1,217.7	0.0	0.0
35.00		379.3	999.9					0.0	189.9	379.3	1,189.8	0.0	0.0
40.00		383.0	972.0					0.0	189.9	383.0	1,161.9	0.0	0.0
45.00		257.9	944.1					0.0	189.9	257.9	1,134.0	0.0	0.0
46.71	Bot - Section 2	194.7	315.9					0.0	64.8	194.7	380.7	0.0	0.0
50.00		238.2	1,124.6					0.0	125.0	238.2	1,249.7	0.0	0.0
52.79	Top - Section 1	195.6	935.2					0.0	105.9	195.6	1,041.1	0.0	0.0
55.00		281.0	340.1					0.0	83.9	281.0	424.0	0.0	0.0
60.00		387.6	752.3					0.0	189.9	387.6	942.1	0.0	0.0
65.00		383.9	728.3					0.0	189.9	383.9	918.2	0.0	0.0
70.00		379.2	704.4					0.0	189.9	379.2	894.3	0.0	0.0
75.00		373.5	680.5					0.0	189.9	373.5	870.3	0.0	0.0
80.00		367.0	656.6					0.0	189.9	367.0	846.4	0.0	0.0
85.00		359.7	632.6					0.0	189.9	359.7	822.5	0.0	0.0
90.00		350.0	608.7					0.0	189.9	350.0	798.6	0.0	0.0
94.95	Bot - Section 3	173.8	579.4					0.0	188.1	173.8	767.5	0.0	0.0
95.00		157.8	9.0					0.0	1.8	157.8	10.7	0.0	0.0
99.54	Top - Section 2	171.9	856.7					0.0	172.3	171.9	1,029.0	0.0	0.0
100.00		182.9	34.7					0.0	17.6	182.9	52.3	0.0	0.0
105.00		329.3	365.5					0.0	189.9	329.3	555.4	0.0	0.0
110.00		319.0	349.6					0.0	189.9	319.0	539.4	0.0	0.0
115.00	Appurtenance(s)	308.1	333.6	2,035.9	0.0	167.2	2,150.8	0.0	189.9	2,344.0	2,674.3	0.0	0.0
120.00		296.7	317.7					0.0	178.2	296.7	495.8	0.0	0.0
125.00		150.2	301.7					0.0	178.2	150.2	479.9	0.0	0.0
125.17	Bot - Section 4	57.3	9.8					0.0	5.9	57.3	15.7	0.0	0.0
127.00	Appurtenance(s)	104.3	187.7	121.4	0.0	0.0	54.0	0.0	65.3	225.8	307.1	0.0	0.0
128.83	Top - Section 3	84.2	184.0					0.0	57.2	84.2	241.2	0.0	0.0
130.00	Appurtenance(s)	167.9	49.9	627.3	0.0	0.0	675.0	0.0	36.4	795.2	761.3	0.0	0.0
135.00	Appurtenance(s)	264.4	206.4	2,299.2	0.0	36.6	1,064.9	0.0	156.0	2,563.6	1,427.2	0.0	0.0
140.00		251.3	194.4					0.0	102.2	251.3	296.6	0.0	0.0
145.00	Appurtenance(s)	215.3	182.4	3,198.3	0.0	3,624.1	2,100.1	0.0	100.4	3,413.6	2,382.9	0.0	0.0
149.00		93.0	137.3					0.0	13.6	93.0	151.0	0.0	0.0
<b>Totals:</b>										18,750.5	32,585.8	0.00	0.00

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

11/27/2019 1:17:17 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	-32.57	-18.56	0.00	-1,868.44	0.00	1,868.44	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.312
5.00	-31.19	-18.18	0.00	-1,775.64	0.00	1,775.64	5,257.68	2,628.84	11,717.6	5,867.53	0.05	-0.09	0.309
10.00	-29.83	-17.81	0.00	-1,684.72	0.00	1,684.72	5,171.61	2,585.81	11,244.6	5,630.68	0.18	-0.17	0.305
15.00	-28.50	-17.45	0.00	-1,595.66	0.00	1,595.66	5,083.50	2,541.75	10,776.6	5,396.35	0.41	-0.26	0.301
20.00	-27.20	-17.09	0.00	-1,508.42	0.00	1,508.42	4,993.34	2,496.67	10,314.0	5,164.71	0.74	-0.36	0.298
25.00	-25.93	-16.74	0.00	-1,422.96	0.00	1,422.96	4,901.14	2,450.57	9,857.18	4,935.92	1.16	-0.45	0.294
30.00	-24.69	-16.40	0.00	-1,339.24	0.00	1,339.24	4,806.90	2,403.45	9,406.30	4,710.14	1.68	-0.54	0.290
35.00	-23.48	-16.05	0.00	-1,257.26	0.00	1,257.26	4,710.62	2,355.31	8,961.79	4,487.55	2.30	-0.64	0.285
40.00	-22.29	-15.69	0.00	-1,177.03	0.00	1,177.03	4,612.30	2,306.15	8,523.97	4,268.32	3.03	-0.74	0.281
45.00	-21.15	-15.44	0.00	-1,098.60	0.00	1,098.60	4,511.93	2,255.96	8,093.18	4,052.61	3.86	-0.84	0.276
46.71	-20.75	-15.26	0.00	-1,072.25	0.00	1,072.25	4,466.81	2,233.41	7,929.36	3,970.57	4.17	-0.88	0.275
50.00	-19.49	-15.02	0.00	-1,022.00	0.00	1,022.00	4,377.60	2,188.80	7,614.23	3,812.78	4.79	-0.95	0.273
52.79	-18.44	-14.83	0.00	-980.09	0.00	980.09	3,632.02	1,816.01	6,338.65	3,174.03	5.37	-1.00	0.314
55.00	-18.00	-14.56	0.00	-947.33	0.00	947.33	3,596.86	1,798.43	6,190.85	3,100.03	5.84	-1.05	0.311
60.00	-17.04	-14.19	0.00	-874.52	0.00	874.52	3,515.84	1,757.92	5,860.24	2,934.48	7.01	-1.17	0.303
65.00	-16.10	-13.82	0.00	-803.56	0.00	803.56	3,432.77	1,716.39	5,535.16	2,771.69	8.29	-1.29	0.295
70.00	-15.18	-13.45	0.00	-734.45	0.00	734.45	3,347.66	1,673.83	5,215.92	2,611.84	9.71	-1.41	0.286
75.00	-14.30	-13.09	0.00	-667.18	0.00	667.18	3,243.59	1,621.79	4,877.42	2,442.34	11.25	-1.53	0.278
80.00	-13.43	-12.73	0.00	-601.74	0.00	601.74	3,127.49	1,563.75	4,532.82	2,269.78	12.91	-1.65	0.269
85.00	-12.60	-12.37	0.00	-538.11	0.00	538.11	3,011.40	1,505.70	4,200.83	2,103.54	14.71	-1.77	0.260
90.00	-11.78	-12.02	0.00	-476.26	0.00	476.26	2,895.30	1,447.65	3,881.48	1,943.62	16.63	-1.89	0.249
94.95	-11.01	-11.83	0.00	-416.73	0.00	416.73	2,780.28	1,390.14	3,577.55	1,791.43	18.66	-2.01	0.237
95.00	-10.99	-11.68	0.00	-416.18	0.00	416.18	2,779.20	1,389.60	3,574.75	1,790.03	18.68	-2.01	0.237
99.54	-9.96	-11.48	0.00	-363.18	0.00	363.18	1,711.73	855.87	2,170.26	1,086.74	20.64	-2.12	0.340
100.00	-9.90	-11.31	0.00	-357.86	0.00	357.86	1,707.20	853.60	2,155.91	1,079.56	20.85	-2.13	0.337
105.00	-9.33	-10.99	0.00	-301.29	0.00	301.29	1,657.18	828.59	2,002.65	1,002.81	23.17	-2.29	0.306
110.00	-8.77	-10.67	0.00	-246.34	0.00	246.34	1,605.11	802.56	1,852.46	927.61	25.66	-2.45	0.271
115.00	-6.18	-8.23	0.00	-192.82	0.00	192.82	1,551.00	775.50	1,705.69	854.11	28.29	-2.59	0.230
120.00	-5.69	-7.92	0.00	-151.69	0.00	151.69	1,494.85	747.43	1,562.67	782.50	31.07	-2.71	0.198
125.00	-5.21	-7.75	0.00	-112.10	0.00	112.10	1,425.26	712.63	1,412.43	707.26	33.98	-2.83	0.162
125.17	-5.19	-7.69	0.00	-110.80	0.00	110.80	1,422.68	711.34	1,407.29	704.69	34.07	-2.83	0.161
127.00	-4.89	-7.46	0.00	-96.70	0.00	96.70	1,394.30	697.15	1,351.43	676.72	35.17	-2.87	0.147
128.83	-4.65	-7.36	0.00	-83.03	0.00	83.03	975.56	487.78	946.27	473.84	36.28	-2.90	0.180
130.00	-3.92	-6.53	0.00	-74.44	0.00	74.44	967.13	483.57	925.83	463.60	36.99	-2.92	0.165
135.00	-2.63	-3.90	0.00	-41.73	0.00	41.73	929.74	464.87	839.48	420.37	40.10	-3.01	0.102
140.00	-2.34	-3.64	0.00	-22.22	0.00	22.22	890.31	445.15	755.47	378.30	43.29	-3.07	0.061
145.00	-0.15	-0.10	0.00	-0.40	0.00	0.40	848.83	424.42	674.13	337.57	46.52	-3.10	0.001
149.00	0.00	-0.09	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	49.11	-3.10	0.000



<b>Load Case:</b> 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	253.1	135.7	2,215.2	0.0	0.0
10.00		133.1	1,962.3					0.0	253.1	133.1	2,215.5	0.0	0.0
15.00		130.2	1,937.7					0.0	253.1	130.2	2,190.8	0.0	0.0
20.00		127.3	1,904.9					0.0	253.1	127.3	2,158.0	0.0	0.0
25.00		124.3	1,867.8					0.0	253.1	124.3	2,120.9	0.0	0.0
30.00		122.8	1,828.0					0.0	253.1	122.8	2,081.2	0.0	0.0
35.00		123.7	1,786.4					0.0	253.1	123.7	2,039.6	0.0	0.0
40.00		125.2	1,743.5					0.0	253.1	125.2	1,996.6	0.0	0.0
45.00		84.4	1,699.4					0.0	253.1	84.4	1,952.5	0.0	0.0
46.71	Bot - Section 2	63.9	571.2					0.0	86.4	63.9	657.7	0.0	0.0
50.00		78.2	1,790.0					0.0	166.7	78.2	1,956.7	0.0	0.0
52.79	Top - Section 1	64.3	1,490.5					0.0	141.3	64.3	1,631.8	0.0	0.0
55.00		92.5	644.9					0.0	111.9	92.5	756.8	0.0	0.0
60.00		127.9	1,425.9					0.0	253.1	127.9	1,679.0	0.0	0.0
65.00		127.1	1,384.5					0.0	253.1	127.1	1,637.6	0.0	0.0
70.00		125.9	1,342.7					0.0	253.1	125.9	1,595.8	0.0	0.0
75.00		124.4	1,300.4					0.0	253.1	124.4	1,553.6	0.0	0.0
80.00		122.7	1,257.8					0.0	253.1	122.7	1,510.9	0.0	0.0
85.00		120.7	1,214.9					0.0	253.1	120.7	1,468.0	0.0	0.0
90.00		117.9	1,171.7					0.0	253.1	117.9	1,424.8	0.0	0.0
94.95	Bot - Section 3	58.6	1,117.9					0.0	250.8	58.6	1,368.7	0.0	0.0
95.00		53.4	15.3					0.0	2.4	53.4	17.6	0.0	0.0
99.54	Top - Section 2	58.2	1,453.5					0.0	229.7	58.2	1,683.2	0.0	0.0
100.00		62.2	78.0					0.0	23.5	62.2	101.4	0.0	0.0
105.00		112.3	817.3					0.0	253.1	112.3	1,070.4	0.0	0.0
110.00		109.3	783.8					0.0	253.1	109.3	1,036.9	0.0	0.0
115.00	Appurtenance(s)	106.1	750.1	523.7	0.0	39.0	7,293.2	0.0	253.1	629.9	8,296.4	0.0	0.0
120.00		102.9	716.2					0.0	237.5	102.9	953.7	0.0	0.0
125.00		52.2	682.1					0.0	237.5	52.2	919.7	0.0	0.0
125.17	Bot - Section 4	20.0	22.4					0.0	7.9	20.0	30.3	0.0	0.0
127.00	Appurtenance(s)	36.4	352.6	34.1	0.0	0.0	254.7	0.0	87.1	70.5	694.4	0.0	0.0
128.83	Top - Section 3	29.5	345.9					0.0	76.3	29.5	422.2	0.0	0.0
130.00	Appurtenance(s)	59.1	129.8	191.6	0.0	0.0	2,269.1	0.0	48.5	250.7	2,447.4	0.0	0.0
135.00	Appurtenance(s)	93.5	533.0	483.5	0.0	13.0	4,818.3	0.0	208.0	577.0	5,559.4	0.0	0.0
140.00		89.7	503.9					0.0	136.3	89.7	640.1	0.0	0.0
145.00	Appurtenance(s)	77.5	474.6	782.7	0.0	783.2	7,783.9	0.0	133.9	860.2	8,392.3	0.0	0.0
149.00		33.6	359.6					0.0	18.2	33.6	377.8	0.0	0.0
								Totals:		5,510.77	68,855.1	0.00	0.00

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

11/27/2019 1:17:20 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	-68.85	-5.46	0.00	-546.41	0.00	546.41	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.102
5.00	-66.64	-5.35	0.00	-519.13	0.00	519.13	5,257.68	2,628.84	11,717.6	5,867.53	0.01	-0.03	0.101
10.00	-64.42	-5.25	0.00	-492.37	0.00	492.37	5,171.61	2,585.81	11,244.6	5,630.68	0.05	-0.05	0.100
15.00	-62.23	-5.14	0.00	-466.15	0.00	466.15	5,083.50	2,541.75	10,776.6	5,396.35	0.12	-0.08	0.099
20.00	-60.07	-5.04	0.00	-440.44	0.00	440.44	4,993.34	2,496.67	10,314.0	5,164.71	0.22	-0.10	0.097
25.00	-57.94	-4.94	0.00	-415.25	0.00	415.25	4,901.14	2,450.57	9,857.18	4,935.92	0.34	-0.13	0.096
30.00	-55.86	-4.84	0.00	-390.56	0.00	390.56	4,806.90	2,403.45	9,406.30	4,710.14	0.49	-0.16	0.095
35.00	-53.82	-4.73	0.00	-366.37	0.00	366.37	4,710.62	2,355.31	8,961.79	4,487.55	0.67	-0.19	0.093
40.00	-51.82	-4.63	0.00	-342.70	0.00	342.70	4,612.30	2,306.15	8,523.97	4,268.32	0.88	-0.22	0.092
45.00	-49.87	-4.55	0.00	-319.56	0.00	319.56	4,511.93	2,255.96	8,093.18	4,052.61	1.13	-0.25	0.090
46.71	-49.21	-4.50	0.00	-311.79	0.00	311.79	4,466.81	2,233.41	7,929.36	3,970.57	1.22	-0.26	0.090
50.00	-47.25	-4.43	0.00	-296.97	0.00	296.97	4,377.60	2,188.80	7,614.23	3,812.78	1.40	-0.28	0.089
52.79	-45.62	-4.37	0.00	-284.62	0.00	284.62	3,632.02	1,816.01	6,338.65	3,174.03	1.57	-0.29	0.102
55.00	-44.86	-4.29	0.00	-274.96	0.00	274.96	3,596.86	1,798.43	6,190.85	3,100.03	1.71	-0.31	0.101
60.00	-43.18	-4.18	0.00	-253.51	0.00	253.51	3,515.84	1,757.92	5,860.24	2,934.48	2.05	-0.34	0.099
65.00	-41.54	-4.07	0.00	-232.62	0.00	232.62	3,432.77	1,716.39	5,535.16	2,771.69	2.42	-0.37	0.096
70.00	-39.94	-3.95	0.00	-212.29	0.00	212.29	3,347.66	1,673.83	5,215.92	2,611.84	2.83	-0.41	0.093
75.00	-38.39	-3.84	0.00	-192.53	0.00	192.53	3,243.59	1,621.79	4,877.42	2,442.34	3.28	-0.44	0.091
80.00	-36.87	-3.73	0.00	-173.32	0.00	173.32	3,127.49	1,563.75	4,532.82	2,269.78	3.76	-0.48	0.088
85.00	-35.40	-3.62	0.00	-154.68	0.00	154.68	3,011.40	1,505.70	4,200.83	2,103.54	4.29	-0.51	0.085
90.00	-33.98	-3.51	0.00	-136.59	0.00	136.59	2,895.30	1,447.65	3,881.48	1,943.62	4.84	-0.55	0.082
94.95	-32.61	-3.44	0.00	-119.23	0.00	119.23	2,780.28	1,390.14	3,577.55	1,791.43	5.43	-0.58	0.078
95.00	-32.59	-3.40	0.00	-119.06	0.00	119.06	2,779.20	1,389.60	3,574.75	1,790.03	5.44	-0.58	0.078
99.54	-30.91	-3.33	0.00	-103.64	0.00	103.64	1,711.73	855.87	2,170.26	1,086.74	6.01	-0.61	0.113
100.00	-30.81	-3.28	0.00	-102.10	0.00	102.10	1,707.20	853.60	2,155.91	1,079.56	6.07	-0.62	0.113
105.00	-29.73	-3.18	0.00	-85.69	0.00	85.69	1,657.18	828.59	2,002.65	1,002.81	6.74	-0.66	0.103
110.00	-28.70	-3.08	0.00	-69.78	0.00	69.78	1,605.11	802.56	1,852.46	927.61	7.46	-0.71	0.093
115.00	-20.41	-2.36	0.00	-54.34	0.00	54.34	1,551.00	775.50	1,705.69	854.11	8.22	-0.75	0.077
120.00	-19.45	-2.25	0.00	-42.54	0.00	42.54	1,494.85	747.43	1,562.67	782.50	9.02	-0.78	0.067
125.00	-18.53	-2.19	0.00	-31.27	0.00	31.27	1,425.26	712.63	1,412.43	707.26	9.86	-0.81	0.057
125.17	-18.50	-2.18	0.00	-30.90	0.00	30.90	1,422.68	711.34	1,407.29	704.69	9.89	-0.82	0.057
127.00	-17.81	-2.10	0.00	-26.91	0.00	26.91	1,394.30	697.15	1,351.43	676.72	10.21	-0.83	0.053
128.83	-17.39	-2.07	0.00	-23.06	0.00	23.06	975.56	487.78	946.27	473.84	10.52	-0.84	0.067
130.00	-14.94	-1.78	0.00	-20.65	0.00	20.65	967.13	483.57	925.83	463.60	10.73	-0.84	0.060
135.00	-9.39	-1.13	0.00	-11.72	0.00	11.72	929.74	464.87	839.48	420.37	11.63	-0.87	0.038
140.00	-8.76	-1.03	0.00	-6.09	0.00	6.09	890.31	445.15	755.47	378.30	12.54	-0.88	0.026
145.00	-0.38	-0.04	0.00	-0.16	0.00	0.16	848.83	424.42	674.13	337.57	13.47	-0.89	0.001
149.00	0.00	-0.03	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	14.21	-0.89	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

