Filed by:
G. Scott Shephed, Site Development Specialist II - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - gshepherd@sbasite.com

August 18, 2020

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

RE: Notice of Exempt Modification
1 Deerfield Lane, Ansonia, CT
Latitude: 41.350750
Longitude: -73.049250
T-Mobile Site #: CTNH209A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 167-foot level of the existing 169-foot Monopole Tower at 1 Deerfield Lane, CT. The 167-foot tower is owned by SBA Towers IV, LLC. The property is owned by Macabee Properties, LLC. T-Mobile now intends to install three (3) new 1900/2100 MHz and replace three (3) L600/700 MHz antennas with three (3) new 2100 MHz antennas. The new antennas would be installed at the 167-foot level of the tower.

Please note: Per the Connecticut Siting Council Website: CSC COVID 19 Guidelines. *In order to prevent the spread of Coronavirus and protect the health and safety of our members and staff, as of March 18, 2020, the Connecticut Siting Council shall convert to full remote operations until March 30, 2020. Please be advised that during this time period, all hard copy filing requirements will be waived in lieu of an electronic filing. Please also be advised that the March 26, 2020 regular meeting shall be held via teleconference. The Council's website is not equipped with an on-line filing fee receipt service. Therefore, filing fees and/or direct cost charges associated with matters received electronically during the above-mentioned time period will be directly invoiced at a later date.*

Planned Modifications:

TOWER

Remove:
- (1) ½" coax (for Dish)

Remove and Replace:
- (3) Ericsson AIR21 B4A/B2P (remove) – (3) Ericsson AIR32 KRD901146-1_B66A_B2A (replace)

- (3) Ericsson Radio 4449 B71+B12 (remove) – Ericsson Radio 4449 B71+B85 (replace)

Install New:

- (2) 1-5/8" Fiber
- (3) Ericsson Radio 4415 B25 RRU
- (3) AIR6449 B41 (antenna)

Existing Equipment to Remain:

- (3) Ericsson AIR21 B2A/B4P (antenna)
- (3) RFS APXVAA24_43-U-A20 (antenna)
- (3) T-Arms/Commscope VSR-MS-B
- (3) Ericsson KRY 112 144/2 TMAs
- (1) 1-1/4" fiber
- (6) 1-5/8" coax
- (1) ½" coax (GPS antenna on ground)

Entitlements:

- (6) 1-5/8" coax
- (2) 1-5/8" Fiber

GROUND

Install New:

- (1) Ericsson B160 Battery Cabinet mounted to existing concrete pad
- (1) Ericsson 6160 Equipment cabinet mounted to existing concrete pad
- Equipment within existing RBS6131 equipment cabinet

This facility was approved by the Council under Docket 340. On March 26, 20018, an Amended Decision and Order granted approval for a monopole not to exceed 170 feet above ground level. The top of the antennas were also not to exceed 170 feet above ground level. The antennas were to be attached with T-arms. An updated EME report was to be provided when site conditions changed. Upon any new State or Federal RF standards applicable, the facility was to be brought into compliance with same. Space was to be permitted to public or private entities for fair consideration barring reasons precluding such sharing. Space was to be provided on the tower for no compensation for any City of Ansonia and Town of Woodbridge public safety services as long as compatible with the structural integrity of the tower. And any nonfunctioning equipment was to be removed with 60 days. There were no further post construction stipulations set. Please see attached.

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 the City of Ansonia's Mayor, David Cassetti, and Zoning

Enforcement Officer, David Blackwell, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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 modification 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 modification 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 telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

G. Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
gshepherd@sbasite.com

Attachments
cc: The Honorable David S. Cassetti / with attachments
City of Ansonia, 253 Main Street, Ansonia, CT 06401
David Blackwell, Zoning Enforcement Officer / with attachments
City of Ansonia, 253 Main Street, Ansonia, CT 06401
Macabee Properties, LLC / with attachments
11 Hemlock Hollow Road, Woodbridge CT 06525

Exhibit List

Exhibit 1	Check Copy	X To be invoiced by CSC
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	CSC Docket 340
Exhibit 6	Construction Drawings	Chappell Engineering 8/7/20
Exhibit 7	Structural Analysis	TES 7/8/20
Exhibit 8	Mount Analysis	TES 7/6/20
Exhibit 9	EME Report	EBI Consulting 7/28/20

EXHIBIT 1

Normally, Exhibit 1 would contain a copy of the check for the filing fee.

EXHIBIT 2

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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EXHIBIT 3

City of Ansonia, CT

Property Listing Report

Map Block Lot	10000020000	Account	16660

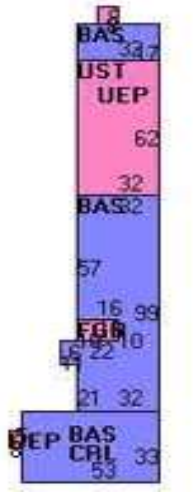
Property Information

Property Location	1 DEERFIELD LA
Owner	MACABEE PROPERTIES LLC
Co-Owner	
Mailing Address	11 HEMLOCK HOLLOW RD WOODBRIDGE CT 06525
Land Use	104 4 Family
Land Class	R
Zoning Code	AA
Census Tract	
Sub Lot	

Neighborhood	
Acreage	16.2
Utilities	Public Water,Septic
Lot Setting/Desc	Level
Survey Map	
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1958
Stories	1
Building Style	Family Flat
Building Use	Residential
Building Condition	Average
Floors	Carpet
Total Rooms	12

Bedrooms	8 Bedrooms
Full Bathrooms	4
Half Bathrooms	0
Bath Style	Average
Kitchen Style	Average
Roof Style	Flat
Roof Cover	Tar + Gravel

Exterior Walls	Concr/Cinder
Interior Walls	Plaster
Heating Type	Hot Water
Heating Fuel	Oil
AC Type	None
Gross Bldg Area	9364
Total Living Area	5367

Report Created On 7/3/2019

City of Ansonia, CT

Property Listing Report | Map Block Lot **10000020000** | Account **16660**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	240300	168200
Extras	0	0
Outbuildings	27900	19600
Land	280100	106820
Total	548300	294620

Outbuilding and Extra Items

Type	Description
Stable	800.00 S.F.
Shed	800.00 S.F.
Barn 1 St	384.00 S.F.
Garage poor	1200.00 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	5367	5367
Crawl space	1749	0
Garage	160	0
Porch, Enclosed, Unfinished	104	0
Utility, Storage, Unfinished	1984	0
Total Area	9364	5367

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MACABEE PROPERTIES LLC	435/ 195	12/28/2005	0
GELERTNER JOEL & CHERYL	316/ 863	12/2/1998	235000

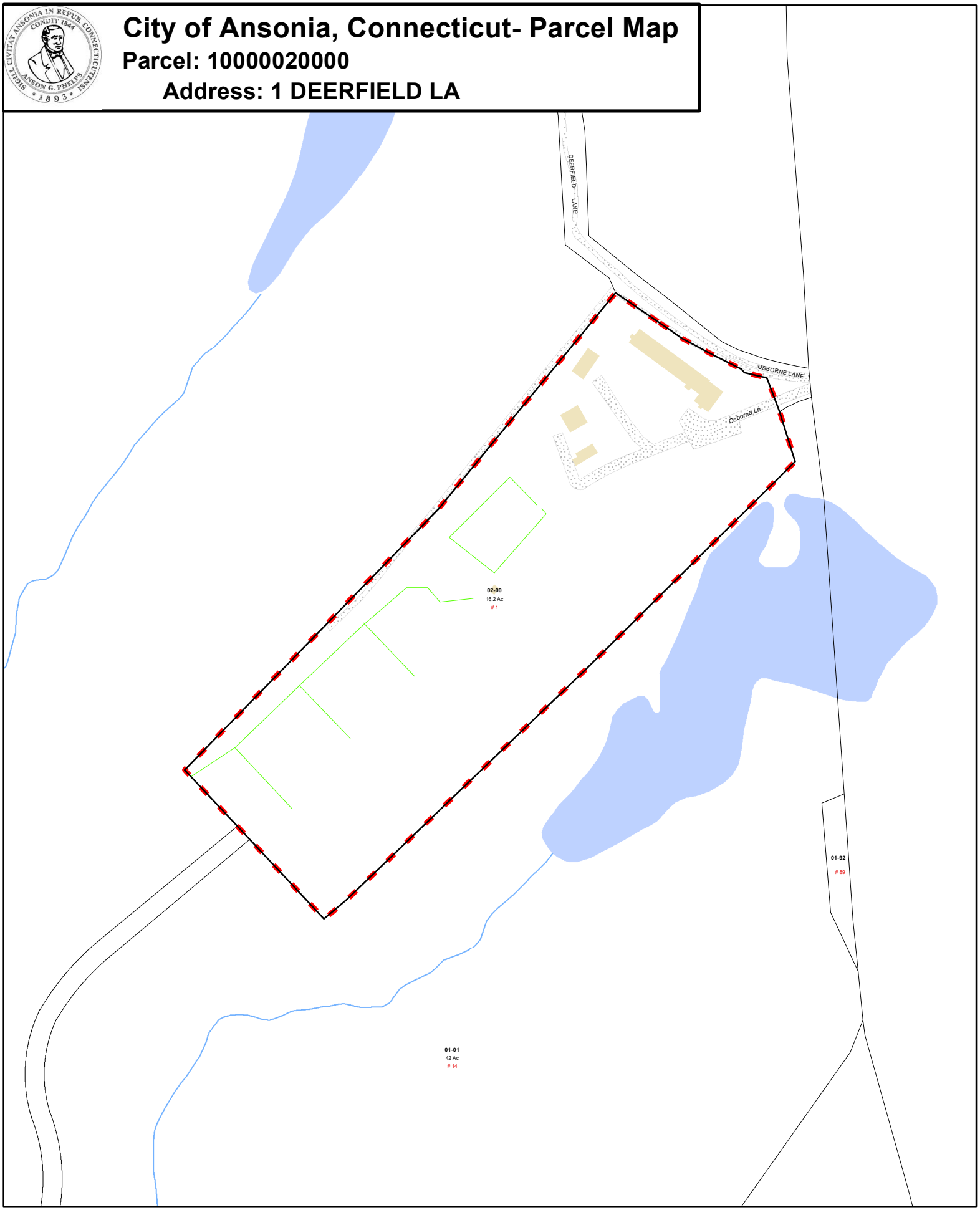
Report Created On 7/3/2019

EXHIBIT 4

City of Ansonia, Connecticut- Parcel Map

Parcel: 10000020000

Address: 1 DEERFIELD LA



Approximate Scale: 1 inch = 250 feet

0 140 280 420 560 Feet

Map Produced: February 2019

EXHIBIT 5

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting council@ct gov
Internet: ct gov/csc

Daniel F. Caruso
Chairman

April 9, 2008

Carrie L. Larson, Esq
Cohen and Wolf P.C.
1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821

WOODBRIDGE

RE: **DOCKET NO. 340** - Optasite Towers LLC and Omnipoint Communications, Inc. Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut

Dear Attorney Larson:

At a public meeting of the Connecticut Siting Council held on March 26, 2008, the Connecticut Siting Council (Council) considered and approved an Amendment to the Decision and Order deleting Condition No 5. The Council also approved the modification to the Development and Management Plan (D&M Plan) submitted for this project as specified in your correspondence dated February 21, 2008.

This approval applies only to the correspondence submitted on February 21, 2008 Any further changes to the D&M Plan require advance Council notification and approval.

Please be advised that deviations from this plan are enforceable under the provisions of the Connecticut General Statutes § 16-50u. Enclosed is a copy of the staff report, dated March 26, 2008 and the amended Decision and Order dated March 26, 2008.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/laf

Enclosure: Staff Report, dated March 26, 2008
Amended Decision and Order, dated March 26, 2008
Service List dated September 19, 2007

c: Parties and Intervenors
The Honorable James T. DellaVolpe, Mayor, City of Ansonia
Peter Crabtree, Zoning Enforcement Officer, City of Ansonia

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CSC
CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

Daniel F. Caruso
Chairman

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting council@ct gov
Internet: ct gov/csc

Docket No. 340
Optasite and T-Mobile
1 Deerfield Lane, Ansonia
Modification to D&M Plan and Decision and Order
Staff Report
March 26, 2008

On July 7, 2007, the Connecticut Siting Council (Council) received an application (Application) for a Certificate of Environmental Compatibility and Public Need from Optasite and T-Mobile (collectively, the Applicant) for a telecommunications facility to be located at 1 Deerfield Lane, Ansonia. In the Application, the Applicant proposed that the utilities be run overhead. Specifically, utilities would be installed overhead from existing service on Osbourne Lane to the compound. Approximately ten, 30-foot utility poles would be installed along the proposed access roadway with approximately 100-foot spacing. However, during the hearing, Optasite testified that it is amenable to running the utilities underground

On November 29, 2007, the Council approved the Application and per Order No. 5 of the Decision and Order (D&O), required that the utilities be run underground following the general alignment of the access drive. On January 24, 2008, the Council approved the Development and Management Plan (D&M Plan) which included underground utilities, consistent with the D&O.

Subsequent to the D&M Plan approval, Optasite had discussions with The United Illuminating Company (UI) and the property owner. By letter dated February 21, 2008, Optasite advised the Council that both UI and the property owner have safety concerns regarding the proposed underground utilities. The underground utility run is located immediately adjacent to paddock fencing used in the operation of the horse farm. The fencing is pressure-operated and the digging for the underground utilities would disrupt the operation of the fencing. Also, given the topography, installation of underground utilities could result in the destabilization of the ground and the fence collapsing. Finally, the utility routing runs along an existing roadway that is used on a daily basis for the operation of the horse farm. The installation would also require the disturbance and installation of a second, temporary route to maintain the operation of the farm. Thus, Optasite requests a modification of the D&M Plan to allow the utilities to be run overhead and relief from Order No. 5 (the requirement to underground utilities).

DOCKET NO. 340 - Optasite Towers LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut	Connecticut Siting Council
	March 26, 2008

Amended Decision and Order
(*Deleted material is in brackets.)

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers LLC (Optasite) and Omnipoint Communications, Inc. (T-Mobile), hereinafter collectively referred to as the Certificate Holder, for a telecommunications facility at 1 Deerfield Lane, Ansonia, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level. The height at the top of Certificate Holder's antennas shall not exceed 170 feet above ground level.

2. Such tower shall incorporate a yield point to eliminate the potential fall radius onto the adjacent property.

3. All cellular and PCS antennas shall be attached to the tower with T-arms.

4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Ansonia for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
   a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
   b) construction plans for site clearing, grading, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

5. [Utilities shall be underground and follow the general alignment of the access drive.]

6. During construction activities, no soils should be removed from the site without proper waste characterization to determine disposal requirements.

7. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997 The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

8 Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

9 The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

10. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Ansonia and Town of Woodbridge public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

11. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

12 Any request for extension of the time period referred to in Condition 11 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Ansonia. Any proposed modifications to this Decision and Order shall likewise be so served.

13. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

14 The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

15. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The New Haven Register and in the Amity Observer.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-1821 (203) 394-9901 jkohler@cohenandwolf.com clarson@cohenandwolf.com
Intervenor	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
Intervenor	**Its Representative**
Osborne Lane Associates, LLC	William Fieber Keith A. Russo c/o The Fieber Group 47 Elm Street New Canaan, CT 06840 (203) 972-4975 (203) 972-4977 fax krusso@fiebergroup.com
Intervenor	**Its Representative**
Gennaro Savino	Gennaro Savino 128 Ford Road Woodbridge, CT 06525 (203) 387-1573 savinovineyards@sbcglobal.net

Intervenor

Brian Freeman

Its Representative

Brian Freeman
5 Hampton Trail
Wallingford, CT 06492
(203) 793-7505
Brian@sparc.us

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the amended Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of amended Decision and Order in Docket No. 340 has been forwarded by Certified First Class Return Receipt Requested mail on April 9, 2008, to all parties and intervenors of record as listed on the attached service list, dated September 19, 2007.

ATTEST:

Lisa A. Fontaine
Fiscal Administrative Officer
Connecticut Siting Council

Date: September 19, 2007

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-1821 (203) 394-9901 jkohler@cohenandwolf.com clarson@cohenandwolf.com
Intervenor (approved 08/29/07)	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
Intervenor (approved 08/29/07)	Osborne Lane Associates, LLC	William Fieber Keith A. Russo c/o The Fieber Group 47 Elm Street New Canaan, CT 06840 (203) 972-4975 (203) 972-4977 fax krusso@fiebergroup.com
Intervenor (approved 09/18/07)	Gennaro Savino	Gennaro Savino 128 Ford Road Woodbridge, CT 06525 (203) 387-1573 savinovineyards@sbcglobal.net
Intervenor (approved 09/18/07)	Brian Freeman	Brian Freeman 5 Hampton Trail Wallingford, CT 06492 (203) 793-7505 Brian@sparc.us

Building Department

City of Ansonia

BUILDING PERMIT

No. BP 4002 **Has Been Issued To**

Owner Macabee Properties LLC

To Erect A Telecommunication Facility

At No. 1 Deerfield La. STREET AVE. **Lot No.** _____

General Contractor: McPhee Elect.

Plumbing	Heating	Electric	Structural
Permit No. _____	Permit No. _____	Permit No. _____	
Rough _____	Rough _____	Rough _____	Footing _____
Final _____	Final _____	Final _____	Foundation _____
Extra _____	Extra _____	Extra _____	Framing _____

BUILDING DEPARTMENT No. C.O. 3833
ANSONIA, CONNECTICUT

CERTIFICATE OF OCCUPANCY Bldg. Permit No. BP 4002/4051/5010

Date March 5, 2009

This is to certify that the telecommunication tower with various attached antenna equipment located at 1 Deerfield Lane is found to substantially conform to the requirements of the Building Ordinances of the City of Ansonia and those laws of the State of Connecticut that may be applicable, and is approved for occupancy.

Owner: Macabbee Properties, LLC Address:
Optasite Tower, Inc. 1 Reasearch Drive West Borough MA. 051581

Comments:

R Dunn

Robert J. Dunn, Jr. BUILDING INSPECTOR

Notice:—A copy of this certificate must be maintained on the premises at all times.

Any change or extension of the use herein approved requires a new Certificate of Occupancy without any unnecessary delay.

EXHIBIT 6

NH209/OPTAGELERTNERFT

APPROVALS

PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

1 DEERFIELD LANE
ANSONIA, CT 06401
NEW HAVEN COUNTY

SITE NO.: CTNH209A

SITE TYPE: 169'± MONOPOLE

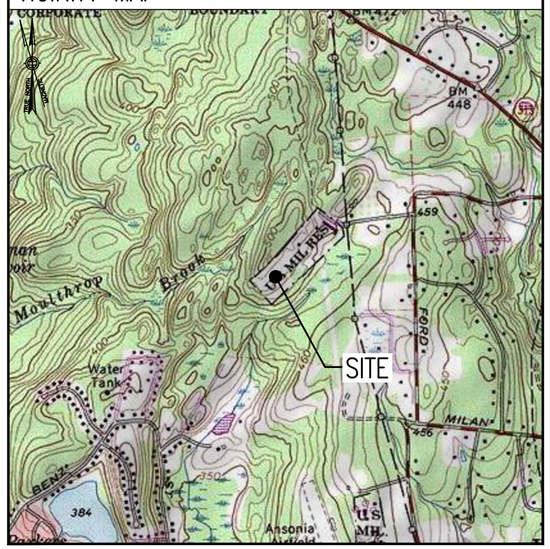
RF DESIGN GUIDELINE: 67D5A992DB OUTDOOR

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON 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 PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

VICINITY MAP

SCALE: 1" = 1000'-0"



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	3
GN-1	GENERAL NOTES	3
A-1	COMPOUND & EQUIPMENT PLAN	3
A-2	TOWER ELEVATIONS & ANTENNA PLAN	3
A-3	SITE DETAILS	3
E-1	ELECTRIC & GROUNDING DETAILS	3

SPECIAL ZONING NOTE:
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

PROJECT SUMMARY

SITE NUMBER:	CTNH209A
SBA SITE NUMBER:	CT13071-A
SBA SITE NAME:	WOODBRIDGE
SITE ADDRESS:	1 DEERFIELD LANE ANSONIA, CT 06401
PROPERTY OWNER:	MACABEE PROPERTIES LLC 11 HEMLOCK HOLLOW ROAD WOODBRIDGE, CT 06525
TOWER OWNER:	SBA TOWERS IV, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW HAVEN COUNTY
ZONING DISTRICT:	RESIDENCE
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	169'
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.35085° N41°21'03.06" LONGITUDE: -73.04936° W73°02'57.696"

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
8/7/20

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	08/07/20	CONSTRUCTION REVISED	CMC
2	07/24/20	CONSTRUCTION REVISED	CMC
1	06/24/20	ISSUED FOR CONSTRUCTION	CMC
0	06/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CTNH209A

SITE ADDRESS:
1 DEERFIELD LANE
ANSONIA, CT 06401

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.115

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – T–MOBILE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER
   OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

7. CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
8/7/20

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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SITE NUMBER:
CTNH209A

SITE ADDRESS:
1 DEERFIELD LANE
ANSONIA, CT 06401

SHEET TITLE
GENERAL NOTES

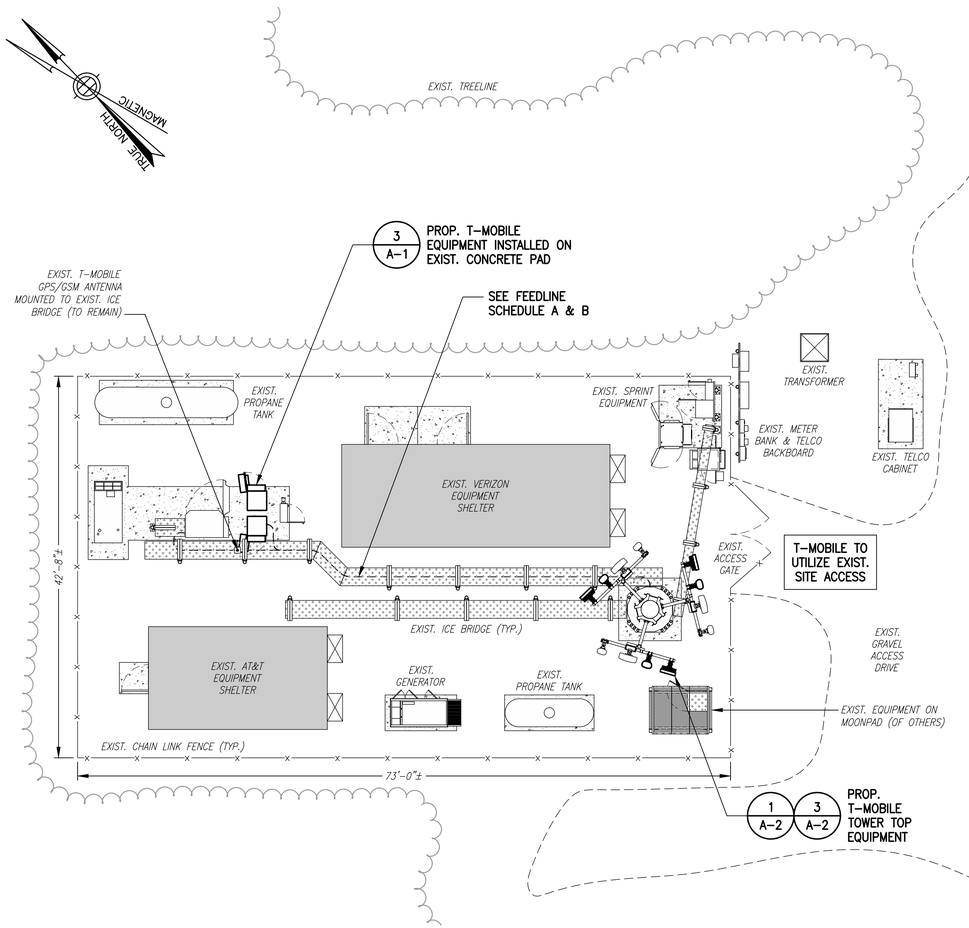
SHEET NUMBER
GN-1

1815.115

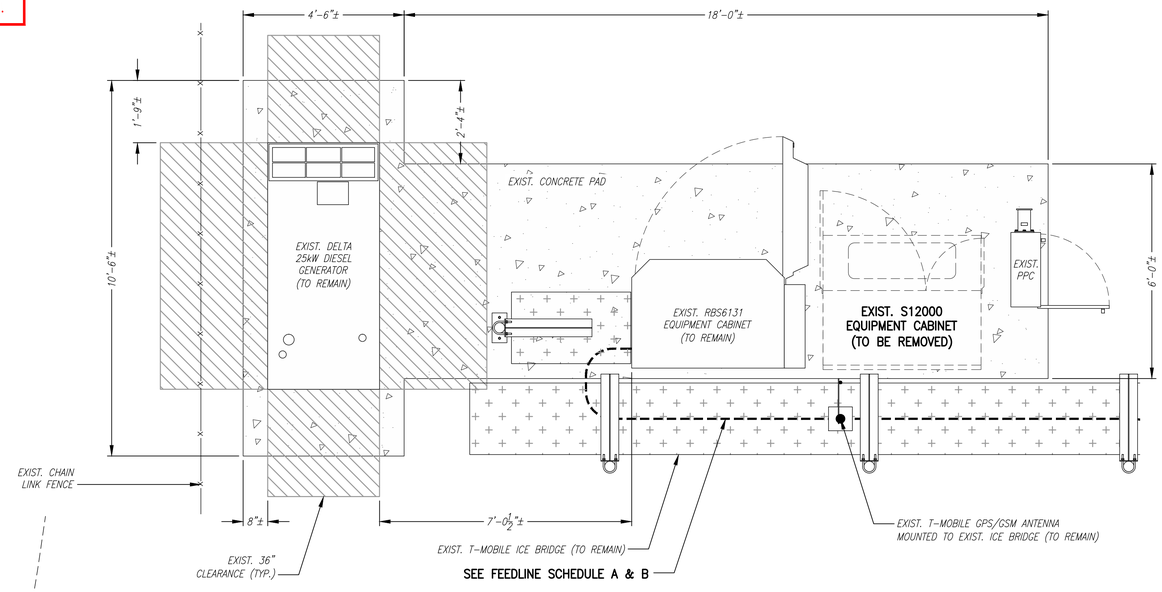
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

