



Northeast Site Solutions  
Denise Sabo  
4 Angela's Way, Burlington CT 06013  
860-209-4690  
denise@northeastsitesolutions.com

December 28, 2018

Members of the Siting Council  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: Exempt Modification Application  
8 Ferris Road, Newtown CT 06470  
Latitude: 41.3897500  
Longitude: -73.338167  
T-Mobile Site#: CT11805A- MWA AV

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 118-foot monopole tower located at 8 Ferris Road, Newtown CT 06470. T-Mobile currently has approval for six (6) antennas at the 81-foot level of the existing 118-foot tower. The tower is owned by SBA and property is owned by Erich & Patricia A Gertsch. T-Mobile now intends to install one (1) IBR1300 Dish. The new dish would be installed at the 83-foot level of the tower.

Planned Modifications:  
Remove: NONE  
Remove and Replace: NONE

Install New:  
(1)IBR1300 Dish  
(1)Fiber line  
(2)CAT6 Cables

Existing to Remain:  
(3) LNX6515 Antenna  
(3) APXV18 Antenna  
(6) TMA  
(3) Bias T  
(12) 7/8" Coax

This facility was first approved prior to CT Siting Councils jurisdiction. The Town does not have access to the original decision. Records show that the approval was given for the tower to be built under Building Permit #99-9-2935 and the Certificate of Occupancy was received on December 13, 1999. The above modification complies with all known conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman Daniel C. Rosenthal, Elected Official and George Benson, Planning Director for the Town of Newtown, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Denise Sabo  
Mobile: 860-209-4690  
Fax: 413-521-0558  
Office: 4 Angela's Way, Burlington CT 06013  
Email: [denise@northeastsitesolutions.com](mailto:denise@northeastsitesolutions.com)

Attachments

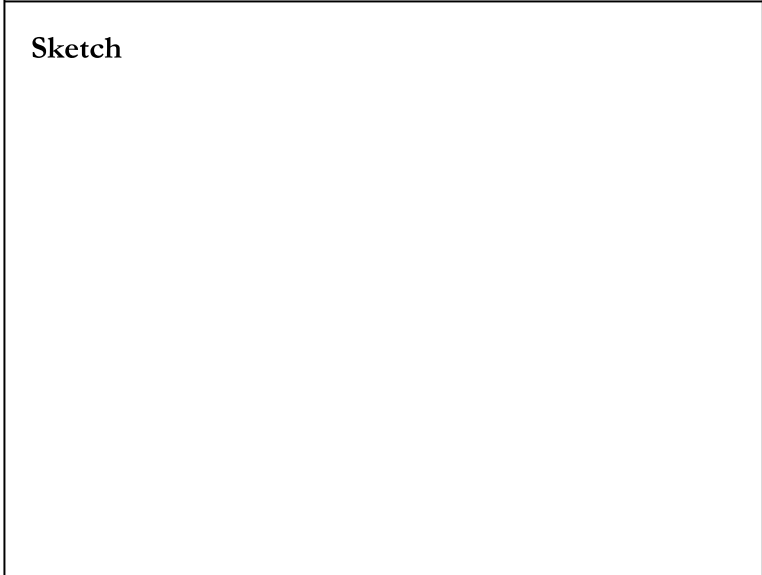
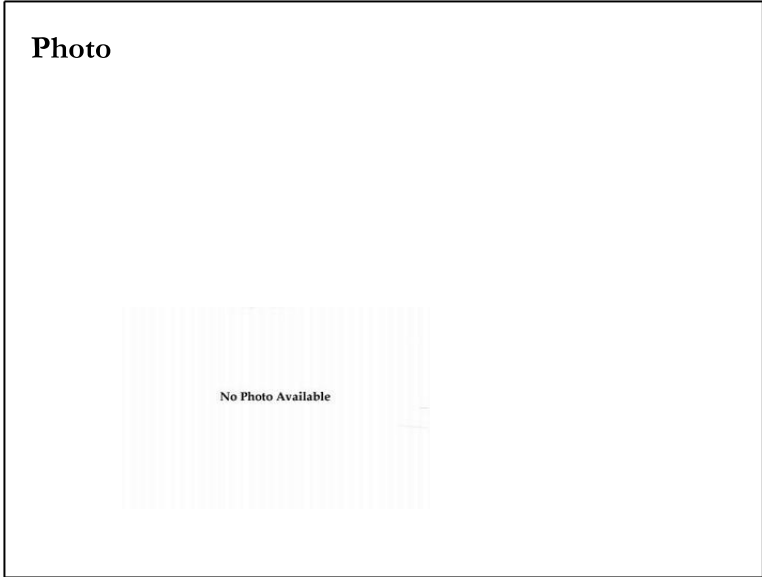
cc: Daniel C. Rosenthal- First Selectman  
George Benson – Director of Planning  
SBA - Tower owner  
Erich & Patricia A Gertsch – Land owner

# Exhibit A



Property Information

|                   |                                 |
|-------------------|---------------------------------|
| Property Location | 8 FERRIS ROAD                   |
| Owner             | GERTSCH ERICH & PATRICIA A      |
| Co-Owner          |                                 |
| Mailing Address   | 8 FERRIS RD<br>NEWTOWN CT 06384 |
| Land Use          | 1060 Vacant W/ OB               |
| Land Class        | R                               |
| Zoning Code       | R-1                             |
| Census Tract      | 12                              |
| Sub Lot           |                                 |
| Neighborhood      |                                 |
| Acreage           | 0                               |
| Utilities         | Well,Septic                     |
| Lot Setting/Desc  |                                 |
| Survey Map        |                                 |
| TC Survey Numbers |                                 |



Primary Construction Details

|                    |  |
|--------------------|--|
| Year Built         |  |
| Stories            |  |
| Building Style     |  |
| Building Use       |  |
| Building Condition |  |
| Floors             |  |
| Total Rooms        |  |

|                |  |
|----------------|--|
| Bedrooms       |  |
| Full Bathrooms |  |
| Half Bathrooms |  |
| Bath Style     |  |
| Kitchen Style  |  |
| Roof Style     |  |
| Roof Cover     |  |

|                   |  |
|-------------------|--|
| Exterior Walls    |  |
| Interior Walls    |  |
| Heating Type      |  |
| Heating Fuel      |  |
| AC Type           |  |
| Gross Bldg Area   |  |
| Total Living Area |  |



**Valuation Summary** (Assessed value = 70% of Appraised Value)

| Item         | Appraised | Assessed |
|--------------|-----------|----------|
| Buildings    |           |          |
| Extras       |           |          |
| Outbuildings |           |          |
| Land         |           |          |
| Total        |           |          |

**Outbuilding and Extra Items**

| Type       | Description |
|------------|-------------|
| Cell Tower | 1 Units     |
|            |             |
|            |             |
|            |             |
|            |             |
|            |             |
|            |             |
|            |             |
|            |             |

**Sub Areas**

| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|--------------|--------------------|---------------------|
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
|              |                    |                     |
| Total Area   |                    | 0                   |

**Sales History**

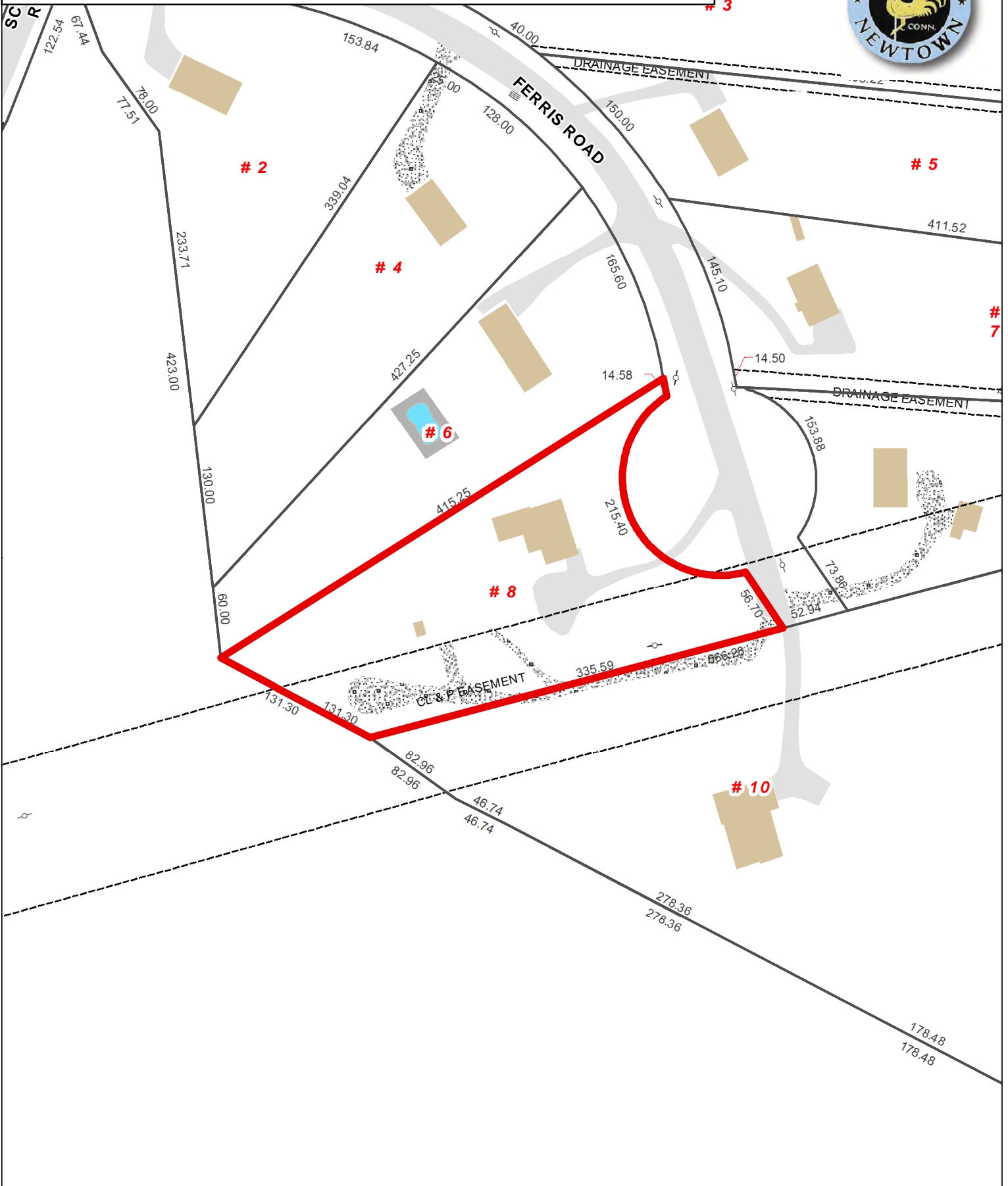
| Owner of Record            | Book/ Page | Sale Date  | Sale Price |
|----------------------------|------------|------------|------------|
| GERTSCH ERICH & PATRICIA A | 181/ 350   | 12/25/2009 |            |

# Town of Newtown, Connecticut - Assessment Parcel Map

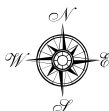
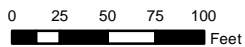
Parcel: 7-7-11

Address: 8 FERRIS ROAD

632.07



Approximate Scale:



Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Newtown and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced Oct 2016

# Exhibit B



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# MODIFICATION TO EXISTING WIRELESS TELECOMMUNICATION FACILITY BY

# T-Mobile

## T-MOBILE NORTHEAST LLC

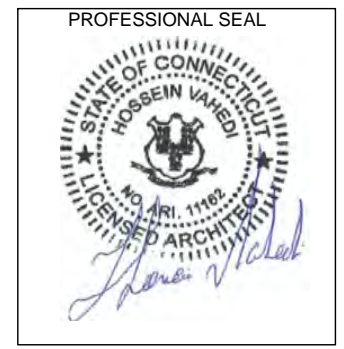
SITE NUMBER: CT11805A  
 SITE NAME: CT805/NEXTELL NEWTOWN\_MP  
 SITE ADDRESS: 8 FERRIS ROAD  
 NEWTOWN, CT 06470

**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
 35 GRIFFIN ROAD SOUTH  
 BLOOMFIELD, CT 06002  
 860-692-7100

**PROJECT MANAGER**  
**NSS NORTHEAST**  
 SITE SOLUTIONS  
*Turnkey Wireless Development*  
 420 MAIN STREET, BLDG 4  
 STURBRIDGE, MA 01566  
 203-275-6669

**CONSULTANT:**  
**FORESITE** LLC  
 Architects . Engineers . Surveyors

462 WALNUT STREET  
 NEWTON, MA 02460  
 617-212-3123



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| REV | DESCRIPTION | DATE     |
|-----|-------------|----------|
| A   | PRELIMINARY | 06/08/18 |
|     |             |          |
|     |             |          |
|     |             |          |
|     |             |          |
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|     |             |          |
|     |             |          |

SITE NUMBER: CT11805A  
 SITE NAME: CT805/NEXTELL NEWTOWN\_MP  
 SITE ADDRESS: 8 FERRIS ROAD  
 NEWTOWN, CT 06470

SHEET TITLE:  
 T-1: TITLE SHEET

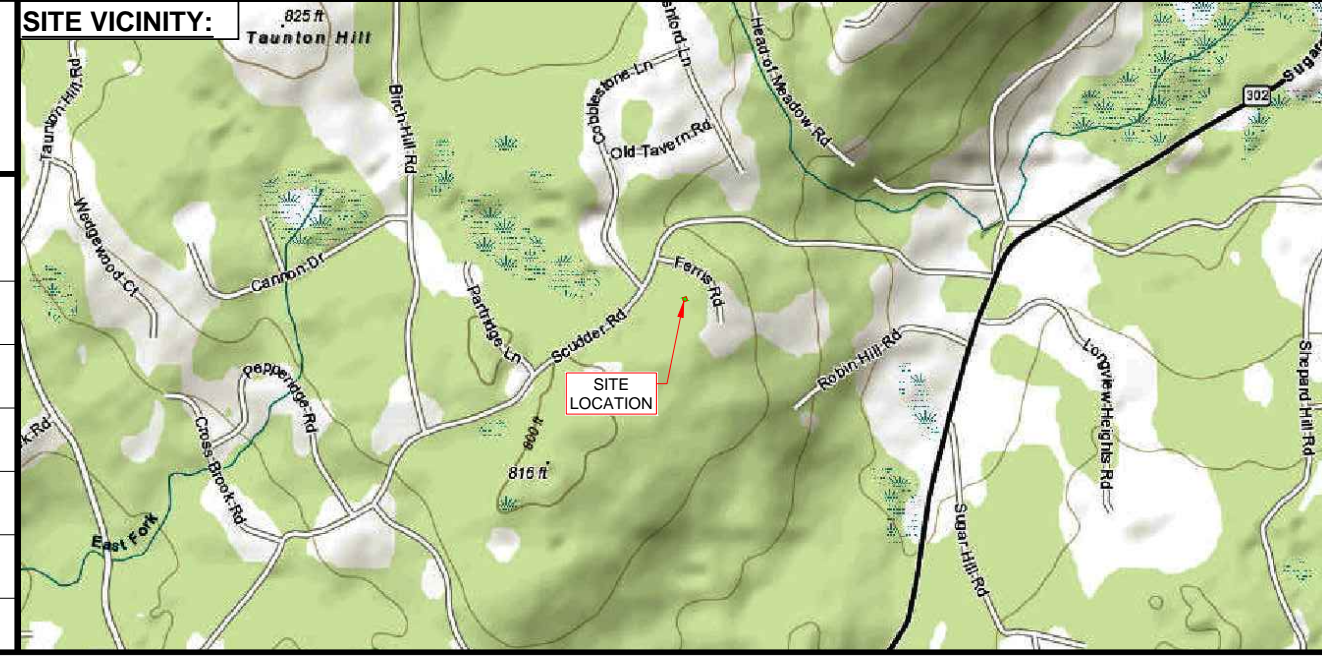
**PROJECT SCOPE:**  
 ADDITION OF A BACKHAUL RADIO MICROWAVE DISH, (1) FIBER AND (2) CAT6 CABLES TO EXISTING TOWER.

- PROJECT NOTES:**
- THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS IS NOT REQUIRED. POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED. NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
  - CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
  - DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.
  - PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT, A STRUCTURAL EVALUATION SHOULD BE PERFORMED TO CERTIFY THAT THE EXISTING/PROPOSED STRUCTURE AND COMPONENTS HAVE ADEQUATE STRUCTURAL CAPACITY PER ALL THE APPLICABLE CODES AND STANDARDS IN THE PROJECT JURISDICTION. CONTRACTOR SHOULD REVIEW THE REPORT AND ADHERE TO THE REPORT FULLY AND ALL THE RECOMMENDATIONS THEREIN, INCLUDING BUT NOT LIMITED TO ANTENNA PLACEMENT, COAX ROUTING, STRUCTURAL IMPROVEMENTS, ETC.

**APPLICABLE STATE ADOPTION CODES:**  
 2016 CONNECTICUT STATE BUILDING CODE (CSBC).  
 ANSITILE-222-G-2005 STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.  
 2014 NATIONAL ELECTRICAL CODE (NFPA 70) FOR POWER AND GROUNDING REQUIREMENTS.

**T-MOBILE APPROVALS:**

|                                      |      |
|--------------------------------------|------|
| FSA CM                               | DATE |
| RF ENGINEER                          | DATE |
| FOPS                                 | DATE |
| T-MOBILE ENGINEERING AND DEVELOPMENT | DATE |
|                                      | DATE |
|                                      | DATE |



**PROJECT INFORMATION:**

ADDRESS: 8 FERRIS ROAD  
 NEWTOWN, CT 06470

COORDINATES: 41.389750° N , -73.338167° W

STRUCTURE TYPE: MONOPOLE TOWER

JURISDICTION: TOWN OF NEWTOWN, CT

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

SBA SITE ID: CT46132-A

**PROJECT TEAM:**

APPLICANT: T-MOBILE NORTHEAST, LLC.  
 35 GRIFFIN ROAD SOUTH  
 BLOOMFIELD, CT 06002  
 860-692-7100

PROPERTY OWNER : SBA 2012 TC ASSETS, LLC  
 STEPHEN ROTH  
 SBA REGIONAL SITE MANAGER  
 (860) 539-4920

PROJECT MANAGER: NORTHEAST SITE SOLUTIONS  
 420 MAIN STREET, BLDG 4  
 STURBRIDGE, MA 01566  
 SHELDON FREINCLE  
 SHELDON@NORTHEASTSITESOLUTIONS.COM  
 201-776-8521

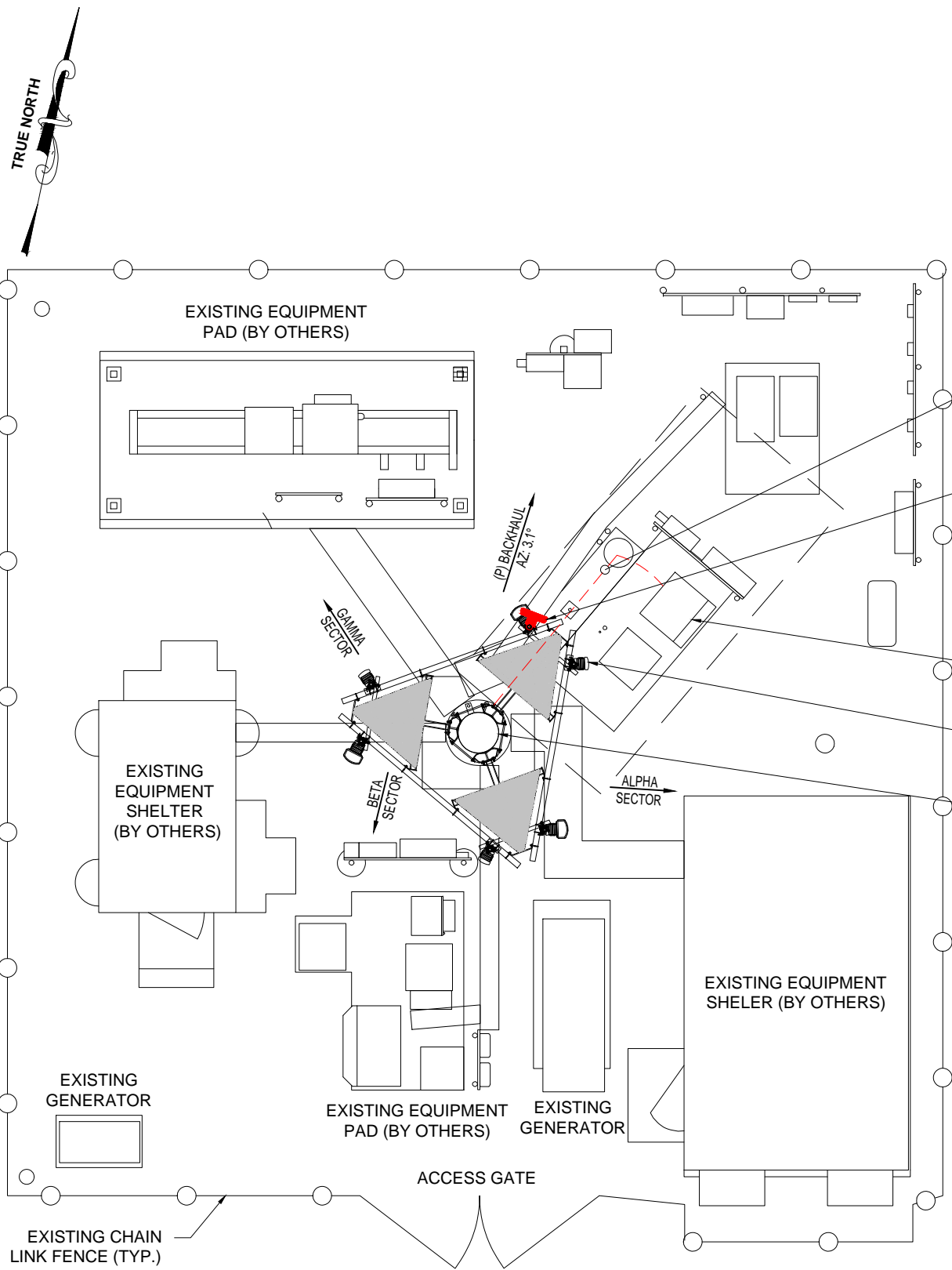
CONSULTANTS: FORESITE LLC  
 462 WALNUT ST  
 NEWTON, MA 02460  
 SAEED MOSSAVAT  
 SMOSSAVAT@FORESITELLC.COM  
 617-212-3123

**SHEET INDEX:**

T-1: TITLE SHEET  
 LE-1: SITE PLAN  
 LE-2: ANTENNA PLAN



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**SITE PLAN**  
SCALE: 1/8" = 1'-0" 1  
LE-1

PROPOSED (1) FIBER AND  
(2) CAT6 CABLES RUN ADJACENT  
TO THE EXISTING CABLES

PROPOSED T-MOBILE BACKHAUL RADIO  
MOUNTED TO ANTENNA PIPE MOUNT  
69@K '5BH9BB5' FN.' 10% 1  
LE-3 2  
LE-3

EXISTING T-MOBILE EQUIPMENT  
ON CONCRETE PAD

T-MOBILE ANTENNAS  
(2/SECTOR, 6 TOTAL)

EXISTING 118' MONOPOLE

CENTER OF (E) & (P)  
T-MOBILE ANTENNAS  
ELEV: 83'-0"± (AGL)

T-MOBILE ANTENNAS  
(2/SECTOR, 6 TOTAL)

PROPOSED T-MOBILE BACKHAUL RADIO  
MOUNTED TO ANTENNA PIPE MOUNT  
69@K '5BH9BB5' FN.' 10% 1  
LE-3 2  
LE-3

EXISTING 118' MONOPOLE



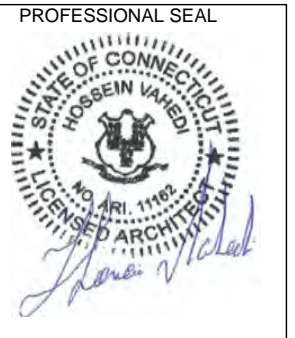
**SITE PHOTO**  
SCALE: NTS 2  
LE-1

**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**

35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
860-692-7100

**PROJECT MANAGER**  
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420 MAIN STREET, BLDG 4  
STURBRIDGE, MA 01566  
203-275-6669

**CONSULTANT:**  
**FORESITE** LLC  
Architects . Engineers . Surveyors  
462 WALNUT STREET  
NEWTON, MA 02460  
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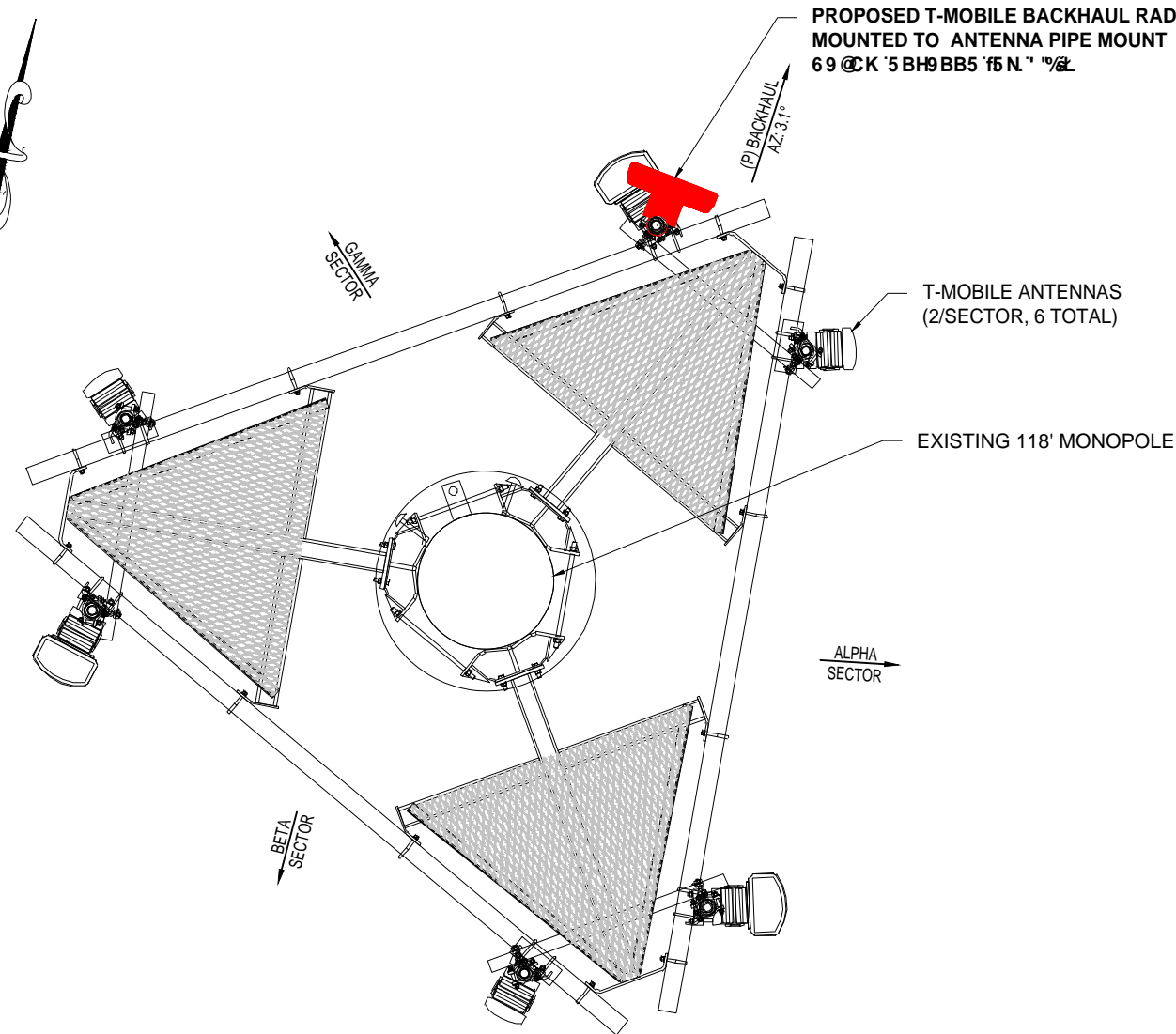
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| REV | DESCRIPTION | DATE     |
|-----|-------------|----------|
| A   | PRELIMINARY | 06/08/18 |
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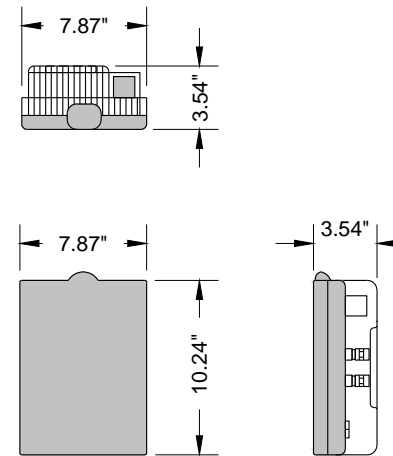
SHEET TITLE:  
LE-1: PLAN AND ELEVATION

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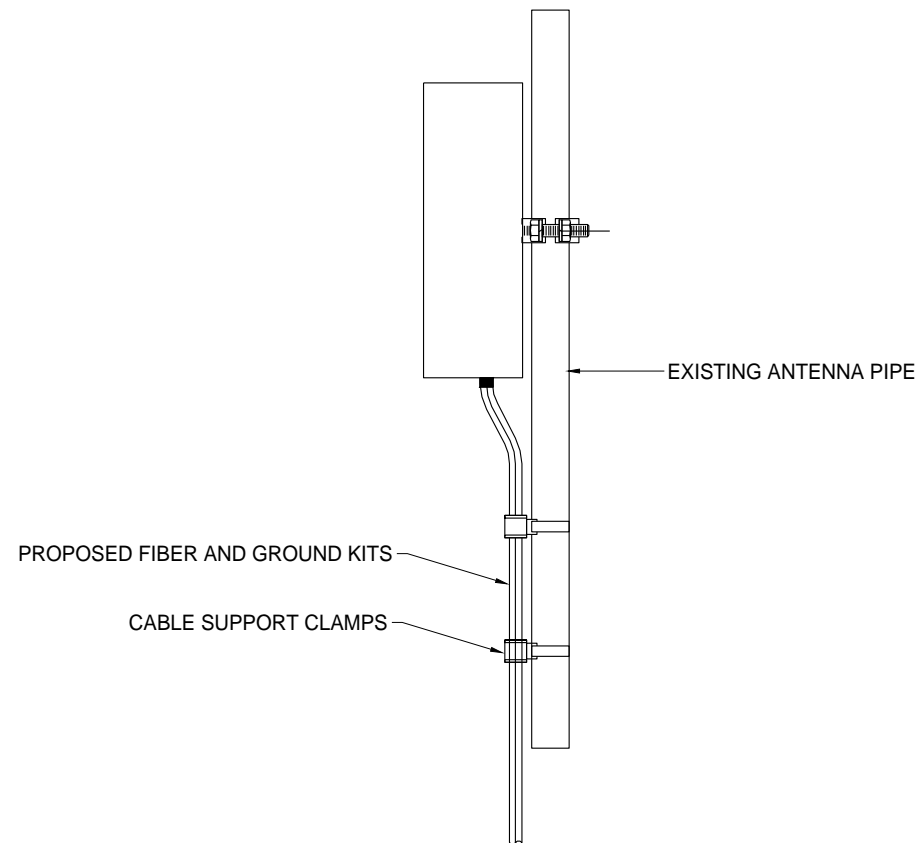
**ANTENNA PLAN** 1  
N.T.S LE-3

**PROPOSED T-MOBILE BACKHAUL RADIO MOUNTED TO ANTENNA PIPE MOUNT** 2  
69@K 5BH9BB5 16 N. 10/18 LE-3



MANUFACTURER: FASTBACK  
MODEL: IBR 1300  
FOOTPRINT: 10.24"HX7.87"WX3.54"D  
WEIGHT: 8.82 LBS

**BACKHAUL RADIO SPECIFICATIONS** 2  
N.T.S LE-3



**BACKHAUL RADIO MOUNTING DETAIL** 3  
N.T.S LE-3

**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**

35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
860-692-7100

**PROJECT MANAGER**  
**NSS NORTHEAST**  
SITE SOLUTIONS  
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420 MAIN STREET, BLDG 4  
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**CONSULTANT:**  
**FORESITE** LLC  
Architects . Engineers . Surveyors  
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|     |             |          |
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|     |             |          |
|     |             |          |
|     |             |          |

SITE NUMBER: CT11805A  
SITE NAME: CT805/NEXTELL NEWTOWN\_MP  
SITE ADDRESS: 8 FERRIS ROAD  
NEWTOWN, CT 06470

SHEET TITLE:  
LE-2: ANTENNA PLAN

# Exhibit C



**Tower Engineering Solutions**

Phone (972) 483-0607, Fax (972) 975-9615  
1320 Greenway Drive, Suite 600, Irving, Texas 75038

---

**Structural Analysis Report**

**Existing 118 ft EEI Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT46132-A**

**Customer Site Name: Newtown-ferris Rd**

**Carrier Name: T-Mobile**

**Carrier Site ID / Name: CT11805A / CT805/Nextell Newtown\_MP**

**Site Location: 8 Ferris Road**

**Newtown, Connecticut**

**Fairfield County**

**Latitude: 41.389747**

**Longitude: -73.338444**

**Analysis Result:**

**Max Structural Usage: 84.9% [Pass]**

**Max Foundation Usage: 94.0% [Pass]**

**Additional Usage Caused by New Mount/Mount Modification: N/A**

**Report Prepared By : Dipika Dhungana**





**Tower Engineering Solutions**

Phone (972) 483-0607, Fax (972) 975-9615  
1320 Greenway Drive, Suite 600, Irving, Texas 75038

---

## **Structural Analysis Report**

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**Max Structural Usage: 84.9% [Pass]**

**Max Foundation Usage: 94.0% [Pass]**

**Additional Usage Caused by New Mount/Mount Modification: N/A**

**Report Prepared By : Dipika Dhungana**



## Introduction

The purpose of this report is to summarize the analysis results on the 118 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

## Sources of Information

|                              |  |
|------------------------------|--|
| <b>Tower Drawings</b>        | EEI, Job No. 5189, dated 06/30/1999.   |
| <b>Foundation Drawing</b>    | EEI, Job No. 5189, dated 06/30/1999.   |
| <b>Geotechnical Report</b>   | New England Boring Contractors & Applied Earth Technologies Inc. dated 06/14/1999. |
| <b>Modification Drawings</b> | Vertical Solutions, Project No. 100188.08, dated 5/7/2010.                         |

## Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-G. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

|   |   |
|---|---|
| <b>Wind Speed Used in the Analysis:</b> | Ultimate Design Wind Speed $V_{ult} = 125$ mph (3-Sec. Gust)/<br>Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust) |
| <b>Wind Speed with Ice:</b>             | 50 mph (3-Sec. Gust) with 3/4" radial ice concurrent  |
| <b>Operational Wind Speed:</b>          | 60 mph + 0" Radial ice  |
| <b>Standard/Codes:</b>                  | ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code  |
| <b>Exposure Category:</b>               | C   |
| <b>Structure Class:</b>                 | II  |
| <b>Topographic Category:</b>            | 1   |
| <b>Crest Height:</b>                    | 0 ft  |
| <b>Seismic Parameters:</b>              | $S_S = 0.215$ , $S_1 = 0.065$   |

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

## Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

| Items | Elevation (ft) | Qty. | Antenna Descriptions                  | Mount Type & Qty.                        | Transmission Lines                         | Owner           |
|-------|----------------|------|---------------------------------------|--|--|-----------------|
| 1     | 118.0          | 1    | Telewave ANT150D - Dipole             | Low Profile Platform                     | (2) 1/2"                                   | Town of Newtown |
| 2     |                | 1    | Decibel DB222 - Dipole                |  |  |                 |
| 3     | 118.0          | 9    | Decibel DB844H90E-XY - Panel          |  | (12) 7/8"                                  | Nextel          |
| 4     | 108.0          | 3    | RFS APXV9TM14-ALU-120 - Panel         | Low Profile Platform                     | (3) 1-1/4"                                 | Sprint          |
| 5     | 107.0          | 3    | RFS APXVSPP18-C-A20 - Panel           |  |  |                 |
| 6     |                | 3    | ALU TD-RRH8x20-25                     |  |  |                 |
| 7     |                | 3    | ALU 1900 MHz RRUs                     |  |  |                 |
| 8     |                | 3    | ALU 800 MHz RRU Filter                |  |  |                 |
| 9     |                | 4    | RFS ACU-A20-N                         |  |  |                 |
| 10    | 98.0           | 2    | RFS APL868013 – Panel                 | (1) Low Profile Platform                 | (12) 1-5/8" Coax<br>(2) 1-5/8" Fiber       | Verizon         |
| 11    |                | 6    | Andrew SBNHH-1D85C – Panel            |  |  |                 |
| 12    |                | 4    | Andrew DB846H80E-SX – Panel           |  |  |                 |
| 13    |                | 3    | Alcatel Lucent RRH4X45-AWS – RRU      |  |  |                 |
| 14    |                | 3    | Alcatel Lucent RRH2x60-700 – RRU      |  |  |                 |
| 15    |                | 3    | Alcatel-Lucent RRH2X60-1900A-4R – RRU |  |  |                 |
| 16    |                | 2    | RFS Celwave DB-T1-6Z-8AB-0Z           |  |  |                 |
| 17    | 91.0           | 3    | Powerwave 7770 – Panel                | Low Profile Platform                     | (12) 7/8"<br>(2) 3/8" Fiber<br>(4) 5/8" DC | AT&T            |
| 18    |                | 3    | Powerwave P65-16-XLH-RR - Panel       |  |  |                 |
| 19    |                | 3    | Quintel QS66512-2 - Panel             |  |  |                 |
| 20    |                | 6    | Powerwave LGP21401 TMA                |  |  |                 |
| 21    |                | 3    | Ericsson RRUS-11                      |  |  |                 |
| 22    |                | 3    | Ericsson RRUS 32 B2                   |  |  |                 |
| 23    |                | 3    | Ericsson RRUS 32 B30                  |  |  |                 |
| 24    |                | 2    | Raycap DC6-48-60-18-8F                |  |  |                 |
| -     | 81.0           | 3    | RFS APXV18-209014 - Panel             | Platform w/ Handrail kit and V-brace kit | (12) 1 1/4"                                | T-Mobile        |
| -     |                | 3    | Commscope LNX-6515DS-A1M - Panel      |  |  |                 |
| -     |                | 3    | RFS ATMAA1412D-1A2 TMA                |  |  |                 |
| -     |                | 3    | S20057A1                              |  |  |                 |
| -     |                | 3    | Kathrein 782 11054 Bias T             |  |  |                 |
| 31    | 75.0           | 1    | GPS                                   | Direct                                   | (1) 1/2"                                   | Sprint          |



**Proposed Carrier’s Final Configuration of Antennas, Mounts and Transmission Lines**

Information pertaining to the proposed carrier’s final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

| Items | Elevation (ft) | Qty. | Antenna Descriptions               | Mount Type & Qty.        | Transmission Lines  | Owner    |
|-------|----------------|------|------------------------------------|--------------------------|---|----------|
| 25    | 83.0           | 3    | RFS - APXV18-209014 - Panel        | Platform w/ Handrail kit | (12) 1 1/4"<br>(1) 5/16"<br>Corning Fiber<br>(2) 5/16"<br>Belden CAT6 | T-Mobile |
| 26    |                | 3    | Commscope - LNX-6515DS-A1M - Panel |                          |   |          |
| 27    |                | 3    | RFS - ATMAA1412D-1A2               |                          |   |          |
| 28    |                | 3    | S20057A1                           |                          |   |          |
| 29    |                | 3    | Kathrein - 782 11054 - Bias T      |                          |   |          |
| 30    |                | 1    | Fastback - IBR 1300 - Dish         |                          |   |          |

See the attached coax layout for the line placement considered in the analysis.

## **Analysis Results**

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

|             | Pole shafts  | Anchor Bolts | Base Plate   |
|-------------|--------------|--------------|--------------|
| Max. Usage: | <b>84.9%</b> | <b>82.5%</b> | <b>80.3%</b> |
| Pass/Fail   | <b>Pass</b>  | <b>Pass</b>  | <b>Pass</b>  |

## **Foundations**

|                    | Moment (Kip-Ft) | Shear (Kips) | Axial (Kips) |
|--------------------|-----------------|--------------|--------------|
| Analysis Reactions | 2685.5          | 29.6         | 36.4         |

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

## **Operational Condition (Rigidity):**

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

| Elevation (ft) | Antenna / Dish             | Carrier  | Twist (deg) | Sway (deg) |
|----------------|----------------------------|----------|-------------|------------|
| 83.0           | Fastback - IBR 1300 - Dish | T-Mobile | 0.000       | 1.453      |

It is recommended that the carriers review the twist and sway values of the microwave dishes.

## **Conclusions**

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the design basic wind speed as specified in the Analysis Criteria.

## Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

## Usage Diagram - Max Ratio 84.85% at 0.0ft

**Structure:** CT46132-A-SBA  
**Site Name:** Newtown-ferris Rd  
**Height:** 118.00 (ft)  
**Base Elev:** 0.000 (ft)

**Code:** EIA/TIA-222-G  
**Exposure:** C  
**Gh:** 1.1

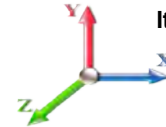
11/27/2018



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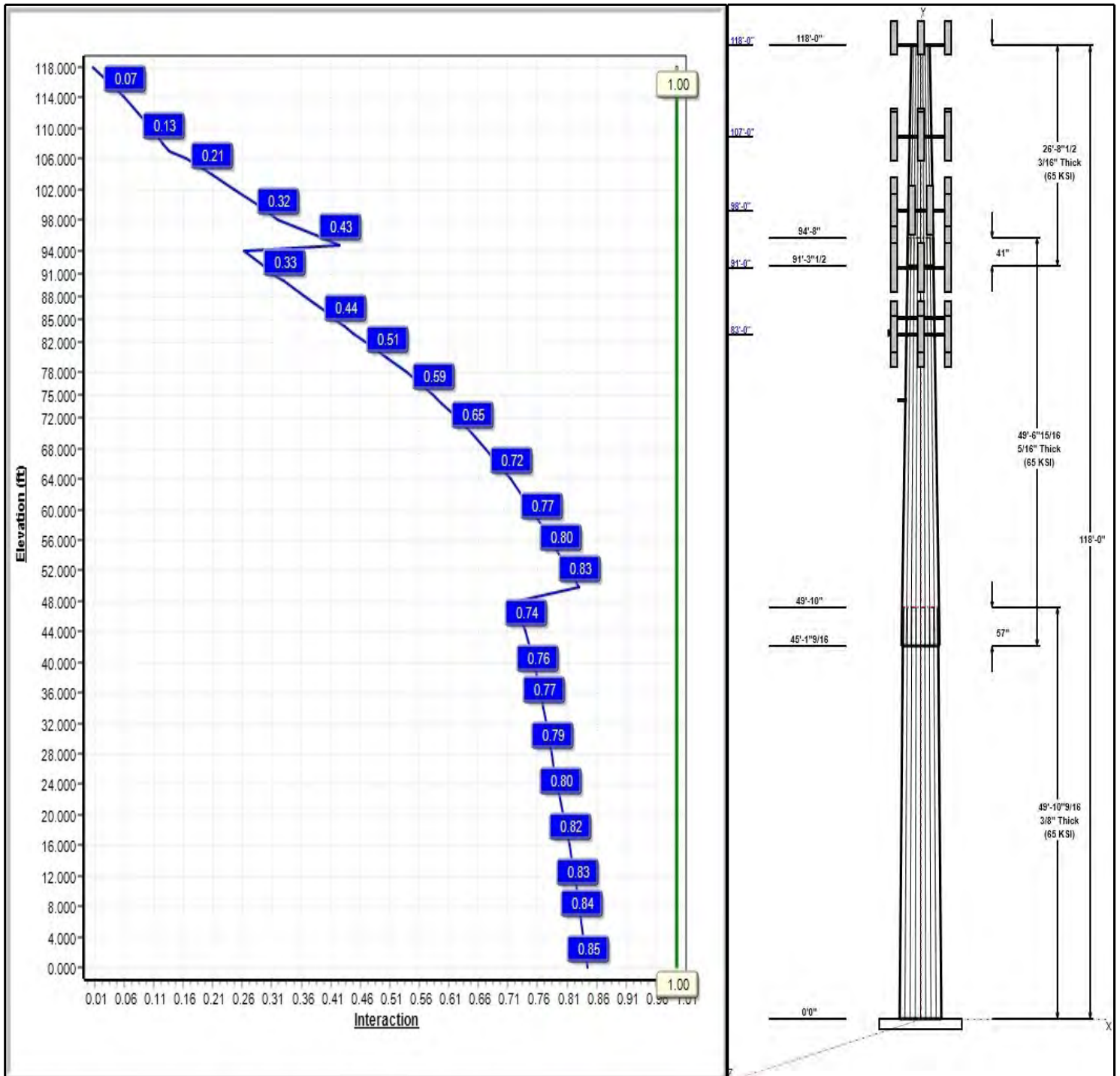
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 97 mph Wind**



**Iterations:** 27

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## Structure: CT46132-A-SBA

**Type:** Tapered  
**Site Name:** Newtown-ferris Rd  
**Height:** 118.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.23093

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### Shaft Properties

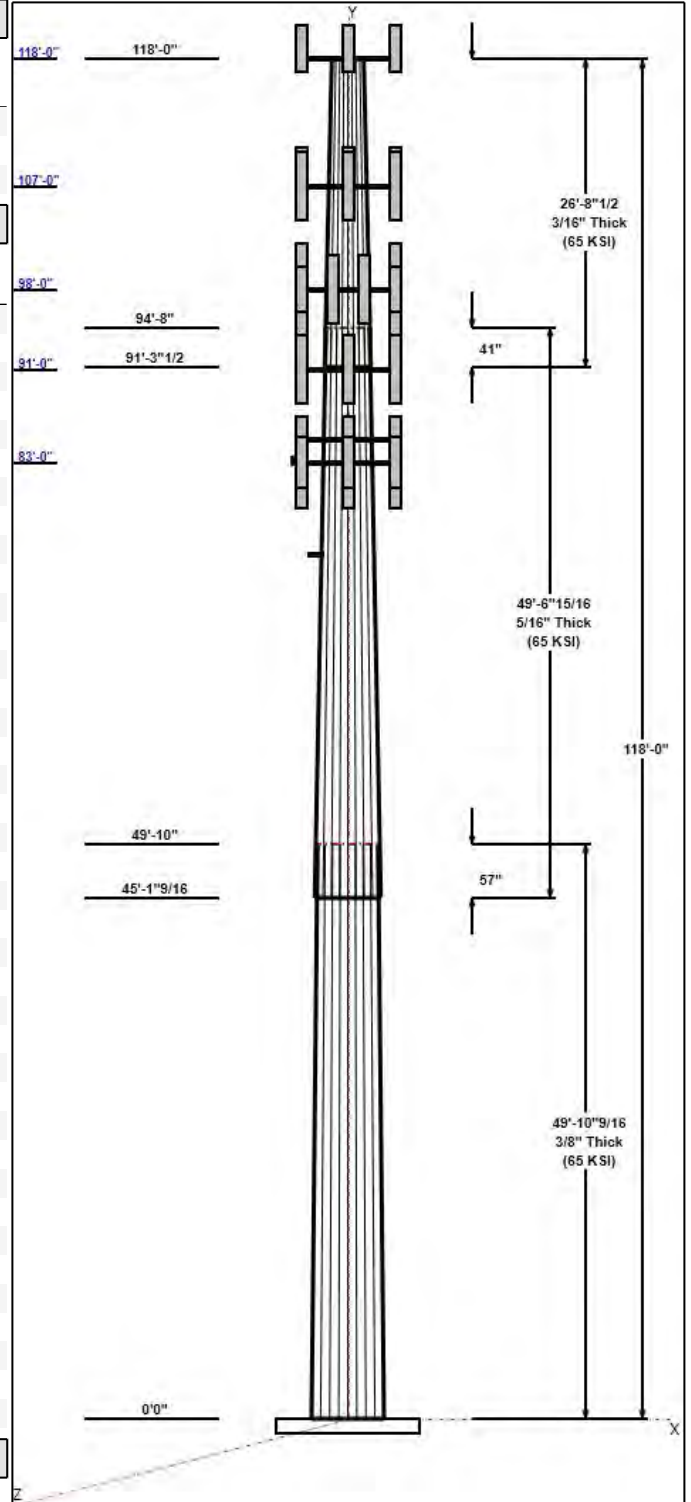
| Seq | Length (ft) | Top (in) | Bottom (in) | Thick (in) | Joint Type | Taper   | Grade (ksi) |
|-----|-------------|----------|-------------|------------|------------|---------|-------------|
| 1   | 49.88       | 31.73    | 43.25       | 0.375      |            | 0.23093 | 65          |
| 2   | 49.58       | 22.00    | 33.45       | 0.313      | Slip       | 0.23093 | 65          |
| 3   | 26.71       | 17.00    | 23.17       | 0.188      | Slip       | 0.23093 | 65          |

### Discrete Appurtenances

| Attach Elev (ft) | Force Elev (ft) | Qty | Description              | Carrier         |
|------------------|-----------------|-----|--------------------------|-----------------|
| 118.00           | 130.00          | 1   | DB222                    | Town of Newtown |
| 118.00           | 119.42          | 1   | ANT150D                  | Town of Newtown |
| 118.00           | 118.80          | 9   | DB844H90E-XY             | Nextel          |
| 118.00           | 118.00          | 1   | Low Profile Platform     | Town of         |
| 107.00           | 107.00          | 1   | Universal Ring Mount     | Sprint          |
| 107.00           | 107.00          | 1   | Low Profile Platform     | Sprint          |
| 107.00           | 107.00          | 3   | APXVSP18-C-A20           | Sprint          |
| 107.00           | 108.00          | 3   | APXV9TM14-ALU-120        | Sprint          |
| 107.00           | 107.00          | 3   | 1900 MHz 4X45 RRH        | Sprint          |
| 107.00           | 107.00          | 3   | 800 MHz RRU Filter       | Sprint          |
| 107.00           | 107.00          | 3   | TD-RRH8x20-25            | Sprint          |
| 107.00           | 107.00          | 4   | ACU-A20-N                | Sprint          |
| 98.00            | 98.00           | 1   | Low Profile Platform     | Verizon         |
| 98.00            | 98.00           | 2   | RFS APL868013            | Verizon         |
| 98.00            | 98.00           | 6   | Andrew SBNHH-1D85C       | Verizon         |
| 98.00            | 98.00           | 3   | Alcatel Lucent           | Verizon         |
| 98.00            | 98.00           | 3   | Alcatel Lucent           | Verizon         |
| 98.00            | 98.00           | 3   | Alcatel-Lucent           | Verizon         |
| 98.00            | 98.00           | 2   | Rfs Celwave              | Verizon         |
| 98.00            | 98.00           | 4   | Andrew DB846H80E-SX      | Verizon         |
| 91.00            | 91.00           | 6   | LGP21401                 | AT&T            |
| 91.00            | 91.00           | 3   | RRUS-11                  | AT&T            |
| 91.00            | 91.00           | 2   | DC6-48-60-18-8F          | AT&T            |
| 91.00            | 91.00           | 1   | Low Profile Platform     | AT&T            |
| 91.00            | 91.00           | 3   | QS66512-2                | AT&T            |
| 91.00            | 91.00           | 3   | RRUS 32 B2               | AT&T            |
| 91.00            | 91.00           | 3   | RRUS 32 B30              | AT&T            |
| 91.00            | 91.00           | 3   | 7770.00                  | AT&T            |
| 91.00            | 91.00           | 3   | P65-16-XLH-RR            | AT&T            |
| 85.00            | 85.00           | 1   | V-brace kit              | T-Mobile        |
| 83.00            | 83.00           | 1   | Platform w/ Handrail kit | T-Mobile        |
| 83.00            | 83.00           | 3   | RFS - APXV18-209014      | T-Mobile        |
| 83.00            | 83.00           | 3   | Commscope -              | T-Mobile        |
| 83.00            | 83.00           | 3   | RFS - ATMAA1412D-1A2     | T-Mobile        |
| 83.00            | 83.00           | 3   | S20057A1                 | T-Mobile        |
| 83.00            | 83.00           | 3   | Kathrein - 782 11054 -   | T-Mobile        |
| 83.00            | 83.00           | 1   | Fastback - IBR 1300      | T-Mobile        |
| 75.00            | 75.00           | 1   | GPS                      | Sprint          |
| 75.00            | 75.00           | 1   | Standoff Mount           | Sprint          |

### Linear Appurtenances

| Elev From (ft) | Elev To (ft) | Placement | Description   | Carrier         |
|----------------|--------------|-----------|---------------|-----------------|
| 0.00           | 118.00       | Inside    | 1/2" Coax     | Town of Newtown |
| 0.00           | 118.00       | Inside    | 7/8"          | Nextel          |
| 0.00           | 107.00       | Inside    | 1-1/4"        | Sprint          |
| 0.00           | 98.00        | Inside    | 1 5/8" Hybrid | Verizon         |



**Structure: CT46132-A-SBA**

|                                     |                             |            |
|-------------------------------------|-----------------------------|------------|
| <b>Type:</b> Tapered                | <b>Base Shape:</b> 18 Sided | 11/27/2018 |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Taper:</b> 0.23093       |            |
| <b>Height:</b> 118.00 (ft)          |                             |            |
| <b>Base Elev:</b> 0.00 (ft)         |                             | Page: 3    |



|      |       |         |                     |          |
|------|-------|---------|---------------------|----------|
| 0.00 | 98.00 | Inside  | 1-5/8" Coax         | Verizon  |
| 0.00 | 91.00 | Inside  | 3/8" Fiber          | AT&T     |
| 0.00 | 91.00 | Inside  | 5/8" DC             | AT&T     |
| 0.00 | 91.00 | Inside  | 7/8"                | AT&T     |
| 0.00 | 83.00 | Inside  | 1 1/4" Coax         | T-Mobile |
| 0.00 | 83.00 | Inside  | 5/16" Belden CAT6   | T-Mobile |
| 0.00 | 83.00 | Inside  | 5/16" Corning Fiber | T-Mobile |
| 0.00 | 75.00 | Outside | 1/2"                | Sprint   |

**Anchor Bolts**

| Qty | Specifications | Grade (ksi) | Arrangement |
|-----|----------------|-------------|-------------|
| 12  | 2.25" 18J      | 75.0        | Radial      |

**Base Plate**

| Thickness (in) | Specifications (in) | Grade (ksi) | Geometry |
|----------------|---------------------|-------------|----------|
| 1.7500         | 58.0                | 60.0        | Round    |

**Reactions**

| Load Case                        | Moment (FT-Kips) | Shear (Kips) | Axial (Kips) |
|----------------------------------|------------------|--------------|--------------|
| 1.2D + 1.6W 97 mph Wind          | 2685.5           | 29.6         | 36.4         |
| 0.9D + 1.6W 97 mph Wind          | 2649.3           | 29.6         | 27.3         |
| 1.2D + 1.0Di + 1.0Wi 50 mph Wind | 704.1            | 7.7          | 60.2         |
| 1.2D + 1.0E                      | 156.4            | 1.6          | 36.4         |
| 0.9D + 1.0E                      | 154.1            | 1.6          | 27.3         |
| 1.0D + 1.0W 60 mph Wind          | 637.8            | 7.1          | 30.3         |

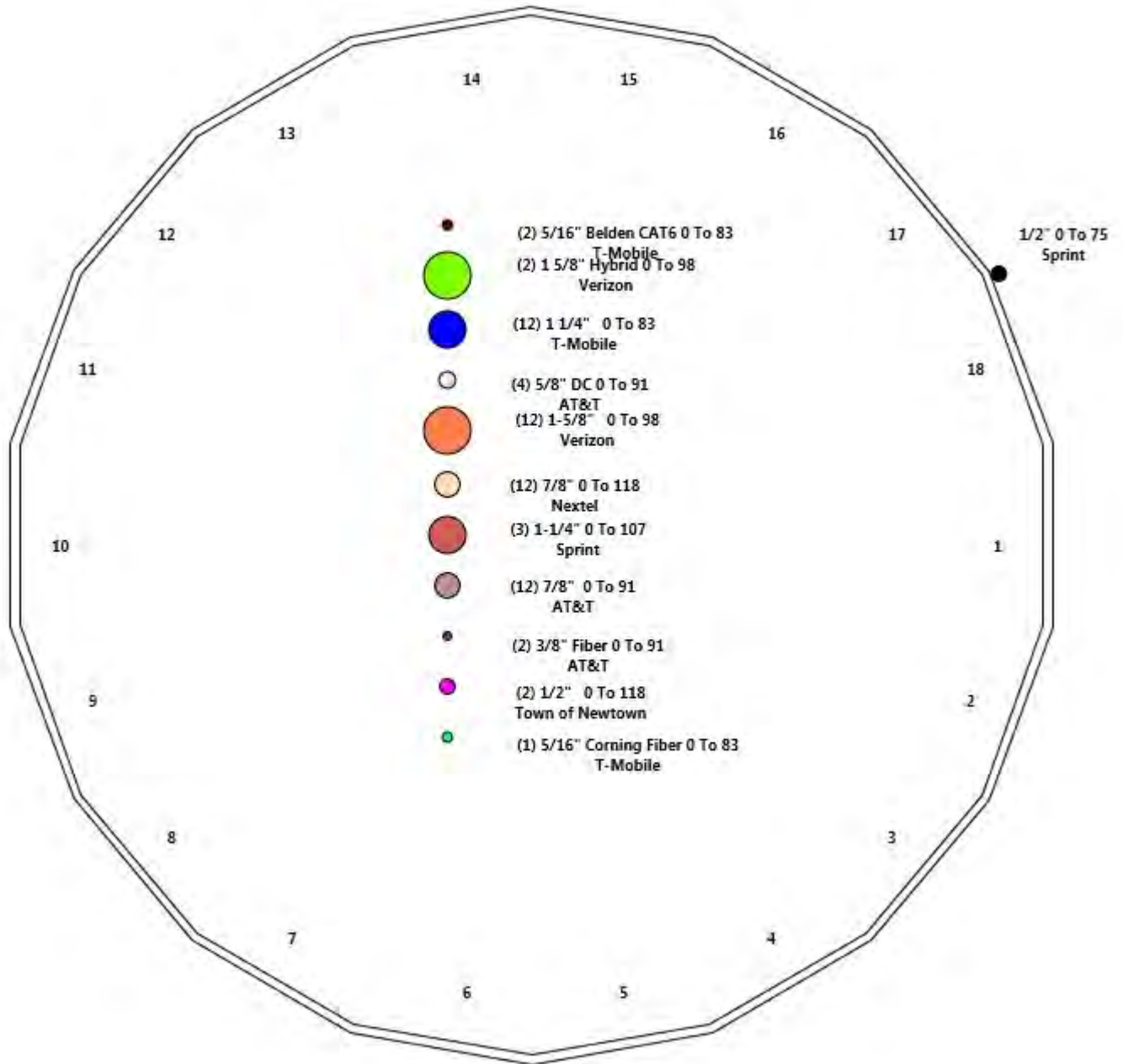
# Structure: CT46132-A-SBA - Coax Line Placement

Type: Monopole  
Site Name: Newtown-ferris Rd  
Height: 118.00 (ft)

11/27/2018



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## Shaft Properties

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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| Sec. No.                   | Shape | Length (ft) | Thick (in) | Fy (ksi) | Joint Type | Overlap (in) | Weight (lb)   |
|----------------------------|-------|-------------|------------|----------|------------|--------------|---------------|
| 1                          | 18    | 49.880      | 0.3750     | 65       |            | 0.00         | 7,498         |
| 2                          | 18    | 49.580      | 0.3125     | 65       | Slip       | 57.00        | 4,588         |
| 3                          | 18    | 26.707      | 0.1875     | 65       | Slip       | 41.00        | 1,076         |
| <b>Total Shaft Weight:</b> |       |             |            |          |            |              | <b>13,161</b> |

Bottom

Top

| Sec. No. | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Taper    |
|----------|----------|-----------|-------------|-----------|-----------|-----------|----------|-----------|-------------|-----------|-----------|-----------|----------|
| 1        | 43.25    | 0.00      | 51.03       | 11851.90  | 18.93     | 115.33    | 31.73    | 49.88     | 37.32       | 4635.98   | 13.51     | 84.62     | 0.230932 |
| 2        | 33.45    | 45.13     | 32.87       | 4561.13   | 17.47     | 107.05    | 22.00    | 94.71     | 21.51       | 1278.87   | 11.00     | 70.41     | 0.230932 |
| 3        | 23.17    | 91.29     | 13.68       | 912.41    | 20.38     | 123.56    | 17.00    | 118.00    | 10.01       | 357.31    | 14.58     | 90.67     | 0.230932 |

## Load Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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### Discrete Appurtenances

| No.            | Elev (ft) | Description                     | Qty        | No Ice           |           |             | Ice              |           |             | Hor. Ecc. (ft) | Vert Ecc (ft) |
|----------------|-----------|---------------------------------|------------|------------------|-----------|-------------|------------------|-----------|-------------|----------------|---------------|
|                |           |                                 |            | Weight (lb)      | CaAa (sf) | CaAa Factor | Weight (lb)      | CaAa (sf) | CaAa Factor |                |               |
| 1              | 118.00    | DB222                           | 1          | 16.00            | 2.25      | 1.00        | 83.66            | 8.168     | 1.00        | 0.00           | 12.00         |
| 2              | 118.00    | ANT150D                         | 1          | 6.00             | 1.00      | 1.00        | 14.49            | 2.675     | 1.00        | 0.00           | 1.42          |
| 3              | 118.00    | DB844H90E-XY                    | 9          | 14.00            | 3.05      | 1.12        | 121.41           | 3.900     | 1.12        | 0.00           | 0.80          |
| 4              | 118.00    | Low Profile Platform            | 1          | 1800.00          | 28.47     | 1.00        | 3716.82          | 35.191    | 1.00        | 0.00           | 0.00          |
| 5              | 107.00    | Universal Ring Mount            | 1          | 350.00           | 5.00      | 1.00        | 633.46           | 8.374     | 1.00        | 0.00           | 0.00          |
| 6              | 107.00    | Low Profile Platform            | 1          | 2000.00          | 27.33     | 1.00        | 4109.06          | 33.719    | 1.00        | 0.00           | 0.00          |
| 7              | 107.00    | APXVSP18-C-A20                  | 3          | 57.00            | 8.02      | 0.83        | 224.11           | 10.721    | 0.85        | 0.00           | 0.00          |
| 8              | 107.00    | APXV9TM14-ALU-120               | 3          | 56.00            | 6.34      | 0.79        | 210.04           | 7.414     | 0.81        | 0.00           | 1.00          |
| 9              | 107.00    | 1900 MHz 4X45 RRH               | 3          | 60.00            | 2.71      | 0.67        | 138.07           | 3.932     | 0.69        | 0.00           | 0.00          |
| 10             | 107.00    | 800 MHz RRU Filter              | 3          | 64.00            | 2.40      | 0.67        | 138.64           | 3.482     | 0.69        | 0.00           | 0.00          |
| 11             | 107.00    | TD-RRH8x20-25                   | 3          | 70.00            | 4.05      | 0.67        | 176.05           | 4.834     | 0.69        | 0.00           | 0.00          |
| 12             | 107.00    | ACU-A20-N                       | 4          | 1.00             | 0.14      | 0.67        | 5.15             | 0.427     | 0.69        | 0.00           | 0.00          |
| 13             | 98.00     | Low Profile Platform            | 1          | 2100.00          | 23.10     | 1.00        | 4295.14          | 28.453    | 1.00        | 0.00           | 0.00          |
| 14             | 98.00     | RFS APL868013                   | 2          | 6.30             | 2.86      | 1.15        | 108.04           | 3.687     | 1.15        | 0.00           | 0.00          |
| 15             | 98.00     | Andrew SBNHH-1D85C              | 6          | 49.60            | 11.39     | 0.84        | 299.40           | 12.976    | 0.86        | 0.00           | 0.00          |
| 16             | 98.00     | Alcatel Lucent RRH2x60-700      | 3          | 60.00            | 3.50      | 0.67        | 143.65           | 4.256     | 0.69        | 0.00           | 0.00          |
| 17             | 98.00     | Alcatel Lucent RRH4X45-AWS      | 3          | 56.80            | 2.54      | 0.67        | 136.61           | 3.203     | 0.69        | 0.00           | 0.00          |
| 18             | 98.00     | Alcatel-Lucent RRH2X60-1900A-4R | 3          | 46.00            | 1.88      | 0.67        | 124.65           | 2.439     | 0.69        | 0.00           | 0.00          |
| 19             | 98.00     | Rfs Celwave DB-T1-6Z-8AB-0Z     | 2          | 18.90            | 4.80      | 0.67        | 155.62           | 5.635     | 0.69        | 0.00           | 0.00          |
| 20             | 98.00     | Andrew DB846H80E-SX             | 4          | 16.00            | 5.01      | 1.12        | 167.39           | 6.169     | 1.14        | 0.00           | 0.00          |
| 21             | 91.00     | LGP21401                        | 6          | 14.10            | 1.29      | 0.67        | 37.88            | 2.085     | 0.69        | 0.00           | 0.00          |
| 22             | 91.00     | RRUS-11                         | 3          | 55.00            | 4.42      | 0.67        | 140.57           | 5.846     | 0.69        | 0.00           | 0.00          |
| 23             | 91.00     | DC6-48-60-18-8F                 | 2          | 31.80            | 0.92      | 1.00        | 90.61            | 1.337     | 1.00        | 0.00           | 0.00          |
| 24             | 91.00     | Low Profile Platform            | 1          | 1349.00          | 17.46     | 1.00        | 2468.76          | 30.794    | 1.00        | 0.00           | 0.00          |
| 25             | 91.00     | QS66512-2                       | 3          | 77.00            | 8.13      | 0.90        | 285.73           | 9.362     | 0.90        | 0.00           | 0.00          |
| 26             | 91.00     | RRUS 32 B2                      | 3          | 53.00            | 2.74      | 0.81        | 135.74           | 3.431     | 0.81        | 0.00           | 0.00          |
| 27             | 91.00     | RRUS 32 B30                     | 3          | 60.00            | 2.74      | 0.81        | 142.74           | 3.431     | 0.81        | 0.00           | 0.00          |
| 28             | 91.00     | 7770.00                         | 3          | 35.00            | 5.50      | 0.73        | 162.16           | 6.510     | 0.75        | 0.00           | 0.00          |
| 29             | 91.00     | P65-16-XLH-RR                   | 3          | 53.00            | 8.16      | 0.75        | 210.00           | 10.826    | 0.75        | 0.00           | 0.00          |
| 30             | 85.00     | V-brace kit                     | 1          | 421.10           | 12.00     | 1.00        | 768.27           | 21.102    | 1.00        | 0.00           | 0.00          |
| 31             | 83.00     | Platform w/ Handrail kit        | 1          | 1868.20          | 37.16     | 1.00        | 3404.73          | 65.278    | 1.00        | 0.00           | 0.00          |
| 32             | 83.00     | RFS - APXV18-209014             | 3          | 18.70            | 3.58      | 0.74        | 100.78           | 4.453     | 0.76        | 0.00           | 0.00          |
| 33             | 83.00     | Commscope - LNX-6515DS-A1M      | 3          | 49.80            | 11.47     | 0.80        | 266.16           | 14.549    | 0.82        | 0.00           | 0.00          |
| 34             | 83.00     | RFS - ATMAA1412D-1A2            | 3          | 13.00            | 1.17      | 0.67        | 38.05            | 1.907     | 0.69        | 0.00           | 0.00          |
| 35             | 83.00     | S20057A1                        | 3          | 11.00            | 0.82      | 0.67        | 28.79            | 1.478     | 0.69        | 0.00           | 0.00          |
| 36             | 83.00     | Kathrein - 782 11054 - Bias T   | 3          | 1.80             | 0.15      | 0.67        | 8.12             | 0.407     | 0.69        | 0.00           | 0.00          |
| 37             | 83.00     | Fastback - IBR 1300             | 1          | 8.90             | 0.67      | 1.00        | 25.75            | 0.997     | 1.00        | 0.00           | 0.00          |
| 38             | 75.00     | GPS                             | 1          | 10.00            | 1.00      | 1.00        | 37.36            | 1.664     | 1.00        | 0.00           | 0.00          |
| 39             | 75.00     | Standoff Mount                  | 1          | 40.00            | 2.63      | 1.00        | 114.90           | 8.199     | 1.00        | 0.00           | 0.00          |
| <b>Totals:</b> |           |                                 | <b>104</b> | <b>13,350.70</b> |           |             | <b>32,619.47</b> |           |             |                |               |

### Linear Appurtenances

| Bottom Elev. (ft) | Top Elev. (ft) | Description   | Exposed Width | Exposed |
|-------------------|----------------|---------------|---------------|---------|
| 0.00              | 118.00         | (2) 1/2" Coax | 0.00          | Inside  |
| 0.00              | 118.00         | (12) 7/8"     | 0.00          | Inside  |

## Discrete Appurtenances

| No.  | Elev<br>(ft) | Description             | Qty | No Ice         |              |                | Ice            |              |                | Hor.<br>Ecc.<br>(ft) | Vert<br>Ecc<br>(ft) |
|------|--------------|-------------------------|-----|----------------|--------------|----------------|----------------|--------------|----------------|----------------------|---------------------|
|      |              |                         |     | Weight<br>(lb) | CaAa<br>(sf) | CaAa<br>Factor | Weight<br>(lb) | CaAa<br>(sf) | CaAa<br>Factor |                      |                     |
| 0.00 | 107.00       | (3) 1-1/4"              |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 98.00        | (2) 1 5/8" Hybrid       |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 98.00        | (12) 1-5/8" Coax        |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 91.00        | (2) 3/8" Fiber          |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 91.00        | (4) 5/8" DC             |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 91.00        | (12) 7/8"               |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 83.00        | (12) 1 1/4" Coax        |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 83.00        | (2) 5/16" Belden CAT6   |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 83.00        | (1) 5/16" Corning Fiber |     | 0.00           |              | Inside         |                |              |                |                      |                     |
| 0.00 | 75.00        | (1) 1/2"                |     | 0.65           |              | Outside        |                |              |                |                      |                     |

## Shaft Section Properties

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Increment Length:** 2 (ft)

| Elev<br>(ft) | Description     | Thick<br>(in) | Dia<br>(in) | Area<br>(in <sup>2</sup> ) | Ix<br>(in <sup>4</sup> ) | W/t<br>Ratio | D/t<br>Ratio | Fpy<br>(ksi) | S<br>(in <sup>3</sup> ) | Weight<br>(lb) |
|--------------|-----------------|---------------|-------------|----------------------------|--------------------------|--------------|--------------|--------------|-------------------------|----------------|
| 0.00         |                 | 0.3750        | 43.250      | 51.030                     | 11851.9                  | 18.93        | 115.33       | 79.1         | 539.7                   | 0.0            |
| 2.00         |                 | 0.3750        | 42.788      | 50.480                     | 11473.0                  | 18.71        | 114.10       | 79.4         | 528.1                   | 345.4          |
| 4.00         |                 | 0.3750        | 42.326      | 49.931                     | 11102.3                  | 18.49        | 112.87       | 79.7         | 516.6                   | 341.7          |
| 6.00         |                 | 0.3750        | 41.864      | 49.381                     | 10739.6                  | 18.27        | 111.64       | 79.9         | 505.3                   | 337.9          |
| 8.00         |                 | 0.3750        | 41.403      | 48.831                     | 10384.9                  | 18.06        | 110.41       | 80.2         | 494.0                   | 334.2          |
| 10.00        |                 | 0.3750        | 40.941      | 48.282                     | 10038.1                  | 17.84        | 109.18       | 80.4         | 482.9                   | 330.5          |
| 12.00        |                 | 0.3750        | 40.479      | 47.732                     | 9699.1                   | 17.62        | 107.94       | 80.7         | 471.9                   | 326.7          |
| 14.00        |                 | 0.3750        | 40.017      | 47.182                     | 9367.9                   | 17.41        | 106.71       | 80.9         | 461.1                   | 323.0          |
| 16.00        |                 | 0.3750        | 39.555      | 46.632                     | 9044.2                   | 17.19        | 105.48       | 81.2         | 450.4                   | 319.2          |
| 18.00        |                 | 0.3750        | 39.093      | 46.083                     | 8728.1                   | 16.97        | 104.25       | 81.4         | 439.7                   | 315.5          |
| 20.00        |                 | 0.3750        | 38.631      | 45.533                     | 8419.5                   | 16.75        | 103.02       | 81.7         | 429.3                   | 311.7          |
| 22.00        |                 | 0.3750        | 38.169      | 44.983                     | 8118.2                   | 16.54        | 101.79       | 82.0         | 418.9                   | 308.0          |
| 24.00        |                 | 0.3750        | 37.708      | 44.434                     | 7824.2                   | 16.32        | 100.55       | 82.2         | 408.7                   | 304.3          |
| 26.00        |                 | 0.3750        | 37.246      | 43.884                     | 7537.4                   | 16.10        | 99.32        | 82.5         | 398.6                   | 300.5          |
| 28.00        |                 | 0.3750        | 36.784      | 43.334                     | 7257.7                   | 15.89        | 98.09        | 82.5         | 388.6                   | 296.8          |
| 30.00        |                 | 0.3750        | 36.322      | 42.784                     | 6985.0                   | 15.67        | 96.86        | 82.5         | 378.8                   | 293.0          |
| 32.00        |                 | 0.3750        | 35.860      | 42.235                     | 6719.2                   | 15.45        | 95.63        | 82.5         | 369.1                   | 289.3          |
| 34.00        |                 | 0.3750        | 35.398      | 41.685                     | 6460.2                   | 15.23        | 94.40        | 82.5         | 359.5                   | 285.6          |
| 36.00        |                 | 0.3750        | 34.936      | 41.135                     | 6208.0                   | 15.02        | 93.16        | 82.5         | 350.0                   | 281.8          |
| 38.00        |                 | 0.3750        | 34.475      | 40.586                     | 5962.4                   | 14.80        | 91.93        | 82.5         | 340.6                   | 278.1          |
| 40.00        |                 | 0.3750        | 34.013      | 40.036                     | 5723.4                   | 14.58        | 90.70        | 82.5         | 331.4                   | 274.3          |
| 42.00        |                 | 0.3750        | 33.551      | 39.486                     | 5490.9                   | 14.37        | 89.47        | 82.5         | 322.3                   | 270.6          |
| 44.00        |                 | 0.3750        | 33.089      | 38.936                     | 5264.7                   | 14.15        | 88.24        | 82.5         | 313.4                   | 266.9          |
| 45.13        | Bot - Section 2 | 0.3750        | 32.828      | 38.626                     | 5139.7                   | 14.03        | 87.54        | 82.5         | 308.4                   | 149.1          |
| 46.00        |                 | 0.3750        | 32.627      | 38.387                     | 5044.9                   | 13.93        | 87.01        | 82.5         | 304.5                   | 211.0          |
| 48.00        |                 | 0.3750        | 32.165      | 37.837                     | 4831.2                   | 13.71        | 85.77        | 82.5         | 295.8                   | 480.2          |
| 49.88        | Top - Section 1 | 0.3125        | 32.356      | 31.782                     | 4123.0                   | 16.85        | 103.54       | 0.0          | 0.0                     | 445.1          |
| 50.00        |                 | 0.3125        | 32.328      | 31.755                     | 4112.4                   | 16.83        | 103.45       | 81.6         | 250.5                   | 13.0           |
| 52.00        |                 | 0.3125        | 31.867      | 31.297                     | 3936.9                   | 16.57        | 101.97       | 81.9         | 243.3                   | 214.5          |
| 54.00        |                 | 0.3125        | 31.405      | 30.838                     | 3766.6                   | 16.31        | 100.49       | 82.2         | 236.2                   | 211.4          |
| 56.00        |                 | 0.3125        | 30.943      | 30.380                     | 3601.2                   | 16.05        | 99.02        | 82.5         | 229.2                   | 208.3          |
| 58.00        |                 | 0.3125        | 30.481      | 29.922                     | 3440.7                   | 15.79        | 97.54        | 82.5         | 222.3                   | 205.2          |
| 60.00        |                 | 0.3125        | 30.019      | 29.464                     | 3285.1                   | 15.53        | 96.06        | 82.5         | 215.5                   | 202.1          |
| 62.00        |                 | 0.3125        | 29.557      | 29.006                     | 3134.3                   | 15.27        | 94.58        | 82.5         | 208.9                   | 199.0          |
| 64.00        |                 | 0.3125        | 29.095      | 28.548                     | 2988.1                   | 15.01        | 93.11        | 82.5         | 202.3                   | 195.8          |
| 66.00        |                 | 0.3125        | 28.633      | 28.090                     | 2846.6                   | 14.75        | 91.63        | 82.5         | 195.8                   | 192.7          |
| 68.00        |                 | 0.3125        | 28.172      | 27.632                     | 2709.5                   | 14.49        | 90.15        | 82.5         | 189.4                   | 189.6          |
| 70.00        |                 | 0.3125        | 27.710      | 27.174                     | 2577.0                   | 14.22        | 88.67        | 82.5         | 183.2                   | 186.5          |
| 72.00        |                 | 0.3125        | 27.248      | 26.716                     | 2448.9                   | 13.96        | 87.19        | 82.5         | 177.0                   | 183.4          |
| 74.00        |                 | 0.3125        | 26.786      | 26.257                     | 2325.0                   | 13.70        | 85.72        | 82.5         | 171.0                   | 180.3          |
| 75.00        |                 | 0.3125        | 26.555      | 26.028                     | 2264.7                   | 13.57        | 84.98        | 82.5         | 168.0                   | 89.0           |
| 76.00        |                 | 0.3125        | 26.324      | 25.799                     | 2205.5                   | 13.44        | 84.24        | 82.5         | 165.0                   | 88.2           |
| 78.00        |                 | 0.3125        | 25.862      | 25.341                     | 2090.0                   | 13.18        | 82.76        | 82.5         | 159.2                   | 174.0          |
| 80.00        |                 | 0.3125        | 25.400      | 24.883                     | 1978.7                   | 12.92        | 81.28        | 82.5         | 153.4                   | 170.9          |
| 82.00        |                 | 0.3125        | 24.939      | 24.425                     | 1871.5                   | 12.66        | 79.80        | 82.5         | 147.8                   | 167.8          |
| 83.00        |                 | 0.3125        | 24.708      | 24.196                     | 1819.3                   | 12.53        | 79.06        | 82.5         | 145.0                   | 82.7           |
| 84.00        |                 | 0.3125        | 24.477      | 23.967                     | 1768.1                   | 12.40        | 78.33        | 82.5         | 142.3                   | 81.9           |
| 85.00        |                 | 0.3125        | 24.246      | 23.738                     | 1717.9                   | 12.27        | 77.59        | 82.5         | 139.6                   | 81.2           |
| 86.00        |                 | 0.3125        | 24.015      | 23.509                     | 1668.7                   | 12.14        | 76.85        | 82.5         | 136.9                   | 80.4           |
| 88.00        |                 | 0.3125        | 23.553      | 23.051                     | 1573.0                   | 11.88        | 75.37        | 82.5         | 131.5                   | 158.4          |

Increment Length: 2 (ft)

| Elev<br>(ft) | Description     | Thick<br>(in) | Dia<br>(in) | Area<br>(in <sup>2</sup> ) | Ix<br>(in <sup>4</sup> ) | W/t<br>Ratio | D/t<br>Ratio | Fpy<br>(ksi) | S<br>(in <sup>3</sup> ) | Weight<br>(lb) |
|--------------|-----------------|---------------|-------------|----------------------------|--------------------------|--------------|--------------|--------------|-------------------------|----------------|
| 90.00        |                 | 0.3125        | 23.091      | 22.593                     | 1481.1                   | 11.62        | 73.89        | 82.5         | 126.3                   | 155.3          |
| 91.00        |                 | 0.3125        | 22.860      | 22.364                     | 1436.5                   | 11.49        | 73.15        | 82.5         | 123.8                   | 76.5           |
| 91.29        | Bot - Section 3 | 0.3125        | 22.792      | 22.296                     | 1423.6                   | 11.45        | 72.94        | 82.5         | 123.0                   | 22.3           |
| 92.00        |                 | 0.3125        | 22.629      | 22.135                     | 1392.8                   | 11.36        | 72.41        | 82.5         | 121.2                   | 86.2           |
| 94.00        |                 | 0.3125        | 22.167      | 21.677                     | 1308.1                   | 11.10        | 70.94        | 82.5         | 116.2                   | 240.6          |
| 94.71        | Top - Section 2 | 0.1875        | 22.378      | 13.206                     | 821.6                    | 19.63        | 119.35       | 0.0          | 0.0                     | 84.2           |
| 96.00        |                 | 0.1875        | 22.081      | 13.029                     | 789.0                    | 19.35        | 117.76       | 78.6         | 70.4                    | 57.6           |
| 98.00        |                 | 0.1875        | 21.619      | 12.754                     | 740.1                    | 18.92        | 115.30       | 79.1         | 67.4                    | 87.7           |
| 100.00       |                 | 0.1875        | 21.157      | 12.479                     | 693.3                    | 18.49        | 112.84       | 79.7         | 64.5                    | 85.9           |
| 102.00       |                 | 0.1875        | 20.695      | 12.204                     | 648.5                    | 18.05        | 110.37       | 80.2         | 61.7                    | 84.0           |
| 104.00       |                 | 0.1875        | 20.233      | 11.929                     | 605.6                    | 17.62        | 107.91       | 80.7         | 59.0                    | 82.1           |
| 106.00       |                 | 0.1875        | 19.771      | 11.654                     | 564.7                    | 17.18        | 105.45       | 81.2         | 56.3                    | 80.2           |
| 107.00       |                 | 0.1875        | 19.540      | 11.517                     | 545.0                    | 16.97        | 104.21       | 81.4         | 54.9                    | 39.4           |
| 108.00       |                 | 0.1875        | 19.309      | 11.379                     | 525.7                    | 16.75        | 102.98       | 81.7         | 53.6                    | 39.0           |
| 110.00       |                 | 0.1875        | 18.847      | 11.105                     | 488.5                    | 16.31        | 100.52       | 82.2         | 51.1                    | 76.5           |
| 112.00       |                 | 0.1875        | 18.386      | 10.830                     | 453.1                    | 15.88        | 98.06        | 82.5         | 48.5                    | 74.6           |
| 114.00       |                 | 0.1875        | 17.924      | 10.555                     | 419.5                    | 15.45        | 95.59        | 82.5         | 46.1                    | 72.8           |
| 116.00       |                 | 0.1875        | 17.462      | 10.280                     | 387.6                    | 15.01        | 93.13        | 82.5         | 43.7                    | 70.9           |
| 118.00       |                 | 0.1875        | 17.000      | 10.005                     | 357.3                    | 14.58        | 90.67        | 82.5         | 41.4                    | 69.0           |

**13161.4**

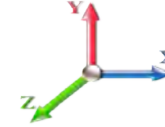
## Wind Loading - Shaft

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



**Load Case:** 1.2D + 1.6W 97 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 27

| Elev (ft) | Description     | Kzt  | Kz   | qz (psf) | qzGh (psf) | C (mph-ft) | Cf    | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|-----------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|--------------------|--------------------|
| 0.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 327.29     | 0.650 | 0.000          | 0.00           | 0.000   | 0.00      | 0.0               | 0.0                | 0.0                |
| 2.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 323.80     | 0.650 | 0.000          | 2.00           | 7.280   | 4.73      | 162.0             | 0.0                | 414.5              |
| 4.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 320.30     | 0.650 | 0.000          | 2.00           | 7.202   | 4.68      | 160.3             | 0.0                | 410.0              |
| 6.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 316.81     | 0.650 | 0.000          | 2.00           | 7.124   | 4.63      | 158.5             | 0.0                | 405.5              |
| 8.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 313.31     | 0.650 | 0.000          | 2.00           | 7.046   | 4.58      | 156.8             | 0.0                | 401.0              |
| 10.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 309.82     | 0.650 | 0.000          | 2.00           | 6.968   | 4.53      | 155.0             | 0.0                | 396.5              |
| 12.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 306.32     | 0.650 | 0.000          | 2.00           | 6.890   | 4.48      | 153.3             | 0.0                | 392.1              |
| 14.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 302.83     | 0.650 | 0.000          | 2.00           | 6.811   | 4.43      | 151.6             | 0.0                | 387.6              |
| 16.00     |                 | 1.00 | 0.86 | 19.690   | 21.66      | 301.17     | 0.650 | 0.000          | 2.00           | 6.733   | 4.38      | 151.7             | 0.0                | 383.1              |
| 18.00     |                 | 1.00 | 0.88 | 20.185   | 22.20      | 301.37     | 0.650 | 0.000          | 2.00           | 6.655   | 4.33      | 153.7             | 0.0                | 378.6              |
| 20.00     |                 | 1.00 | 0.90 | 20.638   | 22.70      | 301.13     | 0.650 | 0.000          | 2.00           | 6.577   | 4.28      | 155.3             | 0.0                | 374.1              |
| 22.00     |                 | 1.00 | 0.92 | 21.056   | 23.16      | 300.53     | 0.650 | 0.000          | 2.00           | 6.499   | 4.22      | 156.5             | 0.0                | 369.6              |
| 24.00     |                 | 1.00 | 0.94 | 21.445   | 23.59      | 299.63     | 0.650 | 0.000          | 2.00           | 6.421   | 4.17      | 157.5             | 0.0                | 365.1              |
| 26.00     |                 | 1.00 | 0.95 | 21.810   | 23.99      | 298.46     | 0.650 | 0.000          | 2.00           | 6.342   | 4.12      | 158.2             | 0.0                | 360.6              |
| 28.00     |                 | 1.00 | 0.97 | 22.152   | 24.37      | 297.07     | 0.650 | 0.000          | 2.00           | 6.264   | 4.07      | 158.8             | 0.0                | 356.1              |
| 30.00     |                 | 1.00 | 0.98 | 22.477   | 24.72      | 295.48     | 0.650 | 0.000          | 2.00           | 6.186   | 4.02      | 159.1             | 0.0                | 351.7              |
| 32.00     |                 | 1.00 | 1.00 | 22.784   | 25.06      | 293.71     | 0.650 | 0.000          | 2.00           | 6.108   | 3.97      | 159.2             | 0.0                | 347.2              |
| 34.00     |                 | 1.00 | 1.01 | 23.077   | 25.38      | 291.78     | 0.650 | 0.000          | 2.00           | 6.030   | 3.92      | 159.2             | 0.0                | 342.7              |
| 36.00     |                 | 1.00 | 1.02 | 23.356   | 25.69      | 289.71     | 0.650 | 0.000          | 2.00           | 5.952   | 3.87      | 159.0             | 0.0                | 338.2              |
| 38.00     |                 | 1.00 | 1.03 | 23.623   | 25.99      | 287.51     | 0.650 | 0.000          | 2.00           | 5.873   | 3.82      | 158.7             | 0.0                | 333.7              |
| 40.00     |                 | 1.00 | 1.04 | 23.880   | 26.27      | 285.20     | 0.650 | 0.000          | 2.00           | 5.795   | 3.77      | 158.3             | 0.0                | 329.2              |
| 42.00     |                 | 1.00 | 1.05 | 24.126   | 26.54      | 282.77     | 0.650 | 0.000          | 2.00           | 5.717   | 3.72      | 157.8             | 0.0                | 324.7              |
| 44.00     |                 | 1.00 | 1.06 | 24.364   | 26.80      | 280.25     | 0.650 | 0.000          | 2.00           | 5.639   | 3.67      | 157.2             | 0.0                | 320.2              |
| 45.13     | Bot - Section 2 | 1.00 | 1.07 | 24.494   | 26.94      | 278.78     | 0.650 | 0.000          | 1.13           | 3.151   | 2.05      | 88.3              | 0.0                | 178.9              |
| 46.00     |                 | 1.00 | 1.07 | 24.593   | 27.05      | 277.63     | 0.650 | 0.000          | 0.87           | 2.455   | 1.60      | 69.1              | 0.0                | 253.2              |
| 48.00     |                 | 1.00 | 1.08 | 24.814   | 27.30      | 274.93     | 0.650 | 0.000          | 2.00           | 5.588   | 3.63      | 158.6             | 0.0                | 576.2              |
| 49.88     | Top - Section 1 | 1.00 | 1.09 | 25.016   | 27.52      | 272.32     | 0.650 | 0.000          | 1.88           | 5.182   | 3.37      | 148.3             | 0.0                | 534.1              |
| 50.00     |                 | 1.00 | 1.09 | 25.029   | 27.53      | 277.52     | 0.650 | 0.000          | 0.12           | 0.328   | 0.21      | 9.4               | 0.0                | 15.6               |
| 52.00     |                 | 1.00 | 1.10 | 25.236   | 27.76      | 274.68     | 0.650 | 0.000          | 2.00           | 5.432   | 3.53      | 156.8             | 0.0                | 257.5              |
| 54.00     |                 | 1.00 | 1.11 | 25.437   | 27.98      | 271.78     | 0.650 | 0.000          | 2.00           | 5.354   | 3.48      | 155.8             | 0.0                | 253.7              |
| 56.00     |                 | 1.00 | 1.12 | 25.633   | 28.20      | 268.81     | 0.650 | 0.000          | 2.00           | 5.276   | 3.43      | 154.7             | 0.0                | 250.0              |
| 58.00     |                 | 1.00 | 1.13 | 25.823   | 28.41      | 265.78     | 0.650 | 0.000          | 2.00           | 5.198   | 3.38      | 153.5             | 0.0                | 246.2              |
| 60.00     |                 | 1.00 | 1.14 | 26.008   | 28.61      | 262.68     | 0.650 | 0.000          | 2.00           | 5.119   | 3.33      | 152.3             | 0.0                | 242.5              |
| 62.00     |                 | 1.00 | 1.14 | 26.188   | 28.81      | 259.54     | 0.650 | 0.000          | 2.00           | 5.041   | 3.28      | 151.0             | 0.0                | 238.8              |
| 64.00     |                 | 1.00 | 1.15 | 26.364   | 29.00      | 256.34     | 0.650 | 0.000          | 2.00           | 4.963   | 3.23      | 149.7             | 0.0                | 235.0              |
| 66.00     |                 | 1.00 | 1.16 | 26.535   | 29.19      | 253.09     | 0.650 | 0.000          | 2.00           | 4.885   | 3.18      | 148.3             | 0.0                | 231.3              |
| 68.00     |                 | 1.00 | 1.17 | 26.702   | 29.37      | 249.79     | 0.650 | 0.000          | 2.00           | 4.807   | 3.12      | 146.8             | 0.0                | 227.5              |
| 70.00     |                 | 1.00 | 1.17 | 26.866   | 29.55      | 246.44     | 0.650 | 0.000          | 2.00           | 4.729   | 3.07      | 145.3             | 0.0                | 223.8              |
| 72.00     |                 | 1.00 | 1.18 | 27.026   | 29.73      | 243.06     | 0.650 | 0.000          | 2.00           | 4.650   | 3.02      | 143.8             | 0.0                | 220.0              |
| 74.00     |                 | 1.00 | 1.19 | 27.182   | 29.90      | 239.63     | 0.650 | 0.000          | 2.00           | 4.572   | 2.97      | 142.2             | 0.0                | 216.3              |
| 75.00     | Appurtenance(s) | 1.00 | 1.19 | 27.259   | 29.98      | 237.90     | 0.650 | 0.000          | 1.00           | 2.257   | 1.47      | 70.4              | 0.0                | 106.8              |
| 76.00     |                 | 1.00 | 1.19 | 27.335   | 30.07      | 236.16     | 0.650 | 0.000          | 1.00           | 2.237   | 1.45      | 70.0              | 0.0                | 105.8              |
| 78.00     |                 | 1.00 | 1.20 | 27.485   | 30.23      | 232.65     | 0.650 | 0.000          | 2.00           | 4.416   | 2.87      | 138.8             | 0.0                | 208.8              |
| 80.00     |                 | 1.00 | 1.21 | 27.632   | 30.39      | 229.10     | 0.650 | 0.000          | 2.00           | 4.338   | 2.82      | 137.1             | 0.0                | 205.1              |
| 82.00     |                 | 1.00 | 1.21 | 27.776   | 30.55      | 225.52     | 0.650 | 0.000          | 2.00           | 4.260   | 2.77      | 135.4             | 0.0                | 201.3              |
| 83.00     | Appurtenance(s) | 1.00 | 1.22 | 27.847   | 30.63      | 223.72     | 0.650 | 0.000          | 1.00           | 2.101   | 1.37      | 66.9              | 0.0                | 99.3               |
| 84.00     |                 | 1.00 | 1.22 | 27.917   | 30.71      | 221.91     | 0.650 | 0.000          | 1.00           | 2.081   | 1.35      | 66.5              | 0.0                | 98.3               |