11/27/2019 1:17:20 PM

Customer: VERIZON WIRELESS

**Load Case: 1.0D + 1.0W** Serviceability 60 mph 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		45.9	0.0					0.0	0.0	45.9	0.0	0.0	0.0
5.00		90.7	1,297.2					0.0	211.0	90.7	1,508.1	0.0	0.0
10.00		88.5	1,266.1					0.0	211.0	88.5	1,477.1	0.0	0.0
15.00		86.4	1,235.1					0.0	211.0	86.4	1,446.1	0.0	0.0
20.00		84.2	1,204.1					0.0	211.0	84.2	1,415.1	0.0	0.0
25.00		82.0	1,173.1					0.0	211.0	82.0	1,384.0	0.0	0.0
30.00		80.8	1,142.1					0.0	211.0	80.8	1,353.0	0.0	0.0
35.00		81.1	1,111.1					0.0	211.0	81.1	1,322.0	0.0	0.0
40.00		82.0	1,080.0					0.0	211.0	82.0	1,291.0	0.0	0.0
45.00		55.2	1,049.0					0.0	211.0	55.2	1,260.0	0.0	0.0
46.71	Bot - Section 2	41.7	351.0					0.0	72.0	41.7	423.0	0.0	0.0
50.00		51.0	1,249.6					0.0	138.9	51.0	1,388.5	0.0	0.0
52.79	Top - Section 1	41.8	1,039.1					0.0	117.7	41.8	1,156.8	0.0	0.0
55.00		60.1	377.9					0.0	93.2	60.1	471.2	0.0	0.0
60.00		82.9	835.8					0.0	211.0	82.9	1,046.8	0.0	0.0
65.00		82.1	809.3					0.0	211.0	82.1	1,020.2	0.0	0.0
70.00		81.1	782.7					0.0	211.0	81.1	993.6	0.0	0.0
75.00		79.9	756.1					0.0	211.0	79.9	967.0	0.0	0.0
80.00		78.5	729.5					0.0	211.0	78.5	940.5	0.0	0.0
85.00		77.0	702.9					0.0	211.0	77.0	913.9	0.0	0.0
90.00		74.9	676.3					0.0	211.0	74.9	887.3	0.0	0.0
94.95	Bot - Section 3	37.2	643.8					0.0	209.0	37.2	852.8	0.0	0.0
95.00		33.8	10.0					0.0	2.0	33.8	11.9	0.0	0.0
99.54	Top - Section 2	36.8	951.9					0.0	191.4	36.8	1,143.3	0.0	0.0
100.00		39.1	38.5					0.0	19.5	39.1	58.1	0.0	0.0
105.00		70.5	406.2					0.0	211.0	70.5	617.1	0.0	0.0
110.00		68.2	388.4					0.0	211.0	68.2	599.4	0.0	0.0
115.00	Appurtenance(s)	65.9	370.7	435.6	0.0	35.8	2,389.8	0.0	211.0	501.5	2,971.5	0.0	0.0
120.00		63.5	353.0					0.0	198.0	63.5	550.9	0.0	0.0
125.00		32.1	335.3					0.0	198.0	32.1	533.2	0.0	0.0
125.17	Bot - Section 4	12.3	10.9					0.0	6.6	12.3	17.5	0.0	0.0
127.00	Appurtenance(s)	22.3	208.6	26.0	0.0	0.0	60.0	0.0	72.6	48.3	341.2	0.0	0.0
128.83	Top - Section 3	18.0	204.4					0.0	63.6	18.0	268.0	0.0	0.0
130.00	Appurtenance(s)	35.9	55.4	134.2	0.0	0.0	750.0	0.0	40.4	170.1	845.9	0.0	0.0
135.00	Appurtenance(s)	56.6	229.3	491.9	0.0	7.8	1,183.2	0.0	173.4	548.5	1,585.8	0.0	0.0
140.00		53.8	216.0					0.0	113.6	53.8	329.5	0.0	0.0
145.00	Appurtenance(s)	46.1	202.7	684.3	0.0	775.4	2,333.4	0.0	111.6	730.4	2,647.6	0.0	0.0
149.00		19.9	152.6					0.0	15.2	19.9	167.7	0.0	0.0
Totals:									4,011.89	36,206.4	0.00	0.00	

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.21	-3.97	0.00	-400.83	0.00	400.83	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.072
5.00	-34.70	-3.89	0.00	-380.98	0.00	380.98	5,257.68	2,628.84	11,717.6	5,867.53	0.01	-0.02	0.072
10.00	-33.22	-3.81	0.00	-361.52	0.00	361.52	5,171.61	2,585.81	11,244.6	5,630.68	0.04	-0.04	0.071
15.00	-31.77	-3.74	0.00	-342.46	0.00	342.46	5,083.50	2,541.75	10,776.6	5,396.35	0.09	-0.06	0.070
20.00	-30.35	-3.66	0.00	-323.78	0.00	323.78	4,993.34	2,496.67	10,314.0	5,164.71	0.16	-0.08	0.069
25.00	-28.97	-3.59	0.00	-305.47	0.00	305.47	4,901.14	2,450.57	9,857.18	4,935.92	0.25	-0.10	0.068
30.00	-27.62	-3.51	0.00	-287.54	0.00	287.54	4,806.90	2,403.45	9,406.30	4,710.14	0.36	-0.12	0.067
35.00	-26.29	-3.44	0.00	-269.97	0.00	269.97	4,710.62	2,355.31	8,961.79	4,487.55	0.49	-0.14	0.066
40.00	-25.00	-3.36	0.00	-252.77	0.00	252.77	4,612.30	2,306.15	8,523.97	4,268.32	0.65	-0.16	0.065
45.00	-23.74	-3.31	0.00	-235.95	0.00	235.95	4,511.93	2,255.96	8,093.18	4,052.61	0.83	-0.18	0.063
46.71	-23.32	-3.27	0.00	-230.30	0.00	230.30	4,466.81	2,233.41	7,929.36	3,970.57	0.89	-0.19	0.063
50.00	-21.93	-3.22	0.00	-219.53	0.00	219.53	4,377.60	2,188.80	7,614.23	3,812.78	1.03	-0.20	0.063
52.79	-20.77	-3.18	0.00	-210.54	0.00	210.54	3,632.02	1,816.01	6,338.65	3,174.03	1.15	-0.22	0.072
55.00	-20.30	-3.12	0.00	-203.51	0.00	203.51	3,596.86	1,798.43	6,190.85	3,100.03	1.25	-0.23	0.071
60.00	-19.25	-3.05	0.00	-187.89	0.00	187.89	3,515.84	1,757.92	5,860.24	2,934.48	1.50	-0.25	0.070
65.00	-18.23	-2.97	0.00	-172.67	0.00	172.67	3,432.77	1,716.39	5,535.16	2,771.69	1.78	-0.28	0.068
70.00	-17.23	-2.89	0.00	-157.83	0.00	157.83	3,347.66	1,673.83	5,215.92	2,611.84	2.08	-0.30	0.066
75.00	-16.27	-2.81	0.00	-143.39	0.00	143.39	3,243.59	1,621.79	4,877.42	2,442.34	2.41	-0.33	0.064
80.00	-15.33	-2.73	0.00	-129.34	0.00	129.34	3,127.49	1,563.75	4,532.82	2,269.78	2.77	-0.35	0.062
85.00	-14.41	-2.66	0.00	-115.67	0.00	115.67	3,011.40	1,505.70	4,200.83	2,103.54	3.16	-0.38	0.060
90.00	-13.52	-2.58	0.00	-102.39	0.00	102.39	2,895.30	1,447.65	3,881.48	1,943.62	3.57	-0.41	0.057
94.95	-12.67	-2.54	0.00	-89.59	0.00	89.59	2,780.28	1,390.14	3,577.55	1,791.43	4.01	-0.43	0.055
95.00	-12.66	-2.51	0.00	-89.48	0.00	89.48	2,779.20	1,389.60	3,574.75	1,790.03	4.01	-0.43	0.055
99.54	-11.51	-2.47	0.00	-78.09	0.00	78.09	1,711.73	855.87	2,170.26	1,086.74	4.43	-0.46	0.079
100.00	-11.46	-2.43	0.00	-76.94	0.00	76.94	1,707.20	853.60	2,155.91	1,079.56	4.48	-0.46	0.078
105.00	-10.84	-2.36	0.00	-64.78	0.00	64.78	1,657.18	828.59	2,002.65	1,002.81	4.98	-0.49	0.071
110.00	-10.24	-2.29	0.00	-52.97	0.00	52.97	1,605.11	802.56	1,852.46	927.61	5.51	-0.53	0.063
115.00	-7.27	-1.77	0.00	-41.46	0.00	41.46	1,551.00	775.50	1,705.69	854.11	6.08	-0.56	0.053
120.00	-6.72	-1.70	0.00	-32.62	0.00	32.62	1,494.85	747.43	1,562.67	782.50	6.67	-0.58	0.046
125.00	-6.19	-1.67	0.00	-24.10	0.00	24.10	1,425.26	712.63	1,412.43	707.26	7.30	-0.61	0.038
125.17	-6.17	-1.65	0.00	-23.83	0.00	23.83	1,422.68	711.34	1,407.29	704.69	7.32	-0.61	0.038
127.00	-5.83	-1.60	0.00	-20.79	0.00	20.79	1,394.30	697.15	1,351.43	676.72	7.55	-0.62	0.035
128.83	-5.56	-1.58	0.00	-17.85	0.00	17.85	975.56	487.78	946.27	473.84	7.79	-0.62	0.043
130.00	-4.72	-1.40	0.00	-16.01	0.00	16.01	967.13	483.57	925.83	463.60	7.95	-0.63	0.039
135.00	-3.14	-0.84	0.00	-8.97	0.00	8.97	929.74	464.87	839.48	420.37	8.62	-0.65	0.025
140.00	-2.81	-0.78	0.00	-4.78	0.00	4.78	890.31	445.15	755.47	378.30	9.30	-0.66	0.016
145.00	-0.17	-0.02	0.00	-0.09	0.00	0.09	848.83	424.42	674.13	337.57	9.99	-0.67	0.000
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	10.55	-0.67	0.000

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	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):	1.89
Redundancy Factor ( $\rho$ ):	1.00
Seismic Force Distribution Exponent (k):	1.70
Total Unfactored Dead Load:	36.21 k
Seismic Base Shear (E):	1.31 k

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

**Seismic Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	168	798	0.013	17	208
36	142.50	314	1,418	0.023	30	390
35	137.50	330	1,400	0.022	29	409
34	132.50	403	1,606	0.026	34	500
33	129.42	96	367	0.006	8	119
32	127.92	268	1,007	0.016	21	333
31	126.08	281	1,031	0.016	22	349
30	125.08	17	63	0.001	1	22
29	122.50	533	1,861	0.030	39	662
28	117.50	551	1,792	0.029	37	684
27	112.50	582	1,757	0.028	37	722
26	107.50	599	1,677	0.027	35	744
25	102.50	617	1,592	0.025	33	766
24	99.77	58	143	0.002	3	72
23	97.27	1,143	2,699	0.043	56	1,419
22	94.98	12	27	0.000	1	15
21	92.48	853	1,848	0.030	39	1,058
20	87.50	887	1,750	0.028	37	1,101
19	82.50	914	1,631	0.026	34	1,134
18	77.50	940	1,510	0.024	32	1,167
17	72.50	967	1,386	0.022	29	1,200
16	67.50	994	1,262	0.020	26	1,233
15	62.50	1,020	1,137	0.018	24	1,266



14	57.50	1,047	1,013	0.016	21	1,299
13	53.90	471	408	0.007	9	585
12	51.40	1,157	925	0.015	19	1,436
11	48.35	1,389	1,001	0.016	21	1,723
10	45.85	423	279	0.004	6	525
9	42.50	1,260	730	0.012	15	1,564
8	37.50	1,291	605	0.010	13	1,602
7	32.50	1,322	486	0.008	10	1,641
6	27.50	1,353	374	0.006	8	1,679
5	22.50	1,384	273	0.004	6	1,718
4	17.50	1,415	182	0.003	4	1,756
3	12.50	1,446	105	0.002	2	1,795
2	7.50	1,477	45	0.001	1	1,833
1	2.50	1,508	7	0.000	0	1,872
Powerwave Allgon LGP	145.00	32	148	0.002	3	39
Powerwave Allgon 702	145.00	13	61	0.001	1	16
Powerwave Allgon LGP	145.00	85	393	0.006	8	105
Raycap DC6-48-60-18-	145.00	32	148	0.002	3	39
Ericsson RRUS 11 (Ba	145.00	150	697	0.011	15	186
Ericsson RRUS 32 B2	145.00	159	739	0.012	15	197
Allgon 7770.00	145.00	210	976	0.016	20	261
CCI HPA-65R-BUU-H6	145.00	153	711	0.011	15	190
Flat Low Profile Pla	145.00	1,500	6,971	0.111	146	1,862
Ericsson KRY 112 144	135.00	33	136	0.002	3	41
Ericsson Radio 4449	135.00	222	914	0.015	19	276
Ericsson AIR 21 B4A	135.00	270	1,112	0.018	23	335
Ericsson AIR 21, 1.3	135.00	275	1,130	0.018	24	341
RFS APXVAARR24_43-U-	135.00	384	1,580	0.025	33	476
Round T-Arm	130.00	750	2,896	0.046	60	931
Generic 34" x 6" Pan	127.00	60	223	0.004	5	74
Samsung B5/B13 RRH-B	115.00	141	441	0.007	9	175
Samsung B2/B66A RRH-	115.00	169	529	0.008	11	210
RFS DB-B1-6C-12AB-0Z	115.00	21	67	0.001	1	27
JMA Wireless MX06FRO	115.00	184	577	0.009	12	228
Generic Round Low Pr	115.00	1,875	5,881	0.094	123	2,327
		36,206	62,525	1.000	1,305	44,939

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	168	798	0.013	17	144
36	142.50	314	1,418	0.023	30	270
35	137.50	330	1,400	0.022	29	283
34	132.50	403	1,606	0.026	34	346
33	129.42	96	367	0.006	8	82
32	127.92	268	1,007	0.016	21	230
31	126.08	281	1,031	0.016	22	241
30	125.08	17	63	0.001	1	15
29	122.50	533	1,861	0.030	39	458
28	117.50	551	1,792	0.029	37	473
27	112.50	582	1,757	0.028	37	500
26	107.50	599	1,677	0.027	35	515
25	102.50	617	1,592	0.025	33	530
24	99.77	58	143	0.002	3	50
23	97.27	1,143	2,699	0.043	56	982
22	94.98	12	27	0.000	1	10
21	92.48	853	1,848	0.030	39	732
20	87.50	887	1,750	0.028	37	762
19	82.50	914	1,631	0.026	34	785

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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Customer: VERIZON WIRELESS