FEEDLINE SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(6) 1-5/8" COAX CABLES* *(2) 1-5/8" HCS FIBER CABLES* *(1) 1/2" COAX CABLE (FOR GPS ANTENNA)*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(6) 1-5/8" COAX CABLES* *(1) 1/2" COAX CABLE (FOR DISH ANTENNA)*	
B	PROPOSED:	(2) 1-5/8" HCS FIBER CABLES	

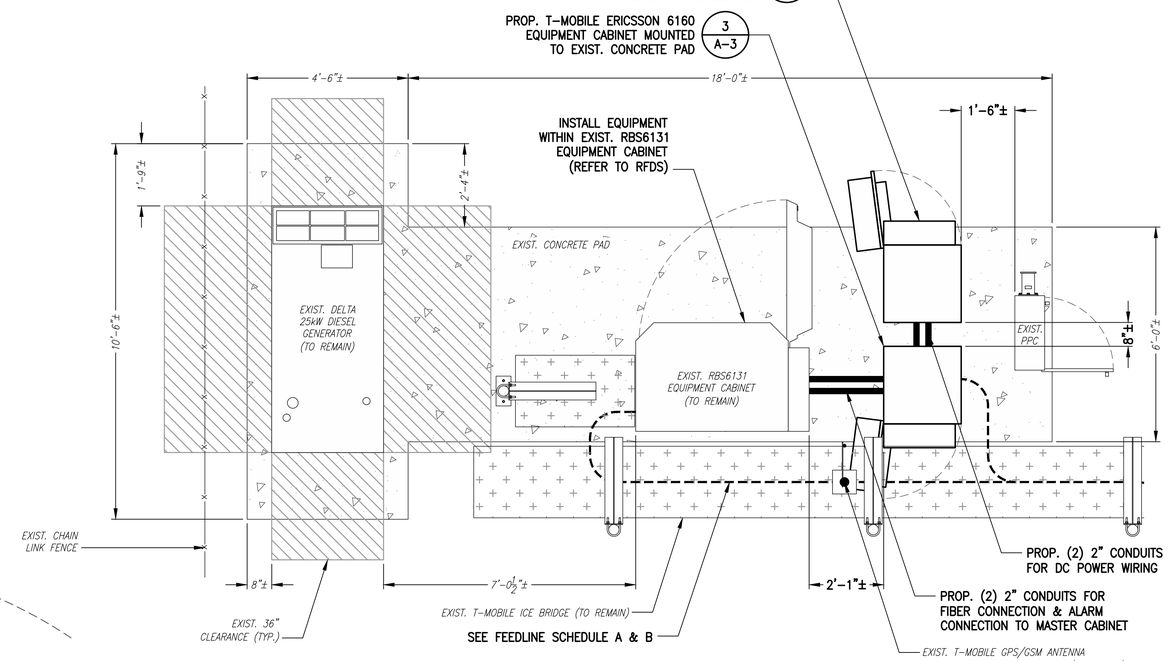
NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.



COMPOUND PLAN (1 / A-1)
SCALE: 1/8" = 1'-0"
0 4'-0" 8'-0" 16'-0" 24'-0"



EXISTING EQUIPMENT PLAN (2 / A-1)
SCALE: 1/2" = 1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED EQUIPMENT PLAN (3 / A-1)
SCALE: 1/2" = 1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"

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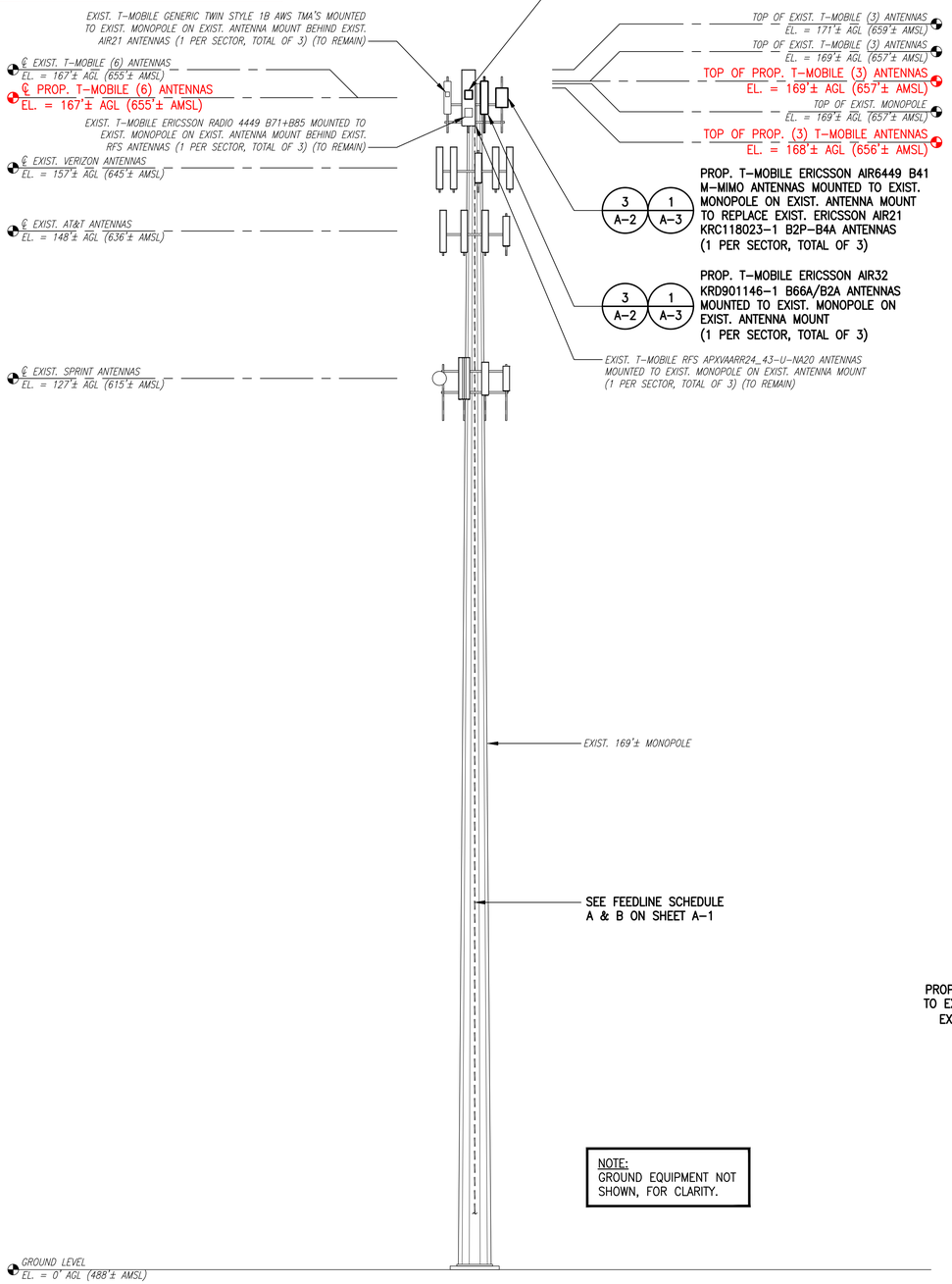
SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.115

RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

GENERAL CONTRACTOR NOTE:
GENERAL CONTRACTOR SHALL REFER TO MOUNT STRUCTURAL ANALYSIS AND ANY MOUNT MODIFICATION DESIGN PROVIDED BY SBA



TOWER ELEVATION
SCALE: 1" = 12'-0"
1 A-2
0 6' 12' 24' 36'

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
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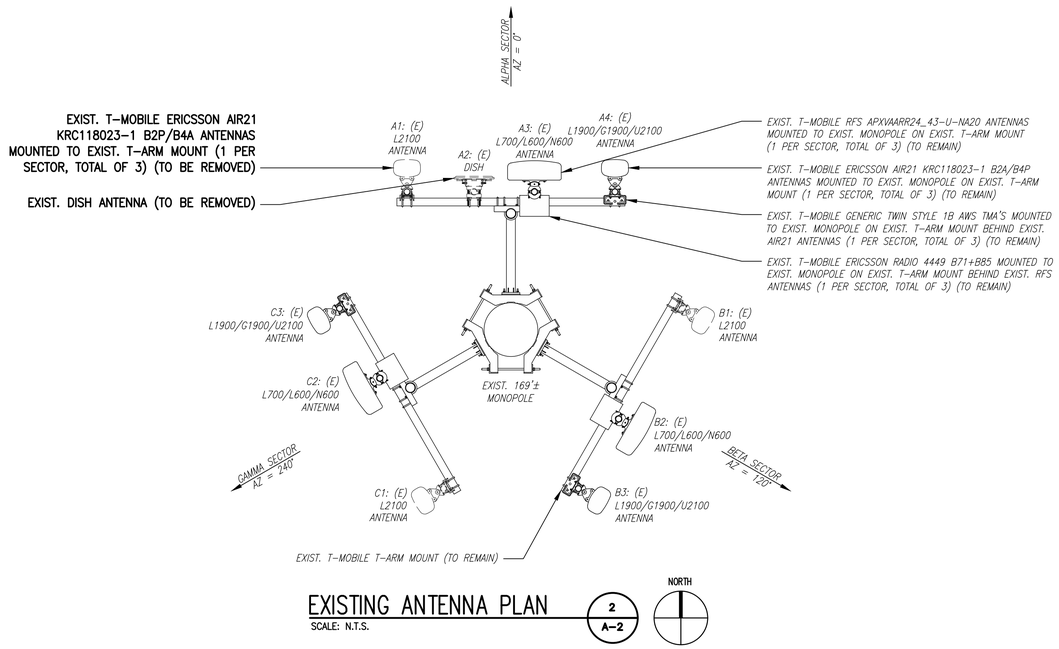
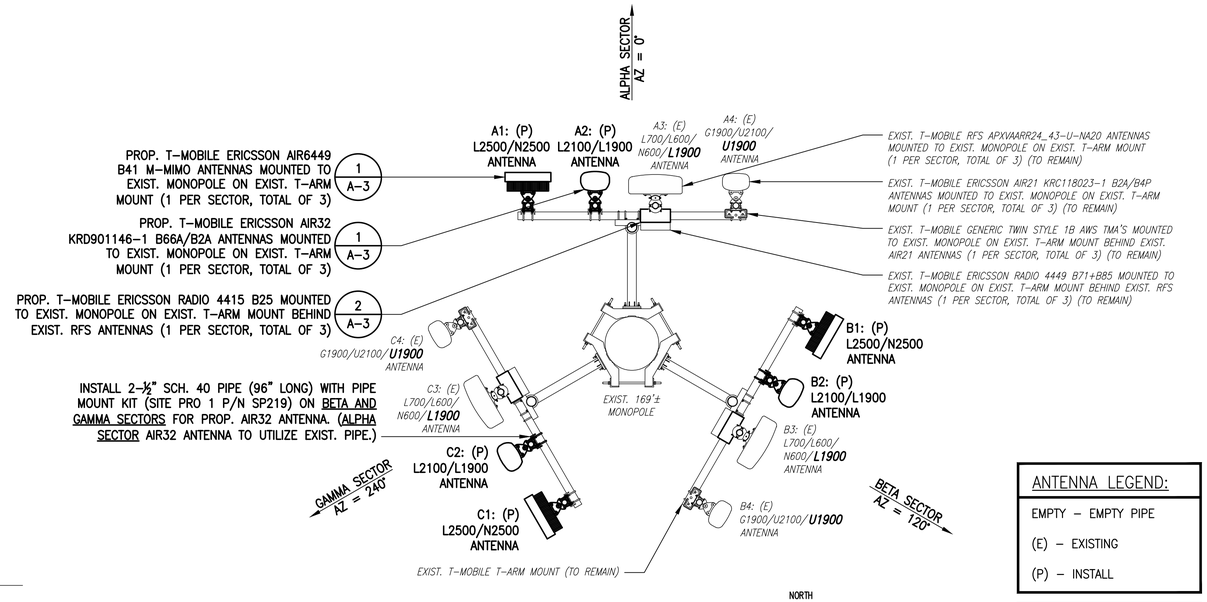


EXISTING ANTENNA PLAN
SCALE: N.T.S.
2 A-2



PROPOSED ANTENNA PLAN
SCALE: N.T.S.
3 A-2

ANTENNA LEGEND:
EMPTY – EMPTY PIPE
(E) – EXISTING
(P) – INSTALL

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

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SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

1815.115

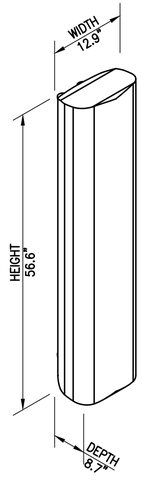
FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	ERICSSON M-MIMO AIR6449 B41	167'± AGL	0°	0°	0°	L2500/N2500	–	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	167'± AGL	0°	0°	0°	L2100	–	
						L1900	–	
	RFS APXVAARR24_43-U-NA20	*167'± AGL*	*0°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
						L1900	RADIO 4415 B25	
	ERICSSON AIR31 KRC118023-1 B2A/B4P	*167'± AGL*	*0°*	*0°*	*0°*	*G1900/*U1900	–	
						U2100	*GENERIC TWIN STYLE 1B AWS TMA*	
BETA	ERICSSON M-MIMO AIR6449 B41	167'± AGL	120°	0°	0°	L2500/N2500	–	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	167'± AGL	120°	0°	0°	L2100	–	*(6) 1-5/8" COAX CABLES*
						L1900	–	*(2) 1-5/8" HCS CABLES*
	RFS APXVAARR24_43-U-NA20	*167'± AGL*	*120°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	(2) 1-5/8" HCS CABLES
						L1900	RADIO 4415 B25	
	ERICSSON AIR31 KRC118023-1 B2A/B4P	*167'± AGL*	*120°*	*0°*	*0°*	*G1900/*U1900	–	
						U2100	*GENERIC TWIN STYLE 1B AWS TMA*	
GAMMA	ERICSSON M-MIMO AIR6449 B41	167'± AGL	240°	0°	0°	L2500/N2500	–	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	167'± AGL	240°	0°	0°	L2100	–	
						L1900	–	
	RFS APXVAARR24_43-U-NA20	*167'± AGL*	*240°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
						L1900	RADIO 4415 B25	
	ERICSSON AIR31 KRC118023-1 B2A/B4P	*167'± AGL*	*240°*	*0°*	*0°*	*G1900/*U1900	–	
						U2100	*GENERIC TWIN STYLE 1B AWS TMA*	

CABLE NOTE: EXISTING (6) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B ON SHEET A-1.

NOTE: RFDS REV5 – 05/17/20

ERICSSON M-MIMO AIR6449 B41 PANEL ANTENNA
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 LBS
1 PER SECTOR, TOTAL OF 3

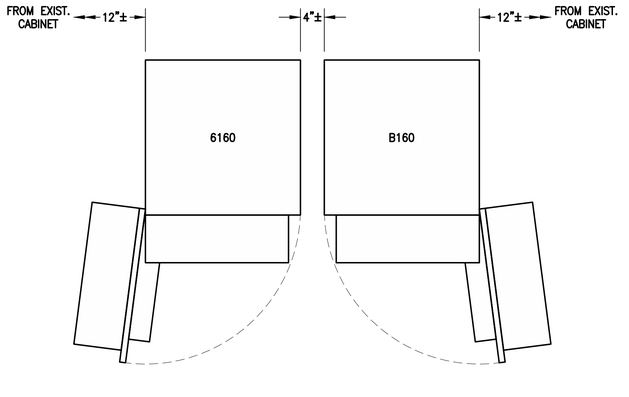


ERICSSON AIR32 KRD901146-1 B66A/B2A ANTENNA
DIMENSIONS: 56.6"H x 12.9"W x 8.7"D
WEIGHT: 132.2 LBS
1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS (1 / A-3)
SCALE: N.T.S.

ERICSSON RRUS 4415 B25
DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46 LBS
1 PER SECTOR, TOTAL OF 3

RRUS DETAIL (2 / A-3)
SCALE: N.T.S.



ERICSSON 6160 SITE SUPPORT CABINET
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
TOTAL OF 1

ERICSSON B160 BATTERY CABINET
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
TOTAL OF 1

EQUIPMENT DETAIL (3 / A-3)
SCALE: N.T.S.

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SITE ADDRESS:
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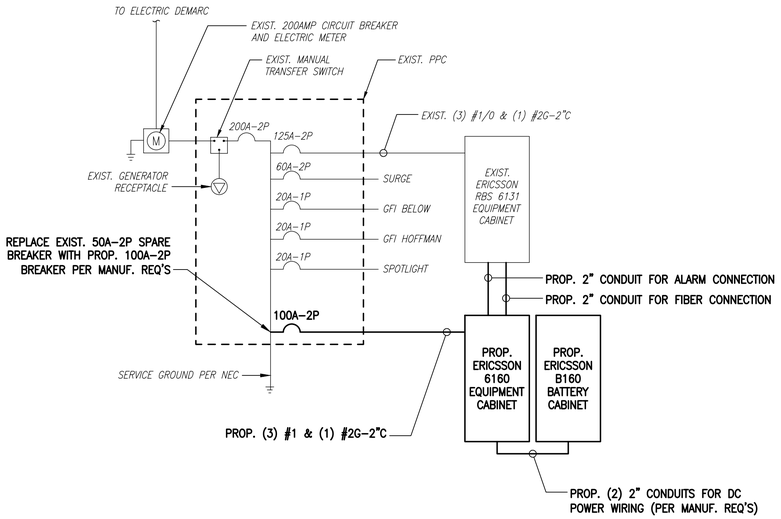
ANSONIA, CT 06401

SHEET TITLE
SITE DETAILS

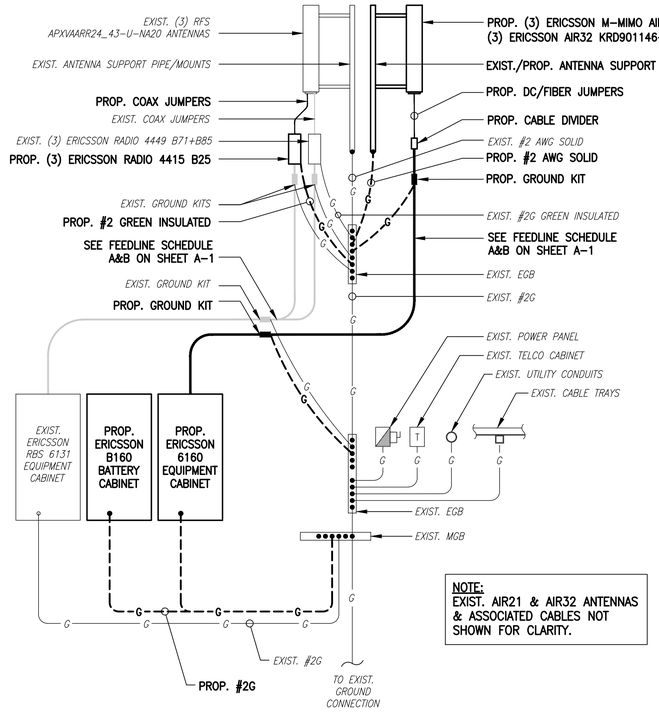
SHEET NUMBER
A-3

1815.115



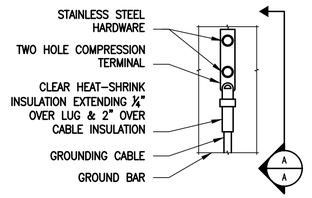
ONE LINE DIAGRAM (1 / E-1)

SCALE: NOT TO SCALE

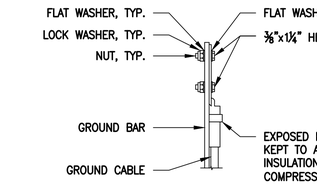


GROUNDING RISER DIAGRAM (2 / E-1)

SCALE: NOT TO SCALE



ELEVATION

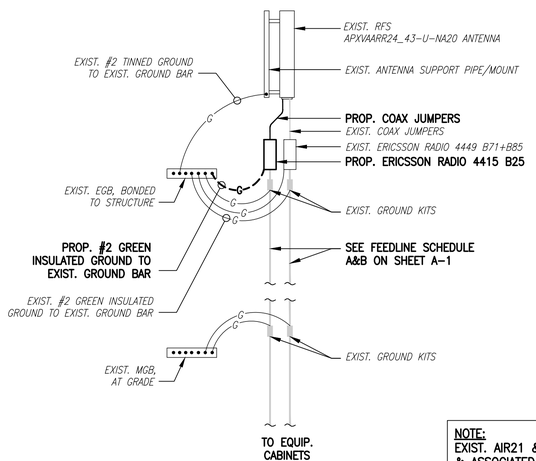


SECTION A-A

NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

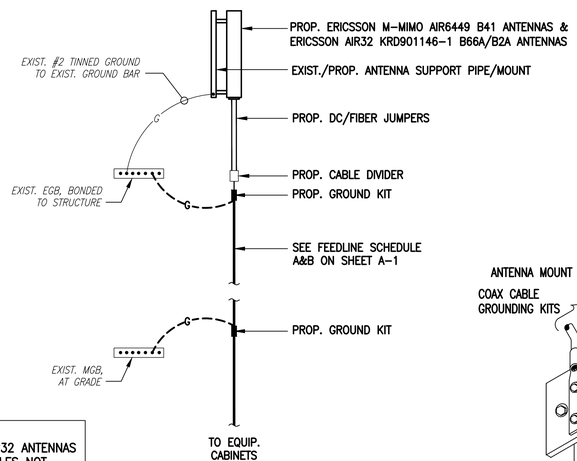
TYPICAL GROUND BAR CONNECTIONS DETAIL (3 / E-1)

SCALE: NOT TO SCALE



L700/L600/N600/L1900 ANTENNA

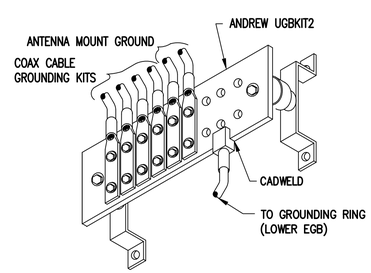
NOTE: EXIST. AIR21 & AIR32 ANTENNAS & ASSOCIATED CABLES NOT SHOWN FOR CLARITY.