## Wind Loading - Shaft

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                        |      |      |        |       |        |       |       |               |       |      |                |     |                 |
|------------------------|------|------|--------|-------|--------|-------|-------|---------------|-------|------|----------------|-----|-----------------|
| 85.00 Appurtenance(s)  | 1.00 | 1.22 | 27.987 | 30.79 | 220.09 | 0.650 | 0.000 | 1.00          | 2.061 | 1.34 | 66.0           | 0.0 | 97.4            |
| 86.00                  | 1.00 | 1.23 | 28.056 | 30.86 | 218.26 | 0.650 | 0.000 | 1.00          | 2.042 | 1.33 | 65.5           | 0.0 | 96.5            |
| 88.00                  | 1.00 | 1.23 | 28.192 | 31.01 | 214.58 | 0.650 | 0.000 | 2.00          | 4.025 | 2.62 | 129.8          | 0.0 | 190.1           |
| 90.00                  | 1.00 | 1.24 | 28.325 | 31.16 | 210.87 | 0.650 | 0.000 | 2.00          | 3.947 | 2.57 | 127.9          | 0.0 | 186.4           |
| 91.00 Appurtenance(s)  | 1.00 | 1.24 | 28.391 | 31.23 | 209.01 | 0.650 | 0.000 | 1.00          | 1.944 | 1.26 | 63.1           | 0.0 | 91.8            |
| 91.29 Bot - Section 3  | 1.00 | 1.24 | 28.411 | 31.25 | 208.46 | 0.650 | 0.000 | 0.29          | 0.567 | 0.37 | 18.4           | 0.0 | 26.7            |
| 92.00                  | 1.00 | 1.24 | 28.457 | 31.30 | 207.13 | 0.650 | 0.000 | 0.71          | 1.380 | 0.90 | 44.9           | 0.0 | 103.4           |
| 94.00                  | 1.00 | 1.25 | 28.586 | 31.44 | 203.36 | 0.650 | 0.000 | 2.00          | 3.854 | 2.51 | 126.0          | 0.0 | 288.7           |
| 94.71 Top - Section 2  | 1.00 | 1.25 | 28.631 | 31.49 | 202.02 | 0.650 | 0.000 | 0.71          | 1.349 | 0.88 | 44.2           | 0.0 | 101.0           |
| 96.00                  | 1.00 | 1.25 | 28.713 | 31.58 | 203.02 | 0.650 | 0.000 | 1.29          | 2.427 | 1.58 | 79.7           | 0.0 | 69.1            |
| 98.00 Appurtenance(s)  | 1.00 | 1.26 | 28.838 | 31.72 | 199.20 | 0.650 | 0.000 | 2.00          | 3.698 | 2.40 | 122.0          | 0.0 | 105.3           |
| 100.00                 | 1.00 | 1.27 | 28.961 | 31.86 | 195.36 | 0.650 | 0.000 | 2.00          | 3.620 | 2.35 | 119.9          | 0.0 | 103.0           |
| 102.00                 | 1.00 | 1.27 | 29.082 | 31.99 | 191.50 | 0.650 | 0.000 | 2.00          | 3.541 | 2.30 | 117.8          | 0.0 | 100.8           |
| 104.00                 | 1.00 | 1.28 | 29.201 | 32.12 | 187.61 | 0.650 | 0.000 | 2.00          | 3.463 | 2.25 | 115.7          | 0.0 | 98.5            |
| 106.00                 | 1.00 | 1.28 | 29.318 | 32.25 | 183.69 | 0.650 | 0.000 | 2.00          | 3.385 | 2.20 | 113.5          | 0.0 | 96.3            |
| 107.00 Appurtenance(s) | 1.00 | 1.28 | 29.376 | 32.31 | 181.72 | 0.650 | 0.000 | 1.00          | 1.663 | 1.08 | 55.9           | 0.0 | 47.3            |
| 108.00                 | 1.00 | 1.29 | 29.434 | 32.38 | 179.75 | 0.650 | 0.000 | 1.00          | 1.644 | 1.07 | 55.3           | 0.0 | 46.7            |
| 110.00                 | 1.00 | 1.29 | 29.548 | 32.50 | 175.79 | 0.650 | 0.000 | 2.00          | 3.229 | 2.10 | 109.1          | 0.0 | 91.8            |
| 112.00                 | 1.00 | 1.30 | 29.660 | 32.63 | 171.81 | 0.650 | 0.000 | 2.00          | 3.151 | 2.05 | 106.9          | 0.0 | 89.6            |
| 114.00                 | 1.00 | 1.30 | 29.771 | 32.75 | 167.81 | 0.650 | 0.000 | 2.00          | 3.072 | 2.00 | 104.6          | 0.0 | 87.3            |
| 116.00                 | 1.00 | 1.31 | 29.880 | 32.87 | 163.78 | 0.650 | 0.000 | 2.00          | 2.994 | 1.95 | 102.4          | 0.0 | 85.1            |
| 118.00 Appurtenance(s) | 1.00 | 1.31 | 29.988 | 32.99 | 159.74 | 0.650 | 0.000 | 2.00          | 2.916 | 1.90 | 100.0          | 0.0 | 82.8            |
| <b>Totals:</b>         |      |      |        |       |        |       |       | <b>118.00</b> |       |      | <b>8,405.7</b> |     | <b>15,793.7</b> |



## Discrete Appurtenance Forces

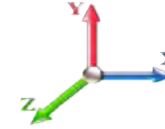
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 27

| No. | Elev (ft) | Description              | Qty | qz (psf) | qzGh (psf) | CaAa x Ka | Ka   | Total CaAa (sf) | Dead Load (lb) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) |
|-----|-----------|--------------------------|-----|----------|------------|-----------|------|-----------------|----------------|----------------|---------------|--------------|---------------|---------------|
| 1   | 118.00    | ANT150D                  | 1   | 30.063   | 33.070     | 1.00      | 1.00 | 1.00            | 7.20           | 0.000          | 1.420         | 52.91        | 0.00          | 75.13         |
| 2   | 118.00    | DB222                    | 1   | 30.605   | 33.666     | 1.00      | 1.00 | 2.25            | 19.20          | 0.000          | 12.000        | 121.20       | 0.00          | 1454.37       |
| 3   | 118.00    | Low Profile Platform     | 1   | 29.988   | 32.986     | 1.00      | 1.00 | 28.47           | 2160.00        | 0.000          | 0.000         | 1502.60      | 0.00          | 0.00          |
| 4   | 118.00    | DB844H90E-XY             | 9   | 30.030   | 33.033     | 1.12      | 1.00 | 30.74           | 151.20         | 0.000          | 0.800         | 1624.93      | 0.00          | 1299.94       |
| 5   | 107.00    | ACU-A20-N                | 4   | 29.376   | 32.314     | 0.54      | 0.80 | 0.30            | 4.80           | 0.000          | 0.000         | 15.52        | 0.00          | 0.00          |
| 6   | 107.00    | 1900 MHz 4X45 RRH        | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 4.36            | 216.00         | 0.000          | 0.000         | 225.30       | 0.00          | 0.00          |
| 7   | 107.00    | 800 MHz RRU Filter       | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 3.86            | 230.40         | 0.000          | 0.000         | 199.53       | 0.00          | 0.00          |
| 8   | 107.00    | TD-RRH8x20-25            | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 6.51            | 252.00         | 0.000          | 0.000         | 336.71       | 0.00          | 0.00          |
| 9   | 107.00    | Low Profile Platform     | 1   | 29.376   | 32.314     | 1.00      | 1.00 | 27.33           | 2400.00        | 0.000          | 0.000         | 1413.02      | 0.00          | 0.00          |
| 10  | 107.00    | APXVSPP18-C-A20          | 3   | 29.376   | 32.314     | 0.66      | 0.80 | 15.98           | 205.20         | 0.000          | 0.000         | 825.99       | 0.00          | 0.00          |
| 11  | 107.00    | APXV9TM14-ALU-120        | 3   | 29.434   | 32.377     | 0.63      | 0.80 | 12.02           | 201.60         | 0.000          | 1.000         | 622.71       | 0.00          | 622.71        |
| 12  | 107.00    | Universal Ring Mount     | 1   | 29.376   | 32.314     | 1.00      | 1.00 | 5.00            | 420.00         | 0.000          | 0.000         | 258.51       | 0.00          | 0.00          |
| 13  | 98.00     | Alcatel Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 5.63            | 216.00         | 0.000          | 0.000         | 285.65       | 0.00          | 0.00          |
| 14  | 98.00     | RFS APL868013            | 2   | 28.838   | 31.722     | 0.92      | 0.80 | 5.27            | 15.12          | 0.000          | 0.000         | 267.32       | 0.00          | 0.00          |
| 15  | 98.00     | Andrew SBNHH-1D85C       | 6   | 28.838   | 31.722     | 0.67      | 0.80 | 45.92           | 357.12         | 0.000          | 0.000         | 2330.88      | 0.00          | 0.00          |
| 16  | 98.00     | Rfs Celwave              | 2   | 28.838   | 31.722     | 0.54      | 0.80 | 5.15            | 45.36          | 0.000          | 0.000         | 261.16       | 0.00          | 0.00          |
| 17  | 98.00     | Alcatel Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 4.08            | 204.48         | 0.000          | 0.000         | 207.30       | 0.00          | 0.00          |
| 18  | 98.00     | Alcatel-Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 3.02            | 165.60         | 0.000          | 0.000         | 153.43       | 0.00          | 0.00          |
| 19  | 98.00     | Andrew DB846H80E-SX      | 4   | 28.838   | 31.722     | 0.90      | 0.80 | 17.96           | 76.80          | 0.000          | 0.000         | 911.34       | 0.00          | 0.00          |
| 20  | 98.00     | Low Profile Platform     | 1   | 28.838   | 31.722     | 1.00      | 1.00 | 23.10           | 2520.00        | 0.000          | 0.000         | 1172.43      | 0.00          | 0.00          |
| 21  | 91.00     | DC6-48-60-18-8F          | 2   | 28.391   | 31.231     | 1.00      | 1.00 | 1.84            | 76.32          | 0.000          | 0.000         | 91.94        | 0.00          | 0.00          |
| 22  | 91.00     | RRUS-11                  | 3   | 28.391   | 31.231     | 0.54      | 0.80 | 7.11            | 198.00         | 0.000          | 0.000         | 355.15       | 0.00          | 0.00          |
| 23  | 91.00     | LGP21401                 | 6   | 28.391   | 31.231     | 0.54      | 0.80 | 4.15            | 101.52         | 0.000          | 0.000         | 207.30       | 0.00          | 0.00          |
| 24  | 91.00     | P65-16-XLH-RR            | 3   | 28.391   | 31.231     | 0.60      | 0.80 | 14.69           | 190.80         | 0.000          | 0.000         | 733.94       | 0.00          | 0.00          |
| 25  | 91.00     | 7770.00                  | 3   | 28.391   | 31.231     | 0.58      | 0.80 | 9.64            | 126.00         | 0.000          | 0.000         | 481.50       | 0.00          | 0.00          |
| 26  | 91.00     | Low Profile Platform     | 1   | 28.391   | 31.231     | 1.00      | 1.00 | 17.46           | 1618.80        | 0.000          | 0.000         | 872.46       | 0.00          | 0.00          |
| 27  | 91.00     | RRUS 32 B30              | 3   | 28.391   | 31.231     | 0.65      | 0.80 | 5.33            | 216.00         | 0.000          | 0.000         | 266.16       | 0.00          | 0.00          |
| 28  | 91.00     | RRUS 32 B2               | 3   | 28.391   | 31.231     | 0.65      | 0.80 | 5.33            | 190.80         | 0.000          | 0.000         | 266.16       | 0.00          | 0.00          |
| 29  | 91.00     | QS66512-2                | 3   | 28.391   | 31.231     | 0.72      | 0.80 | 17.56           | 277.20         | 0.000          | 0.000         | 877.49       | 0.00          | 0.00          |
| 30  | 85.00     | V-brace kit              | 1   | 27.987   | 30.785     | 1.00      | 1.00 | 12.00           | 505.32         | 0.000          | 0.000         | 591.08       | 0.00          | 0.00          |
| 31  | 83.00     | Commscope -              | 3   | 27.847   | 30.631     | 0.64      | 0.80 | 22.02           | 179.28         | 0.000          | 0.000         | 1079.32      | 0.00          | 0.00          |
| 32  | 83.00     | RFS - APXV18-209014      | 3   | 27.847   | 30.631     | 0.59      | 0.80 | 6.36            | 67.32          | 0.000          | 0.000         | 311.61       | 0.00          | 0.00          |
| 33  | 83.00     | Kathrein - 782 11054 -   | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 0.24            | 6.48           | 0.000          | 0.000         | 11.82        | 0.00          | 0.00          |
| 34  | 83.00     | S20057A1                 | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 1.32            | 39.60          | 0.000          | 0.000         | 64.62        | 0.00          | 0.00          |
| 35  | 83.00     | RFS - ATMAA1412D-1A2     | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 1.88            | 46.80          | 0.000          | 0.000         | 92.21        | 0.00          | 0.00          |
| 36  | 83.00     | Fastback - IBR 1300      | 1   | 27.847   | 30.631     | 1.00      | 1.00 | 0.67            | 10.68          | 0.000          | 0.000         | 32.84        | 0.00          | 0.00          |
| 37  | 83.00     | Platform w/ Handrail kit | 1   | 27.847   | 30.631     | 1.00      | 1.00 | 37.16           | 2241.84        | 0.000          | 0.000         | 1821.22      | 0.00          | 0.00          |
| 38  | 75.00     | Standoff Mount           | 1   | 27.259   | 29.985     | 1.00      | 1.00 | 2.63            | 48.00          | 0.000          | 0.000         | 126.18       | 0.00          | 0.00          |
| 39  | 75.00     | GPS                      | 1   | 27.259   | 29.985     | 1.00      | 1.00 | 1.00            | 12.00          | 0.000          | 0.000         | 47.98        | 0.00          | 0.00          |

**Totals:** 16,020.84

**21,119.41**

## Total Applied Force Summary

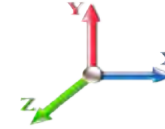
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 27

| Elev<br>(ft) | Description      | Lateral<br>FX (-)<br>(lb) | Axial<br>FY (-)<br>(lb) | Torsion<br>MY<br>(lb-ft) | Moment<br>MZ<br>(lb-ft) |
|--------------|------------------|---------------------------|-------------------------|--------------------------|-------------------------|
| 0.00         |                  | 0.00                      | 0.00                    | 0.00                     | 0.00                    |
| 2.00         |                  | 162.00                    | 509.30                  | 0.00                     | 0.00                    |
| 4.00         |                  | 160.26                    | 504.81                  | 0.00                     | 0.00                    |
| 6.00         |                  | 158.52                    | 500.32                  | 0.00                     | 0.00                    |
| 8.00         |                  | 156.78                    | 495.83                  | 0.00                     | 0.00                    |
| 10.00        |                  | 155.04                    | 491.34                  | 0.00                     | 0.00                    |
| 12.00        |                  | 153.30                    | 486.85                  | 0.00                     | 0.00                    |
| 14.00        |                  | 151.56                    | 482.37                  | 0.00                     | 0.00                    |
| 16.00        |                  | 151.67                    | 477.88                  | 0.00                     | 0.00                    |
| 18.00        |                  | 153.68                    | 473.39                  | 0.00                     | 0.00                    |
| 20.00        |                  | 155.28                    | 468.90                  | 0.00                     | 0.00                    |
| 22.00        |                  | 156.54                    | 464.41                  | 0.00                     | 0.00                    |
| 24.00        |                  | 157.52                    | 459.92                  | 0.00                     | 0.00                    |
| 26.00        |                  | 158.25                    | 455.43                  | 0.00                     | 0.00                    |
| 28.00        |                  | 158.75                    | 450.94                  | 0.00                     | 0.00                    |
| 30.00        |                  | 159.07                    | 446.45                  | 0.00                     | 0.00                    |
| 32.00        |                  | 159.20                    | 441.96                  | 0.00                     | 0.00                    |
| 34.00        |                  | 159.19                    | 437.47                  | 0.00                     | 0.00                    |
| 36.00        |                  | 159.02                    | 432.98                  | 0.00                     | 0.00                    |
| 38.00        |                  | 158.73                    | 428.49                  | 0.00                     | 0.00                    |
| 40.00        |                  | 158.32                    | 424.00                  | 0.00                     | 0.00                    |
| 42.00        |                  | 157.80                    | 419.51                  | 0.00                     | 0.00                    |
| 44.00        |                  | 157.17                    | 415.03                  | 0.00                     | 0.00                    |
| 45.13        |                  | 88.31                     | 232.50                  | 0.00                     | 0.00                    |
| 46.00        |                  | 69.08                     | 294.45                  | 0.00                     | 0.00                    |
| 48.00        |                  | 158.64                    | 670.99                  | 0.00                     | 0.00                    |
| 49.88        |                  | 148.30                    | 623.22                  | 0.00                     | 0.00                    |
| 50.00        |                  | 9.40                      | 21.25                   | 0.00                     | 0.00                    |
| 52.00        |                  | 156.82                    | 352.26                  | 0.00                     | 0.00                    |
| 54.00        |                  | 155.80                    | 348.52                  | 0.00                     | 0.00                    |
| 56.00        |                  | 154.71                    | 344.78                  | 0.00                     | 0.00                    |
| 58.00        |                  | 153.54                    | 341.04                  | 0.00                     | 0.00                    |
| 60.00        |                  | 152.32                    | 337.29                  | 0.00                     | 0.00                    |
| 62.00        |                  | 151.03                    | 333.55                  | 0.00                     | 0.00                    |
| 64.00        |                  | 149.69                    | 329.81                  | 0.00                     | 0.00                    |
| 66.00        |                  | 148.29                    | 326.07                  | 0.00                     | 0.00                    |
| 68.00        |                  | 146.83                    | 322.33                  | 0.00                     | 0.00                    |
| 70.00        |                  | 145.33                    | 318.59                  | 0.00                     | 0.00                    |
| 72.00        |                  | 143.78                    | 314.85                  | 0.00                     | 0.00                    |
| 74.00        |                  | 142.18                    | 311.11                  | 0.00                     | 0.00                    |
| 75.00        | (2) attachments  | 244.53                    | 214.15                  | 0.00                     | 0.00                    |
| 76.00        |                  | 69.96                     | 153.02                  | 0.00                     | 0.00                    |
| 78.00        |                  | 138.85                    | 303.24                  | 0.00                     | 0.00                    |
| 80.00        |                  | 137.12                    | 299.50                  | 0.00                     | 0.00                    |
| 82.00        |                  | 135.35                    | 295.76                  | 0.00                     | 0.00                    |
| 83.00        | (17) attachments | 3480.55                   | 2738.48                 | 0.00                     | 0.00                    |
| 84.00        |                  | 66.46                     | 135.75                  | 0.00                     | 0.00                    |

## Total Applied Force Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                  |                  |                  |             |                 |
|----------------|------------------|------------------|------------------|-------------|-----------------|
| 85.00          | (1) attachments  | 657.08           | 640.13           | 0.00        | 0.00            |
| 86.00          |                  | 65.54            | 133.88           | 0.00        | 0.00            |
| 88.00          |                  | 129.82           | 264.95           | 0.00        | 0.00            |
| 90.00          |                  | 127.90           | 261.21           | 0.00        | 0.00            |
| 91.00          | (27) attachments | 4215.26          | 3124.64          | 0.00        | 0.00            |
| 91.29          |                  | 18.41            | 34.92            | 0.00        | 0.00            |
| 92.00          |                  | 44.94            | 123.12           | 0.00        | 0.00            |
| 94.00          |                  | 126.04           | 344.39           | 0.00        | 0.00            |
| 94.71          |                  | 44.20            | 120.82           | 0.00        | 0.00            |
| 96.00          |                  | 79.71            | 105.04           | 0.00        | 0.00            |
| 98.00          | (24) attachments | 5711.51          | 3761.49          | 0.00        | 0.00            |
| 100.00         |                  | 119.92           | 123.53           | 0.00        | 0.00            |
| 102.00         |                  | 117.82           | 121.28           | 0.00        | 0.00            |
| 104.00         |                  | 115.69           | 119.04           | 0.00        | 0.00            |
| 106.00         |                  | 113.54           | 116.80           | 0.00        | 0.00            |
| 107.00         | (21) attachments | 3953.18          | 3987.56          | 0.00        | 622.71          |
| 108.00         |                  | 55.35            | 54.62            | 0.00        | 0.00            |
| 110.00         |                  | 109.14           | 107.55           | 0.00        | 0.00            |
| 112.00         |                  | 106.90           | 105.31           | 0.00        | 0.00            |
| 114.00         |                  | 104.64           | 103.06           | 0.00        | 0.00            |
| 116.00         |                  | 102.35           | 100.82           | 0.00        | 0.00            |
| 118.00         | (12) attachments | 3401.68          | 2436.18          | 0.00        | 2829.44         |
| <b>Totals:</b> |                  | <b>29,525.14</b> | <b>36,420.44</b> | <b>0.00</b> | <b>3,452.16</b> |

## Linear Appurtenance Segment Forces (Factored)

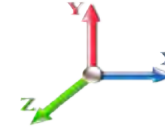
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 27

| Top Elev (ft)  | Description | Wind Exposed | Length (ft) | Ca    | Exposed Width (in) | Area (sqft) | CaAa (sqft) | Ra    | Cf Adjust Factor | qz (psf) | F X (lb)   | Dead Load (lb) |
|----------------|-------------|--------------|-------------|-------|--------------------|-------------|-------------|-------|------------------|----------|------------|----------------|
| 2.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.38           |
| 4.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.38           |
| 6.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.38           |
| 8.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.38           |
| 10.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.38           |
| 12.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.38           |
| 14.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.38           |
| 16.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.690   | 0.00       | 0.38           |
| 18.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 20.185   | 0.00       | 0.38           |
| 20.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 20.638   | 0.00       | 0.38           |
| 22.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.056   | 0.00       | 0.38           |
| 24.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.445   | 0.00       | 0.38           |
| 26.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.810   | 0.00       | 0.38           |
| 28.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 22.152   | 0.00       | 0.38           |
| 30.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 22.477   | 0.00       | 0.38           |
| 32.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 22.784   | 0.00       | 0.38           |
| 34.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.077   | 0.00       | 0.38           |
| 36.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.356   | 0.00       | 0.38           |
| 38.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.623   | 0.00       | 0.38           |
| 40.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 23.880   | 0.00       | 0.38           |
| 42.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 24.126   | 0.00       | 0.38           |
| 44.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 24.364   | 0.00       | 0.38           |
| 45.13          | 1/2"        | Yes          | 1.13        | 0.000 | 0.65               | 0.06        | 0.00        | 0.019 | 0.000            | 24.494   | 0.00       | 0.22           |
| 46.00          | 1/2"        | Yes          | 0.87        | 0.000 | 0.65               | 0.05        | 0.00        | 0.020 | 0.000            | 24.593   | 0.00       | 0.17           |
| 48.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 24.814   | 0.00       | 0.38           |
| 49.88          | 1/2"        | Yes          | 1.88        | 0.000 | 0.65               | 0.10        | 0.00        | 0.020 | 0.000            | 25.016   | 0.00       | 0.36           |
| 50.00          | 1/2"        | Yes          | 0.12        | 0.000 | 0.65               | 0.01        | 0.00        | 0.020 | 0.000            | 25.029   | 0.00       | 0.02           |
| 52.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 25.236   | 0.00       | 0.38           |
| 54.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 25.437   | 0.00       | 0.38           |
| 56.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 25.633   | 0.00       | 0.38           |
| 58.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 25.823   | 0.00       | 0.38           |
| 60.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 26.008   | 0.00       | 0.38           |
| 62.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 26.188   | 0.00       | 0.38           |
| 64.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 26.364   | 0.00       | 0.38           |
| 66.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 26.535   | 0.00       | 0.38           |
| 68.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 26.702   | 0.00       | 0.38           |
| 70.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 26.866   | 0.00       | 0.38           |
| 72.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 27.026   | 0.00       | 0.38           |
| 74.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.024 | 0.000            | 27.182   | 0.00       | 0.38           |
| 75.00          | 1/2"        | Yes          | 1.00        | 0.000 | 0.65               | 0.05        | 0.00        | 0.024 | 0.000            | 27.259   | 0.00       | 0.19           |
| <b>Totals:</b> |             |              |             |       |                    |             |             |       |                  |          | <b>0.0</b> | <b>14.4</b>    |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | <b>11/27/2018</b>       |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |

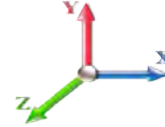


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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Iterations** 27

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -36.39           | -29.57           | 0.00                | -2685.4         | 0.00            | 2685.48                    | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.000               | 0.000                | 0.849        |
| 2.00          | -35.81           | -29.48           | 0.00                | -2626.3         | 0.00            | 2626.35                    | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.03               | -0.128              | 0.000                | 0.845        |
| 4.00          | -35.24           | -29.40           | 0.00                | -2567.3         | 0.00            | 2567.38                    | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.11               | -0.256              | 0.000                | 0.842        |
| 6.00          | -34.67           | -29.32           | 0.00                | -2508.5         | 0.00            | 2508.58                    | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.24               | -0.386              | 0.000                | 0.838        |
| 8.00          | -34.11           | -29.24           | 0.00                | -2449.9         | 0.00            | 2449.94                    | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.44               | -0.518              | 0.000                | 0.835        |
| 10.00         | -33.56           | -29.16           | 0.00                | -2391.4         | 0.00            | 2391.47                    | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.68               | -0.650              | 0.000                | 0.831        |
| 12.00         | -33.00           | -29.07           | 0.00                | -2333.1         | 0.00            | 2333.16                    | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.98               | -0.784              | 0.000                | 0.827        |
| 14.00         | -32.45           | -28.99           | 0.00                | -2275.0         | 0.00            | 2275.01                    | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 1.34               | -0.919              | 0.000                | 0.823        |
| 16.00         | -31.91           | -28.91           | 0.00                | -2217.0         | 0.00            | 2217.03                    | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 1.76               | -1.056              | 0.000                | 0.818        |
| 18.00         | -31.37           | -28.82           | 0.00                | -2159.2         | 0.00            | 2159.22                    | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 2.23               | -1.194              | 0.000                | 0.813        |
| 20.00         | -30.83           | -28.73           | 0.00                | -2101.5         | 0.00            | 2101.57                    | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 2.76               | -1.332              | 0.000                | 0.809        |
| 22.00         | -30.30           | -28.64           | 0.00                | -2044.1         | 0.00            | 2044.11                    | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 3.35               | -1.473              | 0.000                | 0.803        |
| 24.00         | -29.78           | -28.54           | 0.00                | -1986.8         | 0.00            | 1986.84                    | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 3.99               | -1.614              | 0.000                | 0.798        |
| 26.00         | -29.26           | -28.44           | 0.00                | -1929.7         | 0.00            | 1929.76                    | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 4.70               | -1.756              | 0.000                | 0.792        |
| 28.00         | -28.74           | -28.34           | 0.00                | -1872.8         | 0.00            | 1872.87                    | 3219.51       | 1609.75       | 4804.91          | 2406.03          | 5.47               | -1.900              | 0.000                | 0.788        |
| 30.00         | -28.23           | -28.24           | 0.00                | -1816.1         | 0.00            | 1816.19                    | 3178.67       | 1589.33       | 4683.16          | 2345.06          | 6.29               | -2.044              | 0.000                | 0.784        |
| 32.00         | -27.72           | -28.14           | 0.00                | -1759.7         | 0.00            | 1759.71                    | 3137.83       | 1568.91       | 4562.98          | 2284.88          | 7.18               | -2.190              | 0.000                | 0.779        |
| 34.00         | -27.22           | -28.03           | 0.00                | -1703.4         | 0.00            | 1703.44                    | 3096.99       | 1548.49       | 4444.36          | 2225.48          | 8.13               | -2.337              | 0.000                | 0.775        |
| 36.00         | -26.72           | -27.92           | 0.00                | -1647.3         | 0.00            | 1647.38                    | 3056.15       | 1528.07       | 4327.30          | 2166.87          | 9.14               | -2.484              | 0.000                | 0.769        |
| 38.00         | -26.23           | -27.81           | 0.00                | -1591.5         | 0.00            | 1591.54                    | 3015.30       | 1507.65       | 4211.81          | 2109.03          | 10.21              | -2.633              | 0.000                | 0.764        |
| 40.00         | -25.74           | -27.70           | 0.00                | -1535.9         | 0.00            | 1535.92                    | 2974.46       | 1487.23       | 4097.87          | 2051.98          | 11.35              | -2.782              | 0.000                | 0.758        |
| 42.00         | -25.25           | -27.59           | 0.00                | -1480.5         | 0.00            | 1480.52                    | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 12.55              | -2.932              | 0.000                | 0.751        |
| 44.00         | -24.79           | -27.46           | 0.00                | -1425.3         | 0.00            | 1425.35                    | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 13.81              | -3.082              | 0.000                | 0.744        |
| 45.13         | -24.53           | -27.39           | 0.00                | -1394.3         | 0.00            | 1394.32                    | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 14.55              | -3.168              | 0.000                | 0.739        |
| 46.00         | -24.19           | -27.35           | 0.00                | -1370.4         | 0.00            | 1370.49                    | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 15.13              | -3.235              | 0.000                | 0.736        |
| 48.00         | -23.45           | -27.22           | 0.00                | -1315.7         | 0.00            | 1315.78                    | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 16.52              | -3.387              | 0.000                | 0.727        |
| 49.88         | -22.81           | -27.06           | 0.00                | -1264.6         | 0.00            | 1264.62                    | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 17.88              | -3.529              | 0.000                | 0.834        |
| 50.00         | -22.74           | -27.09           | 0.00                | -1261.3         | 0.00            | 1261.37                    | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 17.97              | -3.539              | 0.000                | 0.833        |
| 52.00         | -22.32           | -26.97           | 0.00                | -1207.2         | 0.00            | 1207.20                    | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 19.49              | -3.709              | 0.000                | 0.818        |
| 54.00         | -21.90           | -26.86           | 0.00                | -1153.2         | 0.00            | 1153.25                    | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 21.08              | -3.880              | 0.000                | 0.802        |
| 56.00         | -21.49           | -26.75           | 0.00                | -1099.5         | 0.00            | 1099.53                    | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 22.74              | -4.050              | 0.000                | 0.785        |
| 58.00         | -21.08           | -26.63           | 0.00                | -1046.0         | 0.00            | 1046.04                    | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 24.47              | -4.220              | 0.000                | 0.770        |
| 60.00         | -20.68           | -26.51           | 0.00                | -992.78         | 0.00            | 992.78                     | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 26.27              | -4.388              | 0.000                | 0.754        |
| 62.00         | -20.28           | -26.40           | 0.00                | -939.75         | 0.00            | 939.75                     | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 28.15              | -4.556              | 0.000                | 0.737        |
| 64.00         | -19.89           | -26.28           | 0.00                | -886.95         | 0.00            | 886.95                     | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 30.09              | -4.721              | 0.000                | 0.718        |
| 66.00         | -19.50           | -26.16           | 0.00                | -834.40         | 0.00            | 834.40                     | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 32.10              | -4.885              | 0.000                | 0.698        |
| 68.00         | -19.12           | -26.04           | 0.00                | -782.08         | 0.00            | 782.08                     | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 34.18              | -5.047              | 0.000                | 0.677        |
| 70.00         | -18.75           | -25.92           | 0.00                | -730.00         | 0.00            | 730.00                     | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 36.33              | -5.206              | 0.000                | 0.654        |
| 72.00         | -18.38           | -25.79           | 0.00                | -678.17         | 0.00            | 678.17                     | 1984.83       | 992.42        | 2188.65          | 1095.95          | 38.54              | -5.361              | 0.000                | 0.629        |
| 74.00         | -18.03           | -25.66           | 0.00                | -626.58         | 0.00            | 626.58                     | 1950.80       | 975.40        | 2113.81          | 1058.48          | 40.82              | -5.513              | 0.000                | 0.602        |
| 75.00         | -17.81           | -25.42           | 0.00                | -600.93         | 0.00            | 600.93                     | 1933.78       | 966.89        | 2076.88          | 1039.98          | 41.98              | -5.588              | 0.000                | 0.588        |
| 76.00         | -17.62           | -25.37           | 0.00                | -575.51         | 0.00            | 575.51                     | 1916.76       | 958.38        | 2040.27          | 1021.65          | 43.15              | -5.662              | 0.000                | 0.573        |
| 78.00         | -17.27           | -25.24           | 0.00                | -524.78         | 0.00            | 524.78                     | 1882.73       | 941.37        | 1968.04          | 985.48           | 45.55              | -5.804              | 0.000                | 0.542        |
| 80.00         | -16.92           | -25.11           | 0.00                | -474.30         | 0.00            | 474.30                     | 1848.70       | 924.35        | 1897.11          | 949.96           | 48.01              | -5.940              | 0.000                | 0.509        |
| 82.00         | -16.60           | -24.97           | 0.00                | -424.08         | 0.00            | 424.08                     | 1814.66       | 907.33        | 1827.48          | 915.10           | 50.52              | -6.069              | 0.000                | 0.473        |
| 83.00         | -14.23           | -21.24           | 0.00                | -399.10         | 0.00            | 399.10                     | 1797.65       | 898.82        | 1793.15          | 897.91           | 51.80              | -6.131              | 0.000                | 0.453        |
| 84.00         | -14.08           | -21.17           | 0.00                | -377.86         | 0.00            | 377.86                     | 1780.63       | 890.31        | 1759.15          | 880.88           | 53.09              | -6.192              | 0.000                | 0.437        |
| 85.00         | -13.49           | -20.46           | 0.00                | -356.69         | 0.00            | 356.69                     | 1763.61       | 881.81        | 1725.48          | 864.02           | 54.39              | -6.251              | 0.000                | 0.421        |

## Calculated Forces

|                                     |                                   |                 |
|-------------------------------------|-----------------------------------|-----------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018      |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                 |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                 |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                 |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Page:</b> 17 |
|                                     | <b>Struct Class:</b> II           |                 |



|        |        |        |      |         |      |        |         |        |         |        |        |        |       |       |
|--------|--------|--------|------|---------|------|--------|---------|--------|---------|--------|--------|--------|-------|-------|
| 86.00  | -13.34 | -20.40 | 0.00 | -336.23 | 0.00 | 336.23 | 1746.59 | 873.30 | 1692.13 | 847.32 | 55.70  | -6.309 | 0.000 | 0.405 |
| 88.00  | -13.05 | -20.27 | 0.00 | -295.43 | 0.00 | 295.43 | 1712.56 | 856.28 | 1626.40 | 814.41 | 58.36  | -6.416 | 0.000 | 0.371 |
| 90.00  | -12.78 | -20.13 | 0.00 | -254.89 | 0.00 | 254.89 | 1678.53 | 839.26 | 1561.98 | 782.15 | 61.07  | -6.516 | 0.000 | 0.334 |
| 91.00  | -10.15 | -15.59 | 0.00 | -234.77 | 0.00 | 234.77 | 1661.51 | 830.75 | 1530.26 | 766.27 | 62.44  | -6.563 | 0.000 | 0.313 |
| 91.29  | -10.11 | -15.57 | 0.00 | -230.19 | 0.00 | 230.19 | 1656.52 | 828.26 | 1521.01 | 761.64 | 62.84  | -6.576 | 0.000 | 0.309 |
| 92.00  | -9.98  | -15.52 | 0.00 | -219.19 | 0.00 | 219.19 | 1644.49 | 822.25 | 1498.86 | 750.54 | 63.81  | -6.608 | 0.000 | 0.298 |
| 94.00  | -9.63  | -15.37 | 0.00 | -188.15 | 0.00 | 188.15 | 1610.46 | 805.23 | 1437.04 | 719.59 | 66.59  | -6.691 | 0.000 | 0.268 |
| 94.71  | -9.51  | -15.31 | 0.00 | -177.24 | 0.00 | 177.24 | 930.70  | 465.35 | 848.15  | 424.70 | 67.59  | -6.720 | 0.000 | 0.429 |
| 96.00  | -9.39  | -15.24 | 0.00 | -157.48 | 0.00 | 157.48 | 922.07  | 461.04 | 828.91  | 415.07 | 69.41  | -6.768 | 0.000 | 0.391 |
| 98.00  | -6.32  | -9.13  | 0.00 | -127.01 | 0.00 | 127.01 | 908.49  | 454.24 | 799.32  | 400.25 | 72.26  | -6.870 | 0.000 | 0.325 |
| 100.00 | -6.20  | -9.00  | 0.00 | -108.76 | 0.00 | 108.76 | 894.64  | 447.32 | 770.03  | 385.59 | 75.15  | -6.961 | 0.000 | 0.289 |
| 102.00 | -6.08  | -8.88  | 0.00 | -90.75  | 0.00 | 90.75  | 880.55  | 440.27 | 741.05  | 371.08 | 78.08  | -7.043 | 0.000 | 0.252 |
| 104.00 | -5.97  | -8.76  | 0.00 | -72.99  | 0.00 | 72.99  | 866.20  | 433.10 | 712.41  | 356.74 | 81.04  | -7.114 | 0.000 | 0.212 |
| 106.00 | -5.86  | -8.63  | 0.00 | -55.48  | 0.00 | 55.48  | 851.60  | 425.80 | 684.12  | 342.57 | 84.02  | -7.175 | 0.000 | 0.169 |
| 107.00 | -2.40  | -4.21  | 0.00 | -46.22  | 0.00 | 46.22  | 844.21  | 422.10 | 670.11  | 335.55 | 85.53  | -7.201 | 0.000 | 0.141 |
| 108.00 | -2.35  | -4.15  | 0.00 | -42.00  | 0.00 | 42.00  | 836.75  | 418.38 | 656.18  | 328.58 | 87.03  | -7.224 | 0.000 | 0.131 |
| 110.00 | -2.25  | -4.03  | 0.00 | -33.70  | 0.00 | 33.70  | 821.65  | 410.82 | 628.62  | 314.78 | 90.06  | -7.265 | 0.000 | 0.110 |
| 112.00 | -2.16  | -3.92  | 0.00 | -25.63  | 0.00 | 25.63  | 804.60  | 402.30 | 600.19  | 300.54 | 93.10  | -7.299 | 0.000 | 0.088 |
| 114.00 | -2.07  | -3.80  | 0.00 | -17.80  | 0.00 | 17.80  | 784.18  | 392.09 | 569.96  | 285.40 | 96.16  | -7.326 | 0.000 | 0.065 |
| 116.00 | -1.98  | -3.69  | 0.00 | -10.20  | 0.00 | 10.20  | 763.76  | 381.88 | 540.51  | 270.66 | 99.22  | -7.345 | 0.000 | 0.040 |
| 118.00 | 0.00   | -3.40  | 0.00 | -2.83   | 0.00 | 2.83   | 743.33  | 371.67 | 511.84  | 256.30 | 102.30 | -7.355 | 0.000 | 0.011 |