18	77.50	940	1,510	0.024	32	808
17	72.50	967	1,386	0.022	29	831
16	67.50	994	1,262	0.020	26	853
15	62.50	1,020	1,137	0.018	24	876
14	57.50	1,047	1,013	0.016	21	899
13	53.90	471	408	0.007	9	405
12	51.40	1,157	925	0.015	19	993
11	48.35	1,389	1,001	0.016	21	1,193
10	45.85	423	279	0.004	6	363
9	42.50	1,260	730	0.012	15	1,082
8	37.50	1,291	605	0.010	13	1,109
7	32.50	1,322	486	0.008	10	1,135
6	27.50	1,353	374	0.006	8	1,162
5	22.50	1,384	273	0.004	6	1,189
4	17.50	1,415	182	0.003	4	1,215
3	12.50	1,446	105	0.002	2	1,242
2	7.50	1,477	45	0.001	1	1,269
1	2.50	1,508	7	0.000	0	1,295
Powerwave Allgon LGP	145.00	32	148	0.002	3	27
Powerwave Allgon 702	145.00	13	61	0.001	1	11
Powerwave Allgon LGP	145.00	85	393	0.006	8	73
Raycap DC6-48-60-18-	145.00	32	148	0.002	3	27
Ericsson RRUS 11 (Ba	145.00	150	697	0.011	15	129
Ericsson RRUS 32 B2	145.00	159	739	0.012	15	137
Allgon 7770.00	145.00	210	976	0.016	20	180
CCI HPA-65R-BUU-H6	145.00	153	711	0.011	15	131
Flat Low Profile Pla	145.00	1,500	6,971	0.111	146	1,288
Ericsson KRY 112 144	135.00	33	136	0.002	3	28
Ericsson Radio 4449	135.00	222	914	0.015	19	191
Ericsson AIR 21 B4A	135.00	270	1,112	0.018	23	232
Ericsson AIR 21, 1.3	135.00	275	1,130	0.018	24	236
RFS APXVAARR24_43-U-	135.00	384	1,580	0.025	33	330
Round T-Arm	130.00	750	2,896	0.046	60	644
Generic 34" x 6" Pan	127.00	60	223	0.004	5	52
Samsung B5/B13 RRH-B	115.00	141	441	0.007	9	121
Samsung B2/B66A RRH-	115.00	169	529	0.008	11	145
RFS DB-B1-6C-12AB-0Z	115.00	21	67	0.001	1	18
JMA Wireless MX06FRO	115.00	184	577	0.009	12	158
Generic Round Low Pr	115.00	1,875	5,881	0.094	123	1,610
		36,206	62,525	1.000	1,305	31,095

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	-43.07	-1.31	0.00	-146.67	0.00	146.67	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.032
5.00	-41.23	-1.31	0.00	-140.13	0.00	140.13	5,257.68	2,628.84	11,717.6	5,867.53	0.00	-0.01	0.032
10.00	-39.44	-1.31	0.00	-133.58	0.00	133.58	5,171.61	2,585.81	11,244.6	5,630.68	0.01	-0.01	0.031
15.00	-37.68	-1.31	0.00	-127.02	0.00	127.02	5,083.50	2,541.75	10,776.6	5,396.35	0.03	-0.02	0.031
20.00	-35.96	-1.31	0.00	-120.45	0.00	120.45	4,993.34	2,496.67	10,314.0	5,164.71	0.06	-0.03	0.031
25.00	-34.28	-1.31	0.00	-113.90	0.00	113.90	4,901.14	2,450.57	9,857.18	4,935.92	0.09	-0.04	0.030
30.00	-32.64	-1.30	0.00	-107.36	0.00	107.36	4,806.90	2,403.45	9,406.30	4,710.14	0.13	-0.04	0.030
35.00	-31.04	-1.29	0.00	-100.86	0.00	100.86	4,710.62	2,355.31	8,961.79	4,487.55	0.18	-0.05	0.029
40.00	-29.48	-1.28	0.00	-94.41	0.00	94.41	4,612.30	2,306.15	8,523.97	4,268.32	0.24	-0.06	0.029
45.00	-28.95	-1.27	0.00	-88.02	0.00	88.02	4,511.93	2,255.96	8,093.18	4,052.61	0.31	-0.07	0.028
46.71	-27.23	-1.25	0.00	-85.84	0.00	85.84	4,466.81	2,233.41	7,929.36	3,970.57	0.33	-0.07	0.028
50.00	-25.79	-1.23	0.00	-81.71	0.00	81.71	4,377.60	2,188.80	7,614.23	3,812.78	0.38	-0.08	0.027
52.79	-25.21	-1.23	0.00	-78.27	0.00	78.27	3,632.02	1,816.01	6,338.65	3,174.03	0.43	-0.08	0.032
55.00	-23.91	-1.21	0.00	-75.56	0.00	75.56	3,596.86	1,798.43	6,190.85	3,100.03	0.46	-0.08	0.031
60.00	-22.64	-1.18	0.00	-69.52	0.00	69.52	3,515.84	1,757.92	5,860.24	2,934.48	0.56	-0.09	0.030
65.00	-21.41	-1.16	0.00	-63.60	0.00	63.60	3,432.77	1,716.39	5,535.16	2,771.69	0.66	-0.10	0.029
70.00	-20.21	-1.13	0.00	-57.80	0.00	57.80	3,347.66	1,673.83	5,215.92	2,611.84	0.77	-0.11	0.028
75.00	-19.04	-1.10	0.00	-52.14	0.00	52.14	3,243.59	1,621.79	4,877.42	2,442.34	0.90	-0.12	0.027
80.00	-17.91	-1.07	0.00	-46.63	0.00	46.63	3,127.49	1,563.75	4,532.82	2,269.78	1.03	-0.13	0.026
85.00	-16.80	-1.03	0.00	-41.29	0.00	41.29	3,011.40	1,505.70	4,200.83	2,103.54	1.17	-0.14	0.025
90.00	-15.75	-0.99	0.00	-36.13	0.00	36.13	2,895.30	1,447.65	3,881.48	1,943.62	1.32	-0.15	0.024
94.95	-15.73	-0.99	0.00	-31.21	0.00	31.21	2,780.28	1,390.14	3,577.55	1,791.43	1.48	-0.16	0.023
95.00	-14.31	-0.93	0.00	-31.17	0.00	31.17	2,779.20	1,389.60	3,574.75	1,790.03	1.48	-0.16	0.023
99.54	-14.24	-0.93	0.00	-26.93	0.00	26.93	1,711.73	855.87	2,170.26	1,086.74	1.64	-0.17	0.033
100.00	-13.47	-0.90	0.00	-26.50	0.00	26.50	1,707.20	853.60	2,155.91	1,079.56	1.66	-0.17	0.032
105.00	-12.73	-0.86	0.00	-22.01	0.00	22.01	1,657.18	828.59	2,002.65	1,002.81	1.84	-0.18	0.030
110.00	-12.01	-0.83	0.00	-17.69	0.00	17.69	1,605.11	802.56	1,852.46	927.61	2.03	-0.19	0.027
115.00	-8.36	-0.62	0.00	-13.56	0.00	13.56	1,551.00	775.50	1,705.69	854.11	2.24	-0.20	0.021
120.00	-7.70	-0.58	0.00	-10.45	0.00	10.45	1,494.85	747.43	1,562.67	782.50	2.45	-0.21	0.019
125.00	-7.68	-0.58	0.00	-7.54	0.00	7.54	1,425.26	712.63	1,412.43	707.26	2.68	-0.22	0.016
125.17	-7.33	-0.56	0.00	-7.44	0.00	7.44	1,422.68	711.34	1,407.29	704.69	2.68	-0.22	0.016
127.00	-6.92	-0.53	0.00	-6.42	0.00	6.42	1,394.30	697.15	1,351.43	676.72	2.77	-0.22	0.014
128.83	-6.80	-0.52	0.00	-5.44	0.00	5.44	975.56	487.78	946.27	473.84	2.85	-0.22	0.018
130.00	-5.37	-0.42	0.00	-4.83	0.00	4.83	967.13	483.57	925.83	463.60	2.91	-0.22	0.016
135.00	-3.49	-0.29	0.00	-2.71	0.00	2.71	929.74	464.87	839.48	420.37	3.14	-0.23	0.010
140.00	-3.10	-0.26	0.00	-1.28	0.00	1.28	890.31	445.15	755.47	378.30	3.39	-0.23	0.007
145.00	0.00	0.00	0.00	0.00	0.00	0.00	848.83	424.42	674.13	337.57	3.63	-0.23	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	3.83	-0.23	0.000

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

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	-29.80	-1.31	0.00	-145.31	0.00	145.31	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.029
5.00	-28.53	-1.31	0.00	-138.78	0.00	138.78	5,257.68	2,628.84	11,717.6	5,867.53	0.00	-0.01	0.029
10.00	-27.29	-1.31	0.00	-132.24	0.00	132.24	5,171.61	2,585.81	11,244.6	5,630.68	0.01	-0.01	0.029
15.00	-26.07	-1.31	0.00	-125.69	0.00	125.69	5,083.50	2,541.75	10,776.6	5,396.35	0.03	-0.02	0.028
20.00	-24.88	-1.31	0.00	-119.15	0.00	119.15	4,993.34	2,496.67	10,314.0	5,164.71	0.06	-0.03	0.028
25.00	-23.72	-1.30	0.00	-112.62	0.00	112.62	4,901.14	2,450.57	9,857.18	4,935.92	0.09	-0.04	0.028
30.00	-22.59	-1.29	0.00	-106.13	0.00	106.13	4,806.90	2,403.45	9,406.30	4,710.14	0.13	-0.04	0.027
35.00	-21.48	-1.28	0.00	-99.67	0.00	99.67	4,710.62	2,355.31	8,961.79	4,487.55	0.18	-0.05	0.027
40.00	-20.40	-1.27	0.00	-93.26	0.00	93.26	4,612.30	2,306.15	8,523.97	4,268.32	0.24	-0.06	0.026
45.00	-20.03	-1.26	0.00	-86.92	0.00	86.92	4,511.93	2,255.96	8,093.18	4,052.61	0.30	-0.07	0.026
46.71	-18.84	-1.24	0.00	-84.76	0.00	84.76	4,466.81	2,233.41	7,929.36	3,970.57	0.33	-0.07	0.026
50.00	-17.85	-1.22	0.00	-80.67	0.00	80.67	4,377.60	2,188.80	7,614.23	3,812.78	0.38	-0.07	0.025
52.79	-17.44	-1.22	0.00	-77.26	0.00	77.26	3,632.02	1,816.01	6,338.65	3,174.03	0.42	-0.08	0.029
55.00	-16.54	-1.20	0.00	-74.57	0.00	74.57	3,596.86	1,798.43	6,190.85	3,100.03	0.46	-0.08	0.029
60.00	-15.67	-1.17	0.00	-68.59	0.00	68.59	3,515.84	1,757.92	5,860.24	2,934.48	0.55	-0.09	0.028
65.00	-14.81	-1.15	0.00	-62.73	0.00	62.73	3,432.77	1,716.39	5,535.16	2,771.69	0.65	-0.10	0.027
70.00	-13.98	-1.12	0.00	-56.99	0.00	56.99	3,347.66	1,673.83	5,215.92	2,611.84	0.76	-0.11	0.026
75.00	-13.17	-1.09	0.00	-51.40	0.00	51.40	3,243.59	1,621.79	4,877.42	2,442.34	0.89	-0.12	0.025
80.00	-12.39	-1.05	0.00	-45.96	0.00	45.96	3,127.49	1,563.75	4,532.82	2,269.78	1.02	-0.13	0.024
85.00	-11.63	-1.02	0.00	-40.69	0.00	40.69	3,011.40	1,505.70	4,200.83	2,103.54	1.16	-0.14	0.023
90.00	-10.89	-0.98	0.00	-35.59	0.00	35.59	2,895.30	1,447.65	3,881.48	1,943.62	1.31	-0.15	0.022
94.95	-10.88	-0.98	0.00	-30.74	0.00	30.74	2,780.28	1,390.14	3,577.55	1,791.43	1.47	-0.16	0.021
95.00	-9.90	-0.92	0.00	-30.70	0.00	30.70	2,779.20	1,389.60	3,574.75	1,790.03	1.47	-0.16	0.021
99.54	-9.85	-0.92	0.00	-26.52	0.00	26.52	1,711.73	855.87	2,170.26	1,086.74	1.62	-0.16	0.030
100.00	-9.32	-0.89	0.00	-26.09	0.00	26.09	1,707.20	853.60	2,155.91	1,079.56	1.64	-0.17	0.030
105.00	-8.81	-0.85	0.00	-21.67	0.00	21.67	1,657.18	828.59	2,002.65	1,002.81	1.82	-0.18	0.027
110.00	-8.31	-0.81	0.00	-17.41	0.00	17.41	1,605.11	802.56	1,852.46	927.61	2.01	-0.19	0.024
115.00	-5.78	-0.61	0.00	-13.34	0.00	13.34	1,551.00	775.50	1,705.69	854.11	2.21	-0.20	0.019
120.00	-5.33	-0.57	0.00	-10.28	0.00	10.28	1,494.85	747.43	1,562.67	782.50	2.42	-0.21	0.017
125.00	-5.31	-0.57	0.00	-7.42	0.00	7.42	1,425.26	712.63	1,412.43	707.26	2.64	-0.21	0.014
125.17	-5.07	-0.55	0.00	-7.32	0.00	7.32	1,422.68	711.34	1,407.29	704.69	2.65	-0.21	0.014
127.00	-4.79	-0.52	0.00	-6.32	0.00	6.32	1,394.30	697.15	1,351.43	676.72	2.73	-0.22	0.013
128.83	-4.71	-0.52	0.00	-5.36	0.00	5.36	975.56	487.78	946.27	473.84	2.82	-0.22	0.016
130.00	-3.72	-0.42	0.00	-4.76	0.00	4.76	967.13	483.57	925.83	463.60	2.87	-0.22	0.014
135.00	-2.42	-0.28	0.00	-2.67	0.00	2.67	929.74	464.87	839.48	420.37	3.11	-0.23	0.009
140.00	-2.15	-0.25	0.00	-1.26	0.00	1.26	890.31	445.15	755.47	378.30	3.34	-0.23	0.006
145.00	0.00	0.00	0.00	0.00	0.00	0.00	848.83	424.42	674.13	337.57	3.59	-0.23	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	3.78	-0.23	0.000

### Equivalent Modal Analysis Method

(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):	1.89
Redundancy Factor ( $p$ ):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	168	1.840	1.725	1.047	0.361	40	208
36	142.50	314	1.729	1.234	0.859	0.289	61	390
35	137.50	330	1.610	0.808	0.683	0.218	48	409
34	132.50	403	1.495	0.488	0.536	0.156	42	500
33	129.42	96	1.426	0.335	0.459	0.123	8	119
32	127.92	268	1.393	0.271	0.425	0.107	19	333
31	126.08	281	1.353	0.201	0.385	0.090	17	349
30	125.08	17	1.332	0.167	0.365	0.081	1	22
29	122.50	533	1.278	0.091	0.317	0.059	21	662
28	117.50	551	1.175	-0.017	0.237	0.024	9	684
27	112.50	582	1.077	-0.082	0.173	-0.003	-1	722
26	107.50	599	0.984	-0.114	0.123	-0.021	-9	744
25	102.50	617	0.894	-0.122	0.085	-0.031	-13	766
24	99.77	58	0.847	-0.119	0.068	-0.034	-1	72
23	97.27	1,143	0.805	-0.113	0.055	-0.033	-25	1,419
22	94.98	12	0.768	-0.105	0.045	-0.032	0	15
21	92.48	853	0.728	-0.095	0.036	-0.029	-16	1,058
20	87.50	887	0.652	-0.071	0.021	-0.018	-11	1,101
19	82.50	914	0.579	-0.045	0.012	-0.004	-2	1,134
18	77.50	940	0.511	-0.020	0.008	0.011	7	1,167
17	72.50	967	0.447	0.002	0.006	0.025	16	1,200
16	67.50	994	0.388	0.022	0.007	0.036	24	1,233
15	62.50	1,020	0.333	0.037	0.010	0.044	30	1,266
14	57.50	1,047	0.281	0.049	0.014	0.049	34	1,299
13	53.90	471	0.247	0.056	0.017	0.051	16	585
12	51.40	1,157	0.225	0.059	0.020	0.052	40	1,436
11	48.35	1,389	0.199	0.063	0.023	0.052	48	1,723
10	45.85	423	0.179	0.065	0.026	0.052	15	525
9	42.50	1,260	0.154	0.068	0.030	0.051	43	1,564
8	37.50	1,291	0.120	0.070	0.034	0.050	43	1,602
7	32.50	1,322	0.090	0.071	0.038	0.049	43	1,641
6	27.50	1,353	0.064	0.072	0.041	0.047	43	1,679
5	22.50	1,384	0.043	0.071	0.042	0.045	42	1,718
4	17.50	1,415	0.026	0.067	0.040	0.043	40	1,756

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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Customer: VERIZON WIRELESS

3	12.50	1,446	0.013	0.059	0.034	0.038	37	1,795
2	7.50	1,477	0.005	0.044	0.025	0.030	29	1,833
1	2.50	1,508	0.001	0.018	0.010	0.013	14	1,872
Powerwave Allgon LGP	145.00	32	1.790	1.493	0.960	0.328	7	39
Powerwave Allgon 702	145.00	13	1.790	1.493	0.960	0.328	3	16
Powerwave Allgon LGP	145.00	85	1.790	1.493	0.960	0.328	19	105
Raycap DC6-48-60-18-	145.00	32	1.790	1.493	0.960	0.328	7	39
Ericsson RRUS 11 (Ba	145.00	150	1.790	1.493	0.960	0.328	33	186
Ericsson RRUS 32 B2	145.00	159	1.790	1.493	0.960	0.328	35	197
Allgon 7770.00	145.00	210	1.790	1.493	0.960	0.328	46	261
CCI HPA-65R-BUU-H6	145.00	153	1.790	1.493	0.960	0.328	33	190
Flat Low Profile Pla	145.00	1,500	1.790	1.493	0.960	0.328	328	1,862
Ericsson KRY 112 144	135.00	33	1.552	0.636	0.606	0.186	4	41
Ericsson Radio 4449	135.00	222	1.552	0.636	0.606	0.186	28	276
Ericsson AIR 21 B4A	135.00	270	1.552	0.636	0.606	0.186	34	335
Ericsson AIR 21, 1.3	135.00	275	1.552	0.636	0.606	0.186	34	341
RFS APXVAARR24_43-U-	135.00	384	1.552	0.636	0.606	0.186	48	476
Round T-Arm	130.00	750	1.439	0.361	0.473	0.129	64	931
Generic 34" x 6" Pan	127.00	60	1.373	0.235	0.405	0.099	4	74
Samsung B5/B13 RRH-B	115.00	141	1.126	-0.054	0.203	0.009	1	175
Samsung B2/B66A RRH-	115.00	169	1.126	-0.054	0.203	0.009	1	210
RFS DB-B1-6C-12AB-OZ	115.00	21	1.126	-0.054	0.203	0.009	0	27
JMA Wireless MX06FRO	115.00	184	1.126	-0.054	0.203	0.009	1	228
Generic Round Low Pr	115.00	1,875	1.126	-0.054	0.203	0.009	12	2,327
		36,206	57.599	22.251	19.922	6.200	1,491	44,939