L2500/N2500 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (4 / E-1)

SCALE: NOT TO SCALE



GROUND BAR (EGB) (5 / E-1)

SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 LICENSED PROFESSIONAL CIVIL ENGINEER

8/7/20

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	08/07/20	CONSTRUCTION REVISED	CMC
2	07/24/20	CONSTRUCTION REVISED	CMC
1	06/24/20	ISSUED FOR CONSTRUCTION	CMC
0	06/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CTNH209A

SITE ADDRESS:
1 DEERFIELD LANE
ANSONIA, CT 06401

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.115

EXHIBIT 7

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

Structural Analysis Report

Existing 169 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13071-A

Customer Site Name: Woodbridge

Carrier Name: T-Mobile (App#: 117042, V2)

Carrier Site ID / Name: CTNH209A / NH209/OptaGeleertnerFT

Site Location: 1 Deerfield Lane

Ansonia, Connecticut

New Haven County

Latitude: 41.350750

Longitude: -73.049250

Analysis Result:

Max Structural Usage: 80.1% [Pass]

Max Foundation Usage: 78.0% [Pass]

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

Report Prepared By: Nasib Pandey

Introduction

The purpose of this report is to summarize the analysis results on the 169 ft SABRE 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

Tower Drawings	Sabre, DWG # 08-01016-PE, dated 1/7/2008
Foundation Drawing	Sabre, DWG # 08-01016, dated 1/30/2008
Geotechnical Report	JGI Eastern, Inc., Project # J2085109, dated 1/29/2008
Modification Drawings	TES, Project # 17022, dated 9/1/2015 TES, Project # 19194, dated 12/9/2015 TES, Project # 22848 dated 6/23/2016

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** 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.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.063

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
-	167.0	3	Ericsson - AIR 21 B2A/B4P - Panel	(3) T-Arms/Commscope VSR-MS-B	(12) 1 5/8" (1) 1 5/8" Fiber (1) 1-1/4" Fiber	T-Mobile
-		3	Ericsson - AIR 21 B4A/B2P - Panel			
-		3	RFS - APXVAA24_43-U-A20 - Panel			
-		3	Ericsson - KRY 112 144/2 - TMA			
-		3	Ericsson - Radio 4449 B71+B12 - RRU			
6	157.0	3	ALU RRH2X60-AWS RRH	(3) T-Arms	(6) 1 5/8" (12) 1 5/8" (1) 1 5/8" Fiber (1) 1/2"	Verizon
7		3	ALU/900 RRH2X60W - RRH			
8		1	Antel BXA-70063/6CF - Panel			
9		4	Decibel - DB846F65ZAXY - Panel			
10		2	Decibel - DB846H80E-SX - Panel			
11		1	GPS			
12		6	Andrew - HBX-6517DS-VTM - Panel			
13		1	RFS DB T1-6Z-8AB-OZ Distribution Box			
14		2	Swedcom - SLCP 2x6014F - Panel			
15	148.0	3	Powerwave 7770 - Panel	(3) T-Arms w/ (6) 2" STD Steel Pipe Brace Secured Existing Mount & Tower *	(12) 1 5/8" (1) 1/2" Fiber (2) 3/4" DC Power	AT&T
16		1	Cci OPA-65R-LCUU-H6 - Panel			
17		2	Cci OPA-65R-LCUU-H8 - Panel			
18		2	CCI HPA-65R-BUU-H6 - Panel			
19		4	CCI HPA-65R-BUU-H8 - Panel			
20		6	Powerwave LGP21401 TMA			
21		6	Powerwave LGP13519 Diplexer			
22		3	Ericsson RRUS-11 (17.8x17.3x7.2) - RRU			
23		9	Ericsson RRUS 32 - RRU			
24		3	Powerwave 1001940 - Bias-T			
25		2	Raycap DC6-48-60-18-8F - Surge			
26		1	Commscope - WCS-IMFQ-AMT - Filter			
27	127.0	3	Nokia AAHC - Panel	(1) SitePro Low Profile Platform w/ handrail (RMQP-4096-HK)	(4) 1/2" Coax (1) 1-5/8" Fiber (4) 1-1/4 Fiber	Sprint Nextel
28		3	Commscope NNVV-65B-R4 - Panel			
29		4	Dragonwave Horizon Duo			
30		3	ALU 1900 Mhz - RRU			
31		6	ALU 800 Mhz - RRU			
32		3	ALU TD-RRH8x20-25 - RRU			
33		3	Andrew VHLP2-11 - Dish			
34		1	Andrew VHLP800-11 - Dish			
35	117.0	2	Ericsson 4415 RRU	Standoff Sector Frame (3) Commscope SF-SU7-2-96	(1) 1-1/4" Hybrid	Dish Network
36		3	Ericsson 0208 RRU			
37		3	Comba ODI2-065R18K-GQ - Panel			

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
1	167.0	3	RFS - APXVAA24_43-U-A20 - Panel	(3) T-Arms/Commscope VSR-MS-B	(10) 1-5/8" Coax (3) 1-5/8" Fiber (1) 1-1/4" Fiber	T-Mobile
2		3	Air 32 KRD901146-1_B66A_B2A - Panel			
3		3	Ericsson AIR 21 B2A/B4P - Panel			
4		3	Ericsson AIR6449 B41 - Panel			
5		3	Ericsson - KRY 112 144/1			
6		3	Ericsson - Radio 4449 B71+B85			
7		3	Ericsson Radio 4415 B25			

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	Reinforcing Plate
Max. Usage:	**80.1%**	**74.0%**	**61.0%**	**77.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4452.6	34.8	59.3

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):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.6139 degrees under the operational wind speed as specified in the Analysis Criteria.

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 80.09% at 105.0ft

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge	**Exposure:**	B	
Height:	169.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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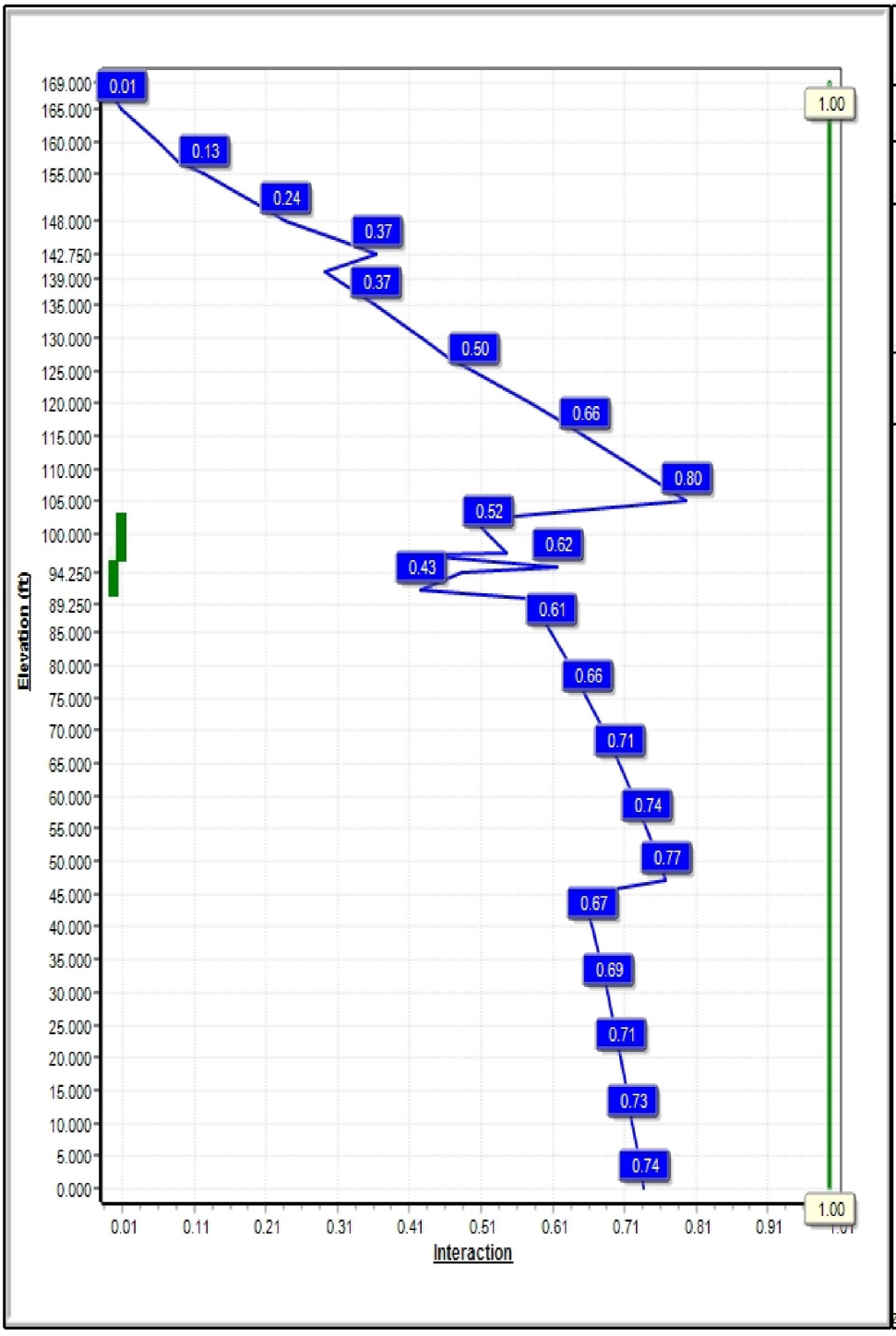
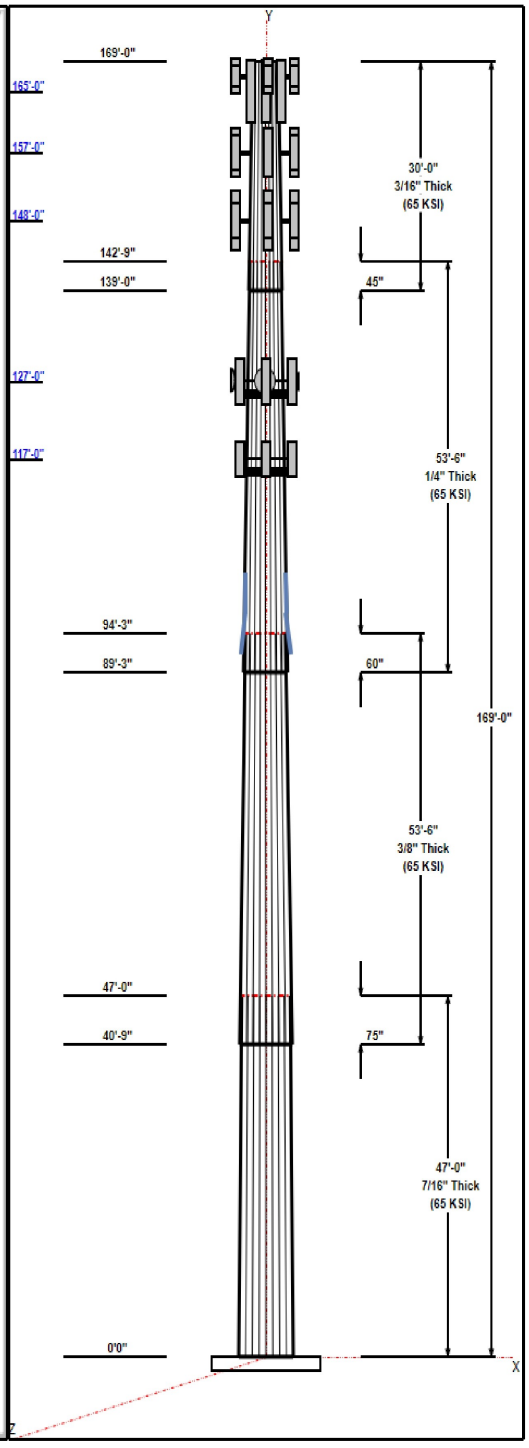
Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 97 mph Wind

Iterations: 27





Structure: CT13071-A-SBA

Type: Tapered
Site Name: Woodbridge
Height: 169.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20003

7/7/2020

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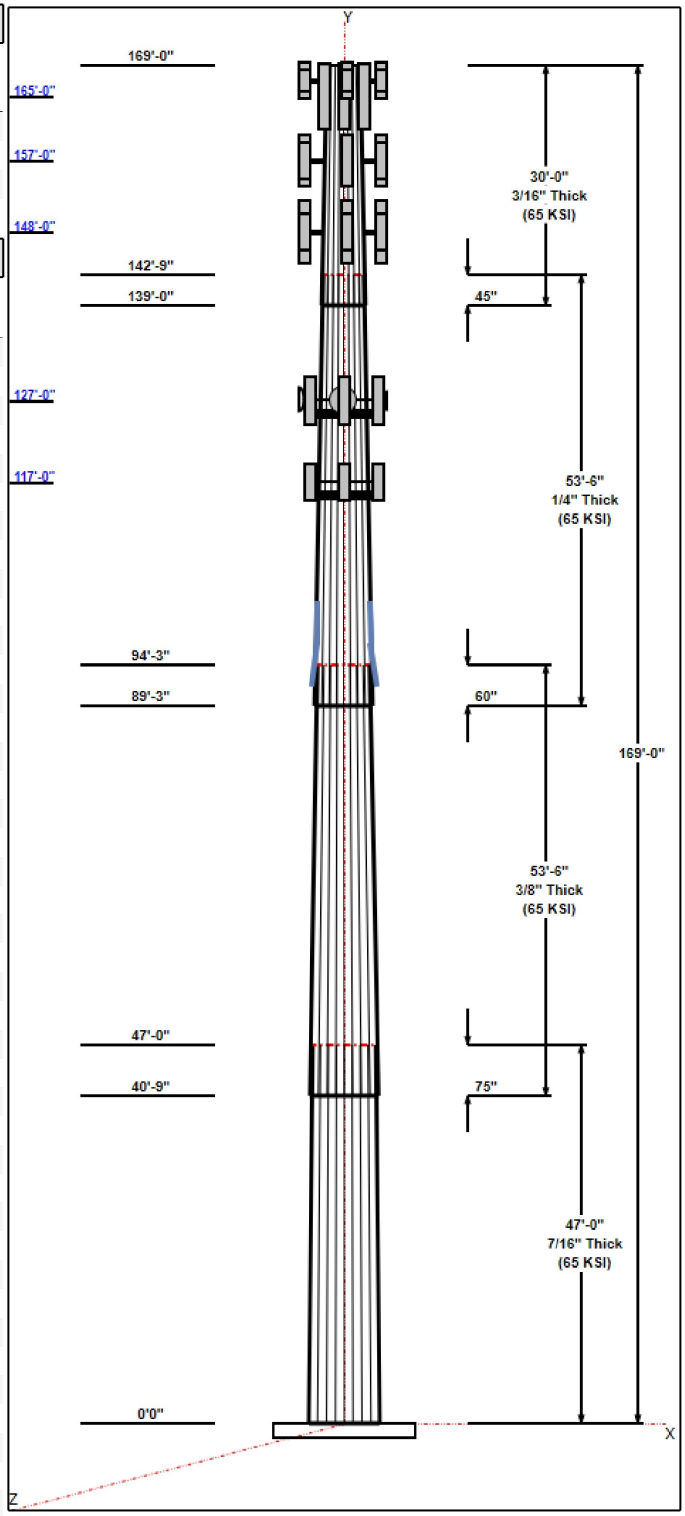
Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	47.00	46.78	56.18	0.438		0.20003	65
2	53.50	38.08	48.78	0.375	Slip	0.20003	65
3	53.50	28.88	39.58	0.250	Slip	0.20003	65
4	30.00	24.00	30.00	0.188	Slip	0.20003	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
167.00	167.50	3	T-Arms/Commscope	T-Mobile
167.00	167.00	3	AIR 21 B2A/B4P	T-Mobile
167.00	167.00	3	Ericsson - KRY 112 144/2	T-Mobile
167.00	167.00	3	AIR 6449 B41	T-Mobile
167.00	167.00	3	Ericsson - Radio 4449	T-Mobile
167.00	167.00	3	RRUS 4415 B25	T-Mobile
165.00	165.00	3	Air 32	T-Mobile
165.00	165.00	3	APXVAA24_43-U-A20	T-Mobile
157.00	157.00	1	BXA-70063/6CF	Verizon
157.00	157.00	3	T-Arms	Verizon
157.00	157.00	2	SLCP 2x6014F	Verizon
157.00	157.00	4	DB846F65ZAXY	Verizon
157.00	157.00	2	DB846H80E-SX	Verizon
157.00	157.00	6	HBX-6517DS-VTM	Verizon
157.00	157.00	3	ALU RRH2X60-AWS RRH	Verizon
157.00	157.00	1	RFS DB T1-6Z-8AB-OZ	Verizon
157.00	157.00	1	GPS	Verizon
157.00	157.00	3	ALU/900 RRH2X60W -	Verizon
150.00	150.00	1	Collar Mount	AT&T
148.00	148.00	1	Cci OPA-65R-LCUU-H6	AT&T
148.00	148.00	2	Cci OPA-65R-LCUU-H8	AT&T
148.00	148.00	2	CCI HPA-65R-BUU-H6	AT&T
148.00	148.00	4	CCI HPA-65R-BUU-H8	AT&T
148.00	148.00	3	Powerwave 1001940-Bias	AT&T
148.00	148.00	9	Ericsson RRUS 32-RRU	AT&T
148.00	148.00	1	Commscope	AT&T
148.00	148.00	3	Ericsson RRUS-11-RRU	AT&T
148.00	148.00	2	Raycap	AT&T
148.00	148.00	3	T-Arms w/ Modifications	AT&T
148.00	148.00	3	Powerwave 7770	AT&T
148.00	148.00	6	Powerwave LGP21401	AT&T
148.00	148.00	6	Powerwave LGP13519	AT&T
127.00	127.00	3	VHLP2-11	Sprint Nextel
127.00	127.00	1	VHLP800-11	Sprint Nextel
127.00	127.00	4	Horizon Duo	Sprint Nextel
127.00	127.00	3	1900MHz RRH	Sprint Nextel
127.00	127.00	6	800 MHz RRH	Sprint Nextel
127.00	127.00	3	TD-RRH8x20-25	Sprint Nextel
127.00	127.00	3	AAHC	Sprint Nextel
127.00	127.00	3	NNVV-65B-R4	Sprint Nextel
127.00	127.00	1	RMQP-4096-HK	Sprint Nextel
117.00	117.00	3	Comba	Dish Network
117.00	117.00	3	Standoff Sector Frame	Dish Network
117.00	117.00	2	Ericsson 4415 RRU	Dish Network
117.00	117.00	3	Ericsson 0208 RRU	Dish Network



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	167.00	Inside	1 5/8" Coax	T-Mobile
0.00	167.00	Inside	1 5/8" Fiber	T-Mobile
0.00	167.00	Inside	1-1/4" Fiber	T-Mobile
0.00	157.00	Outside	1 5/8" Coax	Verizon
0.00	157.00	Inside	1 5/8" Coax	Verizon
0.00	157.00	Inside	1 5/8" Fiber	Verizon
0.00	157.00	Inside	1/2" Coax	Verizon
0.00	148.00	Inside	1 5/8" Coax	AT&T
0.00	148.00	Inside	1/2" Fiber	AT&T
0.00	148.00	Inside	3/4" DC	AT&T
0.00	137.00	Inside	1 5/8" Coax	Metro PCS
0.00	127.00	Inside	1 5/8" Fiber	Sprint Nextel
0.00	127.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	127.00	Inside	1/2" Coax	Sprint Nextel
0.00	117.00	Inside	1-1/4" Hybrid	Dish Network
99.25	104.50	Outside	1" Reinforcing plate	
89.25	99.25	Outside	1" Reinforcing plate	44 Farms

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	61.3	60.0	Clipped

Reactions

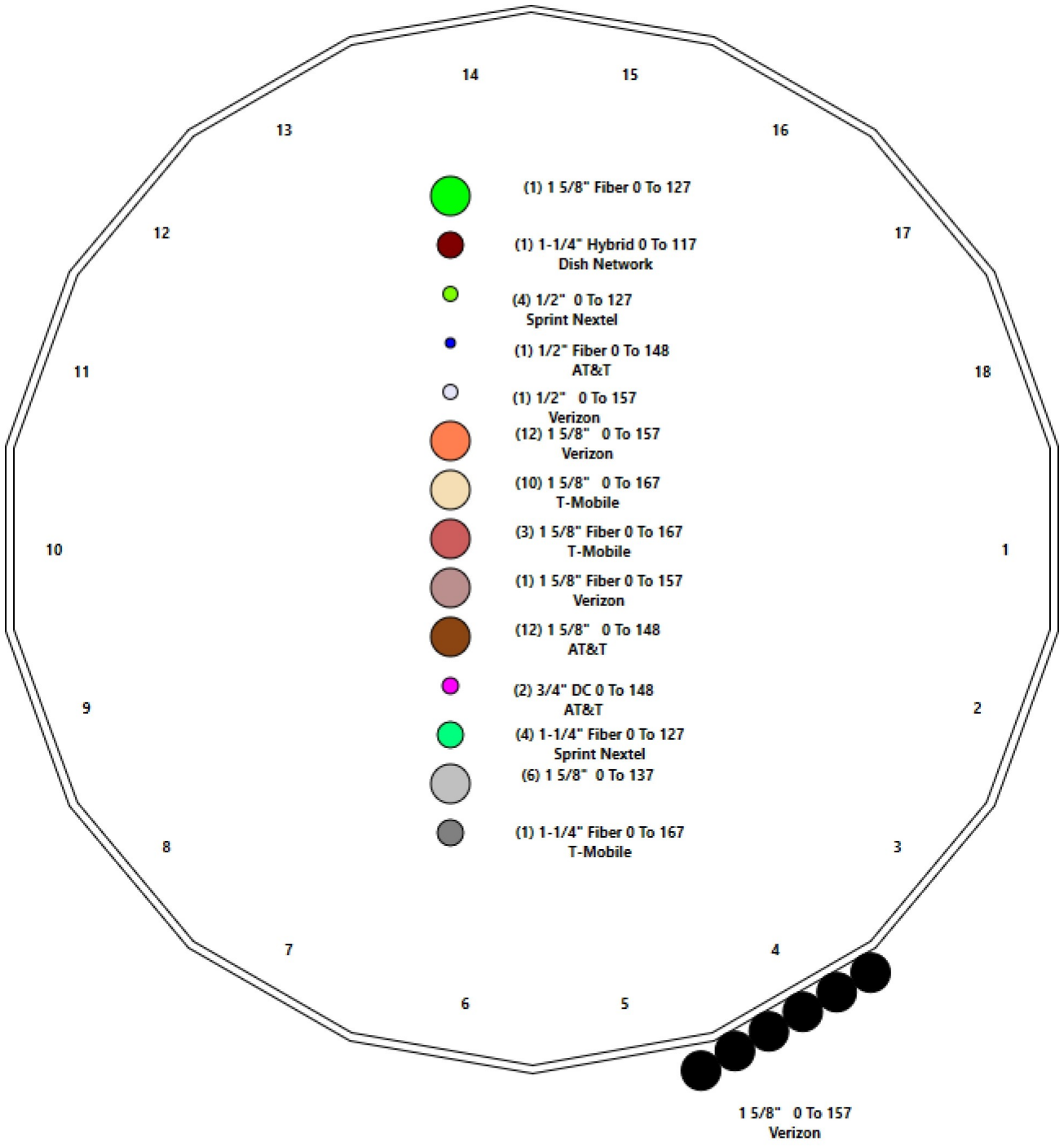
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	4452.6	34.8	59.3
0.9D + 1.6W 97 mph Wind	4389.5	34.7	44.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1207.9	9.4	93.2
1.2D + 1.0E	239.6	1.9	59.4
0.9D + 1.0E	235.8	1.9	44.5
1.0D + 1.0W 60 mph Wind	1056.7	8.3	49.5

Structure: CT13071-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Woodbridge
Height: 169.00 (ft)

7/7/2020

Tower Engineering Solutions



Shaft Properties

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	47.000	0.4375	65		0.00	11,335
2	18	53.500	0.3750	65	Slip	75.00	9,329
3	18	53.500	0.2500	65	Slip	60.00	4,908
4	18	30.000	0.1875	65	Slip	45.00	1,629
					Total Shaft Weight:		**27,200**

	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	56.18	0.00	77.40	30386.58	21.23	128.41	46.78	47.00	64.35	17459.0	17.44	106.9	0.200030
2	48.78	40.75	57.61	17053.51	21.53	130.08	38.08	94.25	44.87	8058.91	16.49	101.5	0.200030
3	39.58	89.25	31.21	6097.74	26.50	158.31	28.88	142.75	22.71	2351.56	18.96	115.5	0.200030
4	30.00	139.0	17.74	1992.41	26.80	160.00	24.00	169.00	14.17	1015.22	21.16	128.0	0.200030

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
91.50	97.00	3	LNP LP6X100-G-10TT	65	80	0.00	5/8" Hollo Bolt	23.00	5/8" Hollo Bolt		9	9
96.75	102.2	3	LNP LP6X100-G-10TT	65	80	0.00	5/8" Hollo Bolt	23.00	5/8" Hollo Bolt		9	9