## Wind Loading - Shaft

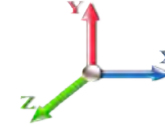
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 0.9D + 1.6W 97 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 27

| Elev (ft) | Description     | Kzt  | Kz   | qz (psf) | qzGh (psf) | C (mph-ft) | Cf    | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|-----------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|--------------------|--------------------|
| 0.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 327.29     | 0.650 | 0.000          | 0.00           | 0.000   | 0.00      | 0.0               | 0.0                | 0.0                |
| 2.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 323.80     | 0.650 | 0.000          | 2.00           | 7.280   | 4.73      | 162.0             | 0.0                | 310.9              |
| 4.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 320.30     | 0.650 | 0.000          | 2.00           | 7.202   | 4.68      | 160.3             | 0.0                | 307.5              |
| 6.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 316.81     | 0.650 | 0.000          | 2.00           | 7.124   | 4.63      | 158.5             | 0.0                | 304.1              |
| 8.00      |                 | 1.00 | 0.85 | 19.450   | 21.40      | 313.31     | 0.650 | 0.000          | 2.00           | 7.046   | 4.58      | 156.8             | 0.0                | 300.8              |
| 10.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 309.82     | 0.650 | 0.000          | 2.00           | 6.968   | 4.53      | 155.0             | 0.0                | 297.4              |
| 12.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 306.32     | 0.650 | 0.000          | 2.00           | 6.890   | 4.48      | 153.3             | 0.0                | 294.0              |
| 14.00     |                 | 1.00 | 0.85 | 19.450   | 21.40      | 302.83     | 0.650 | 0.000          | 2.00           | 6.811   | 4.43      | 151.6             | 0.0                | 290.7              |
| 16.00     |                 | 1.00 | 0.86 | 19.690   | 21.66      | 301.17     | 0.650 | 0.000          | 2.00           | 6.733   | 4.38      | 151.7             | 0.0                | 287.3              |
| 18.00     |                 | 1.00 | 0.88 | 20.185   | 22.20      | 301.37     | 0.650 | 0.000          | 2.00           | 6.655   | 4.33      | 153.7             | 0.0                | 283.9              |
| 20.00     |                 | 1.00 | 0.90 | 20.638   | 22.70      | 301.13     | 0.650 | 0.000          | 2.00           | 6.577   | 4.28      | 155.3             | 0.0                | 280.6              |
| 22.00     |                 | 1.00 | 0.92 | 21.056   | 23.16      | 300.53     | 0.650 | 0.000          | 2.00           | 6.499   | 4.22      | 156.5             | 0.0                | 277.2              |
| 24.00     |                 | 1.00 | 0.94 | 21.445   | 23.59      | 299.63     | 0.650 | 0.000          | 2.00           | 6.421   | 4.17      | 157.5             | 0.0                | 273.8              |
| 26.00     |                 | 1.00 | 0.95 | 21.810   | 23.99      | 298.46     | 0.650 | 0.000          | 2.00           | 6.342   | 4.12      | 158.2             | 0.0                | 270.5              |
| 28.00     |                 | 1.00 | 0.97 | 22.152   | 24.37      | 297.07     | 0.650 | 0.000          | 2.00           | 6.264   | 4.07      | 158.8             | 0.0                | 267.1              |
| 30.00     |                 | 1.00 | 0.98 | 22.477   | 24.72      | 295.48     | 0.650 | 0.000          | 2.00           | 6.186   | 4.02      | 159.1             | 0.0                | 263.7              |
| 32.00     |                 | 1.00 | 1.00 | 22.784   | 25.06      | 293.71     | 0.650 | 0.000          | 2.00           | 6.108   | 3.97      | 159.2             | 0.0                | 260.4              |
| 34.00     |                 | 1.00 | 1.01 | 23.077   | 25.38      | 291.78     | 0.650 | 0.000          | 2.00           | 6.030   | 3.92      | 159.2             | 0.0                | 257.0              |
| 36.00     |                 | 1.00 | 1.02 | 23.356   | 25.69      | 289.71     | 0.650 | 0.000          | 2.00           | 5.952   | 3.87      | 159.0             | 0.0                | 253.6              |
| 38.00     |                 | 1.00 | 1.03 | 23.623   | 25.99      | 287.51     | 0.650 | 0.000          | 2.00           | 5.873   | 3.82      | 158.7             | 0.0                | 250.3              |
| 40.00     |                 | 1.00 | 1.04 | 23.880   | 26.27      | 285.20     | 0.650 | 0.000          | 2.00           | 5.795   | 3.77      | 158.3             | 0.0                | 246.9              |
| 42.00     |                 | 1.00 | 1.05 | 24.126   | 26.54      | 282.77     | 0.650 | 0.000          | 2.00           | 5.717   | 3.72      | 157.8             | 0.0                | 243.5              |
| 44.00     |                 | 1.00 | 1.06 | 24.364   | 26.80      | 280.25     | 0.650 | 0.000          | 2.00           | 5.639   | 3.67      | 157.2             | 0.0                | 240.2              |
| 45.13     | Bot - Section 2 | 1.00 | 1.07 | 24.494   | 26.94      | 278.78     | 0.650 | 0.000          | 1.13           | 3.151   | 2.05      | 88.3              | 0.0                | 134.2              |
| 46.00     |                 | 1.00 | 1.07 | 24.593   | 27.05      | 277.63     | 0.650 | 0.000          | 0.87           | 2.455   | 1.60      | 69.1              | 0.0                | 189.9              |
| 48.00     |                 | 1.00 | 1.08 | 24.814   | 27.30      | 274.93     | 0.650 | 0.000          | 2.00           | 5.588   | 3.63      | 158.6             | 0.0                | 432.1              |
| 49.88     | Top - Section 1 | 1.00 | 1.09 | 25.016   | 27.52      | 272.32     | 0.650 | 0.000          | 1.88           | 5.182   | 3.37      | 148.3             | 0.0                | 400.6              |
| 50.00     |                 | 1.00 | 1.09 | 25.029   | 27.53      | 277.52     | 0.650 | 0.000          | 0.12           | 0.328   | 0.21      | 9.4               | 0.0                | 11.7               |
| 52.00     |                 | 1.00 | 1.10 | 25.236   | 27.76      | 274.68     | 0.650 | 0.000          | 2.00           | 5.432   | 3.53      | 156.8             | 0.0                | 193.1              |
| 54.00     |                 | 1.00 | 1.11 | 25.437   | 27.98      | 271.78     | 0.650 | 0.000          | 2.00           | 5.354   | 3.48      | 155.8             | 0.0                | 190.3              |
| 56.00     |                 | 1.00 | 1.12 | 25.633   | 28.20      | 268.81     | 0.650 | 0.000          | 2.00           | 5.276   | 3.43      | 154.7             | 0.0                | 187.5              |
| 58.00     |                 | 1.00 | 1.13 | 25.823   | 28.41      | 265.78     | 0.650 | 0.000          | 2.00           | 5.198   | 3.38      | 153.5             | 0.0                | 184.7              |
| 60.00     |                 | 1.00 | 1.14 | 26.008   | 28.61      | 262.68     | 0.650 | 0.000          | 2.00           | 5.119   | 3.33      | 152.3             | 0.0                | 181.9              |
| 62.00     |                 | 1.00 | 1.14 | 26.188   | 28.81      | 259.54     | 0.650 | 0.000          | 2.00           | 5.041   | 3.28      | 151.0             | 0.0                | 179.1              |
| 64.00     |                 | 1.00 | 1.15 | 26.364   | 29.00      | 256.34     | 0.650 | 0.000          | 2.00           | 4.963   | 3.23      | 149.7             | 0.0                | 176.3              |
| 66.00     |                 | 1.00 | 1.16 | 26.535   | 29.19      | 253.09     | 0.650 | 0.000          | 2.00           | 4.885   | 3.18      | 148.3             | 0.0                | 173.5              |
| 68.00     |                 | 1.00 | 1.17 | 26.702   | 29.37      | 249.79     | 0.650 | 0.000          | 2.00           | 4.807   | 3.12      | 146.8             | 0.0                | 170.6              |
| 70.00     |                 | 1.00 | 1.17 | 26.866   | 29.55      | 246.44     | 0.650 | 0.000          | 2.00           | 4.729   | 3.07      | 145.3             | 0.0                | 167.8              |
| 72.00     |                 | 1.00 | 1.18 | 27.026   | 29.73      | 243.06     | 0.650 | 0.000          | 2.00           | 4.650   | 3.02      | 143.8             | 0.0                | 165.0              |
| 74.00     |                 | 1.00 | 1.19 | 27.182   | 29.90      | 239.63     | 0.650 | 0.000          | 2.00           | 4.572   | 2.97      | 142.2             | 0.0                | 162.2              |
| 75.00     | Appurtenance(s) | 1.00 | 1.19 | 27.259   | 29.98      | 237.90     | 0.650 | 0.000          | 1.00           | 2.257   | 1.47      | 70.4              | 0.0                | 80.1               |
| 76.00     |                 | 1.00 | 1.19 | 27.335   | 30.07      | 236.16     | 0.650 | 0.000          | 1.00           | 2.237   | 1.45      | 70.0              | 0.0                | 79.4               |
| 78.00     |                 | 1.00 | 1.20 | 27.485   | 30.23      | 232.65     | 0.650 | 0.000          | 2.00           | 4.416   | 2.87      | 138.8             | 0.0                | 156.6              |
| 80.00     |                 | 1.00 | 1.21 | 27.632   | 30.39      | 229.10     | 0.650 | 0.000          | 2.00           | 4.338   | 2.82      | 137.1             | 0.0                | 153.8              |
| 82.00     |                 | 1.00 | 1.21 | 27.776   | 30.55      | 225.52     | 0.650 | 0.000          | 2.00           | 4.260   | 2.77      | 135.4             | 0.0                | 151.0              |
| 83.00     | Appurtenance(s) | 1.00 | 1.22 | 27.847   | 30.63      | 223.72     | 0.650 | 0.000          | 1.00           | 2.101   | 1.37      | 66.9              | 0.0                | 74.5               |
| 84.00     |                 | 1.00 | 1.22 | 27.917   | 30.71      | 221.91     | 0.650 | 0.000          | 1.00           | 2.081   | 1.35      | 66.5              | 0.0                | 73.7               |



## Wind Loading - Shaft

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                        |      |      |        |       |        |       |       |               |       |      |                |     |                 |
|------------------------|------|------|--------|-------|--------|-------|-------|---------------|-------|------|----------------|-----|-----------------|
| 85.00 Appurtenance(s)  | 1.00 | 1.22 | 27.987 | 30.79 | 220.09 | 0.650 | 0.000 | 1.00          | 2.061 | 1.34 | 66.0           | 0.0 | 73.0            |
| 86.00                  | 1.00 | 1.23 | 28.056 | 30.86 | 218.26 | 0.650 | 0.000 | 1.00          | 2.042 | 1.33 | 65.5           | 0.0 | 72.3            |
| 88.00                  | 1.00 | 1.23 | 28.192 | 31.01 | 214.58 | 0.650 | 0.000 | 2.00          | 4.025 | 2.62 | 129.8          | 0.0 | 142.6           |
| 90.00                  | 1.00 | 1.24 | 28.325 | 31.16 | 210.87 | 0.650 | 0.000 | 2.00          | 3.947 | 2.57 | 127.9          | 0.0 | 139.8           |
| 91.00 Appurtenance(s)  | 1.00 | 1.24 | 28.391 | 31.23 | 209.01 | 0.650 | 0.000 | 1.00          | 1.944 | 1.26 | 63.1           | 0.0 | 68.8            |
| 91.29 Bot - Section 3  | 1.00 | 1.24 | 28.411 | 31.25 | 208.46 | 0.650 | 0.000 | 0.29          | 0.567 | 0.37 | 18.4           | 0.0 | 20.1            |
| 92.00                  | 1.00 | 1.24 | 28.457 | 31.30 | 207.13 | 0.650 | 0.000 | 0.71          | 1.380 | 0.90 | 44.9           | 0.0 | 77.6            |
| 94.00                  | 1.00 | 1.25 | 28.586 | 31.44 | 203.36 | 0.650 | 0.000 | 2.00          | 3.854 | 2.51 | 126.0          | 0.0 | 216.5           |
| 94.71 Top - Section 2  | 1.00 | 1.25 | 28.631 | 31.49 | 202.02 | 0.650 | 0.000 | 0.71          | 1.349 | 0.88 | 44.2           | 0.0 | 75.8            |
| 96.00                  | 1.00 | 1.25 | 28.713 | 31.58 | 203.02 | 0.650 | 0.000 | 1.29          | 2.427 | 1.58 | 79.7           | 0.0 | 51.8            |
| 98.00 Appurtenance(s)  | 1.00 | 1.26 | 28.838 | 31.72 | 199.20 | 0.650 | 0.000 | 2.00          | 3.698 | 2.40 | 122.0          | 0.0 | 79.0            |
| 100.00                 | 1.00 | 1.27 | 28.961 | 31.86 | 195.36 | 0.650 | 0.000 | 2.00          | 3.620 | 2.35 | 119.9          | 0.0 | 77.3            |
| 102.00                 | 1.00 | 1.27 | 29.082 | 31.99 | 191.50 | 0.650 | 0.000 | 2.00          | 3.541 | 2.30 | 117.8          | 0.0 | 75.6            |
| 104.00                 | 1.00 | 1.28 | 29.201 | 32.12 | 187.61 | 0.650 | 0.000 | 2.00          | 3.463 | 2.25 | 115.7          | 0.0 | 73.9            |
| 106.00                 | 1.00 | 1.28 | 29.318 | 32.25 | 183.69 | 0.650 | 0.000 | 2.00          | 3.385 | 2.20 | 113.5          | 0.0 | 72.2            |
| 107.00 Appurtenance(s) | 1.00 | 1.28 | 29.376 | 32.31 | 181.72 | 0.650 | 0.000 | 1.00          | 1.663 | 1.08 | 55.9           | 0.0 | 35.5            |
| 108.00                 | 1.00 | 1.29 | 29.434 | 32.38 | 179.75 | 0.650 | 0.000 | 1.00          | 1.644 | 1.07 | 55.3           | 0.0 | 35.1            |
| 110.00                 | 1.00 | 1.29 | 29.548 | 32.50 | 175.79 | 0.650 | 0.000 | 2.00          | 3.229 | 2.10 | 109.1          | 0.0 | 68.9            |
| 112.00                 | 1.00 | 1.30 | 29.660 | 32.63 | 171.81 | 0.650 | 0.000 | 2.00          | 3.151 | 2.05 | 106.9          | 0.0 | 67.2            |
| 114.00                 | 1.00 | 1.30 | 29.771 | 32.75 | 167.81 | 0.650 | 0.000 | 2.00          | 3.072 | 2.00 | 104.6          | 0.0 | 65.5            |
| 116.00                 | 1.00 | 1.31 | 29.880 | 32.87 | 163.78 | 0.650 | 0.000 | 2.00          | 2.994 | 1.95 | 102.4          | 0.0 | 63.8            |
| 118.00 Appurtenance(s) | 1.00 | 1.31 | 29.988 | 32.99 | 159.74 | 0.650 | 0.000 | 2.00          | 2.916 | 1.90 | 100.0          | 0.0 | 62.1            |
| <b>Totals:</b>         |      |      |        |       |        |       |       | <b>118.00</b> |       |      | <b>8,405.7</b> |     | <b>11,845.3</b> |



## Discrete Appurtenance Forces

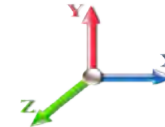
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 0.9D + 1.6W 97 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 27

| No. | Elev (ft) | Description              | Qty | qz (psf) | qzGh (psf) | CaAa x Ka | Ka   | Total CaAa (sf) | Dead Load (lb) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) |
|-----|-----------|--------------------------|-----|----------|------------|-----------|------|-----------------|----------------|----------------|---------------|--------------|---------------|---------------|
| 1   | 118.00    | ANT150D                  | 1   | 30.063   | 33.070     | 1.00      | 1.00 | 1.00            | 5.40           | 0.000          | 1.420         | 52.91        | 0.00          | 75.13         |
| 2   | 118.00    | DB222                    | 1   | 30.605   | 33.666     | 1.00      | 1.00 | 2.25            | 14.40          | 0.000          | 12.000        | 121.20       | 0.00          | 1454.37       |
| 3   | 118.00    | Low Profile Platform     | 1   | 29.988   | 32.986     | 1.00      | 1.00 | 28.47           | 1620.00        | 0.000          | 0.000         | 1502.60      | 0.00          | 0.00          |
| 4   | 118.00    | DB844H90E-XY             | 9   | 30.030   | 33.033     | 1.12      | 1.00 | 30.74           | 113.40         | 0.000          | 0.800         | 1624.93      | 0.00          | 1299.94       |
| 5   | 107.00    | ACU-A20-N                | 4   | 29.376   | 32.314     | 0.54      | 0.80 | 0.30            | 3.60           | 0.000          | 0.000         | 15.52        | 0.00          | 0.00          |
| 6   | 107.00    | 1900 MHz 4X45 RRH        | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 4.36            | 162.00         | 0.000          | 0.000         | 225.30       | 0.00          | 0.00          |
| 7   | 107.00    | 800 MHz RRU Filter       | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 3.86            | 172.80         | 0.000          | 0.000         | 199.53       | 0.00          | 0.00          |
| 8   | 107.00    | TD-RRH8x20-25            | 3   | 29.376   | 32.314     | 0.54      | 0.80 | 6.51            | 189.00         | 0.000          | 0.000         | 336.71       | 0.00          | 0.00          |
| 9   | 107.00    | Low Profile Platform     | 1   | 29.376   | 32.314     | 1.00      | 1.00 | 27.33           | 1800.00        | 0.000          | 0.000         | 1413.02      | 0.00          | 0.00          |
| 10  | 107.00    | APXVSPP18-C-A20          | 3   | 29.376   | 32.314     | 0.66      | 0.80 | 15.98           | 153.90         | 0.000          | 0.000         | 825.99       | 0.00          | 0.00          |
| 11  | 107.00    | APXV9TM14-ALU-120        | 3   | 29.434   | 32.377     | 0.63      | 0.80 | 12.02           | 151.20         | 0.000          | 1.000         | 622.71       | 0.00          | 622.71        |
| 12  | 107.00    | Universal Ring Mount     | 1   | 29.376   | 32.314     | 1.00      | 1.00 | 5.00            | 315.00         | 0.000          | 0.000         | 258.51       | 0.00          | 0.00          |
| 13  | 98.00     | Alcatel Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 5.63            | 162.00         | 0.000          | 0.000         | 285.65       | 0.00          | 0.00          |
| 14  | 98.00     | RFS APL868013            | 2   | 28.838   | 31.722     | 0.92      | 0.80 | 5.27            | 11.34          | 0.000          | 0.000         | 267.32       | 0.00          | 0.00          |
| 15  | 98.00     | Andrew SBNHH-1D85C       | 6   | 28.838   | 31.722     | 0.67      | 0.80 | 45.92           | 267.84         | 0.000          | 0.000         | 2330.88      | 0.00          | 0.00          |
| 16  | 98.00     | Rfs Celwave              | 2   | 28.838   | 31.722     | 0.54      | 0.80 | 5.15            | 34.02          | 0.000          | 0.000         | 261.16       | 0.00          | 0.00          |
| 17  | 98.00     | Alcatel Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 4.08            | 153.36         | 0.000          | 0.000         | 207.30       | 0.00          | 0.00          |
| 18  | 98.00     | Alcatel-Lucent           | 3   | 28.838   | 31.722     | 0.54      | 0.80 | 3.02            | 124.20         | 0.000          | 0.000         | 153.43       | 0.00          | 0.00          |
| 19  | 98.00     | Andrew DB846H80E-SX      | 4   | 28.838   | 31.722     | 0.90      | 0.80 | 17.96           | 57.60          | 0.000          | 0.000         | 911.34       | 0.00          | 0.00          |
| 20  | 98.00     | Low Profile Platform     | 1   | 28.838   | 31.722     | 1.00      | 1.00 | 23.10           | 1890.00        | 0.000          | 0.000         | 1172.43      | 0.00          | 0.00          |
| 21  | 91.00     | DC6-48-60-18-8F          | 2   | 28.391   | 31.231     | 1.00      | 1.00 | 1.84            | 57.24          | 0.000          | 0.000         | 91.94        | 0.00          | 0.00          |
| 22  | 91.00     | RRUS-11                  | 3   | 28.391   | 31.231     | 0.54      | 0.80 | 7.11            | 148.50         | 0.000          | 0.000         | 355.15       | 0.00          | 0.00          |
| 23  | 91.00     | LGP21401                 | 6   | 28.391   | 31.231     | 0.54      | 0.80 | 4.15            | 76.14          | 0.000          | 0.000         | 207.30       | 0.00          | 0.00          |
| 24  | 91.00     | P65-16-XLH-RR            | 3   | 28.391   | 31.231     | 0.60      | 0.80 | 14.69           | 143.10         | 0.000          | 0.000         | 733.94       | 0.00          | 0.00          |
| 25  | 91.00     | 7770.00                  | 3   | 28.391   | 31.231     | 0.58      | 0.80 | 9.64            | 94.50          | 0.000          | 0.000         | 481.50       | 0.00          | 0.00          |
| 26  | 91.00     | Low Profile Platform     | 1   | 28.391   | 31.231     | 1.00      | 1.00 | 17.46           | 1214.10        | 0.000          | 0.000         | 872.46       | 0.00          | 0.00          |
| 27  | 91.00     | RRUS 32 B30              | 3   | 28.391   | 31.231     | 0.65      | 0.80 | 5.33            | 162.00         | 0.000          | 0.000         | 266.16       | 0.00          | 0.00          |
| 28  | 91.00     | RRUS 32 B2               | 3   | 28.391   | 31.231     | 0.65      | 0.80 | 5.33            | 143.10         | 0.000          | 0.000         | 266.16       | 0.00          | 0.00          |
| 29  | 91.00     | QS66512-2                | 3   | 28.391   | 31.231     | 0.72      | 0.80 | 17.56           | 207.90         | 0.000          | 0.000         | 877.49       | 0.00          | 0.00          |
| 30  | 85.00     | V-brace kit              | 1   | 27.987   | 30.785     | 1.00      | 1.00 | 12.00           | 378.99         | 0.000          | 0.000         | 591.08       | 0.00          | 0.00          |
| 31  | 83.00     | Commscope -              | 3   | 27.847   | 30.631     | 0.64      | 0.80 | 22.02           | 134.46         | 0.000          | 0.000         | 1079.32      | 0.00          | 0.00          |
| 32  | 83.00     | RFS - APXV18-209014      | 3   | 27.847   | 30.631     | 0.59      | 0.80 | 6.36            | 50.49          | 0.000          | 0.000         | 311.61       | 0.00          | 0.00          |
| 33  | 83.00     | Kathrein - 782 11054 -   | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 0.24            | 4.86           | 0.000          | 0.000         | 11.82        | 0.00          | 0.00          |
| 34  | 83.00     | S20057A1                 | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 1.32            | 29.70          | 0.000          | 0.000         | 64.62        | 0.00          | 0.00          |
| 35  | 83.00     | RFS - ATMAA1412D-1A2     | 3   | 27.847   | 30.631     | 0.54      | 0.80 | 1.88            | 35.10          | 0.000          | 0.000         | 92.21        | 0.00          | 0.00          |
| 36  | 83.00     | Fastback - IBR 1300      | 1   | 27.847   | 30.631     | 1.00      | 1.00 | 0.67            | 8.01           | 0.000          | 0.000         | 32.84        | 0.00          | 0.00          |
| 37  | 83.00     | Platform w/ Handrail kit | 1   | 27.847   | 30.631     | 1.00      | 1.00 | 37.16           | 1681.38        | 0.000          | 0.000         | 1821.22      | 0.00          | 0.00          |
| 38  | 75.00     | Standoff Mount           | 1   | 27.259   | 29.985     | 1.00      | 1.00 | 2.63            | 36.00          | 0.000          | 0.000         | 126.18       | 0.00          | 0.00          |
| 39  | 75.00     | GPS                      | 1   | 27.259   | 29.985     | 1.00      | 1.00 | 1.00            | 9.00           | 0.000          | 0.000         | 47.98        | 0.00          | 0.00          |

**Totals:** 12,015.63

21,119.41

## Total Applied Force Summary

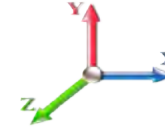
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 0.9D + 1.6W 97 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 27

| Elev<br>(ft) | Description      | Lateral<br>FX (-)<br>(lb) | Axial<br>FY (-)<br>(lb) | Torsion<br>MY<br>(lb-ft) | Moment<br>MZ<br>(lb-ft) |
|--------------|------------------|---------------------------|-------------------------|--------------------------|-------------------------|
| 0.00         |                  | 0.00                      | 0.00                    | 0.00                     | 0.00                    |
| 2.00         |                  | 162.00                    | 381.98                  | 0.00                     | 0.00                    |
| 4.00         |                  | 160.26                    | 378.61                  | 0.00                     | 0.00                    |
| 6.00         |                  | 158.52                    | 375.24                  | 0.00                     | 0.00                    |
| 8.00         |                  | 156.78                    | 371.88                  | 0.00                     | 0.00                    |
| 10.00        |                  | 155.04                    | 368.51                  | 0.00                     | 0.00                    |
| 12.00        |                  | 153.30                    | 365.14                  | 0.00                     | 0.00                    |
| 14.00        |                  | 151.56                    | 361.77                  | 0.00                     | 0.00                    |
| 16.00        |                  | 151.67                    | 358.41                  | 0.00                     | 0.00                    |
| 18.00        |                  | 153.68                    | 355.04                  | 0.00                     | 0.00                    |
| 20.00        |                  | 155.28                    | 351.67                  | 0.00                     | 0.00                    |
| 22.00        |                  | 156.54                    | 348.31                  | 0.00                     | 0.00                    |
| 24.00        |                  | 157.52                    | 344.94                  | 0.00                     | 0.00                    |
| 26.00        |                  | 158.25                    | 341.57                  | 0.00                     | 0.00                    |
| 28.00        |                  | 158.75                    | 338.21                  | 0.00                     | 0.00                    |
| 30.00        |                  | 159.07                    | 334.84                  | 0.00                     | 0.00                    |
| 32.00        |                  | 159.20                    | 331.47                  | 0.00                     | 0.00                    |
| 34.00        |                  | 159.19                    | 328.10                  | 0.00                     | 0.00                    |
| 36.00        |                  | 159.02                    | 324.74                  | 0.00                     | 0.00                    |
| 38.00        |                  | 158.73                    | 321.37                  | 0.00                     | 0.00                    |
| 40.00        |                  | 158.32                    | 318.00                  | 0.00                     | 0.00                    |
| 42.00        |                  | 157.80                    | 314.64                  | 0.00                     | 0.00                    |
| 44.00        |                  | 157.17                    | 311.27                  | 0.00                     | 0.00                    |
| 45.13        |                  | 88.31                     | 174.38                  | 0.00                     | 0.00                    |
| 46.00        |                  | 69.08                     | 220.84                  | 0.00                     | 0.00                    |
| 48.00        |                  | 158.64                    | 503.24                  | 0.00                     | 0.00                    |
| 49.88        |                  | 148.30                    | 467.42                  | 0.00                     | 0.00                    |
| 50.00        |                  | 9.40                      | 15.94                   | 0.00                     | 0.00                    |
| 52.00        |                  | 156.82                    | 264.19                  | 0.00                     | 0.00                    |
| 54.00        |                  | 155.80                    | 261.39                  | 0.00                     | 0.00                    |
| 56.00        |                  | 154.71                    | 258.58                  | 0.00                     | 0.00                    |
| 58.00        |                  | 153.54                    | 255.78                  | 0.00                     | 0.00                    |
| 60.00        |                  | 152.32                    | 252.97                  | 0.00                     | 0.00                    |
| 62.00        |                  | 151.03                    | 250.16                  | 0.00                     | 0.00                    |
| 64.00        |                  | 149.69                    | 247.36                  | 0.00                     | 0.00                    |
| 66.00        |                  | 148.29                    | 244.55                  | 0.00                     | 0.00                    |
| 68.00        |                  | 146.83                    | 241.75                  | 0.00                     | 0.00                    |
| 70.00        |                  | 145.33                    | 238.94                  | 0.00                     | 0.00                    |
| 72.00        |                  | 143.78                    | 236.14                  | 0.00                     | 0.00                    |
| 74.00        |                  | 142.18                    | 233.33                  | 0.00                     | 0.00                    |
| 75.00        | (2) attachments  | 244.53                    | 160.61                  | 0.00                     | 0.00                    |
| 76.00        |                  | 69.96                     | 114.77                  | 0.00                     | 0.00                    |
| 78.00        |                  | 138.85                    | 227.43                  | 0.00                     | 0.00                    |
| 80.00        |                  | 137.12                    | 224.62                  | 0.00                     | 0.00                    |
| 82.00        |                  | 135.35                    | 221.82                  | 0.00                     | 0.00                    |
| 83.00        | (17) attachments | 3480.55                   | 2053.86                 | 0.00                     | 0.00                    |
| 84.00        |                  | 66.46                     | 101.81                  | 0.00                     | 0.00                    |

## Total Applied Force Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                  |                  |                  |             |                 |
|----------------|------------------|------------------|------------------|-------------|-----------------|
| 85.00          | (1) attachments  | 657.08           | 480.10           | 0.00        | 0.00            |
| 86.00          |                  | 65.54            | 100.41           | 0.00        | 0.00            |
| 88.00          |                  | 129.82           | 198.71           | 0.00        | 0.00            |
| 90.00          |                  | 127.90           | 195.91           | 0.00        | 0.00            |
| 91.00          | (27) attachments | 4215.26          | 2343.48          | 0.00        | 0.00            |
| 91.29          |                  | 18.41            | 26.19            | 0.00        | 0.00            |
| 92.00          |                  | 44.94            | 92.34            | 0.00        | 0.00            |
| 94.00          |                  | 126.04           | 258.29           | 0.00        | 0.00            |
| 94.71          |                  | 44.20            | 90.61            | 0.00        | 0.00            |
| 96.00          |                  | 79.71            | 78.78            | 0.00        | 0.00            |
| 98.00          | (24) attachments | 5711.51          | 2821.11          | 0.00        | 0.00            |
| 100.00         |                  | 119.92           | 92.65            | 0.00        | 0.00            |
| 102.00         |                  | 117.82           | 90.96            | 0.00        | 0.00            |
| 104.00         |                  | 115.69           | 89.28            | 0.00        | 0.00            |
| 106.00         |                  | 113.54           | 87.60            | 0.00        | 0.00            |
| 107.00         | (21) attachments | 3953.18          | 2990.67          | 0.00        | 622.71          |
| 108.00         |                  | 55.35            | 40.96            | 0.00        | 0.00            |
| 110.00         |                  | 109.14           | 80.67            | 0.00        | 0.00            |
| 112.00         |                  | 106.90           | 78.98            | 0.00        | 0.00            |
| 114.00         |                  | 104.64           | 77.30            | 0.00        | 0.00            |
| 116.00         |                  | 102.35           | 75.61            | 0.00        | 0.00            |
| 118.00         | (12) attachments | 3401.68          | 1827.13          | 0.00        | 2829.44         |
| <b>Totals:</b> |                  | <b>29,525.14</b> | <b>27,315.33</b> | <b>0.00</b> | <b>3,452.16</b> |

## Linear Appurtenance Segment Forces (Factored)

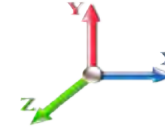
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 0.9D + 1.6W 97 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 27

| Top Elev (ft)  | Description | Wind Exposed | Length (ft) | Ca    | Exposed Width (in) | Area (sqft) | CaAa (sqft) | Ra    | Cf Adjust Factor | qz (psf) | F X (lb)   | Dead Load (lb) |
|----------------|-------------|--------------|-------------|-------|--------------------|-------------|-------------|-------|------------------|----------|------------|----------------|
| 2.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.29           |
| 4.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.29           |
| 6.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.29           |
| 8.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 19.450   | 0.00       | 0.29           |
| 10.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.29           |
| 12.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.29           |
| 14.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.450   | 0.00       | 0.29           |
| 16.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 19.690   | 0.00       | 0.29           |
| 18.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 20.185   | 0.00       | 0.29           |
| 20.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 20.638   | 0.00       | 0.29           |
| 22.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.056   | 0.00       | 0.29           |
| 24.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.445   | 0.00       | 0.29           |
| 26.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 21.810   | 0.00       | 0.29           |
| 28.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 22.152   | 0.00       | 0.29           |
| 30.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 22.477   | 0.00       | 0.29           |
| 32.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 22.784   | 0.00       | 0.29           |
| 34.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.077   | 0.00       | 0.29           |
| 36.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.356   | 0.00       | 0.29           |
| 38.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 23.623   | 0.00       | 0.29           |
| 40.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 23.880   | 0.00       | 0.29           |
| 42.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 24.126   | 0.00       | 0.29           |
| 44.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 24.364   | 0.00       | 0.29           |
| 45.13          | 1/2"        | Yes          | 1.13        | 0.000 | 0.65               | 0.06        | 0.00        | 0.019 | 0.000            | 24.494   | 0.00       | 0.16           |
| 46.00          | 1/2"        | Yes          | 0.87        | 0.000 | 0.65               | 0.05        | 0.00        | 0.020 | 0.000            | 24.593   | 0.00       | 0.13           |
| 48.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 24.814   | 0.00       | 0.29           |
| 49.88          | 1/2"        | Yes          | 1.88        | 0.000 | 0.65               | 0.10        | 0.00        | 0.020 | 0.000            | 25.016   | 0.00       | 0.27           |
| 50.00          | 1/2"        | Yes          | 0.12        | 0.000 | 0.65               | 0.01        | 0.00        | 0.020 | 0.000            | 25.029   | 0.00       | 0.02           |
| 52.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 25.236   | 0.00       | 0.29           |
| 54.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 25.437   | 0.00       | 0.29           |
| 56.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 25.633   | 0.00       | 0.29           |
| 58.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 25.823   | 0.00       | 0.29           |
| 60.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 26.008   | 0.00       | 0.29           |
| 62.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 26.188   | 0.00       | 0.29           |
| 64.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 26.364   | 0.00       | 0.29           |
| 66.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 26.535   | 0.00       | 0.29           |
| 68.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 26.702   | 0.00       | 0.29           |
| 70.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 26.866   | 0.00       | 0.29           |
| 72.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 27.026   | 0.00       | 0.29           |
| 74.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.024 | 0.000            | 27.182   | 0.00       | 0.29           |
| 75.00          | 1/2"        | Yes          | 1.00        | 0.000 | 0.65               | 0.05        | 0.00        | 0.024 | 0.000            | 27.259   | 0.00       | 0.14           |
| <b>Totals:</b> |             |              |             |       |                    |             |             |       |                  |          | <b>0.0</b> | <b>10.8</b>    |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |

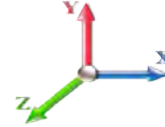


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**Load Case:** 0.9D + 1.6W 97 mph Wind

**Iterations** 27

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -27.28           | -29.56           | 0.00                | -2649.2         | 0.00            | 2649.26                    | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.000               | 0.000                | 0.835        |
| 2.00          | -26.83           | -29.45           | 0.00                | -2590.1         | 0.00            | 2590.15                    | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.03               | -0.126              | 0.000                | 0.831        |
| 4.00          | -26.39           | -29.35           | 0.00                | -2531.2         | 0.00            | 2531.25                    | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.11               | -0.253              | 0.000                | 0.828        |
| 6.00          | -25.95           | -29.25           | 0.00                | -2472.5         | 0.00            | 2472.55                    | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.24               | -0.381              | 0.000                | 0.824        |
| 8.00          | -25.51           | -29.15           | 0.00                | -2414.0         | 0.00            | 2414.06                    | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.43               | -0.510              | 0.000                | 0.820        |
| 10.00         | -25.08           | -29.04           | 0.00                | -2355.7         | 0.00            | 2355.76                    | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.67               | -0.641              | 0.000                | 0.816        |
| 12.00         | -24.65           | -28.94           | 0.00                | -2297.6         | 0.00            | 2297.68                    | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.97               | -0.773              | 0.000                | 0.812        |
| 14.00         | -24.22           | -28.84           | 0.00                | -2239.7         | 0.00            | 2239.79                    | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 1.32               | -0.906              | 0.000                | 0.808        |
| 16.00         | -23.80           | -28.74           | 0.00                | -2182.1         | 0.00            | 2182.10                    | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 1.73               | -1.040              | 0.000                | 0.803        |
| 18.00         | -23.38           | -28.64           | 0.00                | -2124.6         | 0.00            | 2124.62                    | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 2.20               | -1.176              | 0.000                | 0.798        |
| 20.00         | -22.96           | -28.53           | 0.00                | -2067.3         | 0.00            | 2067.35                    | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 2.72               | -1.313              | 0.000                | 0.793        |
| 22.00         | -22.55           | -28.42           | 0.00                | -2010.2         | 0.00            | 2010.29                    | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 3.30               | -1.450              | 0.000                | 0.788        |
| 24.00         | -22.14           | -28.31           | 0.00                | -1953.4         | 0.00            | 1953.45                    | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 3.94               | -1.589              | 0.000                | 0.782        |
| 26.00         | -21.74           | -28.19           | 0.00                | -1896.8         | 0.00            | 1896.84                    | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 4.63               | -1.729              | 0.000                | 0.776        |
| 28.00         | -21.33           | -28.08           | 0.00                | -1840.4         | 0.00            | 1840.46                    | 3219.51       | 1609.75       | 4804.91          | 2406.03          | 5.39               | -1.870              | 0.000                | 0.772        |
| 30.00         | -20.94           | -27.96           | 0.00                | -1784.3         | 0.00            | 1784.31                    | 3178.67       | 1589.33       | 4683.16          | 2345.06          | 6.20               | -2.012              | 0.000                | 0.768        |
| 32.00         | -20.54           | -27.84           | 0.00                | -1728.3         | 0.00            | 1728.39                    | 3137.83       | 1568.91       | 4562.98          | 2284.88          | 7.07               | -2.155              | 0.000                | 0.763        |
| 34.00         | -20.15           | -27.72           | 0.00                | -1672.7         | 0.00            | 1672.72                    | 3096.99       | 1548.49       | 4444.36          | 2225.48          | 8.01               | -2.299              | 0.000                | 0.758        |
| 36.00         | -19.76           | -27.59           | 0.00                | -1617.2         | 0.00            | 1617.29                    | 3056.15       | 1528.07       | 4327.30          | 2166.87          | 9.00               | -2.444              | 0.000                | 0.753        |
| 38.00         | -19.38           | -27.47           | 0.00                | -1562.1         | 0.00            | 1562.10                    | 3015.30       | 1507.65       | 4211.81          | 2109.03          | 10.06              | -2.590              | 0.000                | 0.747        |
| 40.00         | -19.00           | -27.35           | 0.00                | -1507.1         | 0.00            | 1507.16                    | 2974.46       | 1487.23       | 4097.87          | 2051.98          | 11.18              | -2.737              | 0.000                | 0.741        |
| 42.00         | -18.62           | -27.22           | 0.00                | -1452.4         | 0.00            | 1452.46                    | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 12.35              | -2.884              | 0.000                | 0.734        |
| 44.00         | -18.26           | -27.09           | 0.00                | -1398.0         | 0.00            | 1398.02                    | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 13.59              | -3.031              | 0.000                | 0.727        |
| 45.13         | -18.06           | -27.01           | 0.00                | -1367.4         | 0.00            | 1367.41                    | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 14.32              | -3.116              | 0.000                | 0.723        |
| 46.00         | -17.79           | -26.96           | 0.00                | -1343.9         | 0.00            | 1343.91                    | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 14.89              | -3.181              | 0.000                | 0.719        |
| 48.00         | -17.23           | -26.82           | 0.00                | -1289.9         | 0.00            | 1289.99                    | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 16.26              | -3.330              | 0.000                | 0.711        |
| 49.88         | -16.74           | -26.67           | 0.00                | -1239.5         | 0.00            | 1239.56                    | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 17.60              | -3.470              | 0.000                | 0.815        |
| 50.00         | -16.68           | -26.68           | 0.00                | -1236.3         | 0.00            | 1236.36                    | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 17.68              | -3.479              | 0.000                | 0.814        |
| 52.00         | -16.35           | -26.56           | 0.00                | -1183.0         | 0.00            | 1183.00                    | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 19.18              | -3.646              | 0.000                | 0.799        |
| 54.00         | -16.02           | -26.43           | 0.00                | -1129.8         | 0.00            | 1129.89                    | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 20.74              | -3.813              | 0.000                | 0.783        |
| 56.00         | -15.70           | -26.31           | 0.00                | -1077.0         | 0.00            | 1077.02                    | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 22.37              | -3.980              | 0.000                | 0.767        |
| 58.00         | -15.38           | -26.18           | 0.00                | -1024.4         | 0.00            | 1024.41                    | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 24.08              | -4.146              | 0.000                | 0.752        |
| 60.00         | -15.06           | -26.05           | 0.00                | -972.06         | 0.00            | 972.06                     | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 25.85              | -4.311              | 0.000                | 0.736        |
| 62.00         | -14.75           | -25.92           | 0.00                | -919.95         | 0.00            | 919.95                     | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 27.69              | -4.475              | 0.000                | 0.719        |
| 64.00         | -14.44           | -25.80           | 0.00                | -868.11         | 0.00            | 868.11                     | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 29.59              | -4.637              | 0.000                | 0.701        |
| 66.00         | -14.14           | -25.67           | 0.00                | -816.52         | 0.00            | 816.52                     | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 31.57              | -4.798              | 0.000                | 0.681        |
| 68.00         | -13.84           | -25.54           | 0.00                | -765.18         | 0.00            | 765.18                     | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 33.61              | -4.956              | 0.000                | 0.660        |
| 70.00         | -13.55           | -25.41           | 0.00                | -714.11         | 0.00            | 714.11                     | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 35.72              | -5.111              | 0.000                | 0.637        |
| 72.00         | -13.26           | -25.28           | 0.00                | -663.29         | 0.00            | 663.29                     | 1984.83       | 992.42        | 2188.65          | 1095.95          | 37.89              | -5.263              | 0.000                | 0.613        |
| 74.00         | -12.99           | -25.14           | 0.00                | -612.73         | 0.00            | 612.73                     | 1950.80       | 975.40        | 2113.81          | 1058.48          | 40.13              | -5.411              | 0.000                | 0.586        |
| 75.00         | -12.82           | -24.90           | 0.00                | -587.59         | 0.00            | 587.59                     | 1933.78       | 966.89        | 2076.88          | 1039.98          | 41.27              | -5.485              | 0.000                | 0.572        |
| 76.00         | -12.67           | -24.84           | 0.00                | -562.69         | 0.00            | 562.69                     | 1916.76       | 958.38        | 2040.27          | 1021.65          | 42.42              | -5.557              | 0.000                | 0.558        |
| 78.00         | -12.40           | -24.71           | 0.00                | -513.01         | 0.00            | 513.01                     | 1882.73       | 941.37        | 1968.04          | 985.48           | 44.78              | -5.696              | 0.000                | 0.528        |
| 80.00         | -12.13           | -24.58           | 0.00                | -463.59         | 0.00            | 463.59                     | 1848.70       | 924.35        | 1897.11          | 949.96           | 47.19              | -5.829              | 0.000                | 0.495        |
| 82.00         | -11.89           | -24.44           | 0.00                | -414.43         | 0.00            | 414.43                     | 1814.66       | 907.33        | 1827.48          | 915.10           | 49.65              | -5.955              | 0.000                | 0.460        |
| 83.00         | -10.19           | -20.78           | 0.00                | -389.99         | 0.00            | 389.99                     | 1797.65       | 898.82        | 1793.15          | 897.91           | 50.91              | -6.016              | 0.000                | 0.441        |
| 84.00         | -10.07           | -20.71           | 0.00                | -369.22         | 0.00            | 369.22                     | 1780.63       | 890.31        | 1759.15          | 880.88           | 52.17              | -6.075              | 0.000                | 0.425        |
| 85.00         | -9.64            | -20.01           | 0.00                | -348.51         | 0.00            | 348.51                     | 1763.61       | 881.81        | 1725.48          | 864.02           | 53.45              | -6.133              | 0.000                | 0.409        |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|        |       |        |      |         |      |        |         |        |         |        |        |        |       |       |
|--------|-------|--------|------|---------|------|--------|---------|--------|---------|--------|--------|--------|-------|-------|
| 86.00  | -9.52 | -19.95 | 0.00 | -328.49 | 0.00 | 328.49 | 1746.59 | 873.30 | 1692.13 | 847.32 | 54.74  | -6.189 | 0.000 | 0.394 |
| 88.00  | -9.30 | -19.82 | 0.00 | -288.59 | 0.00 | 288.59 | 1712.56 | 856.28 | 1626.40 | 814.41 | 57.35  | -6.294 | 0.000 | 0.360 |
| 90.00  | -9.10 | -19.68 | 0.00 | -248.95 | 0.00 | 248.95 | 1678.53 | 839.26 | 1561.98 | 782.15 | 60.00  | -6.392 | 0.000 | 0.324 |
| 91.00  | -7.23 | -15.23 | 0.00 | -229.27 | 0.00 | 229.27 | 1661.51 | 830.75 | 1530.26 | 766.27 | 61.34  | -6.438 | 0.000 | 0.304 |
| 91.29  | -7.20 | -15.21 | 0.00 | -224.81 | 0.00 | 224.81 | 1656.52 | 828.26 | 1521.01 | 761.64 | 61.74  | -6.451 | 0.000 | 0.300 |
| 92.00  | -7.10 | -15.17 | 0.00 | -214.05 | 0.00 | 214.05 | 1644.49 | 822.25 | 1498.86 | 750.54 | 62.69  | -6.482 | 0.000 | 0.290 |
| 94.00  | -6.85 | -15.02 | 0.00 | -183.72 | 0.00 | 183.72 | 1610.46 | 805.23 | 1437.04 | 719.59 | 65.42  | -6.563 | 0.000 | 0.260 |
| 94.71  | -6.75 | -14.97 | 0.00 | -173.06 | 0.00 | 173.06 | 930.70  | 465.35 | 848.15  | 424.70 | 66.40  | -6.591 | 0.000 | 0.416 |
| 96.00  | -6.66 | -14.89 | 0.00 | -153.75 | 0.00 | 153.75 | 922.07  | 461.04 | 828.91  | 415.07 | 68.18  | -6.638 | 0.000 | 0.379 |
| 98.00  | -4.51 | -8.90  | 0.00 | -123.97 | 0.00 | 123.97 | 908.49  | 454.24 | 799.32  | 400.25 | 70.98  | -6.738 | 0.000 | 0.315 |
| 100.00 | -4.42 | -8.77  | 0.00 | -106.18 | 0.00 | 106.18 | 894.64  | 447.32 | 770.03  | 385.59 | 73.81  | -6.826 | 0.000 | 0.281 |
| 102.00 | -4.33 | -8.65  | 0.00 | -88.63  | 0.00 | 88.63  | 880.55  | 440.27 | 741.05  | 371.08 | 76.68  | -6.906 | 0.000 | 0.244 |
| 104.00 | -4.25 | -8.53  | 0.00 | -71.33  | 0.00 | 71.33  | 866.20  | 433.10 | 712.41  | 356.74 | 79.59  | -6.976 | 0.000 | 0.205 |
| 106.00 | -4.17 | -8.41  | 0.00 | -54.28  | 0.00 | 54.28  | 851.60  | 425.80 | 684.12  | 342.57 | 82.52  | -7.035 | 0.000 | 0.164 |
| 107.00 | -1.69 | -4.12  | 0.00 | -45.25  | 0.00 | 45.25  | 844.21  | 422.10 | 670.11  | 335.55 | 83.99  | -7.060 | 0.000 | 0.137 |
| 108.00 | -1.65 | -4.06  | 0.00 | -41.13  | 0.00 | 41.13  | 836.75  | 418.38 | 656.18  | 328.58 | 85.47  | -7.083 | 0.000 | 0.127 |
| 110.00 | -1.58 | -3.94  | 0.00 | -33.01  | 0.00 | 33.01  | 821.65  | 410.82 | 628.62  | 314.78 | 88.43  | -7.123 | 0.000 | 0.107 |
| 112.00 | -1.51 | -3.83  | 0.00 | -25.12  | 0.00 | 25.12  | 804.60  | 402.30 | 600.19  | 300.54 | 91.42  | -7.157 | 0.000 | 0.086 |
| 114.00 | -1.45 | -3.71  | 0.00 | -17.47  | 0.00 | 17.47  | 784.18  | 392.09 | 569.96  | 285.40 | 94.42  | -7.184 | 0.000 | 0.063 |
| 116.00 | -1.39 | -3.60  | 0.00 | -10.04  | 0.00 | 10.04  | 763.76  | 381.88 | 540.51  | 270.66 | 97.42  | -7.202 | 0.000 | 0.039 |
| 118.00 | 0.00  | -3.40  | 0.00 | -2.83   | 0.00 | 2.83   | 743.33  | 371.67 | 511.84  | 256.30 | 100.43 | -7.212 | 0.000 | 0.011 |