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)
37	147.00	168	1.840	1.725	1.047	0.361	40	144
36	142.50	314	1.729	1.234	0.859	0.289	61	270
35	137.50	330	1.610	0.808	0.683	0.218	48	283
34	132.50	403	1.495	0.488	0.536	0.156	42	346
33	129.42	96	1.426	0.335	0.459	0.123	8	82
32	127.92	268	1.393	0.271	0.425	0.107	19	230
31	126.08	281	1.353	0.201	0.385	0.090	17	241
30	125.08	17	1.332	0.167	0.365	0.081	1	15
29	122.50	533	1.278	0.091	0.317	0.059	21	458
28	117.50	551	1.175	-0.017	0.237	0.024	9	473
27	112.50	582	1.077	-0.082	0.173	-0.003	-1	500
26	107.50	599	0.984	-0.114	0.123	-0.021	-9	515
25	102.50	617	0.894	-0.122	0.085	-0.031	-13	530
24	99.77	58	0.847	-0.119	0.068	-0.034	-1	50
23	97.27	1,143	0.805	-0.113	0.055	-0.033	-25	982
22	94.98	12	0.768	-0.105	0.045	-0.032	0	10
21	92.48	853	0.728	-0.095	0.036	-0.029	-16	732
20	87.50	887	0.652	-0.071	0.021	-0.018	-11	762
19	82.50	914	0.579	-0.045	0.012	-0.004	-2	785
18	77.50	940	0.511	-0.020	0.008	0.011	7	808
17	72.50	967	0.447	0.002	0.006	0.025	16	831
16	67.50	994	0.388	0.022	0.007	0.036	24	853
15	62.50	1,020	0.333	0.037	0.010	0.044	30	876
14	57.50	1,047	0.281	0.049	0.014	0.049	34	899
13	53.90	471	0.247	0.056	0.017	0.051	16	405
12	51.40	1,157	0.225	0.059	0.020	0.052	40	993
11	48.35	1,389	0.199	0.063	0.023	0.052	48	1,193
10	45.85	423	0.179	0.065	0.026	0.052	15	363
9	42.50	1,260	0.154	0.068	0.030	0.051	43	1,082

Site Number: 370641

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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Customer: VERIZON WIRELESS

8	37.50	1,291	0.120	0.070	0.034	0.050	43	1,109
7	32.50	1,322	0.090	0.071	0.038	0.049	43	1,135
6	27.50	1,353	0.064	0.072	0.041	0.047	43	1,162
5	22.50	1,384	0.043	0.071	0.042	0.045	42	1,189
4	17.50	1,415	0.026	0.067	0.040	0.043	40	1,215
3	12.50	1,446	0.013	0.059	0.034	0.038	37	1,242
2	7.50	1,477	0.005	0.044	0.025	0.030	29	1,269
1	2.50	1,508	0.001	0.018	0.010	0.013	14	1,295
Powerwave Allgon LGP	145.00	32	1.790	1.493	0.960	0.328	7	27
Powerwave Allgon 702	145.00	13	1.790	1.493	0.960	0.328	3	11
Powerwave Allgon LGP	145.00	85	1.790	1.493	0.960	0.328	19	73
Raycap DC6-48-60-18-	145.00	32	1.790	1.493	0.960	0.328	7	27
Ericsson RRUS 11 (Ba	145.00	150	1.790	1.493	0.960	0.328	33	129
Ericsson RRUS 32 B2	145.00	159	1.790	1.493	0.960	0.328	35	137
Allgon 7770.00	145.00	210	1.790	1.493	0.960	0.328	46	180
CCI HPA-65R-BUU-H6	145.00	153	1.790	1.493	0.960	0.328	33	131
Flat Low Profile Pla	145.00	1,500	1.790	1.493	0.960	0.328	328	1,288
Ericsson KRY 112 144	135.00	33	1.552	0.636	0.606	0.186	4	28
Ericsson Radio 4449	135.00	222	1.552	0.636	0.606	0.186	28	191
Ericsson AIR 21 B4A	135.00	270	1.552	0.636	0.606	0.186	34	232
Ericsson AIR 21, 1.3	135.00	275	1.552	0.636	0.606	0.186	34	236
RFS APXVAARR24_43-U-	135.00	384	1.552	0.636	0.606	0.186	48	330
Round T-Arm	130.00	750	1.439	0.361	0.473	0.129	64	644
Generic 34" x 6" Pan	127.00	60	1.373	0.235	0.405	0.099	4	52
Samsung B5/B13 RRH-B	115.00	141	1.126	-0.054	0.203	0.009	1	121
Samsung B2/B66A RRH-	115.00	169	1.126	-0.054	0.203	0.009	1	145
RFS DB-B1-6C-12AB-OZ	115.00	21	1.126	-0.054	0.203	0.009	0	18
JMA Wireless MX06FRO	115.00	184	1.126	-0.054	0.203	0.009	1	158
Generic Round Low Pr	115.00	1,875	1.126	-0.054	0.203	0.009	12	1,610
		36,206	57,599	22,251	19,922	6,200	1,491	31,095



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	-43.07	-1.48	0.00	-157.57	0.00	157.57	5,341.71	2,670.85	12,195.34	6,106.74	0.00	0.00	0.034
5.00	-41.23	-1.46	0.00	-150.17	0.00	150.17	5,257.68	2,628.84	11,717.65	5,867.53	0.00	-0.01	0.033
10.00	-39.44	-1.42	0.00	-142.90	0.00	142.90	5,171.61	2,585.81	11,244.65	5,630.68	0.02	-0.01	0.033
15.00	-37.68	-1.39	0.00	-135.78	0.00	135.78	5,083.50	2,541.75	10,776.69	5,396.35	0.04	-0.02	0.033
20.00	-35.96	-1.35	0.00	-128.84	0.00	128.84	4,993.34	2,496.67	10,314.08	5,164.71	0.06	-0.03	0.032
25.00	-34.28	-1.31	0.00	-122.09	0.00	122.09	4,901.14	2,450.57	9,857.18	4,935.92	0.10	-0.04	0.032
30.00	-32.64	-1.27	0.00	-115.54	0.00	115.54	4,806.90	2,403.45	9,406.30	4,710.14	0.14	-0.05	0.031
35.00	-31.04	-1.23	0.00	-109.18	0.00	109.18	4,710.62	2,355.31	8,961.79	4,487.55	0.20	-0.05	0.031
40.00	-29.48	-1.19	0.00	-103.03	0.00	103.03	4,612.30	2,306.15	8,523.97	4,268.32	0.26	-0.06	0.031
45.00	-28.95	-1.18	0.00	-97.07	0.00	97.07	4,511.93	2,255.96	8,093.18	4,052.61	0.33	-0.07	0.030
46.71	-27.23	-1.13	0.00	-95.06	0.00	95.06	4,466.81	2,233.41	7,929.36	3,970.57	0.36	-0.08	0.030
50.00	-25.79	-1.09	0.00	-91.33	0.00	91.33	4,377.60	2,188.80	7,614.23	3,812.78	0.41	-0.08	0.030
52.79	-25.21	-1.08	0.00	-88.28	0.00	88.28	4,332.02	2,181.01	7,338.65	3,714.03	0.46	-0.09	0.035
55.00	-23.91	-1.04	0.00	-85.90	0.00	85.90	4,286.86	2,179.43	7,069.85	3,610.03	0.50	-0.09	0.034
60.00	-22.64	-1.02	0.00	-80.68	0.00	80.68	4,241.84	2,175.92	6,806.24	3,514.48	0.60	-0.10	0.034
65.00	-21.41	-0.99	0.00	-75.60	0.00	75.60	4,196.77	2,171.39	6,553.16	3,417.69	0.71	-0.11	0.034
70.00	-20.21	-0.98	0.00	-70.63	0.00	70.63	4,151.66	2,167.83	6,301.92	3,321.84	0.84	-0.12	0.033
75.00	-19.04	-0.97	0.00	-65.74	0.00	65.74	4,106.59	2,162.79	6,051.42	3,226.34	0.97	-0.14	0.033
80.00	-17.91	-0.98	0.00	-60.87	0.00	60.87	4,061.49	2,156.75	5,801.82	3,130.78	1.12	-0.15	0.033
85.00	-16.80	-0.99	0.00	-55.98	0.00	55.98	4,016.40	2,150.70	5,552.83	3,035.54	1.29	-0.16	0.032
90.00	-15.75	-1.01	0.00	-51.04	0.00	51.04	3,971.30	2,144.65	5,303.48	2,940.62	1.46	-0.17	0.032
94.95	-15.73	-1.01	0.00	-46.06	0.00	46.06	3,926.28	2,139.14	5,054.55	2,845.43	1.65	-0.19	0.031
95.00	-14.31	-1.03	0.00	-46.02	0.00	46.02	3,881.20	2,138.60	4,805.75	2,750.03	1.65	-0.19	0.031
99.54	-14.24	-1.03	0.00	-41.34	0.00	41.34	3,836.17	2,135.87	4,556.26	2,654.74	1.83	-0.20	0.046
100.00	-13.47	-1.05	0.00	-40.87	0.00	40.87	3,791.20	2,135.60	4,306.91	2,559.56	1.85	-0.20	0.046
105.00	-12.73	-1.05	0.00	-35.64	0.00	35.64	3,746.18	2,128.59	4,057.65	2,464.81	2.07	-0.22	0.043
110.00	-12.01	-1.06	0.00	-30.37	0.00	30.37	3,701.11	2,125.56	3,808.46	2,369.61	2.31	-0.24	0.040
115.00	-8.36	-1.02	0.00	-25.08	0.00	25.08	3,656.00	2,115.50	3,559.69	2,274.11	2.57	-0.25	0.035
120.00	-7.69	-1.00	0.00	-19.98	0.00	19.98	3,610.85	2,107.43	3,310.67	2,178.50	2.84	-0.27	0.031
125.00	-7.67	-1.00	0.00	-14.99	0.00	14.99	3,565.26	2,102.63	3,061.43	2,082.26	3.14	-0.29	0.027
125.17	-7.32	-0.98	0.00	-14.82	0.00	14.82	3,520.68	2,097.34	2,812.29	2,006.69	3.15	-0.29	0.026
127.00	-6.92	-0.96	0.00	-13.02	0.00	13.02	3,475.30	2,097.15	2,563.43	1,916.72	3.26	-0.29	0.024
128.83	-6.80	-0.95	0.00	-11.27	0.00	11.27	3,430.56	2,087.78	2,314.27	1,826.84	3.37	-0.30	0.031
130.00	-5.37	-0.83	0.00	-10.17	0.00	10.17	3,385.13	2,083.57	2,065.83	1,736.60	3.44	-0.30	0.027
135.00	-3.49	-0.63	0.00	-5.99	0.00	5.99	3,339.74	2,064.87	1,816.48	1,646.37	3.76	-0.31	0.018
140.00	-3.10	-0.57	0.00	-2.84	0.00	2.84	3,294.31	2,045.15	1,567.47	1,556.30	4.10	-0.32	0.011
145.00	0.00	0.00	0.00	0.00	0.00	0.00	3,248.83	2,024.42	1,318.13	1,466.57	4.43	-0.32	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	3,203.65	2,004.83	1,069.80	1,376.35	4.70	-0.32	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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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	-29.80	-1.48	0.00	-155.99	0.00	155.99	5,341.71	2,670.85	12,195.34	6,106.74	0.00	0.00	0.031
5.00	-28.53	-1.45	0.00	-148.59	0.00	148.59	5,257.68	2,628.84	11,717.65	5,867.53	0.00	-0.01	0.031
10.00	-27.29	-1.42	0.00	-141.33	0.00	141.33	5,171.61	2,585.81	11,244.65	5,630.68	0.02	-0.01	0.030
15.00	-26.07	-1.38	0.00	-134.23	0.00	134.23	5,083.50	2,541.75	10,776.69	5,396.35	0.03	-0.02	0.030
20.00	-24.88	-1.34	0.00	-127.32	0.00	127.32	4,993.34	2,496.67	10,314.08	5,164.71	0.06	-0.03	0.030
25.00	-23.72	-1.30	0.00	-120.61	0.00	120.61	4,901.14	2,450.57	9,857.18	4,935.92	0.10	-0.04	0.029
30.00	-22.59	-1.26	0.00	-114.09	0.00	114.09	4,806.90	2,403.45	9,406.30	4,710.14	0.14	-0.05	0.029
35.00	-21.48	-1.22	0.00	-107.78	0.00	107.78	4,710.62	2,355.31	8,961.79	4,487.55	0.19	-0.05	0.029
40.00	-20.40	-1.18	0.00	-101.67	0.00	101.67	4,612.30	2,306.15	8,523.97	4,268.32	0.25	-0.06	0.028
45.00	-20.03	-1.17	0.00	-95.77	0.00	95.77	4,511.93	2,255.96	8,093.18	4,052.61	0.33	-0.07	0.028
46.71	-18.84	-1.12	0.00	-93.78	0.00	93.78	4,466.81	2,233.41	7,929.36	3,970.57	0.35	-0.07	0.028
50.00	-17.85	-1.08	0.00	-90.09	0.00	90.09	4,377.60	2,188.80	7,614.23	3,812.78	0.40	-0.08	0.028
52.79	-17.44	-1.06	0.00	-87.08	0.00	87.08	4,322.02	2,160.01	7,466.65	3,714.03	0.45	-0.09	0.032
55.00	-16.54	-1.03	0.00	-84.73	0.00	84.73	4,272.86	2,139.43	7,323.85	3,610.03	0.49	-0.09	0.032
60.00	-15.67	-1.00	0.00	-79.57	0.00	79.57	4,229.84	2,120.92	7,186.24	3,514.48	0.59	-0.10	0.032
65.00	-14.81	-0.98	0.00	-74.56	0.00	74.56	4,187.77	2,103.39	7,053.16	3,417.69	0.71	-0.11	0.031
70.00	-13.98	-0.96	0.00	-69.66	0.00	69.66	4,146.66	2,086.83	6,923.92	3,324.84	0.83	-0.12	0.031
75.00	-13.17	-0.96	0.00	-64.83	0.00	64.83	4,106.59	2,071.79	6,797.42	3,236.34	0.96	-0.13	0.031
80.00	-12.39	-0.96	0.00	-60.04	0.00	60.04	4,067.49	2,057.75	6,673.82	3,152.78	1.11	-0.15	0.030
85.00	-11.63	-0.97	0.00	-55.23	0.00	55.23	4,029.40	2,044.70	6,552.83	3,074.54	1.27	-0.16	0.030
90.00	-10.89	-0.99	0.00	-50.37	0.00	50.37	4,000.30	2,032.65	6,434.88	3,001.62	1.44	-0.17	0.030
94.95	-10.88	-0.99	0.00	-45.46	0.00	45.46	3,977.28	2,021.14	6,321.55	2,933.43	1.63	-0.18	0.029
95.00	-9.90	-1.01	0.00	-45.42	0.00	45.42	3,959.20	2,010.60	6,213.75	2,869.03	1.63	-0.18	0.029
99.54	-9.85	-1.02	0.00	-40.82	0.00	40.82	3,946.73	2,000.87	6,110.26	2,810.74	1.81	-0.20	0.043
100.00	-9.32	-1.03	0.00	-40.35	0.00	40.35	3,939.20	1,991.60	6,011.91	2,758.56	1.83	-0.20	0.043
105.00	-8.81	-1.04	0.00	-35.20	0.00	35.20	3,936.18	1,982.59	5,917.65	2,711.81	2.05	-0.22	0.040
110.00	-8.31	-1.04	0.00	-30.00	0.00	30.00	3,937.11	1,973.56	5,827.46	2,670.61	2.28	-0.23	0.038
115.00	-5.78	-1.01	0.00	-24.80	0.00	24.80	3,942.00	1,964.50	5,740.69	2,634.11	2.54	-0.25	0.033
120.00	-5.32	-0.99	0.00	-19.76	0.00	19.76	3,946.85	1,955.43	5,657.43	2,602.50	2.81	-0.27	0.029
125.00	-5.31	-0.99	0.00	-14.83	0.00	14.83	3,951.26	1,946.63	5,577.43	2,575.26	3.10	-0.28	0.025
125.17	-5.07	-0.97	0.00	-14.66	0.00	14.66	3,955.68	1,937.34	5,500.29	2,552.69	3.11	-0.28	0.024
127.00	-4.78	-0.94	0.00	-12.89	0.00	12.89	3,960.30	1,927.15	5,426.43	2,530.72	3.22	-0.29	0.022
128.83	-4.70	-0.94	0.00	-11.15	0.00	11.15	3,965.56	1,916.78	5,355.27	2,510.84	3.33	-0.29	0.028
130.00	-3.71	-0.83	0.00	-10.06	0.00	10.06	3,971.13	1,905.57	5,287.83	2,492.60	3.40	-0.30	0.026
135.00	-2.41	-0.62	0.00	-5.93	0.00	5.93	3,976.74	1,893.87	5,223.48	2,475.37	3.72	-0.31	0.017
140.00	-2.14	-0.56	0.00	-2.81	0.00	2.81	3,982.31	1,881.15	5,162.47	2,459.30	4.04	-0.32	0.010
145.00	0.00	0.00	0.00	0.00	0.00	0.00	3,987.83	1,867.42	5,104.13	2,444.57	4.38	-0.32	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	3,993.65	1,852.83	5,049.80	2,431.35	4.64	-0.32	0.000

