

7016 2140 0000 9458 6569

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
 Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

BEACON FALLS, CT 06403

**OFFICIAL USE**

|  |   |            |
|--|---|------------|
| Certified Mail Fee   | \$3.45  | 0821       |
| \$   |   | 06         |
| Extra Services & Fees (check box, add fee as appropriate)    | \$2.75  |            |
| <input type="checkbox"/> Return Receipt (hardcopy)           | \$0.00  |            |
| <input type="checkbox"/> Return Receipt (electronic)         | \$0.00  |            |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | \$0.00  |            |
| <input type="checkbox"/> Adult Signature Required            | \$0.00  |            |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$0.00  |            |
| Postage  | \$2.26  |            |
| \$   |   |            |
| Total Postage and  | \$8.46  | 03/21/2018 |
| \$   |   |            |
| Sent To  | Christopher J. Bielik<br>First Selectman<br>Town of Beacon Falls<br>10 Maple Avenue<br>Beacon Falls, CT 06403 |            |
| Street and Apt. No.  |   |            |
| City, State, ZIP+4   |   |            |

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 2140 0000 9458 6569

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| <input type="checkbox"/> Adult Signature Required            | \$0.00   |            |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$0.00   |            |
| Postage  | \$2.26   |            |
| \$   |  |            |
| Total Postage and  | \$8.46   | 03/21/2018 |
| \$   |  |            |
| Sent To  | Kevin McDuffie<br>Chairman, Planning and Zoning<br>Town of Beacon Falls<br>10 Maple Avenue<br>Beacon Falls, CT 06403 |            |
| Street and Apt. No.  |  |            |
| City, State, ZIP+4   |  |            |

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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| <input type="checkbox"/> Adult Signature Restricted Delivery | \$0.00  |            |
| Postage  | \$2.26  |            |
| \$   |   |            |
| Total Postage and  | \$8.46  | 03/21/2018 |
| \$   |   |            |
| Sent To  | Mike Mormile<br>Zoning Enforcement Officer<br>Town of Beacon Falls<br>10 Maple Avenue<br>Beacon Falls, CT 06403 |            |
| Street and Apt. No.  |   |            |
| City, State, ZIP+4   |   |            |

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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| <input type="checkbox"/> Return Receipt (electronic)         | \$0.00  |            |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | \$0.00  |            |
| <input type="checkbox"/> Adult Signature Required            | \$0.00  |            |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$0.00  |            |
| Postage  | \$2.26  |            |
| \$   |   |            |
| Total Postage and  | \$8.46  | 03/21/2018 |
| \$   |   |            |
| Sent To  | Wilbur and Joan N. Weed<br>475 Rimmon Hill Road<br>Beacon Falls, CT 06403 |            |
| Street and Apt. No.  |   |            |
| City, State, ZIP+4   |   |            |

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 2140 0000 9458 6569

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WOBURN, MA 01801


**OFFICIAL USE**

|  |  |            |
|--|--|------------|
| Certified Mail Fee   | \$3.45   | 0821       |
| \$   |  | 06         |
| Extra Services & Fees (check box, add fee as appropriate)    | \$2.75   |            |
| <input type="checkbox"/> Return Receipt (hardcopy)           | \$0.00   |            |
| <input type="checkbox"/> Return Receipt (electronic)         | \$0.00   |            |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | \$0.00   |            |
| <input type="checkbox"/> Adult Signature Required            | \$0.00   |            |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$0.00   |            |
| Postage  | \$2.26   |            |
| \$   |  |            |
| Total Postage and  | \$8.46   | 03/21/2018 |
| \$   |  |            |
| Sent To  | Shawn Dunn<br>Account Project Manager<br>American Tower Corporation<br>10 Presidential Way<br>Woburn, MA 01801 |            |
| Street and Apt. No.  |  |            |
| City, State, ZIP+4   |  |            |

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

| SENDER: COMPLETE THIS SECTION  | COMPLETE THIS SECTION ON DELIVERY   |  |   |  |   |  |  |   |   |  |   |  |   |
|--|---|--|---|--|---|--|--|---|---|--|---|--|---|
| <ul style="list-style-type: none"> <li>Complete items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>                   | <p>A. Signature<br/> <input checked="" type="checkbox"/> C. Bernadini <input type="checkbox"/> Agent<br/> <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)<br/> C. BERNARDINI</p> <p>C. Date of Delivery</p>   |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>1. Article Addressed to:</p> <p>Mike Mormile<br/> Zoning Enforcement Officer<br/> Town of Beacon Falls<br/> 10 Maple Avenue<br/> Beacon Falls, CT 06403</p>  <p>9590 9402 1864 6104 9540 84</p> | <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes<br/> If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input checked="" type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> </table> | <input type="checkbox"/> Adult Signature | <input type="checkbox"/> Priority Mail Express® | <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail™ | <input type="checkbox"/> Certified Mail® | <input type="checkbox"/> Registered Mail Restricted Delivery | <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> Collect on Delivery | <input checked="" type="checkbox"/> Signature Confirmation™ | <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Adult Signature   | <input type="checkbox"/> Priority Mail Express®   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Adult Signature Restricted Delivery   | <input type="checkbox"/> Registered Mail™   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Certified Mail®   | <input type="checkbox"/> Registered Mail Restricted Delivery  |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | <input type="checkbox"/> Return Receipt for Merchandise   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Collect on Delivery   | <input checked="" type="checkbox"/> Signature Confirmation™   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery   | <input type="checkbox"/> Signature Confirmation Restricted Delivery   |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>2. Article Number (Transfer from service label)</p> <p>7016 2140 0000 9458 6542</p>   | <p>Restricted Delivery</p>  |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt</p>  |   |  |   |  |   |  |  |   |   |  |   |  |   |

| SENDER: COMPLETE THIS SECTION   | COMPLETE THIS SECTION ON DELIVERY   |  |   |  |   |  |  |   |   |  |   |  |   |
|---|---|--|---|--|---|--|--|---|---|--|---|--|---|
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| <p>1. Article Addressed to:</p> <p>Kevin McDuffie<br/> Chairman, Planning and Zoning<br/> Town of Beacon Falls<br/> 10 Maple Avenue<br/> Beacon Falls, CT 06403</p>  <p>9590 9402 1864 6104 9541 14</p> | <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes<br/> If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input checked="" type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> </table> | <input type="checkbox"/> Adult Signature | <input type="checkbox"/> Priority Mail Express® | <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail™ | <input type="checkbox"/> Certified Mail® | <input type="checkbox"/> Registered Mail Restricted Delivery | <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> Collect on Delivery | <input checked="" type="checkbox"/> Signature Confirmation™ | <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Adult Signature  | <input type="checkbox"/> Priority Mail Express®   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Adult Signature Restricted Delivery  | <input type="checkbox"/> Registered Mail™   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Certified Mail®  | <input type="checkbox"/> Registered Mail Restricted Delivery  |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Certified Mail Restricted Delivery   | <input type="checkbox"/> Return Receipt for Merchandise   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Collect on Delivery  | <input checked="" type="checkbox"/> Signature Confirmation™   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery  | <input type="checkbox"/> Signature Confirmation Restricted Delivery   |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>2. Article Number (Transfer from service label)</p> <p>7016 2140 0000 9458 6566</p>  | <p>Restricted Delivery</p>  |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt</p>   |   |  |   |  |   |  |  |   |   |  |   |  |   |

| SENDER: COMPLETE THIS SECTION  | COMPLETE THIS SECTION ON DELIVERY   |  |   |  |   |  |  |   |   |  |   |  |   |
|--|---|--|---|--|---|--|--|---|---|--|---|--|---|
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| <p>1. Article Addressed to:</p> <p>Christopher J. Bielik<br/> First Selectman<br/> Town of Beacon Falls<br/> 10 Maple Avenue<br/> Beacon Falls, CT 06403</p>  <p>9590 9402 1864 6104 9541 07</p> | <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes<br/> If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input checked="" type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> </table> | <input type="checkbox"/> Adult Signature | <input type="checkbox"/> Priority Mail Express® | <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail™ | <input type="checkbox"/> Certified Mail® | <input type="checkbox"/> Registered Mail Restricted Delivery | <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> Collect on Delivery | <input checked="" type="checkbox"/> Signature Confirmation™ | <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Adult Signature   | <input type="checkbox"/> Priority Mail Express®   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Adult Signature Restricted Delivery   | <input type="checkbox"/> Registered Mail™   |  |   |  |   |  |  |   |   |  |   |  |   |
| <input type="checkbox"/> Certified Mail®   | <input type="checkbox"/> Registered Mail Restricted Delivery  |  |   |  |   |  |  |   |   |  |   |  |   |
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| <p>2. Article Number (Transfer from service label)</p> <p>7016 2140 0000 9458 6573</p>   | <p>Restricted Delivery</p>  |  |   |  |   |  |  |   |   |  |   |  |   |
| <p>PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt</p>  |   |  |   |  |   |  |  |   |   |  |   |  |   |

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Shawn Dunn  
Account Project Manager  
American Tower Corporation  
10 Presidential Way  
Woburn, MA 01801



9590 9402 1864 6104 9540 91

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6580

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Handwritten Signature]*

- Agent
- Addressee

B. Received by (Printed Name)

*[Handwritten Name]*

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

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- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Wilbur and Joan N. Weed  
475 Rimmon Hill Road  
Beacon Falls, CT 06403



9590 9402 1864 6104 9541 21

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6559

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

Hong Lin

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No



3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Restricted Delivery

Domestic Return Receipt



March 20, 2018

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

Regarding: Notice of Exempt Modification – Equipment Upgrades  
Property Address: 664 Rimmon Hill Road, Beacon Falls, CT 06403  
AT&T Site: CT2161/FA# 10035091

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 173-foot monopole tower at the above-referenced address, latitude 41.4071861, longitude -73.0792769. Said monopole tower is owned by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility by swapping (3) antenna, swapping (3) remote-radio heads (“RRH”), adding (3) RRH, adding (1) surge arrestor and accompanying feedlines, and adding (6) combiners as detailed in the enclosed plans. The centerline height of the existing antennas is and will remain at 159 feet.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72 (b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to Christopher J. Bielik, First Selectman for the Town of Beacon Falls, Kevin McDuffie, Chairman of the Planning and Zoning Commission, and Mike Mormile, Zoning Enforcement Officer of the Town of Beacon Falls. A copy of this letter is also being sent to the land owners, Wilbur & Joan N. Weed and tower owner, American Tower Corporation.

The planned modifications to AT&T’s facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72 (b)(2). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The equipment to be added and swapped will be installed at the existing height of 159 feet on the 173-foot tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (enclosed) for AT&T's modified facility is herein provided.
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 AT&T's proposed modifications (please see enclosed structural analysis completed by American Tower Corporation dated January 9, 2018).

For the foregoing reasons, AT&T respectfully requests that the proposed remote-radio head installation be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

*Jennifer Iliades*

Jennifer Iliades  
Site Acquisition Specialist

Enclosures: Exhibit 1 – Property Card and GIS Map  
Exhibit 2 – Construction Drawings  
Exhibit 3 – Structural Analysis  
Exhibit 4 – RF Emissions Analysis Report Evaluation

cc: Christopher J. Bielik, First Selectman, Town of Beacon Falls  
Kevin McDuffie, Chairman, Planning & Zoning Commission, Town of Beacon Falls  
Mike Mormile, Zoning Enforcement Officer, Town of Beacon Falls  
American Tower Corporation  
Wilbur & Joan N. Weed

# Exhibit 1

AT&T MOBILITY LLC  
 909 CHESTNUT ROOM 36-M-1  
 ST LOUIS, MO 63101  
 Census: 3411

Neighborhood Number  
 1

Neighborhood Name  
 Southwest

TAXING DISTRICT INFORMATION

Jurisdiction Name BEACON FALLS  
 Area 006  
 Routing Number 001-005-0006

Transfer of Ownership

Empty space for transfer of ownership details.

Valuation Record

| Assessment Year   | 2011       | 2016       |  |  |  |  |  |  |
|-------------------|------------|------------|--|--|--|--|--|--|
| Reason for Change | 2011 Reval | 2016 Reval |  |  |  |  |  |  |
| 2016 Market       | L 0        | I 0        |  |  |  |  |  |  |
|                   | I 250000   | T 275000   |  |  |  |  |  |  |
|                   | T 250000   |            |  |  |  |  |  |  |
| 70% Assessed      | L 0        | I 0        |  |  |  |  |  |  |
|                   | I 175000   | T 192500   |  |  |  |  |  |  |
|                   | T 175000   |            |  |  |  |  |  |  |

Site Description

Topography

Public Utilities

Electric

Street or Road

Paved

Neighborhood

Zoning:

R-1

Legal Acres:

0.0000

Land Size

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



Physical Characteristics

01

| Special Features |  |
|------------------|--|
| Description      |  |
|                  |  |

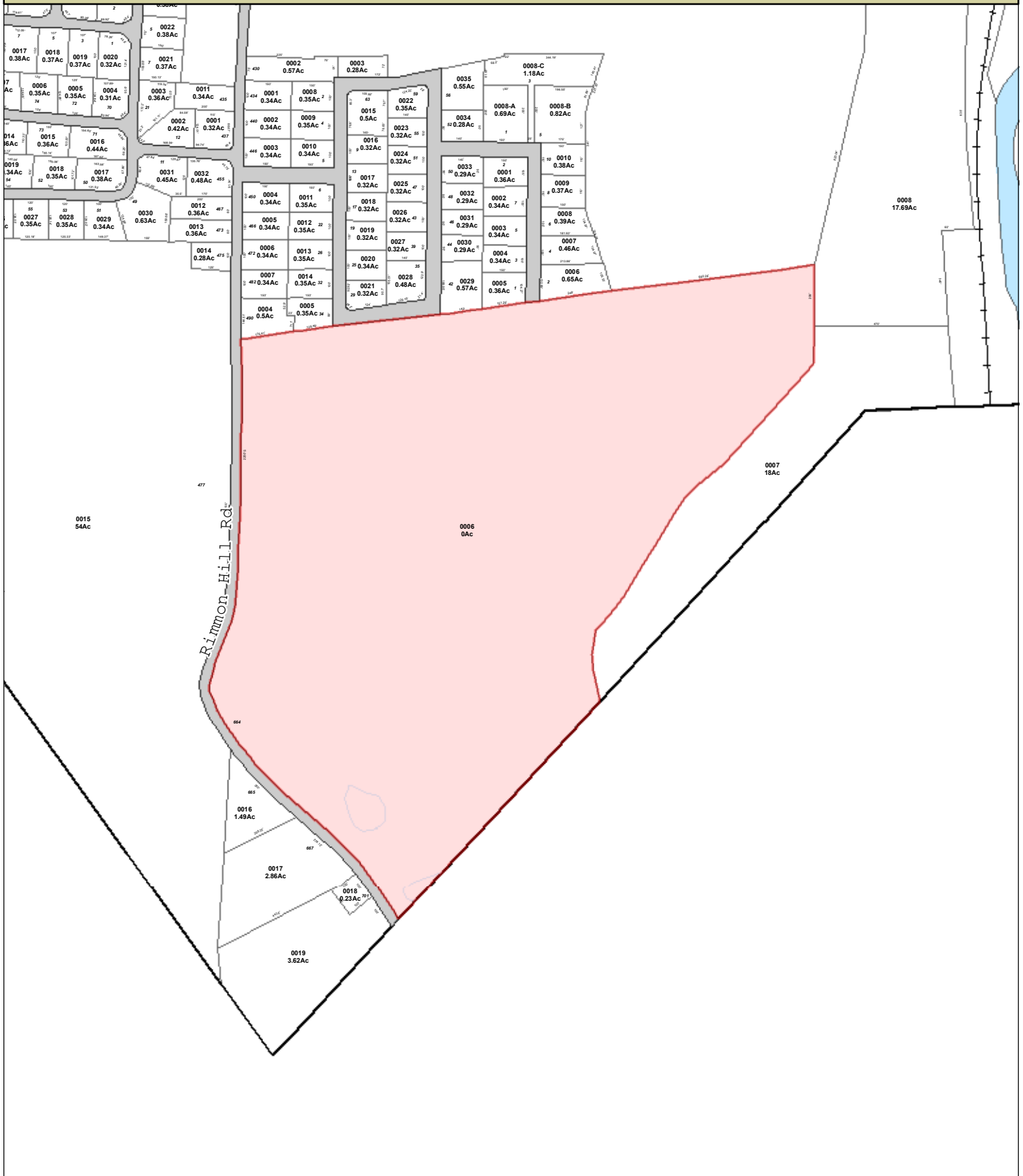
| Summary of Improvements |          |              |            |       |           |          |      |              |
|-------------------------|----------|--------------|------------|-------|-----------|----------|------|--------------|
| ID                      | USE      | Story Height | Const Type | Grade | Year Cons | Eff Year | Cond | Size or Area |
| 01                      | TOWERMON | 0.00         |            | AVG   | 2000      | 2000     | AV   | 0            |

# Town of Beacon Falls, Connecticut - Assessment Parcel Map

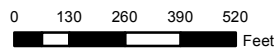


Parcel: 001-005-0006

Address: 664 RIMMON HILL RD



Approximate Scale: 1 inch = 450 feet



Map Produced January 2018

Disclaimer: This map is for informational purposes only. 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.

## Exhibit 2



# WIRELESS COMMUNICATIONS FACILITY

## CT2161 - LTE 3C WCS / 4C 850 / LTE 1900 RETROFIT/5C FIRSTNET

### BEACON FALLS RIMMON HILL

#### AMERICAN TOWER CORP. SITE NO.: 302524

#### 664 RIMMON HILL ROAD

#### BEACON FALLS, CT 06403

### GENERAL NOTES

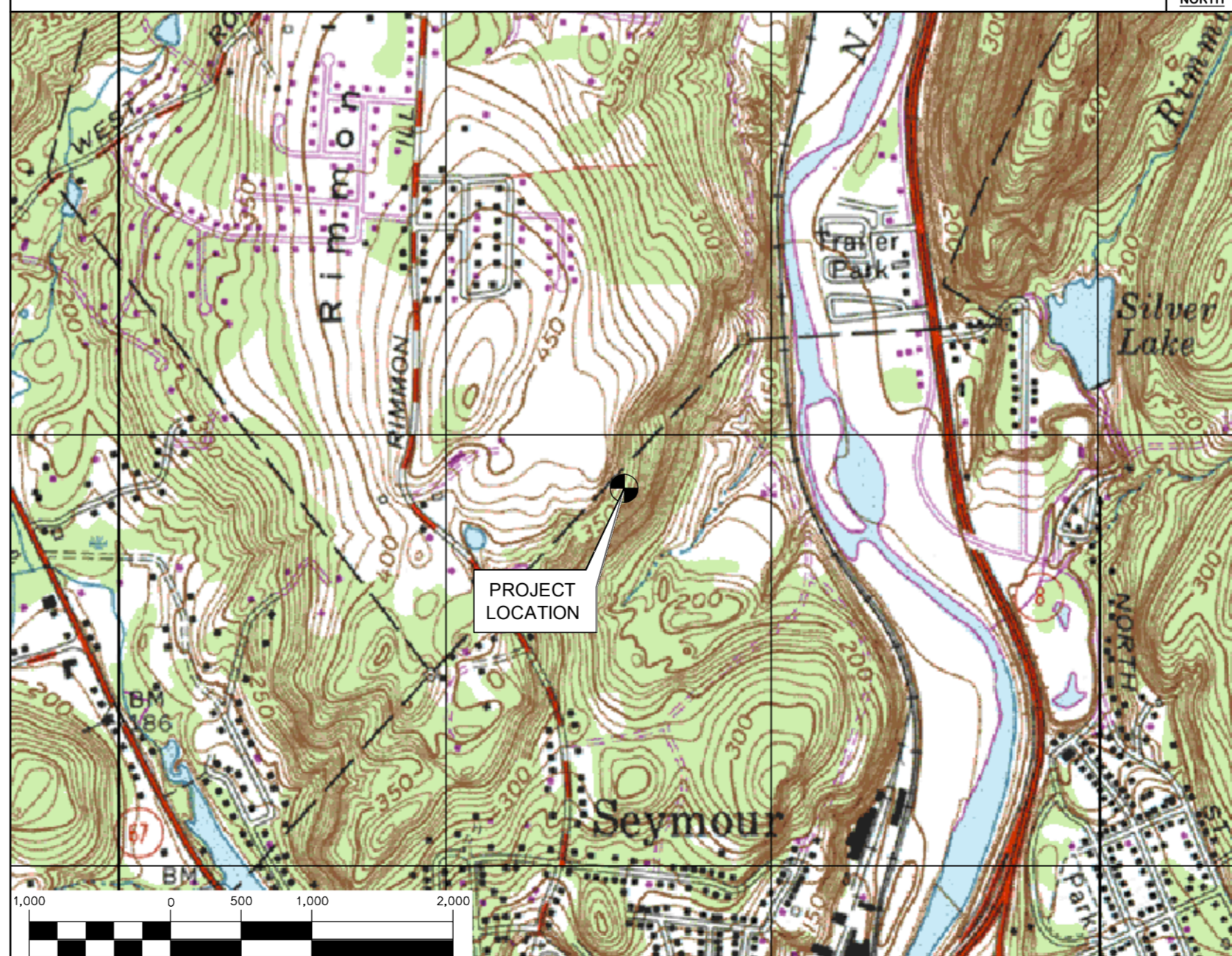
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO "EXTRA" WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

### SITE DIRECTIONS

|   |  |
|---|--|
| <b>FROM:</b> 500 ENTERPRISE DRIVE<br>ROCKY HILL, CONNECTICUT                            | <b>TO:</b> 664 RIMMON HILL ROAD<br>BEACON FALLS, CONNECTICUT |
| 1. HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD                                  | 0.36 MI  |
| 2. TURN LEFT ONTO CAPITAL BLVD  | 0.27 MI  |
| 3. TURN LEFT ONTO WEST ST   | 0.30 MI  |
| 4. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN                                      | 9.06 MI  |
| 5. MERGE ONTO I-691 W VIA EXIT 18 TOWARD MERIDEN/WATERBURY.                             | 7.98 MI  |
| 6. MERGE ONTO I-84 W VIA EXIT 1 ON THE LEFT TOWARD WATERBURY/DANBURY.                   | 8.60 MI  |
| 7. MERGE ONTO CT-8 S VIA EXIT 19 ON THE LEFT TOWARD NAUGATUCK/BRIDGEPORT.               | 7.80 MI  |
| 8. TAKE EXIT 24 TOWARD CT-42/BEACON FALLS/OXFORD.                                       | 0.47 MI  |
| 9. TURN RIGHT ONTO N MAIN ST  | 1.36 MI  |
| 10. STAY STRAIGHT TO GO ONTO PINES BRIDGE RD/CT-42.                                     | 0.52 MI  |
| 11. TAKE THE 3RD LEFT ONTO RIMMON HILL RD.  | 0.09 MI  |
| 12. 664 RIMMON HILL RD, BEACON FALLS, CT 06403-1525, 664 RIMMON HILL RD IS ON THE LEFT. |  |

### VICINITY MAP

SCALE: 1" = 1000'



### PROJECT SUMMARY

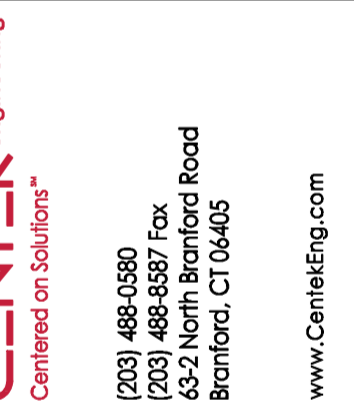
1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
  - A. REMOVE AND REPLACE EXISTING POS.4 ANTENNA FOR (1) NEW 6-PORT ANTENNA & (2) NEW 12-PORT ANTENNAS.
  - B. REMOVE (3) EXISTING RRUS-12+RRUS-A2 (1) PER SECTOR
  - C. REMOVE (3) EXISTING TMA'S (1) PER SECTOR
  - D. INSTALL (1) NEW SURGE ARRESTORS
  - E. INSTALL (3) NEW RRUS-32'S AT TOWER LEVEL (1) PER SECTOR
  - F. INSTALL (3) NEW RRUS-32 B2'S AT TOWER LEVEL (1) PER SECTOR
  - G. INSTALL (6) NEW LOWBAND COMBINERS AT TOWER LEVEL AT POS.4 (2) PER SECTOR.
  - H. REMOVE (6) EXISTING DIPLEXERS WITHIN EXISTING EQUIPMENT SHELTER & INSTALL (6) NEW LOWBAND COMBINERS.
  - I. DECOMMISSION & REMOVE (2) EXISTING NOKIA GSM CABINETS
  - J. INSTALL AN ADDITIONAL XMU UNIT
  - K. INSTALL A EQUIPMENT RACK WITH (3) ERICSSON RRUS-12, AND (2) ERICSSON B14 4478 WITH (14) SURGE ARRESTORS

### PROJECT INFORMATION

|                      |  |
|----------------------|--|
| AT&T SITE NUMBER:    | CT2161   |
| AT&T SITE NAME:      | BEACON FALLS RIMMON HILL   |
| SITE ADDRESS:        | AMERICAN TOWER CORP. SITE NO.: 302524<br>664 RIMMON HILL ROAD<br>BEACON FALLS, CT 06403  |
| LESSEE/APPLICANT:    | AT&T MOBILITY<br>500 ENTERPRISE DRIVE, SUITE 3A<br>ROCKY HILL, CT 06067  |
| ENGINEER:            | CEN TEK ENGINEERING, INC.<br>63-2 NORTH BRANFORD RD.<br>BRANFORD, CT 06405   |
| PROJECT COORDINATES: | LATITUDE: 41°-24'-25.90" N<br>LONGITUDE: 73°-04'-45.43" W<br>GROUND ELEVATION: ±423' AMSL<br>SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH. |

### SHEET INDEX

| SHT. NO. | DESCRIPTION                            | REV. |
|----------|--|------|
| T-1      | TITLE SHEET                            | 0    |
| N-1      | NOTES, SPECIFICATIONS AND DETAILS      | 0    |
| C-1      | PLANS, ELEVATION AND DETAILS           | 0    |
| C-2      | EQUIPMENT LAYOUT PLANS AND DETAILS     | 0    |
| C-3      | ANTENNA LAYOUTS AND DETAILS            | 0    |
| C-4      | RF PLUMBING DIAGRAM & ANTENNA SCHEDULE | 0    |
| E-1      | LTE SCHEMATIC DIAGRAM AND NOTES        | 0    |
| E-2      | LTE WIRING DIAGRAM                     | 0    |
| E-3      | TYPICAL ELECTRICAL DETAILS             | 0    |



AT&T MOBILITY  
 WIRELESS COMMUNICATIONS FACILITY  
**BEACON FALLS RIMMON HILL**  
**CT2161 - LTE 3C/4C/1900 RETROFIT/5C**  
 664 RIMMON HILL ROAD  
 BEACON FALLS, CT 06403

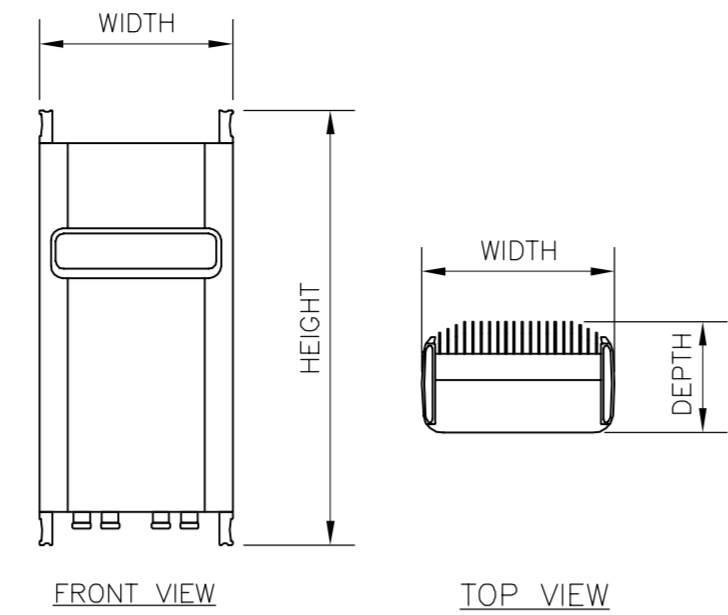
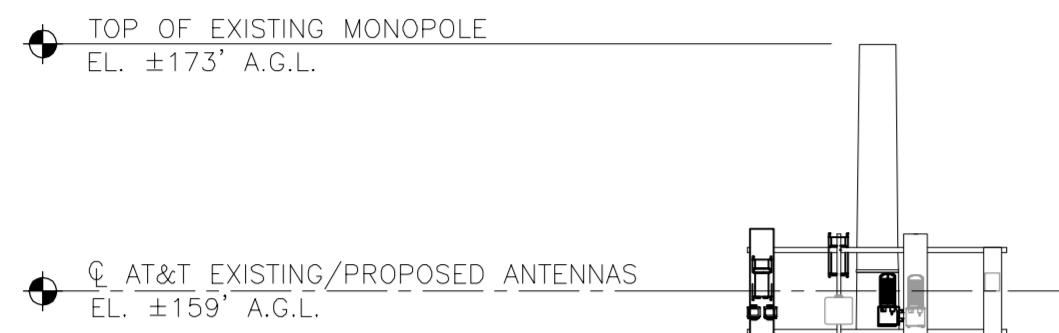
DATE: 08/29/17  
SCALE: AS NOTED  
JOB NO. 17004.39

TITLE SHEET

T-1

| REV. | DATE     | DRAWN BY | CAG | CONSTRUCTION DRAWINGS | ISSUED FOR CONSTRUCTION |
|------|----------|----------|-----|-----------------------|-------------------------|
| 0    | 02/20/18 | KAWJR    |     |                       |                         |

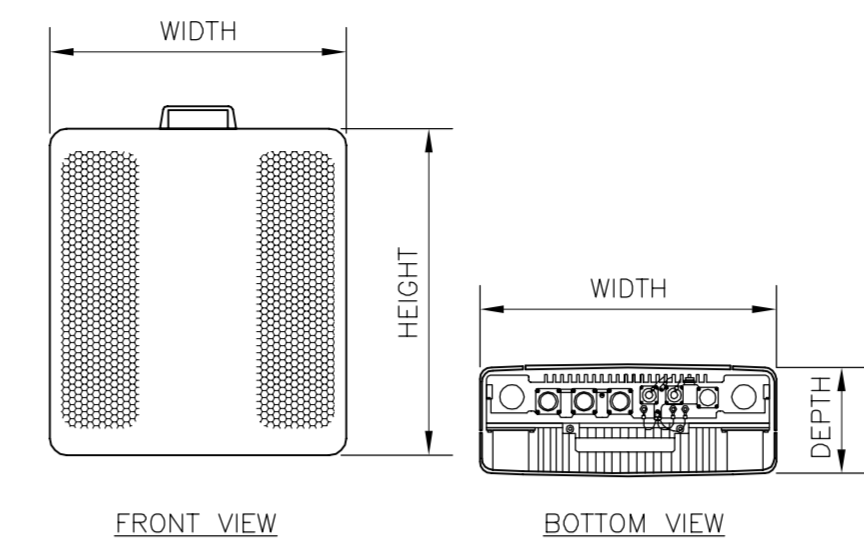




| RRU (REMOTE RADIO UNIT)             |                            |            |   |
|-------------------------------------|----------------------------|------------|---|
| EQUIPMENT                           | DIMENSIONS                 | WEIGHT     | CLEARANCES  |
| MAKE: ERICSSON<br>MODEL: RRUS-32 B2 | 27.17"H x 12.05"W x 7.01"D | 52.91 LBS. | ABOVE: 16" MIN.<br>BELOW: 12" MIN.<br>FRONT: 36" MIN. |
| MAKE: ERICSSON<br>MODEL: RRUS-32    | 27.17"H x 12.05"W x 7.01"D | 52.91 LBS. | ABOVE: 16" MIN.<br>BELOW: 12" MIN.<br>FRONT: 36" MIN. |

NOTES:  
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

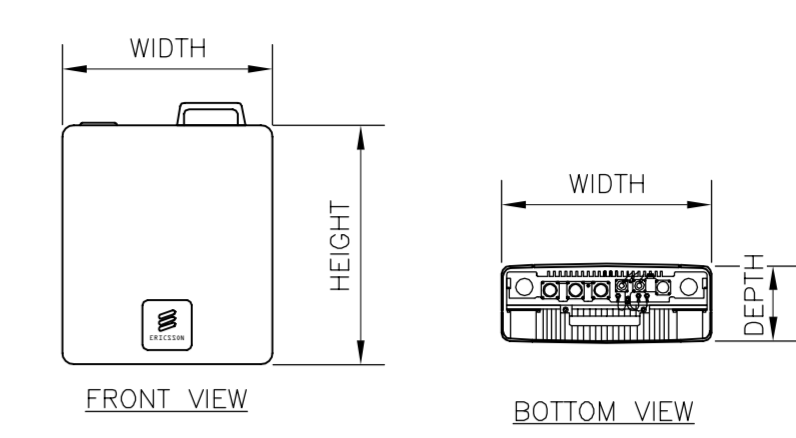
**5 ERICSSON RRUS 32 B2/32 DETAIL**  
C-1 SCALE: 1" = 1'-0"



| RRU (REMOTE RADIO UNIT)          |                         |         |   |
|----------------------------------|-------------------------|---------|---|
| EQUIPMENT                        | DIMENSIONS              | WEIGHT  | CLEARANCES  |
| MAKE: ERICSSON<br>MODEL: RRUS 12 | 20.4"L x 18.5"W x 7.5"D | 50 LBS. | ABOVE: 16" MIN.<br>BELOW: 12" MIN.<br>FRONT: 36" MIN. |

NOTES:  
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

**4 ERICSSON REMOTE RADIO UNITS**  
C-1 SCALE: 1" = 1'-0"



| RRU (REMOTE RADIO UNIT)           |                         |         |   |
|-----------------------------------|-------------------------|---------|---|
| EQUIPMENT                         | DIMENSIONS              | WEIGHT  | CLEARANCES  |
| MAKE: ERICSSON<br>MODEL: B14 4478 | 14.9"L x 13.1"W x 7.3"D | 60 LBS. | ABOVE: 16" MIN.<br>BELOW: 12" MIN.<br>FRONT: 36" MIN. |