## Wind Loading - Shaft

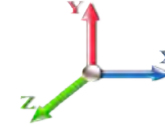
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 26

| Elev<br>(ft) | Description     | Kzt  | Kz   | qz<br>(psf) | qzGh<br>(psf) | C<br>(mph-ft) | Cf    | Ice<br>Thick<br>(in) | Tributary<br>(ft) | Aa<br>(sf) | CfAa<br>(sf) | Wind<br>Force X<br>(lb) | Dead<br>Load Ice<br>(lb) | Tot<br>Dead<br>Load<br>(lb) |
|--------------|-----------------|------|------|-------------|---------------|---------------|-------|----------------------|-------------------|------------|--------------|-------------------------|--------------------------|-----------------------------|
| 0.00         |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 0.000                | 0.00              | 0.000      | 0.00         | 0.0                     | 0.0                      | 0.0                         |
| 2.00         |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.133                | 2.00              | 7.658      | 9.19         | 52.2                    | 124.7                    | 539.2                       |
| 4.00         |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.215                | 2.00              | 7.607      | 9.13         | 51.9                    | 132.5                    | 542.5                       |
| 6.00         |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.265                | 2.00              | 7.546      | 9.05         | 51.5                    | 136.7                    | 542.2                       |
| 8.00         |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.302                | 2.00              | 7.480      | 8.98         | 51.0                    | 139.3                    | 540.3                       |
| 10.00        |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.331                | 2.00              | 7.412      | 8.89         | 50.6                    | 141.0                    | 537.5                       |
| 12.00        |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.356                | 2.00              | 7.342      | 8.81         | 50.1                    | 142.1                    | 534.1                       |
| 14.00        |                 | 1.00 | 0.85 | 5.168       | 5.68          | 0.00          | 1.200 | 1.377                | 2.00              | 7.270      | 8.72         | 49.6                    | 142.8                    | 530.3                       |
| 16.00        |                 | 1.00 | 0.86 | 5.232       | 5.76          | 0.00          | 1.200 | 1.395                | 2.00              | 7.198      | 8.64         | 49.7                    | 143.1                    | 526.2                       |
| 18.00        |                 | 1.00 | 0.88 | 5.363       | 5.90          | 0.00          | 1.200 | 1.412                | 2.00              | 7.126      | 8.55         | 50.4                    | 143.3                    | 521.9                       |
| 20.00        |                 | 1.00 | 0.90 | 5.483       | 6.03          | 0.00          | 1.200 | 1.427                | 2.00              | 7.053      | 8.46         | 51.0                    | 143.2                    | 517.3                       |
| 22.00        |                 | 1.00 | 0.92 | 5.595       | 6.15          | 0.00          | 1.200 | 1.440                | 2.00              | 6.979      | 8.37         | 51.5                    | 142.9                    | 512.5                       |
| 24.00        |                 | 1.00 | 0.94 | 5.698       | 6.27          | 0.00          | 1.200 | 1.453                | 2.00              | 6.905      | 8.29         | 51.9                    | 142.5                    | 507.7                       |
| 26.00        |                 | 1.00 | 0.95 | 5.795       | 6.37          | 0.00          | 1.200 | 1.465                | 2.00              | 6.831      | 8.20         | 52.2                    | 142.0                    | 502.7                       |
| 28.00        |                 | 1.00 | 0.97 | 5.886       | 6.47          | 0.00          | 1.200 | 1.476                | 2.00              | 6.756      | 8.11         | 52.5                    | 141.4                    | 497.6                       |
| 30.00        |                 | 1.00 | 0.98 | 5.972       | 6.57          | 0.00          | 1.200 | 1.486                | 2.00              | 6.681      | 8.02         | 52.7                    | 140.7                    | 492.4                       |
| 32.00        |                 | 1.00 | 1.00 | 6.054       | 6.66          | 0.00          | 1.200 | 1.495                | 2.00              | 6.606      | 7.93         | 52.8                    | 139.9                    | 487.1                       |
| 34.00        |                 | 1.00 | 1.01 | 6.132       | 6.74          | 0.00          | 1.200 | 1.504                | 2.00              | 6.531      | 7.84         | 52.9                    | 139.1                    | 481.8                       |
| 36.00        |                 | 1.00 | 1.02 | 6.206       | 6.83          | 0.00          | 1.200 | 1.513                | 2.00              | 6.456      | 7.75         | 52.9                    | 138.2                    | 476.3                       |
| 38.00        |                 | 1.00 | 1.03 | 6.277       | 6.90          | 0.00          | 1.200 | 1.521                | 2.00              | 6.381      | 7.66         | 52.9                    | 137.2                    | 470.9                       |
| 40.00        |                 | 1.00 | 1.04 | 6.345       | 6.98          | 0.00          | 1.200 | 1.529                | 2.00              | 6.305      | 7.57         | 52.8                    | 136.1                    | 465.3                       |
| 42.00        |                 | 1.00 | 1.05 | 6.410       | 7.05          | 0.00          | 1.200 | 1.537                | 2.00              | 6.229      | 7.48         | 52.7                    | 135.1                    | 459.8                       |
| 44.00        |                 | 1.00 | 1.06 | 6.474       | 7.12          | 0.00          | 1.200 | 1.544                | 2.00              | 6.154      | 7.38         | 52.6                    | 133.9                    | 454.2                       |
| 45.13        | Bot - Section 2 | 1.00 | 1.07 | 6.508       | 7.16          | 0.00          | 1.200 | 1.548                | 1.13              | 3.443      | 4.13         | 29.6                    | 75.3                     | 254.2                       |
| 46.00        |                 | 1.00 | 1.07 | 6.534       | 7.19          | 0.00          | 1.200 | 1.551                | 0.87              | 2.680      | 3.22         | 23.1                    | 58.8                     | 312.0                       |
| 48.00        |                 | 1.00 | 1.08 | 6.593       | 7.25          | 0.00          | 1.200 | 1.557                | 2.00              | 6.108      | 7.33         | 53.2                    | 134.0                    | 710.2                       |
| 49.88        | Top - Section 1 | 1.00 | 1.09 | 6.647       | 7.31          | 0.00          | 1.200 | 1.563                | 1.88              | 5.672      | 6.81         | 49.8                    | 124.9                    | 659.0                       |
| 50.00        |                 | 1.00 | 1.09 | 6.650       | 7.32          | 0.00          | 1.200 | 1.564                | 0.12              | 0.360      | 0.43         | 3.2                     | 8.0                      | 23.5                        |
| 52.00        |                 | 1.00 | 1.10 | 6.705       | 7.38          | 0.00          | 1.200 | 1.570                | 2.00              | 5.955      | 7.15         | 52.7                    | 131.5                    | 388.9                       |
| 54.00        |                 | 1.00 | 1.11 | 6.759       | 7.43          | 0.00          | 1.200 | 1.576                | 2.00              | 5.879      | 7.06         | 52.5                    | 130.2                    | 383.9                       |
| 56.00        |                 | 1.00 | 1.12 | 6.811       | 7.49          | 0.00          | 1.200 | 1.581                | 2.00              | 5.803      | 6.96         | 52.2                    | 128.8                    | 378.8                       |
| 58.00        |                 | 1.00 | 1.13 | 6.861       | 7.55          | 0.00          | 1.200 | 1.587                | 2.00              | 5.727      | 6.87         | 51.9                    | 127.5                    | 373.7                       |
| 60.00        |                 | 1.00 | 1.14 | 6.910       | 7.60          | 0.00          | 1.200 | 1.592                | 2.00              | 5.650      | 6.78         | 51.5                    | 126.1                    | 368.6                       |
| 62.00        |                 | 1.00 | 1.14 | 6.958       | 7.65          | 0.00          | 1.200 | 1.598                | 2.00              | 5.574      | 6.69         | 51.2                    | 124.7                    | 363.4                       |
| 64.00        |                 | 1.00 | 1.15 | 7.005       | 7.71          | 0.00          | 1.200 | 1.603                | 2.00              | 5.497      | 6.60         | 50.8                    | 123.2                    | 358.2                       |
| 66.00        |                 | 1.00 | 1.16 | 7.050       | 7.76          | 0.00          | 1.200 | 1.608                | 2.00              | 5.421      | 6.51         | 50.4                    | 121.8                    | 353.0                       |
| 68.00        |                 | 1.00 | 1.17 | 7.095       | 7.80          | 0.00          | 1.200 | 1.612                | 2.00              | 5.344      | 6.41         | 50.1                    | 120.3                    | 347.8                       |
| 70.00        |                 | 1.00 | 1.17 | 7.138       | 7.85          | 0.00          | 1.200 | 1.617                | 2.00              | 5.268      | 6.32         | 49.6                    | 118.8                    | 342.6                       |
| 72.00        |                 | 1.00 | 1.18 | 7.181       | 7.90          | 0.00          | 1.200 | 1.622                | 2.00              | 5.191      | 6.23         | 49.2                    | 117.3                    | 337.3                       |
| 74.00        |                 | 1.00 | 1.19 | 7.222       | 7.94          | 0.00          | 1.200 | 1.626                | 2.00              | 5.114      | 6.14         | 48.8                    | 115.7                    | 332.0                       |
| 75.00        | Appurtenance(s) | 1.00 | 1.19 | 7.243       | 7.97          | 0.00          | 1.200 | 1.628                | 1.00              | 2.528      | 3.03         | 24.2                    | 57.5                     | 164.2                       |
| 76.00        |                 | 1.00 | 1.19 | 7.263       | 7.99          | 0.00          | 1.200 | 1.631                | 1.00              | 2.509      | 3.01         | 24.1                    | 57.1                     | 162.9                       |
| 78.00        |                 | 1.00 | 1.20 | 7.303       | 8.03          | 0.00          | 1.200 | 1.635                | 2.00              | 4.961      | 5.95         | 47.8                    | 112.6                    | 321.4                       |
| 80.00        |                 | 1.00 | 1.21 | 7.342       | 8.08          | 0.00          | 1.200 | 1.639                | 2.00              | 4.884      | 5.86         | 47.3                    | 111.0                    | 316.1                       |
| 82.00        |                 | 1.00 | 1.21 | 7.380       | 8.12          | 0.00          | 1.200 | 1.643                | 2.00              | 4.807      | 5.77         | 46.8                    | 109.4                    | 310.7                       |
| 83.00        | Appurtenance(s) | 1.00 | 1.22 | 7.399       | 8.14          | 0.00          | 1.200 | 1.645                | 1.00              | 2.375      | 2.85         | 23.2                    | 54.3                     | 153.5                       |
| 84.00        |                 | 1.00 | 1.22 | 7.418       | 8.16          | 0.00          | 1.200 | 1.647                | 1.00              | 2.355      | 2.83         | 23.1                    | 53.9                     | 152.2                       |



## Wind Loading - Shaft

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |
|                                     |                                   | <b>Page:</b> 27         |



|                        |      |      |       |      |      |       |       |               |       |      |                |       |                 |
|------------------------|------|------|-------|------|------|-------|-------|---------------|-------|------|----------------|-------|-----------------|
| 85.00 Appurtenance(s)  | 1.00 | 1.22 | 7.436 | 8.18 | 0.00 | 1.200 | 1.649 | 1.00          | 2.336 | 2.80 | 22.9           | 53.5  | 150.9           |
| 86.00                  | 1.00 | 1.23 | 7.454 | 8.20 | 0.00 | 1.200 | 1.651 | 1.00          | 2.317 | 2.78 | 22.8           | 53.0  | 149.5           |
| 88.00                  | 1.00 | 1.23 | 7.491 | 8.24 | 0.00 | 1.200 | 1.655 | 2.00          | 4.577 | 5.49 | 45.3           | 104.4 | 294.6           |
| 90.00                  | 1.00 | 1.24 | 7.526 | 8.28 | 0.00 | 1.200 | 1.658 | 2.00          | 4.500 | 5.40 | 44.7           | 102.8 | 289.2           |
| 91.00 Appurtenance(s)  | 1.00 | 1.24 | 7.544 | 8.30 | 0.00 | 1.200 | 1.660 | 1.00          | 2.221 | 2.67 | 22.1           | 51.0  | 142.8           |
| 91.29 Bot - Section 3  | 1.00 | 1.24 | 7.549 | 8.30 | 0.00 | 1.200 | 1.661 | 0.29          | 0.648 | 0.78 | 6.5            | 14.9  | 41.7            |
| 92.00                  | 1.00 | 1.24 | 7.561 | 8.32 | 0.00 | 1.200 | 1.662 | 0.71          | 1.576 | 1.89 | 15.7           | 36.3  | 139.7           |
| 94.00                  | 1.00 | 1.25 | 7.595 | 8.35 | 0.00 | 1.200 | 1.666 | 2.00          | 4.409 | 5.29 | 44.2           | 101.0 | 389.6           |
| 94.71 Top - Section 2  | 1.00 | 1.25 | 7.607 | 8.37 | 0.00 | 1.200 | 1.667 | 0.71          | 1.547 | 1.86 | 15.5           | 35.6  | 136.7           |
| 96.00                  | 1.00 | 1.25 | 7.629 | 8.39 | 0.00 | 1.200 | 1.669 | 1.29          | 2.785 | 3.34 | 28.0           | 64.0  | 133.1           |
| 98.00 Appurtenance(s)  | 1.00 | 1.26 | 7.662 | 8.43 | 0.00 | 1.200 | 1.672 | 2.00          | 4.255 | 5.11 | 43.0           | 97.5  | 202.8           |
| 100.00                 | 1.00 | 1.27 | 7.695 | 8.46 | 0.00 | 1.200 | 1.676 | 2.00          | 4.178 | 5.01 | 42.4           | 95.8  | 198.8           |
| 102.00                 | 1.00 | 1.27 | 7.727 | 8.50 | 0.00 | 1.200 | 1.679 | 2.00          | 4.101 | 4.92 | 41.8           | 94.1  | 194.9           |
| 104.00                 | 1.00 | 1.28 | 7.759 | 8.53 | 0.00 | 1.200 | 1.682 | 2.00          | 4.024 | 4.83 | 41.2           | 92.3  | 190.9           |
| 106.00                 | 1.00 | 1.28 | 7.790 | 8.57 | 0.00 | 1.200 | 1.686 | 2.00          | 3.947 | 4.74 | 40.6           | 90.6  | 186.9           |
| 107.00 Appurtenance(s) | 1.00 | 1.28 | 7.805 | 8.59 | 0.00 | 1.200 | 1.687 | 1.00          | 1.944 | 2.33 | 20.0           | 44.8  | 92.1            |
| 108.00                 | 1.00 | 1.29 | 7.821 | 8.60 | 0.00 | 1.200 | 1.689 | 1.00          | 1.925 | 2.31 | 19.9           | 44.4  | 91.1            |
| 110.00                 | 1.00 | 1.29 | 7.851 | 8.64 | 0.00 | 1.200 | 1.692 | 2.00          | 3.793 | 4.55 | 39.3           | 87.0  | 178.8           |
| 112.00                 | 1.00 | 1.30 | 7.881 | 8.67 | 0.00 | 1.200 | 1.695 | 2.00          | 3.716 | 4.46 | 38.7           | 85.2  | 174.8           |
| 114.00                 | 1.00 | 1.30 | 7.910 | 8.70 | 0.00 | 1.200 | 1.698 | 2.00          | 3.638 | 4.37 | 38.0           | 83.4  | 170.7           |
| 116.00                 | 1.00 | 1.31 | 7.939 | 8.73 | 0.00 | 1.200 | 1.701 | 2.00          | 3.561 | 4.27 | 37.3           | 81.6  | 166.7           |
| 118.00 Appurtenance(s) | 1.00 | 1.31 | 7.968 | 8.76 | 0.00 | 1.200 | 1.704 | 2.00          | 3.484 | 4.18 | 36.6           | 79.8  | 162.6           |
| <b>Totals:</b>         |      |      |       |      |      |       |       | <b>118.00</b> |       |      | <b>2,851.3</b> |       | <b>22,886.8</b> |



## Discrete Appurtenance Forces

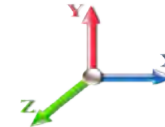
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 26

| No. | Elev (ft) | Description              | Qty | qz (psf) | qzGh (psf) | CaAa x Ka | Ka   | Total CaAa (sf) | Dead Load (lb) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) |
|-----|-----------|--------------------------|-----|----------|------------|-----------|------|-----------------|----------------|----------------|---------------|--------------|---------------|---------------|
| 1   | 118.00    | ANT150D                  | 1   | 7.988    | 8.787      | 1.00      | 1.00 | 2.68            | -5.21          | 0.000          | 1.420         | 23.51        | 0.00          | 33.38         |
| 2   | 118.00    | DB222                    | 1   | 8.132    | 8.945      | 1.00      | 1.00 | 8.17            | 66.96          | 0.000          | 12.000        | 73.06        | 0.00          | 876.72        |
| 3   | 118.00    | Low Profile Platform     | 1   | 7.968    | 8.765      | 1.00      | 1.00 | 35.19           | 3776.82        | 0.000          | 0.000         | 308.43       | 0.00          | 0.00          |
| 4   | 118.00    | DB844H90E-XY             | 9   | 7.979    | 8.777      | 1.12      | 1.00 | 39.31           | 1117.86        | 0.000          | 0.800         | 345.05       | 0.00          | 276.04        |
| 5   | 107.00    | ACU-A20-N                | 4   | 7.805    | 8.586      | 0.55      | 0.80 | 0.94            | 16.21          | 0.000          | 0.000         | 8.09         | 0.00          | 0.00          |
| 6   | 107.00    | 1900 MHz 4X45 RRH        | 3   | 7.805    | 8.586      | 0.55      | 0.80 | 6.51            | 380.92         | 0.000          | 0.000         | 55.90        | 0.00          | 0.00          |
| 7   | 107.00    | 800 MHz RRU Filter       | 3   | 7.805    | 8.586      | 0.55      | 0.80 | 5.77            | 388.02         | 0.000          | 0.000         | 49.51        | 0.00          | 0.00          |
| 8   | 107.00    | TD-RRH8x20-25            | 3   | 7.805    | 8.586      | 0.55      | 0.80 | 8.01            | 570.16         | 0.000          | 0.000         | 68.73        | 0.00          | 0.00          |
| 9   | 107.00    | Low Profile Platform     | 1   | 7.805    | 8.586      | 1.00      | 1.00 | 33.72           | 4409.06        | 0.000          | 0.000         | 289.51       | 0.00          | 0.00          |
| 10  | 107.00    | APXVSPP18-C-A20          | 3   | 7.805    | 8.586      | 0.68      | 0.80 | 21.87           | 558.03         | 0.000          | 0.000         | 187.78       | 0.00          | 0.00          |
| 11  | 107.00    | APXV9TM14-ALU-120        | 3   | 7.821    | 8.603      | 0.65      | 0.80 | 14.41           | 663.73         | 0.000          | 1.000         | 123.99       | 0.00          | 123.99        |
| 12  | 107.00    | Universal Ring Mount     | 1   | 7.805    | 8.586      | 1.00      | 1.00 | 8.37            | 603.46         | 0.000          | 0.000         | 71.90        | 0.00          | 0.00          |
| 13  | 98.00     | Alcatel Lucent           | 3   | 7.662    | 8.429      | 0.55      | 0.80 | 7.05            | 406.65         | 0.000          | 0.000         | 59.41        | 0.00          | 0.00          |
| 14  | 98.00     | RFS APL868013            | 2   | 7.662    | 8.429      | 0.92      | 0.80 | 6.80            | 218.61         | 0.000          | 0.000         | 57.28        | 0.00          | 0.00          |
| 15  | 98.00     | Andrew SBNHH-1D85C       | 6   | 7.662    | 8.429      | 0.69      | 0.80 | 53.56           | 1855.90        | 0.000          | 0.000         | 451.46       | 0.00          | 0.00          |
| 16  | 98.00     | Rfs Celwave              | 2   | 7.662    | 8.429      | 0.55      | 0.80 | 6.22            | 318.79         | 0.000          | 0.000         | 52.43        | 0.00          | 0.00          |
| 17  | 98.00     | Alcatel Lucent           | 3   | 7.662    | 8.429      | 0.55      | 0.80 | 5.30            | 443.90         | 0.000          | 0.000         | 44.70        | 0.00          | 0.00          |
| 18  | 98.00     | Alcatel-Lucent           | 3   | 7.662    | 8.429      | 0.55      | 0.80 | 4.04            | 401.56         | 0.000          | 0.000         | 34.05        | 0.00          | 0.00          |
| 19  | 98.00     | Andrew DB846H80E-SX      | 4   | 7.662    | 8.429      | 0.91      | 0.80 | 22.51           | 682.35         | 0.000          | 0.000         | 189.69       | 0.00          | 0.00          |
| 20  | 98.00     | Low Profile Platform     | 1   | 7.662    | 8.429      | 1.00      | 1.00 | 28.45           | 4715.14        | 0.000          | 0.000         | 239.82       | 0.00          | 0.00          |
| 21  | 91.00     | DC6-48-60-18-8F          | 2   | 7.544    | 8.298      | 1.00      | 1.00 | 2.67            | 158.54         | 0.000          | 0.000         | 22.18        | 0.00          | 0.00          |
| 22  | 91.00     | RRUS-11                  | 3   | 7.544    | 8.298      | 0.55      | 0.80 | 9.68            | 377.62         | 0.000          | 0.000         | 80.34        | 0.00          | 0.00          |
| 23  | 91.00     | LGP21401                 | 6   | 7.544    | 8.298      | 0.55      | 0.80 | 6.91            | 201.61         | 0.000          | 0.000         | 57.30        | 0.00          | 0.00          |
| 24  | 91.00     | P65-16-XLH-RR            | 3   | 7.544    | 8.298      | 0.60      | 0.80 | 19.49           | 520.21         | 0.000          | 0.000         | 161.70       | 0.00          | 0.00          |
| 25  | 91.00     | 7770.00                  | 3   | 7.544    | 8.298      | 0.60      | 0.80 | 11.72           | 507.48         | 0.000          | 0.000         | 97.24        | 0.00          | 0.00          |
| 26  | 91.00     | Low Profile Platform     | 1   | 7.544    | 8.298      | 1.00      | 1.00 | 30.79           | 2287.56        | 0.000          | 0.000         | 255.53       | 0.00          | 0.00          |
| 27  | 91.00     | RRUS 32 B30              | 3   | 7.544    | 8.298      | 0.65      | 0.80 | 6.67            | 464.23         | 0.000          | 0.000         | 55.34        | 0.00          | 0.00          |
| 28  | 91.00     | RRUS 32 B2               | 3   | 7.544    | 8.298      | 0.65      | 0.80 | 6.67            | 439.03         | 0.000          | 0.000         | 55.34        | 0.00          | 0.00          |
| 29  | 91.00     | QS66512-2                | 3   | 7.544    | 8.298      | 0.72      | 0.80 | 20.22           | 903.38         | 0.000          | 0.000         | 167.80       | 0.00          | 0.00          |
| 30  | 85.00     | V-brace kit              | 1   | 7.436    | 8.180      | 1.00      | 1.00 | 21.10           | -526.41        | 0.000          | 0.000         | 172.61       | 0.00          | 0.00          |
| 31  | 83.00     | Commscope -              | 3   | 7.399    | 8.139      | 0.66      | 0.80 | 28.63           | 630.96         | 0.000          | 0.000         | 233.04       | 0.00          | 0.00          |
| 32  | 83.00     | RFS - APXV18-209014      | 3   | 7.399    | 8.139      | 0.61      | 0.80 | 8.12            | 313.55         | 0.000          | 0.000         | 66.11        | 0.00          | 0.00          |
| 33  | 83.00     | Kathrein - 782 11054 -   | 3   | 7.399    | 8.139      | 0.55      | 0.80 | 0.67            | 20.65          | 0.000          | 0.000         | 5.49         | 0.00          | 0.00          |
| 34  | 83.00     | S20057A1                 | 3   | 7.399    | 8.139      | 0.55      | 0.80 | 2.45            | 76.77          | 0.000          | 0.000         | 19.92        | 0.00          | 0.00          |
| 35  | 83.00     | RFS - ATMAA1412D-1A2     | 3   | 7.399    | 8.139      | 0.55      | 0.80 | 3.16            | 99.16          | 0.000          | 0.000         | 25.71        | 0.00          | 0.00          |
| 36  | 83.00     | Fastback - IBR 1300      | 1   | 7.399    | 8.139      | 1.00      | 1.00 | 1.00            | 23.43          | 0.000          | 0.000         | 8.12         | 0.00          | 0.00          |
| 37  | 83.00     | Platform w/ Handrail kit | 1   | 7.399    | 8.139      | 1.00      | 1.00 | 65.28           | 3846.57        | 0.000          | 0.000         | 531.29       | 0.00          | 0.00          |
| 38  | 75.00     | Standoff Mount           | 1   | 7.243    | 7.967      | 1.00      | 1.00 | 8.20            | 99.90          | 0.000          | 0.000         | 65.32        | 0.00          | 0.00          |
| 39  | 75.00     | GPS                      | 1   | 7.243    | 7.967      | 1.00      | 1.00 | 1.66            | 31.36          | 0.000          | 0.000         | 13.26        | 0.00          | 0.00          |

**Totals:** 32,064.51

**4,827.93**

## Total Applied Force Summary

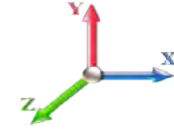
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 26

| Elev<br>(ft) | Description      | Lateral<br>FX (-)<br>(lb) | Axial<br>FY (-)<br>(lb) | Torsion<br>MY<br>(lb-ft) | Moment<br>MZ<br>(lb-ft) |
|--------------|------------------|---------------------------|-------------------------|--------------------------|-------------------------|
| 0.00         |                  | 0.00                      | 0.00                    | 0.00                     | 0.00                    |
| 2.00         |                  | 52.24                     | 638.38                  | 0.00                     | 0.00                    |
| 4.00         |                  | 51.89                     | 642.23                  | 0.00                     | 0.00                    |
| 6.00         |                  | 51.48                     | 642.27                  | 0.00                     | 0.00                    |
| 8.00         |                  | 51.03                     | 640.65                  | 0.00                     | 0.00                    |
| 10.00        |                  | 50.56                     | 638.08                  | 0.00                     | 0.00                    |
| 12.00        |                  | 50.08                     | 634.88                  | 0.00                     | 0.00                    |
| 14.00        |                  | 49.60                     | 631.24                  | 0.00                     | 0.00                    |
| 16.00        |                  | 49.71                     | 627.26                  | 0.00                     | 0.00                    |
| 18.00        |                  | 50.45                     | 623.02                  | 0.00                     | 0.00                    |
| 20.00        |                  | 51.05                     | 618.57                  | 0.00                     | 0.00                    |
| 22.00        |                  | 51.54                     | 613.94                  | 0.00                     | 0.00                    |
| 24.00        |                  | 51.93                     | 609.16                  | 0.00                     | 0.00                    |
| 26.00        |                  | 52.25                     | 604.26                  | 0.00                     | 0.00                    |
| 28.00        |                  | 52.49                     | 599.25                  | 0.00                     | 0.00                    |
| 30.00        |                  | 52.67                     | 594.14                  | 0.00                     | 0.00                    |
| 32.00        |                  | 52.79                     | 588.95                  | 0.00                     | 0.00                    |
| 34.00        |                  | 52.86                     | 583.68                  | 0.00                     | 0.00                    |
| 36.00        |                  | 52.89                     | 578.34                  | 0.00                     | 0.00                    |
| 38.00        |                  | 52.87                     | 572.94                  | 0.00                     | 0.00                    |
| 40.00        |                  | 52.81                     | 567.48                  | 0.00                     | 0.00                    |
| 42.00        |                  | 52.71                     | 561.97                  | 0.00                     | 0.00                    |
| 44.00        |                  | 52.58                     | 556.41                  | 0.00                     | 0.00                    |
| 45.13        |                  | 29.58                     | 312.03                  | 0.00                     | 0.00                    |
| 46.00        |                  | 23.12                     | 356.52                  | 0.00                     | 0.00                    |
| 48.00        |                  | 53.15                     | 812.54                  | 0.00                     | 0.00                    |
| 49.88        |                  | 49.76                     | 755.24                  | 0.00                     | 0.00                    |
| 50.00        |                  | 3.16                      | 29.68                   | 0.00                     | 0.00                    |
| 52.00        |                  | 52.71                     | 491.41                  | 0.00                     | 0.00                    |
| 54.00        |                  | 52.45                     | 486.42                  | 0.00                     | 0.00                    |
| 56.00        |                  | 52.17                     | 481.39                  | 0.00                     | 0.00                    |
| 58.00        |                  | 51.86                     | 476.34                  | 0.00                     | 0.00                    |
| 60.00        |                  | 51.54                     | 471.26                  | 0.00                     | 0.00                    |
| 62.00        |                  | 51.19                     | 466.15                  | 0.00                     | 0.00                    |
| 64.00        |                  | 50.83                     | 461.01                  | 0.00                     | 0.00                    |
| 66.00        |                  | 50.45                     | 455.85                  | 0.00                     | 0.00                    |
| 68.00        |                  | 50.05                     | 450.67                  | 0.00                     | 0.00                    |
| 70.00        |                  | 49.63                     | 445.47                  | 0.00                     | 0.00                    |
| 72.00        |                  | 49.20                     | 440.24                  | 0.00                     | 0.00                    |
| 74.00        |                  | 48.76                     | 435.00                  | 0.00                     | 0.00                    |
| 75.00        | (2) attachments  | 102.75                    | 346.98                  | 0.00                     | 0.00                    |
| 76.00        |                  | 24.05                     | 210.10                  | 0.00                     | 0.00                    |
| 78.00        |                  | 47.82                     | 415.81                  | 0.00                     | 0.00                    |
| 80.00        |                  | 47.33                     | 410.48                  | 0.00                     | 0.00                    |
| 82.00        |                  | 46.83                     | 405.13                  | 0.00                     | 0.00                    |
| 83.00        | (17) attachments | 912.85                    | 5211.85                 | 0.00                     | 0.00                    |
| 84.00        |                  | 23.06                     | 189.62                  | 0.00                     | 0.00                    |

## Total Applied Force Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                  |                 |                  |             |                 |
|----------------|------------------|-----------------|------------------|-------------|-----------------|
| 85.00          | (1) attachments  | 195.54          | -338.14          | 0.00        | 0.00            |
| 86.00          |                  | 22.80           | 186.93           | 0.00        | 0.00            |
| 88.00          |                  | 45.25           | 369.39           | 0.00        | 0.00            |
| 90.00          |                  | 44.70           | 363.98           | 0.00        | 0.00            |
| 91.00          | (27) attachments | 974.88          | 6039.84          | 0.00        | 0.00            |
| 91.29          |                  | 6.45            | 49.83            | 0.00        | 0.00            |
| 92.00          |                  | 15.73           | 159.39           | 0.00        | 0.00            |
| 94.00          |                  | 44.21           | 445.35           | 0.00        | 0.00            |
| 94.71          |                  | 15.53           | 156.45           | 0.00        | 0.00            |
| 96.00          |                  | 28.05           | 169.06           | 0.00        | 0.00            |
| 98.00          | (24) attachments | 1171.88         | 9301.43          | 0.00        | 0.00            |
| 100.00         |                  | 42.44           | 219.34           | 0.00        | 0.00            |
| 102.00         |                  | 41.83           | 215.35           | 0.00        | 0.00            |
| 104.00         |                  | 41.21           | 211.36           | 0.00        | 0.00            |
| 106.00         |                  | 40.59           | 207.35           | 0.00        | 0.00            |
| 107.00         | (21) attachments | 875.45          | 7691.97          | 0.00        | 123.99          |
| 108.00         |                  | 19.87           | 99.01            | 0.00        | 0.00            |
| 110.00         |                  | 39.31           | 194.55           | 0.00        | 0.00            |
| 112.00         |                  | 38.65           | 190.52           | 0.00        | 0.00            |
| 114.00         |                  | 37.99           | 186.47           | 0.00        | 0.00            |
| 116.00         |                  | 37.32           | 182.41           | 0.00        | 0.00            |
| 118.00         | (12) attachments | 786.69          | 5134.78          | 0.00        | 1186.14         |
| <b>Totals:</b> |                  | <b>7,679.20</b> | <b>59,820.89</b> | <b>0.00</b> | <b>1,310.13</b> |

## Linear Appurtenance Segment Forces (Factored)

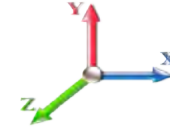
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 26

| Top Elev (ft)  | Description | Wind Exposed | Length (ft) | Ca    | Exposed Width (in) | Area (sqft) | CaAa (sqft) | Ra    | Cf Adjust Factor | qz (psf) | F X (lb)   | Dead Load (lb) |
|----------------|-------------|--------------|-------------|-------|--------------------|-------------|-------------|-------|------------------|----------|------------|----------------|
| 2.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.49        | 0.00        | 0.015 | 0.000            | 5.168    | 0.00       | 4.74           |
| 4.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.51        | 0.00        | 0.015 | 0.000            | 5.168    | 0.00       | 5.29           |
| 6.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.53        | 0.00        | 0.015 | 0.000            | 5.168    | 0.00       | 5.64           |
| 8.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.54        | 0.00        | 0.015 | 0.000            | 5.168    | 0.00       | 5.91           |
| 10.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.55        | 0.00        | 0.016 | 0.000            | 5.168    | 0.00       | 6.13           |
| 12.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.56        | 0.00        | 0.016 | 0.000            | 5.168    | 0.00       | 6.32           |
| 14.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.57        | 0.00        | 0.016 | 0.000            | 5.168    | 0.00       | 6.48           |
| 16.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.57        | 0.00        | 0.016 | 0.000            | 5.232    | 0.00       | 6.62           |
| 18.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.58        | 0.00        | 0.016 | 0.000            | 5.363    | 0.00       | 6.75           |
| 20.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.58        | 0.00        | 0.016 | 0.000            | 5.483    | 0.00       | 6.87           |
| 22.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.59        | 0.00        | 0.017 | 0.000            | 5.595    | 0.00       | 6.98           |
| 24.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.59        | 0.00        | 0.017 | 0.000            | 5.698    | 0.00       | 7.08           |
| 26.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.60        | 0.00        | 0.017 | 0.000            | 5.795    | 0.00       | 7.18           |
| 28.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.60        | 0.00        | 0.017 | 0.000            | 5.886    | 0.00       | 7.27           |
| 30.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.60        | 0.00        | 0.018 | 0.000            | 5.972    | 0.00       | 7.35           |
| 32.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.61        | 0.00        | 0.018 | 0.000            | 6.054    | 0.00       | 7.43           |
| 34.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.61        | 0.00        | 0.018 | 0.000            | 6.132    | 0.00       | 7.51           |
| 36.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.61        | 0.00        | 0.018 | 0.000            | 6.206    | 0.00       | 7.58           |
| 38.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.62        | 0.00        | 0.018 | 0.000            | 6.277    | 0.00       | 7.65           |
| 40.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.62        | 0.00        | 0.019 | 0.000            | 6.345    | 0.00       | 7.71           |
| 42.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.62        | 0.00        | 0.019 | 0.000            | 6.410    | 0.00       | 7.78           |
| 44.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.62        | 0.00        | 0.019 | 0.000            | 6.474    | 0.00       | 7.84           |
| 45.13          | 1/2"        | Yes          | 1.13        | 0.000 | 0.65               | 0.35        | 0.00        | 0.019 | 0.000            | 6.508    | 0.00       | 4.45           |
| 46.00          | 1/2"        | Yes          | 0.87        | 0.000 | 0.65               | 0.27        | 0.00        | 0.020 | 0.000            | 6.534    | 0.00       | 3.44           |
| 48.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.63        | 0.00        | 0.020 | 0.000            | 6.593    | 0.00       | 7.95           |
| 49.88          | 1/2"        | Yes          | 1.88        | 0.000 | 0.65               | 0.59        | 0.00        | 0.020 | 0.000            | 6.647    | 0.00       | 7.53           |
| 50.00          | 1/2"        | Yes          | 0.12        | 0.000 | 0.65               | 0.04        | 0.00        | 0.020 | 0.000            | 6.650    | 0.00       | 0.48           |
| 52.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.63        | 0.00        | 0.020 | 0.000            | 6.705    | 0.00       | 8.06           |
| 54.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.63        | 0.00        | 0.020 | 0.000            | 6.759    | 0.00       | 8.11           |
| 56.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.021 | 0.000            | 6.811    | 0.00       | 8.16           |
| 58.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.021 | 0.000            | 6.861    | 0.00       | 8.21           |
| 60.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.021 | 0.000            | 6.910    | 0.00       | 8.26           |
| 62.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.021 | 0.000            | 6.958    | 0.00       | 8.31           |
| 64.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.022 | 0.000            | 7.005    | 0.00       | 8.35           |
| 66.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.64        | 0.00        | 0.022 | 0.000            | 7.050    | 0.00       | 8.40           |
| 68.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.65        | 0.00        | 0.023 | 0.000            | 7.095    | 0.00       | 8.44           |
| 70.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.65        | 0.00        | 0.023 | 0.000            | 7.138    | 0.00       | 8.48           |
| 72.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.65        | 0.00        | 0.023 | 0.000            | 7.181    | 0.00       | 8.52           |
| 74.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.65        | 0.00        | 0.024 | 0.000            | 7.222    | 0.00       | 8.56           |
| 75.00          | 1/2"        | Yes          | 1.00        | 0.000 | 0.65               | 0.33        | 0.00        | 0.024 | 0.000            | 7.243    | 0.00       | 4.29           |
| <b>Totals:</b> |             |              |             |       |                    |             |             |       |                  |          | <b>0.0</b> | <b>278.1</b>   |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |

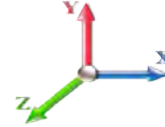


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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 26