Load Summary

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	167.00	T-Arms/Commscope VSR-MS-B	3	340.00	6.75	0.75	579.91	12.704	0.75	0.00	0.50
2	167.00	AIR 21 B2A/B4P	3	92.00	6.09	0.86	263.11	7.155	0.86	0.00	0.00
3	167.00	Ericsson - KRY 112 144/1	3	11.00	0.41	0.75	21.90	0.890	0.75	0.00	0.00
4	167.00	AIR 6449 B41	3	103.00	5.65	0.70	257.84	6.634	0.70	0.00	0.00
5	167.00	Ericsson - Radio 4449 B71+B12	3	74.00	1.65	0.75	142.20	2.167	0.75	0.00	0.00
6	167.00	RRUS 4415 B25	3	46.00	1.64	0.67	87.55	2.161	0.67	0.00	0.00
7	165.00	Air 32 KRD901146-1_B66A_B2A	3	105.80	6.51	0.87	292.27	7.702	0.87	0.00	0.00
8	165.00	APXVAA24_43-U-A20	3	128.00	20.24	0.73	560.73	22.184	0.73	0.00	0.00
9	157.00	BXA-70063/6CF	1	17.00	7.57	1.00	159.36	10.346	1.00	0.00	0.00
10	157.00	T-Arms	3	350.00	8.00	0.75	595.45	15.013	0.75	0.00	0.00
11	157.00	SLCP 2x6014F	2	20.00	6.49	0.93	197.04	8.575	0.93	0.00	0.00
12	157.00	DB846F65ZAXY	4	21.00	7.05	0.92	219.47	8.287	0.93	0.00	0.00
13	157.00	DB846H80E-SX	2	16.00	5.01	1.10	176.40	6.231	1.10	0.00	0.00
14	157.00	HBX-6517DS-VTM	6	18.70	5.29	0.75	140.62	6.584	0.75	0.00	0.00
15	157.00	ALU RRH2X60-AWS RRH	3	60.00	3.50	0.76	147.69	4.293	0.78	0.00	0.00
16	157.00	RFS DB T1-6Z-8AB-OZ Distribution	1	19.00	3.20	1.00	94.95	4.035	1.00	0.00	0.00
17	157.00	GPS	1	10.00	1.00	1.00	39.45	1.715	1.00	0.00	0.00
18	157.00	ALU/900 RRH2X60W - RRH	3	46.00	1.88	0.76	115.51	2.469	0.78	0.00	0.00
19	150.00	Collar Mount	1	100.00	3.50	1.00	183.77	5.943	1.00	0.00	0.00
20	148.00	Cci OPA-65R-LCUU-H6	1	73.00	9.66	0.79	304.40	11.024	0.79	0.00	0.00
21	148.00	Cci OPA-65R-LCUU-H8	2	88.00	12.75	0.79	373.59	14.593	0.79	0.00	0.00
22	148.00	CCI HPA-65R-BUU-H6	2	51.00	9.66	0.85	298.72	11.024	0.85	0.00	0.00
23	148.00	CCI HPA-65R-BUU-H8	4	68.00	12.98	0.79	358.59	14.593	0.79	0.00	0.00
24	148.00	Powerwave 1001940-Bias Ts	3	2.00	0.07	0.90	9.46	0.300	0.91	0.00	0.00
25	148.00	Ericsson RRUS 32-RRU	9	77.00	1.65	0.70	125.40	2.229	0.72	0.00	0.00
26	148.00	Commscope WCS-IMFQ-AMT -	1	6.60	1.19	1.00	30.81	1.976	1.00	0.00	0.00
27	148.00	Ericsson RRUS-11-RRU	3	50.00	2.52	0.76	140.08	3.220	0.78	0.00	0.00
28	148.00	Raycap DC6-48-60-18-8F-Surge	2	32.80	1.47	0.90	96.48	2.169	0.90	0.00	0.00
29	148.00	T-Arms w/ Modifications	3	450.00	12.00	0.75	763.72	22.457	0.75	0.00	0.00
30	148.00	Powerwave 7770	3	35.00	5.51	0.77	169.93	6.566	0.80	0.00	0.00
31	148.00	Powerwave LGP21401 TMA	6	14.10	1.29	0.75	39.07	2.125	0.77	0.00	0.00
32	148.00	Powerwave LGP13519	6	5.30	0.34	0.75	14.78	0.793	0.77	0.00	0.00
33	127.00	VHLP2-11	3	27.00	4.68	1.00	123.25	5.933	1.00	0.10	0.00
34	127.00	VHLP800-11	1	48.00	8.43	1.00	219.27	10.108	1.00	0.10	0.00
35	127.00	Horizon Duo	4	7.00	0.59	0.75	22.26	1.143	0.75	0.00	0.00
36	127.00	1900MHz RRH	3	60.00	2.77	0.99	142.06	4.018	0.99	0.00	0.00
37	127.00	800 MHz RRH	6	53.00	2.49	0.92	125.74	3.615	0.92	0.00	0.00
38	127.00	TD-RRH8x20-25	3	70.00	4.05	0.69	178.27	4.849	0.71	0.00	0.00
39	127.00	AAHC	3	103.60	4.21	0.75	207.38	5.008	0.75	0.00	0.00
40	127.00	NNVV-65B-R4	3	77.40	12.27	0.74	358.24	13.702	0.74	0.00	0.00
41	127.00	RMQP-4096-HK	1	2645.00	51.70	1.00	5368.94	89.325	1.00	0.00	0.00
42	117.00	Comba ODI2-065R18K-GQ	3	25.10	4.85	0.70	129.02	5.808	0.70	0.00	0.00
43	117.00	Standoff Sector Frame Commscope	3	395.00	15.10	0.75	771.57	33.608	0.75	0.00	0.00
44	117.00	Ericsson 4415 RRU	2	44.10	1.86	0.67	90.38	2.419	0.67	0.00	0.00
45	117.00	Ericsson 0208 RRU	3	19.80	1.37	0.67	53.88	1.856	0.67	0.00	0.00
		Totals:	**134**	**13,058.10**			**32,650.39**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	167.00	(10) 1 5/8" Coax	0.00	Inside
0.00	167.00	(3) 1 5/8" Fiber	0.00	Inside
0.00	167.00	(1) 1-1/4" Fiber	0.00	Inside
0.00	157.00	(6) 1 5/8" Coax	1.98	Outside
0.00	157.00	(12) 1 5/8" Coax	0.00	Inside
0.00	157.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	157.00	(1) 1/2" Coax	0.00	Inside
0.00	148.00	(12) 1 5/8" Coax	0.00	Inside
0.00	148.00	(1) 1/2" Fiber	0.00	Inside
0.00	148.00	(2) 3/4" DC	0.00	Inside
0.00	137.00	(6) 1 5/8" Coax	0.00	Inside
0.00	127.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	127.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	127.00	(4) 1/2" Coax	0.00	Inside
0.00	117.00	(1) 1-1/4" Hybrid	0.00	Inside
99.25	104.50	(1) 1" Reinforcing plate	1.00	Outside
89.25	99.25	(1) 1" Reinforcing plate	1.00	Outside

Shaft Section Properties

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: **5 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.4375	56.180	77.403	30386.6	21.23	128.41	65	76	0.0				
5.00		0.4375	55.180	76.014	28780.1	20.83	126.13	65	77	1305.1				
10.00		0.4375	54.180	74.625	27231.3	20.43	123.84	65	77	1281.5				
15.00		0.4375	53.180	73.236	25739.1	20.02	121.55	65	78	1257.8				
20.00		0.4375	52.179	71.848	24302.4	19.62	119.27	65	78	1234.2				
25.00		0.4375	51.179	70.459	22920.2	19.22	116.98	65	79	1210.6				
30.00		0.4375	50.179	69.070	21591.5	18.81	114.70	65	79	1187.0				
35.00		0.4375	49.179	67.681	20315.1	18.41	112.41	65	80	1163.3				
40.00		0.4375	48.179	66.292	19090.0	18.01	110.12	65	80	1139.7				
40.75	Bot - Section 2	0.4375	48.029	66.084	18910.6	17.95	109.78	65	80	168.9				
45.00		0.4375	47.179	64.904	17915.2	17.60	107.84	65	81	1773.0				
47.00	Top - Section 1	0.3750	47.529	56.123	15766.0	20.94	126.74	65	77	823.4				
50.00		0.3750	46.929	55.408	15171.7	20.66	125.14	65	77	569.3				
55.00		0.3750	45.928	54.218	14214.7	20.19	122.48	65	78	932.6				
60.00		0.3750	44.928	53.028	13298.8	19.71	119.81	65	78	912.3				
65.00		0.3750	43.928	51.837	12423.2	19.24	117.14	65	79	892.1				
70.00		0.3750	42.928	50.647	11586.8	18.77	114.47	65	79	871.8				
75.00		0.3750	41.928	49.456	10788.9	18.30	111.81	65	80	851.6				
80.00		0.3750	40.928	48.266	10028.4	17.83	109.14	65	80	831.3				
85.00		0.3750	39.927	47.076	9304.6	17.36	106.47	65	81	811.1				
89.25	Bot - Section 3	0.3750	39.077	46.064	8717.4	16.96	104.21	65	81	673.5				
90.00		0.3750	38.927	45.885	8616.4	16.89	103.81	65	82	196.8				
91.50	RB1	0.3750	38.627	45.528	8416.8	16.75	103.01	65	82	391.4	18.00	4449.0	2805.1	91.9
94.25	Top - Section 2	0.2500	38.577	30.412	5644.2	25.80	154.31	65	71	709.6	18.00	4328.3	2729.4	168.4
95.00		0.2500	38.427	30.293	5578.2	25.69	153.71	65	71	77.5	18.00	4290.5	2703.4	45.9
96.75	RB2	0.2500	38.077	30.015	5426.2	25.45	152.31	65	71	179.6	36.00	7688.0	6129.7	214.4
97.00	RT1	0.2500	38.027	29.975	5404.7	25.41	152.11	65	72	25.5	18.00	3454.8	3454.8	15.3
100.00		0.2500	37.427	29.499	5151.2	24.99	149.71	65	72	303.6	18.00	3350.2	3350.2	183.7
102.25	RT2	0.2500	36.977	29.142	4966.4	24.67	147.91	65	72	224.5	18.00	3272.8	3272.8	137.8
105.00		0.2500	36.427	28.705	4746.6	24.28	145.71	65	73	270.7				
110.00		0.2500	35.427	27.912	4363.7	23.58	141.71	65	74	481.6				
115.00		0.2500	34.427	27.118	4001.9	22.87	137.71	65	75	468.1				
117.00		0.2500	34.027	26.801	3863.0	22.59	136.11	65	75	183.5				
120.00		0.2500	33.426	26.325	3660.8	22.17	133.71	65	75	271.2				
125.00		0.2500	32.426	25.531	3339.6	21.46	129.71	65	76	441.1				
127.00		0.2500	32.026	25.214	3216.6	21.18	128.10	65	76	172.7				
130.00		0.2500	31.426	24.737	3037.7	20.75	125.70	65	77	255.0				
135.00		0.2500	30.426	23.944	2754.7	20.05	121.70	65	78	414.1				
139.00	Bot - Section 4	0.2500	29.626	23.309	2541.3	19.48	118.50	65	78	321.6				
140.00		0.2500	29.426	23.150	2489.7	19.34	117.70	65	79	139.2				
142.75	Top - Section 3	0.1875	29.251	17.296	1845.8	26.10	156.00	65	71	378.0				
145.00		0.1875	28.801	17.028	1761.3	25.67	153.60	65	71	131.4				
148.00		0.1875	28.201	16.671	1652.8	25.11	150.40	65	72	172.0				
150.00		0.1875	27.801	16.433	1583.0	24.73	148.27	65	72	112.6				
155.00		0.1875	26.800	15.837	1417.2	23.79	142.94	65	73	274.5				
157.00		0.1875	26.400	15.599	1354.2	23.42	140.80	65	74	107.0				
160.00		0.1875	25.800	15.242	1263.3	22.85	137.60	65	75	157.4				
165.00		0.1875	24.800	14.647	1121.0	21.91	132.27	65	76	254.3				
167.00		0.1875	24.400	14.409	1067.3	21.54	130.13	65	76	98.9				
169.00		0.1875	24.000	14.171	1015.2	21.16	128.00	65	77	97.3				

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ixp (in^4)	Additional Reinforcing Iyp (in^4)	Additional Reinforcing Weight (lb)
							Total Weight			27200.5				857.5

Wind Loading - Shaft

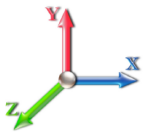
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

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	0.70	16.018	17.62	385.81	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	378.94	0.650	0.000	5.00	23.558	15.31	431.7	0.0	1566.1
10.00		1.00	0.70	16.018	17.62	372.07	0.650	0.000	5.00	23.135	15.04	423.9	0.0	1537.8
15.00		1.00	0.70	16.018	17.62	365.20	0.650	0.000	5.00	22.712	14.76	416.2	0.0	1509.4
20.00		1.00	0.70	16.018	17.62	358.33	0.650	0.000	5.00	22.288	14.49	408.4	0.0	1481.1
25.00		1.00	0.70	16.018	17.62	351.46	0.650	0.000	5.00	21.865	14.21	400.7	0.0	1452.7
30.00		1.00	0.70	16.031	17.63	344.74	0.650	0.000	5.00	21.442	13.94	393.2	0.0	1424.4
35.00		1.00	0.73	16.753	18.43	345.39	0.650	0.000	5.00	21.019	13.66	402.8	0.0	1396.0
40.00		1.00	0.76	17.405	19.15	344.89	0.650	0.000	5.00	20.596	13.39	410.1	0.0	1367.6
40.75	Bot - Section 2	1.00	0.76	17.497	19.25	344.73	0.650	0.000	0.75	3.053	1.98	61.1	0.0	202.7
45.00		1.00	0.79	18.000	19.80	343.46	0.650	0.000	4.25	17.389	11.30	358.1	0.0	2127.6
47.00	Top - Section 1	1.00	0.80	18.225	20.05	342.67	0.650	0.000	2.00	8.077	5.25	168.4	0.0	988.1
50.00		1.00	0.81	18.551	20.41	346.82	0.650	0.000	3.00	11.989	7.79	254.4	0.0	683.1
55.00		1.00	0.83	19.063	20.97	344.08	0.650	0.000	5.00	19.644	12.77	428.4	0.0	1119.1
60.00		1.00	0.85	19.543	21.50	340.80	0.650	0.000	5.00	19.220	12.49	429.7	0.0	1094.8
65.00		1.00	0.87	19.995	21.99	337.04	0.650	0.000	5.00	18.797	12.22	430.0	0.0	1070.5
70.00		1.00	0.89	20.422	22.46	332.87	0.650	0.000	5.00	18.374	11.94	429.3	0.0	1046.2
75.00		1.00	0.91	20.829	22.91	328.34	0.650	0.000	5.00	17.951	11.67	427.7	0.0	1021.9
80.00		1.00	0.93	21.217	23.34	323.47	0.650	0.000	5.00	17.528	11.39	425.4	0.0	997.6
85.00		1.00	0.94	21.587	23.75	318.32	0.650	0.000	5.00	17.105	11.12	422.4	0.0	973.3
89.25	Bot - Section 3	1.00	0.96	21.890	24.08	313.72	0.650	0.000	4.25	14.206	9.23	355.8	0.0	808.2
90.00		1.00	0.96	21.943	24.14	312.89	0.650	0.000	0.75	2.507	1.63	62.9	0.0	236.2
91.50	RB1	1.00	0.96	22.047	24.25	311.21	0.650	0.000	1.50	4.985	3.24	125.7	0.0	469.6
94.25	Top - Section 2	1.00	0.97	22.234	24.46	308.08	0.650	0.000	2.75	9.041	5.88	230.0	0.0	851.5
95.00		1.00	0.97	22.284	24.51	311.26	0.650	0.000	0.75	2.444	1.59	62.3	0.0	93.0
96.75	RB2	1.00	0.98	22.401	24.64	309.23	0.650	0.000	1.75	5.664	3.68	145.2	0.0	215.5
97.00	RT1	1.00	0.98	22.417	24.66	308.94	0.650	0.000	0.25	0.805	0.52	20.6	0.0	30.6
100.00		1.00	0.99	22.613	24.87	305.39	0.650	0.000	3.00	9.577	6.23	247.8	0.0	364.3
102.25	RT2	1.00	0.99	22.758	25.03	302.68	0.650	0.000	2.25	7.083	4.60	184.4	0.0	269.4
105.00		1.00	1.00	22.931	25.22	299.31	0.650	0.000	2.75	8.541	5.55	224.0	0.0	324.8
110.00		1.00	1.02	23.238	25.56	293.03	0.650	0.000	5.00	15.200	9.88	404.1	0.0	578.0
115.00		1.00	1.03	23.535	25.89	286.57	0.650	0.000	5.00	14.777	9.61	397.9	0.0	561.8
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	283.94	0.650	0.000	2.00	5.792	3.77	156.7	0.0	220.2
120.00		1.00	1.04	23.823	26.20	279.94	0.650	0.000	3.00	8.562	5.57	233.3	0.0	325.4
125.00		1.00	1.05	24.102	26.51	273.16	0.650	0.000	5.00	13.931	9.06	384.1	0.0	529.4
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	270.40	0.650	0.000	2.00	5.454	3.55	151.1	0.0	207.2
130.00		1.00	1.07	24.374	26.81	266.22	0.650	0.000	3.00	8.054	5.24	224.6	0.0	305.9
135.00		1.00	1.08	24.638	27.10	259.14	0.650	0.000	5.00	13.085	8.51	368.8	0.0	497.0
139.00	Bot - Section 4	1.00	1.09	24.844	27.33	253.38	0.650	0.000	4.00	10.163	6.61	288.9	0.0	385.9
140.00		1.00	1.09	24.895	27.38	251.93	0.650	0.000	1.00	2.530	1.64	72.1	0.0	167.1
142.75	Top - Section 3	1.00	1.09	25.034	27.54	247.90	0.650	0.000	2.75	6.871	4.47	196.8	0.0	453.6
145.00		1.00	1.10	25.146	27.66	247.81	0.650	0.000	2.25	5.526	3.59	159.0	0.0	157.7
148.00	Appurtenance(s)	1.00	1.11	25.294	27.82	243.36	0.650	0.000	3.00	7.235	4.70	209.4	0.0	206.4
150.00	Appurtenance(s)	1.00	1.11	25.391	27.93	240.37	0.650	0.000	2.00	4.739	3.08	137.6	0.0	135.2
155.00		1.00	1.12	25.630	28.19	232.81	0.650	0.000	5.00	11.551	7.51	338.7	0.0	329.4
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	229.75	0.650	0.000	2.00	4.502	2.93	132.5	0.0	128.4
160.00		1.00	1.13	25.863	28.45	225.14	0.650	0.000	3.00	6.626	4.31	196.0	0.0	188.9

Wind Loading - Shaft

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

165.00 Appurtenance(s)	1.00	1.14	26.092	28.70	217.37	0.650	0.000	5.00	10.704	6.96	319.5	0.0	305.1
167.00 Appurtenance(s)	1.00	1.14	26.182	28.80	214.23	0.650	0.000	2.00	4.163	2.71	124.7	0.0	118.6
169.00	1.00	1.15	26.271	28.90	211.07	0.650	0.000	2.00	4.096	2.66	123.1	0.0	116.7
							Totals:	**169.00**			**13,399.4**		**32,640.6**

Discrete Appurtenance Forces

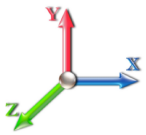
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

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)	Orient Factor 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	167.00	RRUS 4415 B25	3	26.182	28.800	0.54	0.80	2.64	165.60	0.000	0.000	121.52	0.00	0.00
2	167.00	Ericsson - Radio 4449	3	26.182	28.800	0.60	0.80	2.97	266.40	0.000	0.000	136.86	0.00	0.00
3	167.00	AIR 6449 B41	3	26.182	28.800	0.56	0.80	9.49	370.80	0.000	0.000	437.39	0.00	0.00
4	167.00	Ericsson - KRY 112 144/2	3	26.182	28.800	0.60	0.80	0.74	39.60	0.000	0.000	34.01	0.00	0.00
5	167.00	AIR 21 B2A/B4P	3	26.182	28.800	0.77	0.90	14.14	331.20	0.000	0.000	651.61	0.00	0.00
6	167.00	T-Arms/Commscope	3	26.204	28.825	0.56	0.75	11.39	1224.00	0.000	0.500	525.33	0.00	262.66
7	165.00	APXVAA24_43-U-A20	3	26.092	28.701	0.66	0.90	39.89	460.80	0.000	0.000	1831.95	0.00	0.00
8	165.00	Air 32	3	26.092	28.701	0.78	0.90	15.29	380.88	0.000	0.000	702.23	0.00	0.00
9	157.00	DB846F65ZAXY	4	25.724	28.296	0.74	0.80	20.76	100.80	0.000	0.000	939.67	0.00	0.00
10	157.00	SLCP 2x6014F	2	25.724	28.296	0.84	0.90	10.86	48.00	0.000	0.000	491.87	0.00	0.00
11	157.00	DB846H80E-SX	2	25.724	28.296	0.88	0.80	8.82	38.40	0.000	0.000	399.21	0.00	0.00
12	157.00	T-Arms	3	25.724	28.296	0.56	0.75	13.50	1260.00	0.000	0.000	611.20	0.00	0.00
13	157.00	BXA-70063/6CF	1	25.724	28.296	1.00	1.00	7.57	20.40	0.000	0.000	342.72	0.00	0.00
14	157.00	RFS DB T1-6Z-8AB-OZ	1	25.724	28.296	1.00	1.00	3.20	22.80	0.000	0.000	144.88	0.00	0.00
15	157.00	HBX-6517DS-VTM	6	25.724	28.296	0.60	0.80	19.04	134.64	0.000	0.000	862.20	0.00	0.00
16	157.00	ALU RRH2X60-AWS RRH	3	25.724	28.296	0.61	0.80	6.38	216.00	0.000	0.000	289.03	0.00	0.00
17	157.00	GPS	1	25.724	28.296	1.00	1.00	1.00	12.00	0.000	0.000	45.27	0.00	0.00
18	157.00	ALU/900 RRH2X60W -	3	25.724	28.296	0.61	0.80	3.43	165.60	0.000	0.000	155.25	0.00	0.00
19	150.00	Collar Mount	1	25.391	27.930	1.00	1.00	3.50	120.00	0.000	0.000	156.41	0.00	0.00
20	148.00	Powerwave LGP13519	6	25.294	27.823	0.60	0.80	1.22	38.16	0.000	0.000	54.49	0.00	0.00
21	148.00	Powerwave LGP21401	6	25.294	27.823	0.60	0.80	4.64	101.52	0.000	0.000	206.74	0.00	0.00
22	148.00	Powerwave 7770	3	25.294	27.823	0.61	0.80	10.13	126.00	0.000	0.000	450.94	0.00	0.00
23	148.00	T-Arms w/ Modifications	3	25.294	27.823	0.60	0.80	21.60	1620.00	0.000	0.000	961.56	0.00	0.00
24	148.00	CCI HPA-65R-BUU-H8	4	25.294	27.823	0.63	0.80	32.81	326.40	0.000	0.000	1460.75	0.00	0.00
25	148.00	Cci OPA-65R-LCUU-H6	1	25.294	27.823	0.63	0.80	6.11	87.60	0.000	0.000	271.78	0.00	0.00
26	148.00	Cci OPA-65R-LCUU-H8	2	25.294	27.823	0.63	0.80	16.12	211.20	0.000	0.000	717.43	0.00	0.00
27	148.00	CCI HPA-65R-BUU-H6	2	25.294	27.823	0.68	0.80	13.14	122.40	0.000	0.000	584.84	0.00	0.00
28	148.00	Raycap	2	25.294	27.823	0.81	0.90	2.38	78.72	0.000	0.000	106.01	0.00	0.00
29	148.00	Powerwave 1001940-Bias	3	25.294	27.823	0.72	0.80	0.15	7.20	0.000	0.000	6.73	0.00	0.00
30	148.00	Ericsson RRUS 32-RRU	9	25.294	27.823	0.56	0.80	8.32	831.60	0.000	0.000	370.20	0.00	0.00
31	148.00	Commscope	1	25.294	27.823	1.00	1.00	1.19	7.92	0.000	0.000	52.98	0.00	0.00
32	148.00	Ericsson RRUS-11-RRU	3	25.294	27.823	0.61	0.80	4.60	180.00	0.000	0.000	204.62	0.00	0.00
33	127.00	Horizon Duo	4	24.212	26.633	0.60	0.80	1.42	33.60	0.000	0.000	60.34	0.00	0.00
34	127.00	VHLP800-11	1	24.212	26.633	1.00	1.00	8.43	57.60	1.455	0.000	359.22	326.67	0.00
35	127.00	1900MHz RRH	3	24.212	26.633	0.74	0.75	6.17	216.00	0.000	0.000	262.93	0.00	0.00
36	127.00	VHLP2-11	3	24.212	26.633	1.00	1.00	14.04	97.20	1.455	0.000	598.28	544.06	0.00
37	127.00	NNVV-65B-R4	3	24.212	26.633	0.55	0.75	20.43	278.64	0.000	0.000	870.55	0.00	0.00
38	127.00	800 MHz RRH	6	24.212	26.633	0.69	0.75	10.31	381.60	0.000	0.000	439.27	0.00	0.00
39	127.00	TD-RRH8x20-25	3	24.212	26.633	0.52	0.75	6.29	252.00	0.000	0.000	267.93	0.00	0.00
40	127.00	AAHC	3	24.212	26.633	0.56	0.75	7.10	372.96	0.000	0.000	302.73	0.00	0.00
41	127.00	RMQP-4096-HK	1	24.212	26.633	1.00	1.00	51.70	3174.00	0.000	0.000	2203.06	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	23.651	26.016	0.54	0.80	2.20	71.28	0.000	0.000	91.70	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	23.651	26.016	0.54	0.80	1.99	105.84	0.000	0.000	83.00	0.00	0.00
44	117.00	Standoff Sector Frame	3	23.651	26.016	0.56	0.75	25.48	1422.00	0.000	0.000	1060.67	0.00	0.00
45	117.00	Comba	3	23.651	26.016	0.56	0.80	8.15	90.36	0.000	0.000	339.16	0.00	0.00
							Totals:		**15,669.72**			**21,266.55**		