Site Number: 370641

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls CT, CT

Engineering Number: 13000423\_C3\_02

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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	18.57	0.00	43.43	0.00	0.00	1883.11	99.54	0.35
0.9D + 1.6W	18.56	0.00	32.57	0.00	0.00	1868.44	99.54	0.34
1.2D + 1.0Di + 1.0Wi	5.46	0.00	68.85	0.00	0.00	546.41	99.54	0.11
(1.2 + 0.2Sds) * DL + E ELFM	1.31	0.00	43.07	0.00	0.00	146.67	99.54	0.03
(1.2 + 0.2Sds) * DL + E EMAM	1.48	0.00	43.07	0.00	0.00	157.57	99.54	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.31	0.00	29.80	0.00	0.00	145.31	99.54	0.03
(0.9 - 0.2Sds) * DL + E EMAM	1.48	0.00	29.80	0.00	0.00	155.99	99.54	0.04
1.0D + 1.0W	3.97	0.00	36.21	0.00	0.00	400.83	99.54	0.08

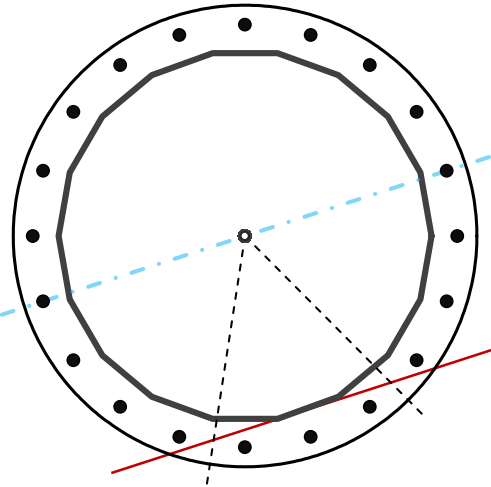
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	56	in
Thickness	0.4375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	1883.1	k-ft
Axial, Pu	43.4	k
Shear, Vu	18.6	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	17%	Pass
Anchor Rods	29%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	71	in
Thickness	2 1/2	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	471.1	k
Bending Stress, $\phi Mn$	2772.4	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	65	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.2	in
Orientation Offset	0	°
Applied Force, Pu	74.3	k
Anchor Rods, $\phi Pn$	259.8	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	18.6	1883.1	1.00
Anchor Rod Forces	18.6	1883.1	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	75.9806	4.2211	0.2704		29325.69
Bolt	3.9761	3.2477	0.8393	4.5	31859.49
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	71	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	43.646	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	65	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	74.3	k
Applied Shear, Vu	0.5	k
Compressive Capacity, $\phi P_n$	259.8	k
Tensile Capacity, $\phi R_n$	0.286	OK
Interaction Capacity	0.289	OK

External Base Plate		
Chord Length AA	37.312	in
Additional AA	5.000	in
Section Modulus, Z	66.113	in <sup>3</sup>
Applied Moment, Mu	471.1	k-ft
Bending Capacity, $\phi M_n$	3570.1	k-ft
Capacity, Mu/ $\phi M_n$	0.132	OK
Chord Length AB	35.970	in
Additional AB	5.000	in
Section Modulus, Z	64.015	in <sup>3</sup>
Applied Moment, Mu	377.4	k-ft
Bending Capacity, $\phi M_n$	3456.8	k-ft
Capacity, Mu/ $\phi M_n$	0.109	OK
Bend Line Length	32.859	in
Additional Bend Line	0.000	in
Section Modulus, Z	51.342	in <sup>3</sup>
Applied Moment, Mu	471.1	k-ft
Bending Capacity, $\phi M_n$	2772.4	k-ft
Capacity, Mu/ $\phi M_n$	0.170	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		



**AMERICAN TOWER®**  
CORPORATION

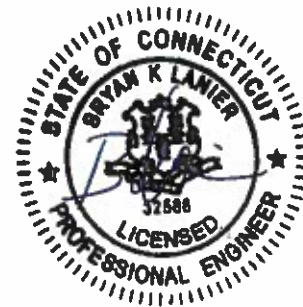
---

## Antenna Mount Analysis Report

ATC Site Name : Beacon Falls CT  
ATC Site Number : 370641  
Engineering Number : 13000423\_C8\_04  
Mount Elevation : 113 ft  
Carrier : Verizon Wireless  
Carrier Site Name : BEACON FALLS 2 CT - Town Monopole  
Carrier Site Number : 470974  
Site Location : 401-411 Lopus Road  
Beacon Falls, CT 06403-0000  
41.43283333 , -73.07022222  
County : New Haven  
Date : December 20, 2019  
Max Usage : 55%  
Result : Pass

Prepared By:  
Steven McGinnis  
Structural Engineer II

Reviewed By:



Authorized by "EOR"  
23 Dec 2019 11:50:53

COA: PEC.0001553



**Table of Contents**

Introduction ..... 1

Analysis ..... 1

Conclusion ..... 1

Antenna Loading..... 2

Mount Layout ..... 2

Equipment Layout ..... 3

Standard Conditions..... 6

Calculations ..... Attached





## Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for Verizon Wireless at 113 ft.

## Analysis

<b>Basic Wind Speed:</b>	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Codes:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.193$ , $S_1 = 0.064$
<b>Site Class:</b>	D - Stiff Soil
<b>Live Loads:</b>	$L_m = 500$ lbs, $L_v = 250$ lbs

## Conclusion

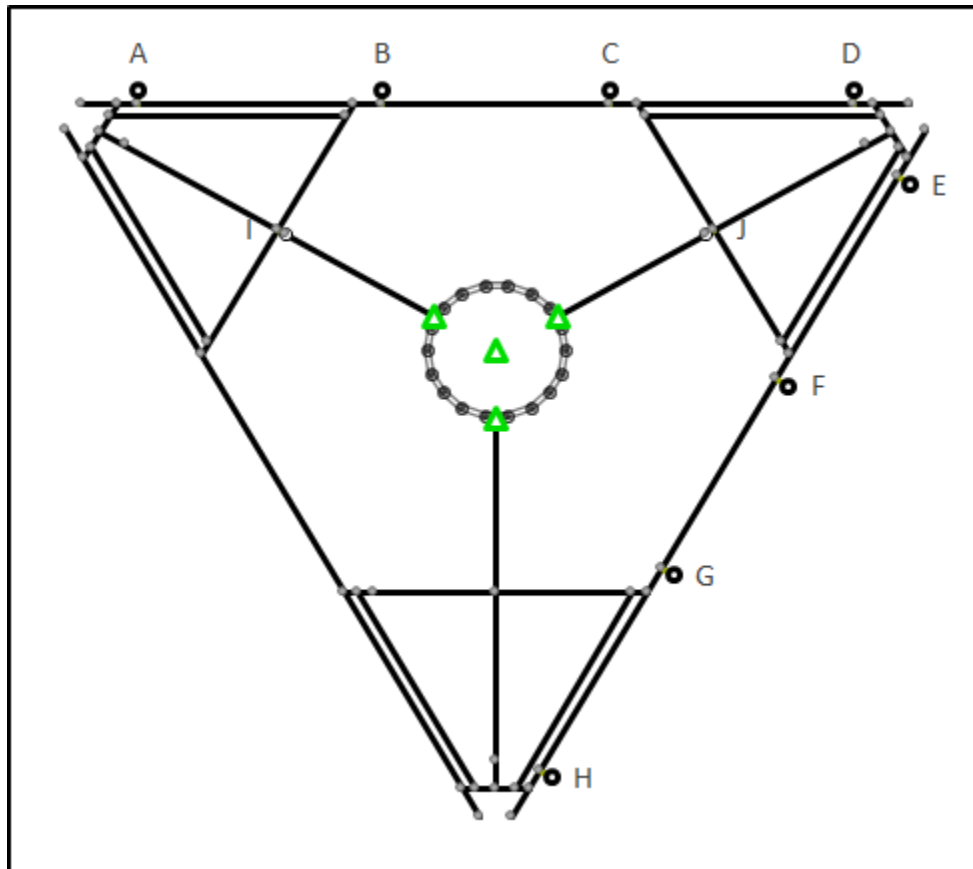
Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

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

**Application Loading**

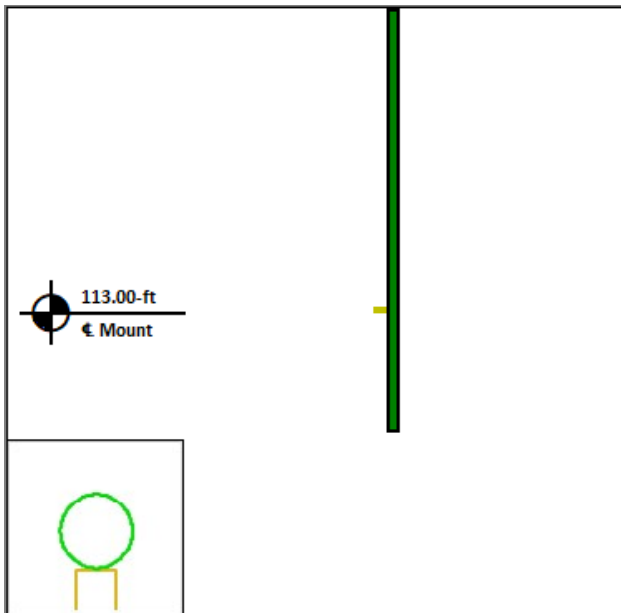
Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
113.0	115.0	4	JMA Wireless MX06FRO660-02
		1	RFS DB-B1-6C-12AB-0Z
		2	Samsung B5/B13 RRH-BR04C
		2	Samsung B2/B66A RRH-BR049