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -60.16           | -7.70            | 0.00                | -704.05         | 0.00            | 704.05                     | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.000               | 0.000                | 0.236        |
| 2.00          | -59.51           | -7.68            | 0.00                | -688.66         | 0.00            | 688.66                     | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.01               | -0.033              | 0.000                | 0.236        |
| 4.00          | -58.87           | -7.66            | 0.00                | -673.31         | 0.00            | 673.31                     | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.03               | -0.067              | 0.000                | 0.235        |
| 6.00          | -58.22           | -7.64            | 0.00                | -657.98         | 0.00            | 657.98                     | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.06               | -0.101              | 0.000                | 0.234        |
| 8.00          | -57.58           | -7.63            | 0.00                | -642.70         | 0.00            | 642.70                     | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.11               | -0.136              | 0.000                | 0.233        |
| 10.00         | -56.93           | -7.61            | 0.00                | -627.44         | 0.00            | 627.44                     | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.18               | -0.171              | 0.000                | 0.232        |
| 12.00         | -56.29           | -7.59            | 0.00                | -612.23         | 0.00            | 612.23                     | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.26               | -0.206              | 0.000                | 0.231        |
| 14.00         | -55.66           | -7.57            | 0.00                | -597.05         | 0.00            | 597.05                     | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 0.35               | -0.241              | 0.000                | 0.230        |
| 16.00         | -55.03           | -7.56            | 0.00                | -581.90         | 0.00            | 581.90                     | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 0.46               | -0.277              | 0.000                | 0.228        |
| 18.00         | -54.40           | -7.54            | 0.00                | -566.79         | 0.00            | 566.79                     | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 0.58               | -0.313              | 0.000                | 0.227        |
| 20.00         | -53.78           | -7.52            | 0.00                | -551.71         | 0.00            | 551.71                     | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 0.72               | -0.350              | 0.000                | 0.226        |
| 22.00         | -53.16           | -7.50            | 0.00                | -536.68         | 0.00            | 536.68                     | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 0.88               | -0.386              | 0.000                | 0.224        |
| 24.00         | -52.54           | -7.47            | 0.00                | -521.69         | 0.00            | 521.69                     | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 1.05               | -0.423              | 0.000                | 0.223        |
| 26.00         | -51.93           | -7.45            | 0.00                | -506.75         | 0.00            | 506.75                     | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 1.23               | -0.461              | 0.000                | 0.222        |
| 28.00         | -51.33           | -7.43            | 0.00                | -491.85         | 0.00            | 491.85                     | 3219.51       | 1609.75       | 4804.91          | 2406.03          | 1.43               | -0.499              | 0.000                | 0.220        |
| 30.00         | -50.73           | -7.40            | 0.00                | -476.99         | 0.00            | 476.99                     | 3178.67       | 1589.33       | 4683.16          | 2345.06          | 1.65               | -0.537              | 0.000                | 0.219        |
| 32.00         | -50.14           | -7.38            | 0.00                | -462.19         | 0.00            | 462.19                     | 3137.83       | 1568.91       | 4562.98          | 2284.88          | 1.88               | -0.575              | 0.000                | 0.218        |
| 34.00         | -49.55           | -7.35            | 0.00                | -447.44         | 0.00            | 447.44                     | 3096.99       | 1548.49       | 4444.36          | 2225.48          | 2.13               | -0.613              | 0.000                | 0.217        |
| 36.00         | -48.97           | -7.33            | 0.00                | -432.73         | 0.00            | 432.73                     | 3056.15       | 1528.07       | 4327.30          | 2166.87          | 2.40               | -0.652              | 0.000                | 0.216        |
| 38.00         | -48.39           | -7.30            | 0.00                | -418.08         | 0.00            | 418.08                     | 3015.30       | 1507.65       | 4211.81          | 2109.03          | 2.68               | -0.691              | 0.000                | 0.214        |
| 40.00         | -47.82           | -7.27            | 0.00                | -403.48         | 0.00            | 403.48                     | 2974.46       | 1487.23       | 4097.87          | 2051.98          | 2.98               | -0.730              | 0.000                | 0.213        |
| 42.00         | -47.25           | -7.24            | 0.00                | -388.94         | 0.00            | 388.94                     | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 3.29               | -0.770              | 0.000                | 0.211        |
| 44.00         | -46.69           | -7.21            | 0.00                | -374.45         | 0.00            | 374.45                     | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 3.62               | -0.809              | 0.000                | 0.209        |
| 45.13         | -46.38           | -7.19            | 0.00                | -366.30         | 0.00            | 366.30                     | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 3.82               | -0.832              | 0.000                | 0.208        |
| 46.00         | -46.02           | -7.19            | 0.00                | -360.05         | 0.00            | 360.05                     | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 3.97               | -0.849              | 0.000                | 0.207        |
| 48.00         | -45.20           | -7.15            | 0.00                | -345.67         | 0.00            | 345.67                     | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 4.34               | -0.889              | 0.000                | 0.205        |
| 49.88         | -44.45           | -7.11            | 0.00                | -332.23         | 0.00            | 332.23                     | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 4.69               | -0.927              | 0.000                | 0.235        |
| 50.00         | -44.41           | -7.12            | 0.00                | -331.38         | 0.00            | 331.38                     | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 4.72               | -0.929              | 0.000                | 0.235        |
| 52.00         | -43.92           | -7.09            | 0.00                | -317.14         | 0.00            | 317.14                     | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 5.12               | -0.974              | 0.000                | 0.231        |
| 54.00         | -43.43           | -7.07            | 0.00                | -302.95         | 0.00            | 302.95                     | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 5.53               | -1.019              | 0.000                | 0.227        |
| 56.00         | -42.94           | -7.04            | 0.00                | -288.82         | 0.00            | 288.82                     | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 5.97               | -1.063              | 0.000                | 0.223        |
| 58.00         | -42.46           | -7.01            | 0.00                | -274.74         | 0.00            | 274.74                     | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 6.43               | -1.108              | 0.000                | 0.219        |
| 60.00         | -41.98           | -6.98            | 0.00                | -260.72         | 0.00            | 260.72                     | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 6.90               | -1.152              | 0.000                | 0.215        |
| 62.00         | -41.51           | -6.95            | 0.00                | -246.75         | 0.00            | 246.75                     | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 7.39               | -1.196              | 0.000                | 0.210        |
| 64.00         | -41.05           | -6.92            | 0.00                | -232.84         | 0.00            | 232.84                     | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 7.90               | -1.240              | 0.000                | 0.205        |
| 66.00         | -40.59           | -6.89            | 0.00                | -219.00         | 0.00            | 219.00                     | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 8.43               | -1.283              | 0.000                | 0.200        |
| 68.00         | -40.14           | -6.86            | 0.00                | -205.21         | 0.00            | 205.21                     | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 8.98               | -1.325              | 0.000                | 0.195        |
| 70.00         | -39.69           | -6.83            | 0.00                | -191.48         | 0.00            | 191.48                     | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 9.54               | -1.367              | 0.000                | 0.189        |
| 72.00         | -39.24           | -6.80            | 0.00                | -177.82         | 0.00            | 177.82                     | 1984.83       | 992.42        | 2188.65          | 1095.95          | 10.12              | -1.408              | 0.000                | 0.182        |
| 74.00         | -38.81           | -6.76            | 0.00                | -164.22         | 0.00            | 164.22                     | 1950.80       | 975.40        | 2113.81          | 1058.48          | 10.72              | -1.447              | 0.000                | 0.175        |
| 75.00         | -38.46           | -6.66            | 0.00                | -157.46         | 0.00            | 157.46                     | 1933.78       | 966.89        | 2076.88          | 1039.98          | 11.03              | -1.467              | 0.000                | 0.171        |
| 76.00         | -38.25           | -6.65            | 0.00                | -150.80         | 0.00            | 150.80                     | 1916.76       | 958.38        | 2040.27          | 1021.65          | 11.34              | -1.486              | 0.000                | 0.168        |
| 78.00         | -37.83           | -6.62            | 0.00                | -137.50         | 0.00            | 137.50                     | 1882.73       | 941.37        | 1968.04          | 985.48           | 11.97              | -1.524              | 0.000                | 0.160        |
| 80.00         | -37.41           | -6.58            | 0.00                | -124.26         | 0.00            | 124.26                     | 1848.70       | 924.35        | 1897.11          | 949.96           | 12.61              | -1.559              | 0.000                | 0.151        |
| 82.00         | -37.01           | -6.54            | 0.00                | -111.10         | 0.00            | 111.10                     | 1814.66       | 907.33        | 1827.48          | 915.10           | 13.27              | -1.593              | 0.000                | 0.142        |
| 83.00         | -31.82           | -5.49            | 0.00                | -104.56         | 0.00            | 104.56                     | 1797.65       | 898.82        | 1793.15          | 897.91           | 13.61              | -1.609              | 0.000                | 0.134        |
| 84.00         | -31.63           | -5.47            | 0.00                | -99.08          | 0.00            | 99.08                      | 1780.63       | 890.31        | 1759.15          | 880.88           | 13.95              | -1.625              | 0.000                | 0.130        |
| 85.00         | -31.64           | -5.28            | 0.00                | -93.61          | 0.00            | 93.61                      | 1763.61       | 881.81        | 1725.48          | 864.02           | 14.29              | -1.641              | 0.000                | 0.126        |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|        |        |       |      |        |      |       |         |        |         |        |       |        |       |       |
|--------|--------|-------|------|--------|------|-------|---------|--------|---------|--------|-------|--------|-------|-------|
| 86.00  | -31.45 | -5.27 | 0.00 | -88.32 | 0.00 | 88.32 | 1746.59 | 873.30 | 1692.13 | 847.32 | 14.64 | -1.656 | 0.000 | 0.122 |
| 88.00  | -31.08 | -5.23 | 0.00 | -77.79 | 0.00 | 77.79 | 1712.56 | 856.28 | 1626.40 | 814.41 | 15.34 | -1.684 | 0.000 | 0.114 |
| 90.00  | -30.71 | -5.18 | 0.00 | -67.34 | 0.00 | 67.34 | 1678.53 | 839.26 | 1561.98 | 782.15 | 16.05 | -1.710 | 0.000 | 0.104 |
| 91.00  | -24.70 | -4.03 | 0.00 | -62.16 | 0.00 | 62.16 | 1661.51 | 830.75 | 1530.26 | 766.27 | 16.41 | -1.723 | 0.000 | 0.096 |
| 91.29  | -24.65 | -4.02 | 0.00 | -60.98 | 0.00 | 60.98 | 1656.52 | 828.26 | 1521.01 | 761.64 | 16.51 | -1.726 | 0.000 | 0.095 |
| 92.00  | -24.49 | -4.01 | 0.00 | -58.13 | 0.00 | 58.13 | 1644.49 | 822.25 | 1498.86 | 750.54 | 16.77 | -1.735 | 0.000 | 0.092 |
| 94.00  | -24.05 | -3.96 | 0.00 | -50.12 | 0.00 | 50.12 | 1610.46 | 805.23 | 1437.04 | 719.59 | 17.50 | -1.757 | 0.000 | 0.085 |
| 94.71  | -23.89 | -3.94 | 0.00 | -47.31 | 0.00 | 47.31 | 930.70  | 465.35 | 848.15  | 424.70 | 17.76 | -1.765 | 0.000 | 0.137 |
| 96.00  | -23.72 | -3.92 | 0.00 | -42.22 | 0.00 | 42.22 | 922.07  | 461.04 | 828.91  | 415.07 | 18.24 | -1.777 | 0.000 | 0.128 |
| 98.00  | -14.46 | -2.46 | 0.00 | -34.39 | 0.00 | 34.39 | 908.49  | 454.24 | 799.32  | 400.25 | 18.99 | -1.805 | 0.000 | 0.102 |
| 100.00 | -14.24 | -2.42 | 0.00 | -29.47 | 0.00 | 29.47 | 894.64  | 447.32 | 770.03  | 385.59 | 19.75 | -1.830 | 0.000 | 0.092 |
| 102.00 | -14.03 | -2.37 | 0.00 | -24.63 | 0.00 | 24.63 | 880.55  | 440.27 | 741.05  | 371.08 | 20.52 | -1.852 | 0.000 | 0.082 |
| 104.00 | -13.82 | -2.33 | 0.00 | -19.88 | 0.00 | 19.88 | 866.20  | 433.10 | 712.41  | 356.74 | 21.30 | -1.871 | 0.000 | 0.072 |
| 106.00 | -13.61 | -2.29 | 0.00 | -15.22 | 0.00 | 15.22 | 851.60  | 425.80 | 684.12  | 342.57 | 22.09 | -1.888 | 0.000 | 0.060 |
| 107.00 | -5.95  | -1.16 | 0.00 | -12.81 | 0.00 | 12.81 | 844.21  | 422.10 | 670.11  | 335.55 | 22.49 | -1.895 | 0.000 | 0.045 |
| 108.00 | -5.85  | -1.14 | 0.00 | -11.66 | 0.00 | 11.66 | 836.75  | 418.38 | 656.18  | 328.58 | 22.89 | -1.901 | 0.000 | 0.042 |
| 110.00 | -5.66  | -1.09 | 0.00 | -9.39  | 0.00 | 9.39  | 821.65  | 410.82 | 628.62  | 314.78 | 23.69 | -1.913 | 0.000 | 0.037 |
| 112.00 | -5.47  | -1.05 | 0.00 | -7.20  | 0.00 | 7.20  | 804.60  | 402.30 | 600.19  | 300.54 | 24.49 | -1.922 | 0.000 | 0.031 |
| 114.00 | -5.29  | -1.00 | 0.00 | -5.11  | 0.00 | 5.11  | 784.18  | 392.09 | 569.96  | 285.40 | 25.30 | -1.930 | 0.000 | 0.025 |
| 116.00 | -5.11  | -0.96 | 0.00 | -3.11  | 0.00 | 3.11  | 763.76  | 381.88 | 540.51  | 270.66 | 26.11 | -1.936 | 0.000 | 0.018 |
| 118.00 | 0.00   | -0.79 | 0.00 | -1.19  | 0.00 | 1.19  | 743.33  | 371.67 | 511.84  | 256.30 | 26.92 | -1.939 | 0.000 | 0.005 |

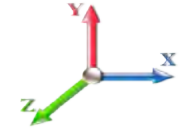
## Seismic Segment Forces (Factored)

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                               |      |                                  |      |                      |
|-------------------------------|------|----------------------------------|------|----------------------|
| <b>Load Case:</b> 1.2D + 1.0E |      |                                  |      | <b>Iterations</b> 24 |
| <b>Gust Response Factor</b>   | 1.10 | <b>Sds</b>                       | 0.23 | <b>Ss</b> 0.21       |
| <b>Dead Load Factor</b>       | 1.20 | <b>Seismic Load Factor</b>       | 1.00 | <b>S1</b> 0.07       |
| <b>Wind Load Factor</b>       | 0.00 | <b>Structure Frequency</b>       | 0.33 | <b>SA</b> 0.03       |
|                               |      | <b>Seismic Importance Factor</b> |      | 1.00                 |



| Top Elev (ft) | Description     | Wz (lb) | a    | b     | c    | Lateral Fs (lb) | R: 1.50 |
|---------------|-----------------|---------|------|-------|------|-----------------|---------|
| 0.00          |                 | 0.00    | 0.00 | 0.00  | 0.00 | 0.00            |         |
| 2.00          |                 | 345.42  | 0.00 | 0.02  | 0.01 | 5.39            |         |
| 4.00          |                 | 341.68  | 0.00 | 0.03  | 0.02 | 8.52            |         |
| 6.00          |                 | 337.94  | 0.00 | 0.04  | 0.02 | 10.49           |         |
| 8.00          |                 | 334.19  | 0.01 | 0.05  | 0.03 | 11.74           |         |
| 10.00         |                 | 330.45  | 0.01 | 0.06  | 0.03 | 12.55           |         |
| 12.00         |                 | 326.71  | 0.02 | 0.06  | 0.04 | 13.05           |         |
| 14.00         |                 | 322.97  | 0.03 | 0.07  | 0.04 | 13.35           |         |
| 16.00         |                 | 319.23  | 0.03 | 0.07  | 0.04 | 13.52           |         |
| 18.00         |                 | 315.49  | 0.04 | 0.07  | 0.04 | 13.60           |         |
| 20.00         |                 | 311.75  | 0.05 | 0.07  | 0.04 | 13.64           |         |
| 22.00         |                 | 308.01  | 0.07 | 0.07  | 0.04 | 13.65           |         |
| 24.00         |                 | 304.27  | 0.08 | 0.07  | 0.04 | 13.65           |         |
| 26.00         |                 | 300.52  | 0.09 | 0.07  | 0.04 | 13.65           |         |
| 28.00         |                 | 296.78  | 0.11 | 0.07  | 0.04 | 13.65           |         |
| 30.00         |                 | 293.04  | 0.12 | 0.07  | 0.03 | 13.64           |         |
| 32.00         |                 | 289.30  | 0.14 | 0.07  | 0.03 | 13.62           |         |
| 34.00         |                 | 285.56  | 0.16 | 0.07  | 0.03 | 13.58           |         |
| 36.00         |                 | 281.82  | 0.18 | 0.07  | 0.03 | 13.50           |         |
| 38.00         |                 | 278.08  | 0.20 | 0.06  | 0.02 | 13.35           |         |
| 40.00         |                 | 274.34  | 0.22 | 0.06  | 0.02 | 13.12           |         |
| 42.00         |                 | 270.60  | 0.24 | 0.06  | 0.02 | 12.76           |         |
| 44.00         |                 | 266.85  | 0.26 | 0.05  | 0.02 | 12.26           |         |
| 45.13         | Bot - Section 2 | 149.12  | 0.28 | 0.05  | 0.01 | 6.70            |         |
| 46.00         |                 | 211.01  | 0.29 | 0.05  | 0.01 | 9.27            |         |
| 48.00         |                 | 480.16  | 0.31 | 0.04  | 0.01 | 19.70           |         |
| 49.88         | Top - Section 1 | 445.09  | 0.34 | 0.04  | 0.01 | 16.60           |         |
| 50.00         |                 | 12.97   | 0.34 | 0.04  | 0.01 | 0.48            |         |
| 52.00         |                 | 214.55  | 0.37 | 0.03  | 0.01 | 6.83            |         |
| 54.00         |                 | 211.43  | 0.40 | 0.02  | 0.01 | 5.35            |         |
| 56.00         |                 | 208.31  | 0.43 | 0.01  | 0.01 | 3.66            |         |
| 58.00         |                 | 205.20  | 0.46 | 0.00  | 0.01 | 1.80            |         |
| 60.00         |                 | 202.08  | 0.49 | -0.01 | 0.01 | -0.16           |         |
| 62.00         |                 | 198.96  | 0.52 | -0.02 | 0.01 | -2.12           |         |
| 64.00         |                 | 195.84  | 0.56 | -0.04 | 0.01 | -3.96           |         |
| 66.00         |                 | 192.73  | 0.59 | -0.05 | 0.01 | -5.61           |         |
| 68.00         |                 | 189.61  | 0.63 | -0.06 | 0.02 | -6.97           |         |
| 70.00         |                 | 186.49  | 0.67 | -0.08 | 0.02 | -8.02           |         |
| 72.00         |                 | 183.37  | 0.70 | -0.09 | 0.03 | -8.73           |         |
| 74.00         |                 | 180.26  | 0.74 | -0.10 | 0.04 | -9.11           |         |
| 75.00         | Appurtenance(s) | 138.96  | 0.76 | -0.10 | 0.04 | -7.14           |         |
| 76.00         |                 | 88.18   | 0.78 | -0.11 | 0.05 | -4.56           |         |
| 78.00         |                 | 174.02  | 0.83 | -0.12 | 0.06 | -8.92           |         |
| 80.00         |                 | 170.90  | 0.87 | -0.12 | 0.08 | -8.40           |         |
| 82.00         |                 | 167.79  | 0.91 | -0.12 | 0.09 | -7.62           |         |
| 83.00         | Appurtenance(s) | 2242.7  | 0.94 | -0.12 | 0.10 | -96.35          |         |



## Seismic Segment Forces (Factored)

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                 |                 |      |       |      |                |
|----------------|-----------------|-----------------|------|-------|------|----------------|
| 84.00          |                 | 81.94           | 0.96 | -0.12 | 0.11 | -3.29          |
| 85.00          | Appurtenance(s) | 502.26          | 0.98 | -0.11 | 0.12 | -18.53         |
| 86.00          |                 | 80.39           | 1.00 | -0.11 | 0.13 | -2.68          |
| 88.00          |                 | 158.43          | 1.05 | -0.09 | 0.16 | -3.95          |
| 90.00          |                 | 155.31          | 1.10 | -0.07 | 0.19 | -2.34          |
| 91.00          | Appurtenance(s) | 2572.6          | 1.12 | -0.06 | 0.20 | -24.70         |
| 91.29          | Bot - Section 3 | 22.29           | 1.13 | -0.05 | 0.21 | -0.18          |
| 92.00          |                 | 86.19           | 1.15 | -0.04 | 0.22 | -0.32          |
| 94.00          |                 | 240.55          | 1.20 | 0.00  | 0.25 | 2.20           |
| 94.71          | Top - Section 2 | 84.20           | 1.22 | 0.02  | 0.27 | 1.18           |
| 96.00          |                 | 57.58           | 1.25 | 0.06  | 0.29 | 1.35           |
| 98.00          | Appurtenance(s) | 3088.1          | 1.30 | 0.13  | 0.34 | 121.82         |
| 100.00         |                 | 85.86           | 1.36 | 0.21  | 0.39 | 4.89           |
| 102.00         |                 | 83.99           | 1.41 | 0.31  | 0.44 | 6.38           |
| 104.00         |                 | 82.12           | 1.47 | 0.43  | 0.51 | 7.93           |
| 106.00         |                 | 80.25           | 1.53 | 0.56  | 0.57 | 9.53           |
| 107.00         | Appurtenance(s) | 3314.4          | 1.55 | 0.64  | 0.61 | 432.44         |
| 108.00         |                 | 38.96           | 1.58 | 0.73  | 0.65 | 5.55           |
| 110.00         |                 | 76.51           | 1.64 | 0.92  | 0.73 | 12.86          |
| 112.00         |                 | 74.64           | 1.70 | 1.13  | 0.82 | 14.57          |
| 114.00         |                 | 72.77           | 1.76 | 1.38  | 0.92 | 16.30          |
| 116.00         |                 | 70.90           | 1.83 | 1.66  | 1.02 | 18.05          |
| 118.00         | Appurtenance(s) | 2017.0          | 1.89 | 1.98  | 1.14 | 578.56         |
| <b>Totals:</b> |                 | <b>26,512.1</b> |      |       |      | <b>1,346.6</b> |

**Total Wind: 29,525.1**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

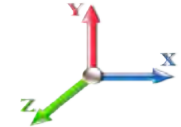
## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                               |      |                            |            |            |      |                                       |
|-------------------------------|------|----------------------------|------------|------------|------|---------------------------------------|
| <b>Load Case:</b> 1.2D + 1.0E |      |                            |            |            |      | <b>Iterations</b> 24                  |
| <b>Gust Response Factor</b>   | 1.10 |                            | <b>Sds</b> | 0.23       |      | <b>Ss</b> 0.21                        |
| <b>Dead Load Factor</b>       | 1.20 | <b>Seismic Load Factor</b> | 1.00       | <b>Sd1</b> | 0.10 | <b>S1</b> 0.07                        |
| <b>Wind Load Factor</b>       | 0.00 | <b>Structure Frequency</b> | 0.33       | <b>SA</b>  | 0.03 | <b>Seismic Importance Factor</b> 1.00 |



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -36.42           | -1.58            | 0.00                | -156.40         | 0.00            | 156.40                     | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.00                | 0.00                 | 0.059        |
| 2.00          | -35.91           | -1.58            | 0.00                | -153.23         | 0.00            | 153.23                     | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.00               | 0.00                | -0.01                | 0.059        |
| 4.00          | -35.41           | -1.58            | 0.00                | -150.07         | 0.00            | 150.07                     | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.01               | 0.01                | -0.01                | 0.059        |
| 6.00          | -34.91           | -1.57            | 0.00                | -146.92         | 0.00            | 146.92                     | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.01               | 0.01                | -0.02                | 0.058        |
| 8.00          | -34.41           | -1.56            | 0.00                | -143.78         | 0.00            | 143.78                     | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.03               | 0.03                | -0.03                | 0.058        |
| 10.00         | -33.92           | -1.56            | 0.00                | -140.65         | 0.00            | 140.65                     | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.04               | 0.04                | -0.04                | 0.058        |
| 12.00         | -33.43           | -1.55            | 0.00                | -137.54         | 0.00            | 137.54                     | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.06               | 0.06                | -0.05                | 0.058        |
| 14.00         | -32.95           | -1.54            | 0.00                | -134.45         | 0.00            | 134.45                     | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 0.08               | 0.08                | -0.05                | 0.058        |
| 16.00         | -32.47           | -1.53            | 0.00                | -131.37         | 0.00            | 131.37                     | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 0.10               | 0.10                | -0.06                | 0.057        |
| 18.00         | -32.00           | -1.52            | 0.00                | -128.32         | 0.00            | 128.32                     | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 0.13               | 0.13                | -0.07                | 0.057        |
| 20.00         | -31.53           | -1.51            | 0.00                | -125.28         | 0.00            | 125.28                     | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 0.16               | 0.16                | -0.08                | 0.057        |
| 22.00         | -31.06           | -1.50            | 0.00                | -122.26         | 0.00            | 122.26                     | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 0.20               | 0.20                | -0.09                | 0.057        |
| 24.00         | -30.60           | -1.49            | 0.00                | -119.26         | 0.00            | 119.26                     | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 0.23               | 0.23                | -0.10                | 0.057        |
| 26.00         | -30.15           | -1.48            | 0.00                | -116.29         | 0.00            | 116.29                     | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 0.28               | 0.28                | -0.10                | 0.056        |
| 28.00         | -29.70           | -1.47            | 0.00                | -113.33         | 0.00            | 113.33                     | 3229.51       | 1609.75       | 4804.91          | 2406.03          | 0.32               | 0.32                | -0.11                | 0.056        |
| 30.00         | -29.25           | -1.46            | 0.00                | -110.39         | 0.00            | 110.39                     | 3178.67       | 1589.33       | 4683.16          | 2345.06          | 0.37               | 0.37                | -0.12                | 0.056        |
| 32.00         | -28.81           | -1.45            | 0.00                | -107.47         | 0.00            | 107.47                     | 3137.83       | 1568.91       | 4562.98          | 2284.88          | 0.42               | 0.42                | -0.13                | 0.056        |
| 34.00         | -28.37           | -1.44            | 0.00                | -104.57         | 0.00            | 104.57                     | 3096.99       | 1548.49       | 4444.36          | 2225.48          | 0.48               | 0.48                | -0.14                | 0.056        |
| 36.00         | -27.94           | -1.43            | 0.00                | -101.70         | 0.00            | 101.70                     | 3056.15       | 1528.07       | 4327.30          | 2166.87          | 0.54               | 0.54                | -0.15                | 0.056        |
| 38.00         | -27.51           | -1.42            | 0.00                | -98.84          | 0.00            | 98.84                      | 3015.30       | 1507.65       | 4211.81          | 2109.03          | 0.60               | 0.60                | -0.16                | 0.056        |
| 40.00         | -27.08           | -1.41            | 0.00                | -96.00          | 0.00            | 96.00                      | 2974.46       | 1487.23       | 4097.87          | 2051.98          | 0.67               | 0.67                | -0.17                | 0.056        |
| 42.00         | -26.66           | -1.40            | 0.00                | -93.18          | 0.00            | 93.18                      | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 0.74               | 0.74                | -0.18                | 0.056        |
| 44.00         | -26.25           | -1.39            | 0.00                | -90.38          | 0.00            | 90.38                      | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 0.82               | 0.82                | -0.19                | 0.056        |
| 45.13         | -26.02           | -1.38            | 0.00                | -88.81          | 0.00            | 88.81                      | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 0.86               | 0.86                | -0.19                | 0.056        |
| 46.00         | -25.72           | -1.38            | 0.00                | -87.61          | 0.00            | 87.61                      | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 0.90               | 0.90                | -0.20                | 0.055        |
| 48.00         | -25.05           | -1.36            | 0.00                | -84.86          | 0.00            | 84.86                      | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 0.98               | 0.98                | -0.21                | 0.055        |
| 49.88         | -24.43           | -1.34            | 0.00                | -82.30          | 0.00            | 82.30                      | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 1.07               | 1.07                | -0.21                | 0.064        |
| 50.00         | -24.41           | -1.34            | 0.00                | -82.14          | 0.00            | 82.14                      | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 1.07               | 1.07                | -0.21                | 0.064        |
| 52.00         | -24.05           | -1.34            | 0.00                | -79.45          | 0.00            | 79.45                      | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 1.16               | 1.16                | -0.23                | 0.064        |
| 54.00         | -23.70           | -1.34            | 0.00                | -76.77          | 0.00            | 76.77                      | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 1.26               | 1.26                | -0.24                | 0.063        |
| 56.00         | -23.36           | -1.34            | 0.00                | -74.10          | 0.00            | 74.10                      | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 1.36               | 1.36                | -0.25                | 0.063        |
| 58.00         | -23.02           | -1.34            | 0.00                | -71.42          | 0.00            | 71.42                      | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 1.47               | 1.47                | -0.26                | 0.062        |
| 60.00         | -22.68           | -1.34            | 0.00                | -68.74          | 0.00            | 68.74                      | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 1.58               | 1.58                | -0.27                | 0.062        |
| 62.00         | -22.35           | -1.35            | 0.00                | -66.06          | 0.00            | 66.06                      | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 1.70               | 1.70                | -0.28                | 0.061        |
| 64.00         | -22.02           | -1.35            | 0.00                | -63.36          | 0.00            | 63.36                      | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 1.82               | 1.82                | -0.30                | 0.061        |
| 66.00         | -21.69           | -1.35            | 0.00                | -60.67          | 0.00            | 60.67                      | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 1.95               | 1.95                | -0.31                | 0.060        |
| 68.00         | -21.37           | -1.35            | 0.00                | -57.97          | 0.00            | 57.97                      | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 2.08               | 2.08                | -0.32                | 0.060        |
| 70.00         | -21.05           | -1.36            | 0.00                | -55.26          | 0.00            | 55.26                      | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 2.21               | 2.21                | -0.33                | 0.059        |
| 72.00         | -20.73           | -1.36            | 0.00                | -52.55          | 0.00            | 52.55                      | 1984.83       | 992.42        | 2188.65          | 1095.95          | 2.35               | 2.35                | -0.34                | 0.058        |
| 74.00         | -20.42           | -1.36            | 0.00                | -49.83          | 0.00            | 49.83                      | 1950.80       | 975.40        | 2113.81          | 1058.48          | 2.50               | 2.50                | -0.35                | 0.058        |
| 75.00         | -20.21           | -1.36            | 0.00                | -48.47          | 0.00            | 48.47                      | 1933.78       | 966.89        | 2076.88          | 1039.98          | 2.57               | 2.57                | -0.36                | 0.057        |
| 76.00         | -20.05           | -1.36            | 0.00                | -47.11          | 0.00            | 47.11                      | 1916.76       | 958.38        | 2040.27          | 1021.65          | 2.65               | 2.65                | -0.37                | 0.057        |
| 78.00         | -19.75           | -1.37            | 0.00                | -44.38          | 0.00            | 44.38                      | 1882.73       | 941.37        | 1968.04          | 985.48           | 2.81               | 2.81                | -0.38                | 0.056        |
| 80.00         | -19.45           | -1.37            | 0.00                | -41.65          | 0.00            | 41.65                      | 1848.70       | 924.35        | 1897.11          | 949.96           | 2.97               | 2.97                | -0.39                | 0.054        |
| 82.00         | -19.16           | -1.37            | 0.00                | -38.92          | 0.00            | 38.92                      | 1814.66       | 907.33        | 1827.48          | 915.10           | 3.13               | 3.13                | -0.40                | 0.053        |
| 83.00         | -16.42           | -1.35            | 0.00                | -37.55          | 0.00            | 37.55                      | 1797.65       | 898.82        | 1793.15          | 897.91           | 3.22               | 3.22                | -0.41                | 0.051        |
| 84.00         | -16.28           | -1.35            | 0.00                | -36.20          | 0.00            | 36.20                      | 1780.63       | 890.31        | 1759.15          | 880.88           | 3.31               | 3.31                | -0.41                | 0.050        |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|        |        |       |      |        |      |       |         |        |         |        |      |       |       |
|--------|--------|-------|------|--------|------|-------|---------|--------|---------|--------|------|-------|-------|
| 85.00  | -15.64 | -1.35 | 0.00 | -34.85 | 0.00 | 34.85 | 1763.61 | 881.81 | 1725.48 | 864.02 | 3.39 | -0.42 | 0.049 |
| 86.00  | -15.51 | -1.35 | 0.00 | -33.50 | 0.00 | 33.50 | 1746.59 | 873.30 | 1692.13 | 847.32 | 3.48 | -0.42 | 0.048 |
| 88.00  | -15.24 | -1.35 | 0.00 | -30.80 | 0.00 | 30.80 | 1712.56 | 856.28 | 1626.40 | 814.41 | 3.66 | -0.44 | 0.047 |
| 90.00  | -14.98 | -1.35 | 0.00 | -28.10 | 0.00 | 28.10 | 1678.53 | 839.26 | 1561.98 | 782.15 | 3.85 | -0.45 | 0.045 |
| 91.00  | -11.86 | -1.33 | 0.00 | -26.75 | 0.00 | 26.75 | 1661.51 | 830.75 | 1530.26 | 766.27 | 3.94 | -0.45 | 0.042 |
| 91.29  | -11.82 | -1.33 | 0.00 | -26.36 | 0.00 | 26.36 | 1656.52 | 828.26 | 1521.01 | 761.64 | 3.97 | -0.45 | 0.042 |
| 92.00  | -11.70 | -1.33 | 0.00 | -25.42 | 0.00 | 25.42 | 1644.49 | 822.25 | 1498.86 | 750.54 | 4.04 | -0.46 | 0.041 |
| 94.00  | -11.35 | -1.32 | 0.00 | -22.77 | 0.00 | 22.77 | 1610.46 | 805.23 | 1437.04 | 719.59 | 4.23 | -0.47 | 0.039 |
| 94.71  | -11.23 | -1.32 | 0.00 | -21.83 | 0.00 | 21.83 | 930.70  | 465.35 | 848.15  | 424.70 | 4.30 | -0.47 | 0.063 |
| 96.00  | -11.13 | -1.32 | 0.00 | -20.12 | 0.00 | 20.12 | 922.07  | 461.04 | 828.91  | 415.07 | 4.43 | -0.48 | 0.061 |
| 98.00  | -7.37  | -1.17 | 0.00 | -17.48 | 0.00 | 17.48 | 908.49  | 454.24 | 799.32  | 400.25 | 4.63 | -0.49 | 0.052 |
| 100.00 | -7.24  | -1.17 | 0.00 | -15.14 | 0.00 | 15.14 | 894.64  | 447.32 | 770.03  | 385.59 | 4.84 | -0.50 | 0.047 |
| 102.00 | -7.12  | -1.16 | 0.00 | -12.80 | 0.00 | 12.80 | 880.55  | 440.27 | 741.05  | 371.08 | 5.05 | -0.51 | 0.043 |
| 104.00 | -7.00  | -1.15 | 0.00 | -10.48 | 0.00 | 10.48 | 866.20  | 433.10 | 712.41  | 356.74 | 5.27 | -0.52 | 0.037 |
| 106.00 | -6.88  | -1.14 | 0.00 | -8.18  | 0.00 | 8.18  | 851.60  | 425.80 | 684.12  | 342.57 | 5.49 | -0.53 | 0.032 |
| 107.00 | -2.90  | -0.67 | 0.00 | -7.04  | 0.00 | 7.04  | 844.21  | 422.10 | 670.11  | 335.55 | 5.60 | -0.54 | 0.024 |
| 108.00 | -2.85  | -0.67 | 0.00 | -6.36  | 0.00 | 6.36  | 836.75  | 418.38 | 656.18  | 328.58 | 5.71 | -0.54 | 0.023 |
| 110.00 | -2.74  | -0.65 | 0.00 | -5.03  | 0.00 | 5.03  | 821.65  | 410.82 | 628.62  | 314.78 | 5.94 | -0.55 | 0.019 |
| 112.00 | -2.63  | -0.64 | 0.00 | -3.72  | 0.00 | 3.72  | 804.60  | 402.30 | 600.19  | 300.54 | 6.17 | -0.55 | 0.016 |
| 114.00 | -2.53  | -0.62 | 0.00 | -2.45  | 0.00 | 2.45  | 784.18  | 392.09 | 569.96  | 285.40 | 6.40 | -0.56 | 0.012 |
| 116.00 | -2.43  | -0.60 | 0.00 | -1.20  | 0.00 | 1.20  | 763.76  | 381.88 | 540.51  | 270.66 | 6.64 | -0.56 | 0.008 |
| 118.00 | 0.00   | -0.58 | 0.00 | 0.00   | 0.00 | 0.00  | 743.33  | 371.67 | 511.84  | 256.30 | 6.87 | -0.56 | 0.000 |

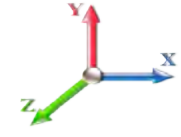
## Seismic Segment Forces (Factored)

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                               |      |                            |      |                                       |
|-------------------------------|------|----------------------------|------|---------------------------------------|
| <b>Load Case:</b> 0.9D + 1.0E |      |                            |      | <b>Iterations</b> 24                  |
| <b>Gust Response Factor</b>   | 1.10 | <b>Sds</b>                 | 0.23 | <b>Ss</b> 0.21                        |
| <b>Dead Load Factor</b>       | 0.90 | <b>Seismic Load Factor</b> | 1.00 | <b>S1</b> 0.07                        |
| <b>Wind Load Factor</b>       | 0.00 | <b>Structure Frequency</b> | 0.33 | <b>SA</b> 0.03                        |
|                               |      |                            |      | <b>Seismic Importance Factor</b> 1.00 |



| Top Elev (ft) | Description     | Wz (lb) | a    | b     | c    | Lateral Fs (lb) | R: 1.50 |
|---------------|-----------------|---------|------|-------|------|-----------------|---------|
| 0.00          |                 | 0.00    | 0.00 | 0.00  | 0.00 | 0.00            |         |
| 2.00          |                 | 345.42  | 0.00 | 0.02  | 0.01 | 5.39            |         |
| 4.00          |                 | 341.68  | 0.00 | 0.03  | 0.02 | 8.52            |         |
| 6.00          |                 | 337.94  | 0.00 | 0.04  | 0.02 | 10.49           |         |
| 8.00          |                 | 334.19  | 0.01 | 0.05  | 0.03 | 11.74           |         |
| 10.00         |                 | 330.45  | 0.01 | 0.06  | 0.03 | 12.55           |         |
| 12.00         |                 | 326.71  | 0.02 | 0.06  | 0.04 | 13.05           |         |
| 14.00         |                 | 322.97  | 0.03 | 0.07  | 0.04 | 13.35           |         |
| 16.00         |                 | 319.23  | 0.03 | 0.07  | 0.04 | 13.52           |         |
| 18.00         |                 | 315.49  | 0.04 | 0.07  | 0.04 | 13.60           |         |
| 20.00         |                 | 311.75  | 0.05 | 0.07  | 0.04 | 13.64           |         |
| 22.00         |                 | 308.01  | 0.07 | 0.07  | 0.04 | 13.65           |         |
| 24.00         |                 | 304.27  | 0.08 | 0.07  | 0.04 | 13.65           |         |
| 26.00         |                 | 300.52  | 0.09 | 0.07  | 0.04 | 13.65           |         |
| 28.00         |                 | 296.78  | 0.11 | 0.07  | 0.04 | 13.65           |         |
| 30.00         |                 | 293.04  | 0.12 | 0.07  | 0.03 | 13.64           |         |
| 32.00         |                 | 289.30  | 0.14 | 0.07  | 0.03 | 13.62           |         |
| 34.00         |                 | 285.56  | 0.16 | 0.07  | 0.03 | 13.58           |         |
| 36.00         |                 | 281.82  | 0.18 | 0.07  | 0.03 | 13.50           |         |
| 38.00         |                 | 278.08  | 0.20 | 0.06  | 0.02 | 13.35           |         |
| 40.00         |                 | 274.34  | 0.22 | 0.06  | 0.02 | 13.12           |         |
| 42.00         |                 | 270.60  | 0.24 | 0.06  | 0.02 | 12.76           |         |
| 44.00         |                 | 266.85  | 0.26 | 0.05  | 0.02 | 12.26           |         |
| 45.13         | Bot - Section 2 | 149.12  | 0.28 | 0.05  | 0.01 | 6.70            |         |
| 46.00         |                 | 211.01  | 0.29 | 0.05  | 0.01 | 9.27            |         |
| 48.00         |                 | 480.16  | 0.31 | 0.04  | 0.01 | 19.70           |         |
| 49.88         | Top - Section 1 | 445.09  | 0.34 | 0.04  | 0.01 | 16.60           |         |
| 50.00         |                 | 12.97   | 0.34 | 0.04  | 0.01 | 0.48            |         |
| 52.00         |                 | 214.55  | 0.37 | 0.03  | 0.01 | 6.83            |         |
| 54.00         |                 | 211.43  | 0.40 | 0.02  | 0.01 | 5.35            |         |
| 56.00         |                 | 208.31  | 0.43 | 0.01  | 0.01 | 3.66            |         |
| 58.00         |                 | 205.20  | 0.46 | 0.00  | 0.01 | 1.80            |         |
| 60.00         |                 | 202.08  | 0.49 | -0.01 | 0.01 | -0.16           |         |
| 62.00         |                 | 198.96  | 0.52 | -0.02 | 0.01 | -2.12           |         |
| 64.00         |                 | 195.84  | 0.56 | -0.04 | 0.01 | -3.96           |         |
| 66.00         |                 | 192.73  | 0.59 | -0.05 | 0.01 | -5.61           |         |
| 68.00         |                 | 189.61  | 0.63 | -0.06 | 0.02 | -6.97           |         |
| 70.00         |                 | 186.49  | 0.67 | -0.08 | 0.02 | -8.02           |         |
| 72.00         |                 | 183.37  | 0.70 | -0.09 | 0.03 | -8.73           |         |
| 74.00         |                 | 180.26  | 0.74 | -0.10 | 0.04 | -9.11           |         |
| 75.00         | Appurtenance(s) | 138.96  | 0.76 | -0.10 | 0.04 | -7.14           |         |
| 76.00         |                 | 88.18   | 0.78 | -0.11 | 0.05 | -4.56           |         |
| 78.00         |                 | 174.02  | 0.83 | -0.12 | 0.06 | -8.92           |         |
| 80.00         |                 | 170.90  | 0.87 | -0.12 | 0.08 | -8.40           |         |
| 82.00         |                 | 167.79  | 0.91 | -0.12 | 0.09 | -7.62           |         |
| 83.00         | Appurtenance(s) | 2242.7  | 0.94 | -0.12 | 0.10 | -96.35          |         |

## Seismic Segment Forces (Factored)

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                 |                 |      |       |      |                |
|----------------|-----------------|-----------------|------|-------|------|----------------|
| 84.00          |                 | 81.94           | 0.96 | -0.12 | 0.11 | -3.29          |
| 85.00          | Appurtenance(s) | 502.26          | 0.98 | -0.11 | 0.12 | -18.53         |
| 86.00          |                 | 80.39           | 1.00 | -0.11 | 0.13 | -2.68          |
| 88.00          |                 | 158.43          | 1.05 | -0.09 | 0.16 | -3.95          |
| 90.00          |                 | 155.31          | 1.10 | -0.07 | 0.19 | -2.34          |
| 91.00          | Appurtenance(s) | 2572.6          | 1.12 | -0.06 | 0.20 | -24.70         |
| 91.29          | Bot - Section 3 | 22.29           | 1.13 | -0.05 | 0.21 | -0.18          |
| 92.00          |                 | 86.19           | 1.15 | -0.04 | 0.22 | -0.32          |
| 94.00          |                 | 240.55          | 1.20 | 0.00  | 0.25 | 2.20           |
| 94.71          | Top - Section 2 | 84.20           | 1.22 | 0.02  | 0.27 | 1.18           |
| 96.00          |                 | 57.58           | 1.25 | 0.06  | 0.29 | 1.35           |
| 98.00          | Appurtenance(s) | 3088.1          | 1.30 | 0.13  | 0.34 | 121.82         |
| 100.00         |                 | 85.86           | 1.36 | 0.21  | 0.39 | 4.89           |
| 102.00         |                 | 83.99           | 1.41 | 0.31  | 0.44 | 6.38           |
| 104.00         |                 | 82.12           | 1.47 | 0.43  | 0.51 | 7.93           |
| 106.00         |                 | 80.25           | 1.53 | 0.56  | 0.57 | 9.53           |
| 107.00         | Appurtenance(s) | 3314.4          | 1.55 | 0.64  | 0.61 | 432.44         |
| 108.00         |                 | 38.96           | 1.58 | 0.73  | 0.65 | 5.55           |
| 110.00         |                 | 76.51           | 1.64 | 0.92  | 0.73 | 12.86          |
| 112.00         |                 | 74.64           | 1.70 | 1.13  | 0.82 | 14.57          |
| 114.00         |                 | 72.77           | 1.76 | 1.38  | 0.92 | 16.30          |
| 116.00         |                 | 70.90           | 1.83 | 1.66  | 1.02 | 18.05          |
| 118.00         | Appurtenance(s) | 2017.0          | 1.89 | 1.98  | 1.14 | 578.56         |
| <b>Totals:</b> |                 | <b>26,512.1</b> |      |       |      | <b>1,346.6</b> |

**Total Wind: 29,525.1**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

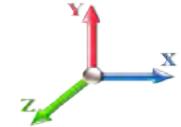
## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                               |      |                            |            |            |      |                                       |
|-------------------------------|------|----------------------------|------------|------------|------|---------------------------------------|
| <b>Load Case:</b> 0.9D + 1.0E |      |                            |            |            |      | <b>Iterations</b> 24                  |
| <b>Gust Response Factor</b>   | 1.10 |                            | <b>Sds</b> | 0.23       |      | <b>Ss</b> 0.21                        |
| <b>Dead Load Factor</b>       | 0.90 | <b>Seismic Load Factor</b> | 1.00       | <b>Sd1</b> | 0.10 | <b>S1</b> 0.07                        |
| <b>Wind Load Factor</b>       | 0.00 | <b>Structure Frequency</b> | 0.33       | <b>SA</b>  | 0.03 | <b>Seismic Importance Factor</b> 1.00 |