NOTES:  
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

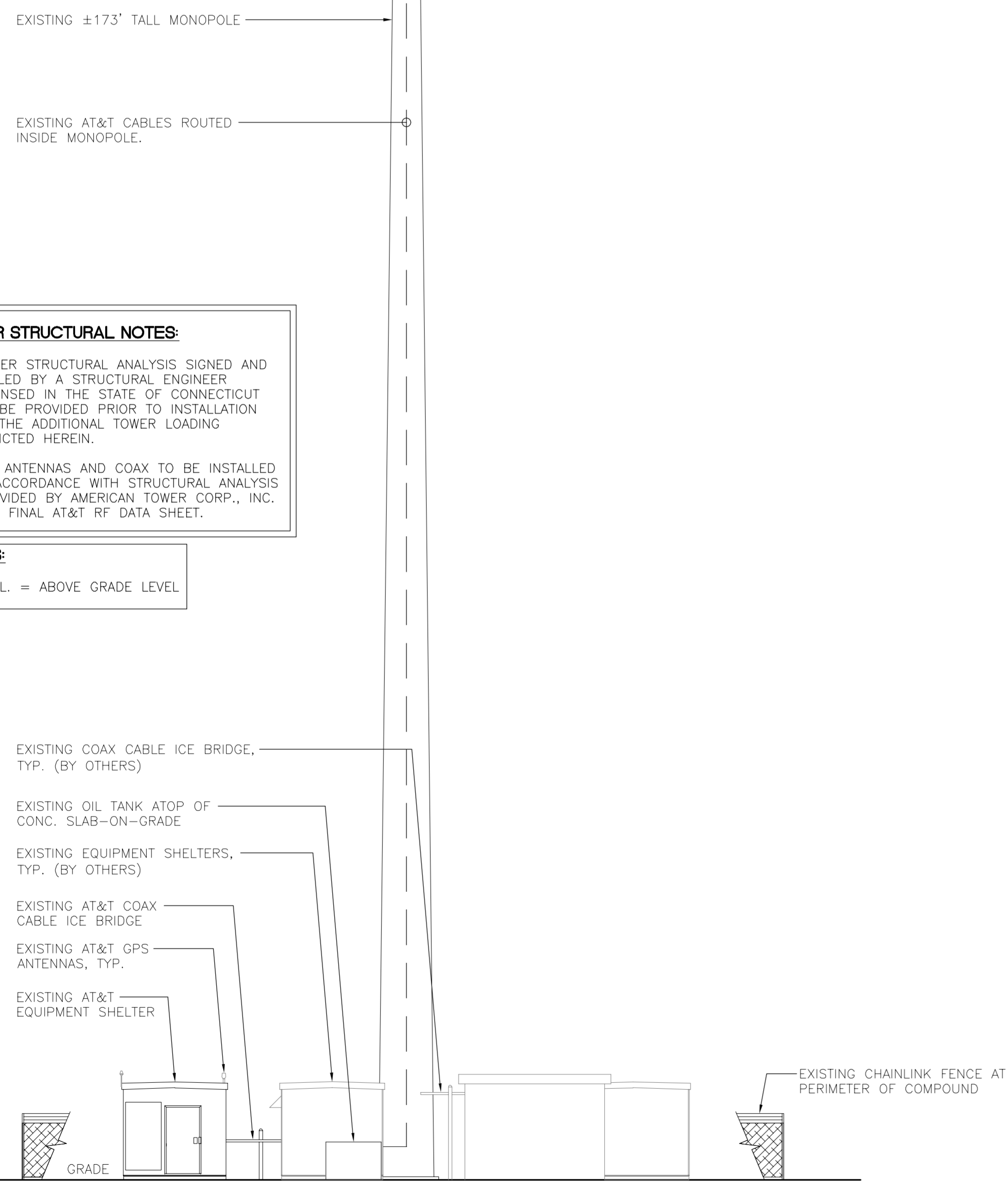
**3 ERICSSON B14 4478 DETAIL**  
C-1 SCALE: 1" = 1'-0"

**TOWER STRUCTURAL NOTES:**

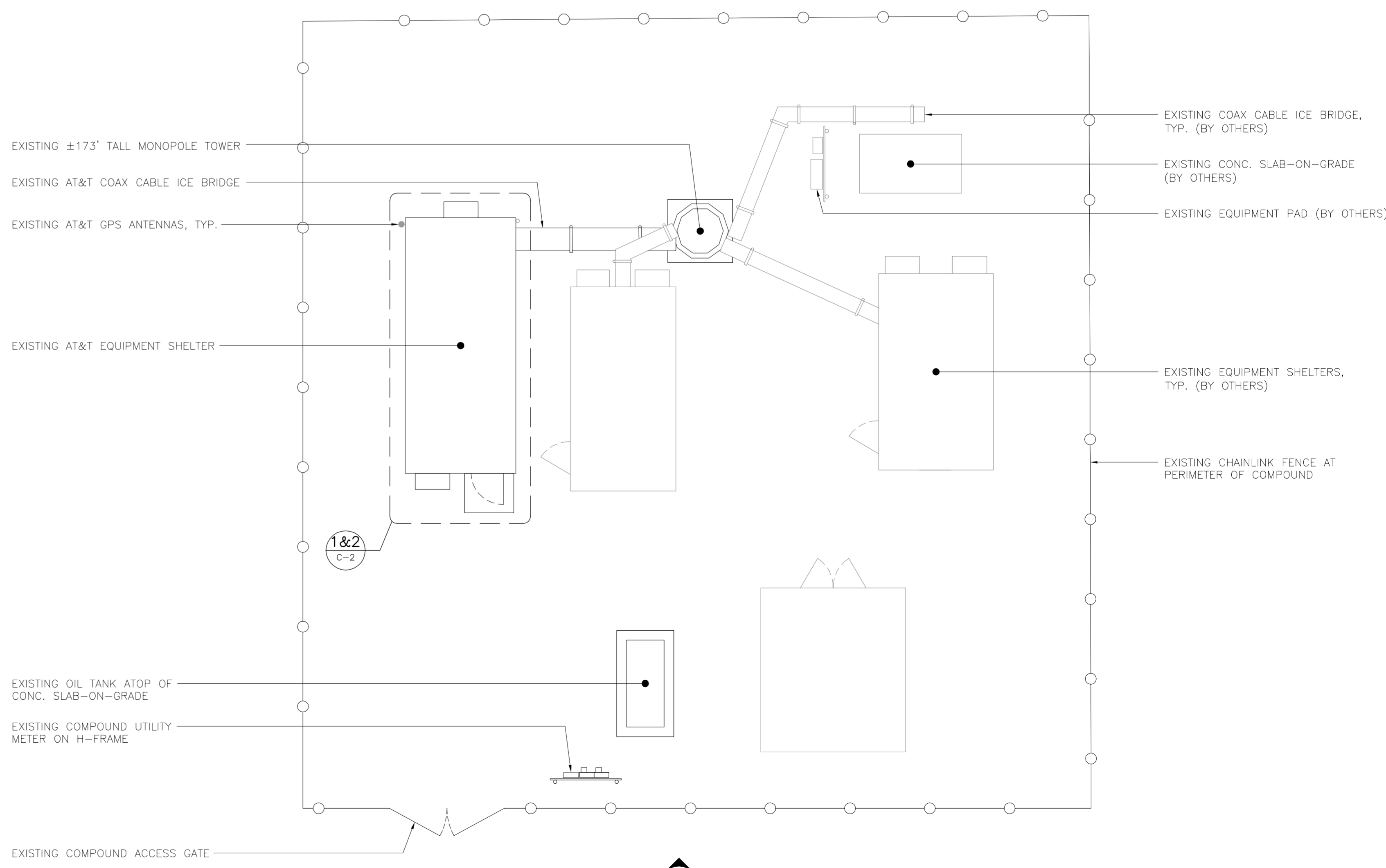
- TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
- ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER CORP., INC. AND FINAL AT&T RF DATA SHEET.

**NOTES:**

- A.G.L. = ABOVE GRADE LEVEL



**2 WEST ELEVATION - PROPOSED**  
C-1 SCALE: 1" = 10'  
GRAPHIC SCALE (IN FEET) 1 inch = 10 ft.



**1 COMPOUND PLAN**  
C-1 SCALE: 1" = 7'  
GRAPHIC SCALE (IN FEET) 1 inch = 7 ft.  
APPROX. NORTH

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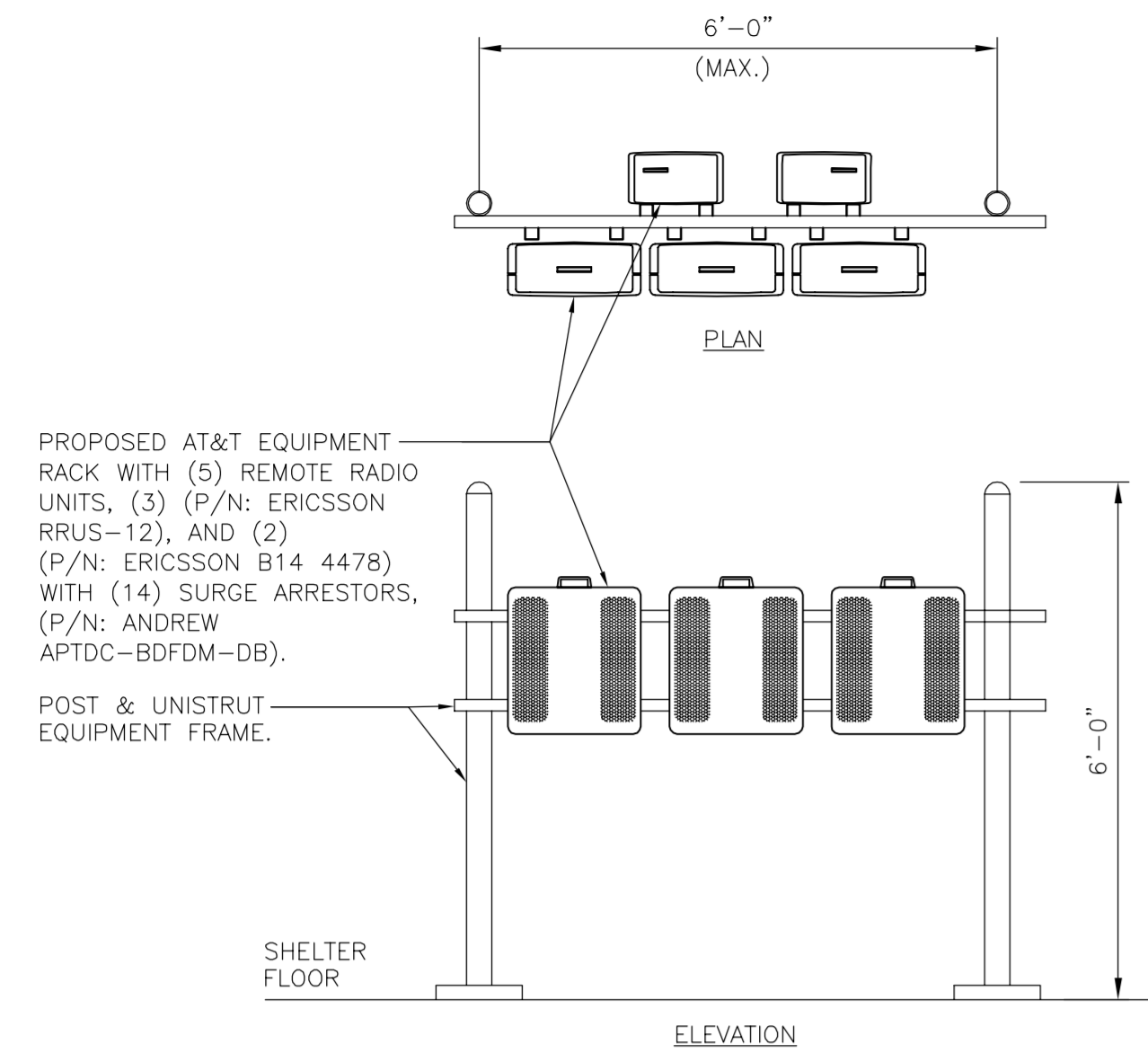
**AT&T MOBILITY**  
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**BEACON FALLS RIMMON RILL**  
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664 RIMMON HILL ROAD  
BEACON FALLS, CT 06403

DATE: 08/29/17  
SCALE: AS NOTED  
JOB NO. 17004.39

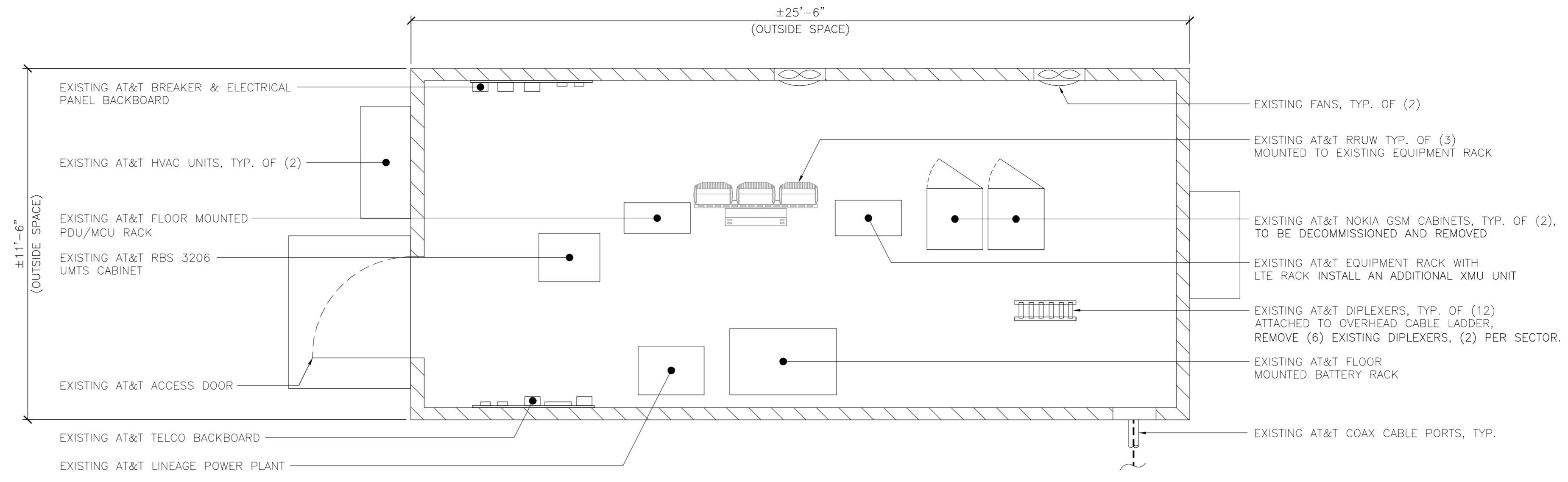
**PLANS, ELEVATION AND DETAILS**

**C-1**

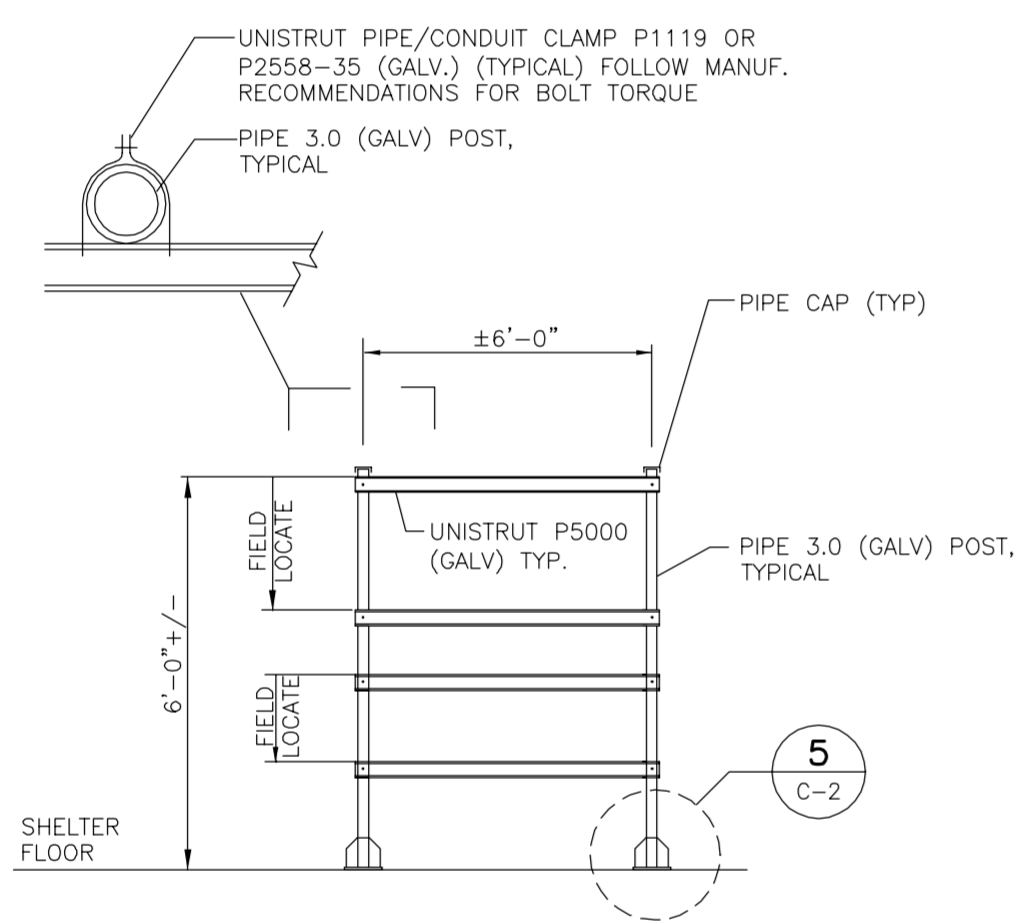
Sheet No. 3 of 9



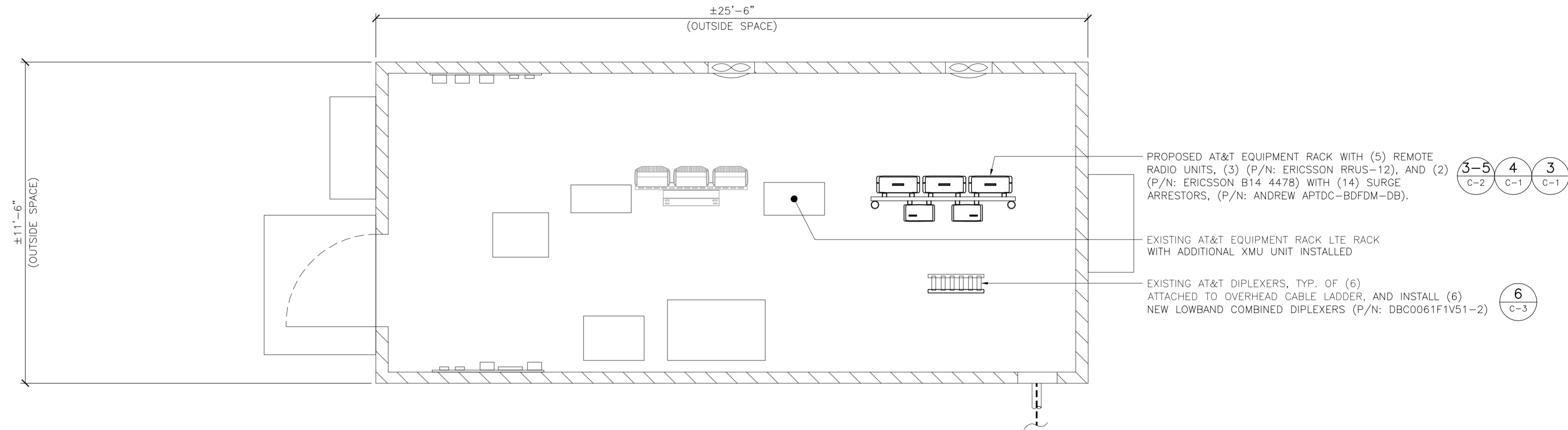
**3 PROPOSED EQUIPMENT RACK**  
 C-2 SCALE: 1/2" = 1'-0"



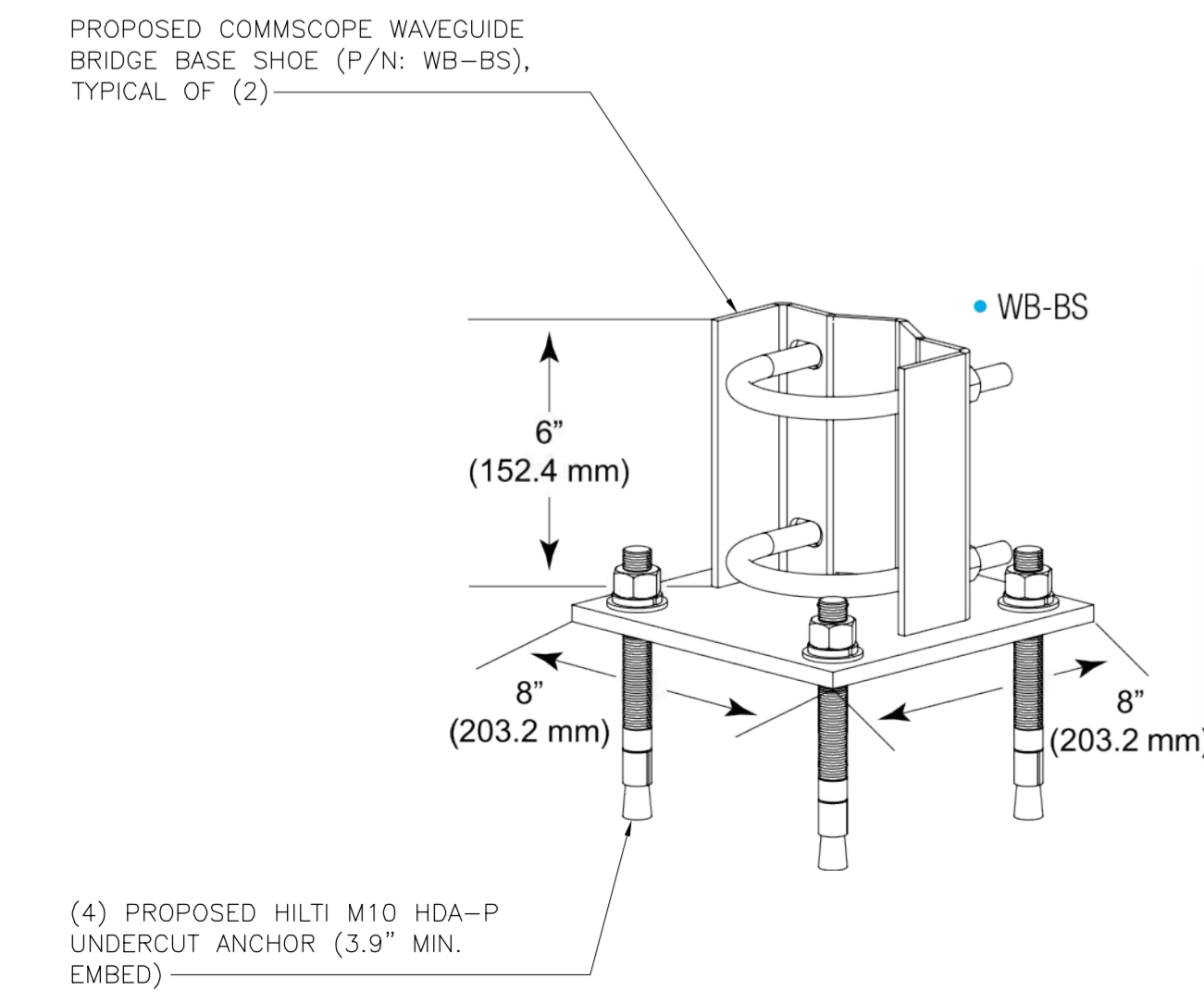
**1 EXISTING EQUIPMENT BUILDING FLOOR PLAN**  
 C-2 SCALE: 3/8" = 1'-0" TRUE NORTH



**4 PROPOSED EQUIPMENT MOUNTING FRAME DETAIL**  
 C-2 SCALE: NOT TO SCALE



**2 PROPOSED EQUIPMENT BUILDING FLOOR PLAN**  
 C-2 SCALE: 3/8" = 1'-0" TRUE NORTH



**5 EQUIPMENT FRAME POST ATTACHMENT DETAIL**  
 C-2 SCALE: NOT TO SCALE

| SURGE ARESSTOR                        |                          |           |
|---------------------------------------|--------------------------|-----------|
| EQUIPMENT                             | DIMENSIONS               | WEIGHT    |
| MAKE: ANDREW<br>MODEL: APTDC-BDFDM-DB | 3.46"H x 3.46"W x 1.65"D | 1.32 LBS. |

**NOTES:**  
 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

**6 ANDREW APTDC-BDFDM-DB DETAIL**  
 C-2 SCALE: NOT TO SCALE

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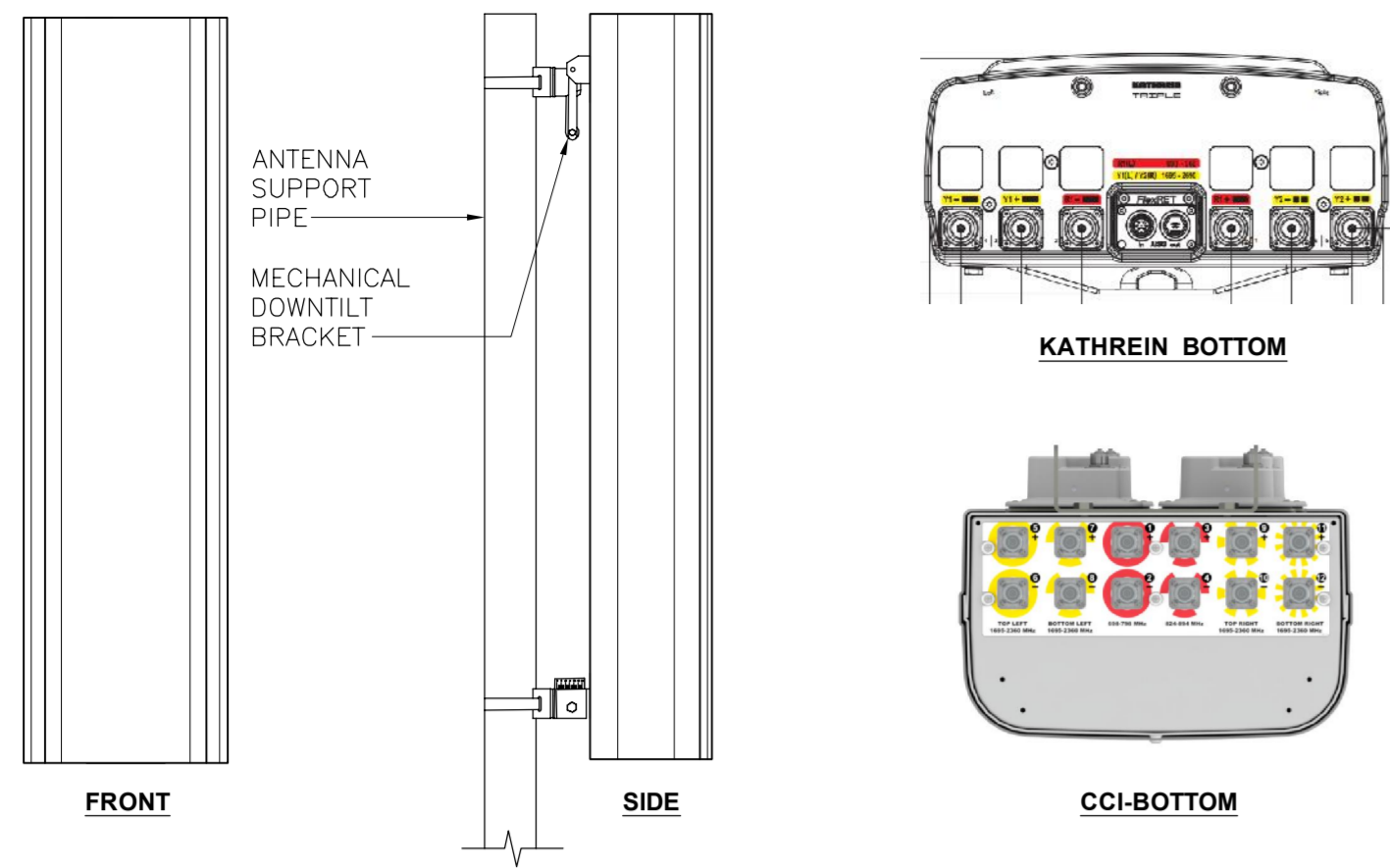
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DATE: 08/29/17  
 SCALE: AS NOTED  
 JOB NO. 17004.39

EQUIPMENT LAYOUT PLANS AND DETAILS

C-2  
 Sheet No. 4 of 9



| ALPHA/BETA/GAMMA ANTENNA              |                         |           |
|---------------------------------------|-------------------------|-----------|
| EQUIPMENT                             | DIMENSIONS              | WEIGHT    |
| MAKE: CCI<br>MODEL: TPA-65R-LCUUUU-H8 | 96"L x 14.4"W x 8.6"D   | 94.2 LBS. |
| MAKE: KATHRIEN<br>MODEL: 80010798     | 78.5"L x 14.8"W x 6.7"D | 81.4 LBS. |

5 PROPOSED ANTENNA DETAIL  
C-3 SCALE: 1/2" = 1'-0"

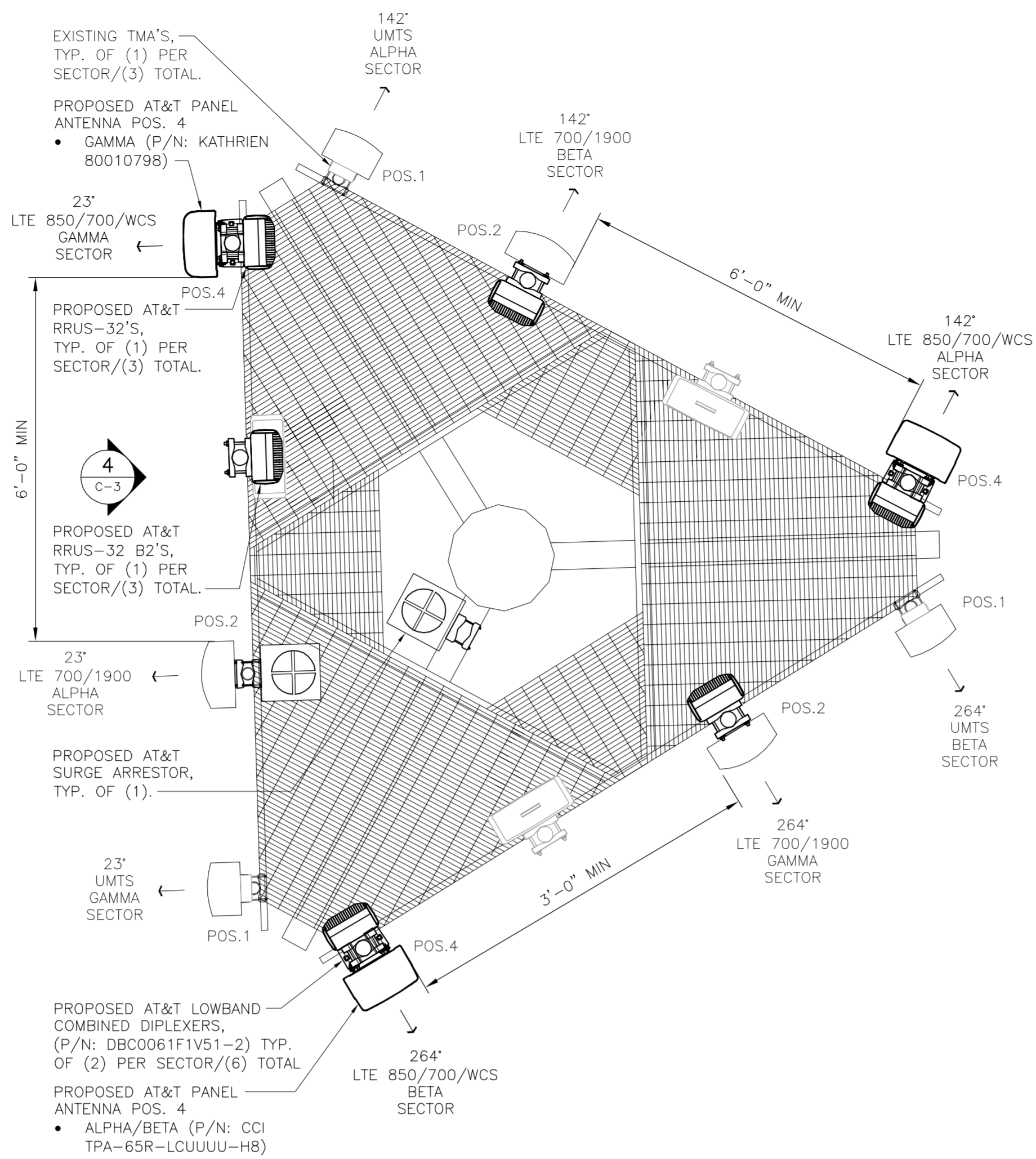


LOW BAND COMBINER

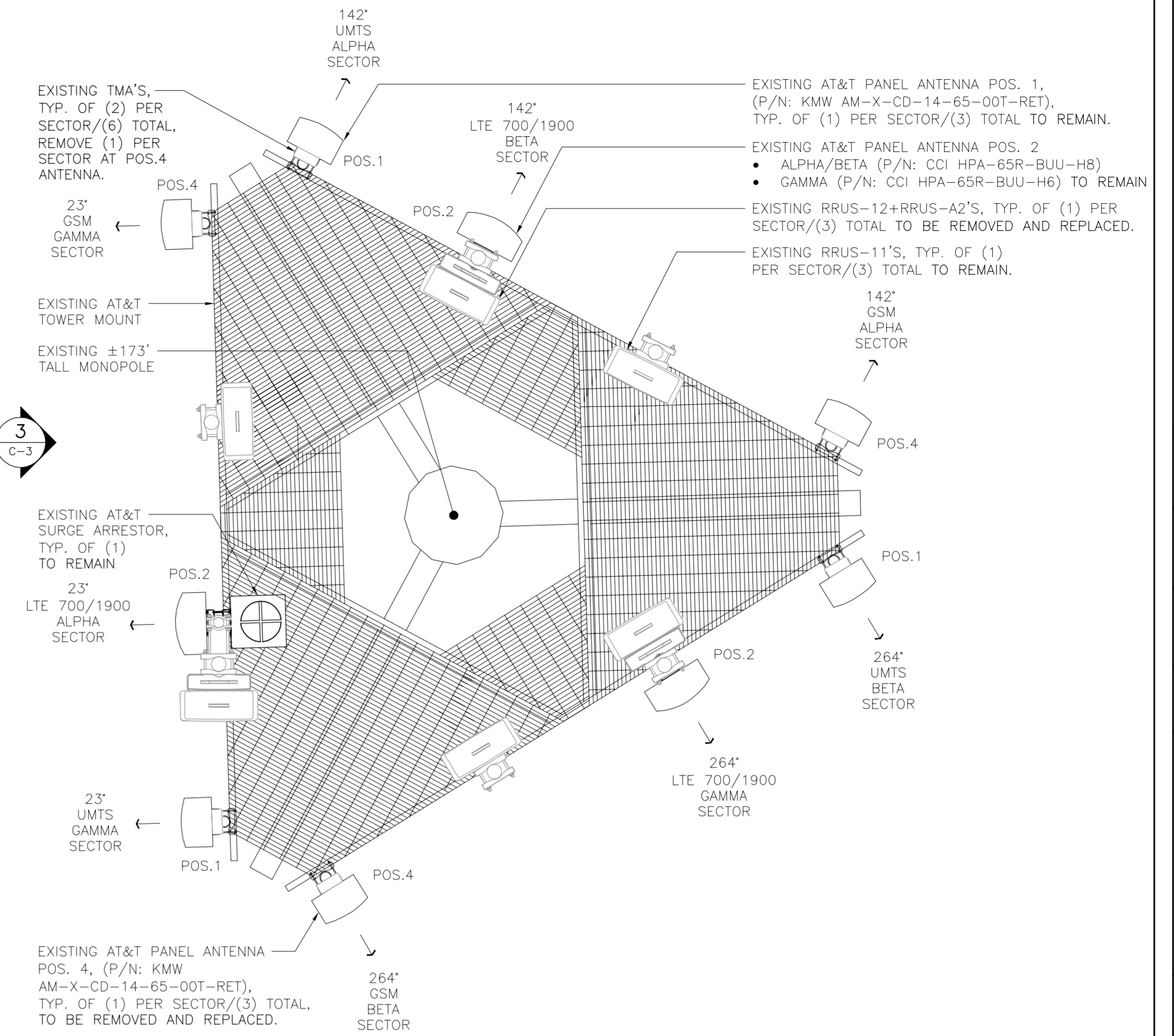
| DIPLEXER 700/850                      |                      |           |
|---------------------------------------|----------------------|-----------|
| EQUIPMENT                             | DIMENSIONS           | WEIGHT    |
| MAKE: KAELUS<br>MODEL: DBC0061F1V51-2 | 8"H x 6.45"W x 6.2"D | 18.3 LBS. |