Total Applied Force Summary

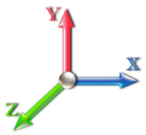
Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.69	1930.47	0.00	0.00
10.00		423.93	1902.12	0.00	0.00
15.00		416.18	1873.76	0.00	0.00
20.00		408.42	1845.41	0.00	0.00
25.00		400.67	1817.05	0.00	0.00
30.00		393.25	1788.70	0.00	0.00
35.00		402.84	1760.35	0.00	0.00
40.00		410.08	1731.99	0.00	0.00
40.75		61.11	257.35	0.00	0.00
45.00		358.09	2437.29	0.00	0.00
47.00		168.42	1133.79	0.00	0.00
50.00		254.43	901.73	0.00	0.00
55.00		428.38	1483.45	0.00	0.00
60.00		429.70	1459.14	0.00	0.00
65.00		429.97	1434.84	0.00	0.00
70.00		429.28	1410.53	0.00	0.00
75.00		427.74	1386.23	0.00	0.00
80.00		425.43	1361.93	0.00	0.00
85.00		422.42	1337.62	0.00	0.00
89.25		355.76	1117.87	0.00	0.00
90.00		62.93	290.83	0.00	0.00
91.50		125.74	578.93	0.00	0.00
94.25		229.96	1051.90	0.00	0.00
95.00		62.29	147.60	0.00	0.00
96.75		145.16	342.99	0.00	0.00
97.00		20.64	48.84	0.00	0.00
100.00		247.76	582.88	0.00	0.00
102.25		184.40	433.34	0.00	0.00
105.00		224.04	525.18	0.00	0.00
110.00		404.09	942.31	0.00	0.00
115.00		397.86	926.11	0.00	0.00
117.00	(11) attachments	1731.26	2055.39	0.00	0.00
120.00		233.33	540.56	0.00	0.00
125.00		384.12	887.98	0.00	0.00
127.00	(27) attachments	5515.39	5214.25	870.74	0.00
130.00		224.57	501.12	0.00	0.00
135.00		368.80	822.24	0.00	0.00
139.00		288.85	631.15	0.00	0.00
140.00		72.06	224.63	0.00	0.00
142.75		196.77	611.87	0.00	0.00
145.00		158.98	287.20	0.00	0.00
148.00	(45) attachments	5658.43	4117.83	0.00	0.00
150.00	(1) attachments	294.06	338.29	0.00	0.00
155.00		338.67	537.23	0.00	0.00
157.00	(26) attachments	4413.79	2230.13	0.00	0.00
160.00		196.04	241.66	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

165.00	(6) attachments	2853.70	1234.72	0.00	0.00
167.00	(18) attachments	2031.41	2551.42	0.00	262.66
169.00		123.09	116.70	0.00	0.00
	Totals:	**34,665.99**	**59,386.92**	**870.74**	**262.66**

Linear Appurtenance Segment Forces (Factored)

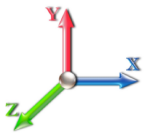
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

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)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.035	0.000	16.018	0.00	37.44
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	16.018	0.00	37.44
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	16.018	0.00	37.44
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.037	0.000	16.018	0.00	37.44
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	16.018	0.00	37.44
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	16.031	0.00	37.44
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.039	0.000	16.753	0.00	37.44
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.040	0.000	17.405	0.00	37.44
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	17.497	0.00	5.62
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	18.000	0.00	31.82
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	18.225	0.00	14.98
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.041	0.000	18.551	0.00	22.46
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.042	0.000	19.063	0.00	37.44
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.043	0.000	19.543	0.00	37.44
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.044	0.000	19.995	0.00	37.44
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.045	0.000	20.422	0.00	37.44
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.046	0.000	20.829	0.00	37.44
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.047	0.000	21.217	0.00	37.44
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.048	0.000	21.587	0.00	37.44
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	21.890	0.00	31.82
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	21.943	0.00	5.62
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	21.943	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	22.047	0.00	11.23
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	22.047	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	22.234	0.00	20.59
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	22.234	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	22.284	0.00	5.62
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	22.284	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	22.401	0.00	13.10
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	22.401	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	22.417	0.00	1.87
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	22.417	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.078	0.000	22.613	0.00	22.46
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	22.613	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	22.613	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	22.758	0.00	16.85
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	22.758	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	22.931	0.00	20.59
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	22.931	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.054	0.000	23.238	0.00	37.44
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.056	0.000	23.535	0.00	37.44
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	23.651	0.00	14.98
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.058	0.000	23.823	0.00	22.46
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.059	0.000	24.102	0.00	37.44
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	24.212	0.00	14.98
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.061	0.000	24.374	0.00	22.46
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.063	0.000	24.638	0.00	37.44

Linear Appurtenance Segment Forces (Factored)

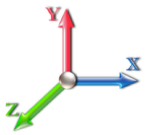
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

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)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	24.844	0.00	29.95
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	24.895	0.00	7.49
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	25.034	0.00	20.59
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	25.146	0.00	16.85
148.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.068	0.000	25.294	0.00	22.46
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	25.391	0.00	14.98
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.071	0.000	25.630	0.00	37.44
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	25.724	0.00	14.98
										Totals:	**0.0**	**1,175.6**

Calculated Forces

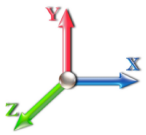
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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	-59.32	-34.77	-0.85	-4452.6	-0.02	4452.62	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.740
5.00	-57.27	-34.54	-0.85	-4278.7	-0.02	4278.75	5261.08	2630.54	11832.5	5925.09	0.11	-0.204	0.000	0.733
10.00	-55.25	-34.31	-0.85	-4106.0	-0.02	4106.03	5196.80	2598.40	11472.7	5744.92	0.43	-0.412	0.000	0.726
15.00	-53.25	-34.08	-0.85	-3934.4	-0.02	3934.48	5131.34	2565.67	11115.7	5566.13	0.98	-0.622	0.000	0.717
20.00	-51.28	-33.84	-0.85	-3764.1	-0.02	3764.10	5064.69	2532.35	10761.6	5388.80	1.74	-0.834	0.000	0.709
25.00	-49.35	-33.59	-0.85	-3594.9	-0.02	3594.93	4996.86	2498.43	10410.5	5212.99	2.73	-1.050	0.000	0.700
30.00	-47.44	-33.34	-0.85	-3426.9	-0.02	3426.97	4927.84	2463.92	10062.6	5038.79	3.95	-1.268	0.000	0.690
35.00	-45.56	-33.08	-0.85	-3260.2	-0.02	3260.26	4857.63	2428.82	9718.08	4866.26	5.39	-1.488	0.000	0.680
40.00	-43.77	-32.71	-0.85	-3094.8	-0.02	3094.89	4786.24	2393.12	9377.03	4695.49	7.07	-1.710	0.000	0.668
40.75	-43.45	-32.73	-0.85	-3070.3	-0.02	3070.35	4775.43	2387.72	9326.19	4670.03	7.34	-1.745	0.000	0.667
45.00	-40.94	-32.40	-0.85	-2931.2	-0.02	2931.24	4713.67	2356.83	9039.63	4526.53	8.98	-1.937	0.000	0.656
47.00	-39.75	-32.27	-0.85	-2866.4	-0.02	2866.45	3877.89	1938.95	7512.92	3762.05	9.82	-2.029	0.000	0.772
50.00	-38.75	-32.11	-0.85	-2769.6	-0.03	2769.64	3845.09	1922.55	7353.82	3682.38	11.13	-2.167	-0.001	0.762
55.00	-37.15	-31.79	-0.85	-2609.0	-0.03	2609.07	3789.47	1894.74	7090.51	3550.52	13.54	-2.419	-0.001	0.745
60.00	-35.57	-31.46	-0.86	-2450.1	-0.03	2450.12	3732.67	1866.34	6829.63	3419.89	16.21	-2.672	-0.001	0.726
65.00	-34.02	-31.11	-0.86	-2292.8	-0.03	2292.85	3674.68	1837.34	6571.34	3290.55	19.14	-2.926	-0.001	0.706
70.00	-32.50	-30.75	-0.86	-2137.3	-0.03	2137.32	3615.51	1807.76	6315.78	3162.58	22.34	-3.179	-0.001	0.685
75.00	-31.01	-30.38	-0.86	-1983.5	-0.03	1983.59	3555.15	1777.58	6063.10	3036.06	25.80	-3.432	-0.001	0.662
80.00	-29.54	-30.00	-0.86	-1831.7	-0.04	1831.71	3493.61	1746.80	5813.45	2911.05	29.53	-3.684	-0.001	0.638
85.00	-28.12	-29.60	-0.86	-1681.7	-0.04	1681.73	3430.88	1715.44	5566.98	2787.63	33.52	-3.933	-0.001	0.612
89.25	-26.96	-29.22	-0.86	-1555.9	-0.04	1555.94	3376.63	1688.32	5360.08	2684.02	37.11	-4.143	-0.001	0.588
90.00	-26.65	-29.17	-0.86	-1534.0	-0.04	1534.02	3366.97	1683.48	5323.83	2665.87	37.77	-4.181	-0.001	0.584
91.50	-26.04	-29.04	-0.86	-1490.2	-0.04	1490.27	3347.56	1673.78	5251.55	2629.68	39.09	-4.256	-0.001	0.431
94.25	-24.97	-28.76	-0.86	-1410.4	-0.04	1410.42	1944.87	972.44	3066.99	1535.78	41.57	-4.357	-0.001	0.487
95.00	-24.80	-28.71	-0.86	-1388.8	-0.04	1388.85	1940.65	970.33	3048.28	1526.41	42.26	-4.385	-0.002	0.621
96.75	-24.45	-28.56	-0.86	-1338.6	-0.04	1338.61	1930.70	965.35	3004.67	1504.57	43.88	-4.466	-0.002	0.424
97.00	-24.37	-28.56	-0.86	-1331.4	-0.04	1331.47	1929.27	964.63	2998.44	1501.45	44.11	-4.475	-0.002	0.550
100.00	-23.76	-28.31	-0.86	-1245.8	-0.04	1245.80	1911.84	955.92	2923.84	1464.09	46.96	-4.599	-0.002	0.524
102.25	-23.29	-28.13	-0.86	-1182.1	-0.04	1182.10	1898.49	949.24	2868.04	1436.15	49.15	-4.690	-0.002	0.505
102.25	-23.29	-28.13	-0.86	-1182.1	-0.04	1182.10	1898.49	949.24	2868.04	1436.15	49.15	-4.690	-0.002	0.505
105.00	-22.68	-27.95	-0.86	-1104.7	-0.05	1104.73	1881.84	940.92	2800.02	1402.09	51.88	-4.799	-0.002	0.801
110.00	-21.63	-27.58	-0.87	-964.98	-0.05	964.98	1850.66	925.33	2676.97	1340.48	57.07	-5.109	-0.002	0.732
115.00	-20.65	-27.17	-0.87	-827.08	-0.05	827.08	1818.29	909.14	2554.84	1279.32	62.57	-5.401	-0.003	0.659
117.00	-18.71	-25.30	-0.87	-772.74	-0.06	772.74	1805.01	902.50	2506.28	1255.00	64.86	-5.515	-0.003	0.627
120.00	-18.10	-25.08	-0.87	-696.84	-0.06	696.84	1784.73	892.37	2433.78	1218.70	68.37	-5.677	-0.003	0.583
125.00	-17.19	-24.66	-0.87	-571.45	-0.06	571.45	1749.99	875.00	2313.93	1158.68	74.44	-5.924	-0.003	0.504
127.00	-12.54	-18.65	0.00	-522.13	0.03	522.13	1735.77	867.88	2266.36	1134.86	76.94	-6.017	-0.003	0.468
130.00	-12.01	-18.41	0.00	-466.17	0.02	466.17	1714.07	857.04	2195.44	1099.35	80.76	-6.148	-0.003	0.432
135.00	-11.18	-17.99	0.00	-374.12	0.02	374.12	1676.96	838.48	2078.45	1040.77	87.29	-6.345	-0.003	0.367
139.00	-10.56	-17.65	0.00	-302.16	0.02	302.16	1646.42	823.21	1986.05	994.50	92.66	-6.484	-0.003	0.311
140.00	-10.33	-17.56	0.00	-284.52	0.01	284.52	1638.67	819.33	1963.12	983.02	94.02	-6.517	-0.003	0.296
142.75	-9.72	-17.31	0.00	-236.23	0.01	236.23	1100.62	550.31	1316.21	659.08	97.79	-6.599	-0.003	0.368
145.00	-9.43	-17.13	0.00	-197.29	0.01	197.29	1091.20	545.60	1284.61	643.26	100.91	-6.658	-0.003	0.316
148.00	-5.99	-11.03	0.00	-145.90	0.01	145.90	1078.27	539.14	1242.60	622.22	105.11	-6.741	-0.003	0.240
150.00	-5.68	-10.71	0.00	-123.84	0.01	123.84	1069.42	534.71	1214.68	608.24	107.94	-6.788	-0.003	0.209
155.00	-5.17	-10.31	0.00	-70.29	0.00	70.29	1046.45	523.23	1145.25	573.48	115.08	-6.875	-0.003	0.128
157.00	-3.49	-5.67	0.00	-49.67	0.00	49.67	1036.93	518.47	1117.66	559.66	117.96	-6.899	-0.003	0.092
160.00	-3.27	-5.44	0.00	-32.67	0.00	32.67	1022.30	511.15	1076.48	539.04	122.30	-6.925	-0.003	0.064

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

165.00	-2.39	-2.46	0.00	-5.46	0.00	5.46	996.96	498.48	1008.51	505.00	129.55	-6.946	-0.003	0.013
167.00	-0.10	-0.14	0.00	-0.27	0.00	0.27	986.50	493.25	981.58	491.52	132.45	-6.948	-0.003	0.001
169.00	0.00	-0.12	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	135.35	-6.948	-0.003	0.000

Wind Loading - Shaft

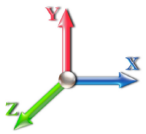
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

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	0.70	16.018	17.62	385.81	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	378.94	0.650	0.000	5.00	23.558	15.31	431.7	0.0	1174.6
10.00		1.00	0.70	16.018	17.62	372.07	0.650	0.000	5.00	23.135	15.04	423.9	0.0	1153.3
15.00		1.00	0.70	16.018	17.62	365.20	0.650	0.000	5.00	22.712	14.76	416.2	0.0	1132.1
20.00		1.00	0.70	16.018	17.62	358.33	0.650	0.000	5.00	22.288	14.49	408.4	0.0	1110.8
25.00		1.00	0.70	16.018	17.62	351.46	0.650	0.000	5.00	21.865	14.21	400.7	0.0	1089.5
30.00		1.00	0.70	16.031	17.63	344.74	0.650	0.000	5.00	21.442	13.94	393.2	0.0	1068.3
35.00		1.00	0.73	16.753	18.43	345.39	0.650	0.000	5.00	21.019	13.66	402.8	0.0	1047.0
40.00		1.00	0.76	17.405	19.15	344.89	0.650	0.000	5.00	20.596	13.39	410.1	0.0	1025.7
40.75	Bot - Section 2	1.00	0.76	17.497	19.25	344.73	0.650	0.000	0.75	3.053	1.98	61.1	0.0	152.0
45.00		1.00	0.79	18.000	19.80	343.46	0.650	0.000	4.25	17.389	11.30	358.1	0.0	1595.7
47.00	Top - Section 1	1.00	0.80	18.225	20.05	342.67	0.650	0.000	2.00	8.077	5.25	168.4	0.0	741.0
50.00		1.00	0.81	18.551	20.41	346.82	0.650	0.000	3.00	11.989	7.79	254.4	0.0	512.3
55.00		1.00	0.83	19.063	20.97	344.08	0.650	0.000	5.00	19.644	12.77	428.4	0.0	839.3
60.00		1.00	0.85	19.543	21.50	340.80	0.650	0.000	5.00	19.220	12.49	429.7	0.0	821.1
65.00		1.00	0.87	19.995	21.99	337.04	0.650	0.000	5.00	18.797	12.22	430.0	0.0	802.9
70.00		1.00	0.89	20.422	22.46	332.87	0.650	0.000	5.00	18.374	11.94	429.3	0.0	784.6
75.00		1.00	0.91	20.829	22.91	328.34	0.650	0.000	5.00	17.951	11.67	427.7	0.0	766.4
80.00		1.00	0.93	21.217	23.34	323.47	0.650	0.000	5.00	17.528	11.39	425.4	0.0	748.2
85.00		1.00	0.94	21.587	23.75	318.32	0.650	0.000	5.00	17.105	11.12	422.4	0.0	730.0
89.25	Bot - Section 3	1.00	0.96	21.890	24.08	313.72	0.650	0.000	4.25	14.206	9.23	355.8	0.0	606.1
90.00		1.00	0.96	21.943	24.14	312.89	0.650	0.000	0.75	2.507	1.63	62.9	0.0	177.1
91.50	RB1	1.00	0.96	22.047	24.25	311.21	0.650	0.000	1.50	4.985	3.24	125.7	0.0	352.2
94.25	Top - Section 2	1.00	0.97	22.234	24.46	308.08	0.650	0.000	2.75	9.041	5.88	230.0	0.0	638.6
95.00		1.00	0.97	22.284	24.51	311.26	0.650	0.000	0.75	2.444	1.59	62.3	0.0	69.7
96.75	RB2	1.00	0.98	22.401	24.64	309.23	0.650	0.000	1.75	5.664	3.68	145.2	0.0	161.6
97.00	RT1	1.00	0.98	22.417	24.66	308.94	0.650	0.000	0.25	0.805	0.52	20.6	0.0	23.0
100.00		1.00	0.99	22.613	24.87	305.39	0.650	0.000	3.00	9.577	6.23	247.8	0.0	273.2
102.25	RT2	1.00	0.99	22.758	25.03	302.68	0.650	0.000	2.25	7.083	4.60	184.4	0.0	202.0
105.00		1.00	1.00	22.931	25.22	299.31	0.650	0.000	2.75	8.541	5.55	224.0	0.0	243.6
110.00		1.00	1.02	23.238	25.56	293.03	0.650	0.000	5.00	15.200	9.88	404.1	0.0	433.5
115.00		1.00	1.03	23.535	25.89	286.57	0.650	0.000	5.00	14.777	9.61	397.9	0.0	421.3
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	283.94	0.650	0.000	2.00	5.792	3.77	156.7	0.0	165.1
120.00		1.00	1.04	23.823	26.20	279.94	0.650	0.000	3.00	8.562	5.57	233.3	0.0	244.0
125.00		1.00	1.05	24.102	26.51	273.16	0.650	0.000	5.00	13.931	9.06	384.1	0.0	397.0
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	270.40	0.650	0.000	2.00	5.454	3.55	151.1	0.0	155.4
130.00		1.00	1.07	24.374	26.81	266.22	0.650	0.000	3.00	8.054	5.24	224.6	0.0	229.5
135.00		1.00	1.08	24.638	27.10	259.14	0.650	0.000	5.00	13.085	8.51	368.8	0.0	372.7
139.00	Bot - Section 4	1.00	1.09	24.844	27.33	253.38	0.650	0.000	4.00	10.163	6.61	288.9	0.0	289.4
140.00		1.00	1.09	24.895	27.38	251.93	0.650	0.000	1.00	2.530	1.64	72.1	0.0	125.3
142.75	Top - Section 3	1.00	1.09	25.034	27.54	247.90	0.650	0.000	2.75	6.871	4.47	196.8	0.0	340.2
145.00		1.00	1.10	25.146	27.66	247.81	0.650	0.000	2.25	5.526	3.59	159.0	0.0	118.3
148.00	Appurtenance(s)	1.00	1.11	25.294	27.82	243.36	0.650	0.000	3.00	7.235	4.70	209.4	0.0	154.8
150.00	Appurtenance(s)	1.00	1.11	25.391	27.93	240.37	0.650	0.000	2.00	4.739	3.08	137.6	0.0	101.4
155.00		1.00	1.12	25.630	28.19	232.81	0.650	0.000	5.00	11.551	7.51	338.7	0.0	247.1
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	229.75	0.650	0.000	2.00	4.502	2.93	132.5	0.0	96.3
160.00		1.00	1.13	25.863	28.45	225.14	0.650	0.000	3.00	6.626	4.31	196.0	0.0	141.7

Wind Loading - Shaft

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

165.00 Appurtenance(s)	1.00	1.14	26.092	28.70	217.37	0.650	0.000	5.00	10.704	6.96	319.5	0.0	228.8
167.00 Appurtenance(s)	1.00	1.14	26.182	28.80	214.23	0.650	0.000	2.00	4.163	2.71	124.7	0.0	89.0
169.00	1.00	1.15	26.271	28.90	211.07	0.650	0.000	2.00	4.096	2.66	123.1	0.0	87.5
							Totals:	**169.00**			**13,399.4**		**24,480.4**

Discrete Appurtenance Forces

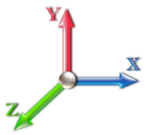
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

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)	Orient Factor 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	167.00	RRUS 4415 B25	3	26.182	28.800	0.54	0.80	2.64	124.20	0.000	0.000	121.52	0.00	0.00
2	167.00	Ericsson - Radio 4449	3	26.182	28.800	0.60	0.80	2.97	199.80	0.000	0.000	136.86	0.00	0.00
3	167.00	AIR 6449 B41	3	26.182	28.800	0.56	0.80	9.49	278.10	0.000	0.000	437.39	0.00	0.00
4	167.00	Ericsson - KRY 112 144/2	3	26.182	28.800	0.60	0.80	0.74	29.70	0.000	0.000	34.01	0.00	0.00
5	167.00	AIR 21 B2A/B4P	3	26.182	28.800	0.77	0.90	14.14	248.40	0.000	0.000	651.61	0.00	0.00
6	167.00	T-Arms/Commscope	3	26.204	28.825	0.56	0.75	11.39	918.00	0.000	0.500	525.33	0.00	262.66
7	165.00	APXVAA24_43-U-A20	3	26.092	28.701	0.66	0.90	39.89	345.60	0.000	0.000	1831.95	0.00	0.00
8	165.00	Air 32	3	26.092	28.701	0.78	0.90	15.29	285.66	0.000	0.000	702.23	0.00	0.00
9	157.00	DB846F65ZAXY	4	25.724	28.296	0.74	0.80	20.76	75.60	0.000	0.000	939.67	0.00	0.00
10	157.00	SLCP 2x6014F	2	25.724	28.296	0.84	0.90	10.86	36.00	0.000	0.000	491.87	0.00	0.00
11	157.00	DB846H80E-SX	2	25.724	28.296	0.88	0.80	8.82	28.80	0.000	0.000	399.21	0.00	0.00
12	157.00	T-Arms	3	25.724	28.296	0.56	0.75	13.50	945.00	0.000	0.000	611.20	0.00	0.00
13	157.00	BXA-70063/6CF	1	25.724	28.296	1.00	1.00	7.57	15.30	0.000	0.000	342.72	0.00	0.00
14	157.00	RFS DB T1-6Z-8AB-OZ	1	25.724	28.296	1.00	1.00	3.20	17.10	0.000	0.000	144.88	0.00	0.00
15	157.00	HBX-6517DS-VTM	6	25.724	28.296	0.60	0.80	19.04	100.98	0.000	0.000	862.20	0.00	0.00
16	157.00	ALU RRH2X60-AWS RRH	3	25.724	28.296	0.61	0.80	6.38	162.00	0.000	0.000	289.03	0.00	0.00
17	157.00	GPS	1	25.724	28.296	1.00	1.00	1.00	9.00	0.000	0.000	45.27	0.00	0.00
18	157.00	ALU/900 RRH2X60W -	3	25.724	28.296	0.61	0.80	3.43	124.20	0.000	0.000	155.25	0.00	0.00
19	150.00	Collar Mount	1	25.391	27.930	1.00	1.00	3.50	90.00	0.000	0.000	156.41	0.00	0.00
20	148.00	Powerwave LGP13519	6	25.294	27.823	0.60	0.80	1.22	28.62	0.000	0.000	54.49	0.00	0.00
21	148.00	Powerwave LGP21401	6	25.294	27.823	0.60	0.80	4.64	76.14	0.000	0.000	206.74	0.00	0.00
22	148.00	Powerwave 7770	3	25.294	27.823	0.61	0.80	10.13	94.50	0.000	0.000	450.94	0.00	0.00
23	148.00	T-Arms w/ Modifications	3	25.294	27.823	0.60	0.80	21.60	1215.00	0.000	0.000	961.56	0.00	0.00
24	148.00	CCI HPA-65R-BUU-H8	4	25.294	27.823	0.63	0.80	32.81	244.80	0.000	0.000	1460.75	0.00	0.00
25	148.00	Cci OPA-65R-LCUU-H6	1	25.294	27.823	0.63	0.80	6.11	65.70	0.000	0.000	271.78	0.00	0.00
26	148.00	Cci OPA-65R-LCUU-H8	2	25.294	27.823	0.63	0.80	16.12	158.40	0.000	0.000	717.43	0.00	0.00
27	148.00	CCI HPA-65R-BUU-H6	2	25.294	27.823	0.68	0.80	13.14	91.80	0.000	0.000	584.84	0.00	0.00
28	148.00	Raycap	2	25.294	27.823	0.81	0.90	2.38	59.04	0.000	0.000	106.01	0.00	0.00
29	148.00	Powerwave 1001940-Bias	3	25.294	27.823	0.72	0.80	0.15	5.40	0.000	0.000	6.73	0.00	0.00
30	148.00	Ericsson RRUS 32-RRU	9	25.294	27.823	0.56	0.80	8.32	623.70	0.000	0.000	370.20	0.00	0.00
31	148.00	Commscope	1	25.294	27.823	1.00	1.00	1.19	5.94	0.000	0.000	52.98	0.00	0.00
32	148.00	Ericsson RRUS-11-RRU	3	25.294	27.823	0.61	0.80	4.60	135.00	0.000	0.000	204.62	0.00	0.00
33	127.00	Horizon Duo	4	24.212	26.633	0.60	0.80	1.42	25.20	0.000	0.000	60.34	0.00	0.00
34	127.00	VHLP800-11	1	24.212	26.633	1.00	1.00	8.43	43.20	1.455	0.000	359.22	326.67	0.00
35	127.00	1900MHz RRH	3	24.212	26.633	0.74	0.75	6.17	162.00	0.000	0.000	262.93	0.00	0.00
36	127.00	VHLP2-11	3	24.212	26.633	1.00	1.00	14.04	72.90	1.455	0.000	598.28	544.06	0.00
37	127.00	NNVV-65B-R4	3	24.212	26.633	0.55	0.75	20.43	208.98	0.000	0.000	870.55	0.00	0.00
38	127.00	800 MHz RRH	6	24.212	26.633	0.69	0.75	10.31	286.20	0.000	0.000	439.27	0.00	0.00
39	127.00	TD-RRH8x20-25	3	24.212	26.633	0.52	0.75	6.29	189.00	0.000	0.000	267.93	0.00	0.00
40	127.00	AAHC	3	24.212	26.633	0.56	0.75	7.10	279.72	0.000	0.000	302.73	0.00	0.00
41	127.00	RMQP-4096-HK	1	24.212	26.633	1.00	1.00	51.70	2380.50	0.000	0.000	2203.06	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	23.651	26.016	0.54	0.80	2.20	53.46	0.000	0.000	91.70	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	23.651	26.016	0.54	0.80	1.99	79.38	0.000	0.000	83.00	0.00	0.00
44	117.00	Standoff Sector Frame	3	23.651	26.016	0.56	0.75	25.48	1066.50	0.000	0.000	1060.67	0.00	0.00
45	117.00	Comba	3	23.651	26.016	0.56	0.80	8.15	67.77	0.000	0.000	339.16	0.00	0.00
							Totals:		**11,752.29**			**21,266.55**		