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -27.32           | -1.58            | 0.00                | -154.07         | 0.00            | 154.07                     | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.00                | 0.00                 | 0.056        |
| 2.00          | -26.93           | -1.58            | 0.00                | -150.91         | 0.00            | 150.91                     | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.00               | -0.01               | -0.01                | 0.055        |
| 4.00          | -26.55           | -1.57            | 0.00                | -147.75         | 0.00            | 147.75                     | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.01               | -0.01               | -0.01                | 0.055        |
| 6.00          | -26.18           | -1.57            | 0.00                | -144.60         | 0.00            | 144.60                     | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.01               | -0.02               | -0.02                | 0.055        |
| 8.00          | -25.81           | -1.56            | 0.00                | -141.47         | 0.00            | 141.47                     | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.03               | -0.03               | -0.03                | 0.055        |
| 10.00         | -25.44           | -1.55            | 0.00                | -138.35         | 0.00            | 138.35                     | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.04               | -0.04               | -0.04                | 0.055        |
| 12.00         | -25.07           | -1.54            | 0.00                | -135.26         | 0.00            | 135.26                     | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.06               | -0.05               | -0.05                | 0.055        |
| 14.00         | -24.71           | -1.53            | 0.00                | -132.18         | 0.00            | 132.18                     | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 0.08               | -0.05               | -0.05                | 0.054        |
| 16.00         | -24.35           | -1.52            | 0.00                | -129.12         | 0.00            | 129.12                     | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 0.10               | -0.06               | -0.06                | 0.054        |
| 18.00         | -24.00           | -1.51            | 0.00                | -126.08         | 0.00            | 126.08                     | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 0.13               | -0.07               | -0.07                | 0.054        |
| 20.00         | -23.64           | -1.50            | 0.00                | -123.07         | 0.00            | 123.07                     | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 0.16               | -0.08               | -0.08                | 0.054        |
| 22.00         | -23.30           | -1.49            | 0.00                | -120.08         | 0.00            | 120.08                     | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 0.19               | -0.09               | -0.09                | 0.054        |
| 24.00         | -22.95           | -1.48            | 0.00                | -117.10         | 0.00            | 117.10                     | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 0.23               | -0.09               | -0.09                | 0.053        |
| 26.00         | -22.61           | -1.46            | 0.00                | -114.15         | 0.00            | 114.15                     | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 0.27               | -0.10               | -0.10                | 0.053        |
| 28.00         | -22.27           | -1.45            | 0.00                | -111.22         | 0.00            | 111.22                     | 3225.91       | 1612.91       | 4804.91          | 2406.03          | 0.32               | -0.11               | -0.11                | 0.053        |
| 30.00         | -21.94           | -1.44            | 0.00                | -108.32         | 0.00            | 108.32                     | 3194.51       | 1597.15       | 4683.16          | 2345.06          | 0.36               | -0.12               | -0.12                | 0.053        |
| 32.00         | -21.60           | -1.43            | 0.00                | -105.43         | 0.00            | 105.43                     | 3165.61       | 1581.15       | 4562.98          | 2284.88          | 0.42               | -0.13               | -0.13                | 0.053        |
| 34.00         | -21.28           | -1.42            | 0.00                | -102.57         | 0.00            | 102.57                     | 3136.11       | 1564.91       | 4444.36          | 2225.48          | 0.47               | -0.14               | -0.14                | 0.053        |
| 36.00         | -20.95           | -1.41            | 0.00                | -99.73          | 0.00            | 99.73                      | 3106.91       | 1548.42       | 4327.30          | 2166.87          | 0.53               | -0.15               | -0.15                | 0.053        |
| 38.00         | -20.63           | -1.40            | 0.00                | -96.91          | 0.00            | 96.91                      | 3077.91       | 1531.69       | 4211.81          | 2109.03          | 0.59               | -0.15               | -0.15                | 0.053        |
| 40.00         | -20.31           | -1.39            | 0.00                | -94.11          | 0.00            | 94.11                      | 3049.01       | 1514.71       | 4097.87          | 2051.98          | 0.66               | -0.16               | -0.16                | 0.053        |
| 42.00         | -20.00           | -1.38            | 0.00                | -91.34          | 0.00            | 91.34                      | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 0.73               | -0.17               | -0.17                | 0.053        |
| 44.00         | -19.69           | -1.37            | 0.00                | -88.58          | 0.00            | 88.58                      | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 0.81               | -0.18               | -0.18                | 0.052        |
| 45.13         | -19.51           | -1.36            | 0.00                | -87.04          | 0.00            | 87.04                      | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 0.85               | -0.19               | -0.19                | 0.052        |
| 46.00         | -19.29           | -1.35            | 0.00                | -85.86          | 0.00            | 85.86                      | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 0.88               | -0.19               | -0.19                | 0.052        |
| 48.00         | -18.79           | -1.33            | 0.00                | -83.15          | 0.00            | 83.15                      | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 0.97               | -0.20               | -0.20                | 0.052        |
| 49.88         | -18.32           | -1.32            | 0.00                | -80.64          | 0.00            | 80.64                      | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 1.05               | -0.21               | -0.21                | 0.060        |
| 50.00         | -18.30           | -1.32            | 0.00                | -80.48          | 0.00            | 80.48                      | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 1.05               | -0.21               | -0.21                | 0.060        |
| 52.00         | -18.04           | -1.32            | 0.00                | -77.84          | 0.00            | 77.84                      | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 1.14               | -0.22               | -0.22                | 0.060        |
| 54.00         | -17.78           | -1.31            | 0.00                | -75.21          | 0.00            | 75.21                      | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 1.24               | -0.23               | -0.23                | 0.059        |
| 56.00         | -17.52           | -1.31            | 0.00                | -72.59          | 0.00            | 72.59                      | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 1.34               | -0.24               | -0.24                | 0.059        |
| 58.00         | -17.26           | -1.31            | 0.00                | -69.97          | 0.00            | 69.97                      | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 1.44               | -0.26               | -0.26                | 0.059        |
| 60.00         | -17.01           | -1.31            | 0.00                | -67.35          | 0.00            | 67.35                      | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 1.55               | -0.27               | -0.27                | 0.058        |
| 62.00         | -16.76           | -1.32            | 0.00                | -64.72          | 0.00            | 64.72                      | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 1.67               | -0.28               | -0.28                | 0.058        |
| 64.00         | -16.51           | -1.32            | 0.00                | -62.09          | 0.00            | 62.09                      | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 1.79               | -0.29               | -0.29                | 0.057        |
| 66.00         | -16.27           | -1.32            | 0.00                | -59.45          | 0.00            | 59.45                      | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 1.91               | -0.30               | -0.30                | 0.057        |
| 68.00         | -16.02           | -1.32            | 0.00                | -56.81          | 0.00            | 56.81                      | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 2.04               | -0.31               | -0.31                | 0.056        |
| 70.00         | -15.78           | -1.32            | 0.00                | -54.17          | 0.00            | 54.17                      | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 2.17               | -0.32               | -0.32                | 0.056        |
| 72.00         | -15.55           | -1.33            | 0.00                | -51.52          | 0.00            | 51.52                      | 1984.83       | 992.42        | 2188.65          | 1095.95          | 2.31               | -0.34               | -0.34                | 0.055        |
| 74.00         | -15.31           | -1.33            | 0.00                | -48.87          | 0.00            | 48.87                      | 1950.80       | 975.40        | 2113.81          | 1058.48          | 2.45               | -0.35               | -0.35                | 0.054        |
| 75.00         | -15.15           | -1.33            | 0.00                | -47.54          | 0.00            | 47.54                      | 1933.78       | 966.89        | 2076.88          | 1039.98          | 2.53               | -0.35               | -0.35                | 0.054        |
| 76.00         | -15.04           | -1.33            | 0.00                | -46.22          | 0.00            | 46.22                      | 1916.76       | 958.38        | 2040.27          | 1021.65          | 2.60               | -0.36               | -0.36                | 0.053        |
| 78.00         | -14.81           | -1.33            | 0.00                | -43.56          | 0.00            | 43.56                      | 1882.73       | 941.37        | 1968.04          | 985.48           | 2.76               | -0.37               | -0.37                | 0.052        |
| 80.00         | -14.59           | -1.33            | 0.00                | -40.90          | 0.00            | 40.90                      | 1848.70       | 924.35        | 1897.11          | 949.96           | 2.91               | -0.38               | -0.38                | 0.051        |
| 82.00         | -14.36           | -1.33            | 0.00                | -38.23          | 0.00            | 38.23                      | 1814.66       | 907.33        | 1827.48          | 915.10           | 3.08               | -0.39               | -0.39                | 0.050        |
| 83.00         | -12.31           | -1.32            | 0.00                | -36.90          | 0.00            | 36.90                      | 1797.65       | 898.82        | 1793.15          | 897.91           | 3.16               | -0.40               | -0.40                | 0.048        |
| 84.00         | -12.21           | -1.32            | 0.00                | -35.58          | 0.00            | 35.58                      | 1780.63       | 890.31        | 1759.15          | 880.88           | 3.24               | -0.41               | -0.41                | 0.047        |

## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|        |        |       |      |        |      |       |         |        |         |        |      |       |       |
|--------|--------|-------|------|--------|------|-------|---------|--------|---------|--------|------|-------|-------|
| 85.00  | -11.73 | -1.32 | 0.00 | -34.26 | 0.00 | 34.26 | 1763.61 | 881.81 | 1725.48 | 864.02 | 3.33 | -0.41 | 0.046 |
| 86.00  | -11.63 | -1.32 | 0.00 | -32.94 | 0.00 | 32.94 | 1746.59 | 873.30 | 1692.13 | 847.32 | 3.42 | -0.42 | 0.046 |
| 88.00  | -11.43 | -1.32 | 0.00 | -30.31 | 0.00 | 30.31 | 1712.56 | 856.28 | 1626.40 | 814.41 | 3.59 | -0.43 | 0.044 |
| 90.00  | -11.23 | -1.32 | 0.00 | -27.67 | 0.00 | 27.67 | 1678.53 | 839.26 | 1561.98 | 782.15 | 3.78 | -0.44 | 0.042 |
| 91.00  | -8.89  | -1.30 | 0.00 | -26.35 | 0.00 | 26.35 | 1661.51 | 830.75 | 1530.26 | 766.27 | 3.87 | -0.44 | 0.040 |
| 91.29  | -8.86  | -1.30 | 0.00 | -25.97 | 0.00 | 25.97 | 1656.52 | 828.26 | 1521.01 | 761.64 | 3.90 | -0.44 | 0.039 |
| 92.00  | -8.77  | -1.30 | 0.00 | -25.05 | 0.00 | 25.05 | 1644.49 | 822.25 | 1498.86 | 750.54 | 3.96 | -0.45 | 0.039 |
| 94.00  | -8.51  | -1.30 | 0.00 | -22.44 | 0.00 | 22.44 | 1610.46 | 805.23 | 1437.04 | 719.59 | 4.15 | -0.46 | 0.036 |
| 94.71  | -8.42  | -1.30 | 0.00 | -21.52 | 0.00 | 21.52 | 1610.46 | 805.23 | 1437.04 | 719.59 | 4.15 | -0.46 | 0.036 |
| 96.00  | -8.34  | -1.30 | 0.00 | -19.85 | 0.00 | 19.85 | 1600.00 | 800.00 | 1425.00 | 715.00 | 4.20 | -0.46 | 0.036 |
| 96.00  | -8.34  | -1.30 | 0.00 | -19.85 | 0.00 | 19.85 | 922.07  | 461.04 | 828.91  | 415.07 | 4.35 | -0.47 | 0.057 |
| 98.00  | -5.52  | -1.15 | 0.00 | -17.25 | 0.00 | 17.25 | 908.49  | 454.24 | 799.32  | 400.25 | 4.54 | -0.48 | 0.049 |
| 100.00 | -5.43  | -1.15 | 0.00 | -14.94 | 0.00 | 14.94 | 894.64  | 447.32 | 770.03  | 385.59 | 4.75 | -0.49 | 0.045 |
| 102.00 | -5.34  | -1.14 | 0.00 | -12.64 | 0.00 | 12.64 | 880.55  | 440.27 | 741.05  | 371.08 | 4.96 | -0.50 | 0.040 |
| 104.00 | -5.25  | -1.14 | 0.00 | -10.36 | 0.00 | 10.36 | 866.20  | 433.10 | 712.41  | 356.74 | 5.17 | -0.51 | 0.035 |
| 106.00 | -5.16  | -1.13 | 0.00 | -8.09  | 0.00 | 8.09  | 851.60  | 425.80 | 684.12  | 342.57 | 5.39 | -0.52 | 0.030 |
| 107.00 | -2.17  | -0.67 | 0.00 | -6.96  | 0.00 | 6.96  | 844.21  | 422.10 | 670.11  | 335.55 | 5.50 | -0.53 | 0.023 |
| 108.00 | -2.13  | -0.66 | 0.00 | -6.30  | 0.00 | 6.30  | 836.75  | 418.38 | 656.18  | 328.58 | 5.61 | -0.53 | 0.022 |
| 110.00 | -2.05  | -0.65 | 0.00 | -4.98  | 0.00 | 4.98  | 821.65  | 410.82 | 628.62  | 314.78 | 5.83 | -0.54 | 0.018 |
| 112.00 | -1.97  | -0.63 | 0.00 | -3.68  | 0.00 | 3.68  | 804.60  | 402.30 | 600.19  | 300.54 | 6.06 | -0.54 | 0.015 |
| 114.00 | -1.90  | -0.61 | 0.00 | -2.42  | 0.00 | 2.42  | 784.18  | 392.09 | 569.96  | 285.40 | 6.29 | -0.55 | 0.011 |
| 116.00 | -1.82  | -0.60 | 0.00 | -1.19  | 0.00 | 1.19  | 763.76  | 381.88 | 540.51  | 270.66 | 6.52 | -0.55 | 0.007 |
| 118.00 | 0.00   | -0.58 | 0.00 | 0.00   | 0.00 | 0.00  | 743.33  | 371.67 | 511.84  | 256.30 | 6.75 | -0.55 | 0.000 |



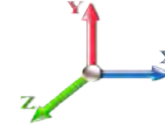
## Wind Loading - Shaft

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 25

| Elev (ft) | Description     | Kzt  | Kz   | qz (psf) | qzGh (psf) | C (mph-ft) | Cf    | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|-----------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|--------------------|--------------------|
| 0.00      |                 | 1.00 | 0.85 | 7.442    | 8.19       | 202.45     | 0.650 | 0.000          | 0.00           | 0.000   | 0.00      | 0.0               | 0.0                | 0.0                |
| 2.00      |                 | 1.00 | 0.85 | 7.442    | 8.19       | 200.29     | 0.650 | 0.000          | 2.00           | 7.280   | 4.73      | 38.7              | 0.0                | 345.4              |
| 4.00      |                 | 1.00 | 0.85 | 7.442    | 8.19       | 198.12     | 0.650 | 0.000          | 2.00           | 7.202   | 4.68      | 38.3              | 0.0                | 341.7              |
| 6.00      |                 | 1.00 | 0.85 | 7.442    | 8.19       | 195.96     | 0.650 | 0.000          | 2.00           | 7.124   | 4.63      | 37.9              | 0.0                | 337.9              |
| 8.00      |                 | 1.00 | 0.85 | 7.442    | 8.19       | 193.80     | 0.650 | 0.000          | 2.00           | 7.046   | 4.58      | 37.5              | 0.0                | 334.2              |
| 10.00     |                 | 1.00 | 0.85 | 7.442    | 8.19       | 191.64     | 0.650 | 0.000          | 2.00           | 6.968   | 4.53      | 37.1              | 0.0                | 330.5              |
| 12.00     |                 | 1.00 | 0.85 | 7.442    | 8.19       | 189.48     | 0.650 | 0.000          | 2.00           | 6.890   | 4.48      | 36.7              | 0.0                | 326.7              |
| 14.00     |                 | 1.00 | 0.85 | 7.442    | 8.19       | 187.31     | 0.650 | 0.000          | 2.00           | 6.811   | 4.43      | 36.2              | 0.0                | 323.0              |
| 16.00     |                 | 1.00 | 0.86 | 7.534    | 8.29       | 186.29     | 0.650 | 0.000          | 2.00           | 6.733   | 4.38      | 36.3              | 0.0                | 319.2              |
| 18.00     |                 | 1.00 | 0.88 | 7.723    | 8.50       | 186.41     | 0.650 | 0.000          | 2.00           | 6.655   | 4.33      | 36.7              | 0.0                | 315.5              |
| 20.00     |                 | 1.00 | 0.90 | 7.896    | 8.69       | 186.27     | 0.650 | 0.000          | 2.00           | 6.577   | 4.28      | 37.1              | 0.0                | 311.7              |
| 22.00     |                 | 1.00 | 0.92 | 8.056    | 8.86       | 185.89     | 0.650 | 0.000          | 2.00           | 6.499   | 4.22      | 37.4              | 0.0                | 308.0              |
| 24.00     |                 | 1.00 | 0.94 | 8.205    | 9.03       | 185.34     | 0.650 | 0.000          | 2.00           | 6.421   | 4.17      | 37.7              | 0.0                | 304.3              |
| 26.00     |                 | 1.00 | 0.95 | 8.345    | 9.18       | 184.61     | 0.650 | 0.000          | 2.00           | 6.342   | 4.12      | 37.8              | 0.0                | 300.5              |
| 28.00     |                 | 1.00 | 0.97 | 8.476    | 9.32       | 183.75     | 0.650 | 0.000          | 2.00           | 6.264   | 4.07      | 38.0              | 0.0                | 296.8              |
| 30.00     |                 | 1.00 | 0.98 | 8.600    | 9.46       | 182.77     | 0.650 | 0.000          | 2.00           | 6.186   | 4.02      | 38.0              | 0.0                | 293.0              |
| 32.00     |                 | 1.00 | 1.00 | 8.717    | 9.59       | 181.67     | 0.650 | 0.000          | 2.00           | 6.108   | 3.97      | 38.1              | 0.0                | 289.3              |
| 34.00     |                 | 1.00 | 1.01 | 8.829    | 9.71       | 180.48     | 0.650 | 0.000          | 2.00           | 6.030   | 3.92      | 38.1              | 0.0                | 285.6              |
| 36.00     |                 | 1.00 | 1.02 | 8.936    | 9.83       | 179.20     | 0.650 | 0.000          | 2.00           | 5.952   | 3.87      | 38.0              | 0.0                | 281.8              |
| 38.00     |                 | 1.00 | 1.03 | 9.039    | 9.94       | 177.84     | 0.650 | 0.000          | 2.00           | 5.873   | 3.82      | 38.0              | 0.0                | 278.1              |
| 40.00     |                 | 1.00 | 1.04 | 9.137    | 10.05      | 176.41     | 0.650 | 0.000          | 2.00           | 5.795   | 3.77      | 37.9              | 0.0                | 274.3              |
| 42.00     |                 | 1.00 | 1.05 | 9.231    | 10.15      | 174.91     | 0.650 | 0.000          | 2.00           | 5.717   | 3.72      | 37.7              | 0.0                | 270.6              |
| 44.00     |                 | 1.00 | 1.06 | 9.322    | 10.25      | 173.35     | 0.650 | 0.000          | 2.00           | 5.639   | 3.67      | 37.6              | 0.0                | 266.9              |
| 45.13     | Bot - Section 2 | 1.00 | 1.07 | 9.372    | 10.31      | 172.44     | 0.650 | 0.000          | 1.13           | 3.151   | 2.05      | 21.1              | 0.0                | 149.1              |
| 46.00     |                 | 1.00 | 1.07 | 9.410    | 10.35      | 171.73     | 0.650 | 0.000          | 0.87           | 2.455   | 1.60      | 16.5              | 0.0                | 211.0              |
| 48.00     |                 | 1.00 | 1.08 | 9.494    | 10.44      | 170.06     | 0.650 | 0.000          | 2.00           | 5.588   | 3.63      | 37.9              | 0.0                | 480.2              |
| 49.88     | Top - Section 1 | 1.00 | 1.09 | 9.571    | 10.53      | 168.44     | 0.650 | 0.000          | 1.88           | 5.182   | 3.37      | 35.5              | 0.0                | 445.1              |
| 50.00     |                 | 1.00 | 1.09 | 9.576    | 10.53      | 171.66     | 0.650 | 0.000          | 0.12           | 0.328   | 0.21      | 2.2               | 0.0                | 13.0               |
| 52.00     |                 | 1.00 | 1.10 | 9.656    | 10.62      | 169.91     | 0.650 | 0.000          | 2.00           | 5.432   | 3.53      | 37.5              | 0.0                | 214.5              |
| 54.00     |                 | 1.00 | 1.11 | 9.733    | 10.71      | 168.11     | 0.650 | 0.000          | 2.00           | 5.354   | 3.48      | 37.3              | 0.0                | 211.4              |
| 56.00     |                 | 1.00 | 1.12 | 9.807    | 10.79      | 166.27     | 0.650 | 0.000          | 2.00           | 5.276   | 3.43      | 37.0              | 0.0                | 208.3              |
| 58.00     |                 | 1.00 | 1.13 | 9.880    | 10.87      | 164.40     | 0.650 | 0.000          | 2.00           | 5.198   | 3.38      | 36.7              | 0.0                | 205.2              |
| 60.00     |                 | 1.00 | 1.14 | 9.951    | 10.95      | 162.49     | 0.650 | 0.000          | 2.00           | 5.119   | 3.33      | 36.4              | 0.0                | 202.1              |
| 62.00     |                 | 1.00 | 1.14 | 10.020   | 11.02      | 160.54     | 0.650 | 0.000          | 2.00           | 5.041   | 3.28      | 36.1              | 0.0                | 199.0              |
| 64.00     |                 | 1.00 | 1.15 | 10.087   | 11.10      | 158.56     | 0.650 | 0.000          | 2.00           | 4.963   | 3.23      | 35.8              | 0.0                | 195.8              |
| 66.00     |                 | 1.00 | 1.16 | 10.153   | 11.17      | 156.55     | 0.650 | 0.000          | 2.00           | 4.885   | 3.18      | 35.5              | 0.0                | 192.7              |
| 68.00     |                 | 1.00 | 1.17 | 10.217   | 11.24      | 154.51     | 0.650 | 0.000          | 2.00           | 4.807   | 3.12      | 35.1              | 0.0                | 189.6              |
| 70.00     |                 | 1.00 | 1.17 | 10.279   | 11.31      | 152.44     | 0.650 | 0.000          | 2.00           | 4.729   | 3.07      | 34.8              | 0.0                | 186.5              |
| 72.00     |                 | 1.00 | 1.18 | 10.340   | 11.37      | 150.34     | 0.650 | 0.000          | 2.00           | 4.650   | 3.02      | 34.4              | 0.0                | 183.4              |
| 74.00     |                 | 1.00 | 1.19 | 10.400   | 11.44      | 148.22     | 0.650 | 0.000          | 2.00           | 4.572   | 2.97      | 34.0              | 0.0                | 180.3              |
| 75.00     | Appurtenance(s) | 1.00 | 1.19 | 10.430   | 11.47      | 147.15     | 0.650 | 0.000          | 1.00           | 2.257   | 1.47      | 16.8              | 0.0                | 89.0               |
| 76.00     |                 | 1.00 | 1.19 | 10.459   | 11.50      | 146.08     | 0.650 | 0.000          | 1.00           | 2.237   | 1.45      | 16.7              | 0.0                | 88.2               |
| 78.00     |                 | 1.00 | 1.20 | 10.516   | 11.57      | 143.91     | 0.650 | 0.000          | 2.00           | 4.416   | 2.87      | 33.2              | 0.0                | 174.0              |
| 80.00     |                 | 1.00 | 1.21 | 10.572   | 11.63      | 141.71     | 0.650 | 0.000          | 2.00           | 4.338   | 2.82      | 32.8              | 0.0                | 170.9              |
| 82.00     |                 | 1.00 | 1.21 | 10.627   | 11.69      | 139.50     | 0.650 | 0.000          | 2.00           | 4.260   | 2.77      | 32.4              | 0.0                | 167.8              |
| 83.00     | Appurtenance(s) | 1.00 | 1.22 | 10.654   | 11.72      | 138.38     | 0.650 | 0.000          | 1.00           | 2.101   | 1.37      | 16.0              | 0.0                | 82.7               |
| 84.00     |                 | 1.00 | 1.22 | 10.681   | 11.75      | 137.26     | 0.650 | 0.000          | 1.00           | 2.081   | 1.35      | 15.9              | 0.0                | 81.9               |

## Wind Loading - Shaft

|                                     |                                   |                 |
|-------------------------------------|-----------------------------------|-----------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018      |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                 |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                 |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                 |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Page:</b> 43 |
|                                     | <b>Struct Class:</b> II           |                 |



|                        |      |      |        |       |        |       |       |               |       |      |                |     |                 |
|------------------------|------|------|--------|-------|--------|-------|-------|---------------|-------|------|----------------|-----|-----------------|
| 85.00 Appurtenance(s)  | 1.00 | 1.22 | 10.708 | 11.78 | 136.14 | 0.650 | 0.000 | 1.00          | 2.061 | 1.34 | 15.8           | 0.0 | 81.2            |
| 86.00                  | 1.00 | 1.23 | 10.734 | 11.81 | 135.01 | 0.650 | 0.000 | 1.00          | 2.042 | 1.33 | 15.7           | 0.0 | 80.4            |
| 88.00                  | 1.00 | 1.23 | 10.787 | 11.87 | 132.73 | 0.650 | 0.000 | 2.00          | 4.025 | 2.62 | 31.0           | 0.0 | 158.4           |
| 90.00                  | 1.00 | 1.24 | 10.838 | 11.92 | 130.44 | 0.650 | 0.000 | 2.00          | 3.947 | 2.57 | 30.6           | 0.0 | 155.3           |
| 91.00 Appurtenance(s)  | 1.00 | 1.24 | 10.863 | 11.95 | 129.28 | 0.650 | 0.000 | 1.00          | 1.944 | 1.26 | 15.1           | 0.0 | 76.5            |
| 91.29 Bot - Section 3  | 1.00 | 1.24 | 10.870 | 11.96 | 128.94 | 0.650 | 0.000 | 0.29          | 0.567 | 0.37 | 4.4            | 0.0 | 22.3            |
| 92.00                  | 1.00 | 1.24 | 10.888 | 11.98 | 128.12 | 0.650 | 0.000 | 0.71          | 1.380 | 0.90 | 10.7           | 0.0 | 86.2            |
| 94.00                  | 1.00 | 1.25 | 10.937 | 12.03 | 125.79 | 0.650 | 0.000 | 2.00          | 3.854 | 2.51 | 30.1           | 0.0 | 240.6           |
| 94.71 Top - Section 2  | 1.00 | 1.25 | 10.955 | 12.05 | 124.96 | 0.650 | 0.000 | 0.71          | 1.349 | 0.88 | 10.6           | 0.0 | 84.2            |
| 96.00                  | 1.00 | 1.25 | 10.986 | 12.08 | 125.58 | 0.650 | 0.000 | 1.29          | 2.427 | 1.58 | 19.1           | 0.0 | 57.6            |
| 98.00 Appurtenance(s)  | 1.00 | 1.26 | 11.034 | 12.14 | 123.22 | 0.650 | 0.000 | 2.00          | 3.698 | 2.40 | 29.2           | 0.0 | 87.7            |
| 100.00                 | 1.00 | 1.27 | 11.081 | 12.19 | 120.84 | 0.650 | 0.000 | 2.00          | 3.620 | 2.35 | 28.7           | 0.0 | 85.9            |
| 102.00                 | 1.00 | 1.27 | 11.127 | 12.24 | 118.45 | 0.650 | 0.000 | 2.00          | 3.541 | 2.30 | 28.2           | 0.0 | 84.0            |
| 104.00                 | 1.00 | 1.28 | 11.173 | 12.29 | 116.04 | 0.650 | 0.000 | 2.00          | 3.463 | 2.25 | 27.7           | 0.0 | 82.1            |
| 106.00                 | 1.00 | 1.28 | 11.218 | 12.34 | 113.62 | 0.650 | 0.000 | 2.00          | 3.385 | 2.20 | 27.2           | 0.0 | 80.2            |
| 107.00 Appurtenance(s) | 1.00 | 1.28 | 11.240 | 12.36 | 112.41 | 0.650 | 0.000 | 1.00          | 1.663 | 1.08 | 13.4           | 0.0 | 39.4            |
| 108.00                 | 1.00 | 1.29 | 11.262 | 12.39 | 111.19 | 0.650 | 0.000 | 1.00          | 1.644 | 1.07 | 13.2           | 0.0 | 39.0            |
| 110.00                 | 1.00 | 1.29 | 11.305 | 12.44 | 108.74 | 0.650 | 0.000 | 2.00          | 3.229 | 2.10 | 26.1           | 0.0 | 76.5            |
| 112.00                 | 1.00 | 1.30 | 11.348 | 12.48 | 106.27 | 0.650 | 0.000 | 2.00          | 3.151 | 2.05 | 25.6           | 0.0 | 74.6            |
| 114.00                 | 1.00 | 1.30 | 11.391 | 12.53 | 103.80 | 0.650 | 0.000 | 2.00          | 3.072 | 2.00 | 25.0           | 0.0 | 72.8            |
| 116.00                 | 1.00 | 1.31 | 11.432 | 12.58 | 101.31 | 0.650 | 0.000 | 2.00          | 2.994 | 1.95 | 24.5           | 0.0 | 70.9            |
| 118.00 Appurtenance(s) | 1.00 | 1.31 | 11.474 | 12.62 | 98.81  | 0.650 | 0.000 | 2.00          | 2.916 | 1.90 | 23.9           | 0.0 | 69.0            |
| <b>Totals:</b>         |      |      |        |       |        |       |       | <b>118.00</b> |       |      | <b>2,010.1</b> |     | <b>13,161.4</b> |

## Discrete Appurtenance Forces

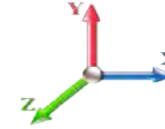
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 25

| No. | Elev (ft) | Description              | Qty | qz (psf) | qzGh (psf) | CaAa x Ka | Ka   | Total CaAa (sf) | Dead Load (lb) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) |
|-----|-----------|--------------------------|-----|----------|------------|-----------|------|-----------------|----------------|----------------|---------------|--------------|---------------|---------------|
| 1   | 118.00    | ANT150D                  | 1   | 11.503   | 12.653     | 1.00      | 1.00 | 1.00            | 6.00           | 0.000          | 1.420         | 12.65        | 0.00          | 17.97         |
| 2   | 118.00    | DB222                    | 1   | 11.710   | 12.881     | 1.00      | 1.00 | 2.25            | 16.00          | 0.000          | 12.000        | 28.98        | 0.00          | 347.79        |
| 3   | 118.00    | Low Profile Platform     | 1   | 11.474   | 12.621     | 1.00      | 1.00 | 28.47           | 1800.00        | 0.000          | 0.000         | 359.32       | 0.00          | 0.00          |
| 4   | 118.00    | DB844H90E-XY             | 9   | 11.490   | 12.639     | 1.12      | 1.00 | 30.74           | 126.00         | 0.000          | 0.800         | 388.57       | 0.00          | 310.86        |
| 5   | 107.00    | ACU-A20-N                | 4   | 11.240   | 12.364     | 0.54      | 0.80 | 0.30            | 4.00           | 0.000          | 0.000         | 3.71         | 0.00          | 0.00          |
| 6   | 107.00    | 1900 MHz 4X45 RRH        | 3   | 11.240   | 12.364     | 0.54      | 0.80 | 4.36            | 180.00         | 0.000          | 0.000         | 53.88        | 0.00          | 0.00          |
| 7   | 107.00    | 800 MHz RRU Filter       | 3   | 11.240   | 12.364     | 0.54      | 0.80 | 3.86            | 192.00         | 0.000          | 0.000         | 47.71        | 0.00          | 0.00          |
| 8   | 107.00    | TD-RRH8x20-25            | 3   | 11.240   | 12.364     | 0.54      | 0.80 | 6.51            | 210.00         | 0.000          | 0.000         | 80.52        | 0.00          | 0.00          |
| 9   | 107.00    | Low Profile Platform     | 1   | 11.240   | 12.364     | 1.00      | 1.00 | 27.33           | 2000.00        | 0.000          | 0.000         | 337.90       | 0.00          | 0.00          |
| 10  | 107.00    | APXVSPP18-C-A20          | 3   | 11.240   | 12.364     | 0.66      | 0.80 | 15.98           | 171.00         | 0.000          | 0.000         | 197.52       | 0.00          | 0.00          |
| 11  | 107.00    | APXV9TM14-ALU-120        | 3   | 11.262   | 12.388     | 0.63      | 0.80 | 12.02           | 168.00         | 0.000          | 1.000         | 148.91       | 0.00          | 148.91        |
| 12  | 107.00    | Universal Ring Mount     | 1   | 11.240   | 12.364     | 1.00      | 1.00 | 5.00            | 350.00         | 0.000          | 0.000         | 61.82        | 0.00          | 0.00          |
| 13  | 98.00     | Alcatel Lucent           | 3   | 11.034   | 12.137     | 0.54      | 0.80 | 5.63            | 180.00         | 0.000          | 0.000         | 68.31        | 0.00          | 0.00          |
| 14  | 98.00     | RFS APL868013            | 2   | 11.034   | 12.137     | 0.92      | 0.80 | 5.27            | 12.60          | 0.000          | 0.000         | 63.93        | 0.00          | 0.00          |
| 15  | 98.00     | Andrew SBNHH-1D85C       | 6   | 11.034   | 12.137     | 0.67      | 0.80 | 45.92           | 297.60         | 0.000          | 0.000         | 557.39       | 0.00          | 0.00          |
| 16  | 98.00     | Rfs Celwave              | 2   | 11.034   | 12.137     | 0.54      | 0.80 | 5.15            | 37.80          | 0.000          | 0.000         | 62.45        | 0.00          | 0.00          |
| 17  | 98.00     | Alcatel Lucent           | 3   | 11.034   | 12.137     | 0.54      | 0.80 | 4.08            | 170.40         | 0.000          | 0.000         | 49.57        | 0.00          | 0.00          |
| 18  | 98.00     | Alcatel-Lucent           | 3   | 11.034   | 12.137     | 0.54      | 0.80 | 3.02            | 138.00         | 0.000          | 0.000         | 36.69        | 0.00          | 0.00          |
| 19  | 98.00     | Andrew DB846H80E-SX      | 4   | 11.034   | 12.137     | 0.90      | 0.80 | 17.96           | 64.00          | 0.000          | 0.000         | 217.93       | 0.00          | 0.00          |
| 20  | 98.00     | Low Profile Platform     | 1   | 11.034   | 12.137     | 1.00      | 1.00 | 23.10           | 2100.00        | 0.000          | 0.000         | 280.37       | 0.00          | 0.00          |
| 21  | 91.00     | DC6-48-60-18-8F          | 2   | 10.863   | 11.949     | 1.00      | 1.00 | 1.84            | 63.60          | 0.000          | 0.000         | 21.99        | 0.00          | 0.00          |
| 22  | 91.00     | RRUS-11                  | 3   | 10.863   | 11.949     | 0.54      | 0.80 | 7.11            | 165.00         | 0.000          | 0.000         | 84.93        | 0.00          | 0.00          |
| 23  | 91.00     | LGP21401                 | 6   | 10.863   | 11.949     | 0.54      | 0.80 | 4.15            | 84.60          | 0.000          | 0.000         | 49.57        | 0.00          | 0.00          |
| 24  | 91.00     | P65-16-XLH-RR            | 3   | 10.863   | 11.949     | 0.60      | 0.80 | 14.69           | 159.00         | 0.000          | 0.000         | 175.51       | 0.00          | 0.00          |
| 25  | 91.00     | 7770.00                  | 3   | 10.863   | 11.949     | 0.58      | 0.80 | 9.64            | 105.00         | 0.000          | 0.000         | 115.14       | 0.00          | 0.00          |
| 26  | 91.00     | Low Profile Platform     | 1   | 10.863   | 11.949     | 1.00      | 1.00 | 17.46           | 1349.00        | 0.000          | 0.000         | 208.63       | 0.00          | 0.00          |
| 27  | 91.00     | RRUS 32 B30              | 3   | 10.863   | 11.949     | 0.65      | 0.80 | 5.33            | 180.00         | 0.000          | 0.000         | 63.65        | 0.00          | 0.00          |
| 28  | 91.00     | RRUS 32 B2               | 3   | 10.863   | 11.949     | 0.65      | 0.80 | 5.33            | 159.00         | 0.000          | 0.000         | 63.65        | 0.00          | 0.00          |
| 29  | 91.00     | QS66512-2                | 3   | 10.863   | 11.949     | 0.72      | 0.80 | 17.56           | 231.00         | 0.000          | 0.000         | 209.84       | 0.00          | 0.00          |
| 30  | 85.00     | V-brace kit              | 1   | 10.708   | 11.779     | 1.00      | 1.00 | 12.00           | 421.10         | 0.000          | 0.000         | 141.35       | 0.00          | 0.00          |
| 31  | 83.00     | Commscope -              | 3   | 10.654   | 11.720     | 0.64      | 0.80 | 22.02           | 149.40         | 0.000          | 0.000         | 258.10       | 0.00          | 0.00          |
| 32  | 83.00     | RFS - APXV18-209014      | 3   | 10.654   | 11.720     | 0.59      | 0.80 | 6.36            | 56.10          | 0.000          | 0.000         | 74.52        | 0.00          | 0.00          |
| 33  | 83.00     | Kathrein - 782 11054 -   | 3   | 10.654   | 11.720     | 0.54      | 0.80 | 0.24            | 5.40           | 0.000          | 0.000         | 2.83         | 0.00          | 0.00          |
| 34  | 83.00     | S20057A1                 | 3   | 10.654   | 11.720     | 0.54      | 0.80 | 1.32            | 33.00          | 0.000          | 0.000         | 15.45        | 0.00          | 0.00          |
| 35  | 83.00     | RFS - ATMAA1412D-1A2     | 3   | 10.654   | 11.720     | 0.54      | 0.80 | 1.88            | 39.00          | 0.000          | 0.000         | 22.05        | 0.00          | 0.00          |
| 36  | 83.00     | Fastback - IBR 1300      | 1   | 10.654   | 11.720     | 1.00      | 1.00 | 0.67            | 8.90           | 0.000          | 0.000         | 7.85         | 0.00          | 0.00          |
| 37  | 83.00     | Platform w/ Handrail kit | 1   | 10.654   | 11.720     | 1.00      | 1.00 | 37.16           | 1868.20        | 0.000          | 0.000         | 435.51       | 0.00          | 0.00          |
| 38  | 75.00     | Standoff Mount           | 1   | 10.430   | 11.473     | 1.00      | 1.00 | 2.63            | 40.00          | 0.000          | 0.000         | 30.17        | 0.00          | 0.00          |
| 39  | 75.00     | GPS                      | 1   | 10.430   | 11.473     | 1.00      | 1.00 | 1.00            | 10.00          | 0.000          | 0.000         | 11.47        | 0.00          | 0.00          |

**Totals: 13,350.70**

**5,050.34**

## Total Applied Force Summary

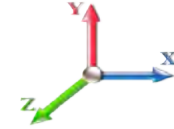
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 25

| Elev<br>(ft) | Description      | Lateral<br>FX (-)<br>(lb) | Axial<br>FY (-)<br>(lb) | Torsion<br>MY<br>(lb-ft) | Moment<br>MZ<br>(lb-ft) |
|--------------|------------------|---------------------------|-------------------------|--------------------------|-------------------------|
| 0.00         |                  | 0.00                      | 0.00                    | 0.00                     | 0.00                    |
| 2.00         |                  | 38.74                     | 424.42                  | 0.00                     | 0.00                    |
| 4.00         |                  | 38.32                     | 420.68                  | 0.00                     | 0.00                    |
| 6.00         |                  | 37.91                     | 416.94                  | 0.00                     | 0.00                    |
| 8.00         |                  | 37.49                     | 413.19                  | 0.00                     | 0.00                    |
| 10.00        |                  | 37.08                     | 409.45                  | 0.00                     | 0.00                    |
| 12.00        |                  | 36.66                     | 405.71                  | 0.00                     | 0.00                    |
| 14.00        |                  | 36.24                     | 401.97                  | 0.00                     | 0.00                    |
| 16.00        |                  | 36.27                     | 398.23                  | 0.00                     | 0.00                    |
| 18.00        |                  | 36.75                     | 394.49                  | 0.00                     | 0.00                    |
| 20.00        |                  | 37.13                     | 390.75                  | 0.00                     | 0.00                    |
| 22.00        |                  | 37.43                     | 387.01                  | 0.00                     | 0.00                    |
| 24.00        |                  | 37.67                     | 383.27                  | 0.00                     | 0.00                    |
| 26.00        |                  | 37.84                     | 379.52                  | 0.00                     | 0.00                    |
| 28.00        |                  | 37.96                     | 375.78                  | 0.00                     | 0.00                    |
| 30.00        |                  | 38.04                     | 372.04                  | 0.00                     | 0.00                    |
| 32.00        |                  | 38.07                     | 368.30                  | 0.00                     | 0.00                    |
| 34.00        |                  | 38.07                     | 364.56                  | 0.00                     | 0.00                    |
| 36.00        |                  | 38.03                     | 360.82                  | 0.00                     | 0.00                    |
| 38.00        |                  | 37.96                     | 357.08                  | 0.00                     | 0.00                    |
| 40.00        |                  | 37.86                     | 353.34                  | 0.00                     | 0.00                    |
| 42.00        |                  | 37.73                     | 349.60                  | 0.00                     | 0.00                    |
| 44.00        |                  | 37.58                     | 345.85                  | 0.00                     | 0.00                    |
| 45.13        |                  | 21.12                     | 193.75                  | 0.00                     | 0.00                    |
| 46.00        |                  | 16.52                     | 245.37                  | 0.00                     | 0.00                    |
| 48.00        |                  | 37.94                     | 559.16                  | 0.00                     | 0.00                    |
| 49.88        |                  | 35.46                     | 519.35                  | 0.00                     | 0.00                    |
| 50.00        |                  | 2.25                      | 17.71                   | 0.00                     | 0.00                    |
| 52.00        |                  | 37.50                     | 293.55                  | 0.00                     | 0.00                    |
| 54.00        |                  | 37.26                     | 290.43                  | 0.00                     | 0.00                    |
| 56.00        |                  | 37.00                     | 287.31                  | 0.00                     | 0.00                    |
| 58.00        |                  | 36.72                     | 284.20                  | 0.00                     | 0.00                    |
| 60.00        |                  | 36.42                     | 281.08                  | 0.00                     | 0.00                    |
| 62.00        |                  | 36.12                     | 277.96                  | 0.00                     | 0.00                    |
| 64.00        |                  | 35.80                     | 274.84                  | 0.00                     | 0.00                    |
| 66.00        |                  | 35.46                     | 271.73                  | 0.00                     | 0.00                    |
| 68.00        |                  | 35.11                     | 268.61                  | 0.00                     | 0.00                    |
| 70.00        |                  | 34.75                     | 265.49                  | 0.00                     | 0.00                    |
| 72.00        |                  | 34.38                     | 262.37                  | 0.00                     | 0.00                    |
| 74.00        |                  | 34.00                     | 259.26                  | 0.00                     | 0.00                    |
| 75.00        | (2) attachments  | 58.47                     | 178.46                  | 0.00                     | 0.00                    |
| 76.00        |                  | 16.73                     | 127.52                  | 0.00                     | 0.00                    |
| 78.00        |                  | 33.20                     | 252.70                  | 0.00                     | 0.00                    |
| 80.00        |                  | 32.79                     | 249.58                  | 0.00                     | 0.00                    |
| 82.00        |                  | 32.37                     | 246.47                  | 0.00                     | 0.00                    |
| 83.00        | (17) attachments | 832.31                    | 2282.06                 | 0.00                     | 0.00                    |
| 84.00        |                  | 15.89                     | 113.12                  | 0.00                     | 0.00                    |

## Total Applied Force Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|                |                  |                 |                  |             |               |
|----------------|------------------|-----------------|------------------|-------------|---------------|
| 85.00          | (1) attachments  | 157.13          | 533.44           | 0.00        | 0.00          |
| 86.00          |                  | 15.67           | 111.57           | 0.00        | 0.00          |
| 88.00          |                  | 31.04           | 220.79           | 0.00        | 0.00          |
| 90.00          |                  | 30.58           | 217.67           | 0.00        | 0.00          |
| 91.00          | (27) attachments | 1008.01         | 2603.87          | 0.00        | 0.00          |
| 91.29          |                  | 4.40            | 29.10            | 0.00        | 0.00          |
| 92.00          |                  | 10.75           | 102.60           | 0.00        | 0.00          |
| 94.00          |                  | 30.14           | 286.99           | 0.00        | 0.00          |
| 94.71          |                  | 10.57           | 100.68           | 0.00        | 0.00          |
| 96.00          |                  | 19.06           | 87.53            | 0.00        | 0.00          |
| 98.00          | (24) attachments | 1365.81         | 3134.57          | 0.00        | 0.00          |
| 100.00         |                  | 28.68           | 102.94           | 0.00        | 0.00          |
| 102.00         |                  | 28.18           | 101.07           | 0.00        | 0.00          |
| 104.00         |                  | 27.67           | 99.20            | 0.00        | 0.00          |
| 106.00         |                  | 27.15           | 97.33            | 0.00        | 0.00          |
| 107.00         | (21) attachments | 945.33          | 3322.96          | 0.00        | 148.91        |
| 108.00         |                  | 13.24           | 45.52            | 0.00        | 0.00          |
| 110.00         |                  | 26.10           | 89.63            | 0.00        | 0.00          |
| 112.00         |                  | 25.56           | 87.76            | 0.00        | 0.00          |
| 114.00         |                  | 25.02           | 85.89            | 0.00        | 0.00          |
| 116.00         |                  | 24.48           | 84.02            | 0.00        | 0.00          |
| 118.00         | (12) attachments | 813.45          | 2030.15          | 0.00        | 676.61        |
| <b>Totals:</b> |                  | <b>7,060.43</b> | <b>30,350.36</b> | <b>0.00</b> | <b>825.52</b> |

## Linear Appurtenance Segment Forces (Factored)

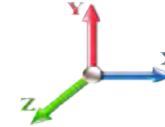
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 25

| Top Elev (ft)  | Description | Wind Exposed | Length (ft) | Ca    | Exposed Width (in) | Area (sqft) | CaAa (sqft) | Ra    | Cf Adjust Factor | qz (psf) | F X (lb)   | Dead Load (lb) |
|----------------|-------------|--------------|-------------|-------|--------------------|-------------|-------------|-------|------------------|----------|------------|----------------|
| 2.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 7.442    | 0.00       | 0.32           |
| 4.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 7.442    | 0.00       | 0.32           |
| 6.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 7.442    | 0.00       | 0.32           |
| 8.00           | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.015 | 0.000            | 7.442    | 0.00       | 0.32           |
| 10.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.442    | 0.00       | 0.32           |
| 12.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.442    | 0.00       | 0.32           |
| 14.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.442    | 0.00       | 0.32           |
| 16.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.534    | 0.00       | 0.32           |
| 18.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.723    | 0.00       | 0.32           |
| 20.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.016 | 0.000            | 7.896    | 0.00       | 0.32           |
| 22.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 8.056    | 0.00       | 0.32           |
| 24.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 8.205    | 0.00       | 0.32           |
| 26.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 8.345    | 0.00       | 0.32           |
| 28.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.017 | 0.000            | 8.476    | 0.00       | 0.32           |
| 30.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 8.600    | 0.00       | 0.32           |
| 32.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 8.717    | 0.00       | 0.32           |
| 34.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 8.829    | 0.00       | 0.32           |
| 36.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 8.936    | 0.00       | 0.32           |
| 38.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.018 | 0.000            | 9.039    | 0.00       | 0.32           |
| 40.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 9.137    | 0.00       | 0.32           |
| 42.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 9.231    | 0.00       | 0.32           |
| 44.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.019 | 0.000            | 9.322    | 0.00       | 0.32           |
| 45.13          | 1/2"        | Yes          | 1.13        | 0.000 | 0.65               | 0.06        | 0.00        | 0.019 | 0.000            | 9.372    | 0.00       | 0.18           |
| 46.00          | 1/2"        | Yes          | 0.87        | 0.000 | 0.65               | 0.05        | 0.00        | 0.020 | 0.000            | 9.410    | 0.00       | 0.14           |
| 48.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 9.494    | 0.00       | 0.32           |
| 49.88          | 1/2"        | Yes          | 1.88        | 0.000 | 0.65               | 0.10        | 0.00        | 0.020 | 0.000            | 9.571    | 0.00       | 0.30           |
| 50.00          | 1/2"        | Yes          | 0.12        | 0.000 | 0.65               | 0.01        | 0.00        | 0.020 | 0.000            | 9.576    | 0.00       | 0.02           |
| 52.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 9.656    | 0.00       | 0.32           |
| 54.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.020 | 0.000            | 9.733    | 0.00       | 0.32           |
| 56.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 9.807    | 0.00       | 0.32           |
| 58.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 9.880    | 0.00       | 0.32           |
| 60.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 9.951    | 0.00       | 0.32           |
| 62.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.021 | 0.000            | 10.020   | 0.00       | 0.32           |
| 64.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 10.087   | 0.00       | 0.32           |
| 66.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.022 | 0.000            | 10.153   | 0.00       | 0.32           |
| 68.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 10.217   | 0.00       | 0.32           |
| 70.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 10.279   | 0.00       | 0.32           |
| 72.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.023 | 0.000            | 10.340   | 0.00       | 0.32           |
| 74.00          | 1/2"        | Yes          | 2.00        | 0.000 | 0.65               | 0.11        | 0.00        | 0.024 | 0.000            | 10.400   | 0.00       | 0.32           |
| 75.00          | 1/2"        | Yes          | 1.00        | 0.000 | 0.65               | 0.05        | 0.00        | 0.024 | 0.000            | 10.430   | 0.00       | 0.16           |
| <b>Totals:</b> |             |              |             |       |                    |             |             |       |                  |          | <b>0.0</b> | <b>12.0</b>    |