NOTES:  
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

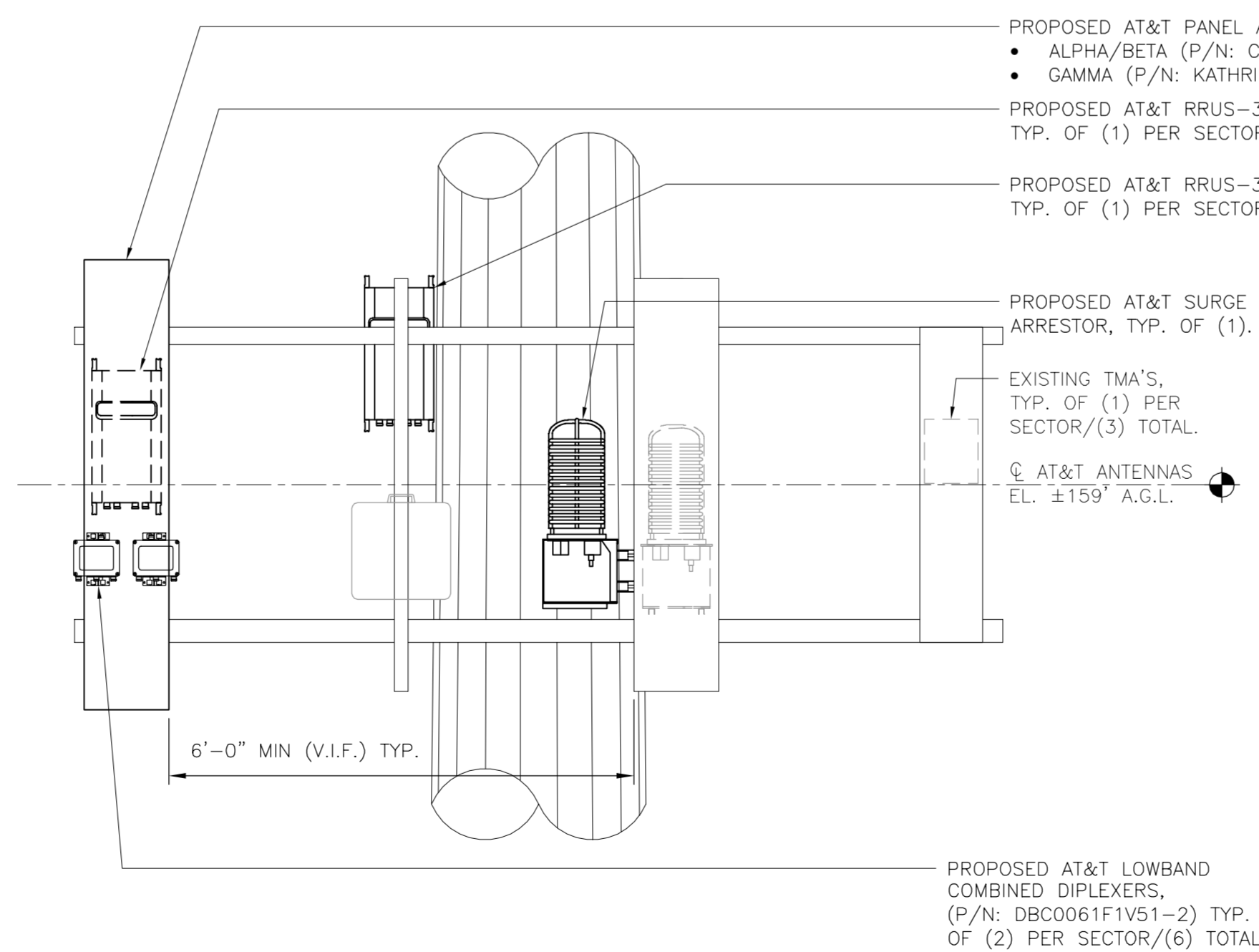
6 KAELUS DBC0061F1V51-2 DETAIL  
C-3 SCALE: NOT TO SCALE



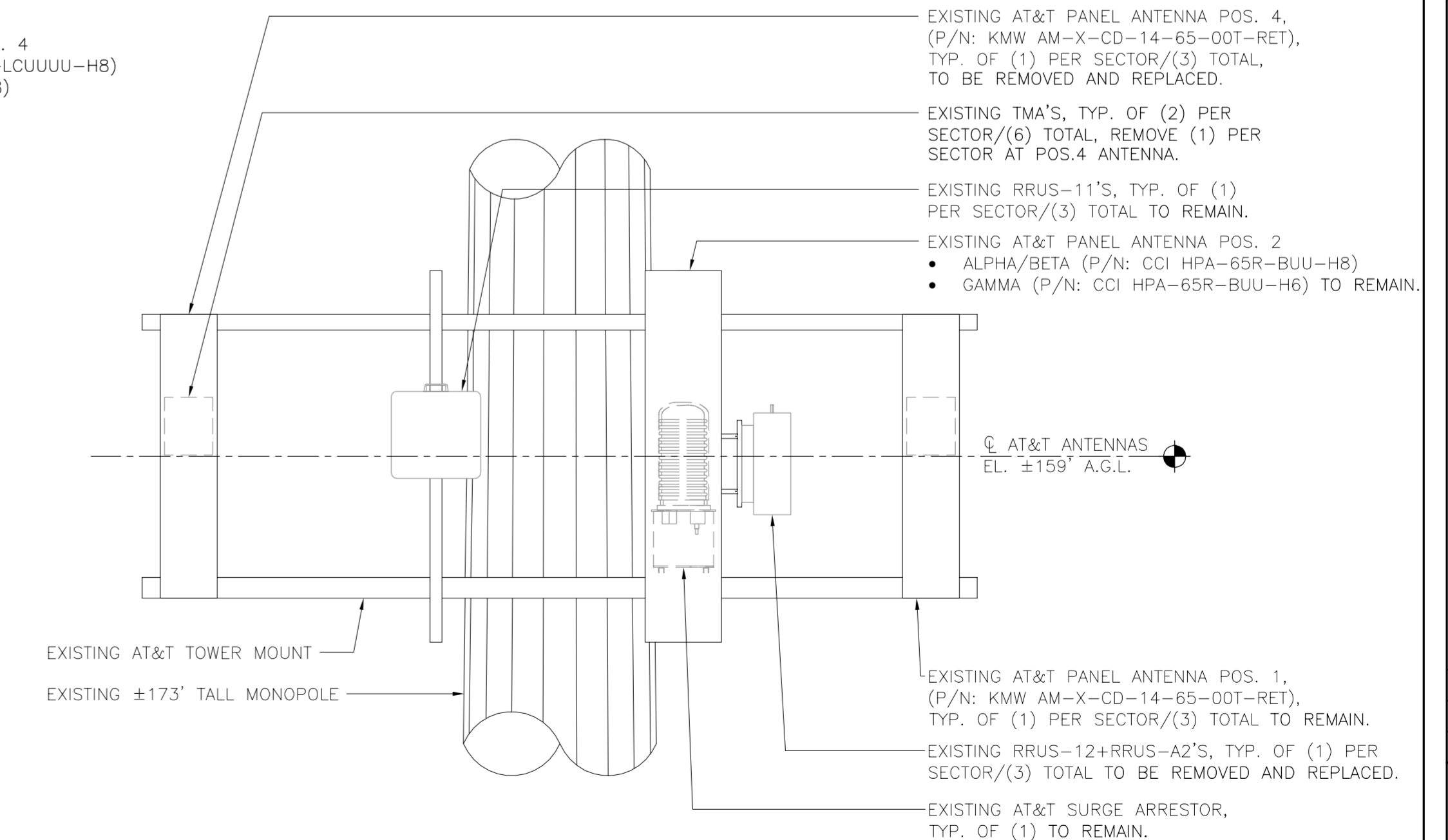
2 PROPOSED ANTENNA PLAN  
C-3 SCALE: 1/2" = 1'-0" NORTH



1 EXISTING ANTENNA PLAN  
C-3 SCALE: 1/2" = 1'-0" NORTH



4 PROPOSED ANTENNA ELEVATION  
C-3 SCALE: 1/2" = 1'-0"



3 EXISTING ANTENNA ELEVATION  
C-3 SCALE: 1/2" = 1'-0"

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BEACON FALLS, CT 06403

DATE: 08/29/17  
SCALE: AS NOTED  
JOB NO. 17004.39

LTE 3C/4C/5C  
ANTENNA LAYOUT  
AND DETAILS

C-3  
Sheet No. 5 of 9

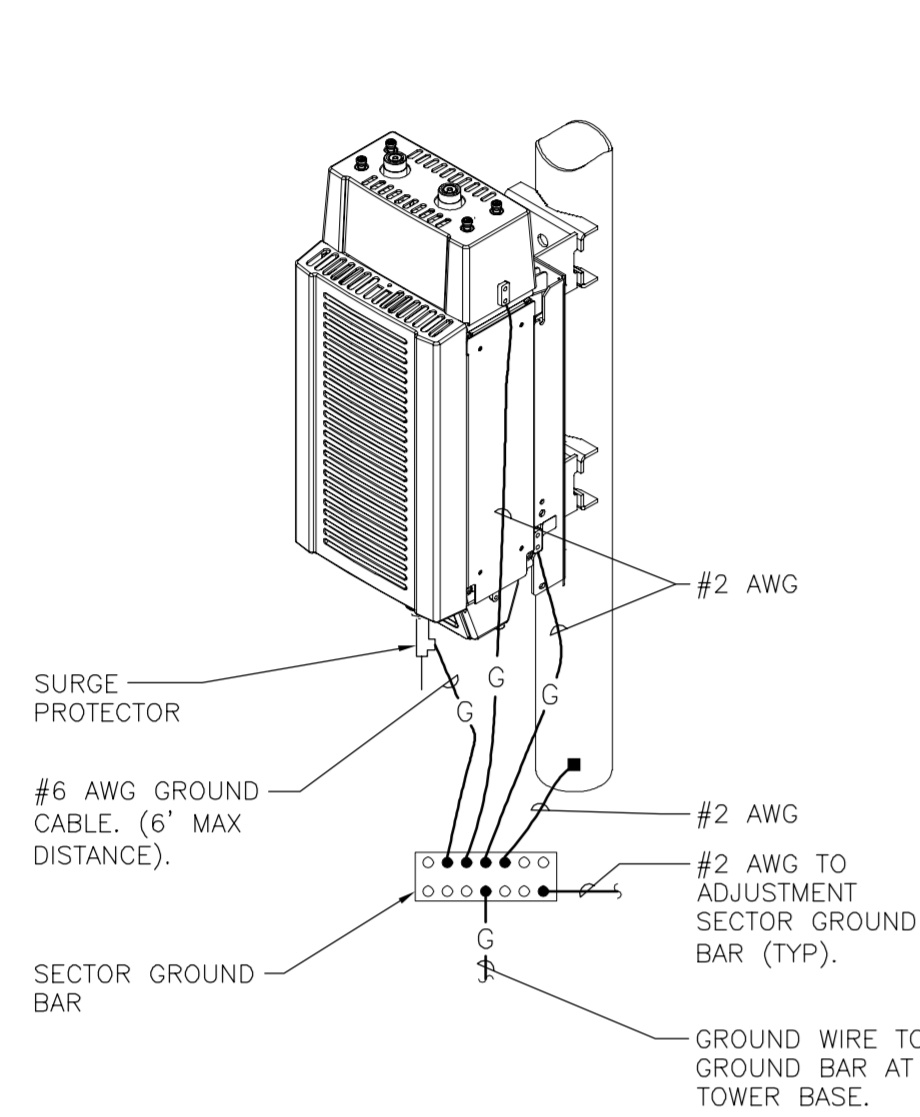




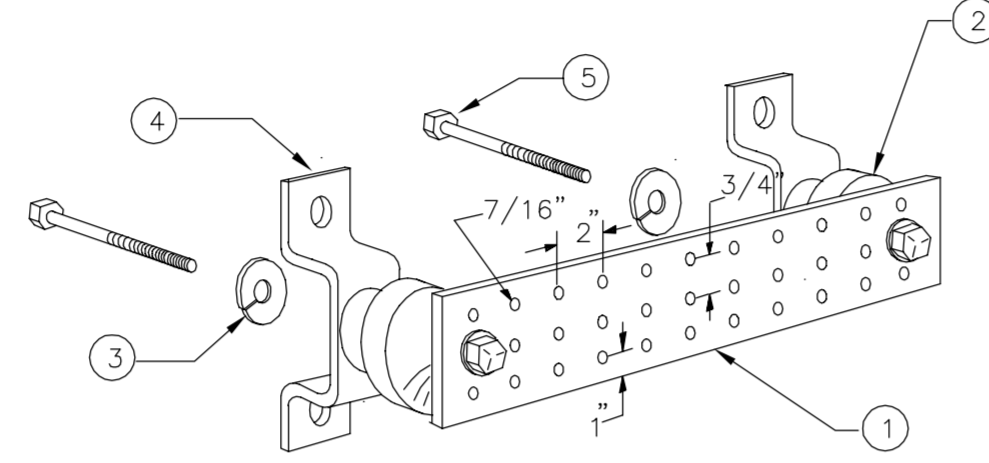




EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:  
 1. AT TOP OF THE CABINET  
 2. AT RIGHT SIDE OF THE CABINET.



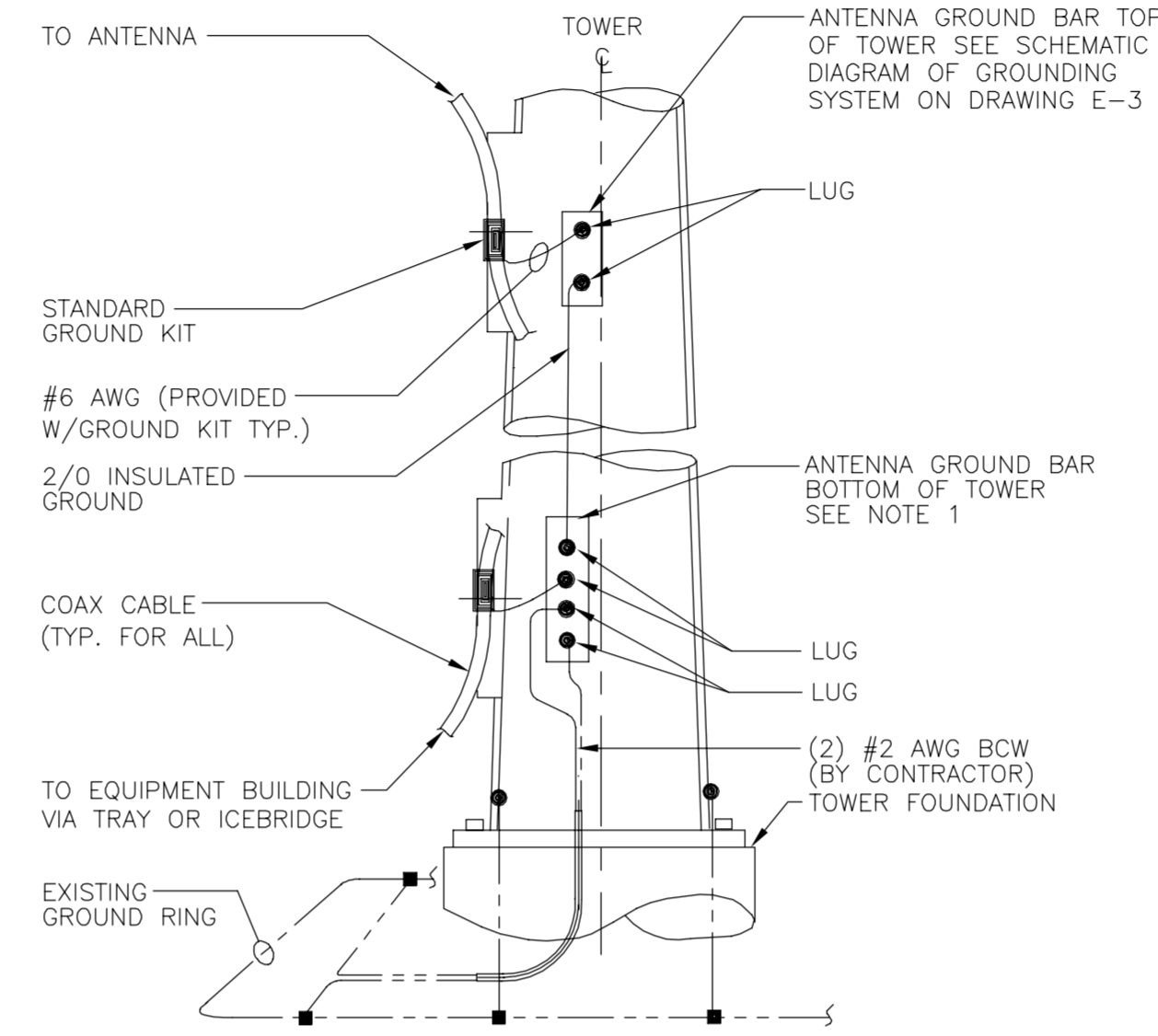
**4** RRU POLE MOUNT GROUNDED  
 E-3 NOT TO SCALE



**LEGEND**

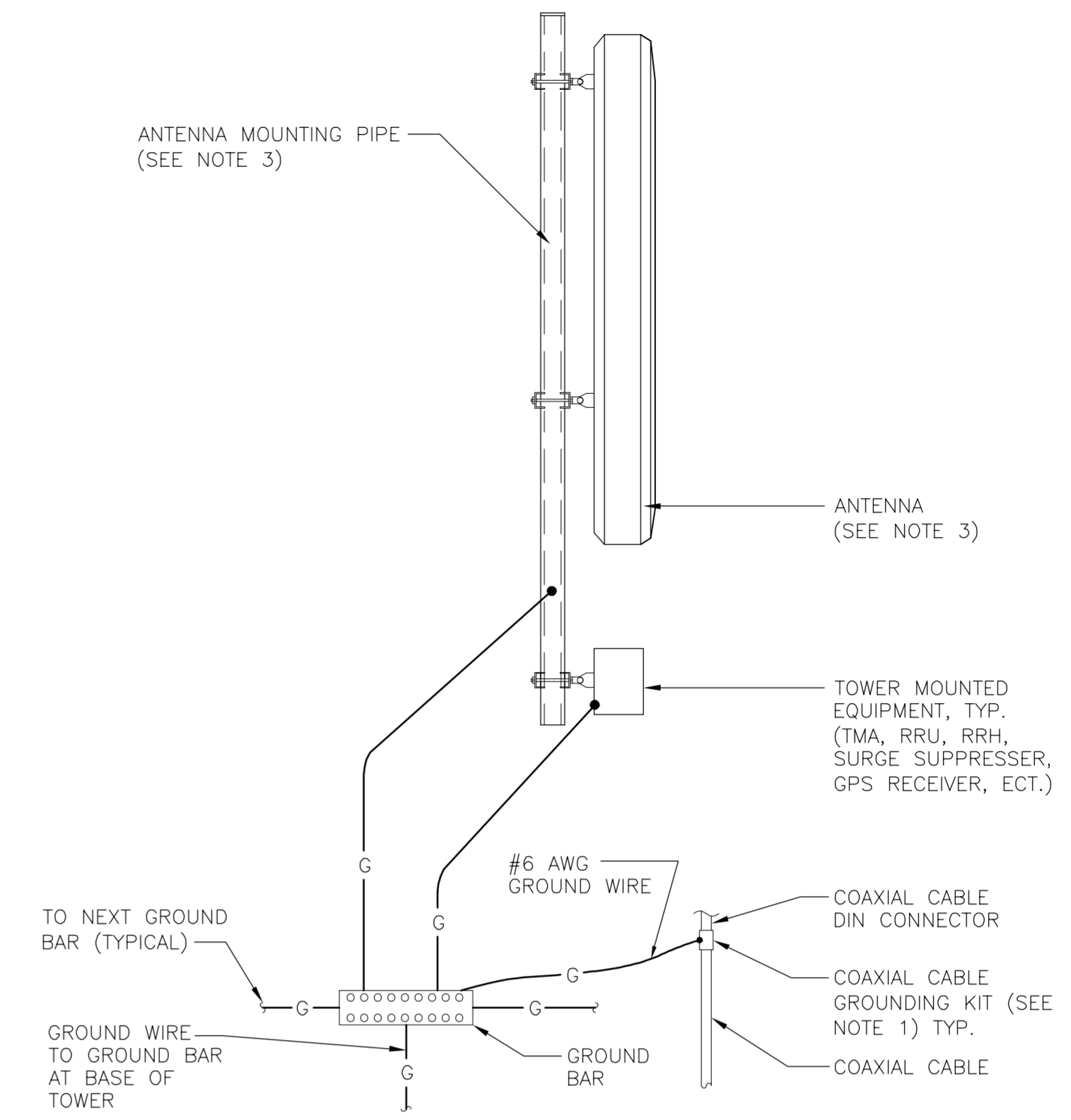
1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

**3** GROUND BAR DETAIL  
 E-3 NOT TO SCALE



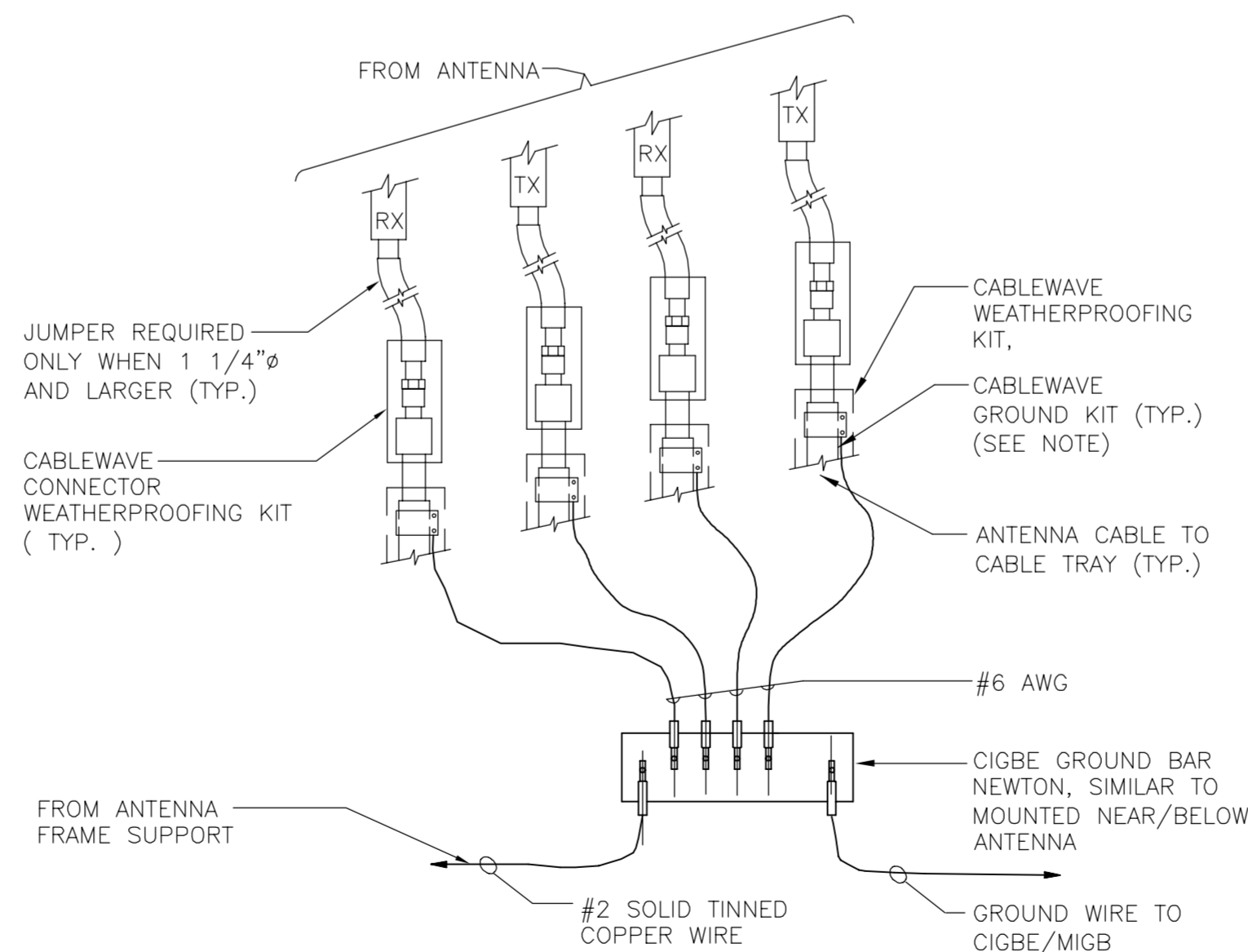
- NOTES:**
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
  2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

**2** ANTENNA CABLE GROUNDED - TOWER  
 E-3 NOT TO SCALE



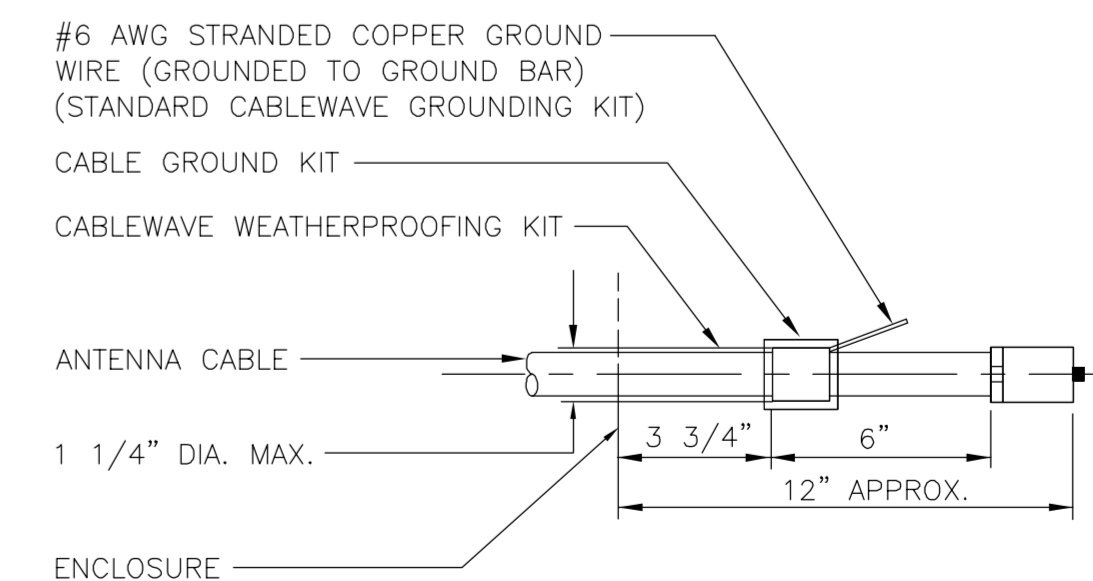
- NOTES:**
1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
  2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
  3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

**1** TYPICAL ANTENNA GROUNDED DETAIL  
 E-3 NOT TO SCALE



- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

**6** CONNECTION OF GROUND WIRES TO GROUND BAR  
 E-3 NOT TO SCALE



- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

**5** ANTENNA CABLE GROUNDED DETAIL  
 E-3 NOT TO SCALE

| REV. | DATE     | DRAWN BY | CHECK'D BY | CAG | CONSTRUCTION DRAWINGS | ISSUED FOR CONSTRUCTION |
|------|----------|----------|------------|-----|-----------------------|-------------------------|
| 0    | 02/20/18 | KAWUR    |            |     |                       |                         |



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**AT&T MOBILITY**  
 WIRELESS COMMUNICATIONS FACILITY  
**BEACON FALLS RIMMON RILL**  
**CT2161 - LTE 3C/4C/1900 RETROFIT/5C**  
 664 RIMMON HILL ROAD  
 BEACON FALLS, CT 06403

DATE: 08/29/17  
 SCALE: AS NOTED  
 JOB NO. 17004.39

TYPICAL ELECTRICAL DETAILS

**E-3**

## Exhibit 3



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 173 ft Monopole  
**ATC Site Name** : Beacon Falls, CT  
**ATC Site Number** : 302524  
**Engineering Number** : OAA720775\_C3\_01  
**Proposed Carrier** : AT&T Mobility  
**Carrier Site Name** : SNET 5641-0124/Beacon Falls  
**Carrier Site Number** : CT2161  
**Site Location** : 664 Rimmon Hill Road  
Seymour, CT 06483-2722  
41.407200,-73.079300  
**County** : New Haven  
**Date** : January 8, 2018  
**Max Usage** : 85%  
**Result** : Pass

Prepared By:  
Aaron Black  
Structural Engineer I

Reviewed By:

**COA: PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 173 ft monopole to reflect the change in loading by AT&T Mobility.

## Supporting Documents

|                            |  |
|----------------------------|--|
| <b>Tower Drawings</b>      | Valmont Drawing #DC3268Z, dated May 28, 1996       |
| <b>Foundation Drawing</b>  | SNET Sheet #4 of 11, dated July 16, 1996           |
| <b>Geotechnical Report</b> | S&ME Job #1261-07-418Z, dated November 13, 2007    |
| <b>Modifications</b>       | Spectrasite Site #CT-0060, dated February 20, 2002 |

## 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 / 2012 IBC / 2016 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**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                               | Mount Type            | Lines  | Carrier          |
|-----------------------------|-------|-----|---------------------------------------|-----------------------|--|------------------|
| Mount                       | RAD   |     |                                       |                       |  |                  |
| 159.0                       | 159.0 | 6   | Powerwave TT08-19DB111-001            | Platform w/ Handrails | (2) 0.78" 8 AWG 6<br>(12) 1 1/4" Coax<br>(1) 2" conduit<br>(1) 0.39" Fiber Trunk | AT&T Mobility    |
|                             |       | 1   | Raycap DC6-48-60-18-8F (23.5" Height) |                       |  |                  |
|                             |       | 3   | Ericsson RRUS-11 (50 lbs.)            |                       |  |                  |
|                             |       | 3   | KMW AM-X-CD-14-65-00T-RET             |                       |  |                  |
|                             |       | 2   | CCI HPA-65R-BUU-H8                    |                       |  |                  |
| 149.0                       | 150.0 | 6   | RFS FDL85002/1C-3L                    | Platform w/ Handrails | (12) 1 5/8" Coax   | Verizon Wireless |
|                             |       | 3   | Andrew 948F85T2E-M                    |                       |  |                  |
|                             |       | 6   | Andrew DB844H80E-XY                   |                       |  |                  |
|                             |       | 6   | Andrew SBNHH-1D65B                    |                       |  |                  |
|                             | 149.0 | 3   | Alcatel-Lucent B66 RRH4x45            |                       |  |                  |
|                             |       | 1   | RFS DB-T1-6Z-8AB-0Z                   |                       |  |                  |
| 135.0                       | 135.0 | 12  | 42" x 6" Panel                        | Low Profile Platform  | (12) 1 1/4" Coax   | Other            |

**Equipment to be Removed**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                     | Mount Type | Lines | Carrier       |
|-----------------------------|-------|-----|-----------------------------|------------|-------|---------------|
| Mount                       | RAD   |     |                             |            |       |               |
| 159.0                       | 159.0 | 3   | KMW AM-X-CD-14-65-00T-RET   | -          | -     | AT&T Mobility |
|                             |       | 6   | KMW KDXCV0012017            |            |       |               |
|                             |       | 3   | Ericsson RRUS 12 w/ RRUS A2 |            |       |               |

**Proposed Equipment**

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                               | Mount Type            | Lines  | Carrier       |
|-----------------------------|-------|-----|---------------------------------------|-----------------------|--|---------------|
| Mount                       | RAD   |     |                                       |                       |  |               |
| 159.0                       | 159.0 | 6   | Kaelus DBC0061F1V51-2                 | Platform w/ Handrails | (2) 0.78" 8 AWG 6<br>(1) 0.39" Fiber Trunk<br>(1) 2" conduit | AT&T Mobility |
|                             |       | 1   | Raycap DC6-48-60-18-8F (23.5" Height) |                       |  |               |
|                             |       | 3   | Ericsson RRUS 32 B2                   |                       |  |               |
|                             |       | 3   | Ericsson RRUS 32 (55.1 lbs)           |                       |  |               |
|                             |       | 1   | Kathrein 80010798                     |                       |  |               |
|                             |       | 1   | CCI HPA-65R-BUU-H6                    |                       |  |               |
|                             |       | 2   | CCI TPA-65R-LCUUUU-H8                 |                       |  |               |

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

Install proposed coax inside the pole shaft.