**Mount Layout**

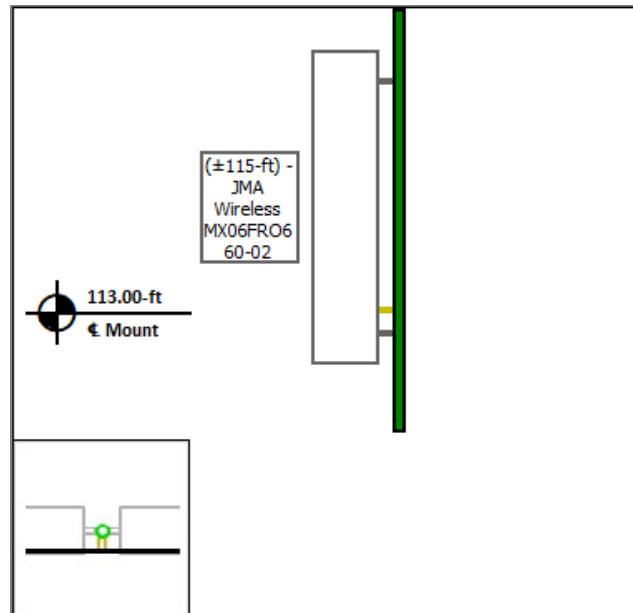


**Equipment Layout**

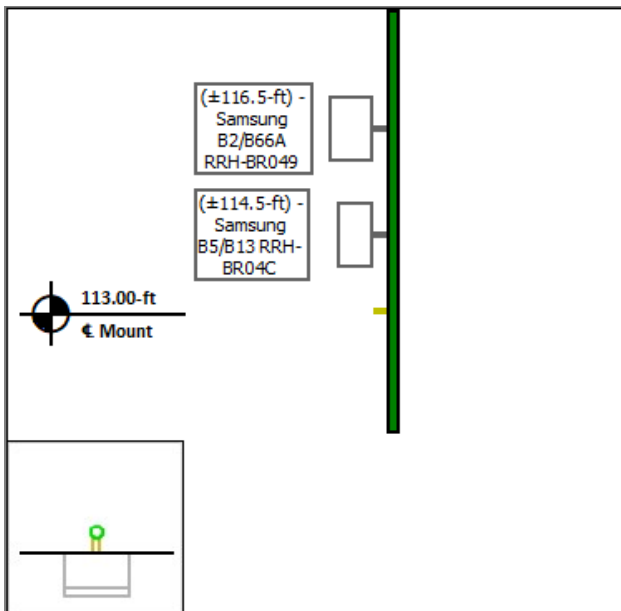
**Mount Pipe A**



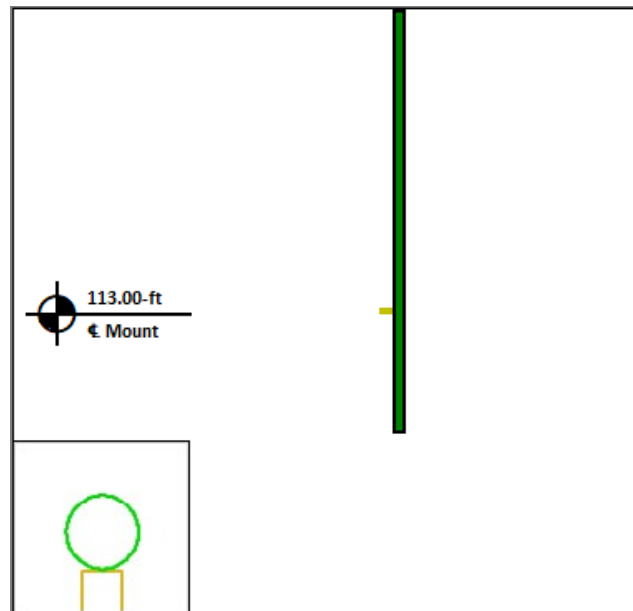
**Mount Pipe B**



**Mount Pipe C**

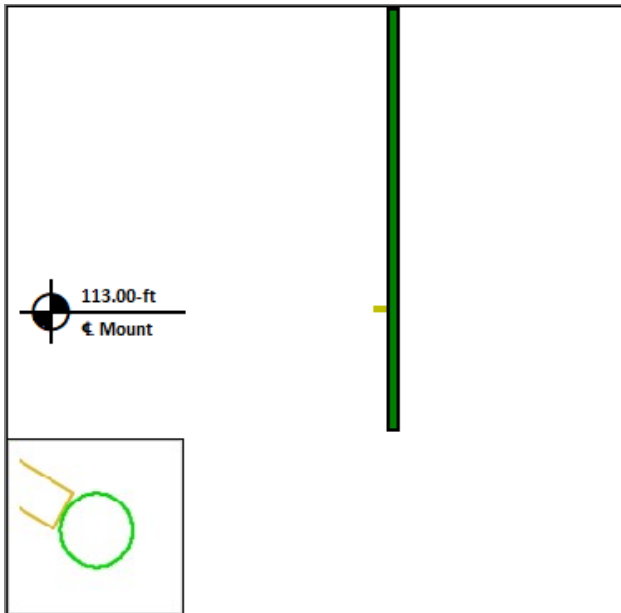


**Mount Pipe D**

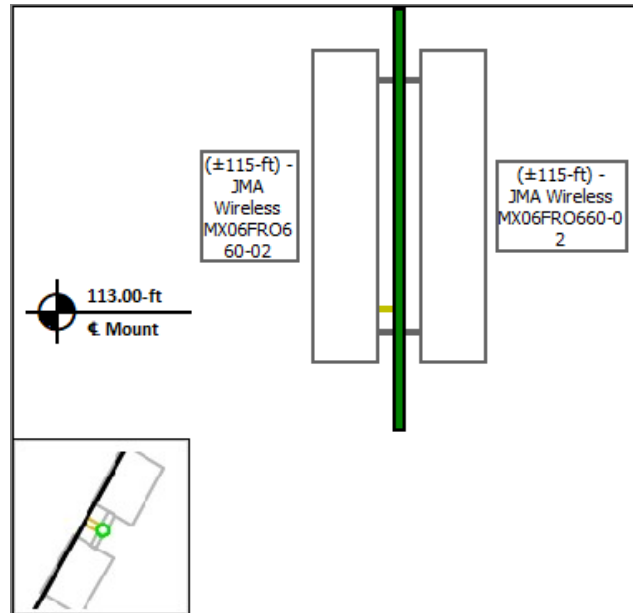


**Equipment Layout Cont'd.**

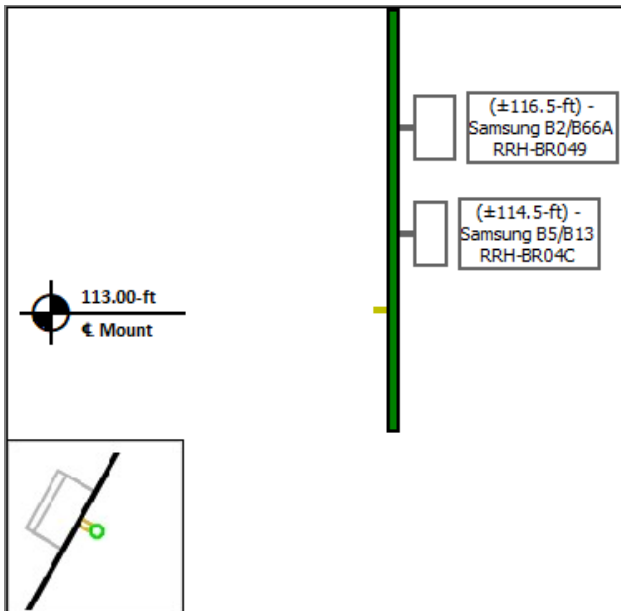
**Mount Pipe E**



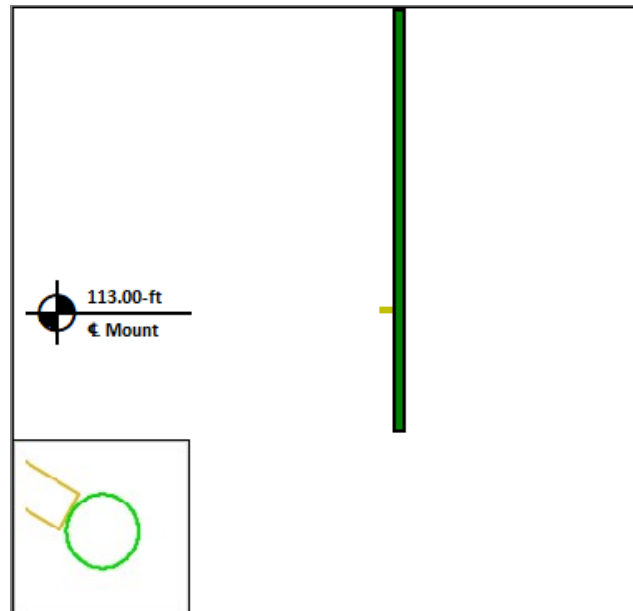
**Mount Pipe F**



**Mount Pipe G**

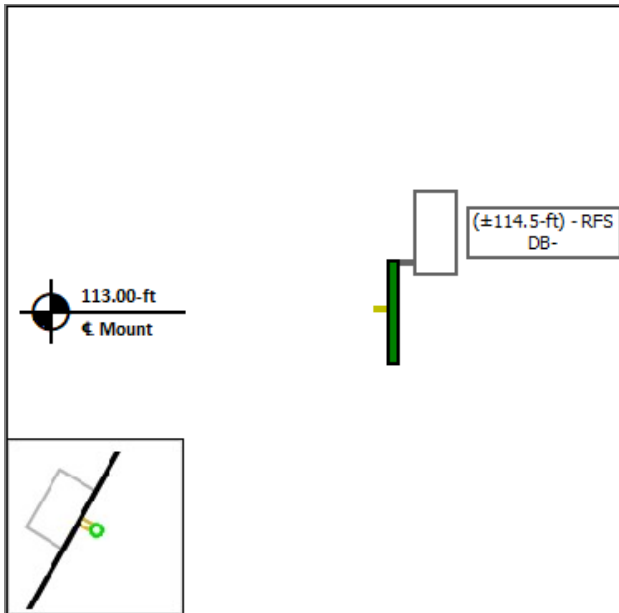


**Mount Pipe H**

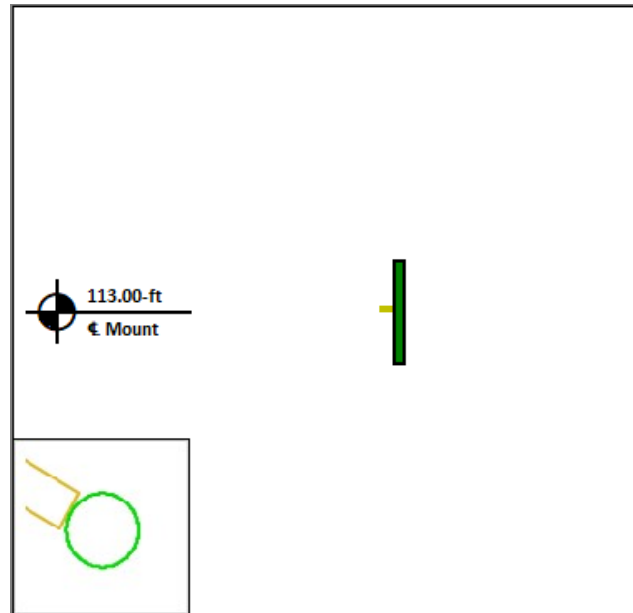


**Equipment Layout Cont'd.**

**Mount Pipe I**



**Mount Pipe J**





### **Standard Conditions**

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

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

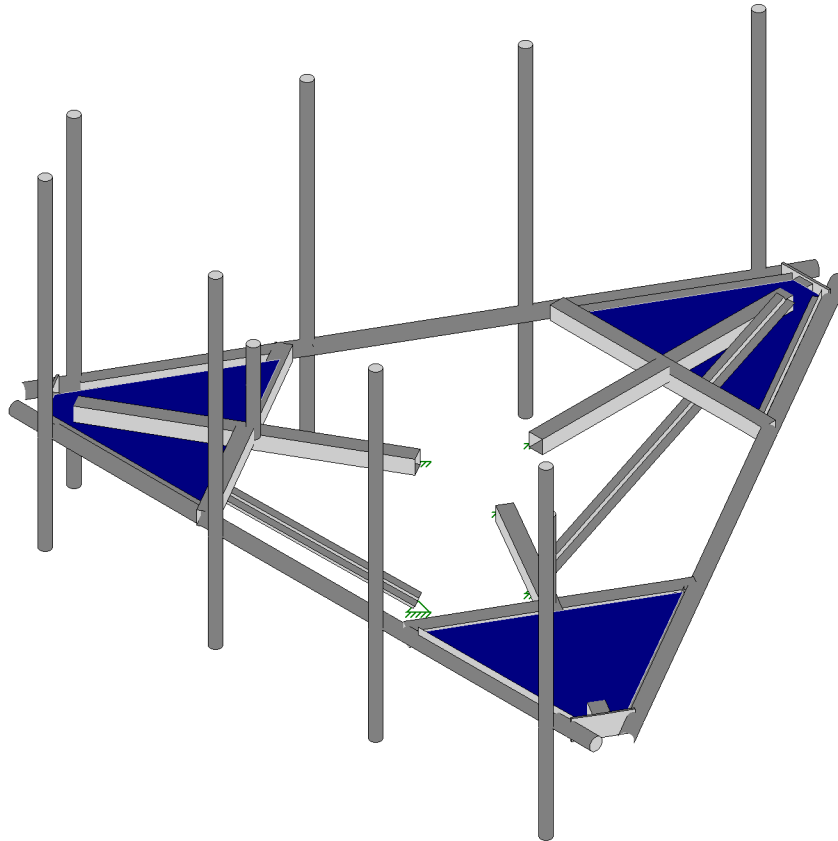
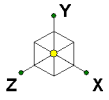
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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

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



American Tower Corp.

Steven.McGinnis

13000423\_C8\_04

370641, Beacon Falls CT

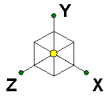
3D Rendering

SK - 1

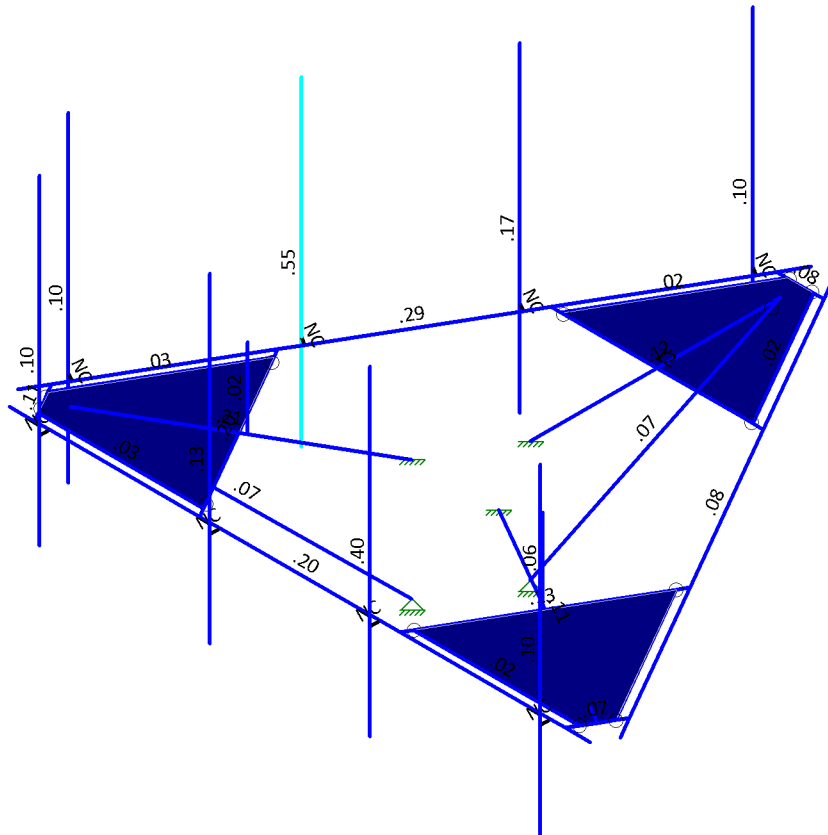
Dec 20, 2019 at 8:33 PM

R3D. VERIZON WIRELESS @ 370...





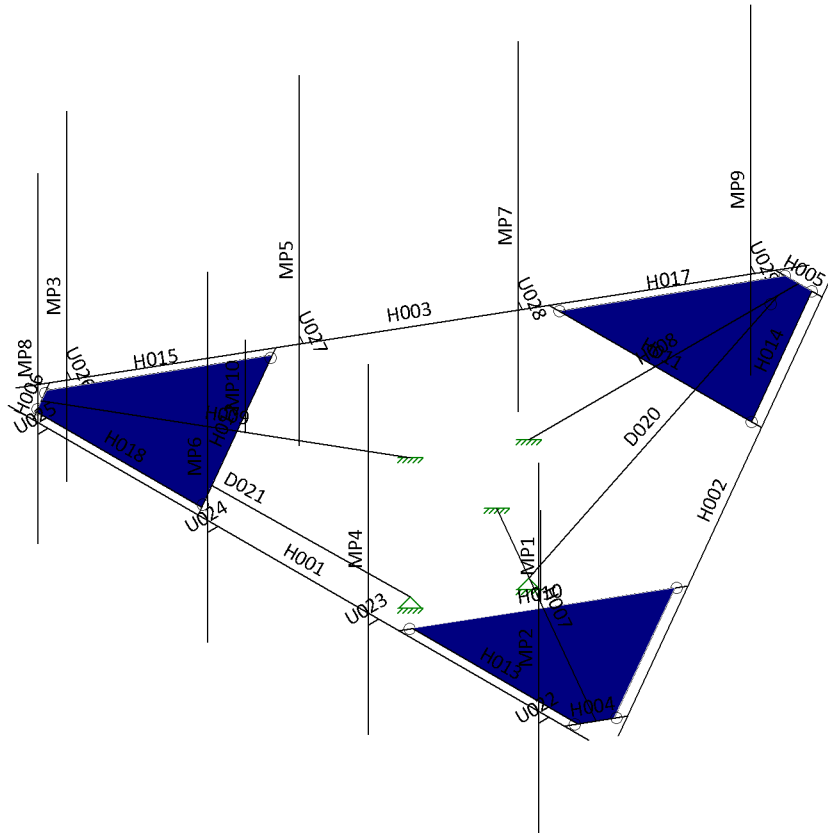
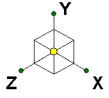
Code Check ( Env )	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)  
Results for LC 1, 1.4D

American Tower Corp.	370641, Beacon Falls CT Unity Bending Checks	SK - 2
Steven.McGinnis		Dec 20, 2019 at 8:40 PM
13000423_C8_04		R3D. VERIZON WIRELESS @ 370...





American Tower Corp.

Steven.McGinnis

13000423\_C8\_04

370641, Beacon Falls CT

Member Labels

SK - 4

Dec 20, 2019 at 8:41 PM

R3D. VERIZON WIRELESS @ 370...

















Site Name: Beacon Falls 2 CT

Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	(%)
VZW 700	746	4	638	2551.84	115	0.0694	0.497333333	13.95%
VZW Cellular	880	4	312	1249.84	115	0.0340	0.586666667	5.79%
VZW PCS	1970	4	1462	5846	115	0.1590	1.0	15.90%
VZW AWS	2145	4	1566	6264.08	115	0.1703	1.0	17.03%

**Total Percentage of Maximum Permissible Exposure** 52.68%

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

MHz = Megahertz

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

ERP = Effective Radiated Power

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

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



# Town of Beacon Falls

Geographic Information System (GIS)



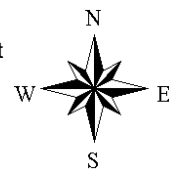
Date Printed: 1/8/2020



### **MAP DISCLAIMER - NOTICE OF LIABILITY**

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Beacon Falls and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 150 feet



# Town of Beacon Falls

Geographic Information System (GIS)



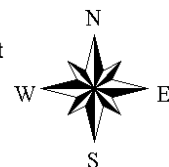
Date Printed: 1/8/2020



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Approximate Scale: 1 inch = 150 feet



BEACON FALLS TOWN OF  
 10 MAPLE AVE  
 BEACON FALLS, CT 06403  
 Census: 3411

Neighborhood Number  
 300

Neighborhood Name  
 General Industrial

TAXING DISTRICT INFORMATION

Jurisdiction Name BEACON FALLS  
 Area 006  
 Routing Number 003-001-0016

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Type	Deed Book/Page
NA	0	02/13/1975		37 413

Site Description

Topography  
 Level

Public Utilities  
 Electric

Street or Road  
 Paved

Neighborhood

Zoning:  
 IPD

Legal Acres:  
 3.0600

Valuation Record

Assessment Year	2006	2011	2014	2016				
Reason for Change	2006 Reval	2011 Reval		2016 Reval				
2016 Market	L 229500	I 206550	I 206550	I 189720				
	I 328280	I 571150	I 321150	I 334780				
	T 557780	T 777700	T 527700	T 524500				
70% Assessed	L 160650	L 144590	L 144590	L 132800				
	I 229800	I 399810	I 224810	I 234350				
	T 390450	T 544400	T 369400	T 367150				



Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor
Primary Industrial Land		3.0600		

Physical Characteristics

ROOFING

Metal

WALLS

	B	1	2	U
Frame		Yes		
Guard		Yes	Yes	Yes

FRAMING

	B	1	2	U
--	---	---	---	---

FINISH

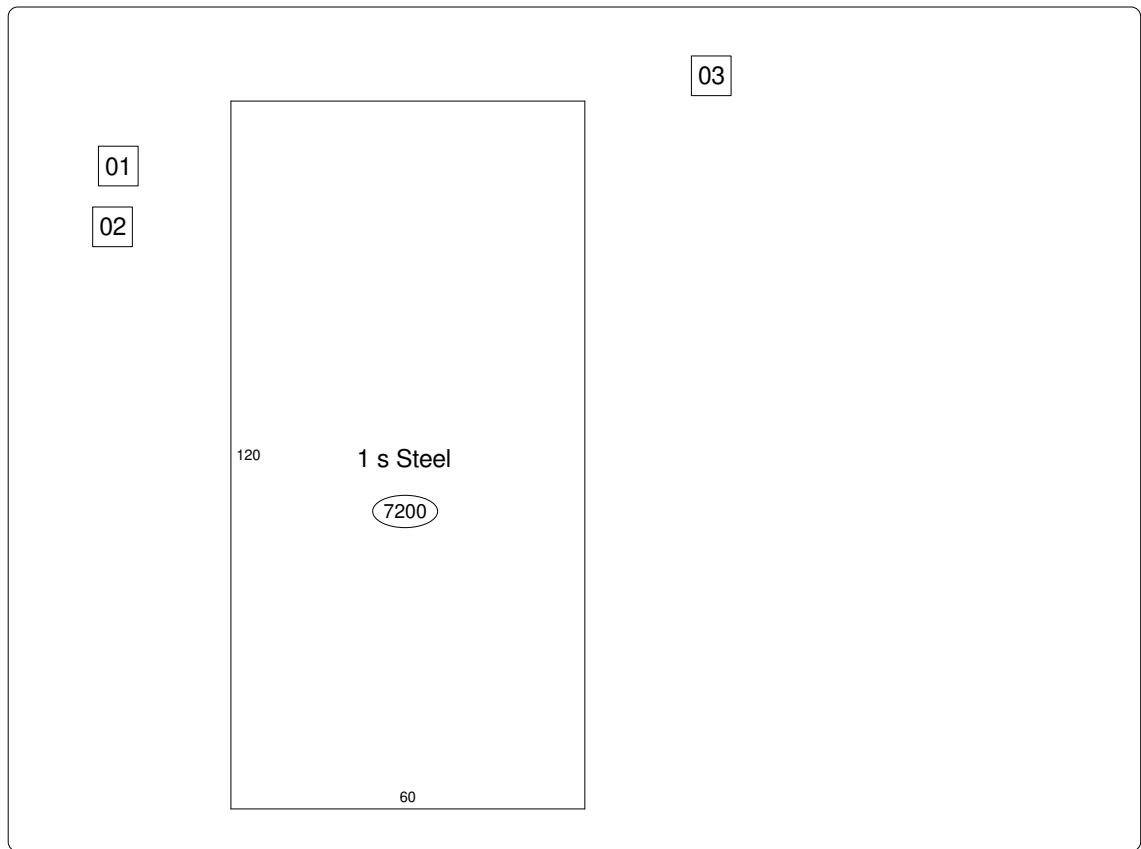
	UF	SF	FO	FD
1	7200	0	0	0
Total	7200	0	0	0

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	0	7200	0	0

PLUMBING Residential Commercial

	#	TF	#	TF
Full Baths				
Half Baths				
Extra Fixtures				4
TOTAL	0			4



Special Features

Description

Summary of Improvements

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
C	MUNIGAR	0.00		Fair	1979	1999	AV	7200
01	PAVING	0.00	85	AVG	1979	1979	AV	4300
02	FENCECL	5.00	51C	AVG	1979	1979	AV	80
03	POLEBLDG	1.00		EXE	1990	1990	AV	1000



GLOBAL TOWER PROPERTIES, LLC  
 750 PARK OF COMMERCE BLVD SUITE 300  
 BOCA RATON, FL 33487

Neighborhood Number  
 300

Neighborhood Name  
 General Industrial

TAXING DISTRICT INFORMATION

Jurisdiction Name BEACON FALLS  
 Area 006  
 Routing Number 003-001-0016

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Type	Deed Book/Page
BEACON FALLS TOWN OF	0	10/05/2012	.	.