Total Applied Force Summary

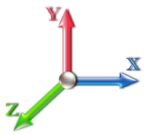
Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.69	1447.85	0.00	0.00
10.00		423.93	1426.59	0.00	0.00
15.00		416.18	1405.32	0.00	0.00
20.00		408.42	1384.06	0.00	0.00
25.00		400.67	1362.79	0.00	0.00
30.00		393.25	1341.52	0.00	0.00
35.00		402.84	1320.26	0.00	0.00
40.00		410.08	1298.99	0.00	0.00
40.75		61.11	193.01	0.00	0.00
45.00		358.09	1827.97	0.00	0.00
47.00		168.42	850.35	0.00	0.00
50.00		254.43	676.30	0.00	0.00
55.00		428.38	1112.58	0.00	0.00
60.00		429.70	1094.36	0.00	0.00
65.00		429.97	1076.13	0.00	0.00
70.00		429.28	1057.90	0.00	0.00
75.00		427.74	1039.67	0.00	0.00
80.00		425.43	1021.45	0.00	0.00
85.00		422.42	1003.22	0.00	0.00
89.25		355.76	838.40	0.00	0.00
90.00		62.93	218.12	0.00	0.00
91.50		125.74	434.20	0.00	0.00
94.25		229.96	788.93	0.00	0.00
95.00		62.29	110.70	0.00	0.00
96.75		145.16	257.24	0.00	0.00
97.00		20.64	36.63	0.00	0.00
100.00		247.76	437.16	0.00	0.00
102.25		184.40	325.00	0.00	0.00
105.00		224.04	393.88	0.00	0.00
110.00		404.09	706.73	0.00	0.00
115.00		397.86	694.58	0.00	0.00
117.00	(11) attachments	1731.26	1541.54	0.00	0.00
120.00		233.33	405.42	0.00	0.00
125.00		384.12	665.98	0.00	0.00
127.00	(27) attachments	5515.39	3910.69	870.74	0.00
130.00		224.57	375.84	0.00	0.00
135.00		368.80	616.68	0.00	0.00
139.00		288.85	473.36	0.00	0.00
140.00		72.06	168.47	0.00	0.00
142.75		196.77	458.91	0.00	0.00
145.00		158.98	215.40	0.00	0.00
148.00	(45) attachments	5658.43	3088.37	0.00	0.00
150.00	(1) attachments	294.06	253.72	0.00	0.00
155.00		338.67	402.92	0.00	0.00
157.00	(26) attachments	4413.79	1672.60	0.00	0.00
160.00		196.04	181.24	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

Tower Engineering Solutions

165.00	(6) attachments	2853.70	926.04	0.00	0.00
167.00	(18) attachments	2031.41	1913.56	0.00	262.66
169.00		123.09	87.53	0.00	0.00
	Totals:	**34,665.99**	**44,540.19**	**870.74**	**262.66**

Linear Appurtenance Segment Forces (Factored)

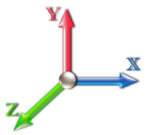
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

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)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.035	0.000	16.018	0.00	28.08
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	16.018	0.00	28.08
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	16.018	0.00	28.08
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.037	0.000	16.018	0.00	28.08
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	16.018	0.00	28.08
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	16.031	0.00	28.08
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.039	0.000	16.753	0.00	28.08
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.040	0.000	17.405	0.00	28.08
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	17.497	0.00	4.21
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	18.000	0.00	23.87
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	18.225	0.00	11.23
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.041	0.000	18.551	0.00	16.85
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.042	0.000	19.063	0.00	28.08
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.043	0.000	19.543	0.00	28.08
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.044	0.000	19.995	0.00	28.08
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.045	0.000	20.422	0.00	28.08
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.046	0.000	20.829	0.00	28.08
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.047	0.000	21.217	0.00	28.08
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.048	0.000	21.587	0.00	28.08
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	21.890	0.00	23.87
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	21.943	0.00	4.21
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	21.943	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	22.047	0.00	8.42
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	22.047	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	22.234	0.00	15.44
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	22.234	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	22.284	0.00	4.21
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	22.284	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	22.401	0.00	9.83
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	22.401	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	22.417	0.00	1.40
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	22.417	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.078	0.000	22.613	0.00	16.85
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	22.613	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	22.613	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	22.758	0.00	12.64
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	22.758	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	22.931	0.00	15.44
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	22.931	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.054	0.000	23.238	0.00	28.08
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.056	0.000	23.535	0.00	28.08
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	23.651	0.00	11.23
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.058	0.000	23.823	0.00	16.85
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.059	0.000	24.102	0.00	28.08
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	24.212	0.00	11.23
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.061	0.000	24.374	0.00	16.85
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.063	0.000	24.638	0.00	28.08

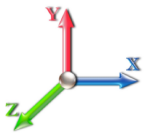
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

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)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	24.844	0.00	22.46
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	24.895	0.00	5.62
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	25.034	0.00	15.44
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	25.146	0.00	12.64
148.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.068	0.000	25.294	0.00	16.85
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	25.391	0.00	11.23
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.071	0.000	25.630	0.00	28.08
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	25.724	0.00	11.23
										Totals:	**0.0**	**881.7**

Calculated Forces

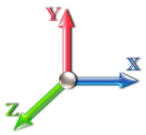
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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	-44.48	-34.75	-0.85	-4389.4	-0.01	4389.47	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.727
5.00	-42.91	-34.46	-0.85	-4215.7	-0.01	4215.74	5261.08	2630.54	11832.5	5925.09	0.11	-0.201	0.000	0.720
10.00	-41.36	-34.18	-0.85	-4043.4	-0.01	4043.43	5196.80	2598.40	11472.7	5744.92	0.43	-0.406	0.000	0.712
15.00	-39.84	-33.90	-0.85	-3872.5	-0.01	3872.53	5131.34	2565.67	11115.7	5566.13	0.96	-0.612	0.000	0.704
20.00	-38.34	-33.61	-0.85	-3703.0	-0.02	3703.05	5064.69	2532.35	10761.6	5388.80	1.72	-0.822	0.000	0.695
25.00	-36.86	-33.33	-0.85	-3534.9	-0.02	3534.99	4996.86	2498.43	10410.5	5212.99	2.69	-1.033	0.000	0.686
30.00	-35.40	-33.04	-0.85	-3368.3	-0.02	3368.36	4927.84	2463.92	10062.6	5038.79	3.89	-1.248	0.000	0.676
35.00	-33.96	-32.74	-0.85	-3203.1	-0.02	3203.16	4857.63	2428.82	9718.08	4866.26	5.31	-1.464	0.000	0.665
40.00	-32.61	-32.36	-0.85	-3039.4	-0.02	3039.49	4786.24	2393.12	9377.03	4695.49	6.96	-1.683	0.000	0.654
40.75	-32.35	-32.36	-0.85	-3015.2	-0.02	3015.22	4775.43	2387.72	9326.19	4670.03	7.23	-1.717	0.000	0.653
45.00	-30.46	-32.02	-0.85	-2877.7	-0.02	2877.70	4713.67	2356.83	9039.63	4526.53	8.84	-1.905	0.000	0.642
47.00	-29.55	-31.88	-0.85	-2813.6	-0.02	2813.67	3877.89	1938.95	7512.92	3762.05	9.66	-1.995	0.000	0.756
50.00	-28.78	-31.69	-0.86	-2718.0	-0.02	2718.04	3845.09	1922.55	7353.82	3682.38	10.96	-2.131	-0.001	0.746
55.00	-27.55	-31.34	-0.86	-2559.5	-0.02	2559.57	3789.47	1894.74	7090.51	3550.52	13.32	-2.378	-0.001	0.728
60.00	-26.34	-30.98	-0.86	-2402.8	-0.02	2402.86	3732.67	1866.34	6829.63	3419.89	15.94	-2.626	-0.001	0.710
65.00	-25.15	-30.61	-0.86	-2247.9	-0.03	2247.96	3674.68	1837.34	6571.34	3290.55	18.83	-2.875	-0.001	0.690
70.00	-23.99	-30.23	-0.86	-2094.9	-0.03	2094.92	3615.51	1807.76	6315.78	3162.58	21.97	-3.124	-0.001	0.669
75.00	-22.85	-29.84	-0.86	-1943.7	-0.03	1943.78	3555.15	1777.58	6063.10	3036.06	25.37	-3.372	-0.001	0.647
80.00	-21.73	-29.45	-0.86	-1794.5	-0.03	1794.58	3493.61	1746.80	5813.45	2911.05	29.04	-3.618	-0.001	0.623
85.00	-20.64	-29.04	-0.86	-1647.3	-0.03	1647.34	3430.88	1715.44	5566.98	2787.63	32.95	-3.862	-0.001	0.597
89.25	-19.77	-28.67	-0.86	-1523.9	-0.03	1523.91	3376.63	1688.32	5360.08	2684.02	36.48	-4.068	-0.001	0.574
90.00	-19.53	-28.61	-0.86	-1502.4	-0.04	1502.41	3366.97	1683.48	5323.83	2665.87	37.13	-4.105	-0.001	0.570
91.50	-19.06	-28.48	-0.86	-1459.5	-0.04	1459.50	3347.56	1673.78	5251.55	2629.68	38.43	-4.179	-0.001	0.420
94.25	-18.26	-28.22	-0.86	-1381.1	-0.04	1381.17	1944.87	972.44	3066.99	1535.78	40.86	-4.278	-0.001	0.475
95.00	-18.13	-28.16	-0.86	-1360.0	-0.04	1360.01	1940.65	970.33	3048.28	1526.41	41.53	-4.305	-0.002	0.606
96.75	-17.86	-28.01	-0.86	-1310.7	-0.04	1310.73	1930.70	965.35	3004.67	1504.57	43.13	-4.385	-0.002	0.414
97.00	-17.79	-28.01	-0.86	-1303.7	-0.04	1303.72	1929.27	964.63	2998.44	1501.45	43.36	-4.393	-0.002	0.536
100.00	-17.33	-27.76	-0.86	-1219.7	-0.04	1219.70	1911.84	955.92	2923.84	1464.09	46.15	-4.514	-0.002	0.511
102.25	-16.97	-27.58	-0.86	-1157.2	-0.04	1157.24	1898.49	949.24	2868.04	1436.15	48.30	-4.604	-0.002	0.492
102.25	-16.97	-27.58	-0.86	-1157.2	-0.04	1157.24	1898.49	949.24	2868.04	1436.15	48.30	-4.604	-0.002	0.492
105.00	-16.49	-27.38	-0.86	-1081.4	-0.04	1081.40	1881.84	940.92	2800.02	1402.09	50.98	-4.710	-0.002	0.781
110.00	-15.69	-27.00	-0.87	-944.48	-0.05	944.48	1850.66	925.33	2676.97	1340.48	56.07	-5.014	-0.002	0.714
115.00	-14.94	-26.59	-0.87	-809.47	-0.05	809.47	1818.29	909.14	2554.84	1279.32	61.47	-5.300	-0.003	0.642
117.00	-13.51	-24.76	-0.87	-756.28	-0.05	756.28	1805.01	902.50	2506.28	1255.00	63.72	-5.411	-0.003	0.611
120.00	-13.04	-24.53	-0.87	-682.01	-0.06	682.01	1784.73	892.37	2433.78	1218.70	67.16	-5.570	-0.003	0.568
125.00	-12.35	-24.12	-0.87	-559.34	-0.06	559.34	1749.99	875.00	2313.93	1158.68	73.12	-5.811	-0.003	0.491
127.00	-8.98	-18.25	0.00	-511.10	0.03	511.10	1735.77	867.88	2266.36	1134.86	75.57	-5.902	-0.003	0.456
130.00	-8.58	-18.01	0.00	-456.34	0.02	456.34	1714.07	857.04	2195.44	1099.35	79.32	-6.031	-0.003	0.421
135.00	-7.96	-17.60	0.00	-366.27	0.02	366.27	1676.96	838.48	2078.45	1040.77	85.73	-6.223	-0.003	0.357
139.00	-7.50	-17.28	0.00	-295.85	0.02	295.85	1646.42	823.21	1986.05	994.50	90.99	-6.360	-0.003	0.302
140.00	-7.32	-17.19	0.00	-278.57	0.02	278.57	1638.67	819.33	1963.12	983.02	92.32	-6.392	-0.003	0.288
142.75	-6.86	-16.95	0.00	-231.29	0.01	231.29	1100.62	550.31	1316.21	659.08	96.02	-6.472	-0.003	0.358
145.00	-6.65	-16.78	0.00	-193.14	0.01	193.14	1091.20	545.60	1284.61	643.26	99.08	-6.530	-0.003	0.307
148.00	-4.22	-10.81	0.00	-142.80	0.01	142.80	1078.27	539.14	1242.60	622.22	103.21	-6.611	-0.003	0.234
150.00	-3.99	-10.49	0.00	-121.18	0.01	121.18	1069.42	534.71	1214.68	608.24	105.98	-6.657	-0.003	0.203
155.00	-3.62	-10.11	0.00	-68.71	0.00	68.71	1046.45	523.23	1145.25	573.48	112.99	-6.742	-0.003	0.124
157.00	-2.47	-5.53	0.00	-48.48	0.00	48.48	1036.93	518.47	1117.66	559.66	115.81	-6.766	-0.003	0.089
160.00	-2.31	-5.32	0.00	-31.88	0.00	31.88	1022.30	511.15	1076.48	539.04	120.06	-6.791	-0.003	0.062

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G
Site Name:	Woodbridge	**Exposure:**	B
Height:	169.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

7/7/2020

Tower Engineering Solutions

165.00	-1.73	-2.38	0.00	-5.28	0.00	5.28	996.96	498.48	1008.51	505.00	127.17	-6.812	-0.003	0.012
167.00	-0.07	-0.13	0.00	-0.27	0.00	0.27	986.50	493.25	981.58	491.52	130.02	-6.813	-0.003	0.001
169.00	0.00	-0.12	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	132.86	-6.813	-0.003	0.000

Wind Loading - Shaft

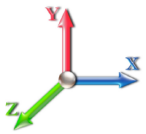
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	24.593	29.51	138.2	439.0	2005.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	24.244	29.09	136.2	462.9	2000.7
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	23.867	28.64	134.1	473.8	1983.3
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.477	28.17	131.9	479.1	1960.2
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	23.081	27.70	129.7	481.0	1933.8
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.680	27.22	127.5	480.8	1905.2
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	22.276	26.73	130.9	479.1	1875.1
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	21.870	26.24	133.5	476.1	1843.8
40.75	Bot - Section 2	1.00	0.76	4.649	5.11	0.00	1.200	1.532	0.75	3.244	3.89	19.9	71.3	274.0
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	4.25	18.485	22.18	116.7	407.6	2535.2
47.00	Top - Section 1	1.00	0.80	4.843	5.33	0.00	1.200	1.554	2.00	8.595	10.31	54.9	191.1	1179.2
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	3.00	12.771	15.33	83.1	285.0	968.1
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	20.959	25.15	140.1	469.7	1588.8
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	20.547	24.66	140.8	464.0	1558.8
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	20.135	24.16	141.2	457.8	1528.3
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	19.722	23.67	141.3	451.2	1497.4
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	19.308	23.17	141.1	444.2	1466.1
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	18.894	22.67	140.6	436.9	1434.5
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	18.479	22.17	139.9	429.3	1402.6
89.25	Bot - Section 3	1.00	0.96	5.816	6.40	0.00	1.200	1.657	4.25	15.380	18.46	118.1	359.3	1167.5
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	0.75	2.714	3.26	20.9	64.0	300.2
91.50	RB1	1.00	0.96	5.858	6.44	0.00	1.200	1.661	1.50	5.401	6.48	41.8	127.3	596.9
94.25	Top - Section 2	1.00	0.97	5.908	6.50	0.00	1.200	1.666	2.75	9.805	11.77	76.5	230.9	1082.4
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	0.75	2.652	3.18	20.7	62.8	155.8
96.75	RB2	1.00	0.98	5.952	6.55	0.00	1.200	1.670	1.75	6.152	7.38	48.3	145.5	361.0
97.00	RT1	1.00	0.98	5.956	6.55	0.00	1.200	1.671	0.25	0.875	1.05	6.9	20.8	51.4
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	3.00	10.415	12.50	82.6	246.2	610.5
102.25	RT2	1.00	0.99	6.047	6.65	0.00	1.200	1.680	2.25	7.713	9.26	61.6	183.0	452.4
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	2.75	9.312	11.17	74.9	221.1	545.9
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	16.610	19.93	135.4	393.3	971.2
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	16.193	19.43	133.7	384.5	946.2
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200	1.702	2.00	6.360	7.63	52.8	152.4	372.5
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	3.00	9.415	11.30	78.7	225.3	550.7
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	15.359	18.43	129.8	366.4	895.7
127.00	Appurtenance(s)	1.00	1.06	6.433	7.08	0.00	1.200	1.716	2.00	6.026	7.23	51.2	145.1	352.3
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	3.00	8.914	10.70	76.2	214.2	520.2
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	5.00	14.524	17.43	125.5	347.7	844.6
139.00	Bot - Section 4	1.00	1.09	6.601	7.26	0.00	1.200	1.732	4.00	11.318	13.58	98.6	272.0	657.9
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	1.00	2.819	3.38	24.6	68.4	235.5
142.75	Top - Section 3	1.00	1.09	6.652	7.32	0.00	1.200	1.737	2.75	7.667	9.20	67.3	185.3	638.9
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	2.25	6.179	7.41	54.5	149.7	307.3
148.00	Appurtenance(s)	1.00	1.11	6.721	7.39	0.00	1.200	1.743	3.00	8.107	9.73	71.9	196.1	402.5
150.00	Appurtenance(s)	1.00	1.11	6.746	7.42	0.00	1.200	1.745	2.00	5.320	6.38	47.4	129.1	264.3
155.00		1.00	1.12	6.810	7.49	0.00	1.200	1.751	5.00	13.010	15.61	116.9	313.0	642.4
157.00	Appurtenance(s)	1.00	1.12	6.835	7.52	0.00	1.200	1.753	2.00	5.086	6.10	45.9	123.6	252.0
160.00		1.00	1.13	6.872	7.56	0.00	1.200	1.757	3.00	7.504	9.00	68.1	181.8	370.7

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

165.00 Appurtenance(s)	1.00	1.14	6.933	7.63	0.00	1.200	1.762	5.00	12.173	14.61	111.4	293.0	598.1
167.00 Appurtenance(s)	1.00	1.14	6.957	7.65	0.00	1.200	1.764	2.00	4.751	5.70	43.6	115.6	234.2
169.00	1.00	1.15	6.980	7.68	0.00	1.200	1.766	2.00	4.684	5.62	43.2	114.0	230.7
							Totals:	**169.00**			**4,450.3**		**46,551.8**

Discrete Appurtenance Forces

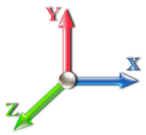
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

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)	Orient Factor 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	167.00	RRUS 4415 B25	3	6.957	7.652	0.54	0.80	3.47	262.04	0.000	0.000	26.59	0.00	0.00
2	167.00	Ericsson - Radio 4449	3	6.957	7.652	0.60	0.80	3.90	471.00	0.000	0.000	29.85	0.00	0.00
3	167.00	AIR 6449 B41	3	6.957	7.652	0.56	0.80	11.15	835.33	0.000	0.000	85.29	0.00	0.00
4	167.00	Ericsson - KRY 112 144/2	3	6.957	7.652	0.60	0.80	1.60	62.99	0.000	0.000	12.26	0.00	0.00
5	167.00	AIR 21 B2A/B4P	3	6.957	7.652	0.77	0.90	16.61	844.54	0.000	0.000	127.14	0.00	0.00
6	167.00	T-Arms/Commscope	3	6.963	7.659	0.56	0.75	21.44	1703.73	0.000	0.500	164.18	0.00	82.09
7	165.00	APXVAA24_43-U-A20	3	6.933	7.626	0.66	0.90	43.73	1758.98	0.000	0.000	333.45	0.00	0.00
8	165.00	Air 32	3	6.933	7.626	0.78	0.90	18.09	940.28	0.000	0.000	137.96	0.00	0.00
9	157.00	DB846F65ZAXY	4	6.835	7.518	0.74	0.80	24.66	894.70	0.000	0.000	185.42	0.00	0.00
10	157.00	SLCP 2x6014F	2	6.835	7.518	0.84	0.90	14.35	301.29	0.000	0.000	107.92	0.00	0.00
11	157.00	DB846H80E-SX	2	6.835	7.518	0.88	0.80	10.97	359.21	0.000	0.000	82.45	0.00	0.00
12	157.00	T-Arms	3	6.835	7.518	0.56	0.75	25.33	1786.34	0.000	0.000	190.47	0.00	0.00
13	157.00	BXA-70063/6CF	1	6.835	7.518	1.00	1.00	10.35	122.16	0.000	0.000	77.79	0.00	0.00
14	157.00	RFS DB T1-6Z-8AB-OZ	1	6.835	7.518	1.00	1.00	4.03	81.95	0.000	0.000	30.34	0.00	0.00
15	157.00	HBX-6517DS-VTM	6	6.835	7.518	0.60	0.80	23.70	866.16	0.000	0.000	178.19	0.00	0.00
16	157.00	ALU RRH2X60-AWS RRH	3	6.835	7.518	0.62	0.80	8.04	418.76	0.000	0.000	60.42	0.00	0.00
17	157.00	GPS	1	6.835	7.518	1.00	1.00	1.72	33.45	0.000	0.000	12.90	0.00	0.00
18	157.00	ALU/900 RRH2X60W -	3	6.835	7.518	0.62	0.80	4.62	374.13	0.000	0.000	34.75	0.00	0.00
19	150.00	Collar Mount	1	6.746	7.421	1.00	1.00	5.94	-146.23	0.000	0.000	44.11	0.00	0.00
20	148.00	Powerwave LGP13519	6	6.721	7.393	0.62	0.80	2.93	78.87	0.000	0.000	21.68	0.00	0.00
21	148.00	Powerwave LGP21401	6	6.721	7.393	0.62	0.80	7.85	208.73	0.000	0.000	58.05	0.00	0.00
22	148.00	Powerwave 7770	3	6.721	7.393	0.64	0.80	12.54	635.80	0.000	0.000	92.74	0.00	0.00
23	148.00	T-Arms w/ Modifications	3	6.721	7.393	0.60	0.80	40.42	2651.15	0.000	0.000	298.83	0.00	0.00
24	148.00	CCI HPA-65R-BUU-H8	4	6.721	7.393	0.63	0.80	36.89	1488.76	0.000	0.000	272.72	0.00	0.00
25	148.00	Cci OPA-65R-LCUU-H6	1	6.721	7.393	0.63	0.80	6.97	319.00	0.000	0.000	51.51	0.00	0.00
26	148.00	Cci OPA-65R-LCUU-H8	2	6.721	7.393	0.63	0.80	18.45	782.38	0.000	0.000	136.36	0.00	0.00
27	148.00	CCI HPA-65R-BUU-H6	2	6.721	7.393	0.68	0.80	14.99	617.83	0.000	0.000	110.84	0.00	0.00
28	148.00	Raycap	2	6.721	7.393	0.81	0.90	3.51	172.69	0.000	0.000	25.98	0.00	0.00
29	148.00	Powerwave 1001940-Bias	3	6.721	7.393	0.73	0.80	0.65	31.38	0.000	0.000	4.84	0.00	0.00
30	148.00	Ericsson RRUS 32-RRU	9	6.721	7.393	0.58	0.80	11.55	1267.24	0.000	0.000	85.41	0.00	0.00
31	148.00	Commscope	1	6.721	7.393	1.00	1.00	1.98	25.23	0.000	0.000	14.61	0.00	0.00
32	148.00	Ericsson RRUS-11-RRU	3	6.721	7.393	0.62	0.80	6.03	450.24	0.000	0.000	44.56	0.00	0.00
33	127.00	Horizon Duo	4	6.433	7.076	0.60	0.80	2.74	77.05	0.000	0.000	19.40	0.00	0.00
34	127.00	VHLP800-11	1	6.433	7.076	1.00	1.00	10.11	179.87	1.455	0.000	71.53	104.08	0.00
35	127.00	1900MHz RRH	3	6.433	7.076	0.74	0.75	8.95	390.47	0.000	0.000	63.33	0.00	0.00
36	127.00	VHLP2-11	3	6.433	7.076	1.00	1.00	17.80	301.94	1.455	0.000	125.96	183.27	0.00
37	127.00	NNVV-65B-R4	3	6.433	7.076	0.55	0.75	22.81	923.77	0.000	0.000	161.44	0.00	0.00
38	127.00	800 MHz RRH	6	6.433	7.076	0.69	0.75	14.97	691.44	0.000	0.000	105.90	0.00	0.00
39	127.00	TD-RRH8x20-25	3	6.433	7.076	0.53	0.75	7.75	576.79	0.000	0.000	54.81	0.00	0.00
40	127.00	AAHC	3	6.433	7.076	0.56	0.75	8.45	608.99	0.000	0.000	59.80	0.00	0.00
41	127.00	RMQP-4096-HK	1	6.433	7.076	1.00	1.00	89.33	5142.94	0.000	0.000	632.10	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	6.284	6.913	0.54	0.80	2.98	151.63	0.000	0.000	20.63	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	6.284	6.913	0.54	0.80	2.59	177.99	0.000	0.000	17.92	0.00	0.00
44	117.00	Standoff Sector Frame	3	6.284	6.913	0.56	0.75	56.71	2086.70	0.000	0.000	392.04	0.00	0.00
45	117.00	Comba	3	6.284	6.913	0.56	0.80	9.76	336.12	0.000	0.000	67.45	0.00	0.00
							Totals:		**32,345.81**			**4,931.91**		