**Structure Usages**

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Anchor Bolts         | 64%               | Pass      |
| Shaft                | 85%               | Pass      |
| Base Plate           | 42%               | Pass      |
| Flanges              | 2%                | Pass      |

**Foundations**

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|--------------------|---------------------------|----------------------------|--------------------|-------------|
| Moment (Kips-Ft)   | 3,020.9                   | 4,078.2                    | 3,074.6            | 75%         |
| Shear (Kips)       | 28.0                      | 37.8                       | 26.9               | 71%         |

\* 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) (°) |
|------------------------|---------------------------------------|---------------|-----------------|---------------------|
| 159.0                  | Kaelus DBC0061F1V51-2                 | AT&T Mobility | 3.005           | 2.186               |
|                        | Raycap DC6-48-60-18-8F (23.5" Height) |               |                 |                     |
|                        | Ericsson RRUS 32 B2                   |               |                 |                     |
|                        | Ericsson RRUS 32 (55.1 lbs)           |               |                 |                     |
|                        | Kathrein 80010798                     |               |                 |                     |
|                        | CCI HPA-65R-BUU-H6                    |               |                 |                     |
|                        | CCI TPA-65R-LCUUUU-H8                 |               |                 |                     |

\*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

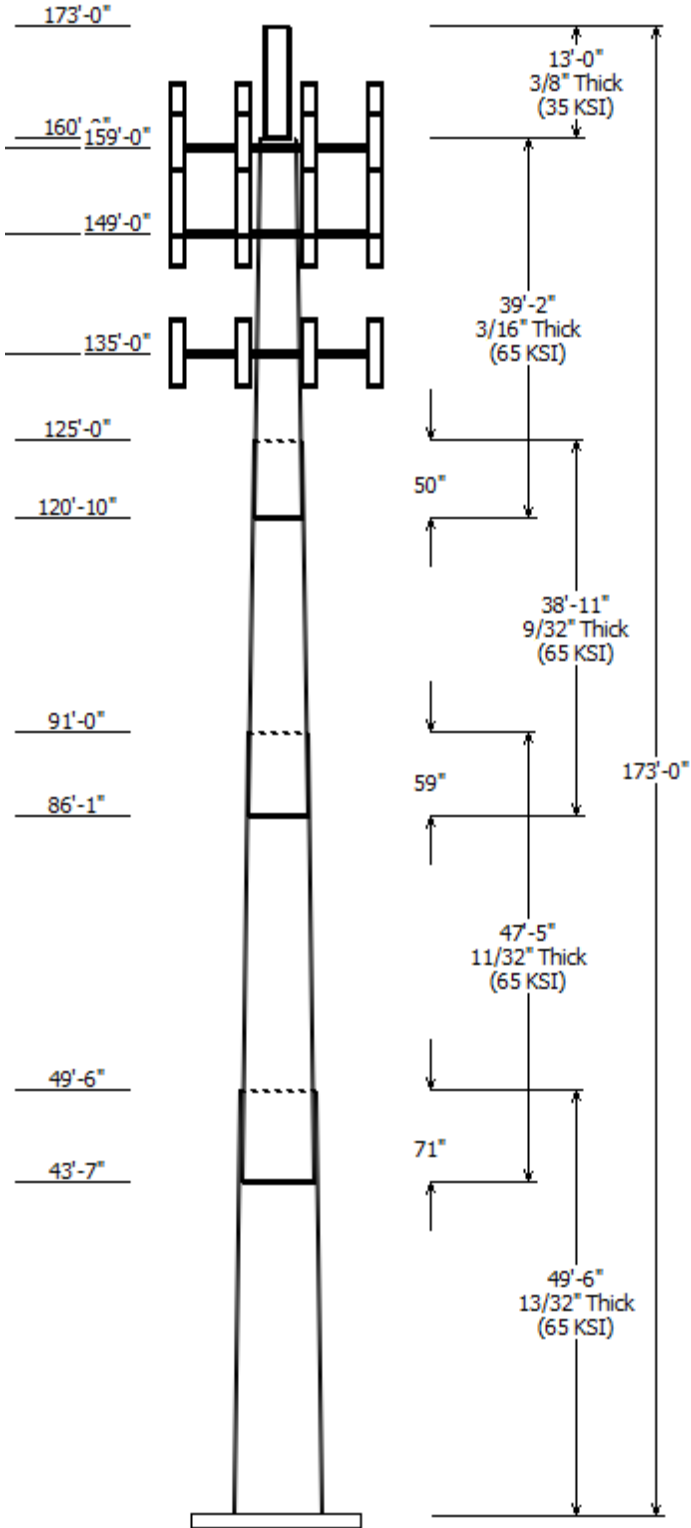
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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                       |                      |
|---------------------------------------|----------------------|
| Pole : 302524                         | Code: ANSI/TIA-222-G |
| Location : Beacon Falls, CT           |                      |
| Description : 173 ft Valmont Monopole |                      |
| Client : AT&T MOBILITY                | Struct Class : II    |
| Shape : 12 Sides                      | Exposure : B         |
| Height : 173.00 (ft)                  | Topo : 1             |
| Base Elev (ft): 0.00                  |                      |
| Taper: 0.20300@in/ft                  |                      |



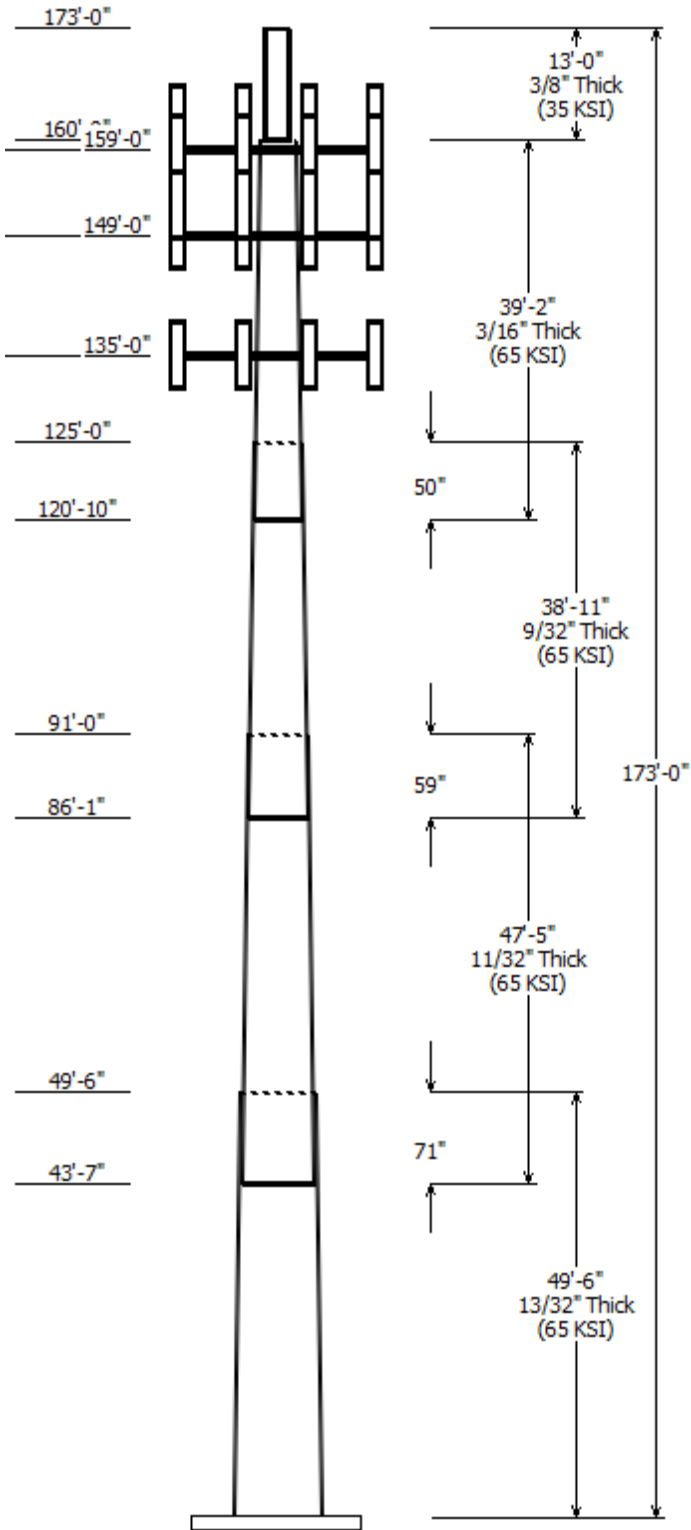
| Sections Properties |             |                   |        |            |            |                     |             |
|---------------------|-------------|-------------------|--------|------------|------------|---------------------|-------------|
| Shaft Section       | Length (ft) | Diameter (in)     |        | Thick (in) | Joint Type | Overlap Length (in) | Steel Grade |
|                     |             | Accross Flats Top | Bottom |            |            |                     |             |
| 1                   | 49.500      | 38.45             | 48.50  | 0.406      |            | 0.000               | 12 Sides 65 |
| 2                   | 47.417      | 30.71             | 40.34  | 0.344      | Slip Joint | 71.000              | 12 Sides 65 |
| 3                   | 38.917      | 24.37             | 32.27  | 0.281      | Slip Joint | 59.000              | 12 Sides 65 |
| 4                   | 39.167      | 17.64             | 25.59  | 0.188      | Slip Joint | 50.000              | 12 Sides 65 |
| 5                   | 13.000      | 14.00             | 14.00  | 0.375      | Butt Joint | 0.000               | Round 35    |

| Discrete Appurtenance |                 |     |                                |
|-----------------------|-----------------|-----|--------------------------------|
| Attach Elev (ft)      | Force Elev (ft) | Qty | Description                    |
| 159.000               | 159.000         | 2   | CCI TPA-65R-LCUUUU-H8          |
| 159.000               | 159.000         | 1   | Kathrein Scala 80010798        |
| 159.000               | 159.000         | 3   | Ericsson RRUS 32 (55.1 lbs)    |
| 159.000               | 159.000         | 3   | Ericsson RRUS 32 B2            |
| 159.000               | 159.000         | 6   | Kaelus DBC0061F1V51-2          |
| 159.000               | 159.000         | 1   | Flat Platform w/ Handrails     |
| 159.000               | 159.000         | 2   | CCI HPA-65R-BUU-H8             |
| 159.000               | 159.000         | 1   | CCI HPA-65R-BUU-H6             |
| 159.000               | 159.000         | 3   | KMW AM-X-CD-14-65-00T-RET      |
| 159.000               | 159.000         | 3   | Ericsson RRUS-11 (50 lbs.)     |
| 159.000               | 159.000         | 2   | Raycap DC6-48-60-18-8F (23.5") |
| 159.000               | 163.000         | 6   | Powerwave Allgon TT08-         |
| 149.000               | 149.000         | 3   | Alcatel-Lucent B66 RRH4x45     |
| 149.000               | 150.000         | 6   | RFS FDL85002/1C-3L             |
| 149.000               | 149.000         | 1   | Flat Platform w/ Handrails     |
| 149.000               | 150.000         | 6   | Andrew SBNHH-1D65B             |
| 149.000               | 150.000         | 6   | Andrew DB844H80E-XY            |
| 149.000               | 149.000         | 1   | RFS DB-T1-6Z-8AB-0Z            |
| 149.000               | 150.000         | 3   | Andrew 948F85T2E-M             |
| 135.000               | 135.000         | 1   | Flat Low Profile Platform      |
| 135.000               | 135.000         | 12  | 42" x 6" Panel                 |

| Linear Appurtenance |       |                  |                 |
|---------------------|-------|------------------|-----------------|
| Elev (ft) From      | To    | Description      | Exposed To Wind |
| 0.000               | 135.0 | 1 1/4" Coax      | No              |
| 0.000               | 149.0 | 1 5/8" Coax      | No              |
| 0.000               | 159.0 | 0.39" (10mm)     | No              |
| 0.000               | 159.0 | 0.39" (10mm)     | No              |
| 0.000               | 159.0 | 0.78" (19.7mm) 8 | No              |
| 0.000               | 159.0 | 0.78" (19.7mm) 8 | No              |
| 0.000               | 159.0 | 1 1/4" Coax      | No              |
| 0.000               | 159.0 | 2" conduit       | No              |
| 0.000               | 159.0 | 2" conduit       | No              |

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

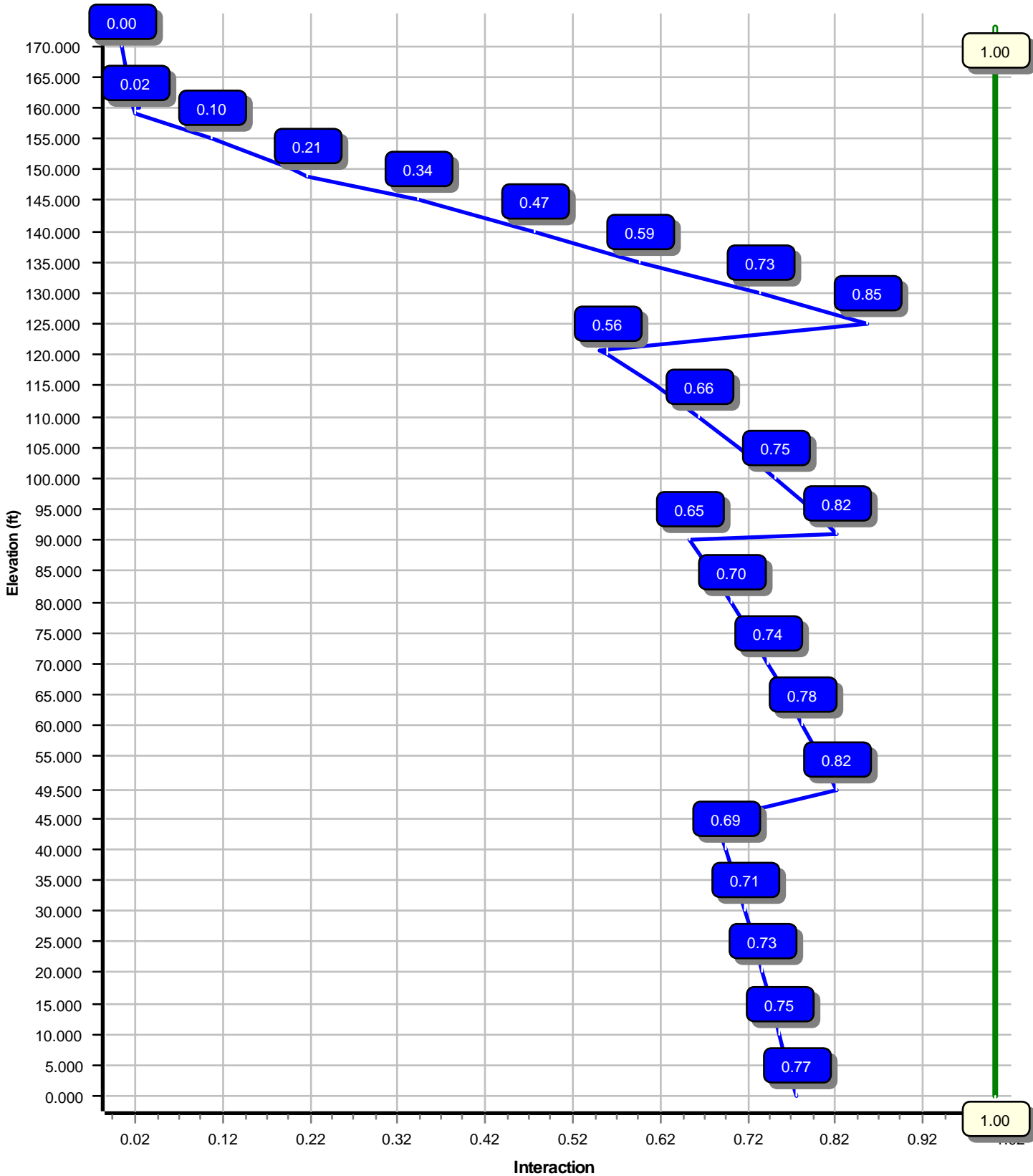
|                         |  |
|-------------------------|--|
| 1.2D + 1.0Di + 1.0Wi    | 50 mph with 0.75 in Radial Ice           |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + E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



| Reactions                    |                 |             |             |
|------------------------------|-----------------|-------------|-------------|
| Load Case                    | Moment (kip-ft) | Shear (kip) | Axial (kip) |
| 1.2D + 1.6W                  | 3074.58         | 26.86       | 41.43       |
| 0.9D + 1.6W                  | 3020.10         | 26.83       | 31.06       |
| 1.2D + 1.0Di + 1.0Wi         | 746.97          | 6.04        | 62.23       |
| (1.2 + 0.2Sds) * DL + E ELFM | 190.90          | 1.35        | 41.39       |
| (1.2 + 0.2Sds) * DL + E EMAM | 194.89          | 1.68        | 41.39       |
| (0.9 - 0.2Sds) * DL + E ELFM | 186.52          | 1.35        | 28.63       |
| (0.9 - 0.2Sds) * DL + E EMAM | 190.26          | 1.68        | 28.63       |
| 1.0D + 1.0W                  | 728.69          | 6.42        | 34.57       |

| 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 85.34% at 125.0 ft



Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

1/8/2018 4:27:48 PM

Customer: AT&T MOBILITY

Analysis Parameters

|                     |                         |                      |       |
|---------------------|-------------------------|----------------------|-------|
| Location :          | NEW HAVEN County, CT    | Height (ft) :        | 173   |
| Code :              | ANSI/TIA-222-G          | Base Diameter (in) : | 48.50 |
| Shape :             | 12 Sides. Sect 5: Round | Top Diameter (in) :  | 14.00 |
| Pole Type :         | Custom                  | Taper (in/ft) :      | 0.203 |
| Pole Manufacturer : | Valmont                 | 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): | 3.08   |                     |       |
| T <sub>L</sub> (sec):                  | 6  | p:                  | 1.3   |
| S <sub>s</sub> :                       | 0.194  | S <sub>1</sub> :    | 0.064 |
| F <sub>a</sub> :                       | 1.600  | F <sub>v</sub> :    | 2.400 |
| S <sub>ds</sub> :                      | 0.207  | S <sub>d1</sub> :   | 0.102 |
|  |  | C <sub>s</sub> :    | 0.030 |
|  |  | C <sub>s</sub> Max: | 0.030 |
|  |  | C <sub>s</sub> Min: | 0.030 |

Load Cases

|                              |   |
|------------------------------|---|
| 1.2D + 1.6W                  | 97 mph with No Ice                                    |
| 0.9D + 1.6W                  | 97 mph with No Ice (Reduced DL)                       |
| 1.2D + 1.0Di + 1.0Wi         | 50 mph with 0.75 in Radial Ice                        |
| (1.2 + 0.2Sds) * 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: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

1/8/2018 4:27:48 PM

Customer: AT&T MOBILITY

**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) |
| 1-12         | 49.500      | 0.4063     | 65       |            | 0.00           | 9,490       | 48.50    | 0.00      | 62.91                   | 18573.8               | 29.31     | 119.38    | 38.45    | 49.50     | 49.77                   | 9194.7                | 22.68     | 94.65     | 0.203000      |
| 2-12         | 47.417      | 0.3438     | 65       | Slip       | 71.00          | 6,284       | 40.34    | 43.58     | 44.27                   | 9039.5                | 28.77     | 117.35    | 30.71    | 91.00     | 33.62                   | 3957.8                | 21.26     | 89.35     | 0.203000      |
| 3-12         | 38.917      | 0.2813     | 65       | Slip       | 59.00          | 3,363       | 32.27    | 86.08     | 28.97                   | 3785.6                | 28.07     | 114.76    | 24.37    | 125.00    | 21.82                   | 1616.8                | 20.54     | 86.67     | 0.203000      |
| 4-12         | 39.167      | 0.1875     | 65       | Slip       | 50.00          | 1,725       | 25.59    | 120.83    | 15.34                   | 1264.1                | 33.90     | 136.51    | 17.64    | 160.00    | 10.54                   | 410.0                 | 22.54     | 94.11     | 0.203000      |
| 5-R          | 13.000      | 0.3750     | 35       | Butt       | 0.00           | 710         | 14.00    | 160.00    | 16.05                   | 372.8                 | 0.00      | 37.33     | 14.00    | 173.00    | 16.05                   | 372.8                 | 0.00      | 37.33     | 0.000000      |
| Shaft Weight |             |            |          |            |                | 21,571      |          |           |                         |                       |           |           |          |           |                         |                       |           |           |               |

**Discrete Appurtenance Properties**

| Attach Elev (ft) | Description                 | Qty | No Ice      |           |                    | Ice         |           |                    | Distance From Face (ft) | Vert Ecc (ft) |
|------------------|-----------------------------|-----|-------------|-----------|--------------------|-------------|-----------|--------------------|-------------------------|---------------|
|                  |                             |     | Weight (lb) | EPAA (sf) | Orientation Factor | Weight (lb) | EPAA (sf) | Orientation Factor |                         |               |
| 159.00           | CCI HPA-65R-BUU-H6          | 1   | 51.00       | 9.660     | 0.69               | 300.42      | 11.033    | 0.69               | 0.000                   | 0.000         |
| 159.00           | CCI HPA-65R-BUU-H8          | 2   | 68.00       | 12.980    | 0.67               | 360.60      | 14.603    | 0.67               | 0.000                   | 0.000         |
| 159.00           | CCI TPA-65R-LCUUUU-H8       | 2   | 81.60       | 13.300    | 0.69               | 0.00        | 0.000     | 0.69               | 0.000                   | 0.000         |
| 159.00           | Ericsson RRUS 32 (55.1 lbs) | 3   | 55.10       | 2.850     | 0.67               | 0.00        | 0.000     | 0.67               | 0.000                   | 0.000         |
| 159.00           | Ericsson RRUS 32 B2         | 3   | 53.00       | 2.740     | 0.67               | 0.00        | 0.000     | 0.67               | 0.000                   | 0.000         |
| 159.00           | Ericsson RRUS-11 (50 lbs.)  | 3   | 50.00       | 2.570     | 0.67               | 131.83      | 3.218     | 0.67               | 0.000                   | 0.000         |
| 159.00           | Flat Platform w/ Handrails  | 1   | 2000.00     | 42.400    | 1.00               | 3,430.59    | 63.511    | 1.00               | 0.000                   | 0.000         |
| 159.00           | Kaelus DBC0061F1V51-2       | 6   | 25.50       | 0.510     | 0.50               | 0.00        | 0.000     | 0.50               | 0.000                   | 0.000         |
| 159.00           | Kathrein Scala 80010798     | 1   | 81.40       | 10.690    | 0.65               | 0.00        | 0.000     | 0.65               | 0.000                   | 0.000         |
| 159.00           | KMW AM-X-CD-14-65-00T-      | 3   | 36.40       | 4.990     | 0.66               | 167.78      | 5.942     | 0.66               | 0.000                   | 0.000         |
| 159.00           | Powerwave Allgon TT08-      | 6   | 22.00       | 0.920     | 0.50               | 57.44       | 1.206     | 0.50               | 0.000                   | 4.000         |
| 159.00           | Raycap DC6-48-60-18-8F      | 2   | 20.00       | 1.110     | 1.00               | 101.04      | 2.527     | 1.00               | 0.000                   | 0.000         |
| 149.00           | Alcatel-Lucent B66 RRH4x45  | 3   | 67.00       | 2.580     | 0.67               | 0.00        | 0.000     | 0.67               | 0.000                   | 0.000         |
| 149.00           | Andrew 948F85T2E-M          | 3   | 8.50        | 3.250     | 0.66               | 91.21       | 2.639     | 0.66               | 0.000                   | 1.000         |
| 149.00           | Andrew DB844H80E-XY         | 6   | 10.00       | 3.610     | 0.73               | 117.03      | 3.724     | 0.73               | 0.000                   | 1.000         |
| 149.00           | Andrew SBNHH-1D65B          | 6   | 50.70       | 8.170     | 0.69               | 253.65      | 9.475     | 0.69               | 0.000                   | 1.000         |
| 149.00           | Flat Platform w/ Handrails  | 1   | 2000.00     | 42.400    | 1.00               | 3,421.21    | 63.373    | 1.00               | 0.000                   | 0.000         |
| 149.00           | RFS DB-T1-6Z-8AB-OZ         | 1   | 44.00       | 4.800     | 0.67               | 187.39      | 5.672     | 0.67               | 0.000                   | 0.000         |
| 149.00           | RFS FDL85002/1C-3L          | 6   | 7.00        | 0.390     | 0.50               | 0.00        | 0.000     | 0.50               | 0.000                   | 1.000         |
| 135.00           | 42" x 6" Panel              | 12  | 20.00       | 2.450     | 0.67               | 123.35      | 3.913     | 0.67               | 0.000                   | 0.000         |
| 135.00           | Flat Low Profile Platform   | 1   | 1500.00     | 26.100    | 1.00               | 2,143.01    | 45.048    | 1.00               | 0.000                   | 0.000         |
| Totals           |                             | 72  | 7756.80     |           |                    | 15,627.23   |           |                    | Number of Loadings : 21 |               |

**Linear Appurtenance Properties**

| Elev From (ft) | Elev To (ft) | Qty | Description        | Coax Diameter (in) | Coax Weight (lb/ft) | Flat | Projected Width (in) | Exposed To Wind | Carrier       |
|----------------|--------------|-----|--------------------|--------------------|---------------------|------|----------------------|-----------------|---------------|
| 0.00           | 159.00       | 1   | 0.39" (10mm) Fiber | 0.39               | 0.06                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 1   | 0.39" (10mm) Fiber | 0.39               | 0.06                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 2   | 0.78" (19.7mm) 8   | 0.78               | 0.59                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 2   | 0.78" (19.7mm) 8   | 0.78               | 0.59                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 12  | 1 1/4" Coax        | 1.55               | 0.63                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 1   | 2" conduit         | 2.38               | 3.65                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 159.00       | 1   | 2" conduit         | 2.38               | 3.65                | N    | 0.00                 | N               | AT&T Mobility |
| 0.00           | 149.00       | 12  | 1 5/8" Coax        | 1.98               | 0.82                | N    | 0.00                 | N               | Verizon       |
| 0.00           | 135.00       | 12  | 1 1/4" Coax        | 1.55               | 0.63                | N    | 0.00                 | N               | Other         |



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              |                 | 0.4063     | 48.500        | 62.913                  | 18,573.8              | 29.31     | 119.38    | 72.7      | 739.8                | 0.0                  | 0.0         |
| 5.00              |                 | 0.4063     | 47.485        | 61.585                  | 17,422.5              | 28.64     | 116.89    | 73.5      | 708.8                | 0.0                  | 1,059.1     |
| 10.00             |                 | 0.4063     | 46.470        | 60.257                  | 16,319.7              | 27.97     | 114.39    | 74.2      | 678.4                | 0.0                  | 1,036.5     |
| 15.00             |                 | 0.4063     | 45.455        | 58.929                  | 15,264.5              | 27.30     | 111.89    | 74.9      | 648.7                | 0.0                  | 1,013.9     |
| 20.00             |                 | 0.4063     | 44.440        | 57.602                  | 14,255.8              | 26.63     | 109.39    | 75.7      | 619.7                | 0.0                  | 991.3       |
| 25.00             |                 | 0.4063     | 43.425        | 56.274                  | 13,292.6              | 25.96     | 106.89    | 76.4      | 591.3                | 0.0                  | 968.7       |
| 30.00             |                 | 0.4063     | 42.410        | 54.946                  | 12,373.7              | 25.29     | 104.39    | 77.1      | 563.6                | 0.0                  | 946.1       |
| 35.00             |                 | 0.4063     | 41.395        | 53.618                  | 11,498.2              | 24.62     | 101.90    | 77.9      | 536.6                | 0.0                  | 923.6       |
| 40.00             |                 | 0.4063     | 40.380        | 52.291                  | 10,665.0              | 23.95     | 99.40     | 78.6      | 510.2                | 0.0                  | 901.0       |
| 43.58             | Bot - Section 2 | 0.4063     | 39.653        | 51.339                  | 10,093.3              | 23.47     | 97.61     | 79.1      | 491.7                | 0.0                  | 631.8       |
| 45.00             |                 | 0.4063     | 39.365        | 50.963                  | 9,873.0               | 23.28     | 96.90     | 79.3      | 484.5                | 0.0                  | 459.2       |
| 49.50             | Top - Section 1 | 0.3438     | 39.139        | 42.941                  | 8,249.4               | 27.83     | 113.86    | 74.4      | 407.2                | 0.0                  | 1,436.5     |
| 50.00             |                 | 0.3438     | 39.038        | 42.829                  | 8,184.8               | 27.75     | 113.56    | 74.4      | 405.0                | 0.0                  | 73.0        |
| 55.00             |                 | 0.3438     | 38.023        | 41.706                  | 7,557.4               | 26.96     | 110.61    | 75.3      | 384.0                | 0.0                  | 719.1       |
| 60.00             |                 | 0.3438     | 37.007        | 40.582                  | 6,963.0               | 26.17     | 107.66    | 76.2      | 363.5                | 0.0                  | 700.0       |
| 65.00             |                 | 0.3438     | 35.993        | 39.459                  | 6,400.6               | 25.38     | 104.71    | 77.0      | 343.5                | 0.0                  | 680.9       |
| 70.00             |                 | 0.3438     | 34.978        | 38.335                  | 5,869.3               | 24.59     | 101.75    | 77.9      | 324.2                | 0.0                  | 661.8       |
| 75.00             |                 | 0.3438     | 33.963        | 37.212                  | 5,368.2               | 23.79     | 98.80     | 78.8      | 305.4                | 0.0                  | 642.7       |
| 80.00             |                 | 0.3438     | 32.948        | 36.088                  | 4,896.5               | 23.00     | 95.85     | 79.6      | 287.1                | 0.0                  | 623.6       |
| 85.00             |                 | 0.3438     | 31.933        | 34.965                  | 4,453.3               | 22.21     | 92.89     | 80.5      | 269.4                | 0.0                  | 604.4       |
| 86.08             | Bot - Section 3 | 0.3438     | 31.713        | 34.721                  | 4,360.9               | 22.04     | 92.25     | 80.7      | 265.7                | 0.0                  | 128.4       |
| 90.00             |                 | 0.3438     | 30.918        | 33.841                  | 4,037.7               | 21.42     | 89.94     | 81.4      | 252.3                | 0.0                  | 838.2       |
| 91.00             | Top - Section 2 | 0.2813     | 31.277        | 28.071                  | 3,442.2               | 27.12     | 111.21    | 75.1      | 212.6                | 0.0                  | 210.6       |
| 95.00             |                 | 0.2813     | 30.465        | 27.335                  | 3,178.7               | 26.34     | 108.32    | 76.0      | 201.6                | 0.0                  | 377.1       |
| 100.0             |                 | 0.2813     | 29.450        | 26.416                  | 2,868.7               | 25.38     | 104.71    | 77.0      | 188.2                | 0.0                  | 457.3       |
| 105.0             |                 | 0.2813     | 28.435        | 25.497                  | 2,579.5               | 24.41     | 101.10    | 78.1      | 175.3                | 0.0                  | 441.6       |
| 110.0             |                 | 0.2813     | 27.420        | 24.578                  | 2,310.5               | 23.44     | 97.49     | 79.1      | 162.8                | 0.0                  | 426.0       |
| 115.0             |                 | 0.2813     | 26.405        | 23.658                  | 2,060.8               | 22.48     | 93.88     | 80.2      | 150.8                | 0.0                  | 410.3       |
| 120.0             |                 | 0.2813     | 25.390        | 22.739                  | 1,829.8               | 21.51     | 90.28     | 81.3      | 139.2                | 0.0                  | 394.7       |
| 120.8             | Bot - Section 4 | 0.2813     | 25.221        | 22.586                  | 1,793.1               | 21.35     | 89.67     | 81.4      | 137.3                | 0.0                  | 64.3        |
| 125.0             | Top - Section 3 | 0.1875     | 24.750        | 14.830                  | 1,142.0               | 32.69     | 132.00    | 69.1      | 89.1                 | 0.0                  | 528.7       |
| 130.0             |                 | 0.1875     | 23.735        | 14.217                  | 1,006.2               | 31.24     | 126.59    | 70.6      | 81.9                 | 0.0                  | 247.1       |
| 135.0             |                 | 0.1875     | 22.720        | 13.604                  | 881.6                 | 29.79     | 121.17    | 72.2      | 75.0                 | 0.0                  | 236.7       |
| 140.0             |                 | 0.1875     | 21.705        | 12.991                  | 767.7                 | 28.34     | 115.76    | 73.8      | 68.3                 | 0.0                  | 226.2       |
| 145.0             |                 | 0.1875     | 20.690        | 12.378                  | 664.1                 | 26.89     | 110.35    | 75.4      | 62.0                 | 0.0                  | 215.8       |
| 149.0             |                 | 0.1875     | 19.878        | 11.888                  | 588.3                 | 25.73     | 106.02    | 76.7      | 57.2                 | 0.0                  | 165.1       |
| 150.0             |                 | 0.1875     | 19.675        | 11.766                  | 570.3                 | 25.44     | 104.93    | 77.0      | 56.0                 | 0.0                  | 40.2        |
| 155.0             |                 | 0.1875     | 18.660        | 11.153                  | 485.8                 | 23.99     | 99.52     | 78.6      | 50.3                 | 0.0                  | 195.0       |
| 159.0             |                 | 0.1875     | 17.848        | 10.663                  | 424.5                 | 22.83     | 95.19     | 79.8      | 45.9                 | 0.0                  | 148.5       |
| 160.0             | Top - Section 4 | 0.1875     | 17.645        | 10.540                  | 410.0                 | 22.54     | 94.11     | 80.1      | 44.9                 | 0.0                  | 36.1        |
| 160.0             | Bot - Section 5 | 0.3750     | 14.000        | 16.052                  | 372.8                 | 0.00      | 37.33     | 35.0      | 53.3                 | 69.6                 |             |
| 165.0             |                 | 0.3750     | 14.000        | 16.052                  | 372.8                 | 0.00      | 37.33     | 35.0      | 53.3                 | 69.6                 | 273.1       |
| 170.0             |                 | 0.3750     | 14.000        | 16.052                  | 372.8                 | 0.00      | 37.33     | 35.0      | 53.3                 | 69.6                 | 273.1       |
| 173.0             |                 | 0.3750     | 14.000        | 16.052                  | 372.8                 | 0.00      | 37.33     | 35.0      | 53.3                 | 69.6                 | 163.9       |
| 21,571.2          |                 |            |               |                         |                       |           |           |           |                      |                      |             |

|                               |                    |                              |
|-------------------------------|--------------------|------------------------------|
| <b>Load Case:</b> 1.2D + 1.6W | 97 mph with No Ice | 30 Iterations                |
| Gust Response Factor :1.10    |                    | Wind Importance Factor :1.00 |
| Dead Load Factor :1.20        |                    |                              |
| Wind Load Factor :1.60        |                    |                              |