Site Description

Topography  
 Level

Public Utilities  
 Electric

Street or Road  
 Paved

Neighborhood  
 Static

Zoning:  
 IPD

Legal Acres:  
 0.0000

Valuation Record

Assessment Year	2012	2016						
Reason for Change	Use Chg	2016 Reval						
2016 Market	L 0	0						
	I 250000	275000						
	T 250000	275000						
70% Assessed	L 0	0						
	I 175000	192500						
	T 175000	192500						

Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Physical Characteristics

01

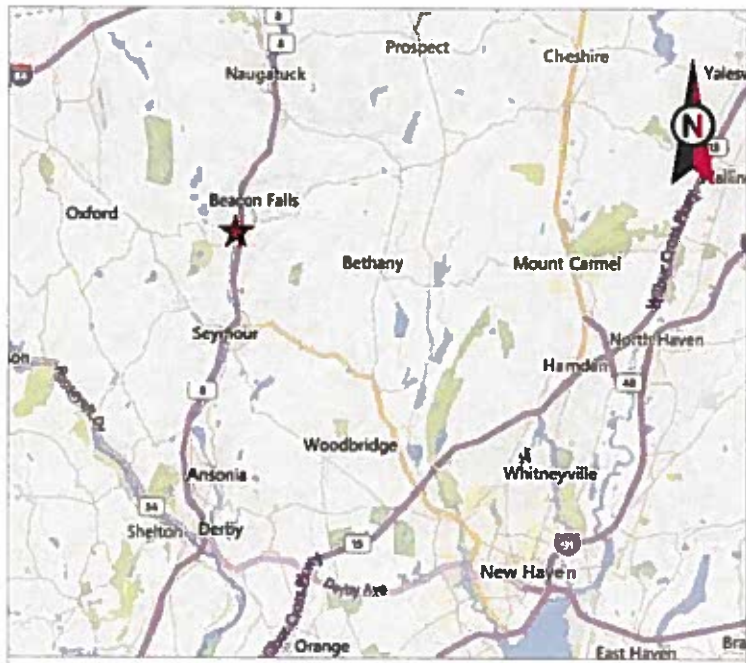
Special Features	
Description	

Summary of Improvements								
ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
01	TOWERMON	0.00		AVG	2011	2011	AV	160



**AMERICAN TOWER®**

ATC SITE NAME: BEACON FALLS CT  
 ATC SITE NUMBER: 370641  
 VERIZON SITE NAME: BEACON FALLS 2 CT - TOWN MONOPOLE  
 VERIZON SITE NUMBER: 470974  
 SITE ADDRESS: 401-411 LOPUS ROAD  
 BEACON FALLS, CT 06403  
 VERIZON WIRELESS  
 ANTENNA AMENDMENT DRAWINGS



VICINITY MAP



LOCATION MAP

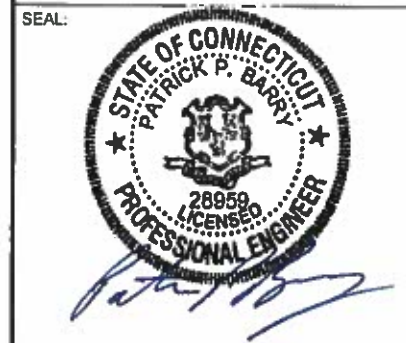
**BIRD WATCH SITE:**  
 PLEASE CONTACT BIRD WATCH@AMERICANTOWER.COM OR AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE

**AMERICAN TOWER®**  
 A.T. ENGINEERING SERVICE, PLLC  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AR	01/29/20

ATC SITE NUMBER:  
**370641**  
 ATC SITE NAME:  
**BEACON FALLS CT**  
 SITE ADDRESS:  
 401-411 LOPUS ROAD  
 BEACON FALLS, CT 06403



Authorized by "EOR"  
 Jan **Verizon** design

DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	12/02/19
ATC JOB NO:	13000423
CUSTOMER ID:	BEACON FALLS 2 CT - TOWN MONOPOLE
CUSTOMER #:	470974

COVER SHEET

SHEET NUMBER:	REVISION:
<b>G-001</b>	<b>0</b>

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX					
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 401-411 LOPUS ROAD BEACON FALLS, CT 06403 COUNTY: NEW HAVEN  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.43283333 LONGITUDE: -73.07022222 GROUND ELEVATION: 159' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:  REMOVE (8) PANELS AND (4) RRU's  INSTALL (4) NEW PANELS AND (4) RRU's  EXISTING (2) 1-5/8" HYBRID CABLES AND (1) OVP TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:	
	<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> TOWN OF BEACON FALLS 10 MAPLE AVE BEACON FALLS, CT 06403  <u>APPLICANT:</u> VERIZON WIRELESS 20 ALEXANDER DRIVE, 2ND FLOOR WALLINGFORD, CT 06492	<u>PROJECT NOTES</u>  1. THE FACILITY IS UNMANNED.  2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.  3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.  4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.  5. HANDICAP ACCESS IS NOT REQUIRED.	G-001 COVER SHEET G-002 GENERAL NOTES C-101 DETAILED SITE PLAN C-102 TOWER ELEVATION C-501 RF SCHEDULE AND ANTENNA INSTALLATION C-502 CONSTRUCTION DETAILS R-601 SUPPLEMENTAL					
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> TOWN OF BEACON FALLS 10 MAPLE AVE BEACON FALLS, CT 06403  <u>APPLICANT:</u> VERIZON WIRELESS 20 ALEXANDER DRIVE, 2ND FLOOR WALLINGFORD, CT 06492	<u>PROJECT LOCATION DIRECTIONS</u>  FROM HAMDEN CT TAKE WILBUR CROSS PARKWAY CT-15 SOUTH TOWARD NEW YORK CITY. TAKE EXIT 59 CT-69 WOODBRIDGE / NEW HAVEN. TURN LEFT ONTO CT-69. TURN LEFT ON LUCY ST; TURN RIGHT ON CT-63 AMITY ROAD; TURN LEFT ON SEYMOUR ROAD CT-67; MERGE ONTO CT-8 NORTH TOWARD WATERBURY; TAKE EXIT 23 CT-42 TO BEACON FALLS / OXFORD; TURN RIGHT ONTO SOUTH MAIN ST CT-42. TURN LEFT ON DEPOT ST; TURN RIGHT ON LOPUS ROAD. SITE IS ON THE LEFT						



Know what's below.  
 Call before you dig.



**GENERAL CONSTRUCTION NOTES:**

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/AIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY VERIZON WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING BARRIERS, ETC.

27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON WIRELESS REP. ANY WORK FOUND BY THE VERIZON WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

**STRUCTURAL STEEL NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
  - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
  - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE
  - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
  - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
  - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
  - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
  - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
  - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
  - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
  - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
  - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
  - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AR	01/29/20

ATC SITE NUMBER:  
**370641**

ATC SITE NAME:  
**BEACON FALLS CT**

SITE ADDRESS:  
 401-411 LOPUS ROAD  
 BEACON FALLS, CT 06403

SEAL:



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DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	12/02/19
ATC JOB NO:	13000423
CUSTOMER ID:	BEACON FALLS 2 CT - TOWN MONOPOLY
CUSTOMER #:	470974

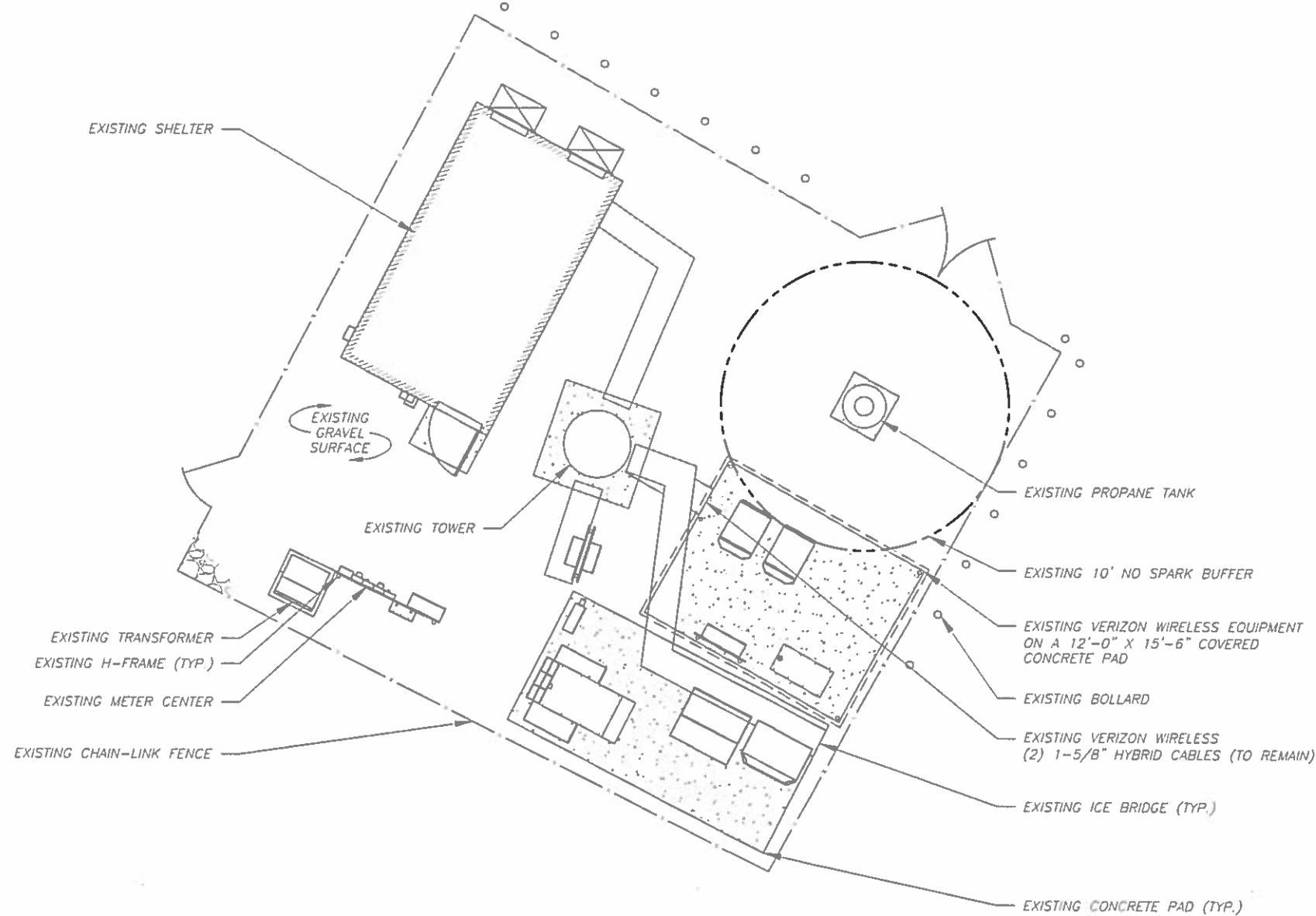
**GENERAL NOTES**

SHEET NUMBER:	REVISION:
<b>G-001</b>	<b>0</b>

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**SITE PLAN NOTES:**

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, CABLE SUPPORTS, AND CABLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE INSTALLING NEW CABLE SUPPORT STRUCTURES, COAX PORTS, OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.



**1 DETAILED SITE PLAN**

0 10' 20'

SCALE: 1"=10' (11X17)  
1"=5' (22X34)



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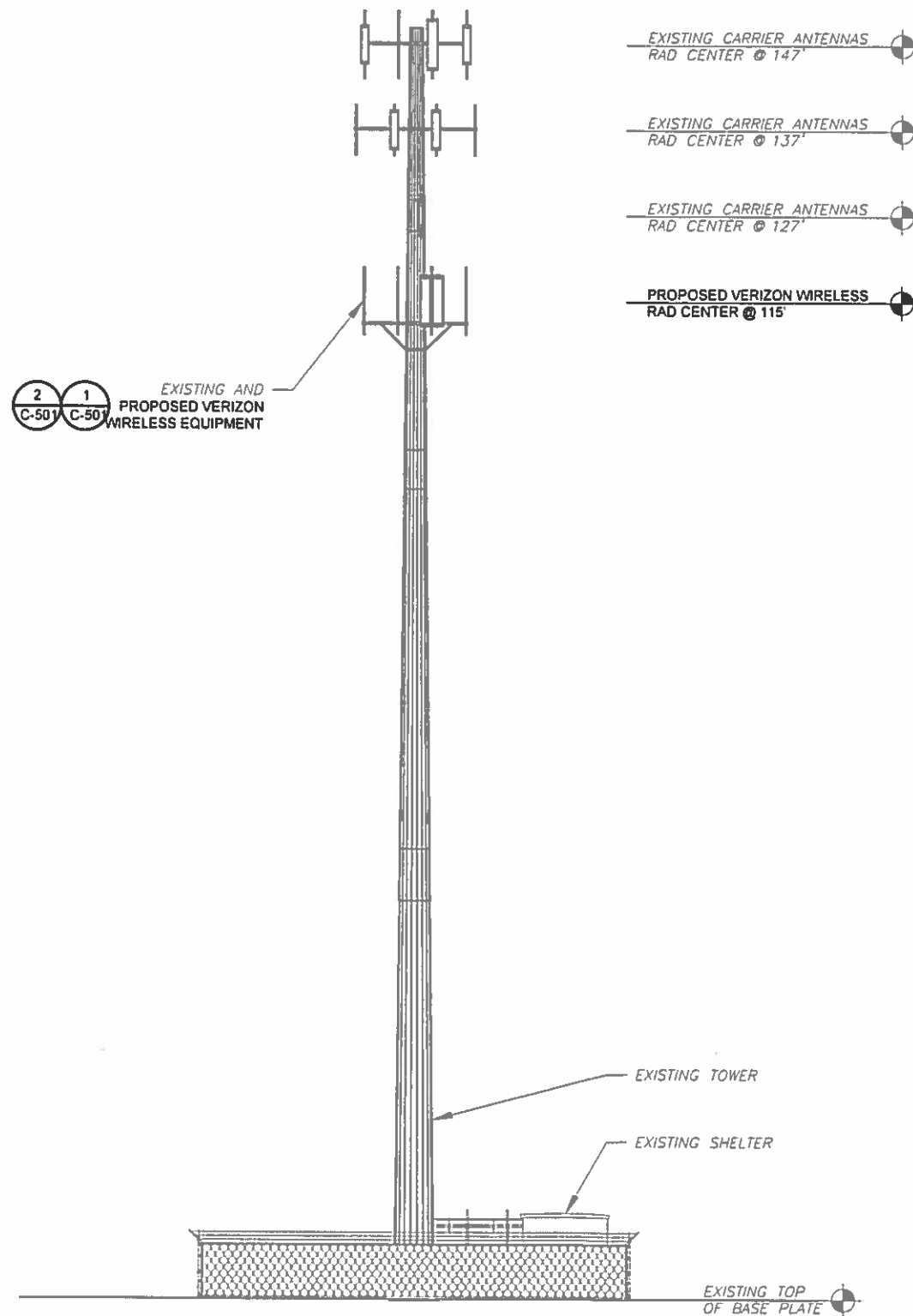
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DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	12/02/19
ATC JOB NO:	13000423
CUSTOMER ID:	BEACON FALLS 2 CT - TOWN MONOPOLY
CUSTOMER #:	470974

**DETAILED SITE PLAN**

SHEET NUMBER:	REVISION:
<b>G-001</b>	<b>0</b>

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 12/23/20, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



2 TOWER ELEVATION  
SCALE: NOT TO SCALE

**TOWER NOTE:**

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
3. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

**ANTENNA NOTES:**

1. ALL ANTENNAS TO BE FURNISHED WITH DOWNTILT BRACKETS. CONTRACTOR TO COORDINATE REQUIRED MECHANICAL DOWNTILT FOR EACH ANTENNA WITH VERIZON RF ENGINEER.
2. ANTENNA CENTERLINE HEIGHT IS ABOVE GROUND LEVEL (AGL).
3. CONTRACTOR SHALL VERIFY ANTENNA TYPE, AZIMUTH, DOWNTILT, AND ANTENNA NUMBER PER SECTOR WITH CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
4. ALL PERSONNEL WORKING ON THE TOWER MUST COMPLY WITH VERIZON'S RF EMISSIONS GUIDELINE POLICY.
5. CHECK WITH RF ENGINEER FOR LATEST ANTENNA TYPE AND AZIMUTH.
6. CONTRACTOR SHALL NOT INSTALL SHRINK WRAP UNTIL AFTER CABLES HAVE BEEN SWEEPED.
7. THE USE OF ALTERNATE GROUNDING MEANS (SUCH AS LYNCOLE XIT) SHALL COMPLY WITH O.C.E.I. CONSTRUCTION SPECIFICATIONS AND BUILDING PRACTICES.