Total Applied Force Summary

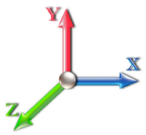
Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		138.16	2446.10	0.00	0.00
10.00		136.20	2447.17	0.00	0.00
15.00		134.08	2433.21	0.00	0.00
20.00		131.89	2412.66	0.00	0.00
25.00		129.67	2388.32	0.00	0.00
30.00		127.52	2361.47	0.00	0.00
35.00		130.89	2332.84	0.00	0.00
40.00		133.50	2302.84	0.00	0.00
40.75		19.91	342.93	0.00	0.00
45.00		116.70	2926.39	0.00	0.00
47.00		54.94	1363.44	0.00	0.00
50.00		83.09	1244.89	0.00	0.00
55.00		140.13	2051.15	0.00	0.00
60.00		140.83	2022.01	0.00	0.00
65.00		141.20	1992.34	0.00	0.00
70.00		141.26	1962.21	0.00	0.00
75.00		141.05	1931.68	0.00	0.00
80.00		140.59	1900.78	0.00	0.00
85.00		139.91	1869.56	0.00	0.00
89.25		118.08	1564.83	0.00	0.00
90.00		20.89	373.87	0.00	0.00
91.50		41.76	744.37	0.00	0.00
94.25		76.46	1353.01	0.00	0.00
95.00		20.73	229.56	0.00	0.00
96.75		48.33	533.31	0.00	0.00
97.00		6.88	76.01	0.00	0.00
100.00		82.60	906.21	0.00	0.00
102.25		61.56	674.28	0.00	0.00
105.00		74.90	814.89	0.00	0.00
110.00		135.38	1441.06	0.00	0.00
115.00		133.67	1416.54	0.00	0.00
117.00	(11) attachments	550.79	3313.18	0.00	0.00
120.00		78.67	829.73	0.00	0.00
125.00		129.83	1361.26	0.00	0.00
127.00	(27) attachments	1345.45	9431.82	287.35	0.00
130.00		76.20	779.80	0.00	0.00
135.00		125.50	1277.73	0.00	0.00
139.00		98.62	989.72	0.00	0.00
140.00		24.61	314.72	0.00	0.00
142.75		67.31	856.85	0.00	0.00
145.00		54.49	485.76	0.00	0.00
148.00	(45) attachments	1290.04	9369.79	0.00	0.00
150.00	(1) attachments	91.49	244.82	0.00	0.00
155.00		116.95	959.65	0.00	0.00
157.00	(26) attachments	1006.54	5617.07	0.00	0.00
160.00		68.07	423.48	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 32

Tower Engineering Solutions

165.00	(6) attachments	582.80	3385.29	0.00	0.00
167.00	(18) attachments	488.94	4449.03	0.00	82.09
169.00		43.16	230.65	0.00	0.00
	Totals:	**9,382.24**	**93,180.30**	**287.35**	**82.09**

Linear Appurtenance Segment Forces (Factored)

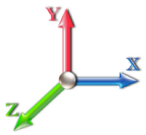
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

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)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.86	0.00	0.035	0.000	4.256	0.00	114.06
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.93	0.00	0.036	0.000	4.256	0.00	119.58
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.98	0.00	0.036	0.000	4.256	0.00	123.04
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.01	0.00	0.037	0.000	4.256	0.00	125.61
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.04	0.00	0.038	0.000	4.256	0.00	127.66
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.06	0.00	0.038	0.000	4.260	0.00	129.38
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.08	0.00	0.039	0.000	4.451	0.00	130.87
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.10	0.00	0.040	0.000	4.625	0.00	132.19
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.32	0.00	0.041	0.000	4.649	0.00	19.86
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	1.80	0.00	0.041	0.000	4.783	0.00	113.36
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.042	0.000	4.843	0.00	53.52
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.28	0.00	0.041	0.000	4.929	0.00	80.66
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.14	0.00	0.042	0.000	5.065	0.00	135.41
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.15	0.00	0.043	0.000	5.193	0.00	136.31
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.16	0.00	0.044	0.000	5.313	0.00	137.16
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.17	0.00	0.045	0.000	5.426	0.00	137.94
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.18	0.00	0.046	0.000	5.534	0.00	138.68
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.19	0.00	0.047	0.000	5.637	0.00	139.38
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.20	0.00	0.048	0.000	5.736	0.00	140.04
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	1.87	0.00	0.049	0.000	5.816	0.00	119.49
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.33	0.00	0.075	0.000	5.830	0.00	21.10
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.075	0.000	5.830	0.00	3.55
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.66	0.00	0.076	0.000	5.858	0.00	42.26
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.54	0.00	0.076	0.000	5.858	0.00	7.12
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	1.22	0.00	0.077	0.000	5.908	0.00	77.65
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.99	0.00	0.077	0.000	5.908	0.00	13.12
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.33	0.00	0.076	0.000	5.921	0.00	21.19
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.076	0.000	5.921	0.00	3.58
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.78	0.00	0.077	0.000	5.952	0.00	49.51
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.63	0.00	0.077	0.000	5.952	0.00	8.38
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.11	0.00	0.077	0.000	5.956	0.00	7.07
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.09	0.00	0.077	0.000	5.956	0.00	1.20
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.33	0.00	0.078	0.000	6.008	0.00	85.10
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.078	0.000	6.008	0.00	3.61
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.078	0.000	6.008	0.00	10.84
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	1.00	0.00	0.079	0.000	6.047	0.00	63.94
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.079	0.000	6.047	0.00	10.88
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	1.23	0.00	0.075	0.000	6.093	0.00	78.31
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.075	0.000	6.093	0.00	10.93
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.054	0.000	6.174	0.00	142.91
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.24	0.00	0.056	0.000	6.253	0.00	143.41
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.057	0.000	6.284	0.00	57.44
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.35	0.00	0.058	0.000	6.330	0.00	86.34
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.25	0.00	0.059	0.000	6.404	0.00	144.37
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.061	0.000	6.433	0.00	57.82
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.36	0.00	0.061	0.000	6.476	0.00	86.89
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.26	0.00	0.063	0.000	6.546	0.00	145.26

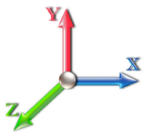
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

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)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	1.81	0.00	0.065	0.000	6.601	0.00	116.48
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.066	0.000	6.615	0.00	29.14
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	1.25	0.00	0.067	0.000	6.652	0.00	80.25
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	1.02	0.00	0.067	0.000	6.681	0.00	65.74
148.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.37	0.00	0.068	0.000	6.721	0.00	87.80
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.070	0.000	6.746	0.00	58.60
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.28	0.00	0.071	0.000	6.810	0.00	146.88
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.073	0.000	6.835	0.00	58.81
										Totals:	**0.0**	**4,381.7**

Calculated Forces

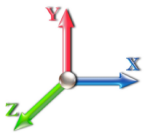
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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	-93.18	-9.43	-0.29	-1207.9	0.00	1207.91	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.215
5.00	-90.72	-9.38	-0.29	-1160.7	0.00	1160.77	5261.08	2630.54	11832.5	5925.09	0.03	-0.055	0.000	0.213
10.00	-88.26	-9.32	-0.29	-1113.8	0.00	1113.89	5196.80	2598.40	11472.7	5744.92	0.12	-0.112	0.000	0.211
15.00	-85.82	-9.27	-0.29	-1067.2	0.00	1067.27	5131.34	2565.67	11115.7	5566.13	0.27	-0.169	0.000	0.208
20.00	-83.40	-9.21	-0.29	-1020.9	0.00	1020.92	5064.69	2532.35	10761.6	5388.80	0.47	-0.226	0.000	0.206
25.00	-81.00	-9.16	-0.29	-974.85	0.00	974.85	4996.86	2498.43	10410.5	5212.99	0.74	-0.285	0.000	0.203
30.00	-78.63	-9.10	-0.29	-929.07	0.00	929.07	4927.84	2463.92	10062.6	5038.79	1.07	-0.344	0.000	0.200
35.00	-76.29	-9.03	-0.29	-883.58	0.00	883.58	4857.63	2428.82	9718.08	4866.26	1.46	-0.404	0.000	0.197
40.00	-73.99	-8.93	-0.29	-838.42	0.00	838.42	4786.24	2393.12	9377.03	4695.49	1.92	-0.464	0.000	0.194
40.75	-73.64	-8.94	-0.29	-831.72	0.00	831.72	4775.43	2387.72	9326.19	4670.03	1.99	-0.473	0.000	0.194
45.00	-70.71	-8.85	-0.29	-793.72	0.00	793.72	4713.67	2356.83	9039.63	4526.53	2.44	-0.525	0.000	0.190
47.00	-69.34	-8.82	-0.29	-776.02	0.00	776.02	3877.89	1938.95	7512.92	3762.05	2.66	-0.550	0.000	0.224
50.00	-68.09	-8.79	-0.29	-749.57	0.00	749.57	3845.09	1922.55	7353.82	3682.38	3.02	-0.587	0.000	0.221
55.00	-66.03	-8.70	-0.29	-705.65	0.00	705.65	3789.47	1894.74	7090.51	3550.52	3.67	-0.656	0.000	0.216
60.00	-64.00	-8.61	-0.29	-662.14	0.00	662.14	3732.67	1866.34	6829.63	3419.89	4.40	-0.724	0.000	0.211
65.00	-62.00	-8.52	-0.29	-619.08	0.00	619.08	3674.68	1837.34	6571.34	3290.55	5.19	-0.793	0.000	0.205
70.00	-60.03	-8.42	-0.29	-576.48	0.00	576.48	3615.51	1807.76	6315.78	3162.58	6.06	-0.861	0.000	0.199
75.00	-58.09	-8.32	-0.29	-534.37	0.00	534.37	3555.15	1777.58	6063.10	3036.06	7.00	-0.929	0.000	0.192
80.00	-56.18	-8.21	-0.29	-492.78	0.00	492.78	3493.61	1746.80	5813.45	2911.05	8.00	-0.997	0.000	0.185
85.00	-54.30	-8.10	-0.29	-451.72	0.00	451.72	3430.88	1715.44	5566.98	2787.63	9.09	-1.064	0.000	0.178
89.25	-52.74	-7.98	-0.29	-417.30	0.00	417.30	3376.63	1688.32	5360.08	2684.02	10.06	-1.120	0.000	0.171
90.00	-52.36	-7.97	-0.29	-411.32	0.00	411.32	3366.97	1683.48	5323.83	2665.87	10.23	-1.130	0.000	0.170
91.50	-51.61	-7.93	-0.29	-399.37	-0.01	399.37	3347.56	1673.78	5251.55	2629.68	10.59	-1.151	0.000	0.125
94.25	-50.26	-7.84	-0.29	-377.56	-0.01	377.56	1944.87	972.44	3066.99	1535.78	11.26	-1.178	0.000	0.141
95.00	-50.03	-7.83	-0.29	-371.68	-0.01	371.68	1940.65	970.33	3048.28	1526.41	11.45	-1.185	-0.001	0.180
96.75	-49.50	-7.78	-0.29	-357.98	-0.01	357.98	1930.70	965.35	3004.67	1504.57	11.89	-1.207	-0.001	0.123
97.00	-49.42	-7.79	-0.29	-356.04	-0.01	356.04	1929.27	964.63	2998.44	1501.45	11.95	-1.209	-0.001	0.161
100.00	-48.51	-7.71	-0.29	-332.68	-0.01	332.68	1911.84	955.92	2923.84	1464.09	12.72	-1.242	-0.001	0.154
102.25	-47.83	-7.66	-0.29	-315.33	-0.01	315.33	1898.49	949.24	2868.04	1436.15	13.31	-1.267	-0.001	0.148
102.25	-47.83	-7.66	-0.29	-315.33	-0.01	315.33	1898.49	949.24	2868.04	1436.15	13.31	-1.267	-0.001	0.148
105.00	-47.01	-7.61	-0.29	-294.28	-0.01	294.28	1881.84	940.92	2800.02	1402.09	14.05	-1.296	-0.001	0.235
110.00	-45.57	-7.50	-0.29	-256.24	-0.01	256.24	1850.66	925.33	2676.97	1340.48	15.45	-1.378	-0.001	0.216
115.00	-44.15	-7.38	-0.29	-218.73	-0.01	218.73	1818.29	909.14	2554.84	1279.32	16.94	-1.456	-0.001	0.195
117.00	-40.84	-6.77	-0.29	-203.98	-0.01	203.98	1805.01	902.50	2506.28	1255.00	17.56	-1.486	-0.001	0.185
120.00	-40.01	-6.70	-0.29	-183.68	-0.01	183.68	1784.73	892.37	2433.78	1218.70	18.50	-1.528	-0.001	0.173
125.00	-38.65	-6.57	-0.29	-150.16	-0.01	150.16	1749.99	875.00	2313.93	1158.68	20.14	-1.593	-0.001	0.152
127.00	-29.25	-4.97	0.00	-137.03	0.00	137.03	1735.77	867.88	2266.36	1134.86	20.81	-1.618	-0.001	0.138
130.00	-28.47	-4.89	0.00	-122.12	0.00	122.12	1714.07	857.04	2195.44	1099.35	21.84	-1.652	-0.001	0.128
135.00	-27.20	-4.75	0.00	-97.64	0.00	97.64	1676.96	838.48	2078.45	1040.77	23.60	-1.704	-0.001	0.110
139.00	-26.21	-4.63	0.00	-78.63	0.00	78.63	1646.42	823.21	1986.05	994.50	25.04	-1.740	-0.001	0.095
140.00	-25.89	-4.61	0.00	-74.00	0.00	74.00	1638.67	819.33	1963.12	983.02	25.41	-1.749	-0.001	0.091
142.75	-25.04	-4.52	0.00	-61.33	0.00	61.33	1100.62	550.31	1316.21	659.08	26.42	-1.770	-0.001	0.116
145.00	-24.55	-4.46	0.00	-51.16	0.00	51.16	1091.20	545.60	1284.61	643.26	27.26	-1.785	-0.001	0.102
148.00	-15.23	-2.88	0.00	-37.78	0.00	37.78	1078.27	539.14	1242.60	622.22	28.39	-1.807	-0.001	0.075
150.00	-14.98	-2.79	0.00	-32.02	0.00	32.02	1069.42	534.71	1214.68	608.24	29.15	-1.819	-0.001	0.067
155.00	-14.03	-2.64	0.00	-18.08	0.00	18.08	1046.45	523.23	1145.25	573.48	31.07	-1.841	-0.001	0.045
157.00	-8.45	-1.46	0.00	-12.80	0.00	12.80	1036.93	518.47	1117.66	559.66	31.84	-1.847	-0.001	0.031
160.00	-8.02	-1.38	0.00	-8.43	0.00	8.43	1022.30	511.15	1076.48	539.04	33.00	-1.854	-0.001	0.023

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

165.00	-4.66	-0.68	0.00	-1.55	0.00	1.55	996.96	498.48	1008.51	505.00	34.95	-1.860	-0.001	0.008
167.00	-0.23	-0.05	0.00	-0.10	0.00	0.10	986.50	493.25	981.58	491.52	35.73	-1.860	-0.001	0.000
169.00	0.00	-0.04	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	36.50	-1.860	-0.001	0.000

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29		**SA**	0.03	**Seismic Importance Factor**		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	
5.00		1305.1	0.00	0.03	0.02	24.28	
10.00		1281.4	0.01	0.05	0.03	34.61	
15.00		1257.8	0.01	0.06	0.04	39.39	
20.00		1234.2	0.03	0.07	0.04	41.49	
25.00		1210.5	0.04	0.07	0.04	42.29	
30.00		1186.9	0.06	0.07	0.04	42.54	
35.00		1163.3	0.08	0.07	0.04	42.60	
40.00		1139.7	0.11	0.07	0.04	42.64	
40.75	Bot - Section 2	168.92	0.11	0.07	0.04	6.34	
45.00		1773.0	0.13	0.07	0.03	67.75	
47.00	Top - Section 1	823.38	0.15	0.07	0.03	31.70	
50.00		569.27	0.17	0.07	0.03	22.12	
55.00		932.58	0.20	0.06	0.02	36.43	
60.00		912.33	0.24	0.06	0.02	35.03	
65.00		892.08	0.28	0.05	0.01	32.38	
70.00		871.83	0.32	0.04	0.01	27.95	
75.00		851.57	0.37	0.03	0.01	21.32	
80.00		831.32	0.42	0.01	0.01	12.40	
85.00		811.07	0.48	-0.01	0.01	1.78	
89.25	Bot - Section 3	673.48	0.53	-0.03	0.01	-6.44	
90.00		196.82	0.54	-0.03	0.01	-2.29	
91.50	RB1	391.36	0.55	-0.04	0.01	-6.12	
94.25	Top - Section 2	709.60	0.59	-0.05	0.01	-16.04	
95.00		77.46	0.60	-0.05	0.01	-1.89	
96.75	RB2	179.56	0.62	-0.06	0.02	-5.07	
97.00	RT1	25.52	0.62	-0.06	0.02	-0.73	
100.00		303.57	0.66	-0.07	0.02	-10.39	
102.25	RT2	224.48	0.69	-0.08	0.03	-8.40	
105.00		270.66	0.73	-0.10	0.04	-10.87	
110.00		481.64	0.80	-0.11	0.05	-20.16	
115.00		468.14	0.88	-0.12	0.08	-18.46	
117.00	Appurtenance(s)	1591.3	0.91	-0.12	0.09	-59.41	
120.00		271.16	0.95	-0.12	0.11	-8.95	
125.00		441.13	1.03	-0.10	0.15	-10.03	
127.00	Appurtenance(s)	4225.6	1.07	-0.09	0.17	-74.21	
130.00		254.96	1.12	-0.06	0.20	-2.21	
135.00		414.13	1.21	0.01	0.26	3.79	
139.00	Bot - Section 4	321.58	1.28	0.09	0.32	8.41	
140.00		139.21	1.30	0.12	0.33	4.29	
142.75	Top - Section 3	377.97	1.35	0.19	0.38	16.75	
145.00		131.39	1.39	0.27	0.42	7.39	
148.00	Appurtenance(s)	3287.6	1.45	0.38	0.48	241.46	
150.00	Appurtenance(s)	212.64	1.49	0.47	0.53	18.22	
155.00		274.52	1.59	0.75	0.66	32.70	
157.00	Appurtenance(s)	1789.1	1.63	0.88	0.71	239.12	

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

Tower Engineering Solutions

160.00		157.42	1.69	1.10	0.81	24.66		
165.00	Appurtenance(s)	955.67	1.80	1.55	0.98	189.62		
167.00	Appurtenance(s)	2096.8	1.85	1.75	1.06	453.58		
169.00		97.25	1.89	1.98	1.14	22.84		
	Totals:	**40,258.6**				**1,606.2**	**Total Wind:**	**34,666.0**

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

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.03	**Seismic Importance 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	-59.39	-1.87	0.00	-239.56	0.00	239.56	5324.18	2662.09	12195.0	6106.56		0.00	0.00	0.050
5.00	-57.46	-1.86	0.00	-230.19	0.00	230.19	5261.08	2630.54	11832.5	5925.09		0.01	-0.01	0.050
10.00	-55.55	-1.84	0.00	-220.90	0.00	220.90	5196.80	2598.40	11472.7	5744.92		0.02	-0.02	0.049
15.00	-53.68	-1.81	0.00	-211.72	0.00	211.72	5131.34	2565.67	11115.7	5566.13		0.05	-0.03	0.048
20.00	-51.83	-1.77	0.00	-202.69	0.00	202.69	5064.69	2532.35	10761.6	5388.80		0.09	-0.04	0.048
25.00	-50.02	-1.74	0.00	-193.82	0.00	193.82	4996.86	2498.43	10410.5	5212.99		0.15	-0.06	0.047
30.00	-48.23	-1.71	0.00	-185.13	0.00	185.13	4927.84	2463.92	10062.6	5038.79		0.21	-0.07	0.047
35.00	-46.47	-1.67	0.00	-176.60	0.00	176.60	4857.63	2428.82	9718.08	4866.26		0.29	-0.08	0.046
40.00	-44.73	-1.63	0.00	-168.25	0.00	168.25	4786.24	2393.12	9377.03	4695.49		0.38	-0.09	0.045
40.75	-44.48	-1.63	0.00	-167.03	0.00	167.03	4775.43	2387.72	9326.19	4670.03		0.40	-0.09	0.045
45.00	-42.04	-1.56	0.00	-160.11	0.00	160.11	4713.67	2356.83	9039.63	4526.53		0.48	-0.10	0.044
47.00	-40.91	-1.53	0.00	-156.98	0.00	156.98	3877.89	1938.95	7512.92	3762.05		0.53	-0.11	0.052
50.00	-40.00	-1.52	0.00	-152.39	0.00	152.39	3845.09	1922.55	7353.82	3682.38		0.60	-0.12	0.052
55.00	-38.52	-1.49	0.00	-144.81	0.00	144.81	3789.47	1894.74	7090.51	3550.52		0.73	-0.13	0.051
60.00	-37.06	-1.46	0.00	-137.38	0.00	137.38	3732.67	1866.34	6829.63	3419.89		0.88	-0.15	0.050
65.00	-35.63	-1.43	0.00	-130.09	0.00	130.09	3674.68	1837.34	6571.34	3290.55		1.04	-0.16	0.049
70.00	-34.21	-1.41	0.00	-122.95	0.00	122.95	3615.51	1807.76	6315.78	3162.58		1.21	-0.17	0.048
75.00	-32.83	-1.39	0.00	-115.92	0.00	115.92	3555.15	1777.58	6063.10	3036.06		1.40	-0.19	0.047
80.00	-31.47	-1.38	0.00	-108.97	0.00	108.97	3493.61	1746.80	5813.45	2911.05		1.61	-0.20	0.046
85.00	-30.13	-1.38	0.00	-102.07	0.00	102.07	3430.88	1715.44	5566.98	2787.63		1.83	-0.22	0.045
89.25	-29.01	-1.38	0.00	-96.21	0.00	96.21	3376.63	1688.32	5360.08	2684.02		2.03	-0.23	0.044
90.00	-28.72	-1.38	0.00	-95.17	0.00	95.17	3366.97	1683.48	5323.83	2665.87		2.06	-0.23	0.044
91.50	-28.14	-1.38	0.00	-93.10	0.00	93.10	3347.56	1673.78	5251.55	2629.68		2.14	-0.24	0.033
94.25	-27.09	-1.38	0.00	-89.30	0.00	89.30	1944.87	972.44	3066.99	1535.78		2.28	-0.24	0.037
95.00	-26.94	-1.38	0.00	-88.27	0.00	88.27	1940.65	970.33	3048.28	1526.41		2.32	-0.25	0.048
96.75	-26.60	-1.38	0.00	-85.85	0.00	85.85	1930.70	965.35	3004.67	1504.57		2.41	-0.25	0.033
97.00	-26.55	-1.38	0.00	-85.51	0.00	85.51	1929.27	964.63	2998.44	1501.45		2.42	-0.25	0.043
100.00	-25.97	-1.38	0.00	-81.37	0.00	81.37	1911.84	955.92	2923.84	1464.09		2.58	-0.26	0.042
102.25	-25.53	-1.38	0.00	-78.26	0.00	78.26	1898.49	949.24	2868.04	1436.15		2.71	-0.27	0.041
102.25	-25.53	-1.38	0.00	-78.26	0.00	78.26	1898.49	949.24	2868.04	1436.15		2.71	-0.27	0.041
105.00	-25.01	-1.39	0.00	-74.46	0.00	74.46	1881.84	940.92	2800.02	1402.09		2.86	-0.27	0.066
110.00	-24.06	-1.39	0.00	-67.52	0.00	67.52	1850.66	925.33	2676.97	1340.48		3.16	-0.29	0.063
115.00	-23.14	-1.39	0.00	-60.57	0.00	60.57	1818.29	909.14	2554.84	1279.32		3.48	-0.32	0.060
117.00	-21.08	-1.38	0.00	-57.79	0.00	57.79	1805.01	902.50	2506.28	1255.00		3.61	-0.32	0.058
120.00	-20.54	-1.39	0.00	-53.63	0.00	53.63	1784.73	892.37	2433.78	1218.70		3.82	-0.34	0.056
125.00	-19.65	-1.39	0.00	-46.70	0.00	46.70	1749.99	875.00	2313.93	1158.68		4.18	-0.36	0.052
127.00	-14.44	-1.36	0.00	-43.93	0.00	43.93	1735.77	867.88	2266.36	1134.86		4.33	-0.36	0.047
130.00	-13.94	-1.36	0.00	-39.86	0.00	39.86	1714.07	857.04	2195.44	1099.35		4.57	-0.37	0.044
135.00	-13.11	-1.35	0.00	-33.08	0.00	33.08	1676.96	838.48	2078.45	1040.77		4.97	-0.39	0.040
139.00	-12.48	-1.34	0.00	-27.68	0.00	27.68	1646.42	823.21	1986.05	994.50		5.30	-0.40	0.035
140.00	-12.26	-1.33	0.00	-26.35	0.00	26.35	1638.67	819.33	1963.12	983.02		5.39	-0.41	0.034
142.75	-11.65	-1.31	0.00	-22.68	0.00	22.68	1100.62	550.31	1316.21	659.08		5.62	-0.42	0.045
145.00	-11.36	-1.31	0.00	-19.72	0.00	19.72	1091.20	545.60	1284.61	643.26		5.82	-0.42	0.041
148.00	-7.24	-1.04	0.00	-15.80	0.00	15.80	1078.27	539.14	1242.60	622.22		6.09	-0.43	0.032
150.00	-6.90	-1.02	0.00	-13.73	0.00	13.73	1069.42	534.71	1214.68	608.24		6.27	-0.43	0.029
155.00	-6.37	-0.98	0.00	-8.65	0.00	8.65	1046.45	523.23	1145.25	573.48		6.73	-0.44	0.021
157.00	-4.14	-0.72	0.00	-6.70	0.00	6.70	1036.93	518.47	1117.66	559.66		6.92	-0.45	0.016