**Applied Segment Forces Summary**

| 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           |                 | 291.8        | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 291.8        | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 577.5        | 1,270.9        |                 |                    |                   |                | 0.0          | 208.4          | 577.5        | 1,479.4        | 0.0                | 0.0            |
| 10.00          |                 | 565.1        | 1,243.8        |                 |                    |                   |                | 0.0          | 208.4          | 565.1        | 1,452.2        | 0.0                | 0.0            |
| 15.00          |                 | 552.8        | 1,216.7        |                 |                    |                   |                | 0.0          | 208.4          | 552.8        | 1,425.1        | 0.0                | 0.0            |
| 20.00          |                 | 540.4        | 1,189.6        |                 |                    |                   |                | 0.0          | 208.4          | 540.4        | 1,398.0        | 0.0                | 0.0            |
| 25.00          |                 | 528.1        | 1,162.5        |                 |                    |                   |                | 0.0          | 208.4          | 528.1        | 1,370.9        | 0.0                | 0.0            |
| 30.00          |                 | 521.9        | 1,135.4        |                 |                    |                   |                | 0.0          | 208.4          | 521.9        | 1,343.8        | 0.0                | 0.0            |
| 35.00          |                 | 526.1        | 1,108.3        |                 |                    |                   |                | 0.0          | 208.4          | 526.1        | 1,316.7        | 0.0                | 0.0            |
| 40.00          |                 | 457.1        | 1,081.2        |                 |                    |                   |                | 0.0          | 208.4          | 457.1        | 1,289.6        | 0.0                | 0.0            |
| 43.58          | Bot - Section 2 | 269.3        | 758.2          |                 |                    |                   |                | 0.0          | 149.4          | 269.3        | 907.5          | 0.0                | 0.0            |
| 45.00          |                 | 324.4        | 551.1          |                 |                    |                   |                | 0.0          | 59.1           | 324.4        | 610.1          | 0.0                | 0.0            |
| 49.50          | Top - Section 1 | 274.4        | 1,723.8        |                 |                    |                   |                | 0.0          | 187.6          | 274.4        | 1,911.4        | 0.0                | 0.0            |
| 50.00          |                 | 302.6        | 87.6           |                 |                    |                   |                | 0.0          | 20.8           | 302.6        | 108.4          | 0.0                | 0.0            |
| 55.00          |                 | 550.1        | 863.0          |                 |                    |                   |                | 0.0          | 208.4          | 550.1        | 1,071.4        | 0.0                | 0.0            |
| 60.00          |                 | 548.9        | 840.0          |                 |                    |                   |                | 0.0          | 208.4          | 548.9        | 1,048.5        | 0.0                | 0.0            |
| 65.00          |                 | 546.2        | 817.1          |                 |                    |                   |                | 0.0          | 208.4          | 546.2        | 1,025.5        | 0.0                | 0.0            |
| 70.00          |                 | 542.2        | 794.1          |                 |                    |                   |                | 0.0          | 208.4          | 542.2        | 1,002.6        | 0.0                | 0.0            |
| 75.00          |                 | 536.9        | 771.2          |                 |                    |                   |                | 0.0          | 208.4          | 536.9        | 979.6          | 0.0                | 0.0            |
| 80.00          |                 | 530.6        | 748.3          |                 |                    |                   |                | 0.0          | 208.4          | 530.6        | 956.7          | 0.0                | 0.0            |
| 85.00          |                 | 320.2        | 725.3          |                 |                    |                   |                | 0.0          | 208.4          | 320.2        | 933.8          | 0.0                | 0.0            |
| 86.08          | Bot - Section 3 | 263.3        | 154.1          |                 |                    |                   |                | 0.0          | 45.2           | 263.3        | 199.3          | 0.0                | 0.0            |
| 90.00          |                 | 259.0        | 1,005.9        |                 |                    |                   |                | 0.0          | 163.3          | 259.0        | 1,169.2        | 0.0                | 0.0            |
| 91.00          | Top - Section 2 | 260.0        | 252.7          |                 |                    |                   |                | 0.0          | 41.7           | 260.0        | 294.4          | 0.0                | 0.0            |
| 95.00          |                 | 463.0        | 452.5          |                 |                    |                   |                | 0.0          | 166.8          | 463.0        | 619.2          | 0.0                | 0.0            |
| 100.00         |                 | 505.5        | 548.7          |                 |                    |                   |                | 0.0          | 208.4          | 505.5        | 757.1          | 0.0                | 0.0            |
| 105.00         |                 | 494.9        | 529.9          |                 |                    |                   |                | 0.0          | 208.4          | 494.9        | 738.4          | 0.0                | 0.0            |
| 110.00         |                 | 483.7        | 511.2          |                 |                    |                   |                | 0.0          | 208.4          | 483.7        | 719.6          | 0.0                | 0.0            |
| 115.00         |                 | 471.7        | 492.4          |                 |                    |                   |                | 0.0          | 208.4          | 471.7        | 700.8          | 0.0                | 0.0            |
| 120.00         |                 | 271.0        | 473.6          |                 |                    |                   |                | 0.0          | 208.4          | 271.0        | 682.1          | 0.0                | 0.0            |
| 120.83         | Bot - Section 4 | 229.2        | 77.1           |                 |                    |                   |                | 0.0          | 34.7           | 229.2        | 111.9          | 0.0                | 0.0            |
| 125.00         | Top - Section 3 | 414.1        | 634.4          |                 |                    |                   |                | 0.0          | 173.7          | 414.1        | 808.1          | 0.0                | 0.0            |
| 130.00         |                 | 439.1        | 296.5          |                 |                    |                   |                | 0.0          | 208.4          | 439.1        | 505.0          | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 424.9        | 284.0          | 1,815.1         | 0.0                | 0.0               | 2,088.0        | 0.0          | 208.4          | 2,240.0      | 2,580.4        | 0.0                | 0.0            |
| 140.00         |                 | 410.2        | 271.5          |                 |                    |                   |                | 0.0          | 163.1          | 410.2        | 434.6          | 0.0                | 0.0            |
| 145.00         |                 | 356.8        | 259.0          |                 |                    |                   |                | 0.0          | 163.1          | 356.8        | 422.1          | 0.0                | 0.0            |
| 149.00         | Appurtenance(s) | 193.6        | 198.2          | 4,090.7         | 0.0                | 1,918.5           | 3,212.0        | 0.0          | 130.5          | 4,284.3      | 3,540.7        | 0.0                | 0.0            |
| 150.00         |                 | 223.7        | 48.3           |                 |                    |                   |                | 0.0          | 20.8           | 223.7        | 69.1           | 0.0                | 0.0            |
| 155.00         |                 | 328.2        | 234.0          |                 |                    |                   |                | 0.0          | 104.0          | 328.2        | 338.0          | 0.0                | 0.0            |
| 159.00         | Appurtenance(s) | 177.4        | 178.2          | 4,726.9         | 0.0                | 378.9             | 4,008.1        | 0.0          | 83.2           | 4,904.3      | 4,269.5        | 0.0                | 0.0            |
| 160.00         | Top - Section 4 | 114.8        | 43.3           |                 |                    |                   |                | 0.0          | 0.0            | 114.8        | 43.3           | 0.0                | 0.0            |
| 165.00         |                 | 160.7        | 327.7          |                 |                    |                   |                | 0.0          | 0.0            | 160.7        | 327.7          | 0.0                | 0.0            |
| 170.00         |                 | 129.5        | 327.7          |                 |                    |                   |                | 0.0          | 0.0            | 129.5        | 327.7          | 0.0                | 0.0            |
| 173.00         |                 | 48.8         | 196.6          |                 |                    |                   |                | 0.0          | 0.0            | 48.8         | 196.6          | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 27,062.1     | 41,486.1       | 0.00               | 0.00           |

**Load Case: 1.2D + 1.6W**

97 mph with No Ice

30 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

**Calculated Forces**

| Seg    | Pu     | Vu     | Tu        | Mu        | Mu        | Resultant | phi      | phi      | phi       | phi       | Total   |          |       |
|--------|--------|--------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|---------|----------|-------|
| Elev   | FY (-) | FX (-) | MY        | MZ        | MX        | Moment    | Pn       | Vn       | Tn        | Mn        | Deflect | Rotation | Ratio |
| (ft)   | (kips) | (kips) | (ft-kips) | (ft-kips) | (ft-kips) | (ft-kips) | (kips)   | (kips)   | (ft-kips) | (ft-kips) | (in)    | (deg)    |       |
| 0.00   | -41.43 | -26.86 | 0.00      | -3,074.58 | 0.00      | 3,074.58  | 4,119.11 | 2,059.55 | 8,173.56  | 4,036.61  | 0.00    | 0.00     | 0.772 |
| 5.00   | -39.85 | -26.44 | 0.00      | -2,940.31 | 0.00      | 2,940.31  | 4,072.65 | 2,036.32 | 7,909.38  | 3,906.15  | 0.12    | -0.23    | 0.763 |
| 10.00  | -38.29 | -26.02 | 0.00      | -2,808.13 | 0.00      | 2,808.13  | 4,024.44 | 2,012.22 | 7,645.81  | 3,775.98  | 0.49    | -0.47    | 0.753 |
| 15.00  | -36.76 | -25.61 | 0.00      | -2,678.03 | 0.00      | 2,678.03  | 3,974.49 | 1,987.24 | 7,383.08  | 3,646.22  | 1.10    | -0.70    | 0.744 |
| 20.00  | -35.27 | -25.20 | 0.00      | -2,549.99 | 0.00      | 2,549.99  | 3,922.79 | 1,961.39 | 7,121.39  | 3,516.99  | 1.97    | -0.95    | 0.734 |
| 25.00  | -33.80 | -24.79 | 0.00      | -2,423.99 | 0.00      | 2,423.99  | 3,869.35 | 1,934.67 | 6,860.97  | 3,388.38  | 3.10    | -1.20    | 0.724 |
| 30.00  | -32.36 | -24.39 | 0.00      | -2,300.02 | 0.00      | 2,300.02  | 3,814.16 | 1,907.08 | 6,602.05  | 3,260.51  | 4.49    | -1.45    | 0.714 |
| 35.00  | -30.95 | -23.96 | 0.00      | -2,178.09 | 0.00      | 2,178.09  | 3,757.23 | 1,878.61 | 6,344.85  | 3,133.48  | 6.14    | -1.71    | 0.704 |
| 40.00  | -29.58 | -23.58 | 0.00      | -2,058.27 | 0.00      | 2,058.27  | 3,698.55 | 1,849.27 | 6,089.58  | 3,007.41  | 8.07    | -1.97    | 0.693 |
| 43.58  | -28.63 | -23.35 | 0.00      | -1,973.77 | 0.00      | 1,973.77  | 3,655.42 | 1,827.71 | 5,907.95  | 2,917.71  | 9.62    | -2.16    | 0.684 |
| 45.00  | -27.96 | -23.08 | 0.00      | -1,940.69 | 0.00      | 1,940.69  | 3,638.13 | 1,819.06 | 5,836.47  | 2,882.41  | 10.27   | -2.24    | 0.681 |
| 49.50  | -26.01 | -22.79 | 0.00      | -1,836.83 | 0.00      | 1,836.83  | 2,873.94 | 1,436.97 | 4,598.30  | 2,270.93  | 12.50   | -2.48    | 0.818 |
| 50.00  | -25.85 | -22.56 | 0.00      | -1,825.44 | 0.00      | 1,825.44  | 2,869.74 | 1,434.87 | 4,579.47  | 2,261.63  | 12.76   | -2.51    | 0.816 |
| 55.00  | -24.69 | -22.09 | 0.00      | -1,712.64 | 0.00      | 1,712.64  | 2,826.86 | 1,413.43 | 4,391.66  | 2,168.87  | 15.55   | -2.82    | 0.799 |
| 60.00  | -23.55 | -21.62 | 0.00      | -1,602.18 | 0.00      | 1,602.18  | 2,782.22 | 1,391.11 | 4,204.83  | 2,076.61  | 18.67   | -3.13    | 0.780 |
| 65.00  | -22.44 | -21.14 | 0.00      | -1,494.08 | 0.00      | 1,494.08  | 2,735.84 | 1,367.92 | 4,019.21  | 1,984.94  | 22.12   | -3.45    | 0.761 |
| 70.00  | -21.36 | -20.66 | 0.00      | -1,388.38 | 0.00      | 1,388.38  | 2,687.72 | 1,343.86 | 3,835.01  | 1,893.97  | 25.90   | -3.77    | 0.741 |
| 75.00  | -20.30 | -20.17 | 0.00      | -1,285.09 | 0.00      | 1,285.09  | 2,637.85 | 1,318.93 | 3,652.47  | 1,803.82  | 30.02   | -4.09    | 0.720 |
| 80.00  | -19.28 | -19.68 | 0.00      | -1,184.24 | 0.00      | 1,184.24  | 2,586.24 | 1,293.12 | 3,471.79  | 1,714.59  | 34.47   | -4.42    | 0.698 |
| 85.00  | -18.30 | -19.35 | 0.00      | -1,085.84 | 0.00      | 1,085.84  | 2,532.88 | 1,266.44 | 3,293.21  | 1,626.39  | 39.27   | -4.75    | 0.675 |
| 86.08  | -18.07 | -19.13 | 0.00      | -1,064.88 | 0.00      | 1,064.88  | 2,521.09 | 1,260.54 | 3,254.81  | 1,607.43  | 40.36   | -4.82    | 0.670 |
| 90.00  | -16.87 | -18.81 | 0.00      | -989.97   | 0.00      | 989.97    | 2,477.77 | 1,238.89 | 3,116.93  | 1,539.34  | 44.42   | -5.09    | 0.650 |
| 91.00  | -16.55 | -18.58 | 0.00      | -971.16   | 0.00      | 971.16    | 1,898.25 | 949.12   | 2,426.08  | 1,198.15  | 45.49   | -5.16    | 0.820 |
| 95.00  | -15.87 | -18.15 | 0.00      | -896.84   | 0.00      | 896.84    | 1,869.28 | 934.64   | 2,325.90  | 1,148.68  | 49.92   | -5.42    | 0.790 |
| 100.00 | -15.05 | -17.67 | 0.00      | -806.09   | 0.00      | 806.09    | 1,831.49 | 915.75   | 2,201.55  | 1,087.26  | 55.80   | -5.80    | 0.750 |
| 105.00 | -14.26 | -17.20 | 0.00      | -717.71   | 0.00      | 717.71    | 1,791.96 | 895.98   | 2,078.36  | 1,026.42  | 62.07   | -6.18    | 0.708 |
| 110.00 | -13.49 | -16.73 | 0.00      | -631.72   | 0.00      | 631.72    | 1,750.69 | 875.34   | 1,956.56  | 966.27    | 68.73   | -6.55    | 0.662 |
| 115.00 | -12.75 | -16.25 | 0.00      | -548.10   | 0.00      | 548.10    | 1,707.67 | 853.83   | 1,836.37  | 906.92    | 75.78   | -6.92    | 0.612 |
| 120.00 | -12.05 | -15.94 | 0.00      | -466.83   | 0.00      | 466.83    | 1,662.90 | 831.45   | 1,718.02  | 848.46    | 83.19   | -7.27    | 0.558 |
| 120.83 | -11.92 | -15.74 | 0.00      | -453.54   | 0.00      | 453.54    | 1,655.27 | 827.64   | 1,698.48  | 838.82    | 84.46   | -7.33    | 0.548 |
| 125.00 | -11.09 | -15.28 | 0.00      | -387.97   | 0.00      | 387.97    | 921.74   | 460.87   | 934.87    | 461.70    | 90.97   | -7.61    | 0.853 |
| 130.00 | -10.56 | -14.84 | 0.00      | -311.57   | 0.00      | 311.57    | 903.89   | 451.95   | 878.60    | 433.91    | 99.08   | -7.91    | 0.731 |
| 135.00 | -8.24  | -12.31 | 0.00      | -237.36   | 0.00      | 237.36    | 884.30   | 442.15   | 822.21    | 406.06    | 107.55  | -8.30    | 0.595 |
| 140.00 | -7.81  | -11.88 | 0.00      | -175.81   | 0.00      | 175.81    | 862.96   | 431.48   | 765.93    | 378.26    | 116.40  | -8.64    | 0.475 |
| 145.00 | -7.41  | -11.49 | 0.00      | -116.40   | 0.00      | 116.40    | 839.88   | 419.94   | 709.98    | 350.63    | 125.56  | -8.91    | 0.342 |
| 149.00 | -4.57  | -6.72  | 0.00      | -68.50    | 0.00      | 68.50     | 820.16   | 410.08   | 665.60    | 328.71    | 133.07  | -9.07    | 0.214 |
| 150.00 | -4.53  | -6.49  | 0.00      | -61.79    | 0.00      | 61.79     | 815.05   | 407.53   | 654.57    | 323.27    | 134.96  | -9.10    | 0.197 |
| 155.00 | -4.24  | -6.12  | 0.00      | -29.34    | 0.00      | 29.34     | 788.48   | 394.24   | 599.93    | 296.28    | 144.52  | -9.21    | 0.105 |
| 159.00 | -0.81  | -0.59  | 0.00      | -4.49     | 0.00      | 4.49      | 765.97   | 382.98   | 556.93    | 275.05    | 152.22  | -9.25    | 0.017 |
| 160.00 | -0.79  | -0.47  | 0.00      | -3.90     | 0.00      | 3.90      | 760.16   | 380.08   | 546.29    | 269.79    | 154.15  | -9.25    | 0.015 |
| 160.00 | -0.79  | -0.47  | 0.00      | -3.90     | 0.00      | 3.90      | 505.62   | 252.81   | 279.19    | 182.79    | 154.15  | -9.25    | 0.023 |
| 165.00 | -0.49  | -0.26  | 0.00      | -1.54     | 0.00      | 1.54      | 505.62   | 252.81   | 279.19    | 182.79    | 163.81  | -9.26    | 0.009 |
| 170.00 | -0.19  | -0.08  | 0.00      | -0.24     | 0.00      | 0.24      | 505.62   | 252.81   | 279.19    | 182.79    | 173.47  | -9.27    | 0.002 |
| 173.00 | 0.00   | -0.05  | 0.00      | 0.00      | 0.00      | 0.00      | 505.62   | 252.81   | 279.19    | 182.79    | 179.26  | -9.27    | 0.000 |

|                               |                                 |                              |
|-------------------------------|---------------------------------|------------------------------|
| <b>Load Case:</b> 0.9D + 1.6W | 97 mph with No Ice (Reduced DL) | 29 Iterations                |
| Gust Response Factor :1.10    |                                 | Wind Importance Factor :1.00 |
| Dead Load Factor :0.90        |                                 |                              |
| Wind Load Factor :1.60        |                                 |                              |

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           |                 | 291.8        | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 291.8        | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 577.5        | 953.2          |                 |                    |                   |                | 0.0          | 156.3          | 577.5        | 1,109.5        | 0.0                | 0.0            |
| 10.00          |                 | 565.1        | 932.9          |                 |                    |                   |                | 0.0          | 156.3          | 565.1        | 1,089.2        | 0.0                | 0.0            |
| 15.00          |                 | 552.8        | 912.5          |                 |                    |                   |                | 0.0          | 156.3          | 552.8        | 1,068.9        | 0.0                | 0.0            |
| 20.00          |                 | 540.4        | 892.2          |                 |                    |                   |                | 0.0          | 156.3          | 540.4        | 1,048.5        | 0.0                | 0.0            |
| 25.00          |                 | 528.1        | 871.9          |                 |                    |                   |                | 0.0          | 156.3          | 528.1        | 1,028.2        | 0.0                | 0.0            |
| 30.00          |                 | 521.9        | 851.5          |                 |                    |                   |                | 0.0          | 156.3          | 521.9        | 1,007.9        | 0.0                | 0.0            |
| 35.00          |                 | 526.1        | 831.2          |                 |                    |                   |                | 0.0          | 156.3          | 526.1        | 987.5          | 0.0                | 0.0            |
| 40.00          |                 | 457.1        | 810.9          |                 |                    |                   |                | 0.0          | 156.3          | 457.1        | 967.2          | 0.0                | 0.0            |
| 43.58          | Bot - Section 2 | 269.3        | 568.6          |                 |                    |                   |                | 0.0          | 112.0          | 269.3        | 680.7          | 0.0                | 0.0            |
| 45.00          |                 | 324.4        | 413.3          |                 |                    |                   |                | 0.0          | 44.3           | 324.4        | 457.6          | 0.0                | 0.0            |
| 49.50          | Top - Section 1 | 274.4        | 1,292.9        |                 |                    |                   |                | 0.0          | 140.7          | 274.4        | 1,433.6        | 0.0                | 0.0            |
| 50.00          |                 | 302.6        | 65.7           |                 |                    |                   |                | 0.0          | 15.6           | 302.6        | 81.3           | 0.0                | 0.0            |
| 55.00          |                 | 550.1        | 647.2          |                 |                    |                   |                | 0.0          | 156.3          | 550.1        | 803.5          | 0.0                | 0.0            |
| 60.00          |                 | 548.9        | 630.0          |                 |                    |                   |                | 0.0          | 156.3          | 548.9        | 786.3          | 0.0                | 0.0            |
| 65.00          |                 | 546.2        | 612.8          |                 |                    |                   |                | 0.0          | 156.3          | 546.2        | 769.1          | 0.0                | 0.0            |
| 70.00          |                 | 542.2        | 595.6          |                 |                    |                   |                | 0.0          | 156.3          | 542.2        | 751.9          | 0.0                | 0.0            |
| 75.00          |                 | 536.9        | 578.4          |                 |                    |                   |                | 0.0          | 156.3          | 536.9        | 734.7          | 0.0                | 0.0            |
| 80.00          |                 | 530.6        | 561.2          |                 |                    |                   |                | 0.0          | 156.3          | 530.6        | 717.5          | 0.0                | 0.0            |
| 85.00          |                 | 320.2        | 544.0          |                 |                    |                   |                | 0.0          | 156.3          | 320.2        | 700.3          | 0.0                | 0.0            |
| 86.08          | Bot - Section 3 | 263.3        | 115.6          |                 |                    |                   |                | 0.0          | 33.9           | 263.3        | 149.5          | 0.0                | 0.0            |
| 90.00          |                 | 259.0        | 754.4          |                 |                    |                   |                | 0.0          | 122.5          | 259.0        | 876.9          | 0.0                | 0.0            |
| 91.00          | Top - Section 2 | 260.0        | 189.5          |                 |                    |                   |                | 0.0          | 31.3           | 260.0        | 220.8          | 0.0                | 0.0            |
| 95.00          |                 | 463.0        | 339.4          |                 |                    |                   |                | 0.0          | 125.1          | 463.0        | 464.4          | 0.0                | 0.0            |
| 100.00         |                 | 505.5        | 411.5          |                 |                    |                   |                | 0.0          | 156.3          | 505.5        | 567.9          | 0.0                | 0.0            |
| 105.00         |                 | 494.9        | 397.5          |                 |                    |                   |                | 0.0          | 156.3          | 494.9        | 553.8          | 0.0                | 0.0            |
| 110.00         |                 | 483.7        | 383.4          |                 |                    |                   |                | 0.0          | 156.3          | 483.7        | 539.7          | 0.0                | 0.0            |
| 115.00         |                 | 471.7        | 369.3          |                 |                    |                   |                | 0.0          | 156.3          | 471.7        | 525.6          | 0.0                | 0.0            |
| 120.00         |                 | 271.0        | 355.2          |                 |                    |                   |                | 0.0          | 156.3          | 271.0        | 511.6          | 0.0                | 0.0            |
| 120.83         | Bot - Section 4 | 229.2        | 57.8           |                 |                    |                   |                | 0.0          | 26.1           | 229.2        | 83.9           | 0.0                | 0.0            |
| 125.00         | Top - Section 3 | 414.1        | 475.8          |                 |                    |                   |                | 0.0          | 130.3          | 414.1        | 606.1          | 0.0                | 0.0            |
| 130.00         |                 | 439.1        | 222.4          |                 |                    |                   |                | 0.0          | 156.3          | 439.1        | 378.7          | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 424.9        | 213.0          | 1,815.1         | 0.0                | 0.0               | 1,566.0        | 0.0          | 156.3          | 2,240.0      | 1,935.3        | 0.0                | 0.0            |
| 140.00         |                 | 410.2        | 203.6          |                 |                    |                   |                | 0.0          | 122.3          | 410.2        | 325.9          | 0.0                | 0.0            |
| 145.00         |                 | 356.8        | 194.2          |                 |                    |                   |                | 0.0          | 122.3          | 356.8        | 316.5          | 0.0                | 0.0            |
| 149.00         | Appurtenance(s) | 193.6        | 148.6          | 4,090.7         | 0.0                | 1,918.5           | 2,409.0        | 0.0          | 97.8           | 4,284.3      | 2,655.5        | 0.0                | 0.0            |
| 150.00         |                 | 223.7        | 36.2           |                 |                    |                   |                | 0.0          | 15.6           | 223.7        | 51.8           | 0.0                | 0.0            |
| 155.00         |                 | 328.2        | 175.5          |                 |                    |                   |                | 0.0          | 78.0           | 328.2        | 253.5          | 0.0                | 0.0            |
| 159.00         | Appurtenance(s) | 177.4        | 133.6          | 4,726.9         | 0.0                | 378.9             | 3,006.1        | 0.0          | 62.4           | 4,904.3      | 3,202.1        | 0.0                | 0.0            |
| 160.00         | Top - Section 4 | 114.8        | 32.5           |                 |                    |                   |                | 0.0          | 0.0            | 114.8        | 32.5           | 0.0                | 0.0            |
| 165.00         |                 | 160.7        | 245.8          |                 |                    |                   |                | 0.0          | 0.0            | 160.7        | 245.8          | 0.0                | 0.0            |
| 170.00         |                 | 129.5        | 245.8          |                 |                    |                   |                | 0.0          | 0.0            | 129.5        | 245.8          | 0.0                | 0.0            |
| 173.00         |                 | 48.8         | 147.5          |                 |                    |                   |                | 0.0          | 0.0            | 48.8         | 147.5          | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 27,062.1     | 31,114.6       | 0.00               | 0.00           |

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

97 mph with No Ice (Reduced DL)

29 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

**Calculated Forces**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -31.06           | -26.83           | 0.00            | -3,020.10       | 0.00            | 3,020.10                   | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.756 |
| 5.00          | -29.85           | -26.37           | 0.00            | -2,885.94       | 0.00            | 2,885.94                   | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.12               | -0.23          | 0.746 |
| 10.00         | -28.66           | -25.92           | 0.00            | -2,754.08       | 0.00            | 2,754.08                   | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.48               | -0.46          | 0.737 |
| 15.00         | -27.49           | -25.47           | 0.00            | -2,624.50       | 0.00            | 2,624.50                   | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 1.08               | -0.69          | 0.727 |
| 20.00         | -26.34           | -25.02           | 0.00            | -2,497.17       | 0.00            | 2,497.17                   | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 1.94               | -0.93          | 0.717 |
| 25.00         | -25.22           | -24.58           | 0.00            | -2,372.06       | 0.00            | 2,372.06                   | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 3.04               | -1.17          | 0.707 |
| 30.00         | -24.12           | -24.14           | 0.00            | -2,249.15       | 0.00            | 2,249.15                   | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 4.40               | -1.42          | 0.696 |
| 35.00         | -23.04           | -23.69           | 0.00            | -2,128.43       | 0.00            | 2,128.43                   | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 6.02               | -1.67          | 0.686 |
| 40.00         | -22.00           | -23.29           | 0.00            | -2,009.96       | 0.00            | 2,009.96                   | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 7.91               | -1.93          | 0.674 |
| 43.58         | -21.28           | -23.05           | 0.00            | -1,926.50       | 0.00            | 1,926.50                   | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 9.43               | -2.12          | 0.666 |
| 45.00         | -20.77           | -22.76           | 0.00            | -1,893.85       | 0.00            | 1,893.85                   | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 10.07              | -2.19          | 0.663 |
| 49.50         | -19.29           | -22.48           | 0.00            | -1,791.41       | 0.00            | 1,791.41                   | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 12.25              | -2.43          | 0.796 |
| 50.00         | -19.16           | -22.23           | 0.00            | -1,780.17       | 0.00            | 1,780.17                   | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 12.50              | -2.46          | 0.794 |
| 55.00         | -18.27           | -21.74           | 0.00            | -1,669.05       | 0.00            | 1,669.05                   | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 15.24              | -2.76          | 0.776 |
| 60.00         | -17.40           | -21.24           | 0.00            | -1,560.36       | 0.00            | 1,560.36                   | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 18.29              | -3.06          | 0.758 |
| 65.00         | -16.55           | -20.74           | 0.00            | -1,454.16       | 0.00            | 1,454.16                   | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 21.66              | -3.37          | 0.739 |
| 70.00         | -15.72           | -20.24           | 0.00            | -1,350.45       | 0.00            | 1,350.45                   | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 25.35              | -3.68          | 0.719 |
| 75.00         | -14.92           | -19.74           | 0.00            | -1,249.24       | 0.00            | 1,249.24                   | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 29.37              | -4.00          | 0.698 |
| 80.00         | -14.13           | -19.24           | 0.00            | -1,150.54       | 0.00            | 1,150.54                   | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 33.72              | -4.31          | 0.677 |
| 85.00         | -13.40           | -18.91           | 0.00            | -1,054.35       | 0.00            | 1,054.35                   | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 38.41              | -4.63          | 0.654 |
| 86.08         | -13.21           | -18.67           | 0.00            | -1,033.87       | 0.00            | 1,033.87                   | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 39.47              | -4.71          | 0.649 |
| 90.00         | -12.31           | -18.37           | 0.00            | -960.74         | 0.00            | 960.74                     | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 43.43              | -4.96          | 0.629 |
| 91.00         | -12.06           | -18.13           | 0.00            | -942.36         | 0.00            | 942.36                     | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 44.48              | -5.03          | 0.793 |
| 95.00         | -11.54           | -17.69           | 0.00            | -869.84         | 0.00            | 869.84                     | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 48.80              | -5.29          | 0.764 |
| 100.00        | -10.92           | -17.21           | 0.00            | -781.37         | 0.00            | 781.37                     | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 54.53              | -5.66          | 0.725 |
| 105.00        | -10.31           | -16.72           | 0.00            | -695.35         | 0.00            | 695.35                     | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 60.64              | -6.03          | 0.684 |
| 110.00        | -9.72            | -16.24           | 0.00            | -611.73         | 0.00            | 611.73                     | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 67.13              | -6.39          | 0.639 |
| 115.00        | -9.16            | -15.77           | 0.00            | -530.51         | 0.00            | 530.51                     | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 74.00              | -6.74          | 0.591 |
| 120.00        | -8.63            | -15.47           | 0.00            | -451.66         | 0.00            | 451.66                     | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 81.22              | -7.08          | 0.538 |
| 120.83        | -8.53            | -15.26           | 0.00            | -438.77         | 0.00            | 438.77                     | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 82.46              | -7.13          | 0.529 |
| 125.00        | -7.91            | -14.81           | 0.00            | -375.19         | 0.00            | 375.19                     | 921.74        | 460.87        | 934.87           | 461.70           | 88.79              | -7.40          | 0.822 |
| 130.00        | -7.51            | -14.37           | 0.00            | -301.15         | 0.00            | 301.15                     | 903.89        | 451.95        | 878.60           | 433.91           | 96.68              | -7.70          | 0.703 |
| 135.00        | -5.83            | -11.92           | 0.00            | -229.30         | 0.00            | 229.30                     | 884.30        | 442.15        | 822.21           | 406.06           | 104.93             | -8.08          | 0.572 |
| 140.00        | -5.51            | -11.50           | 0.00            | -169.71         | 0.00            | 169.71                     | 862.96        | 431.48        | 765.93           | 378.26           | 113.53             | -8.40          | 0.456 |
| 145.00        | -5.21            | -11.11           | 0.00            | -112.23         | 0.00            | 112.23                     | 839.88        | 419.94        | 709.98           | 350.63           | 122.44             | -8.66          | 0.327 |
| 149.00        | -3.22            | -6.48            | 0.00            | -65.85          | 0.00            | 65.85                      | 820.16        | 410.08        | 665.60           | 328.71           | 129.74             | -8.81          | 0.205 |
| 150.00        | -3.20            | -6.26            | 0.00            | -59.37          | 0.00            | 59.37                      | 815.05        | 407.53        | 654.57           | 323.27           | 131.58             | -8.84          | 0.188 |
| 155.00        | -2.99            | -5.90            | 0.00            | -28.09          | 0.00            | 28.09                      | 788.48        | 394.24        | 599.93           | 296.28           | 140.87             | -8.95          | 0.099 |
| 159.00        | -0.59            | -0.55            | 0.00            | -4.13           | 0.00            | 4.13                       | 765.97        | 382.98        | 556.93           | 275.05           | 148.36             | -8.99          | 0.016 |
| 160.00        | -0.58            | -0.43            | 0.00            | -3.57           | 0.00            | 3.57                       | 760.16        | 380.08        | 546.29           | 269.79           | 150.24             | -8.99          | 0.014 |
| 160.00        | -0.58            | -0.43            | 0.00            | -3.57           | 0.00            | 3.57                       | 505.62        | 252.81        | 279.19           | 182.79           | 150.24             | -8.99          | 0.021 |
| 165.00        | -0.36            | -0.24            | 0.00            | -1.40           | 0.00            | 1.40                       | 505.62        | 252.81        | 279.19           | 182.79           | 159.62             | -9.00          | 0.008 |
| 170.00        | -0.14            | -0.07            | 0.00            | -0.21           | 0.00            | 0.21                       | 505.62        | 252.81        | 279.19           | 182.79           | 169.01             | -9.00          | 0.001 |
| 173.00        | 0.00             | -0.05            | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 174.65             | -9.00          | 0.000 |

|  |                                |                              |
|--|--------------------------------|------------------------------|
| <b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi | 50 mph with 0.75 in Radial Ice | 29 Iterations                |
| Gust Response Factor :1.10             | Ice Dead Load Factor :1.00     | Wind Importance Factor :1.00 |
| Dead Load Factor :1.20                 |                                | Ice Importance Factor :1.00  |
| Wind Load Factor :1.00                 |                                |                              |

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           |                 | 60.9         | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 60.9         | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 120.8        | 1,636.0        |                 |                    |                   |                | 0.0          | 208.4          | 120.8        | 1,844.5        | 0.0                | 0.0            |
| 10.00          |                 | 118.8        | 1,643.9        |                 |                    |                   |                | 0.0          | 208.4          | 118.8        | 1,852.3        | 0.0                | 0.0            |
| 15.00          |                 | 116.6        | 1,629.4        |                 |                    |                   |                | 0.0          | 208.4          | 116.6        | 1,837.8        | 0.0                | 0.0            |
| 20.00          |                 | 114.4        | 1,607.5        |                 |                    |                   |                | 0.0          | 208.4          | 114.4        | 1,816.0        | 0.0                | 0.0            |
| 25.00          |                 | 112.1        | 1,581.9        |                 |                    |                   |                | 0.0          | 208.4          | 112.1        | 1,790.3        | 0.0                | 0.0            |
| 30.00          |                 | 111.0        | 1,553.9        |                 |                    |                   |                | 0.0          | 208.4          | 111.0        | 1,762.3        | 0.0                | 0.0            |
| 35.00          |                 | 112.2        | 1,524.2        |                 |                    |                   |                | 0.0          | 208.4          | 112.2        | 1,732.6        | 0.0                | 0.0            |
| 40.00          |                 | 97.7         | 1,493.3        |                 |                    |                   |                | 0.0          | 208.4          | 97.7         | 1,701.7        | 0.0                | 0.0            |
| 43.58          | Bot - Section 2 | 57.7         | 1,051.6        |                 |                    |                   |                | 0.0          | 149.4          | 57.7         | 1,201.0        | 0.0                | 0.0            |
| 45.00          |                 | 69.5         | 668.9          |                 |                    |                   |                | 0.0          | 59.1           | 69.5         | 728.0          | 0.0                | 0.0            |
| 49.50          | Top - Section 1 | 58.8         | 2,092.4        |                 |                    |                   |                | 0.0          | 187.6          | 58.8         | 2,280.0        | 0.0                | 0.0            |
| 50.00          |                 | 65.0         | 128.6          |                 |                    |                   |                | 0.0          | 20.8           | 65.0         | 149.5          | 0.0                | 0.0            |
| 55.00          |                 | 118.4        | 1,265.7        |                 |                    |                   |                | 0.0          | 208.4          | 118.4        | 1,474.1        | 0.0                | 0.0            |
| 60.00          |                 | 118.5        | 1,236.1        |                 |                    |                   |                | 0.0          | 208.4          | 118.5        | 1,444.6        | 0.0                | 0.0            |
| 65.00          |                 | 118.2        | 1,206.1        |                 |                    |                   |                | 0.0          | 208.4          | 118.2        | 1,414.6        | 0.0                | 0.0            |
| 70.00          |                 | 117.7        | 1,175.7        |                 |                    |                   |                | 0.0          | 208.4          | 117.7        | 1,384.2        | 0.0                | 0.0            |
| 75.00          |                 | 116.9        | 1,145.0        |                 |                    |                   |                | 0.0          | 208.4          | 116.9        | 1,353.4        | 0.0                | 0.0            |
| 80.00          |                 | 115.9        | 1,113.9        |                 |                    |                   |                | 0.0          | 208.4          | 115.9        | 1,322.3        | 0.0                | 0.0            |
| 85.00          |                 | 70.1         | 1,082.5        |                 |                    |                   |                | 0.0          | 208.4          | 70.1         | 1,291.0        | 0.0                | 0.0            |
| 86.08          | Bot - Section 3 | 57.7         | 231.3          |                 |                    |                   |                | 0.0          | 45.2           | 57.7         | 276.5          | 0.0                | 0.0            |
| 90.00          |                 | 56.8         | 1,283.8        |                 |                    |                   |                | 0.0          | 163.3          | 56.8         | 1,447.1        | 0.0                | 0.0            |
| 91.00          | Top - Section 2 | 57.2         | 323.5          |                 |                    |                   |                | 0.0          | 41.7           | 57.2         | 365.1          | 0.0                | 0.0            |
| 95.00          |                 | 102.0        | 729.2          |                 |                    |                   |                | 0.0          | 166.8          | 102.0        | 895.9          | 0.0                | 0.0            |
| 100.00         |                 | 111.8        | 885.3          |                 |                    |                   |                | 0.0          | 208.4          | 111.8        | 1,093.7        | 0.0                | 0.0            |
| 105.00         |                 | 109.9        | 857.3          |                 |                    |                   |                | 0.0          | 208.4          | 109.9        | 1,065.7        | 0.0                | 0.0            |
| 110.00         |                 | 107.9        | 829.0          |                 |                    |                   |                | 0.0          | 208.4          | 107.9        | 1,037.5        | 0.0                | 0.0            |
| 115.00         |                 | 105.7        | 800.6          |                 |                    |                   |                | 0.0          | 208.4          | 105.7        | 1,009.1        | 0.0                | 0.0            |
| 120.00         |                 | 60.9         | 772.1          |                 |                    |                   |                | 0.0          | 208.4          | 60.9         | 980.5          | 0.0                | 0.0            |
| 120.83         | Bot - Section 4 | 51.7         | 126.7          |                 |                    |                   |                | 0.0          | 34.7           | 51.7         | 161.4          | 0.0                | 0.0            |
| 125.00         | Top - Section 3 | 93.6         | 878.4          |                 |                    |                   |                | 0.0          | 173.7          | 93.6         | 1,052.1        | 0.0                | 0.0            |
| 130.00         |                 | 99.8         | 579.1          |                 |                    |                   |                | 0.0          | 208.4          | 99.8         | 787.6          | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 97.1         | 556.5          | 472.5           | 0.0                | 0.0               | 3,311.8        | 0.0          | 208.4          | 569.6        | 4,076.7        | 0.0                | 0.0            |
| 140.00         |                 | 94.3         | 533.6          |                 |                    |                   |                | 0.0          | 163.1          | 94.3         | 696.7          | 0.0                | 0.0            |
| 145.00         |                 | 82.6         | 510.7          |                 |                    |                   |                | 0.0          | 163.1          | 82.6         | 673.8          | 0.0                | 0.0            |
| 149.00         | Appurtenance(s) | 45.0         | 392.9          | 875.7           | 0.0                | 348.6             | 6,798.5        | 0.0          | 130.5          | 920.7        | 7,321.8        | 0.0                | 0.0            |
| 150.00         |                 | 52.4         | 96.6           |                 |                    |                   |                | 0.0          | 20.8           | 52.4         | 117.4          | 0.0                | 0.0            |
| 155.00         |                 | 77.2         | 464.5          |                 |                    |                   |                | 0.0          | 104.0          | 77.2         | 568.6          | 0.0                | 0.0            |
| 159.00         | Appurtenance(s) | 42.0         | 355.8          | 1,040.0         | 0.0                | 82.5              | 8,408.8        | 0.0          | 83.2           | 1,081.9      | 8,847.8        | 0.0                | 0.0            |
| 160.00         | Top - Section 4 | 41.5         | 87.3           |                 |                    |                   |                | 0.0          | 0.0            | 41.5         | 87.3           | 0.0                | 0.0            |
| 165.00         |                 | 66.8         | 497.0          |                 |                    |                   |                | 0.0          | 0.0            | 66.8         | 497.0          | 0.0                | 0.0            |
| 170.00         |                 | 53.8         | 497.6          |                 |                    |                   |                | 0.0          | 0.0            | 53.8         | 497.6          | 0.0                | 0.0            |
| 173.00         |                 | 20.3         | 298.8          |                 |                    |                   |                | 0.0          | 0.0            | 20.3         | 298.8          | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 6,067.47     | 62,235.9       | 0.00               | 0.00           |

Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

1/8/2018 4:28:00 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

29 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -62.23           | -6.04            | 0.00            | -746.97         | 0.00            | 746.97                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.200 |
| 5.00          | -60.38           | -5.98            | 0.00            | -716.78         | 0.00            | 716.78                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.03               | -0.06          | 0.198 |
| 10.00         | -58.52           | -5.91            | 0.00            | -686.91         | 0.00            | 686.91                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.12               | -0.11          | 0.196 |
| 15.00         | -56.68           | -5.85            | 0.00            | -657.34         | 0.00            | 657.34                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.27               | -0.17          | 0.195 |
| 20.00         | -54.86           | -5.79            | 0.00            | -628.09         | 0.00            | 628.09                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.48               | -0.23          | 0.193 |
| 25.00         | -53.06           | -5.72            | 0.00            | -599.16         | 0.00            | 599.16                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.76               | -0.29          | 0.191 |
| 30.00         | -51.30           | -5.66            | 0.00            | -570.54         | 0.00            | 570.54                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 1.10               | -0.36          | 0.188 |
| 35.00         | -49.56           | -5.59            | 0.00            | -542.24         | 0.00            | 542.24                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 1.50               | -0.42          | 0.186 |
| 40.00         | -47.85           | -5.53            | 0.00            | -514.28         | 0.00            | 514.28                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 1.98               | -0.48          | 0.184 |
| 43.58         | -46.65           | -5.49            | 0.00            | -494.47         | 0.00            | 494.47                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 2.36               | -0.53          | 0.182 |
| 45.00         | -45.92           | -5.44            | 0.00            | -486.69         | 0.00            | 486.69                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 2.52               | -0.55          | 0.181 |
| 49.50         | -43.63           | -5.39            | 0.00            | -462.20         | 0.00            | 462.20                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 3.07               | -0.61          | 0.219 |
| 50.00         | -43.48           | -5.35            | 0.00            | -459.50         | 0.00            | 459.50                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 3.14               | -0.62          | 0.218 |
| 55.00         | -42.00           | -5.28            | 0.00            | -432.74         | 0.00            | 432.74                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 3.83               | -0.70          | 0.214 |
| 60.00         | -40.55           | -5.19            | 0.00            | -406.36         | 0.00            | 406.36                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 4.60               | -0.78          | 0.210 |
| 65.00         | -39.13           | -5.11            | 0.00            | -380.39         | 0.00            | 380.39                     | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 5.46               | -0.86          | 0.206 |
| 70.00         | -37.74           | -5.03            | 0.00            | -354.83         | 0.00            | 354.83                     | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 6.40               | -0.94          | 0.201 |
| 75.00         | -36.38           | -4.94            | 0.00            | -329.70         | 0.00            | 329.70                     | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 7.43               | -1.02          | 0.197 |
| 80.00         | -35.06           | -4.85            | 0.00            | -305.00         | 0.00            | 305.00                     | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 8.55               | -1.11          | 0.191 |
| 85.00         | -33.76           | -4.79            | 0.00            | -280.75         | 0.00            | 280.75                     | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 9.75               | -1.19          | 0.186 |
| 86.08         | -33.48           | -4.75            | 0.00            | -275.56         | 0.00            | 275.56                     | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 10.03              | -1.21          | 0.185 |
| 90.00         | -32.04           | -4.68            | 0.00            | -256.97         | 0.00            | 256.97                     | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 11.05              | -1.28          | 0.180 |
| 91.00         | -31.67           | -4.64            | 0.00            | -252.29         | 0.00            | 252.29                     | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 11.32              | -1.30          | 0.227 |
| 95.00         | -30.77           | -4.57            | 0.00            | -233.72         | 0.00            | 233.72                     | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 12.44              | -1.37          | 0.220 |
| 100.00        | -29.67           | -4.48            | 0.00            | -210.89         | 0.00            | 210.89                     | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 13.92              | -1.47          | 0.210 |
| 105.00        | -28.60           | -4.39            | 0.00            | -188.50         | 0.00            | 188.50                     | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 15.51              | -1.57          | 0.200 |
| 110.00        | -27.56           | -4.30            | 0.00            | -166.56         | 0.00            | 166.56                     | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 17.20              | -1.66          | 0.188 |
| 115.00        | -26.55           | -4.21            | 0.00            | -145.07         | 0.00            | 145.07                     | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 19.00              | -1.76          | 0.176 |
| 120.00        | -25.56           | -4.14            | 0.00            | -124.04         | 0.00            | 124.04                     | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 20.89              | -1.85          | 0.162 |
| 120.83        | -25.40           | -4.10            | 0.00            | -120.59         | 0.00            | 120.59                     | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 21.21              | -1.87          | 0.159 |
| 125.00        | -24.35           | -4.01            | 0.00            | -103.50         | 0.00            | 103.50                     | 921.74        | 460.87        | 934.87           | 461.70           | 22.88              | -1.94          | 0.251 |
| 130.00        | -23.56           | -3.92            | 0.00            | -83.47          | 0.00            | 83.47                      | 903.89        | 451.95        | 878.60           | 433.91           | 24.96              | -2.02          | 0.219 |
| 135.00        | -19.50           | -3.23            | 0.00            | -63.88          | 0.00            | 63.88                      | 884.30        | 442.15        | 822.21           | 406.06           | 27.13              | -2.13          | 0.179 |
| 140.00        | -18.80           | -3.14            | 0.00            | -47.71          | 0.00            | 47.71                      | 862.96        | 431.48        | 765.93           | 378.26           | 29.41              | -2.22          | 0.148 |
| 145.00        | -18.13           | -3.05            | 0.00            | -32.00          | 0.00            | 32.00                      | 839.88        | 419.94        | 709.98           | 350.63           | 31.78              | -2.29          | 0.113 |
| 149.00        | -10.85           | -1.84            | 0.00            | -19.45          | 0.00            | 19.45                      | 820.16        | 410.08        | 665.60           | 328.71           | 33.72              | -2.34          | 0.072 |
| 150.00        | -10.73           | -1.79            | 0.00            | -17.62          | 0.00            | 17.62                      | 815.05        | 407.53        | 654.57           | 323.27           | 34.21              | -2.35          | 0.068 |
| 155.00        | -10.17           | -1.69            | 0.00            | -8.69           | 0.00            | 8.69                       | 788.48        | 394.24        | 599.93           | 296.28           | 36.69              | -2.38          | 0.042 |
| 159.00        | -1.37            | -0.24            | 0.00            | -1.85           | 0.00            | 1.85                       | 765.97        | 382.98        | 556.93           | 275.05           | 38.68              | -2.39          | 0.009 |
| 160.00        | -1.29            | -0.19            | 0.00            | -1.61           | 0.00            | 1.61                       | 760.16        | 380.08        | 546.29           | 269.79           | 39.19              | -2.39          | 0.008 |
| 160.00        | -1.29            | -0.19            | 0.00            | -1.61           | 0.00            | 1.61                       | 505.62        | 252.81        | 279.19           | 182.79           | 39.19              | -2.39          | 0.011 |
| 165.00        | -0.79            | -0.11            | 0.00            | -0.63           | 0.00            | 0.63                       | 505.62        | 252.81        | 279.19           | 182.79           | 41.69              | -2.40          | 0.005 |
| 170.00        | -0.30            | -0.03            | 0.00            | -0.10           | 0.00            | 0.10                       | 505.62        | 252.81        | 279.19           | 182.79           | 44.20              | -2.40          | 0.001 |
| 173.00        | 0.00             | -0.02            | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 45.71              | -2.40          | 0.000 |

|                               |                       |                              |
|-------------------------------|-----------------------|------------------------------|
| <b>Load Case:</b> 1.0D + 1.0W | Serviceability 60 mph | 28 Iterations                |
| Gust Response Factor :1.10    |                       | Wind Importance Factor :1.00 |
| Dead Load Factor :1.00        |                       |                              |
| Wind Load Factor :1.00        |                       |                              |

Applied Segment Forces Summary

| 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           |                 | 69.8         | 0.0            |                 |                    |                   |                | 0.0          | 0.0            | 69.8         | 0.0            | 0.0                | 0.0            |
| 5.00           |                 | 138.1        | 1,059.1        |                 |                    |                   |                | 0.0          | 173.7          | 138.1        | 1,232.8        | 0.0                | 0.0            |
| 10.00          |                 | 135.1        | 1,036.5        |                 |                    |                   |                | 0.0          | 173.7          | 135.1        | 1,210.2        | 0.0                | 0.0            |
| 15.00          |                 | 132.2        | 1,013.9        |                 |                    |                   |                | 0.0          | 173.7          | 132.2        | 1,187.6        | 0.0                | 0.0            |
| 20.00          |                 | 129.2        | 991.3          |                 |                    |                   |                | 0.0          | 173.7          | 129.2        | 1,165.0        | 0.0                | 0.0            |
| 25.00          |                 | 126.3        | 968.7          |                 |                    |                   |                | 0.0          | 173.7          | 126.3        | 1,142.4        | 0.0                | 0.0            |
| 30.00          |                 | 124.8        | 946.1          |                 |                    |                   |                | 0.0          | 173.7          | 124.8        | 1,119.8        | 0.0                | 0.0            |
| 35.00          |                 | 125.8        | 923.6          |                 |                    |                   |                | 0.0          | 173.7          | 125.8        | 1,097.3        | 0.0                | 0.0            |
| 40.00          |                 | 109.3        | 901.0          |                 |                    |                   |                | 0.0          | 173.7          | 109.3        | 1,074.7        | 0.0                | 0.0            |
| 43.58          | Bot - Section 2 | 64.4         | 631.8          |                 |                    |                   |                | 0.0          | 124.5          | 64.4         | 756.3          | 0.0                | 0.0            |
| 45.00          |                 | 77.6         | 459.2          |                 |                    |                   |                | 0.0          | 49.2           | 77.6         | 508.4          | 0.0                | 0.0            |
| 49.50          | Top - Section 1 | 65.6         | 1,436.5        |                 |                    |                   |                | 0.0          | 156.3          | 65.6         | 1,592.8        | 0.0                | 0.0            |
| 50.00          |                 | 72.4         | 73.0           |                 |                    |                   |                | 0.0          | 17.4           | 72.4         | 90.3           | 0.0                | 0.0            |
| 55.00          |                 | 131.5        | 719.1          |                 |                    |                   |                | 0.0          | 173.7          | 131.5        | 892.8          | 0.0                | 0.0            |
| 60.00          |                 | 131.3        | 700.0          |                 |                    |                   |                | 0.0          | 173.7          | 131.3        | 873.7          | 0.0                | 0.0            |
| 65.00          |                 | 130.6        | 680.9          |                 |                    |                   |                | 0.0          | 173.7          | 130.6        | 854.6          | 0.0                | 0.0            |
| 70.00          |                 | 129.6        | 661.8          |                 |                    |                   |                | 0.0          | 173.7          | 129.6        | 835.5          | 0.0                | 0.0            |
| 75.00          |                 | 128.4        | 642.7          |                 |                    |                   |                | 0.0          | 173.7          | 128.4        | 816.4          | 0.0                | 0.0            |
| 80.00          |                 | 126.9        | 623.6          |                 |                    |                   |                | 0.0          | 173.7          | 126.9        | 797.3          | 0.0                | 0.0            |
| 85.00          |                 | 76.6         | 604.4          |                 |                    |                   |                | 0.0          | 173.7          | 76.6         | 778.1          | 0.0                | 0.0            |
| 86.08          | Bot - Section 3 | 63.0         | 128.4          |                 |                    |                   |                | 0.0          | 37.6           | 63.0         | 166.1          | 0.0                | 0.0            |
| 90.00          |                 | 61.9         | 838.2          |                 |                    |                   |                | 0.0          | 136.1          | 61.9         | 974.3          | 0.0                | 0.0            |
| 91.00          | Top - Section 2 | 62.2         | 210.6          |                 |                    |                   |                | 0.0          | 34.7           | 62.2         | 245.3          | 0.0                | 0.0            |
| 95.00          |                 | 110.7        | 377.1          |                 |                    |                   |                | 0.0          | 139.0          | 110.7        | 516.0          | 0.0                | 0.0            |
| 100.00         |                 | 120.9        | 457.3          |                 |                    |                   |                | 0.0          | 173.7          | 120.9        | 631.0          | 0.0                | 0.0            |
| 105.00         |                 | 118.4        | 441.6          |                 |                    |                   |                | 0.0          | 173.7          | 118.4        | 615.3          | 0.0                | 0.0            |
| 110.00         |                 | 115.7        | 426.0          |                 |                    |                   |                | 0.0          | 173.7          | 115.7        | 599.7          | 0.0                | 0.0            |
| 115.00         |                 | 112.8        | 410.3          |                 |                    |                   |                | 0.0          | 173.7          | 112.8        | 584.0          | 0.0                | 0.0            |
| 120.00         |                 | 64.8         | 394.7          |                 |                    |                   |                | 0.0          | 173.7          | 64.8         | 568.4          | 0.0                | 0.0            |
| 120.83         | Bot - Section 4 | 54.8         | 64.3           |                 |                    |                   |                | 0.0          | 28.9           | 54.8         | 93.2           | 0.0                | 0.0            |
| 125.00         | Top - Section 3 | 99.0         | 528.7          |                 |                    |                   |                | 0.0          | 144.8          | 99.0         | 673.4          | 0.0                | 0.0            |
| 130.00         |                 | 105.0        | 247.1          |                 |                    |                   |                | 0.0          | 173.7          | 105.0        | 420.8          | 0.0                | 0.0            |
| 135.00         | Appurtenance(s) | 101.6        | 236.7          | 434.0           | 0.0                | 0.0               | 1,740.0        | 0.0          | 173.7          | 535.7        | 2,150.4        | 0.0                | 0.0            |
| 140.00         |                 | 98.1         | 226.2          |                 |                    |                   |                | 0.0          | 135.9          | 98.1         | 362.1          | 0.0                | 0.0            |
| 145.00         |                 | 85.3         | 215.8          |                 |                    |                   |                | 0.0          | 135.9          | 85.3         | 351.7          | 0.0                | 0.0            |
| 149.00         | Appurtenance(s) | 46.3         | 165.1          | 978.2           | 0.0                | 458.8             | 2,676.7        | 0.0          | 108.7          | 1,024.5      | 2,950.6        | 0.0                | 0.0            |
| 150.00         |                 | 53.5         | 40.2           |                 |                    |                   |                | 0.0          | 17.3           | 53.5         | 57.6           | 0.0                | 0.0            |
| 155.00         |                 | 78.5         | 195.0          |                 |                    |                   |                | 0.0          | 86.7           | 78.5         | 281.7          | 0.0                | 0.0            |
| 159.00         | Appurtenance(s) | 42.4         | 148.5          | 1,130.4         | 0.0                | 90.6              | 3,340.1        | 0.0          | 69.4           | 1,172.8      | 3,557.9        | 0.0                | 0.0            |
| 160.00         | Top - Section 4 | 27.5         | 36.1           |                 |                    |                   |                | 0.0          | 0.0            | 27.5         | 36.1           | 0.0                | 0.0            |
| 165.00         |                 | 38.4         | 273.1          |                 |                    |                   |                | 0.0          | 0.0            | 38.4         | 273.1          | 0.0                | 0.0            |
| 170.00         |                 | 31.0         | 273.1          |                 |                    |                   |                | 0.0          | 0.0            | 31.0         | 273.1          | 0.0                | 0.0            |
| 173.00         |                 | 11.7         | 163.9          |                 |                    |                   |                | 0.0          | 0.0            | 11.7         | 163.9          | 0.0                | 0.0            |
| <b>Totals:</b> |                 |              |                |                 |                    |                   |                |              |                | 6,471.45     | 34,571.8       | 0.00               | 0.00           |



Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

1/8/2018 4:28:04 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W

Serviceability 60 mph

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -34.57           | -6.42            | 0.00            | -728.69         | 0.00            | 728.69                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.189 |
| 5.00          | -33.33           | -6.31            | 0.00            | -696.60         | 0.00            | 696.60                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.03               | -0.05          | 0.187 |
| 10.00         | -32.11           | -6.21            | 0.00            | -665.05         | 0.00            | 665.05                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.12               | -0.11          | 0.184 |
| 15.00         | -30.92           | -6.10            | 0.00            | -634.02         | 0.00            | 634.02                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.26               | -0.17          | 0.182 |
| 20.00         | -29.75           | -6.00            | 0.00            | -603.51         | 0.00            | 603.51                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.47               | -0.22          | 0.179 |
| 25.00         | -28.60           | -5.90            | 0.00            | -573.52         | 0.00            | 573.52                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.73               | -0.28          | 0.177 |
| 30.00         | -27.48           | -5.79            | 0.00            | -544.03         | 0.00            | 544.03                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 1.06               | -0.34          | 0.174 |
| 35.00         | -26.37           | -5.69            | 0.00            | -515.06         | 0.00            | 515.06                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 1.45               | -0.40          | 0.171 |
| 40.00         | -25.30           | -5.60            | 0.00            | -486.61         | 0.00            | 486.61                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 1.91               | -0.47          | 0.169 |
| 43.58         | -24.54           | -5.54            | 0.00            | -466.55         | 0.00            | 466.55                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 2.28               | -0.51          | 0.167 |
| 45.00         | -24.02           | -5.47            | 0.00            | -458.71         | 0.00            | 458.71                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 2.43               | -0.53          | 0.166 |
| 49.50         | -22.43           | -5.40            | 0.00            | -434.08         | 0.00            | 434.08                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 2.96               | -0.59          | 0.199 |
| 50.00         | -22.34           | -5.35            | 0.00            | -431.38         | 0.00            | 431.38                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 3.02               | -0.59          | 0.199 |
| 55.00         | -21.44           | -5.23            | 0.00            | -404.64         | 0.00            | 404.64                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 3.68               | -0.67          | 0.194 |
| 60.00         | -20.56           | -5.12            | 0.00            | -378.48         | 0.00            | 378.48                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 4.42               | -0.74          | 0.190 |
| 65.00         | -19.70           | -5.00            | 0.00            | -352.89         | 0.00            | 352.89                     | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 5.24               | -0.82          | 0.185 |
| 70.00         | -18.86           | -4.88            | 0.00            | -327.89         | 0.00            | 327.89                     | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 6.13               | -0.89          | 0.180 |
| 75.00         | -18.04           | -4.77            | 0.00            | -303.47         | 0.00            | 303.47                     | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 7.11               | -0.97          | 0.175 |
| 80.00         | -17.24           | -4.65            | 0.00            | -279.63         | 0.00            | 279.63                     | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 8.16               | -1.04          | 0.170 |
| 85.00         | -16.46           | -4.57            | 0.00            | -256.39         | 0.00            | 256.39                     | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 9.30               | -1.12          | 0.164 |
| 86.08         | -16.29           | -4.52            | 0.00            | -251.43         | 0.00            | 251.43                     | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 9.55               | -1.14          | 0.163 |
| 90.00         | -15.31           | -4.45            | 0.00            | -233.74         | 0.00            | 233.74                     | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 10.51              | -1.20          | 0.158 |
| 91.00         | -15.07           | -4.39            | 0.00            | -229.30         | 0.00            | 229.30                     | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 10.77              | -1.22          | 0.199 |
| 95.00         | -14.55           | -4.29            | 0.00            | -211.75         | 0.00            | 211.75                     | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 11.82              | -1.28          | 0.192 |
| 100.00        | -13.91           | -4.17            | 0.00            | -190.31         | 0.00            | 190.31                     | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 13.21              | -1.37          | 0.183 |
| 105.00        | -13.30           | -4.06            | 0.00            | -169.45         | 0.00            | 169.45                     | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 14.69              | -1.46          | 0.173 |
| 110.00        | -12.69           | -3.95            | 0.00            | -149.16         | 0.00            | 149.16                     | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 16.27              | -1.55          | 0.162 |
| 115.00        | -12.11           | -3.84            | 0.00            | -129.42         | 0.00            | 129.42                     | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 17.94              | -1.63          | 0.150 |
| 120.00        | -11.54           | -3.76            | 0.00            | -110.24         | 0.00            | 110.24                     | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 19.69              | -1.72          | 0.137 |
| 120.83        | -11.44           | -3.71            | 0.00            | -107.10         | 0.00            | 107.10                     | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 20.00              | -1.73          | 0.135 |
| 125.00        | -10.77           | -3.61            | 0.00            | -91.62          | 0.00            | 91.62                      | 921.74        | 460.87        | 934.87           | 461.70           | 21.54              | -1.80          | 0.210 |
| 130.00        | -10.35           | -3.50            | 0.00            | -73.58          | 0.00            | 73.58                      | 903.89        | 451.95        | 878.60           | 433.91           | 23.46              | -1.87          | 0.181 |
| 135.00        | -8.21            | -2.91            | 0.00            | -56.06          | 0.00            | 56.06                      | 884.30        | 442.15        | 822.21           | 406.06           | 25.47              | -1.96          | 0.147 |
| 140.00        | -7.85            | -2.81            | 0.00            | -41.51          | 0.00            | 41.51                      | 862.96        | 431.48        | 765.93           | 378.26           | 27.57              | -2.04          | 0.119 |
| 145.00        | -7.50            | -2.72            | 0.00            | -27.47          | 0.00            | 27.47                      | 839.88        | 419.94        | 709.98           | 350.63           | 29.74              | -2.10          | 0.087 |
| 149.00        | -4.59            | -1.59            | 0.00            | -16.14          | 0.00            | 16.14                      | 820.16        | 410.08        | 665.60           | 328.71           | 31.52              | -2.14          | 0.055 |
| 150.00        | -4.53            | -1.53            | 0.00            | -14.55          | 0.00            | 14.55                      | 815.05        | 407.53        | 654.57           | 323.27           | 31.97              | -2.15          | 0.051 |
| 155.00        | -4.25            | -1.44            | 0.00            | -6.89           | 0.00            | 6.89                       | 788.48        | 394.24        | 599.93           | 296.28           | 34.23              | -2.18          | 0.029 |
| 159.00        | -0.74            | -0.14            | 0.00            | -1.03           | 0.00            | 1.03                       | 765.97        | 382.98        | 556.93           | 275.05           | 36.06              | -2.19          | 0.005 |
| 160.00        | -0.71            | -0.11            | 0.00            | -0.89           | 0.00            | 0.89                       | 760.16        | 380.08        | 546.29           | 269.79           | 36.52              | -2.19          | 0.004 |
| 160.00        | -0.71            | -0.11            | 0.00            | -0.89           | 0.00            | 0.89                       | 505.62        | 252.81        | 279.19           | 182.79           | 36.52              | -2.19          | 0.006 |
| 165.00        | -0.43            | -0.06            | 0.00            | -0.35           | 0.00            | 0.35                       | 505.62        | 252.81        | 279.19           | 182.79           | 38.81              | -2.19          | 0.003 |
| 170.00        | -0.16            | -0.02            | 0.00            | -0.05           | 0.00            | 0.05                       | 505.62        | 252.81        | 279.19           | 182.79           | 41.10              | -2.19          | 0.001 |
| 173.00        | 0.00             | -0.01            | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 42.48              | -2.19          | 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 ( $S_1$ ):           | 0.06    |
| Long-Period Transition Period ( $T_L$ ):                                 | 6       |
| Importance Factor ( $I_E$ ):   | 1.00    |
| Site Coefficient $F_a$ :   | 1.60    |
| Site Coefficient $F_v$ :   | 2.40    |
| Response Modification Coefficient (R):                                   | 1.50    |
| Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):      | 0.21    |
| Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ): | 0.10    |
| Seismic Response Coefficient ( $C_s$ ):                                  | 0.03    |
| Upper Limit $C_s$  | 0.03    |
| Lower Limit $C_s$  | 0.03    |
| Period based on Rayleigh Method (sec):                                   | 3.08    |
| Redundancy Factor ( $\rho$ ):  | 1.30    |
| Seismic Force Distribution Exponent (k):                                 | 2.00    |
| Total Unfactored Dead Load:  | 34.57 k |
| Seismic Base Shear (E):  | 1.35 k  |

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

Seismic Equivalent Lateral Forces Method

| Segment | Height<br>Above<br>Base<br>(ft) | Weight<br>(lb) | $W_z$<br>(lb-ft) | $C_{vx}$ | Horizontal<br>Force<br>(lb) | Vertical<br>Force<br>(lb) |
|---------|---------------------------------|----------------|------------------|----------|-----------------------------|---------------------------|
| 42      | 171.50                          | 164            | 4,819            | 0.014    | 19                          | 203                       |
| 41      | 167.50                          | 273            | 7,662            | 0.022    | 30                          | 339                       |
| 40      | 162.50                          | 273            | 7,212            | 0.021    | 28                          | 339                       |
| 39      | 159.50                          | 36             | 918              | 0.003    | 4                           | 45                        |
| 38      | 157.00                          | 218            | 5,369            | 0.016    | 21                          | 270                       |
| 37      | 152.50                          | 282            | 6,550            | 0.019    | 26                          | 350                       |
| 36      | 149.50                          | 58             | 1,287            | 0.004    | 5                           | 71                        |
| 35      | 147.00                          | 274            | 5,918            | 0.017    | 23                          | 340                       |
| 34      | 142.50                          | 352            | 7,142            | 0.021    | 28                          | 437                       |
| 33      | 137.50                          | 362            | 6,847            | 0.020    | 27                          | 450                       |
| 32      | 132.50                          | 410            | 7,205            | 0.021    | 28                          | 509                       |
| 31      | 127.50                          | 421            | 6,841            | 0.020    | 27                          | 522                       |
| 30      | 122.92                          | 673            | 10,174           | 0.030    | 40                          | 836                       |
| 29      | 120.42                          | 93             | 1,352            | 0.004    | 5                           | 116                       |
| 28      | 117.50                          | 568            | 7,847            | 0.023    | 31                          | 706                       |
| 27      | 112.50                          | 584            | 7,392            | 0.022    | 29                          | 725                       |
| 26      | 107.50                          | 600            | 6,930            | 0.020    | 27                          | 744                       |
| 25      | 102.50                          | 615            | 6,465            | 0.019    | 25                          | 764                       |
| 24      | 97.50                           | 631            | 5,998            | 0.018    | 24                          | 783                       |
| 23      | 93.00                           | 516            | 4,463            | 0.013    | 18                          | 641                       |
| 22      | 90.50                           | 245            | 2,009            | 0.006    | 8                           | 305                       |
| 21      | 88.04                           | 974            | 7,552            | 0.022    | 30                          | 1,209                     |
| 20      | 85.54                           | 166            | 1,215            | 0.004    | 5                           | 206                       |

Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

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Customer: AT&T MOBILITY

|                      |        |        |         |       |       |        |
|----------------------|--------|--------|---------|-------|-------|--------|
| 19                   | 82.50  | 778    | 5,296   | 0.015 | 21    | 966    |
| 18                   | 77.50  | 797    | 4,789   | 0.014 | 19    | 990    |
| 17                   | 72.50  | 816    | 4,291   | 0.013 | 17    | 1,013  |
| 16                   | 67.50  | 835    | 3,807   | 0.011 | 15    | 1,037  |
| 15                   | 62.50  | 855    | 3,338   | 0.010 | 13    | 1,061  |
| 14                   | 57.50  | 874    | 2,889   | 0.008 | 11    | 1,085  |
| 13                   | 52.50  | 893    | 2,461   | 0.007 | 10    | 1,108  |
| 12                   | 49.75  | 90     | 224     | 0.001 | 1     | 112    |
| 11                   | 47.25  | 1,593  | 3,556   | 0.010 | 14    | 1,977  |
| 10                   | 44.29  | 508    | 997     | 0.003 | 4     | 631    |
| 9                    | 41.79  | 756    | 1,321   | 0.004 | 5     | 939    |
| 8                    | 37.50  | 1,075  | 1,511   | 0.004 | 6     | 1,334  |
| 7                    | 32.50  | 1,097  | 1,159   | 0.003 | 5     | 1,362  |
| 6                    | 27.50  | 1,120  | 847     | 0.002 | 3     | 1,390  |
| 5                    | 22.50  | 1,142  | 578     | 0.002 | 2     | 1,418  |
| 4                    | 17.50  | 1,165  | 357     | 0.001 | 1     | 1,446  |
| 3                    | 12.50  | 1,188  | 186     | 0.001 | 1     | 1,474  |
| 2                    | 7.50   | 1,210  | 68      | 0.000 | 0     | 1,502  |
| 1                    | 2.50   | 1,233  | 8       | 0.000 | 0     | 1,530  |
| Kaelus DBC0061F1V51- | 159.00 | 153    | 3,868   | 0.011 | 15    | 190    |
| Powerwave Allgon TT0 | 159.00 | 132    | 3,337   | 0.010 | 13    | 164    |
| Raycap DC6-48-60-18- | 159.00 | 40     | 1,011   | 0.003 | 4     | 50     |
| Ericsson RRUS-11 (50 | 159.00 | 150    | 3,792   | 0.011 | 15    | 186    |
| Ericsson RRUS 32 B2  | 159.00 | 159    | 4,020   | 0.012 | 16    | 197    |
| Ericsson RRUS 32 (55 | 159.00 | 165    | 4,179   | 0.012 | 16    | 205    |
| KMW AM-X-CD-14-65-00 | 159.00 | 109    | 2,761   | 0.008 | 11    | 136    |
| CCI HPA-65R-BUU-H6   | 159.00 | 51     | 1,289   | 0.004 | 5     | 63     |
| Kathrein Scala 80010 | 159.00 | 81     | 2,058   | 0.006 | 8     | 101    |
| CCI HPA-65R-BUU-H8   | 159.00 | 136    | 3,438   | 0.010 | 14    | 169    |
| CCI TPA-65R-LCUUUU-H | 159.00 | 163    | 4,126   | 0.012 | 16    | 203    |
| Flat Platform w/ Han | 159.00 | 2,000  | 50,562  | 0.148 | 199   | 2,483  |
| RFS FDL85002/1C-3L   | 149.00 | 42     | 932     | 0.003 | 4     | 52     |
| Alcatel-Lucent B66 R | 149.00 | 201    | 4,462   | 0.013 | 18    | 250    |
| Andrew 948F85T2E-M   | 149.00 | 25     | 566     | 0.002 | 2     | 32     |
| Andrew DB844H80E-XY  | 149.00 | 60     | 1,332   | 0.004 | 5     | 74     |
| RFS DB-T1-6Z-8AB-OZ  | 149.00 | 44     | 977     | 0.003 | 4     | 55     |
| Andrew SBNHH-1D65B   | 149.00 | 304    | 6,754   | 0.020 | 27    | 378    |
| Flat Platform w/ Han | 149.00 | 2,000  | 44,402  | 0.130 | 175   | 2,483  |
| 42" x 6" Panel       | 135.00 | 240    | 4,374   | 0.013 | 17    | 298    |
| Flat Low Profile Pla | 135.00 | 1,500  | 27,338  | 0.080 | 108   | 1,862  |
|                      |        | 34,572 | 342,428 | 1.000 | 1,348 | 42,917 |

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---------|------------------------|-------------|---------------|----------|-----------------------|---------------------|
| 42      | 171.50                 | 164         | 4,819         | 0.014    | 19                    | 141                 |
| 41      | 167.50                 | 273         | 7,662         | 0.022    | 30                    | 234                 |
| 40      | 162.50                 | 273         | 7,212         | 0.021    | 28                    | 234                 |
| 39      | 159.50                 | 36          | 918           | 0.003    | 4                     | 31                  |
| 38      | 157.00                 | 218         | 5,369         | 0.016    | 21                    | 187                 |
| 37      | 152.50                 | 282         | 6,550         | 0.019    | 26                    | 242                 |
| 36      | 149.50                 | 58          | 1,287         | 0.004    | 5                     | 49                  |
| 35      | 147.00                 | 274         | 5,918         | 0.017    | 23                    | 235                 |
| 34      | 142.50                 | 352         | 7,142         | 0.021    | 28                    | 302                 |
| 33      | 137.50                 | 362         | 6,847         | 0.020    | 27                    | 311                 |
| 32      | 132.50                 | 410         | 7,205         | 0.021    | 28                    | 352                 |
| 31      | 127.50                 | 421         | 6,841         | 0.020    | 27                    | 361                 |
| 30      | 122.92                 | 673         | 10,174        | 0.030    | 40                    | 578                 |
| 29      | 120.42                 | 93          | 1,352         | 0.004    | 5                     | 80                  |

Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

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Customer: AT&T MOBILITY

|                      |        |        |         |       |       |        |
|----------------------|--------|--------|---------|-------|-------|--------|
| 28                   | 117.50 | 568    | 7,847   | 0.023 | 31    | 488    |
| 27                   | 112.50 | 584    | 7,392   | 0.022 | 29    | 501    |
| 26                   | 107.50 | 600    | 6,930   | 0.020 | 27    | 515    |
| 25                   | 102.50 | 615    | 6,465   | 0.019 | 25    | 528    |
| 24                   | 97.50  | 631    | 5,998   | 0.018 | 24    | 542    |
| 23                   | 93.00  | 516    | 4,463   | 0.013 | 18    | 443    |
| 22                   | 90.50  | 245    | 2,009   | 0.006 | 8     | 211    |
| 21                   | 88.04  | 974    | 7,552   | 0.022 | 30    | 837    |
| 20                   | 85.54  | 166    | 1,215   | 0.004 | 5     | 143    |
| 19                   | 82.50  | 778    | 5,296   | 0.015 | 21    | 668    |
| 18                   | 77.50  | 797    | 4,789   | 0.014 | 19    | 685    |
| 17                   | 72.50  | 816    | 4,291   | 0.013 | 17    | 701    |
| 16                   | 67.50  | 835    | 3,807   | 0.011 | 15    | 717    |
| 15                   | 62.50  | 855    | 3,338   | 0.010 | 13    | 734    |
| 14                   | 57.50  | 874    | 2,889   | 0.008 | 11    | 750    |
| 13                   | 52.50  | 893    | 2,461   | 0.007 | 10    | 767    |
| 12                   | 49.75  | 90     | 224     | 0.001 | 1     | 78     |
| 11                   | 47.25  | 1,593  | 3,556   | 0.010 | 14    | 1,368  |
| 10                   | 44.29  | 508    | 997     | 0.003 | 4     | 437    |
| 9                    | 41.79  | 756    | 1,321   | 0.004 | 5     | 649    |
| 8                    | 37.50  | 1,075  | 1,511   | 0.004 | 6     | 923    |
| 7                    | 32.50  | 1,097  | 1,159   | 0.003 | 5     | 942    |
| 6                    | 27.50  | 1,120  | 847     | 0.002 | 3     | 962    |
| 5                    | 22.50  | 1,142  | 578     | 0.002 | 2     | 981    |
| 4                    | 17.50  | 1,165  | 357     | 0.001 | 1     | 1,000  |
| 3                    | 12.50  | 1,188  | 186     | 0.001 | 1     | 1,020  |
| 2                    | 7.50   | 1,210  | 68      | 0.000 | 0     | 1,039  |
| 1                    | 2.50   | 1,233  | 8       | 0.000 | 0     | 1,058  |
| Kaelus DBC0061F1V51- | 159.00 | 153    | 3,868   | 0.011 | 15    | 131    |
| Powerwave Allgon TT0 | 159.00 | 132    | 3,337   | 0.010 | 13    | 113    |
| Raycap DC6-48-60-18- | 159.00 | 40     | 1,011   | 0.003 | 4     | 34     |
| Ericsson RRUS-11 (50 | 159.00 | 150    | 3,792   | 0.011 | 15    | 129    |
| Ericsson RRUS 32 B2  | 159.00 | 159    | 4,020   | 0.012 | 16    | 137    |
| Ericsson RRUS 32 (55 | 159.00 | 165    | 4,179   | 0.012 | 16    | 142    |
| KMW AM-X-CD-14-65-00 | 159.00 | 109    | 2,761   | 0.008 | 11    | 94     |
| CCI HPA-65R-BUU-H6   | 159.00 | 51     | 1,289   | 0.004 | 5     | 44     |
| Kathrein Scala 80010 | 159.00 | 81     | 2,058   | 0.006 | 8     | 70     |
| CCI HPA-65R-BUU-H8   | 159.00 | 136    | 3,438   | 0.010 | 14    | 117    |
| CCI TPA-65R-LCUUUU-H | 159.00 | 163    | 4,126   | 0.012 | 16    | 140    |
| Flat Platform w/ Han | 159.00 | 2,000  | 50,562  | 0.148 | 199   | 1,717  |
| RFS FDL85002/1C-3L   | 149.00 | 42     | 932     | 0.003 | 4     | 36     |
| Alcatel-Lucent B66 R | 149.00 | 201    | 4,462   | 0.013 | 18    | 173    |
| Andrew 948F85T2E-M   | 149.00 | 25     | 566     | 0.002 | 2     | 22     |
| Andrew DB844H80E-XY  | 149.00 | 60     | 1,332   | 0.004 | 5     | 52     |
| RFS DB-T1-6Z-8AB-0Z  | 149.00 | 44     | 977     | 0.003 | 4     | 38     |
| Andrew SBNHH-1D65B   | 149.00 | 304    | 6,754   | 0.020 | 27    | 261    |
| Flat Platform w/ Han | 149.00 | 2,000  | 44,402  | 0.130 | 175   | 1,717  |
| 42" x 6" Panel       | 135.00 | 240    | 4,374   | 0.013 | 17    | 206    |
| Flat Low Profile Pla | 135.00 | 1,500  | 27,338  | 0.080 | 108   | 1,288  |
|                      |        | 34,572 | 342,428 | 1.000 | 1,348 | 29,684 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -41.39           | -1.35            | 0.00            | -190.90         | 0.00            | 190.90                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.057 |
| 5.00          | -39.88           | -1.36            | 0.00            | -184.14         | 0.00            | 184.14                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.01               | -0.01          | 0.057 |
| 10.00         | -38.41           | -1.37            | 0.00            | -177.33         | 0.00            | 177.33                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.03               | -0.03          | 0.057 |
| 15.00         | -36.96           | -1.38            | 0.00            | -170.47         | 0.00            | 170.47                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.07               | -0.04          | 0.056 |
| 20.00         | -35.54           | -1.38            | 0.00            | -163.58         | 0.00            | 163.58                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.12               | -0.06          | 0.056 |
| 25.00         | -34.15           | -1.39            | 0.00            | -156.66         | 0.00            | 156.66                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.19               | -0.08          | 0.055 |
| 30.00         | -32.79           | -1.39            | 0.00            | -149.72         | 0.00            | 149.72                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 0.28               | -0.09          | 0.055 |
| 35.00         | -31.46           | -1.39            | 0.00            | -142.76         | 0.00            | 142.76                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 0.39               | -0.11          | 0.054 |
| 40.00         | -30.52           | -1.39            | 0.00            | -135.79         | 0.00            | 135.79                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 0.51               | -0.13          | 0.053 |
| 43.58         | -29.89           | -1.39            | 0.00            | -130.80         | 0.00            | 130.80                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 0.61               | -0.14          | 0.053 |
| 45.00         | -27.91           | -1.38            | 0.00            | -128.82         | 0.00            | 128.82                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 0.65               | -0.14          | 0.052 |
| 49.50         | -27.80           | -1.38            | 0.00            | -122.61         | 0.00            | 122.61                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 0.80               | -0.16          | 0.064 |
| 50.00         | -26.69           | -1.38            | 0.00            | -121.92         | 0.00            | 121.92                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 0.81               | -0.16          | 0.063 |
| 55.00         | -25.60           | -1.37            | 0.00            | -115.05         | 0.00            | 115.05                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 1.00               | -0.18          | 0.062 |
| 60.00         | -24.54           | -1.36            | 0.00            | -108.20         | 0.00            | 108.20                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 1.20               | -0.20          | 0.061 |
| 65.00         | -23.50           | -1.35            | 0.00            | -101.39         | 0.00            | 101.39                     | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 1.42               | -0.23          | 0.060 |
| 70.00         | -22.49           | -1.34            | 0.00            | -94.62          | 0.00            | 94.62                      | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 1.67               | -0.25          | 0.058 |
| 75.00         | -21.50           | -1.32            | 0.00            | -87.92          | 0.00            | 87.92                      | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 1.94               | -0.27          | 0.057 |
| 80.00         | -20.53           | -1.31            | 0.00            | -81.30          | 0.00            | 81.30                      | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 2.24               | -0.29          | 0.055 |
| 85.00         | -20.33           | -1.31            | 0.00            | -74.76          | 0.00            | 74.76                      | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 2.55               | -0.31          | 0.054 |
| 86.08         | -19.12           | -1.27            | 0.00            | -73.35          | 0.00            | 73.35                      | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 2.63               | -0.32          | 0.053 |
| 90.00         | -18.81           | -1.27            | 0.00            | -68.36          | 0.00            | 68.36                      | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 2.90               | -0.34          | 0.052 |
| 91.00         | -18.17           | -1.25            | 0.00            | -67.09          | 0.00            | 67.09                      | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 2.97               | -0.34          | 0.066 |
| 95.00         | -17.39           | -1.23            | 0.00            | -62.09          | 0.00            | 62.09                      | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 3.26               | -0.36          | 0.063 |
| 100.00        | -16.62           | -1.21            | 0.00            | -55.94          | 0.00            | 55.94                      | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 3.65               | -0.39          | 0.061 |
| 105.00        | -15.88           | -1.18            | 0.00            | -49.91          | 0.00            | 49.91                      | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 4.07               | -0.41          | 0.057 |
| 110.00        | -15.15           | -1.15            | 0.00            | -44.01          | 0.00            | 44.01                      | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 4.52               | -0.44          | 0.054 |
| 115.00        | -14.45           | -1.12            | 0.00            | -38.24          | 0.00            | 38.24                      | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 4.99               | -0.46          | 0.051 |
| 120.00        | -14.33           | -1.12            | 0.00            | -32.63          | 0.00            | 32.63                      | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 5.49               | -0.49          | 0.047 |
| 120.83        | -13.50           | -1.08            | 0.00            | -31.69          | 0.00            | 31.69                      | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 5.58               | -0.49          | 0.046 |
| 125.00        | -12.97           | -1.05            | 0.00            | -27.21          | 0.00            | 27.21                      | 921.74        | 460.87        | 934.87           | 461.70           | 6.02               | -0.51          | 0.073 |
| 130.00        | -12.46           | -1.02            | 0.00            | -21.97          | 0.00            | 21.97                      | 903.89        | 451.95        | 878.60           | 433.91           | 6.57               | -0.53          | 0.064 |
| 135.00        | -9.86            | -0.85            | 0.00            | -16.86          | 0.00            | 16.86                      | 884.30        | 442.15        | 822.21           | 406.06           | 7.14               | -0.56          | 0.053 |
| 140.00        | -9.42            | -0.82            | 0.00            | -12.61          | 0.00            | 12.61                      | 862.96        | 431.48        | 765.93           | 378.26           | 7.75               | -0.59          | 0.044 |
| 145.00        | -9.08            | -0.80            | 0.00            | -8.51           | 0.00            | 8.51                       | 839.88        | 419.94        | 709.98           | 350.63           | 8.37               | -0.61          | 0.035 |
| 149.00        | -5.69            | -0.52            | 0.00            | -5.33           | 0.00            | 5.33                       | 820.16        | 410.08        | 665.60           | 328.71           | 8.88               | -0.62          | 0.023 |
| 150.00        | -5.34            | -0.49            | 0.00            | -4.81           | 0.00            | 4.81                       | 815.05        | 407.53        | 654.57           | 323.27           | 9.01               | -0.62          | 0.021 |
| 155.00        | -5.07            | -0.47            | 0.00            | -2.34           | 0.00            | 2.34                       | 788.48        | 394.24        | 599.93           | 296.28           | 9.67               | -0.63          | 0.014 |
| 159.00        | -0.88            | -0.09            | 0.00            | -0.47           | 0.00            | 0.47                       | 765.97        | 382.98        | 556.93           | 275.05           | 10.20              | -0.63          | 0.003 |
| 160.00        | -0.54            | -0.05            | 0.00            | -0.38           | 0.00            | 0.38                       | 760.16        | 380.08        | 546.29           | 269.79           | 10.33              | -0.63          | 0.002 |
| 160.00        | -0.54            | -0.05            | 0.00            | -0.38           | 0.00            | 0.38                       | 505.62        | 252.81        | 279.19           | 182.79           | 10.33              | -0.63          | 0.003 |
| 165.00        | -0.20            | -0.02            | 0.00            | -0.10           | 0.00            | 0.10                       | 505.62        | 252.81        | 279.19           | 182.79           | 10.99              | -0.63          | 0.001 |
| 170.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 11.65              | -0.63          | 0.000 |
| 173.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 12.05              | -0.63          | 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          | -28.63           | -1.35            | 0.00            | -186.52         | 0.00            | 186.52                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.053 |
| 5.00          | -27.59           | -1.36            | 0.00            | -179.76         | 0.00            | 179.76                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.01               | -0.01          | 0.053 |
| 10.00         | -26.57           | -1.36            | 0.00            | -172.98         | 0.00            | 172.98                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.03               | -0.03          | 0.052 |
| 15.00         | -25.57           | -1.37            | 0.00            | -166.16         | 0.00            | 166.16                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.07               | -0.04          | 0.052 |
| 20.00         | -24.58           | -1.37            | 0.00            | -159.33         | 0.00            | 159.33                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.12               | -0.06          | 0.052 |
| 25.00         | -23.62           | -1.37            | 0.00            | -152.47         | 0.00            | 152.47                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.19               | -0.07          | 0.051 |
| 30.00         | -22.68           | -1.37            | 0.00            | -145.61         | 0.00            | 145.61                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 0.28               | -0.09          | 0.051 |
| 35.00         | -21.76           | -1.37            | 0.00            | -138.74         | 0.00            | 138.74                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 0.38               | -0.11          | 0.050 |
| 40.00         | -21.11           | -1.37            | 0.00            | -131.88         | 0.00            | 131.88                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 0.50               | -0.12          | 0.050 |
| 43.58         | -20.67           | -1.37            | 0.00            | -126.97         | 0.00            | 126.97                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 0.60               | -0.14          | 0.049 |
| 45.00         | -19.30           | -1.36            | 0.00            | -125.03         | 0.00            | 125.03                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 0.64               | -0.14          | 0.049 |
| 49.50         | -19.22           | -1.36            | 0.00            | -118.93         | 0.00            | 118.93                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 0.78               | -0.16          | 0.059 |
| 50.00         | -18.46           | -1.35            | 0.00            | -118.25         | 0.00            | 118.25                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 0.79               | -0.16          | 0.059 |
| 55.00         | -17.71           | -1.34            | 0.00            | -111.50         | 0.00            | 111.50                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 0.97               | -0.18          | 0.058 |
| 60.00         | -16.97           | -1.33            | 0.00            | -104.79         | 0.00            | 104.79                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 1.17               | -0.20          | 0.057 |
| 65.00         | -16.25           | -1.32            | 0.00            | -98.13          | 0.00            | 98.13                      | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 1.39               | -0.22          | 0.055 |
| 70.00         | -15.55           | -1.31            | 0.00            | -91.53          | 0.00            | 91.53                      | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 1.63               | -0.24          | 0.054 |
| 75.00         | -14.87           | -1.29            | 0.00            | -84.99          | 0.00            | 84.99                      | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 1.89               | -0.26          | 0.053 |
| 80.00         | -14.20           | -1.27            | 0.00            | -78.54          | 0.00            | 78.54                      | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 2.17               | -0.28          | 0.051 |
| 85.00         | -14.06           | -1.27            | 0.00            | -72.18          | 0.00            | 72.18                      | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 2.48               | -0.31          | 0.050 |
| 86.08         | -13.22           | -1.24            | 0.00            | -70.81          | 0.00            | 70.81                      | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 2.55               | -0.31          | 0.049 |
| 90.00         | -13.01           | -1.23            | 0.00            | -65.96          | 0.00            | 65.96                      | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 2.81               | -0.33          | 0.048 |
| 91.00         | -12.57           | -1.21            | 0.00            | -64.73          | 0.00            | 64.73                      | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 2.88               | -0.33          | 0.061 |
| 95.00         | -12.02           | -1.19            | 0.00            | -59.87          | 0.00            | 59.87                      | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 3.17               | -0.35          | 0.059 |
| 100.00        | -11.50           | -1.17            | 0.00            | -53.91          | 0.00            | 53.91                      | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 3.55               | -0.38          | 0.056 |
| 105.00        | -10.98           | -1.14            | 0.00            | -48.07          | 0.00            | 48.07                      | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 3.96               | -0.40          | 0.053 |
| 110.00        | -10.48           | -1.11            | 0.00            | -42.36          | 0.00            | 42.36                      | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 4.39               | -0.43          | 0.050 |
| 115.00        | -9.99            | -1.08            | 0.00            | -36.80          | 0.00            | 36.80                      | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 4.85               | -0.45          | 0.046 |
| 120.00        | -9.91            | -1.08            | 0.00            | -31.38          | 0.00            | 31.38                      | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 5.33               | -0.47          | 0.043 |
| 120.83        | -9.33            | -1.04            | 0.00            | -30.48          | 0.00            | 30.48                      | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 5.42               | -0.48          | 0.042 |
| 125.00        | -8.97            | -1.01            | 0.00            | -26.16          | 0.00            | 26.16                      | 921.74        | 460.87        | 934.87           | 461.70           | 5.84               | -0.50          | 0.066 |
| 130.00        | -8.62            | -0.98            | 0.00            | -21.11          | 0.00            | 21.11                      | 903.89        | 451.95        | 878.60           | 433.91           | 6.37               | -0.52          | 0.058 |
| 135.00        | -6.81            | -0.82            | 0.00            | -16.20          | 0.00            | 16.20                      | 884.30        | 442.15        | 822.21           | 406.06           | 6.93               | -0.54          | 0.048 |
| 140.00        | -6.51            | -0.79            | 0.00            | -12.12          | 0.00            | 12.12                      | 862.96        | 431.48        | 765.93           | 378.26           | 7.51               | -0.57          | 0.040 |
| 145.00        | -6.28            | -0.76            | 0.00            | -8.18           | 0.00            | 8.18                       | 839.88        | 419.94        | 709.98           | 350.63           | 8.12               | -0.59          | 0.031 |
| 149.00        | -3.93            | -0.50            | 0.00            | -5.12           | 0.00            | 5.12                       | 820.16        | 410.08        | 665.60           | 328.71           | 8.61               | -0.60          | 0.020 |
| 150.00        | -3.69            | -0.47            | 0.00            | -4.62           | 0.00            | 4.62                       | 815.05        | 407.53        | 654.57           | 323.27           | 8.74               | -0.60          | 0.019 |
| 155.00        | -3.50            | -0.45            | 0.00            | -2.25           | 0.00            | 2.25                       | 788.48        | 394.24        | 599.93           | 296.28           | 9.37               | -0.61          | 0.012 |
| 159.00        | -0.61            | -0.08            | 0.00            | -0.45           | 0.00            | 0.45                       | 765.97        | 382.98        | 556.93           | 275.05           | 9.88               | -0.61          | 0.002 |
| 160.00        | -0.37            | -0.05            | 0.00            | -0.37           | 0.00            | 0.37                       | 760.16        | 380.08        | 546.29           | 269.79           | 10.01              | -0.61          | 0.002 |
| 160.00        | -0.37            | -0.05            | 0.00            | -0.37           | 0.00            | 0.37                       | 505.62        | 252.81        | 279.19           | 182.79           | 10.01              | -0.61          | 0.003 |
| 165.00        | -0.14            | -0.02            | 0.00            | -0.10           | 0.00            | 0.10                       | 505.62        | 252.81        | 279.19           | 182.79           | 10.65              | -0.61          | 0.001 |
| 170.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 11.29              | -0.61          | 0.000 |
| 173.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 11.67              | -0.61          | 0.000 |

### Equivalent Modal Forces Analysis

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

|  |      |
|--|------|
| Spectral Response Acceleration for Short Period ( $S_s$ ):               | 0.19 |
| Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):           | 0.06 |
| Importance Factor ( $I_E$ ):   | 1.00 |
| Site Coefficient $F_a$ :   | 1.60 |
| Site Coefficient $F_v$ :   | 2.40 |
| Response Modification Coefficient (R):                                   | 1.50 |
| Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):      | 0.21 |
| Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ): | 0.10 |
| Period Based on Rayleigh Method (sec):                                   | 3.08 |
| Redundancy Factor ( $\rho$ ):  | 1.30 |

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

| Segment | Height<br>Above<br>Base<br>(ft) | Weight<br>(lb) | a     | b      | c     | Saz    | Horizontal<br>Force<br>(lb) | Vertical<br>Force<br>(lb) |
|---------|---------------------------------|----------------|-------|--------|-------|--------|-----------------------------|---------------------------|
| 42      | 171.50                          | 164            | 1.857 | 1.812  | 1.079 | 0.366  | 52                          | 203                       |
| 41      | 167.50                          | 273            | 1.772 | 1.413  | 0.929 | 0.309  | 73                          | 339                       |
| 40      | 162.50                          | 273            | 1.668 | 1.003  | 0.766 | 0.243  | 58                          | 339                       |
| 39      | 159.50                          | 36             | 1.607 | 0.799  | 0.679 | 0.207  | 6                           | 45                        |
| 38      | 157.00                          | 218            | 1.557 | 0.650  | 0.613 | 0.179  | 34                          | 270                       |
| 37      | 152.50                          | 282            | 1.469 | 0.427  | 0.506 | 0.132  | 32                          | 350                       |
| 36      | 149.50                          | 58             | 1.411 | 0.306  | 0.444 | 0.103  | 5                           | 71                        |
| 35      | 147.00                          | 274            | 1.365 | 0.220  | 0.396 | 0.081  | 19                          | 340                       |
| 34      | 142.50                          | 352            | 1.282 | 0.097  | 0.321 | 0.046  | 14                          | 437                       |
| 33      | 137.50                          | 362            | 1.194 | -0.001 | 0.250 | 0.012  | 4                           | 450                       |
| 32      | 132.50                          | 410            | 1.109 | -0.065 | 0.192 | -0.016 | -6                          | 509                       |
| 31      | 127.50                          | 421            | 1.027 | -0.102 | 0.145 | -0.038 | -14                         | 522                       |
| 30      | 122.92                          | 673            | 0.954 | -0.118 | 0.110 | -0.053 | -31                         | 836                       |
| 29      | 120.42                          | 93             | 0.916 | -0.121 | 0.094 | -0.059 | -5                          | 116                       |
| 28      | 117.50                          | 568            | 0.872 | -0.121 | 0.077 | -0.064 | -31                         | 706                       |
| 27      | 112.50                          | 584            | 0.799 | -0.112 | 0.054 | -0.067 | -34                         | 725                       |
| 26      | 107.50                          | 600            | 0.730 | -0.096 | 0.036 | -0.064 | -33                         | 744                       |
| 25      | 102.50                          | 615            | 0.663 | -0.075 | 0.023 | -0.054 | -29                         | 764                       |
| 24      | 97.50                           | 631            | 0.600 | -0.053 | 0.015 | -0.039 | -21                         | 783                       |
| 23      | 93.00                           | 516            | 0.546 | -0.033 | 0.010 | -0.021 | -9                          | 641                       |
| 22      | 90.50                           | 245            | 0.517 | -0.022 | 0.008 | -0.010 | -2                          | 305                       |
| 21      | 88.04                           | 974            | 0.489 | -0.012 | 0.007 | 0.000  | 0                           | 1,209                     |
| 20      | 85.54                           | 166            | 0.462 | -0.003 | 0.006 | 0.011  | 2                           | 206                       |
| 19      | 82.50                           | 778            | 0.430 | 0.008  | 0.006 | 0.023  | 15                          | 966                       |
| 18      | 77.50                           | 797            | 0.379 | 0.024  | 0.007 | 0.039  | 27                          | 990                       |
| 17      | 72.50                           | 816            | 0.332 | 0.038  | 0.010 | 0.051  | 36                          | 1,013                     |
| 16      | 67.50                           | 835            | 0.288 | 0.048  | 0.013 | 0.058  | 42                          | 1,037                     |
| 15      | 62.50                           | 855            | 0.247 | 0.056  | 0.017 | 0.062  | 46                          | 1,061                     |
| 14      | 57.50                           | 874            | 0.209 | 0.062  | 0.022 | 0.063  | 48                          | 1,085                     |
| 13      | 52.50                           | 893            | 0.174 | 0.066  | 0.027 | 0.063  | 49                          | 1,108                     |
| 12      | 49.75                           | 90             | 0.156 | 0.067  | 0.029 | 0.063  | 5                           | 112                       |
| 11      | 47.25                           | 1,593          | 0.141 | 0.069  | 0.031 | 0.062  | 86                          | 1,977                     |
| 10      | 44.29                           | 508            | 0.124 | 0.070  | 0.034 | 0.062  | 27                          | 631                       |
| 9       | 41.79                           | 756            | 0.110 | 0.070  | 0.036 | 0.061  | 40                          | 939                       |

|                      |        |        |        |        |        |        |       |        |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 8                    | 37.50  | 1,075  | 0.089  | 0.071  | 0.039  | 0.060  | 56    | 1,334  |
| 7                    | 32.50  | 1,097  | 0.067  | 0.072  | 0.041  | 0.059  | 56    | 1,362  |
| 6                    | 27.50  | 1,120  | 0.048  | 0.071  | 0.042  | 0.057  | 56    | 1,390  |
| 5                    | 22.50  | 1,142  | 0.032  | 0.069  | 0.041  | 0.056  | 55    | 1,418  |
| 4                    | 17.50  | 1,165  | 0.019  | 0.064  | 0.038  | 0.053  | 53    | 1,446  |
| 3                    | 12.50  | 1,188  | 0.010  | 0.055  | 0.032  | 0.047  | 49    | 1,474  |
| 2                    | 7.50   | 1,210  | 0.004  | 0.040  | 0.022  | 0.038  | 39    | 1,502  |
| 1                    | 2.50   | 1,233  | 0.000  | 0.016  | 0.009  | 0.018  | 19    | 1,530  |
| Kaelus DBC0061F1V51- | 159.00 | 153    | 1.596  | 0.768  | 0.665  | 0.201  | 27    | 190    |
| Powerwave Allgon TT0 | 159.00 | 132    | 1.596  | 0.768  | 0.665  | 0.201  | 23    | 164    |
| Raycap DC6-48-60-18- | 159.00 | 40     | 1.596  | 0.768  | 0.665  | 0.201  | 7     | 50     |
| Ericsson RRUS-11 (50 | 159.00 | 150    | 1.596  | 0.768  | 0.665  | 0.201  | 26    | 186    |
| Ericsson RRUS 32 B2  | 159.00 | 159    | 1.596  | 0.768  | 0.665  | 0.201  | 28    | 197    |
| Ericsson RRUS 32 (55 | 159.00 | 165    | 1.596  | 0.768  | 0.665  | 0.201  | 29    | 205    |
| KMW AM-X-CD-14-65-00 | 159.00 | 109    | 1.596  | 0.768  | 0.665  | 0.201  | 19    | 136    |
| CCI HPA-65R-BUU-H6   | 159.00 | 51     | 1.596  | 0.768  | 0.665  | 0.201  | 9     | 63     |
| Kathrein Scala 80010 | 159.00 | 81     | 1.596  | 0.768  | 0.665  | 0.201  | 14    | 101    |
| CCI HPA-65R-BUU-H8   | 159.00 | 136    | 1.596  | 0.768  | 0.665  | 0.201  | 24    | 169    |
| CCI TPA-65R-LCUUUU-H | 159.00 | 163    | 1.596  | 0.768  | 0.665  | 0.201  | 28    | 203    |
| Flat Platform w/ Han | 159.00 | 2,000  | 1.596  | 0.768  | 0.665  | 0.201  | 349   | 2,483  |
| RFS FDL85002/1C-3L   | 149.00 | 42     | 1.402  | 0.288  | 0.434  | 0.099  | 4     | 52     |
| Alcatel-Lucent B66 R | 149.00 | 201    | 1.402  | 0.288  | 0.434  | 0.099  | 17    | 250    |
| Andrew 948F85T2E-M   | 149.00 | 25     | 1.402  | 0.288  | 0.434  | 0.099  | 2     | 32     |
| Andrew DB844H80E-XY  | 149.00 | 60     | 1.402  | 0.288  | 0.434  | 0.099  | 5     | 74     |
| RFS DB-T1-6Z-8AB-0Z  | 149.00 | 44     | 1.402  | 0.288  | 0.434  | 0.099  | 4     | 55     |
| Andrew SBNHH-1D65B   | 149.00 | 304    | 1.402  | 0.288  | 0.434  | 0.099  | 26    | 378    |
| Flat Platform w/ Han | 149.00 | 2,000  | 1.402  | 0.288  | 0.434  | 0.099  | 171   | 2,483  |
| 42" x 6" Panel       | 135.00 | 240    | 1.151  | -0.037 | 0.220  | -0.003 | -1    | 298    |
| Flat Low Profile Pla | 135.00 | 1,500  | 1.151  | -0.037 | 0.220  | -0.003 | -4    | 1,862  |
|                      |        | 34,572 | 58.997 | 17.978 | 18.712 | 5.302  | 1,696 | 42,917 |

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) |
|---------|------------------------|-------------|-------|--------|-------|--------|-----------------------|---------------------|
| 42      | 171.50                 | 164         | 1.857 | 1.812  | 1.079 | 0.366  | 52                    | 141                 |
| 41      | 167.50                 | 273         | 1.772 | 1.413  | 0.929 | 0.309  | 73                    | 234                 |
| 40      | 162.50                 | 273         | 1.668 | 1.003  | 0.766 | 0.243  | 58                    | 234                 |
| 39      | 159.50                 | 36          | 1.607 | 0.799  | 0.679 | 0.207  | 6                     | 31                  |
| 38      | 157.00                 | 218         | 1.557 | 0.650  | 0.613 | 0.179  | 34                    | 187                 |
| 37      | 152.50                 | 282         | 1.469 | 0.427  | 0.506 | 0.132  | 32                    | 242                 |
| 36      | 149.50                 | 58          | 1.411 | 0.306  | 0.444 | 0.103  | 5                     | 49                  |
| 35      | 147.00                 | 274         | 1.365 | 0.220  | 0.396 | 0.081  | 19                    | 235                 |
| 34      | 142.50                 | 352         | 1.282 | 0.097  | 0.321 | 0.046  | 14                    | 302                 |
| 33      | 137.50                 | 362         | 1.194 | -0.001 | 0.250 | 0.012  | 4                     | 311                 |
| 32      | 132.50                 | 410         | 1.109 | -0.065 | 0.192 | -0.016 | -6                    | 352                 |
| 31      | 127.50                 | 421         | 1.027 | -0.102 | 0.145 | -0.038 | -14                   | 361                 |
| 30      | 122.92                 | 673         | 0.954 | -0.118 | 0.110 | -0.053 | -31                   | 578                 |
| 29      | 120.42                 | 93          | 0.916 | -0.121 | 0.094 | -0.059 | -5                    | 80                  |
| 28      | 117.50                 | 568         | 0.872 | -0.121 | 0.077 | -0.064 | -31                   | 488                 |
| 27      | 112.50                 | 584         | 0.799 | -0.112 | 0.054 | -0.067 | -34                   | 501                 |
| 26      | 107.50                 | 600         | 0.730 | -0.096 | 0.036 | -0.064 | -33                   | 515                 |
| 25      | 102.50                 | 615         | 0.663 | -0.075 | 0.023 | -0.054 | -29                   | 528                 |
| 24      | 97.50                  | 631         | 0.600 | -0.053 | 0.015 | -0.039 | -21                   | 542                 |
| 23      | 93.00                  | 516         | 0.546 | -0.033 | 0.010 | -0.021 | -9                    | 443                 |
| 22      | 90.50                  | 245         | 0.517 | -0.022 | 0.008 | -0.010 | -2                    | 211                 |
| 21      | 88.04                  | 974         | 0.489 | -0.012 | 0.007 | 0.000  | 0                     | 837                 |
| 20      | 85.54                  | 166         | 0.462 | -0.003 | 0.006 | 0.011  | 2                     | 143                 |
| 19      | 82.50                  | 778         | 0.430 | 0.008  | 0.006 | 0.023  | 15                    | 668                 |



Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

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Customer: AT&T MOBILITY

|                      |        |        |        |        |        |        |       |        |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 18                   | 77.50  | 797    | 0.379  | 0.024  | 0.007  | 0.039  | 27    | 685    |
| 17                   | 72.50  | 816    | 0.332  | 0.038  | 0.010  | 0.051  | 36    | 701    |
| 16                   | 67.50  | 835    | 0.288  | 0.048  | 0.013  | 0.058  | 42    | 717    |
| 15                   | 62.50  | 855    | 0.247  | 0.056  | 0.017  | 0.062  | 46    | 734    |
| 14                   | 57.50  | 874    | 0.209  | 0.062  | 0.022  | 0.063  | 48    | 750    |
| 13                   | 52.50  | 893    | 0.174  | 0.066  | 0.027  | 0.063  | 49    | 767    |
| 12                   | 49.75  | 90     | 0.156  | 0.067  | 0.029  | 0.063  | 5     | 78     |
| 11                   | 47.25  | 1,593  | 0.141  | 0.069  | 0.031  | 0.062  | 86    | 1,368  |
| 10                   | 44.29  | 508    | 0.124  | 0.070  | 0.034  | 0.062  | 27    | 437    |
| 9                    | 41.79  | 756    | 0.110  | 0.070  | 0.036  | 0.061  | 40    | 649    |
| 8                    | 37.50  | 1,075  | 0.089  | 0.071  | 0.039  | 0.060  | 56    | 923    |
| 7                    | 32.50  | 1,097  | 0.067  | 0.072  | 0.041  | 0.059  | 56    | 942    |
| 6                    | 27.50  | 1,120  | 0.048  | 0.071  | 0.042  | 0.057  | 56    | 962    |
| 5                    | 22.50  | 1,142  | 0.032  | 0.069  | 0.041  | 0.056  | 55    | 981    |
| 4                    | 17.50  | 1,165  | 0.019  | 0.064  | 0.038  | 0.053  | 53    | 1,000  |
| 3                    | 12.50  | 1,188  | 0.010  | 0.055  | 0.032  | 0.047  | 49    | 1,020  |
| 2                    | 7.50   | 1,210  | 0.004  | 0.040  | 0.022  | 0.038  | 39    | 1,039  |
| 1                    | 2.50   | 1,233  | 0.000  | 0.016  | 0.009  | 0.018  | 19    | 1,058  |
| Kaelus DBC0061F1V51- | 159.00 | 153    | 1.596  | 0.768  | 0.665  | 0.201  | 27    | 131    |
| Powerwave Allgon TT0 | 159.00 | 132    | 1.596  | 0.768  | 0.665  | 0.201  | 23    | 113    |
| Raycap DC6-48-60-18- | 159.00 | 40     | 1.596  | 0.768  | 0.665  | 0.201  | 7     | 34     |
| Ericsson RRUS-11 (50 | 159.00 | 150    | 1.596  | 0.768  | 0.665  | 0.201  | 26    | 129    |
| Ericsson RRUS 32 B2  | 159.00 | 159    | 1.596  | 0.768  | 0.665  | 0.201  | 28    | 137    |
| Ericsson RRUS 32 (55 | 159.00 | 165    | 1.596  | 0.768  | 0.665  | 0.201  | 29    | 142    |
| KMW AM-X-CD-14-65-00 | 159.00 | 109    | 1.596  | 0.768  | 0.665  | 0.201  | 19    | 94     |
| CCI HPA-65R-BUU-H6   | 159.00 | 51     | 1.596  | 0.768  | 0.665  | 0.201  | 9     | 44     |
| Kathrein Scala 80010 | 159.00 | 81     | 1.596  | 0.768  | 0.665  | 0.201  | 14    | 70     |
| CCI HPA-65R-BUU-H8   | 159.00 | 136    | 1.596  | 0.768  | 0.665  | 0.201  | 24    | 117    |
| CCI TPA-65R-LCUUUU-H | 159.00 | 163    | 1.596  | 0.768  | 0.665  | 0.201  | 28    | 140    |
| Flat Platform w/ Han | 159.00 | 2,000  | 1.596  | 0.768  | 0.665  | 0.201  | 349   | 1,717  |
| RFS FDL85002/1C-3L   | 149.00 | 42     | 1.402  | 0.288  | 0.434  | 0.099  | 4     | 36     |
| Alcatel-Lucent B66 R | 149.00 | 201    | 1.402  | 0.288  | 0.434  | 0.099  | 17    | 173    |
| Andrew 948F85T2E-M   | 149.00 | 25     | 1.402  | 0.288  | 0.434  | 0.099  | 2     | 22     |
| Andrew DB844H80E-XY  | 149.00 | 60     | 1.402  | 0.288  | 0.434  | 0.099  | 5     | 52     |
| RFS DB-T1-6Z-8AB-0Z  | 149.00 | 44     | 1.402  | 0.288  | 0.434  | 0.099  | 4     | 38     |
| Andrew SBNHH-1D65B   | 149.00 | 304    | 1.402  | 0.288  | 0.434  | 0.099  | 26    | 261    |
| Flat Platform w/ Han | 149.00 | 2,000  | 1.402  | 0.288  | 0.434  | 0.099  | 171   | 1,717  |
| 42" x 6" Panel       | 135.00 | 240    | 1.151  | -0.037 | 0.220  | -0.003 | -1    | 206    |
| Flat Low Profile Pla | 135.00 | 1,500  | 1.151  | -0.037 | 0.220  | -0.003 | -4    | 1,288  |
|                      |        | 34,572 | 58.997 | 17.978 | 18.712 | 5.302  | 1,696 | 29,684 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -41.39           | -1.68            | 0.00            | -194.89         | 0.00            | 194.89                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.058 |
| 5.00          | -39.88           | -1.65            | 0.00            | -186.49         | 0.00            | 186.49                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.01               | -0.01          | 0.058 |
| 10.00         | -38.41           | -1.61            | 0.00            | -178.23         | 0.00            | 178.23                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.03               | -0.03          | 0.057 |
| 15.00         | -36.96           | -1.57            | 0.00            | -170.16         | 0.00            | 170.16                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.07               | -0.04          | 0.056 |
| 20.00         | -35.54           | -1.52            | 0.00            | -162.32         | 0.00            | 162.32                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.13               | -0.06          | 0.055 |
| 25.00         | -34.15           | -1.47            | 0.00            | -154.71         | 0.00            | 154.71                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.20               | -0.08          | 0.054 |
| 30.00         | -32.79           | -1.43            | 0.00            | -147.35         | 0.00            | 147.35                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 0.28               | -0.09          | 0.054 |
| 35.00         | -31.46           | -1.38            | 0.00            | -140.22         | 0.00            | 140.22                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 0.39               | -0.11          | 0.053 |
| 40.00         | -30.52           | -1.34            | 0.00            | -133.34         | 0.00            | 133.34                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 0.51               | -0.13          | 0.053 |
| 43.58         | -29.89           | -1.32            | 0.00            | -128.53         | 0.00            | 128.53                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 0.61               | -0.14          | 0.052 |
| 45.00         | -27.91           | -1.23            | 0.00            | -126.66         | 0.00            | 126.66                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 0.65               | -0.14          | 0.052 |
| 49.50         | -27.80           | -1.23            | 0.00            | -121.12         | 0.00            | 121.12                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 0.80               | -0.16          | 0.063 |
| 50.00         | -26.69           | -1.18            | 0.00            | -120.51         | 0.00            | 120.51                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 0.81               | -0.16          | 0.063 |
| 55.00         | -25.60           | -1.14            | 0.00            | -114.59         | 0.00            | 114.59                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 0.99               | -0.18          | 0.062 |
| 60.00         | -24.54           | -1.10            | 0.00            | -108.88         | 0.00            | 108.88                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 1.19               | -0.20          | 0.061 |
| 65.00         | -23.50           | -1.06            | 0.00            | -103.37         | 0.00            | 103.37                     | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 1.42               | -0.22          | 0.061 |
| 70.00         | -22.49           | -1.03            | 0.00            | -98.04          | 0.00            | 98.04                      | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 1.66               | -0.25          | 0.060 |
| 75.00         | -21.50           | -1.01            | 0.00            | -92.87          | 0.00            | 92.87                      | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 1.94               | -0.27          | 0.060 |
| 80.00         | -20.53           | -1.00            | 0.00            | -87.82          | 0.00            | 87.82                      | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 2.23               | -0.29          | 0.059 |
| 85.00         | -20.33           | -1.00            | 0.00            | -82.82          | 0.00            | 82.82                      | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 2.55               | -0.32          | 0.059 |
| 86.08         | -19.12           | -1.00            | 0.00            | -81.73          | 0.00            | 81.73                      | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 2.62               | -0.32          | 0.058 |
| 90.00         | -18.81           | -1.00            | 0.00            | -77.81          | 0.00            | 77.81                      | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 2.90               | -0.34          | 0.058 |
| 91.00         | -18.17           | -1.01            | 0.00            | -76.81          | 0.00            | 76.81                      | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 2.97               | -0.35          | 0.074 |
| 95.00         | -17.39           | -1.04            | 0.00            | -72.75          | 0.00            | 72.75                      | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 3.27               | -0.37          | 0.073 |
| 100.00        | -16.62           | -1.07            | 0.00            | -67.56          | 0.00            | 67.56                      | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 3.68               | -0.40          | 0.071 |
| 105.00        | -15.88           | -1.11            | 0.00            | -62.20          | 0.00            | 62.20                      | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 4.12               | -0.44          | 0.069 |
| 110.00        | -15.15           | -1.15            | 0.00            | -56.65          | 0.00            | 56.65                      | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 4.59               | -0.47          | 0.067 |
| 115.00        | -14.45           | -1.18            | 0.00            | -50.92          | 0.00            | 50.92                      | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 5.10               | -0.50          | 0.065 |
| 120.00        | -14.33           | -1.19            | 0.00            | -45.03          | 0.00            | 45.03                      | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 5.64               | -0.53          | 0.062 |
| 120.83        | -13.49           | -1.21            | 0.00            | -44.04          | 0.00            | 44.04                      | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 5.74               | -0.54          | 0.061 |
| 125.00        | -12.97           | -1.23            | 0.00            | -38.98          | 0.00            | 38.98                      | 921.74        | 460.87        | 934.87           | 461.70           | 6.22               | -0.57          | 0.098 |
| 130.00        | -12.46           | -1.24            | 0.00            | -32.82          | 0.00            | 32.82                      | 903.89        | 451.95        | 878.60           | 433.91           | 6.83               | -0.60          | 0.089 |
| 135.00        | -9.85            | -1.22            | 0.00            | -26.63          | 0.00            | 26.63                      | 884.30        | 442.15        | 822.21           | 406.06           | 7.48               | -0.64          | 0.077 |
| 140.00        | -9.41            | -1.21            | 0.00            | -20.54          | 0.00            | 20.54                      | 862.96        | 431.48        | 765.93           | 378.26           | 8.17               | -0.68          | 0.065 |
| 145.00        | -9.07            | -1.19            | 0.00            | -14.51          | 0.00            | 14.51                      | 839.88        | 419.94        | 709.98           | 350.63           | 8.90               | -0.71          | 0.052 |
| 149.00        | -5.68            | -0.91            | 0.00            | -9.76           | 0.00            | 9.76                       | 820.16        | 410.08        | 665.60           | 328.71           | 9.51               | -0.73          | 0.037 |
| 150.00        | -5.33            | -0.87            | 0.00            | -8.85           | 0.00            | 8.85                       | 815.05        | 407.53        | 654.57           | 323.27           | 9.66               | -0.74          | 0.034 |
| 155.00        | -5.06            | -0.84            | 0.00            | -4.48           | 0.00            | 4.48                       | 788.48        | 394.24        | 599.93           | 296.28           | 10.44              | -0.75          | 0.022 |
| 159.00        | -0.88            | -0.19            | 0.00            | -1.13           | 0.00            | 1.13                       | 765.97        | 382.98        | 556.93           | 275.05           | 11.08              | -0.76          | 0.005 |
| 160.00        | -0.54            | -0.13            | 0.00            | -0.93           | 0.00            | 0.93                       | 760.16        | 380.08        | 546.29           | 269.79           | 11.24              | -0.76          | 0.004 |
| 160.00        | -0.54            | -0.13            | 0.00            | -0.93           | 0.00            | 0.93                       | 505.62        | 252.81        | 279.19           | 182.79           | 11.24              | -0.76          | 0.006 |
| 165.00        | -0.20            | -0.05            | 0.00            | -0.27           | 0.00            | 0.27                       | 505.62        | 252.81        | 279.19           | 182.79           | 12.04              | -0.76          | 0.002 |
| 170.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 12.84              | -0.76          | 0.000 |
| 173.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 13.31              | -0.76          | 0.000 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00          | -28.63           | -1.68            | 0.00            | -190.26         | 0.00            | 190.26                     | 4,119.11      | 2,059.55      | 8,173.56         | 4,036.61         | 0.00               | 0.00           | 0.054 |
| 5.00          | -27.59           | -1.65            | 0.00            | -181.86         | 0.00            | 181.86                     | 4,072.65      | 2,036.32      | 7,909.38         | 3,906.15         | 0.01               | -0.01          | 0.053 |
| 10.00         | -26.57           | -1.60            | 0.00            | -173.63         | 0.00            | 173.63                     | 4,024.44      | 2,012.22      | 7,645.81         | 3,775.98         | 0.03               | -0.03          | 0.053 |
| 15.00         | -25.56           | -1.56            | 0.00            | -165.60         | 0.00            | 165.60                     | 3,974.49      | 1,987.24      | 7,383.08         | 3,646.22         | 0.07               | -0.04          | 0.052 |
| 20.00         | -24.58           | -1.51            | 0.00            | -157.81         | 0.00            | 157.81                     | 3,922.79      | 1,961.39      | 7,121.39         | 3,516.99         | 0.12               | -0.06          | 0.051 |
| 25.00         | -23.62           | -1.46            | 0.00            | -150.27         | 0.00            | 150.27                     | 3,869.35      | 1,934.67      | 6,860.97         | 3,388.38         | 0.19               | -0.07          | 0.050 |
| 30.00         | -22.68           | -1.41            | 0.00            | -142.99         | 0.00            | 142.99                     | 3,814.16      | 1,907.08      | 6,602.05         | 3,260.51         | 0.28               | -0.09          | 0.050 |
| 35.00         | -21.76           | -1.36            | 0.00            | -135.95         | 0.00            | 135.95                     | 3,757.23      | 1,878.61      | 6,344.85         | 3,133.48         | 0.38               | -0.11          | 0.049 |
| 40.00         | -21.11           | -1.32            | 0.00            | -129.18         | 0.00            | 129.18                     | 3,698.55      | 1,849.27      | 6,089.58         | 3,007.41         | 0.50               | -0.12          | 0.049 |
| 43.58         | -20.67           | -1.29            | 0.00            | -124.45         | 0.00            | 124.45                     | 3,655.42      | 1,827.71      | 5,907.95         | 2,917.71         | 0.60               | -0.13          | 0.048 |
| 45.00         | -19.30           | -1.21            | 0.00            | -122.62         | 0.00            | 122.62                     | 3,638.13      | 1,819.06      | 5,836.47         | 2,882.41         | 0.64               | -0.14          | 0.048 |
| 49.50         | -19.22           | -1.21            | 0.00            | -117.18         | 0.00            | 117.18                     | 2,873.94      | 1,436.97      | 4,598.30         | 2,270.93         | 0.77               | -0.15          | 0.058 |
| 50.00         | -18.46           | -1.16            | 0.00            | -116.58         | 0.00            | 116.58                     | 2,869.74      | 1,434.87      | 4,579.47         | 2,261.63         | 0.79               | -0.16          | 0.058 |
| 55.00         | -17.71           | -1.11            | 0.00            | -110.79         | 0.00            | 110.79                     | 2,826.86      | 1,413.43      | 4,391.66         | 2,168.87         | 0.97               | -0.18          | 0.057 |
| 60.00         | -16.97           | -1.07            | 0.00            | -105.22         | 0.00            | 105.22                     | 2,782.22      | 1,391.11      | 4,204.83         | 2,076.61         | 1.16               | -0.20          | 0.057 |
| 65.00         | -16.26           | -1.03            | 0.00            | -99.86          | 0.00            | 99.86                      | 2,735.84      | 1,367.92      | 4,019.21         | 1,984.94         | 1.38               | -0.22          | 0.056 |
| 70.00         | -15.55           | -1.00            | 0.00            | -94.70          | 0.00            | 94.70                      | 2,687.72      | 1,343.86      | 3,835.01         | 1,893.97         | 1.62               | -0.24          | 0.056 |
| 75.00         | -14.87           | -0.98            | 0.00            | -89.69          | 0.00            | 89.69                      | 2,637.85      | 1,318.93      | 3,652.47         | 1,803.82         | 1.88               | -0.26          | 0.055 |
| 80.00         | -14.20           | -0.96            | 0.00            | -84.81          | 0.00            | 84.81                      | 2,586.24      | 1,293.12      | 3,471.79         | 1,714.59         | 2.17               | -0.28          | 0.055 |
| 85.00         | -14.06           | -0.97            | 0.00            | -79.99          | 0.00            | 79.99                      | 2,532.88      | 1,266.44      | 3,293.21         | 1,626.39         | 2.48               | -0.31          | 0.055 |
| 86.08         | -13.22           | -0.96            | 0.00            | -78.94          | 0.00            | 78.94                      | 2,521.09      | 1,260.54      | 3,254.81         | 1,607.43         | 2.55               | -0.31          | 0.054 |
| 90.00         | -13.01           | -0.97            | 0.00            | -75.17          | 0.00            | 75.17                      | 2,477.77      | 1,238.89      | 3,116.93         | 1,539.34         | 2.81               | -0.33          | 0.054 |
| 91.00         | -12.57           | -0.98            | 0.00            | -74.20          | 0.00            | 74.20                      | 1,898.25      | 949.12        | 2,426.08         | 1,198.15         | 2.88               | -0.34          | 0.069 |
| 95.00         | -12.03           | -1.00            | 0.00            | -70.29          | 0.00            | 70.29                      | 1,869.28      | 934.64        | 2,325.90         | 1,148.68         | 3.18               | -0.36          | 0.068 |
| 100.00        | -11.50           | -1.03            | 0.00            | -65.29          | 0.00            | 65.29                      | 1,831.49      | 915.75        | 2,201.55         | 1,087.26         | 3.57               | -0.39          | 0.066 |
| 105.00        | -10.98           | -1.07            | 0.00            | -60.13          | 0.00            | 60.13                      | 1,791.96      | 895.98        | 2,078.36         | 1,026.42         | 4.00               | -0.42          | 0.065 |
| 110.00        | -10.48           | -1.10            | 0.00            | -54.80          | 0.00            | 54.80                      | 1,750.69      | 875.34        | 1,956.56         | 966.27           | 4.45               | -0.45          | 0.063 |
| 115.00        | -9.99            | -1.14            | 0.00            | -49.28          | 0.00            | 49.28                      | 1,707.67      | 853.83        | 1,836.37         | 906.92           | 4.94               | -0.48          | 0.060 |
| 120.00        | -9.91            | -1.14            | 0.00            | -43.60          | 0.00            | 43.60                      | 1,662.90      | 831.45        | 1,718.02         | 848.46           | 5.47               | -0.52          | 0.057 |
| 120.83        | -9.33            | -1.17            | 0.00            | -42.65          | 0.00            | 42.65                      | 1,655.27      | 827.64        | 1,698.48         | 838.82           | 5.56               | -0.52          | 0.056 |
| 125.00        | -8.97            | -1.19            | 0.00            | -37.76          | 0.00            | 37.76                      | 921.74        | 460.87        | 934.87           | 461.70           | 6.03               | -0.55          | 0.092 |
| 130.00        | -8.62            | -1.19            | 0.00            | -31.83          | 0.00            | 31.83                      | 903.89        | 451.95        | 878.60           | 433.91           | 6.62               | -0.58          | 0.083 |
| 135.00        | -6.81            | -1.18            | 0.00            | -25.86          | 0.00            | 25.86                      | 884.30        | 442.15        | 822.21           | 406.06           | 7.25               | -0.62          | 0.071 |
| 140.00        | -6.51            | -1.17            | 0.00            | -19.95          | 0.00            | 19.95                      | 862.96        | 431.48        | 765.93           | 378.26           | 7.92               | -0.66          | 0.060 |
| 145.00        | -6.27            | -1.15            | 0.00            | -14.11          | 0.00            | 14.11                      | 839.88        | 419.94        | 709.98           | 350.63           | 8.63               | -0.69          | 0.048 |
| 149.00        | -3.93            | -0.89            | 0.00            | -9.52           | 0.00            | 9.52                       | 820.16        | 410.08        | 665.60           | 328.71           | 9.21               | -0.71          | 0.034 |
| 150.00        | -3.69            | -0.85            | 0.00            | -8.63           | 0.00            | 8.63                       | 815.05        | 407.53        | 654.57           | 323.27           | 9.36               | -0.71          | 0.031 |
| 155.00        | -3.50            | -0.82            | 0.00            | -4.37           | 0.00            | 4.37                       | 788.48        | 394.24        | 599.93           | 296.28           | 10.12              | -0.73          | 0.019 |
| 159.00        | -0.61            | -0.19            | 0.00            | -1.11           | 0.00            | 1.11                       | 765.97        | 382.98        | 556.93           | 275.05           | 10.73              | -0.74          | 0.005 |
| 160.00        | -0.37            | -0.13            | 0.00            | -0.92           | 0.00            | 0.92                       | 760.16        | 380.08        | 546.29           | 269.79           | 10.89              | -0.74          | 0.004 |
| 160.00        | -0.37            | -0.13            | 0.00            | -0.92           | 0.00            | 0.92                       | 505.62        | 252.81        | 279.19           | 182.79           | 10.89              | -0.74          | 0.006 |
| 165.00        | -0.14            | -0.05            | 0.00            | -0.27           | 0.00            | 0.27                       | 505.62        | 252.81        | 279.19           | 182.79           | 11.66              | -0.74          | 0.002 |
| 170.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 12.44              | -0.74          | 0.000 |
| 173.00        | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                       | 505.62        | 252.81        | 279.19           | 182.79           | 12.90              | -0.74          | 0.000 |

Site Number: 302524

Code: ANSI/TIA-222-G

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Site Name: Beacon Falls, CT

Engineering Number: OAA720775\_C3\_01

1/8/2018 4:28:04 PM

Customer: AT&T MOBILITY

## Analysis Summary

| Load Case                    | Reactions             |                       |                       |                           |                           |                           | Max Usage    |                      |
|------------------------------|-----------------------|-----------------------|-----------------------|---------------------------|---------------------------|---------------------------|--------------|----------------------|
|                              | Shear<br>FX<br>(kips) | Shear<br>FZ<br>(kips) | Axial<br>FY<br>(kips) | Moment<br>MX<br>(ft-kips) | Moment<br>MY<br>(ft-kips) | Moment<br>MZ<br>(ft-kips) | Elev<br>(ft) | Interaction<br>Ratio |
| 1.2D + 1.6W                  | 26.86                 | 0.00                  | 41.43                 | 0.00                      | 0.00                      | 3074.58                   | 125.00       | 0.85                 |
| 0.9D + 1.6W                  | 26.83                 | 0.00                  | 31.06                 | 0.00                      | 0.00                      | 3020.10                   | 125.00       | 0.82                 |
| 1.2D + 1.0Di + 1.0Wi         | 6.04                  | 0.00                  | 62.23                 | 0.00                      | 0.00                      | 746.97                    | 125.00       | 0.25                 |
| (1.2 + 0.2Sds) * DL + E ELFM | 1.35                  | 0.00                  | 41.39                 | 0.00                      | 0.00                      | 190.90                    | 125.00       | 0.07                 |
| (1.2 + 0.2Sds) * DL + E EMAM | 1.68                  | 0.00                  | 41.39                 | 0.00                      | 0.00                      | 194.89                    | 125.00       | 0.10                 |
| (0.9 - 0.2Sds) * DL + E ELFM | 1.35                  | 0.00                  | 28.63                 | 0.00                      | 0.00                      | 186.52                    | 125.00       | 0.07                 |
| (0.9 - 0.2Sds) * DL + E EMAM | 1.68                  | 0.00                  | 28.63                 | 0.00                      | 0.00                      | 190.26                    | 125.00       | 0.09                 |
| 1.0D + 1.0W                  | 6.42                  | 0.00                  | 34.57                 | 0.00                      | 0.00                      | 728.69                    | 125.00       | 0.21                 |

|                   |                     |                  |
|-------------------|---------------------|------------------|
| Base/Flange Plate | Plate Type          | <b>Baseplate</b> |
|                   | Pole Diameter       | 48.5 in          |
|                   | Pole Thickness      | 0.40625 in       |
|                   | Plate Diameter      | 62.71 in         |
|                   | Plate Thickness     | 2.75 in          |
|                   | Plate Fy            | 60 ksi           |
|                   | Weld Length         | 0.3125 in        |
|                   | $\phi_s$ Resistance | 972.23 k-in      |
|                   | Applied             | 409.53 k-in      |
| Stiffeners        | #                   | 0                |

|               |                                 |               |
|---------------|---------------------------------|---------------|
| Bolts         | #                               | 16            |
|               | Bolt Circle (R)adial / (S)quare | 56.71 in<br>R |
|               | Diameter                        | 2.25 in       |
|               | Hole Diameter                   | 2.625 in      |
|               | Type                            | A615-75       |
|               | Fy                              | 75 ksi        |
|               | Fu                              | 100 ksi       |
|               | $\phi_s$ Resistance             | 259.82 k      |
|               | Applied                         | 165.13 k      |
| Reinforcement | #                               | 0             |
|               | Extra Bolts O                   | 0             |

Code Rev. **G**

Date 1/8/2018  
 Engineer Aaron.Black  
 Site # 302524  
 Carrier AT&T MOBILITY

Moment 3074.6 k-ft  
 Axial 41.4 k

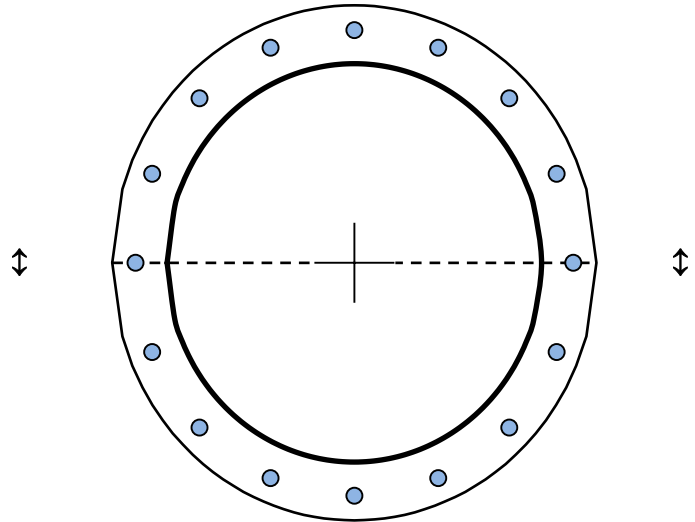


Plate Stress Ratio:  
**0.42** (Pass)

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

|                          |                     |                          |
|--------------------------|---------------------|--------------------------|
| <b>Base/Flange Plate</b> | Plate Type          | <b>Flange @ 160.0 ft</b> |
|                          | Pole Diameter       | 14 in                    |
|                          | Pole Thickness      | 0.375 in                 |
|                          | Plate Diameter      | 20 in                    |
|                          | Plate Thickness     | 0.5 in                   |
|                          | Plate Fy            | 36 ksi                   |
|                          | Weld Length         | 0.3125 in                |
|                          | $\phi_s$ Resistance | 788.95 k-in              |
|                          | Applied             | 0.63 k-in                |
| <b>Stiffeners</b>        | #                   | <b>24 Show</b>           |
|                          | Thickness           | 0.375 in                 |
|                          | Length              | 3 in                     |
|                          | Height              | 13.5 in                  |
|                          | Chamfer             | 0 in                     |
|                          | Offset Angle        | 22 °                     |
|                          | Fy                  | 36 ksi                   |

Code Rev. **G**

Date **1/8/2018**  
 Engineer **Aaron.Black**  
 Site # **302524**  
 Carrier **AT&T MOBILITY**

Moment **3.9 k-ft**  
 Axial **0.8 k**

|                      |                     |            |
|----------------------|---------------------|------------|
| <b>Bolts</b>         | #                   | <b>12</b>  |
|                      | Bolt Circle         | 17.1875 in |
|                      | (R)adial / (S)quare | R          |
|                      | Diameter            | 1 in       |
|                      | Hole Diameter       | 1.0625 in  |
|                      | Type                | A325       |
|                      | Fy                  | 92 ksi     |
|                      | Fu                  | 120 ksi    |
|                      | $\phi_s$ Resistance | 54.52 k    |
| Applied              | 0.84 k              |            |
| <b>Reinforcement</b> | #                   | <b>0</b>   |
| <b>Extra Bolts</b>   | #                   | <b>0</b>   |

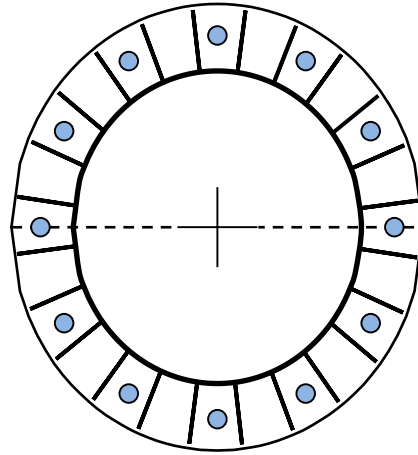


Plate Stress Ratio:  
**0.00** (Pass)

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

## Exhibit 4



# Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2161

FA#: 10035091

Beacon Falls - Rimmon Hill

664 Rimmon Hill Road

Seymour, CT 06483

**February 28, 2018**

**Centerline Communications Project Number: 950006-096**

| Site Compliance Summary                                    |                  |
|--|------------------|
| Compliance Status:   | <b>COMPLIANT</b> |
| Site total MPE% of FCC general population allowable limit: | <b>5.94 %</b>    |





February 28, 2018

AT&T Mobility – New England  
Attn: John Benedetto, RF Manager  
550 Cochituate Road  
Suite 550 – 13&14  
Framingham, MA 06040

### Emissions Analysis for Site: **CT2161 – Beacon Falls - Rimmon Hill**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **664 Rimmon Hill Road, Seymour, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 700 and 850 MHz Bands are approximately  $467 \mu\text{W}/\text{cm}^2$  and  $567 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.



## CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **664 Rimmon Hill Road, Seymour, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

| Technology | Frequency Band    | Channel Count | Transmit Power per Channel (W) |
|------------|-------------------|---------------|--------------------------------|
| UMTS       | 850 MHz           | 1             | 30                             |
| UMTS       | 1900 MHz (PCS)    | 1             | 30                             |
| LTE        | 700 MHz           | 2             | 60                             |
| LTE        | 1900 MHz (PCS)    | 4             | 40                             |
| LTE        | 850 MHz           | 2             | 40                             |
| LTE        | 700 MHz (Band 14) | 4             | 40                             |
| LTE        | 2300 MHz (WCS)    | 4             | 30                             |

*Table 1: Channel Data Table*



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

| Sector | Antenna Number | Antenna Make / Model      | Antenna Centerline (ft) |
|--------|----------------|---------------------------|-------------------------|
| A      | 1              | KMW AM-X-CD-14-65-00T-RET | 159                     |
| A      | 2              | CCI HPA-65R-BUU-H8        | 159                     |
| A      | 3              | CCI TPA-65R-LCUUUU-H8     | 159                     |
| B      | 1              | KMW AM-X-CD-14-65-00T-RET | 159                     |
| B      | 2              | CCI HPA-65R-BUU-H8        | 159                     |
| B      | 3              | CCI TPA-65R-LCUUUU-H8     | 159                     |
| C      | 1              | KMW AM-X-CD-14-65-00T-RET | 159                     |
| C      | 2              | CCI HPA-65R-BUU-H6        | 159                     |
| C      | 3              | Kathrein 800-10798        | 159                     |

*Table 2: Antenna Data*

All calculations were done with respect to uncontrolled / general population threshold limits.



## RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

| Antenna ID              | Antenna Make / Model         | Frequency Bands                          | Antenna Gain (dBd)          | Channel Count | Total TX Power (W) | ERP (W)  | MPE %       |
|-------------------------|------------------------------|--|-----------------------------|---------------|--------------------|----------|-------------|
| Antenna A1              | KMW<br>AM-X-CD-14-65-00T-RET | 850 MHz /<br>1900 MHz (PCS)              | 12.65 /<br>14.15            | 2             | 60                 | 1,332.28 | 0.27        |
| Antenna A2              | CCI<br>HPA-65R-BUU-H8        | 700 MHz /<br>1900 MHz (PCS)              | 13.15 /<br>14.95            | 6             | 240                | 6,654.03 | 1.31        |
| Antenna A3              | CCI<br>TPA-65R-LCUUUU-H8     | 850 MHz /<br>700 MHz /<br>2300 MHz (WCS) | 13.45 /<br>12.95 /<br>14.45 | 10            | 360                | 8,269.70 | 2.03        |
| Sector A Composite MPE% |                              |  |                             |               |                    |          | <b>3.61</b> |
| Antenna B1              | KMW<br>AM-X-CD-14-65-00T-RET | 850 MHz /<br>1900 MHz (PCS)              | 12.65 /<br>14.15            | 2             | 60                 | 1,332.28 | 0.27        |
| Antenna B2              | CCI<br>HPA-65R-BUU-H8        | 700 MHz /<br>1900 MHz (PCS)              | 13.15 /<br>14.95            | 6             | 240                | 6,654.03 | 1.31        |
| Antenna B3              | CCI<br>TPA-65R-LCUUUU-H8     | 850 MHz /<br>700 MHz /<br>2300 MHz (WCS) | 13.45 /<br>12.95 /<br>14.45 | 10            | 360                | 8,269.70 | 2.03        |
| Sector B Composite MPE% |                              |  |                             |               |                    |          | <b>3.61</b> |
| Antenna C1              | KMW<br>AM-X-CD-14-65-00T-RET | 850 MHz /<br>1900 MHz (PCS)              | 12.65 /<br>14.15            | 2             | 60                 | 1,332.28 | 0.27        |
| Antenna C2              | CCI<br>HPA-65R-BUU-H6        | 700 MHz /<br>1900 MHz (PCS)              | 11.95 /<br>14.75            | 6             | 240                | 6,030.01 | 1.15        |
| Antenna C3              | Kathrein<br>800-10798        | 850 MHz /<br>700 MHz /<br>2300 MHz (WCS) | 13.65 /<br>13.05 /<br>15.15 | 10            | 360                | 9,011.39 | 2.17        |
| Sector C Composite MPE% |                              |  |                             |               |                    |          | <b>3.58</b> |

*Table 3: AT&T Emissions Levels*



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sectors with the largest calculated MPE% are Sectors A & B. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

| <b>Site Composite MPE%</b> |               |
|----------------------------|---------------|
| <b>Carrier</b>             | <b>MPE%</b>   |
| AT&T – Max Sector Value    | <b>3.61 %</b> |
| Nextel                     | 0.33 %        |
| Verizon Wireless           | 2.00 %        |
| <b>Site Total MPE %:</b>   | <b>5.94 %</b> |

*Table 4: All Carrier MPE Contributions*

|                      |               |
|----------------------|---------------|
| AT&T Sector A Total: | 3.61 %        |
| AT&T Sector B Total: | 3.61 %        |
| AT&T Sector C Total: | 3.58 %        |
|                      |               |
| <b>Site Total:</b>   | <b>5.94 %</b> |

*Table 5: Site MPE Summary*



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sectors with the largest calculated MPE% are Sectors A & B.

| AT&T _ Frequency Band / Technology<br>Max Power Values<br>(Sectors A & B) | # Channels | Watts ERP<br>(Per Channel) | Height<br>(feet) | Total Power<br>Density<br>( $\mu\text{W}/\text{cm}^2$ ) | Frequency<br>(MHz) | Allowable<br>MPE<br>( $\mu\text{W}/\text{cm}^2$ ) | Calculated<br>% MPE |
|---|------------|----------------------------|------------------|---|--------------------|---|---------------------|
| AT&T 850 MHz UMTS<br>(Antenna 1)  | 1          | 552.23                     | 159              | 0.85  | 850 MHz            | 567   | 0.15%               |
| AT&T 1900 MHz (PCS) UMTS<br>(Antenna 1)                                   | 1          | 780.05                     | 159              | 1.20  | 1900 MHz (PCS)     | 1000  | 0.12%               |
| AT&T 700 MHz LTE<br>(Antenna )  | 2          | 826.15                     | 159              | 2.54  | 700 MHz            | 467   | 0.54%               |
| AT&T 1900 MHz (PCS) LTE<br>(Antenna 2)                                    | 4          | 1,250.43                   | 159              | 7.68  | 1900 MHz (PCS)     | 1000  | 0.77%               |
| AT&T 850 MHz LTE<br>(Antenna 3)   | 2          | 885.24                     | 159              | 2.72  | 850 MHz            | 567   | 0.48%               |
| AT&T 700 MHz LTE – Band 14<br>(Antenna 3)                                 | 4          | 788.97                     | 159              | 4.85  | 700 MHz            | 467   | 1.04%               |
| AT&T 2300 MHz (WCS) LTE<br>(Antenna 3)                                    | 4          | 835.84                     | 159              | 5.13  | 2300 MHz (WCS)     | 1000  | 0.51%               |
|   |            |                            |                  |   |                    | <b>Total:</b>                                     | <b>3.61 %</b>       |

*Table 6: AT&T Maximum Sector MPE Power Values*



## Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

| AT&T Sector                         | Power Density Value (%) |
|-------------------------------------|-------------------------|
| Sector A:                           | 3.61 %                  |
| Sector B:                           | 3.61 %                  |
| Sector C:                           | 3.58 %                  |
| AT&T Maximum Total<br>(per sector): | 3.61 %                  |
|                                     |                         |
| Site Total:                         | 5.94 %                  |
|                                     |                         |
| Site Compliance Status:             | <b>COMPLIANT</b>        |

The anticipated composite MPE value for this site assuming all carriers present is **5.94 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is written over a light blue horizontal line.

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