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 BEACON FALLS, CT 06403

SEAL:



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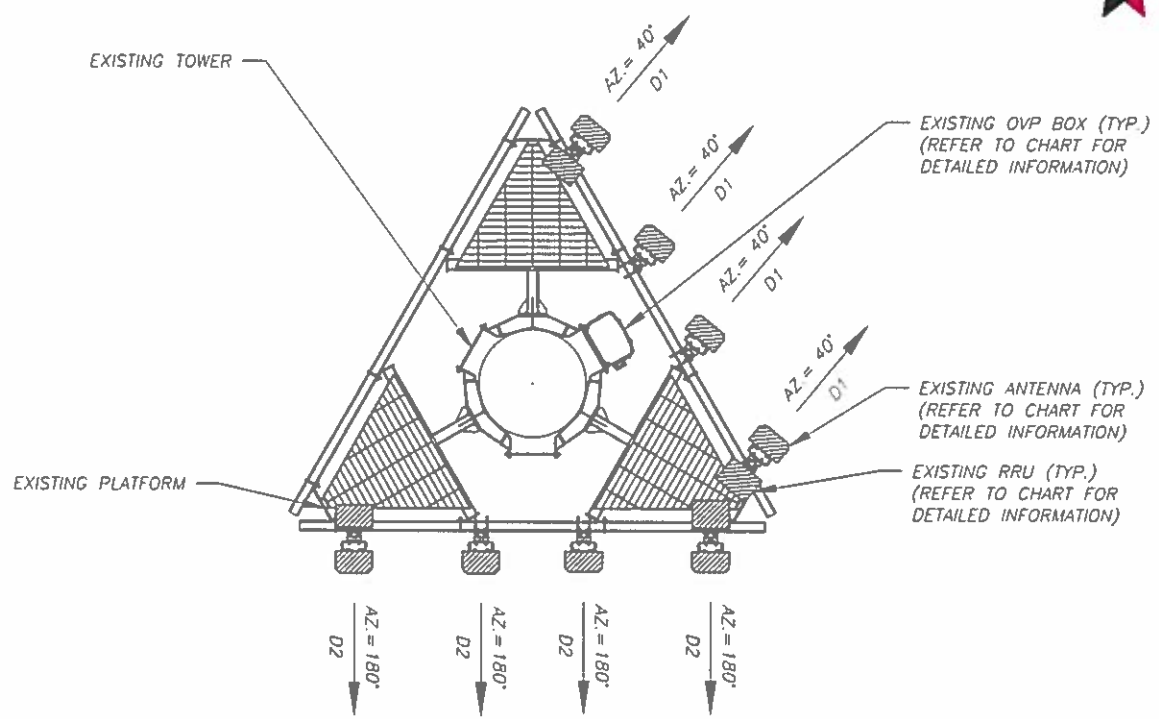
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CUSTOMER ID:	BEACON FALLS 2 CT - TOWN MONOPOLE
CUSTOMER #:	470974

**TOWER ELEVATION**

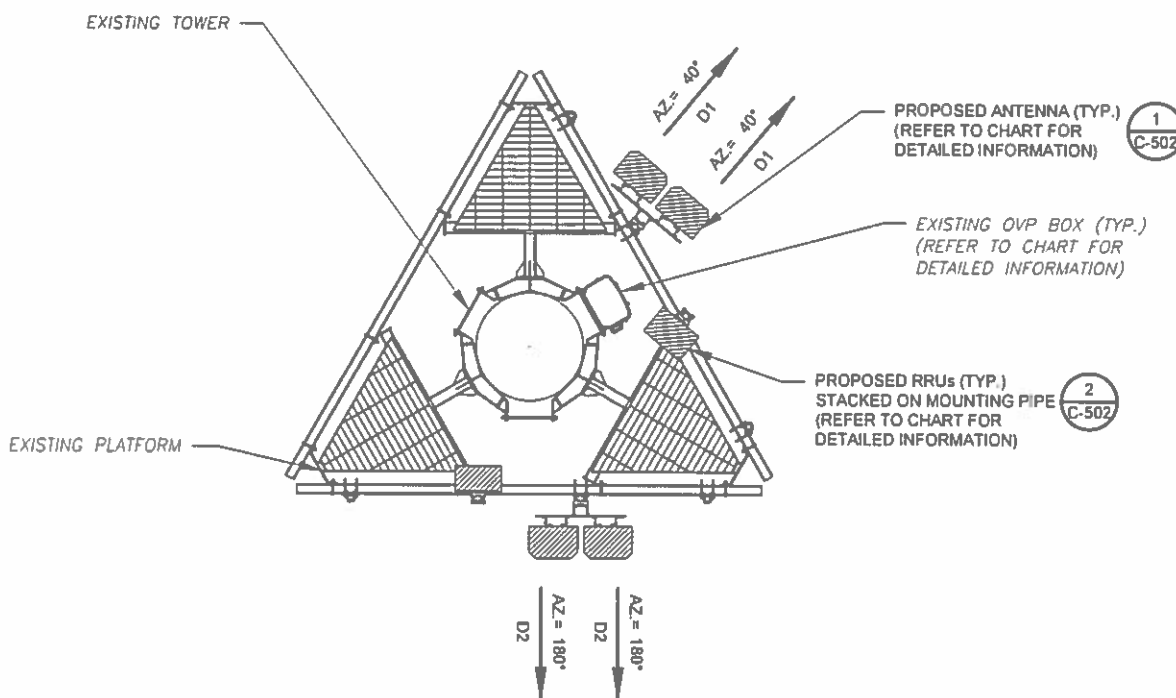
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PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 12/23/20, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



1 CURRENT ANTENNA PLAN



2 FINAL ANTENNA PLAN

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	115'	40°	A1	HBXX-6517DS-A2M	700 LTE	RMV	B66A RRH4X45-4R	RMV
			A2	HBXX-6517DS-A2M	700 LTE	RMV	-	-
			A3	LNx-6515DS-A1M	700 LTE	RMV	-	-
			A4	LNx-6515DS-A1M	700 LTE	RMV	RRH2X60 700	RMV
D2	115'	180°	B1	HBXX-6517DS-A2M	700 LTE	RMV	B66A RRH4X45-4R	RMV
			B2	HBXX-6517DS-A2M	700 LTE	RMV	-	-
			B3	LNx-6515DS-A1M	700 LTE	RMV	-	-
			B4	LNx-6515DS-A1M	700 LTE	RMV	RRH2X60 700	RMV

NOTES

1. BASED ON APPROVED ATC APPLICATION 13000423, DATED 11/25/2019. CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.)
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	115'	40°	A1	-	-	-	-	-
			A2	(2) MX06FRO660-02	700/850/1900 LTE	ADD	-	-
			A3	-	-	-	B2/B66A RRH-BR049 B5/B13 RRH-BR04C	ADD
			A4	-	-	-	-	-
D2	115'	180°	B1	-	-	-	-	-
			B2	(2) MX06FRO660-02	700/850/1900 LTE	ADD	-	-
			B3	-	-	-	B2/B66A RRH-BR049 B5/B13 RRH-BR04C	ADD
			B4	-	-	-	-	-

STATUS ABBREVIATIONS

RMV: TO BE REMOVED  
 RMN: TO REMAIN  
 REL: TO BE RELOCATED  
 DSC: TO BE DISCONNECTED & REMAIN  
 ADD: TO BE ADDED

3 EQUIPMENT SCHEDULES

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
(1) DB-B1-6C-12AB-02	RMN	-	(2) 1-5/8"	RMN

CABLE LENGTHS FOR JUMPERS  
 FIBER DISTRIBUTION/OVP TO RRU: 15'  
 RRU TO ANTENNA: 10'

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
(1) DB-B1-6C-12AB-02	RMN	-	(2) 1-5/8"	RMN

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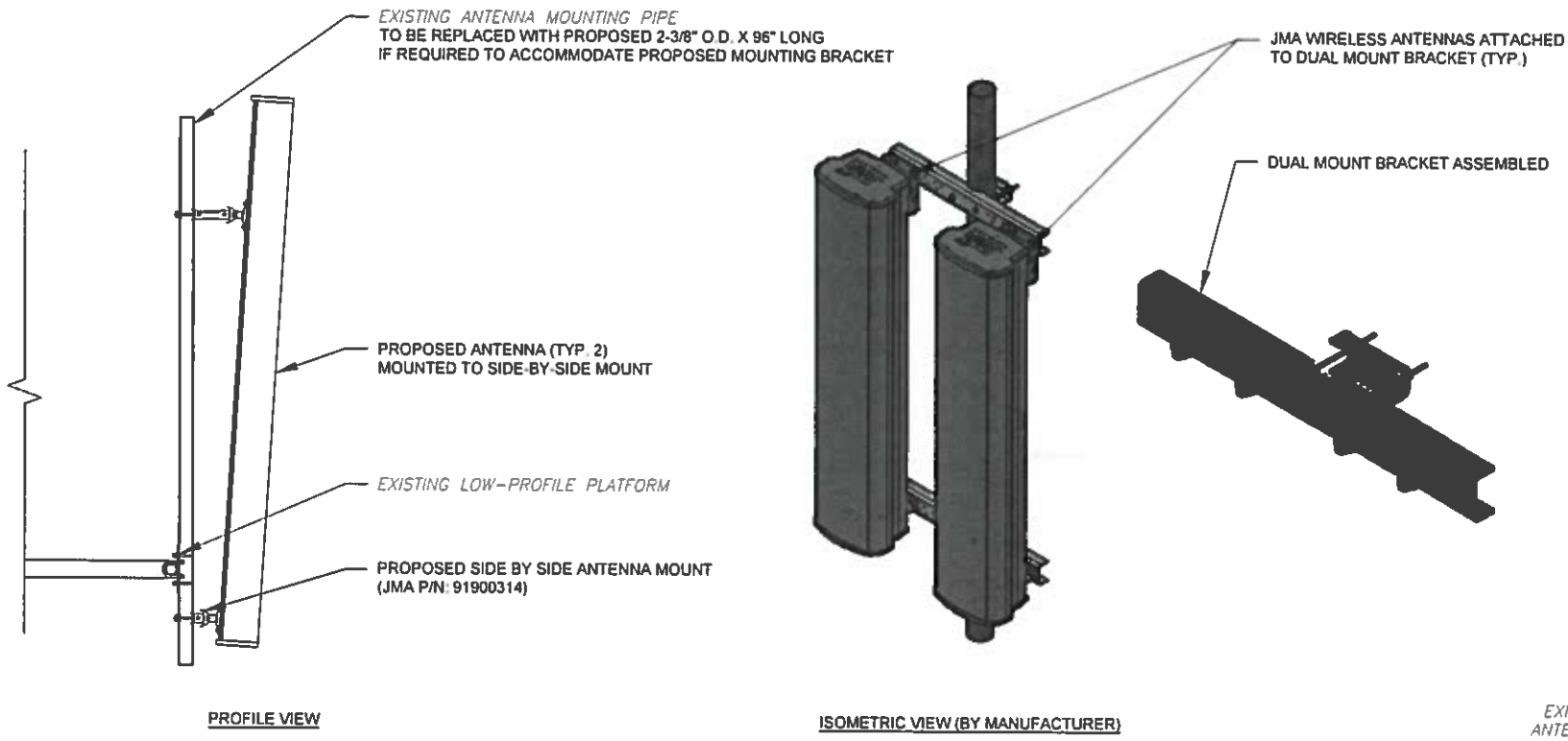
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DRAWN BY:	AR
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CUSTOMER #:	470974

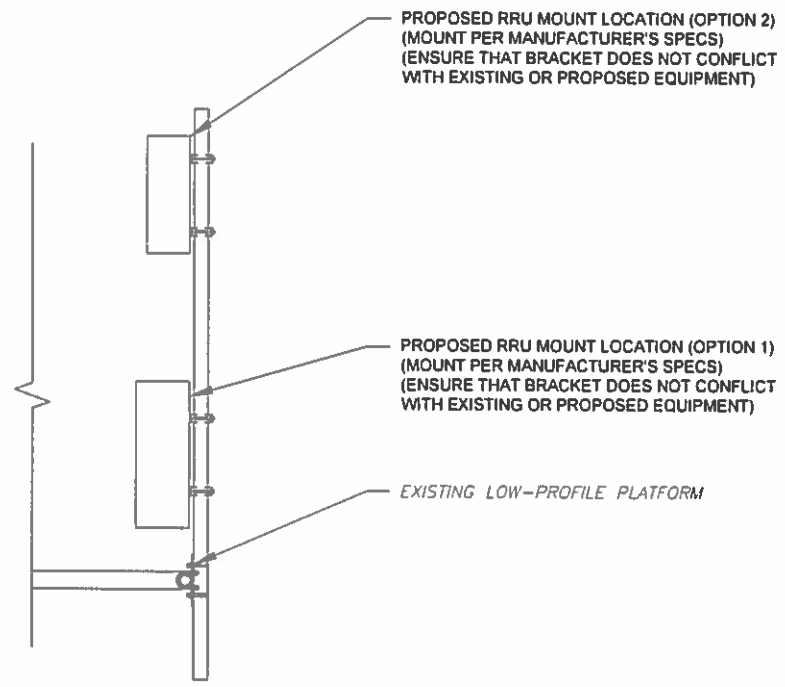
RF SCHEDULE AND ANTENNA INSTALLATION

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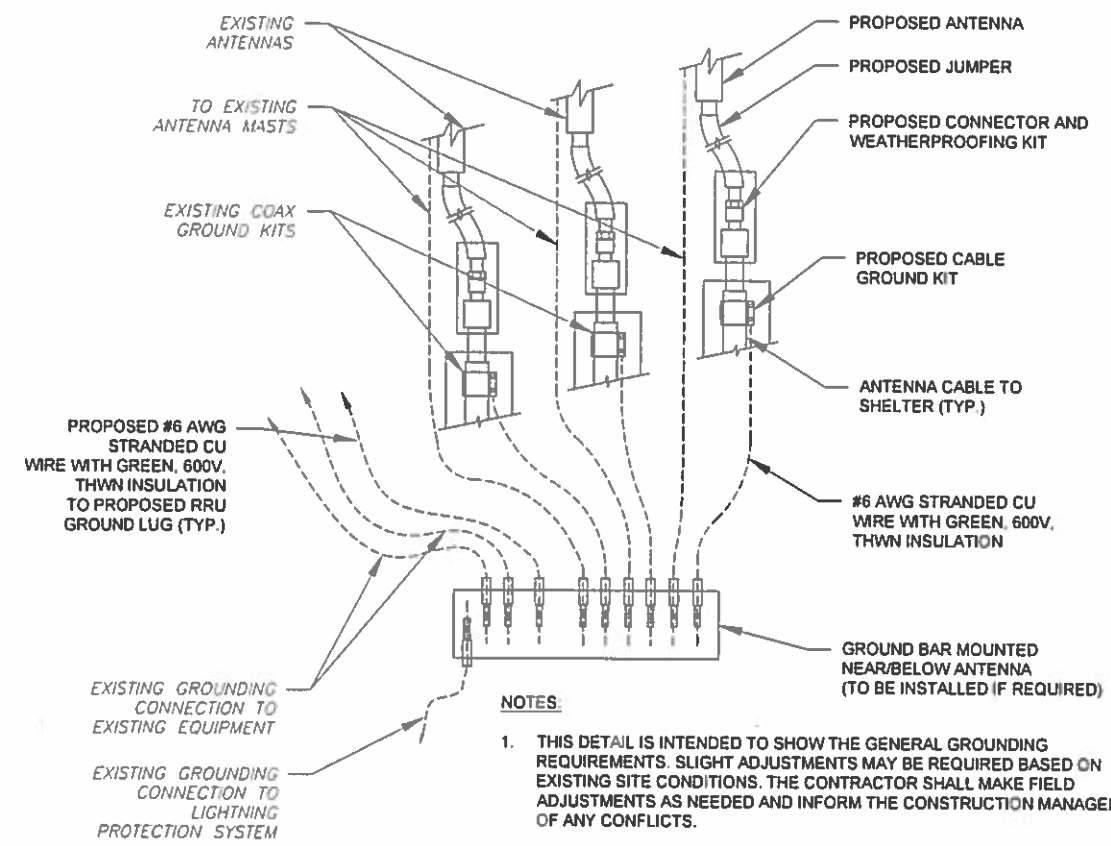
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1 PROPOSED SIDE-BY-SIDE MOUNT  
SCALE: NOT TO SCALE



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
SCALE: NOT TO SCALE



3 TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: NOT TO SCALE

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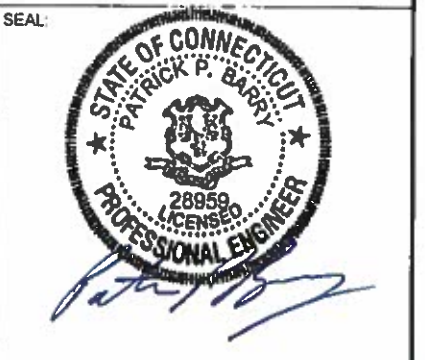
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CUSTOMER #:	470974

**CONSTRUCTION DETAILS**

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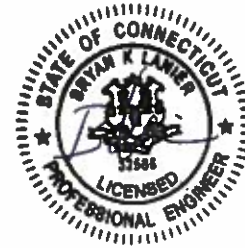


### Antenna Mount Analysis Report

**ATC Site Name** : Beacon Falls CT  
**ATC Site Number** : 370641  
**Engineering Number** : 13000423\_C8\_04  
**Mount Elevation** : 113 ft  
**Carrier** : Verizon Wireless  
**Carrier Site Name** : BEACON FALLS 2 CT - Town Monopole  
**Carrier Site Number** : 470974  
**Site Location** : 401-411 Lopus Road  
                           Beacon Falls, CT 06403-0000  
                           41.43283333 , -73.07022222  
**County** : New Haven  
**Date** : December 20, 2019  
**Max Usage** : 55%  
**Result** : Pass

Prepared By:  
Steven McGinnis  
Structural Engineer II

Reviewed By:



Authorized by "EOR"  
23 Dec 2019 11:50:53 cosign

COA: PEC.0001553

#### Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for Verizon Wireless at 113 ft.

#### Analysis

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Codes:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.193, S1 = 0.064
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

#### Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount 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.