## Calculated Forces

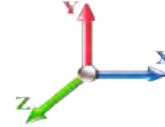
|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | <b>11/27/2018</b>       |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 25

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



| 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 Sway (deg) | Rotation Twist (deg) | Stress Ratio |
|---------------|------------------|------------------|---------------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|---------------------|----------------------|--------------|
| 0.00          | -30.35           | -7.07            | 0.00                | -637.76         | 0.00            | 637.76                     | 3634.70       | 1817.35       | 6397.77          | 3203.64          | 0.00               | 0.000               | 0.000                | 0.207        |
| 2.00          | -29.92           | -7.04            | 0.00                | -623.62         | 0.00            | 623.62                     | 3607.15       | 1803.57       | 6280.28          | 3144.81          | 0.01               | -0.030              | 0.000                | 0.207        |
| 4.00          | -29.50           | -7.02            | 0.00                | -609.53         | 0.00            | 609.53                     | 3579.34       | 1789.67       | 6163.42          | 3086.29          | 0.03               | -0.061              | 0.000                | 0.206        |
| 6.00          | -29.08           | -7.00            | 0.00                | -595.49         | 0.00            | 595.49                     | 3551.29       | 1775.64       | 6047.19          | 3028.09          | 0.06               | -0.092              | 0.000                | 0.205        |
| 8.00          | -28.66           | -6.98            | 0.00                | -581.49         | 0.00            | 581.49                     | 3522.98       | 1761.49       | 5931.61          | 2970.21          | 0.10               | -0.123              | 0.000                | 0.204        |
| 10.00         | -28.25           | -6.95            | 0.00                | -567.54         | 0.00            | 567.54                     | 3494.42       | 1747.21       | 5816.69          | 2912.67          | 0.16               | -0.154              | 0.000                | 0.203        |
| 12.00         | -27.84           | -6.93            | 0.00                | -553.64         | 0.00            | 553.64                     | 3465.61       | 1732.80       | 5702.44          | 2855.46          | 0.23               | -0.186              | 0.000                | 0.202        |
| 14.00         | -27.43           | -6.91            | 0.00                | -539.77         | 0.00            | 539.77                     | 3436.54       | 1718.27       | 5588.89          | 2798.60          | 0.32               | -0.218              | 0.000                | 0.201        |
| 16.00         | -27.03           | -6.89            | 0.00                | -525.96         | 0.00            | 525.96                     | 3407.22       | 1703.61       | 5476.05          | 2742.09          | 0.42               | -0.251              | 0.000                | 0.200        |
| 18.00         | -26.63           | -6.86            | 0.00                | -512.18         | 0.00            | 512.18                     | 3377.65       | 1688.83       | 5363.92          | 2685.95          | 0.53               | -0.283              | 0.000                | 0.199        |
| 20.00         | -26.24           | -6.84            | 0.00                | -498.46         | 0.00            | 498.46                     | 3347.83       | 1673.91       | 5252.53          | 2630.17          | 0.65               | -0.316              | 0.000                | 0.197        |
| 22.00         | -25.84           | -6.81            | 0.00                | -484.78         | 0.00            | 484.78                     | 3317.75       | 1658.87       | 5141.89          | 2574.76          | 0.79               | -0.349              | 0.000                | 0.196        |
| 24.00         | -25.46           | -6.79            | 0.00                | -471.15         | 0.00            | 471.15                     | 3287.42       | 1643.71       | 5032.01          | 2519.74          | 0.95               | -0.383              | 0.000                | 0.195        |
| 26.00         | -25.07           | -6.76            | 0.00                | -457.57         | 0.00            | 457.57                     | 3256.84       | 1628.42       | 4922.91          | 2465.11          | 1.12               | -0.417              | 0.000                | 0.193        |
| 28.00         | -24.69           | -6.74            | 0.00                | -444.05         | 0.00            | 444.05                     | 3219.51       | 1609.75       | 4804.91          | 2406.03          | 1.30               | -0.451              | 0.000                | 0.192        |
| 30.00         | -24.32           | -6.71            | 0.00                | -430.57         | 0.00            | 430.57                     | 3178.67       | 1589.33       | 4683.16          | 2345.06          | 1.49               | -0.485              | 0.000                | 0.191        |
| 32.00         | -23.95           | -6.68            | 0.00                | -417.15         | 0.00            | 417.15                     | 3137.83       | 1568.91       | 4562.98          | 2284.88          | 1.70               | -0.520              | 0.000                | 0.190        |
| 34.00         | -23.58           | -6.66            | 0.00                | -403.78         | 0.00            | 403.78                     | 3096.99       | 1548.49       | 4444.36          | 2225.48          | 1.93               | -0.554              | 0.000                | 0.189        |
| 36.00         | -23.21           | -6.63            | 0.00                | -390.47         | 0.00            | 390.47                     | 3056.15       | 1528.07       | 4327.30          | 2166.87          | 2.17               | -0.589              | 0.000                | 0.188        |
| 38.00         | -22.85           | -6.60            | 0.00                | -377.21         | 0.00            | 377.21                     | 3015.30       | 1507.65       | 4211.81          | 2109.03          | 2.42               | -0.624              | 0.000                | 0.186        |
| 40.00         | -22.50           | -6.57            | 0.00                | -364.00         | 0.00            | 364.00                     | 2974.46       | 1487.23       | 4097.87          | 2051.98          | 2.69               | -0.660              | 0.000                | 0.185        |
| 42.00         | -22.14           | -6.55            | 0.00                | -350.86         | 0.00            | 350.86                     | 2933.62       | 1466.81       | 3985.50          | 1995.71          | 2.98               | -0.695              | 0.000                | 0.183        |
| 44.00         | -21.79           | -6.51            | 0.00                | -337.76         | 0.00            | 337.76                     | 2892.78       | 1446.39       | 3874.69          | 1940.23          | 3.28               | -0.731              | 0.000                | 0.182        |
| 45.13         | -21.60           | -6.50            | 0.00                | -330.40         | 0.00            | 330.40                     | 2869.71       | 1434.85       | 3812.78          | 1909.22          | 3.45               | -0.751              | 0.000                | 0.181        |
| 46.00         | -21.35           | -6.49            | 0.00                | -324.75         | 0.00            | 324.75                     | 2851.94       | 1425.97       | 3765.45          | 1885.52          | 3.59               | -0.767              | 0.000                | 0.180        |
| 48.00         | -20.79           | -6.46            | 0.00                | -311.77         | 0.00            | 311.77                     | 2811.10       | 1405.55       | 3657.76          | 1831.60          | 3.92               | -0.803              | 0.000                | 0.178        |
| 49.88         | -20.27           | -6.42            | 0.00                | -299.64         | 0.00            | 299.64                     | 2333.69       | 1166.84       | 3066.96          | 1535.76          | 4.24               | -0.837              | 0.000                | 0.204        |
| 50.00         | -20.25           | -6.42            | 0.00                | -298.87         | 0.00            | 298.87                     | 2332.20       | 1166.10       | 3062.32          | 1533.44          | 4.26               | -0.839              | 0.000                | 0.204        |
| 52.00         | -19.95           | -6.40            | 0.00                | -286.02         | 0.00            | 286.02                     | 2307.18       | 1153.59       | 2985.35          | 1494.89          | 4.62               | -0.880              | 0.000                | 0.200        |
| 54.00         | -19.66           | -6.37            | 0.00                | -273.23         | 0.00            | 273.23                     | 2281.92       | 1140.96       | 2909.02          | 1456.67          | 5.00               | -0.920              | 0.000                | 0.196        |
| 56.00         | -19.36           | -6.34            | 0.00                | -260.49         | 0.00            | 260.49                     | 2256.40       | 1128.20       | 2833.34          | 1418.77          | 5.40               | -0.960              | 0.000                | 0.192        |
| 58.00         | -19.08           | -6.31            | 0.00                | -247.81         | 0.00            | 247.81                     | 2223.07       | 1111.54       | 2748.96          | 1376.53          | 5.81               | -1.001              | 0.000                | 0.189        |
| 60.00         | -18.79           | -6.28            | 0.00                | -235.19         | 0.00            | 235.19                     | 2189.04       | 1094.52       | 2665.01          | 1334.49          | 6.24               | -1.040              | 0.000                | 0.185        |
| 62.00         | -18.51           | -6.25            | 0.00                | -222.63         | 0.00            | 222.63                     | 2155.00       | 1077.50       | 2582.36          | 1293.10          | 6.68               | -1.080              | 0.000                | 0.181        |
| 64.00         | -18.23           | -6.23            | 0.00                | -210.12         | 0.00            | 210.12                     | 2120.97       | 1060.48       | 2501.02          | 1252.37          | 7.14               | -1.119              | 0.000                | 0.176        |
| 66.00         | -17.96           | -6.20            | 0.00                | -197.66         | 0.00            | 197.66                     | 2086.94       | 1043.47       | 2420.97          | 1212.28          | 7.62               | -1.158              | 0.000                | 0.172        |
| 68.00         | -17.69           | -6.17            | 0.00                | -185.27         | 0.00            | 185.27                     | 2052.90       | 1026.45       | 2342.23          | 1172.85          | 8.11               | -1.196              | 0.000                | 0.167        |
| 70.00         | -17.42           | -6.14            | 0.00                | -172.93         | 0.00            | 172.93                     | 2018.87       | 1009.43       | 2264.79          | 1134.08          | 8.62               | -1.234              | 0.000                | 0.161        |
| 72.00         | -17.15           | -6.11            | 0.00                | -160.66         | 0.00            | 160.66                     | 1984.83       | 992.42        | 2188.65          | 1095.95          | 9.15               | -1.271              | 0.000                | 0.155        |
| 74.00         | -16.89           | -6.08            | 0.00                | -148.44         | 0.00            | 148.44                     | 1950.80       | 975.40        | 2113.81          | 1058.48          | 9.69               | -1.307              | 0.000                | 0.149        |
| 75.00         | -16.71           | -6.02            | 0.00                | -142.36         | 0.00            | 142.36                     | 1933.78       | 966.89        | 2076.88          | 1039.98          | 9.96               | -1.325              | 0.000                | 0.146        |
| 76.00         | -16.58           | -6.01            | 0.00                | -136.34         | 0.00            | 136.34                     | 1916.76       | 958.38        | 2040.27          | 1021.65          | 10.24              | -1.342              | 0.000                | 0.142        |
| 78.00         | -16.33           | -5.98            | 0.00                | -124.32         | 0.00            | 124.32                     | 1882.73       | 941.37        | 1968.04          | 985.48           | 10.81              | -1.376              | 0.000                | 0.135        |
| 80.00         | -16.07           | -5.95            | 0.00                | -112.36         | 0.00            | 112.36                     | 1848.70       | 924.35        | 1897.11          | 949.96           | 11.39              | -1.408              | 0.000                | 0.127        |
| 82.00         | -15.83           | -5.92            | 0.00                | -100.46         | 0.00            | 100.46                     | 1814.66       | 907.33        | 1827.48          | 915.10           | 11.99              | -1.439              | 0.000                | 0.119        |
| 83.00         | -13.56           | -5.03            | 0.00                | -94.55          | 0.00            | 94.55                      | 1797.65       | 898.82        | 1793.15          | 897.91           | 12.29              | -1.453              | 0.000                | 0.113        |
| 84.00         | -13.45           | -5.02            | 0.00                | -89.52          | 0.00            | 89.52                      | 1780.63       | 890.31        | 1759.15          | 880.88           | 12.60              | -1.468              | 0.000                | 0.109        |
| 85.00         | -12.92           | -4.85            | 0.00                | -84.50          | 0.00            | 84.50                      | 1763.61       | 881.81        | 1725.48          | 864.02           | 12.91              | -1.482              | 0.000                | 0.105        |



## Calculated Forces

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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|        |        |       |      |        |      |       |         |        |         |        |       |        |       |       |
|--------|--------|-------|------|--------|------|-------|---------|--------|---------|--------|-------|--------|-------|-------|
| 86.00  | -12.81 | -4.83 | 0.00 | -79.66 | 0.00 | 79.66 | 1746.59 | 873.30 | 1692.13 | 847.32 | 13.22 | -1.495 | 0.000 | 0.101 |
| 88.00  | -12.59 | -4.80 | 0.00 | -69.99 | 0.00 | 69.99 | 1712.56 | 856.28 | 1626.40 | 814.41 | 13.85 | -1.521 | 0.000 | 0.093 |
| 90.00  | -12.37 | -4.77 | 0.00 | -60.39 | 0.00 | 60.39 | 1678.53 | 839.26 | 1561.98 | 782.15 | 14.50 | -1.544 | 0.000 | 0.085 |
| 91.00  | -9.79  | -3.69 | 0.00 | -55.62 | 0.00 | 55.62 | 1661.51 | 830.75 | 1530.26 | 766.27 | 14.82 | -1.556 | 0.000 | 0.078 |
| 91.29  | -9.76  | -3.69 | 0.00 | -54.53 | 0.00 | 54.53 | 1656.52 | 828.26 | 1521.01 | 761.64 | 14.92 | -1.559 | 0.000 | 0.078 |
| 92.00  | -9.66  | -3.68 | 0.00 | -51.93 | 0.00 | 51.93 | 1644.49 | 822.25 | 1498.86 | 750.54 | 15.15 | -1.566 | 0.000 | 0.075 |
| 94.00  | -9.37  | -3.64 | 0.00 | -44.57 | 0.00 | 44.57 | 1610.46 | 805.23 | 1437.04 | 719.59 | 15.81 | -1.586 | 0.000 | 0.068 |
| 94.71  | -9.27  | -3.63 | 0.00 | -41.99 | 0.00 | 41.99 | 930.70  | 465.35 | 848.15  | 424.70 | 16.04 | -1.593 | 0.000 | 0.109 |
| 96.00  | -9.18  | -3.61 | 0.00 | -37.31 | 0.00 | 37.31 | 922.07  | 461.04 | 828.91  | 415.07 | 16.48 | -1.604 | 0.000 | 0.100 |
| 98.00  | -6.09  | -2.16 | 0.00 | -30.09 | 0.00 | 30.09 | 908.49  | 454.24 | 799.32  | 400.25 | 17.15 | -1.628 | 0.000 | 0.082 |
| 100.00 | -5.98  | -2.13 | 0.00 | -25.77 | 0.00 | 25.77 | 894.64  | 447.32 | 770.03  | 385.59 | 17.84 | -1.650 | 0.000 | 0.074 |
| 102.00 | -5.88  | -2.10 | 0.00 | -21.51 | 0.00 | 21.51 | 880.55  | 440.27 | 741.05  | 371.08 | 18.54 | -1.669 | 0.000 | 0.065 |
| 104.00 | -5.78  | -2.07 | 0.00 | -17.31 | 0.00 | 17.31 | 866.20  | 433.10 | 712.41  | 356.74 | 19.24 | -1.686 | 0.000 | 0.055 |
| 106.00 | -5.69  | -2.04 | 0.00 | -13.16 | 0.00 | 13.16 | 851.60  | 425.80 | 684.12  | 342.57 | 19.95 | -1.701 | 0.000 | 0.045 |
| 107.00 | -2.39  | -1.00 | 0.00 | -10.97 | 0.00 | 10.97 | 844.21  | 422.10 | 670.11  | 335.55 | 20.31 | -1.707 | 0.000 | 0.036 |
| 108.00 | -2.35  | -0.99 | 0.00 | -9.97  | 0.00 | 9.97  | 836.75  | 418.38 | 656.18  | 328.58 | 20.66 | -1.712 | 0.000 | 0.033 |
| 110.00 | -2.26  | -0.96 | 0.00 | -8.00  | 0.00 | 8.00  | 821.65  | 410.82 | 628.62  | 314.78 | 21.38 | -1.722 | 0.000 | 0.028 |
| 112.00 | -2.17  | -0.93 | 0.00 | -6.09  | 0.00 | 6.09  | 804.60  | 402.30 | 600.19  | 300.54 | 22.11 | -1.730 | 0.000 | 0.023 |
| 114.00 | -2.09  | -0.90 | 0.00 | -4.23  | 0.00 | 4.23  | 784.18  | 392.09 | 569.96  | 285.40 | 22.83 | -1.737 | 0.000 | 0.017 |
| 116.00 | -2.00  | -0.87 | 0.00 | -2.43  | 0.00 | 2.43  | 763.76  | 381.88 | 540.51  | 270.66 | 23.56 | -1.741 | 0.000 | 0.012 |
| 118.00 | 0.00   | -0.81 | 0.00 | -0.68  | 0.00 | 0.68  | 743.33  | 371.67 | 511.84  | 256.30 | 24.29 | -1.743 | 0.000 | 0.003 |

## Final Analysis Summary

|                                     |                                   |                         |
|-------------------------------------|-----------------------------------|-------------------------|
| <b>Structure:</b> CT46132-A-SBA     | <b>Code:</b> EIA/TIA-222-G        | 11/27/2018              |
| <b>Site Name:</b> Newtown-ferris Rd | <b>Exposure:</b> C                |                         |
| <b>Height:</b> 118.00 (ft)          | <b>Crest Height:</b> 0.00         |                         |
| <b>Base Elev:</b> 0.000 (ft)        | <b>Site Class:</b> D - Stiff Soil |                         |
| <b>Gh:</b> 1.1                      | <b>Topography:</b> 1              | <b>Struct Class:</b> II |



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### Reactions

| Load Case                        | Shear FX<br>(kips) | Shear FZ<br>(kips) | Axial FY<br>(kips) | Moment MX<br>(ft-kips) | Moment MY<br>(ft-kips) | Moment MZ<br>(ft-kips) |
|----------------------------------|--------------------|--------------------|--------------------|------------------------|------------------------|------------------------|
| 1.2D + 1.6W 97 mph Wind          | 29.6               | 0.00               | 36.39              | 0.00                   | 0.00                   | 2685.48                |
| 0.9D + 1.6W 97 mph Wind          | 29.6               | 0.00               | 27.28              | 0.00                   | 0.00                   | 2649.26                |
| 1.2D + 1.0Di + 1.0Wi 50 mph Wind | 7.7                | 0.00               | 60.16              | 0.00                   | 0.00                   | 704.05                 |
| 1.2D + 1.0E                      | 1.6                | 0.00               | 36.42              | 0.00                   | 0.00                   | 156.40                 |
| 0.9D + 1.0E                      | 1.6                | 0.00               | 27.32              | 0.00                   | 0.00                   | 154.07                 |
| 1.0D + 1.0W 60 mph Wind          | 7.1                | 0.00               | 30.35              | 0.00                   | 0.00                   | 637.76                 |

### Max Stresses

| Load Case                        | Pu<br>FY (-)<br>(kips) | Vu<br>FX (-)<br>(kips) | Tu<br>MY (-)<br>(ft-kips) | Mu<br>MZ<br>(ft-kips) | Mu<br>MX<br>(ft-kips) | Resultant<br>Moment<br>(ft-kips) | phi<br>Pn<br>(kips) | phi<br>Vn<br>(kips) | phi<br>Tn<br>(ft-kips) | phi<br>Mn<br>(ft-kips) | Elev<br>(ft) | Stress<br>Ratio |
|----------------------------------|------------------------|------------------------|---------------------------|-----------------------|-----------------------|----------------------------------|---------------------|---------------------|------------------------|------------------------|--------------|-----------------|
| 1.2D + 1.6W 97 mph Wind          | -36.39                 | -29.57                 | 0.00                      | -2685.4               | 0.00                  | -2685.4                          | 3634.70             | 1817.3              | 6397.77                | 3203.64                | 0.00         | 0.849           |
| 0.9D + 1.6W 97 mph Wind          | -27.28                 | -29.56                 | 0.00                      | -2649.2               | 0.00                  | -2649.2                          | 3634.70             | 1817.3              | 6397.77                | 3203.64                | 0.00         | 0.835           |
| 1.2D + 1.0Di + 1.0Wi 50 mph Wind | -60.16                 | -7.70                  | 0.00                      | -704.05               | 0.00                  | -704.05                          | 3634.70             | 1817.3              | 6397.77                | 3203.64                | 0.00         | 0.236           |
| 1.2D + 1.0E                      | -24.43                 | -1.34                  | 0.00                      | -82.30                | 0.00                  | -82.30                           | 2333.69             | 1166.8              | 3066.96                | 1535.76                | 49.88        | 0.064           |
| 0.9D + 1.0E                      | -18.32                 | -1.32                  | 0.00                      | -80.64                | 0.00                  | -80.64                           | 2333.69             | 1166.8              | 3066.96                | 1535.76                | 49.88        | 0.060           |
| 1.0D + 1.0W 60 mph Wind          | -30.35                 | -7.07                  | 0.00                      | -637.76               | 0.00                  | -637.76                          | 3634.70             | 1817.3              | 6397.77                | 3203.64                | 0.00         | 0.207           |



# Monopole Mat Foundation Design

Date

11/27/2018

|                       |               |                                |           |
|-----------------------|---------------|--------------------------------|-----------|
| <b>Customer Name:</b> | T-Mobile      | <b>EIA/TIA Standard:</b>       | EIA-222-G |
| <b>Site Name:</b>     |               | <b>Structure Height (Ft.):</b> | 118       |
| <b>Site Number:</b>   | CT46132-A-SBA | <b>Engineer Name:</b>          | J. Chen   |
| <b>Engr. Number:</b>  | 65524         | <b>Engineer Login ID:</b>      |           |

**Foundation Info Obtained from:**

Drawings/Calculations

**Structure Type:**

Monopole

**Analysis or Design?**

Analysis

**Base Reactions (Factored):**

|                      |      |                     |        |
|----------------------|------|---------------------|--------|
| Axial Load (Kips):   | 60.2 | Shear Force (Kips): | 29.6   |
| Uplift Force (Kips): | 0.0  | Moment (Kips-ft):   | 2685.5 |

Allowable overstress %: 5.0%

**Foundation Geometries:**

|                             |      |                             |      |
|-----------------------------|------|-----------------------------|------|
|                             |      | Mods required -Yes/No ?:    | No   |
| Diameter of Pier (ft.):     | 6.0  | Depth of Base BG (ft.):     | 5.5  |
| Pier Height A. G. (ft.):    | 0.50 | Thickness of Pad (ft):      | 2.00 |
| Length of Pad (ft.):        | 23   | Width of Pad (ft.):         | 23   |
| Final Length of pad (ft)    | 23.0 | Final width of pad (ft):    | 23.0 |
| Control Value for Cell D18: | 0    | Control Value for Cell F18: | 0    |

**Material Properties and Rebar Info:**

|  |      |                           |       |     |
|--|------|---------------------------|-------|-----|
| Concrete Strength (psi):                 | 4000 | Steel Elastic Modulus:    | 29000 | ksi |
| Vertical bar yield (ksi)                 | 60   | Tie steel yield (ksi):    | 60    |     |
| Vertical Rebar Size #:                   | 8    | Tie / Stirrup Size #:     | 4     |     |
| Qty. of Vertical Rebars:                 | 26   | Tie Spacing (in):         | 12.0  |     |
| Pad Rebar Yield (Ksi):                   | 60   | Pad Steel Rebar Size (#): | 8     |     |
| Concrete Cover (in.):                    | 3    | Unit Weight of Concrete:  | 150.0 | pcf |
| Rebar at the bottom of the concrete pad: |      |                           |       |     |
| Qty. of Rebar in Pad (L):                | 37   | Qty. of Rebar in Pad (W): | 37    |     |
| Rebar at the top of the concrete pad:    |      |                           |       |     |
| Qty. of Rebar in Pad (L):                | 16   | Qty. of Rebar in Pad (W): | 16    |     |

Apply 1.35 factor for e/w Per G: 1.35

**Soil Design Parameters:**

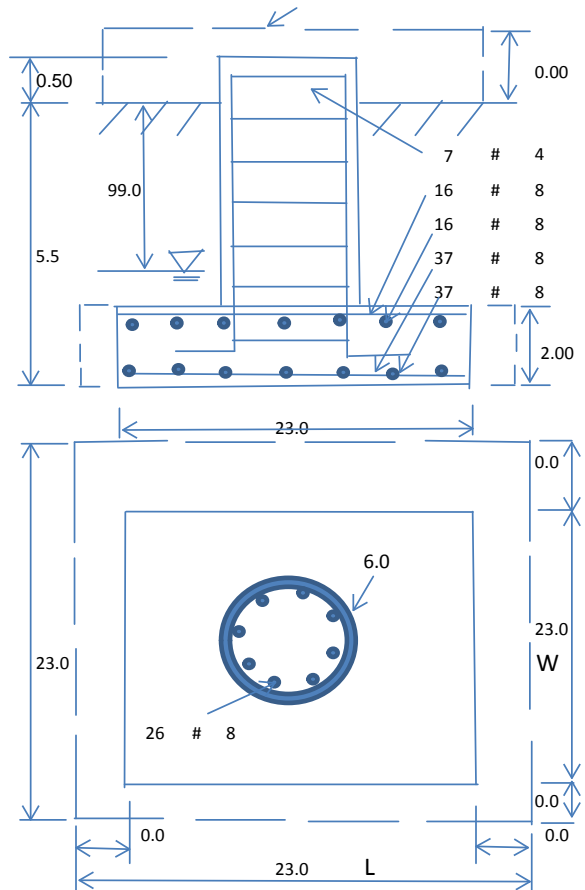
|                                      |       |  |      |     |
|--------------------------------------|-------|--|------|-----|
| Soil Unit Weight (pcf):              | 155.0 | Soil Buoyant Weight:                                   | 37.6 | Pcf |
| Water Table B.G.S. (ft):             | 99.0  | Unit Weight of Water:                                  | 62.4 | pcf |
| Ultimate Bearing Pressure (psf):     | 20000 | Ultimate Skin Friction:                                | 0    | Psf |
| Consider Friction for O.T.M. (Y/N):  | No    | Consider Friction for bearing (Y/N):                   | No   |     |
| Consider soil hor. resist. for OTM.: | No    | Reduction factor on the maximum soil bearing pressure: | 1.00 |     |
|                                      |       | Angle from Top of Pad:                                 | 30   |     |
|                                      |       | Angle from Bottm of Pad:                               | 25   |     |
|                                      |       | Angle from Bottm of Pad:                               | 25   |     |

**Foundation Analysis and Design:**

|  |         |  |        |
|--|---------|--|--------|
| Uplift Strength Reduction Factor:        | 0.75    | Compression Strength Reduction Factor:     | 0.75   |
| Total Dry Soil Volume (cu. Ft.):         | 1752.54 | Total Dry Soil Weight (Kips):              | 271.64 |
| Total Buoyant Soil Volume (cu. Ft.):     | 0.00    | Total Buoyant Soil Weight (Kips):          | 0.00   |
| Total Effective Soil Weight (Kips):      | 271.64  | Weight from the Concrete Block at Top (K): | 0.00   |
| Total Dry Concrete Volume (cu. Ft.):     | 1171.10 | Total Dry Concrete Weight (Kips):          | 175.66 |
| Total Buoyant Concrete Volume (cu. Ft.): | 0.00    | Total Buoyant Concrete Weight (Kips):      | 0.00   |
| Total Effective Concrete Weight (Kips):  | 175.66  | Total Vertical Load on Base (Kips):        | 507.51 |

**Check Soil Capacities:**

|  |        |   |  |       |      |     |
|--|--------|---|--|-------|------|-----|
| Calculated Maxium Net Soil Pressure under the base (psf):          | 2457   | < | Allowable Factored Soil Bearing (psf): | 15000 | 0.16 | OK! |
| Allowable Foundation Overturning Resistance (kips-ft.):            | 5321.9 | > | Design Factored Momont (kips-ft):      | 2863  | 0.54 | OK! |
| Factor of Safety Against Overturning (O. R. Moment/Design Moment): | 1.86   |   |  |       |      | OK! |



**Check the capacities of Reinforcing Concrete:**

|  |      |                                      |      |
|--|------|--------------------------------------|------|
| Strength reduction factor (Flexure and axial tension): | 0.90 | Strength reduction factor (Shear):   | 0.75 |
| Strength reduction factor (Axial compression):         | 0.65 | Wind Load Factor on Concrete Design: | 1.00 |

Load/  
Capacity  
Ratio**(1) Concrete Pier:**

|   |        |  |        |      |     |
|---|--------|--|--------|------|-----|
| Vertical Steel Rebar Area (sq. in./each):   | 0.79   | Tie / Stirrup Area (sq. in./each):       | 0.20   |      |     |
| Calculated Moment Capacity (Mn,Kips-Ft):    | 2994.3 | > Design Factored Moment (Mu, Kips-Ft)   | 2803.9 | 0.94 | OK! |
| Calculated Shear Capacity (Kips):           | 501.5  | > Design Factored Shear (Kips):          | 29.6   | 0.06 | OK! |
| Calculated Tension Capacity (Tn, Kips):     | 1109.2 | > Design Factored Tension (Tu Kips):     | 0.0    | 0.00 | OK! |
| Calculated Compression Capacity (Pn, Kips): | 7162.1 | > Design Factored Axial Load (Pu Kips):  | 60.2   | 0.01 | OK! |
| Moment & Axial Strength Combination:        | 0.94   | OK! Check Tie Spacing (Design/Required): |        | 1    | OK! |
| Pier Reinforcement Ratio:                   | 0.005  | Reinforcement Ratio is satisfied per ACI |        |      |     |

**(2).Concrete Pad:**

|   |        |   |        |      |     |
|---|--------|---|--------|------|-----|
| One-Way Design Shear Capacity (L-Direction, Kips):      | 536.8  | > One-Way Factored Shear (L-D. Kips):     | 201.0  | 0.37 | OK! |
| One-Way Design Shear Capacity (W-Direction, Kips):      | 536.8  | > One-Way Factored Shear (W-D., Kips)     | 201.0  | 0.37 | OK! |
| One-Way Design Shear Capacity (Corner-Corner. Kips):    | 539.3  | > One-Way Factored Shear (C-C, Kips):     | 199.5  | 0.37 | OK! |
| Lower Steel Pad Reinforcement Ratio (L-Direct. ):       | 0.0052 | OK! Lower Steel Pad Reinf. Ratio (W-Direc | 0.0052 |      |     |
| Lower Steel Pad Moment Capacity (L-Direction. Kips-ft): | 2573.6 | > Moment at Bottom ( L-Dir. K-Ft):        | 952.0  | 0.37 | OK! |
| Lower Steel Pad Moment Capacity (W-Direction. Kips-ft): | 2573.6 | > Moment at Bottom ( W-Dir. K-Ft):        | 952.0  | 0.37 | OK! |
| Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):   | 3600.2 | > Moment at Bottom ( C-C Dir. K-Ft):      | 1346.3 | 0.37 | OK! |
| Upper Steel Pad Reinforcement Ratio (L-Direct. ):       | 0.0022 | OK! Upper Steel Reinf. Ratio (W-Dir. ):   | 0.0022 |      |     |
| Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):     | 1143.1 | > Moment at the top (L-Dir K-Ft):         | 451.9  | 0.40 | OK! |
| Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):     | 1143.1 | > Moment at the top (W-Dir K-Ft):         | 451.9  | 0.40 | OK! |
| Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):  | 1609.2 | > Moment at the top (C-C Dir. K-Ft):      | 423.0  | 0.26 | OK! |

**(3).Check Punching Shear Capacity due to Moment in the Pier:**

|   |        |       |   |       |     |
|---|--------|-------|---|-------|-----|
| Moment transferred by punching shear:   | 1074.2 | k-ft. | Max. factored shear stress $v_{u,CD}$ : | 2.2   | Psi |
| Max. factored shear stress $v_{u,AB}$ : | 18.8   | Psi   | Factored shear Strength $\phi v_n$ :    | 189.7 | Psi |
| Max. factored shear stress $v_u$ :      | 18.8   | Psi   | Check Usage of Punching Shear Capacity: | 0.10  | OK! |

# Exhibit D



## RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11805A

CT805/Nextell Newtown\_MP  
8 Ferris Road  
Newtown, CT 06470

**August 20, 2018**

**EBI Project Number: 6218005697**

| Site Compliance Summary   |                  |
|---|------------------|
| Compliance Status:  | <b>COMPLIANT</b> |
| Site total MPE% of<br>FCC general<br>population<br>allowable limit: | <b>19.71%</b>    |



August 20, 2018

T-Mobile USA  
Attn: Jason Overbey, RF Manager  
35 Griffin Road South  
Bloomfield, CT 06002

## Emissions Analysis for Site: **CT11805A – CT805/Nextell Newtown\_MP**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **8 Ferris Road, Newtown, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile 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.

Public 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 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 10 GHz frequency 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 done for the proposed T-Mobile Wireless antenna facility located at **8 Ferris Road, Newtown, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile 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 for directional panel antennas for broadcast and microwave backhaul, 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.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 1 UMTS channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 2) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 5) 1 microwave backhaul channel (10 GHz) was considered for the proposed facility. This channel has a transmit power of 1 Watt.



- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas for broadcast and microwave backhaul, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **RFS APXV18-209014 & Commscope LNX-6515DS-A1M** for 1900 MHz (PCS), 2100 MHz (AWS) and 700 MHz channels as well as the **Fastback IBR1300** for the proposed 10 GHz microwave backhaul. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas for broadcast and microwave backhaul, 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.
- 9) The antenna mounting height centerline of the proposed antennas is **83 feet** above ground level (AGL).
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 11) All calculations were done with respect to uncontrolled / general population threshold limits.



### T-Mobile Site Inventory and Power Data

| Sector:            | A                                  | Sector:            | B                                  | Sector:            | C                                  |
|--------------------|------------------------------------|--------------------|------------------------------------|--------------------|------------------------------------|
| Antenna #:         | 1                                  | Antenna #:         | 1                                  | Antenna #:         | 1                                  |
| Make / Model:      | RFS APXV18-209014                  | Make / Model:      | RFS APXV18-209014                  | Make / Model:      | RFS APXV18-209014                  |
| Gain:              | 14.4 dBd                           | Gain:              | 14.4 dBd                           | Gain:              | 14.4 dBd                           |
| Height (AGL):      | 83 feet                            | Height (AGL):      | 83 feet                            | Height (AGL):      | 83 feet                            |
| Frequency Bands    | 1900 MHz (PCS) /<br>2100 MHz (AWS) | Frequency Bands    | 1900 MHz (PCS) /<br>2100 MHz (AWS) | Frequency Bands    | 1900 MHz (PCS) /<br>2100 MHz (AWS) |
| Channel Count      | 5                                  | Channel Count      | 5                                  | Channel Count      | 5                                  |
| Total TX Power(W): | 240                                | Total TX Power(W): | 240                                | Total TX Power(W): | 240                                |
| ERP (W):           | 6,610.15                           | ERP (W):           | 6,610.15                           | ERP (W):           | 6,610.15                           |
| Antenna A1 MPE%    | <b>4.01</b>                        | Antenna B1 MPE%    | <b>4.01</b>                        | Antenna C1 MPE%    | <b>4.01</b>                        |
| Antenna #:         | 2                                  | Antenna #:         | 2                                  | Antenna #:         | 2                                  |
| Make / Model:      | Commscope<br>LNX-6515DS-A1M        | Make / Model:      | Commscope<br>LNX-6515DS-A1M        | Make / Model:      | Commscope<br>LNX-6515DS-A1M        |
| Gain:              | 14.55 dBd                          | Gain:              | 14.55 dBd                          | Gain:              | 14.55 dBd                          |
| Height (AGL):      | 83 feet                            | Height (AGL):      | 83 feet                            | Height (AGL):      | 83 feet                            |
| Frequency Bands    | 700 MHz                            | Frequency Bands    | 700 MHz                            | Frequency Bands    | 700 MHz                            |
| Channel Count      | 2                                  | Channel Count      | 2                                  | Channel Count      | 2                                  |
| Total TX Power(W): | 80                                 | Total TX Power(W): | 80                                 | Total TX Power(W): | 80                                 |
| ERP (W):           | 2,280.81                           | ERP (W):           | 2,280.81                           | ERP (W):           | 2,280.81                           |
| Antenna A2 MPE%    | <b>2.96</b>                        | Antenna B2 MPE%    | <b>2.96</b>                        | Antenna C2 MPE%    | <b>2.96</b>                        |

### Microwave Backhaul Data

| Make / Model:    | Gain   | Height (AGL): | Frequency Bands | Channel Count | Total TX Power(W) | ERP (W) | MPE %       | Sector   |
|------------------|--------|---------------|-----------------|---------------|-------------------|---------|-------------|----------|
| Fastback IBR1300 | 10 dBd | 83            | 10 GHz          | 1             | 1                 | 10      | <b>0.01</b> | <b>C</b> |

| Site Composite MPE%      |                |
|--------------------------|----------------|
| Carrier                  | MPE%           |
| T-Mobile (Sector C)      | <b>6.98 %</b>  |
| Nextel                   | <b>0.45 %</b>  |
| Sprint                   | <b>0.13 %</b>  |
| Verizon Wireless         | <b>4.98 %</b>  |
| AT&T                     | <b>7.17 %</b>  |
| <b>Site Total MPE %:</b> | <b>19.71 %</b> |

|                          |               |
|--------------------------|---------------|
| T-Mobile Sector A Total: | 6.97 %        |
| T-Mobile Sector B Total: | 6.97 %        |
| T-Mobile Sector C Total: | <b>6.98 %</b> |
| <hr/>                    |               |
| Site Total:              | 19.71%        |



## T-Mobile Maximum MPE Power Values (Per Sector)

| T-Mobile Frequency Band / Technology (Sector C) | # Channels | Watts ERP (Per Channel) | Height (feet) | Total Power Density ( $\mu\text{W}/\text{cm}^2$ ) | Frequency (MHz) | Allowable MPE ( $\mu\text{W}/\text{cm}^2$ ) | Calculated % MPE |
|---|------------|-------------------------|---------------|---|-----------------|---|------------------|
| T-Mobile PCS - 1900 MHz LTE                     | 2          | 1,101.69                | 83            | 13.36   | PCS - 1900 MHz  | 1000.00                                     | 1.34%            |
| T-Mobile AWS - 2100 MHz LTE                     | 2          | 1,652.54                | 83            | 20.04   | AWS - 2100 MHz  | 1000.00                                     | 2.00%            |
| T-Mobile PCS - 1900 MHz UMTS                    | 1          | 1,101.69                | 83            | 6.68  | PCS - 1900 MHz  | 1000.00                                     | 0.67%            |
| T-Mobile 700 MHz LTE                            | 2          | 1,140.41                | 83            | 13.83   | 700 MHz         | 467.00                                      | 2.96%            |
| T-Mobile 10 GHz Microwave                       | 1          | 10                      | 83            | 0.06  | 10 GHz          | 1000  | 0.01%            |
|   |            |                         |               |   |                 | <b>Total:</b>                               | <b>6.98%</b>     |



## 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 T-Mobile 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:

| T-Mobile Sector                    | Power Density Value (%) |
|------------------------------------|-------------------------|
| Sector A:                          | 6.97 %                  |
| Sector B:                          | 6.97 %                  |
| Sector C:                          | 6.98 %                  |
| T-Mobile Maximum MPE % (Sector C): | 6.98 %                  |
|                                    |                         |
| Site Total:                        | 19.71 %                 |
|                                    |                         |
| Site Compliance Status:            | <b>COMPLIANT</b>        |

The anticipated composite MPE value for this site assuming all carriers present is **19.71%** 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.

# Exhibit E



**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE** \$6.70  
 Flat Rate Env  
 9405 5036 9930 0371 6018 12 0067 0000 0010 6470


12/28/2018 Mailed from 01566 062S0000001307

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 12/31/18  
 Ref#: 805 MWAAV  
**0006**

SHIP TO:  
 ERICH GERTSCH  
 8 FERRIS RD  
 NEWTOWN CT 06470-1758

**USPS TRACKING #**



**9405 5036 9930 0371 6018 12**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0371 6018 12**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Trans. #: 452927659                | Priority Mail® Postage: <b>\$6.70</b> |
| Print Date: 12/28/2018             | Total: <b>\$6.70</b>                  |
| Ship Date: 12/28/2018              |                                       |
| Expected Delivery Date: 12/31/2018 |                                       |

**From:** DEBORAH CHASE Ref#: 805 MWAAV  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359


**To:** ERICH GERTSCH  
 8 FERRIS RD  
 NEWTOWN CT 06470-1758

\* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!  
 Check the status of your shipment on the USPS Tracking® page at usps.com






**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE**  
 Flat Rate Env  
 \$6.70

9405 5036 9930 0371 6018 29 0067 0000 0010 6470



Mailed from 01566 062S0000001309

**PRIORITY MAIL 2-DAY™**


Expected Delivery Date: 12/31/18  
 Ref#: 805 MWA/V  
**0006**

SHIP TO: DANIEL C ROSENTHAL  
 FIRST SELECTMAN  
 3 PRIMROSE ST  
 NEWTOWN CT 06470-5307

**Carrier -- Leave if No Response**

**R006**

**USPS TRACKING #**



**9405 5036 9930 0371 6018 29**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0371 6018 29**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Trans. #: 452927659                | Priority Mail® Postage: <b>\$6.70</b> |
| Print Date: 12/28/2018             | Total <b>\$6.70</b>                   |
| Ship Date: 12/28/2018              |                                       |
| Expected Delivery Date: 12/31/2018 |                                       |


**From:** DEBORAH CHASE Ref#: 805 MWA/V  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**To:** DANIEL C ROSENTHAL  
 FIRST SELECTMAN  
 3 PRIMROSE ST  
 NEWTOWN CT 06470-5307

\* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!  
 Check the status of your shipment on the USPS Tracking® page at usps.com




**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE**  
 Flat Rate Env  
 \$6.70

9405 5036 9930 0371 6018 50 0067 0000 0010 6470



Mailed from 01566 062S0000001309

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 12/31/18  
 Ref#: 805 MWAAY  
**0006**


DEBORAH CHASE  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**Carrier -- Leave if No Response**

**R006**

SHIP TO: GEORGE BENSON  
 DIRECTOR OF PLANNING  
 3 PRIMROSE ST  
 NEWTOWN CT 06470-5307

**USPS TRACKING #**



**9405 5036 9930 0371 6018 50**

Electronic Rate Approved #038555749



Cut on dotted line.

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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0371 6018 50**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Trans. #: 452927659                | Priority Mail® Postage: <b>\$6.70</b> |
| Print Date: 12/28/2018             | Total: <b>\$6.70</b>                  |
| Ship Date: 12/28/2018              |                                       |
| Expected Delivery Date: 12/31/2018 |                                       |


**From:** DEBORAH CHASE      Ref#: 805 MWAAY  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**To:** GEORGE BENSON  
 DIRECTOR OF PLANNING  
 3 PRIMROSE ST  
 NEWTOWN CT 06470-5307

\* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



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**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE**  
 Flat Rate Env  
 \$6.70

9405 5036 9930 0371 6018 67 0067 0000 0063 3487



Mailed from 01566 062S0000001310

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 12/31/18  
 Ref#: 525 MWZAP  
**0006**

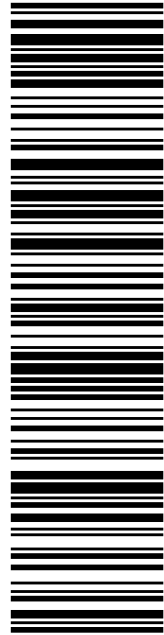
DEBORAH CHASE  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**Carrier -- Leave if No Response**

**C036**

SHIP TO: CARLA SHORTER  
 SBA COMMUNICATIONS- ZONING DEPT.  
 8051 CONGRESS AVE  
 BOCA RATON FL 33487-1310

**USPS TRACKING #**



**9405 5036 9930 0371 6018 67**

Electronic Rate Approved #038555749



Cut on dotted line.

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**9405 5036 9930 0371 6018 67**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Trans. #: 452927659                | Priority Mail® Postage: <b>\$6.70</b> |
| Print Date: 12/28/2018             | Total <b>\$6.70</b>                   |
| Ship Date: 12/28/2018              |                                       |
| Expected Delivery Date: 12/31/2018 |                                       |

**From:** DEBORAH CHASE      Ref#: 525 MWZAP  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**To:** CARLA SHORTER  
 SBA COMMUNICATIONS- ZONING DEPT.  
 8051 CONGRESS AVE  
 BOCA RATON FL 33487-1310

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