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

160.00	-3.90	-0.70	0.00	-4.53	0.00	4.53	1022.30	511.15	1076.48	539.04	7.20	-0.45	0.012
165.00	-2.66	-0.50	0.00	-1.04	0.00	1.04	996.96	498.48	1008.51	505.00	7.68	-0.45	0.005
167.00	-0.12	-0.02	0.00	-0.05	0.00	0.05	986.50	493.25	981.58	491.52	7.87	-0.45	0.000
169.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	8.06	-0.45	0.000

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29		**SA**	0.03	**Seismic Importance Factor**		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	
5.00		1305.1	0.00	0.03	0.02	24.28	
10.00		1281.4	0.01	0.05	0.03	34.61	
15.00		1257.8	0.01	0.06	0.04	39.39	
20.00		1234.2	0.03	0.07	0.04	41.49	
25.00		1210.5	0.04	0.07	0.04	42.29	
30.00		1186.9	0.06	0.07	0.04	42.54	
35.00		1163.3	0.08	0.07	0.04	42.60	
40.00		1139.7	0.11	0.07	0.04	42.64	
40.75	Bot - Section 2	168.92	0.11	0.07	0.04	6.34	
45.00		1773.0	0.13	0.07	0.03	67.75	
47.00	Top - Section 1	823.38	0.15	0.07	0.03	31.70	
50.00		569.27	0.17	0.07	0.03	22.12	
55.00		932.58	0.20	0.06	0.02	36.43	
60.00		912.33	0.24	0.06	0.02	35.03	
65.00		892.08	0.28	0.05	0.01	32.38	
70.00		871.83	0.32	0.04	0.01	27.95	
75.00		851.57	0.37	0.03	0.01	21.32	
80.00		831.32	0.42	0.01	0.01	12.40	
85.00		811.07	0.48	-0.01	0.01	1.78	
89.25	Bot - Section 3	673.48	0.53	-0.03	0.01	-6.44	
90.00		196.82	0.54	-0.03	0.01	-2.29	
91.50	RB1	391.36	0.55	-0.04	0.01	-6.12	
94.25	Top - Section 2	709.60	0.59	-0.05	0.01	-16.04	
95.00		77.46	0.60	-0.05	0.01	-1.89	
96.75	RB2	179.56	0.62	-0.06	0.02	-5.07	
97.00	RT1	25.52	0.62	-0.06	0.02	-0.73	
100.00		303.57	0.66	-0.07	0.02	-10.39	
102.25	RT2	224.48	0.69	-0.08	0.03	-8.40	
105.00		270.66	0.73	-0.10	0.04	-10.87	
110.00		481.64	0.80	-0.11	0.05	-20.16	
115.00		468.14	0.88	-0.12	0.08	-18.46	
117.00	Appurtenance(s)	1591.3	0.91	-0.12	0.09	-59.41	
120.00		271.16	0.95	-0.12	0.11	-8.95	
125.00		441.13	1.03	-0.10	0.15	-10.03	
127.00	Appurtenance(s)	4225.6	1.07	-0.09	0.17	-74.21	
130.00		254.96	1.12	-0.06	0.20	-2.21	
135.00		414.13	1.21	0.01	0.26	3.79	
139.00	Bot - Section 4	321.58	1.28	0.09	0.32	8.41	
140.00		139.21	1.30	0.12	0.33	4.29	
142.75	Top - Section 3	377.97	1.35	0.19	0.38	16.75	
145.00		131.39	1.39	0.27	0.42	7.39	
148.00	Appurtenance(s)	3287.6	1.45	0.38	0.48	241.46	
150.00	Appurtenance(s)	212.64	1.49	0.47	0.53	18.22	
155.00		274.52	1.59	0.75	0.66	32.70	
157.00	Appurtenance(s)	1789.1	1.63	0.88	0.71	239.12	

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

Tower Engineering Solutions

160.00		157.42	1.69	1.10	0.81	24.66		
165.00	Appurtenance(s)	955.67	1.80	1.55	0.98	189.62		
167.00	Appurtenance(s)	2096.8	1.85	1.75	1.06	453.58		
169.00		97.25	1.89	1.98	1.14	22.84		
	Totals:	**40,258.6**				**1,606.2**	**Total Wind:**	**34,666.0**

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

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.03			**Seismic Importance 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	-44.54	-1.87	0.00	-235.78	0.00	235.78	5324.18	2662.09	12195.0	6106.56		0.00	0.00	0.047
5.00	-43.09	-1.85	0.00	-226.43	0.00	226.43	5261.08	2630.54	11832.5	5925.09		0.01	-0.01	0.046
10.00	-41.66	-1.83	0.00	-217.16	0.00	217.16	5196.80	2598.40	11472.7	5744.92		0.02	-0.02	0.046
15.00	-40.26	-1.79	0.00	-208.02	0.00	208.02	5131.34	2565.67	11115.7	5566.13		0.05	-0.03	0.045
20.00	-38.87	-1.76	0.00	-199.05	0.00	199.05	5064.69	2532.35	10761.6	5388.80		0.09	-0.04	0.045
25.00	-37.51	-1.72	0.00	-190.25	0.00	190.25	4996.86	2498.43	10410.5	5212.99		0.14	-0.06	0.044
30.00	-36.17	-1.69	0.00	-181.63	0.00	181.63	4927.84	2463.92	10062.6	5038.79		0.21	-0.07	0.043
35.00	-34.85	-1.65	0.00	-173.19	0.00	173.19	4857.63	2428.82	9718.08	4866.26		0.29	-0.08	0.043
40.00	-33.55	-1.61	0.00	-164.94	0.00	164.94	4786.24	2393.12	9377.03	4695.49		0.37	-0.09	0.042
40.75	-33.36	-1.61	0.00	-163.73	0.00	163.73	4775.43	2387.72	9326.19	4670.03		0.39	-0.09	0.042
45.00	-31.53	-1.54	0.00	-156.90	0.00	156.90	4713.67	2356.83	9039.63	4526.53		0.48	-0.10	0.041
47.00	-30.68	-1.51	0.00	-153.82	0.00	153.82	3877.89	1938.95	7512.92	3762.05		0.52	-0.11	0.049
50.00	-30.00	-1.49	0.00	-149.29	0.00	149.29	3845.09	1922.55	7353.82	3682.38		0.59	-0.12	0.048
55.00	-28.89	-1.46	0.00	-141.83	0.00	141.83	3789.47	1894.74	7090.51	3550.52		0.72	-0.13	0.048
60.00	-27.79	-1.43	0.00	-134.53	0.00	134.53	3732.67	1866.34	6829.63	3419.89		0.86	-0.14	0.047
65.00	-26.72	-1.40	0.00	-127.38	0.00	127.38	3674.68	1837.34	6571.34	3290.55		1.02	-0.16	0.046
70.00	-25.66	-1.38	0.00	-120.38	0.00	120.38	3615.51	1807.76	6315.78	3162.58		1.19	-0.17	0.045
75.00	-24.62	-1.36	0.00	-113.49	0.00	113.49	3555.15	1777.58	6063.10	3036.06		1.37	-0.19	0.044
80.00	-23.60	-1.35	0.00	-106.70	0.00	106.70	3493.61	1746.80	5813.45	2911.05		1.58	-0.20	0.043
85.00	-22.59	-1.35	0.00	-99.96	0.00	99.96	3430.88	1715.44	5566.98	2787.63		1.79	-0.21	0.042
89.25	-21.76	-1.35	0.00	-94.23	0.00	94.23	3376.63	1688.32	5360.08	2684.02		1.99	-0.23	0.042
90.00	-21.54	-1.35	0.00	-93.22	0.00	93.22	3366.97	1683.48	5323.83	2665.87		2.03	-0.23	0.041
91.50	-21.10	-1.35	0.00	-91.20	0.00	91.20	3347.56	1673.78	5251.55	2629.68		2.10	-0.23	0.031
94.25	-20.31	-1.35	0.00	-87.49	0.00	87.49	1944.87	972.44	3066.99	1535.78		2.23	-0.24	0.035
95.00	-20.20	-1.35	0.00	-86.48	0.00	86.48	1940.65	970.33	3048.28	1526.41		2.27	-0.24	0.045
96.75	-19.95	-1.35	0.00	-84.12	0.00	84.12	1930.70	965.35	3004.67	1504.57		2.36	-0.25	0.031
97.00	-19.91	-1.35	0.00	-83.79	0.00	83.79	1929.27	964.63	2998.44	1501.45		2.37	-0.25	0.040
100.00	-19.47	-1.35	0.00	-79.74	0.00	79.74	1911.84	955.92	2923.84	1464.09		2.53	-0.26	0.039
102.25	-19.15	-1.35	0.00	-76.70	0.00	76.70	1898.49	949.24	2868.04	1436.15		2.65	-0.26	0.038
102.25	-19.15	-1.35	0.00	-76.70	0.00	76.70	1898.49	949.24	2868.04	1436.15		2.65	-0.26	0.038
105.00	-18.75	-1.35	0.00	-72.99	0.00	72.99	1881.84	940.92	2800.02	1402.09		2.81	-0.27	0.062
110.00	-18.05	-1.36	0.00	-66.23	0.00	66.23	1850.66	925.33	2676.97	1340.48		3.10	-0.29	0.059
115.00	-17.35	-1.36	0.00	-59.45	0.00	59.45	1818.29	909.14	2554.84	1279.32		3.41	-0.31	0.056
117.00	-15.81	-1.35	0.00	-56.74	0.00	56.74	1805.01	902.50	2506.28	1255.00		3.54	-0.32	0.054
120.00	-15.40	-1.35	0.00	-52.68	0.00	52.68	1784.73	892.37	2433.78	1218.70		3.75	-0.33	0.052
125.00	-14.74	-1.35	0.00	-45.92	0.00	45.92	1749.99	875.00	2313.93	1158.68		4.10	-0.35	0.048
127.00	-10.83	-1.33	0.00	-43.21	0.00	43.21	1735.77	867.88	2266.36	1134.86		4.25	-0.36	0.044
130.00	-10.45	-1.33	0.00	-39.22	0.00	39.22	1714.07	857.04	2195.44	1099.35		4.48	-0.37	0.042
135.00	-9.83	-1.33	0.00	-32.57	0.00	32.57	1676.96	838.48	2078.45	1040.77		4.87	-0.38	0.037
139.00	-9.36	-1.31	0.00	-27.27	0.00	27.27	1646.42	823.21	1986.05	994.50		5.20	-0.40	0.033
140.00	-9.19	-1.31	0.00	-25.95	0.00	25.95	1638.67	819.33	1963.12	983.02		5.28	-0.40	0.032
142.75	-8.73	-1.29	0.00	-22.35	0.00	22.35	1100.62	550.31	1316.21	659.08		5.52	-0.41	0.042
145.00	-8.52	-1.28	0.00	-19.44	0.00	19.44	1091.20	545.60	1284.61	643.26		5.71	-0.41	0.038
148.00	-5.43	-1.02	0.00	-15.59	0.00	15.59	1078.27	539.14	1242.60	622.22		5.97	-0.42	0.030
150.00	-5.18	-1.00	0.00	-13.55	0.00	13.55	1069.42	534.71	1214.68	608.24		6.15	-0.43	0.027
155.00	-4.77	-0.97	0.00	-8.55	0.00	8.55	1046.45	523.23	1145.25	573.48		6.60	-0.44	0.019
157.00	-3.10	-0.71	0.00	-6.62	0.00	6.62	1036.93	518.47	1117.66	559.66		6.79	-0.44	0.015

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

160.00	-2.92	-0.69	0.00	-4.47	0.00	4.47	1022.30	511.15	1076.48	539.04	7.06	-0.44	0.011
165.00	-2.00	-0.49	0.00	-1.03	0.00	1.03	996.96	498.48	1008.51	505.00	7.53	-0.45	0.004
167.00	-0.09	-0.02	0.00	-0.05	0.00	0.05	986.50	493.25	981.58	491.52	7.72	-0.45	0.000
169.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	7.90	-0.45	0.000

Wind Loading - Shaft

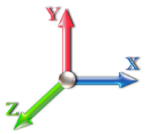
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Tower Engineering Solutions

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	0.70	6.129	6.74	238.64	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	234.39	0.650	0.000	5.00	23.558	15.31	103.2	0.0	1305.1
10.00		1.00	0.70	6.129	6.74	230.15	0.650	0.000	5.00	23.135	15.04	101.4	0.0	1281.5
15.00		1.00	0.70	6.129	6.74	225.90	0.650	0.000	5.00	22.712	14.76	99.5	0.0	1257.8
20.00		1.00	0.70	6.129	6.74	221.65	0.650	0.000	5.00	22.288	14.49	97.7	0.0	1234.2
25.00		1.00	0.70	6.129	6.74	217.40	0.650	0.000	5.00	21.865	14.21	95.8	0.0	1210.6
30.00		1.00	0.70	6.134	6.75	213.24	0.650	0.000	5.00	21.442	13.94	94.0	0.0	1187.0
35.00		1.00	0.73	6.410	7.05	213.65	0.650	0.000	5.00	21.019	13.66	96.3	0.0	1163.3
40.00		1.00	0.76	6.659	7.33	213.33	0.650	0.000	5.00	20.596	13.39	98.1	0.0	1139.7
40.75	Bot - Section 2	1.00	0.76	6.695	7.36	213.23	0.650	0.000	0.75	3.053	1.98	14.6	0.0	168.9
45.00		1.00	0.79	6.887	7.58	212.45	0.650	0.000	4.25	17.389	11.30	85.6	0.0	1773.0
47.00	Top - Section 1	1.00	0.80	6.973	7.67	211.96	0.650	0.000	2.00	8.077	5.25	40.3	0.0	823.4
50.00		1.00	0.81	7.098	7.81	214.53	0.650	0.000	3.00	11.989	7.79	60.8	0.0	569.3
55.00		1.00	0.83	7.294	8.02	212.83	0.650	0.000	5.00	19.644	12.77	102.4	0.0	932.6
60.00		1.00	0.85	7.477	8.22	210.80	0.650	0.000	5.00	19.220	12.49	102.8	0.0	912.3
65.00		1.00	0.87	7.650	8.42	208.48	0.650	0.000	5.00	18.797	12.22	102.8	0.0	892.1
70.00		1.00	0.89	7.814	8.60	205.90	0.650	0.000	5.00	18.374	11.94	102.7	0.0	871.8
75.00		1.00	0.91	7.969	8.77	203.10	0.650	0.000	5.00	17.951	11.67	102.3	0.0	851.6
80.00		1.00	0.93	8.118	8.93	200.09	0.650	0.000	5.00	17.528	11.39	101.7	0.0	831.3
85.00		1.00	0.94	8.260	9.09	196.90	0.650	0.000	5.00	17.105	11.12	101.0	0.0	811.1
89.25	Bot - Section 3	1.00	0.96	8.376	9.21	194.05	0.650	0.000	4.25	14.206	9.23	85.1	0.0	673.5
90.00		1.00	0.96	8.396	9.24	193.54	0.650	0.000	0.75	2.507	1.63	15.0	0.0	196.8
91.50	RB1	1.00	0.96	8.435	9.28	192.50	0.650	0.000	1.50	4.985	3.24	30.1	0.0	391.4
94.25	Top - Section 2	1.00	0.97	8.507	9.36	190.56	0.650	0.000	2.75	9.041	5.88	55.0	0.0	709.6
95.00		1.00	0.97	8.526	9.38	192.53	0.650	0.000	0.75	2.444	1.59	14.9	0.0	77.5
96.75	RB2	1.00	0.98	8.571	9.43	191.28	0.650	0.000	1.75	5.664	3.68	34.7	0.0	179.6
97.00	RT1	1.00	0.98	8.577	9.43	191.10	0.650	0.000	0.25	0.805	0.52	4.9	0.0	25.5
100.00		1.00	0.99	8.652	9.52	188.90	0.650	0.000	3.00	9.577	6.23	59.2	0.0	303.6
102.25	RT2	1.00	0.99	8.707	9.58	187.22	0.650	0.000	2.25	7.083	4.60	44.1	0.0	224.5
105.00		1.00	1.00	8.774	9.65	185.14	0.650	0.000	2.75	8.541	5.55	53.6	0.0	270.7
110.00		1.00	1.02	8.891	9.78	181.26	0.650	0.000	5.00	15.200	9.88	96.6	0.0	481.6
115.00		1.00	1.03	9.005	9.91	177.26	0.650	0.000	5.00	14.777	9.61	95.1	0.0	468.1
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	175.63	0.650	0.000	2.00	5.792	3.77	37.5	0.0	183.5
120.00		1.00	1.04	9.115	10.03	173.16	0.650	0.000	3.00	8.562	5.57	55.8	0.0	271.2
125.00		1.00	1.05	9.222	10.14	168.96	0.650	0.000	5.00	13.931	9.06	91.9	0.0	441.1
127.00	Appurtenance(s)	1.00	1.06	9.264	10.19	167.26	0.650	0.000	2.00	5.454	3.55	36.1	0.0	172.7
130.00		1.00	1.07	9.326	10.26	164.67	0.650	0.000	3.00	8.054	5.24	53.7	0.0	255.0
135.00		1.00	1.08	9.427	10.37	160.29	0.650	0.000	5.00	13.085	8.51	88.2	0.0	414.1
139.00	Bot - Section 4	1.00	1.09	9.506	10.46	156.73	0.650	0.000	4.00	10.163	6.61	69.1	0.0	321.6
140.00		1.00	1.09	9.525	10.48	155.83	0.650	0.000	1.00	2.530	1.64	17.2	0.0	139.2
142.75	Top - Section 3	1.00	1.09	9.578	10.54	153.34	0.650	0.000	2.75	6.871	4.47	47.1	0.0	378.0
145.00		1.00	1.10	9.621	10.58	153.29	0.650	0.000	2.25	5.526	3.59	38.0	0.0	131.4
148.00	Appurtenance(s)	1.00	1.11	9.678	10.65	150.53	0.650	0.000	3.00	7.235	4.70	50.1	0.0	172.0
150.00	Appurtenance(s)	1.00	1.11	9.715	10.69	148.68	0.650	0.000	2.00	4.739	3.08	32.9	0.0	112.6
155.00		1.00	1.12	9.806	10.79	144.01	0.650	0.000	5.00	11.551	7.51	81.0	0.0	274.5
157.00	Appurtenance(s)	1.00	1.12	9.842	10.83	142.12	0.650	0.000	2.00	4.502	2.93	31.7	0.0	107.0
160.00		1.00	1.13	9.896	10.89	139.26	0.650	0.000	3.00	6.626	4.31	46.9	0.0	157.4

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

165.00 Appurtenance(s)	1.00	1.14	9.983	10.98	134.45	0.650	0.000	5.00	10.704	6.96	76.4	0.0	254.3
167.00 Appurtenance(s)	1.00	1.14	10.017	11.02	132.51	0.650	0.000	2.00	4.163	2.71	29.8	0.0	98.9
169.00	1.00	1.15	10.052	11.06	130.56	0.650	0.000	2.00	4.096	2.66	29.4	0.0	97.3
							Totals:	**169.00**			**3,204.2**		**27,200.5**

Discrete Appurtenance Forces

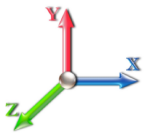
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

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)	Orient Factor 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	167.00	RRUS 4415 B25	3	10.017	11.019	0.54	0.80	2.64	138.00	0.000	0.000	29.06	0.00	0.00
2	167.00	Ericsson - Radio 4449	3	10.017	11.019	0.60	0.80	2.97	222.00	0.000	0.000	32.73	0.00	0.00
3	167.00	AIR 6449 B41	3	10.017	11.019	0.56	0.80	9.49	309.00	0.000	0.000	104.59	0.00	0.00
4	167.00	Ericsson - KRY 112 144/2	3	10.017	11.019	0.60	0.80	0.74	33.00	0.000	0.000	8.13	0.00	0.00
5	167.00	AIR 21 B2A/B4P	3	10.017	11.019	0.77	0.90	14.14	276.00	0.000	0.000	155.82	0.00	0.00
6	167.00	T-Arms/Commscope	3	10.026	11.029	0.56	0.75	11.39	1020.00	0.000	0.500	125.62	0.00	62.81
7	165.00	APXVAA24_43-U-A20	3	9.983	10.981	0.66	0.90	39.89	384.00	0.000	0.000	438.08	0.00	0.00
8	165.00	Air 32	3	9.983	10.981	0.78	0.90	15.29	317.40	0.000	0.000	167.93	0.00	0.00
9	157.00	DB846F65ZAXY	4	9.842	10.827	0.74	0.80	20.76	84.00	0.000	0.000	224.71	0.00	0.00
10	157.00	SLCP 2x6014F	2	9.842	10.827	0.84	0.90	10.86	40.00	0.000	0.000	117.62	0.00	0.00
11	157.00	DB846H80E-SX	2	9.842	10.827	0.88	0.80	8.82	32.00	0.000	0.000	95.46	0.00	0.00
12	157.00	T-Arms	3	9.842	10.827	0.56	0.75	13.50	1050.00	0.000	0.000	146.16	0.00	0.00
13	157.00	BXA-70063/6CF	1	9.842	10.827	1.00	1.00	7.57	17.00	0.000	0.000	81.96	0.00	0.00
14	157.00	RFS DB T1-6Z-8AB-OZ	1	9.842	10.827	1.00	1.00	3.20	19.00	0.000	0.000	34.64	0.00	0.00
15	157.00	HBX-6517DS-VTM	6	9.842	10.827	0.60	0.80	19.04	112.20	0.000	0.000	206.18	0.00	0.00
16	157.00	ALU RRH2X60-AWS RRH	3	9.842	10.827	0.61	0.80	6.38	180.00	0.000	0.000	69.12	0.00	0.00
17	157.00	GPS	1	9.842	10.827	1.00	1.00	1.00	10.00	0.000	0.000	10.83	0.00	0.00
18	157.00	ALU/900 RRH2X60W -	3	9.842	10.827	0.61	0.80	3.43	138.00	0.000	0.000	37.13	0.00	0.00
19	150.00	Collar Mount	1	9.715	10.686	1.00	1.00	3.50	100.00	0.000	0.000	37.40	0.00	0.00
20	148.00	Powerwave LGP13519	6	9.678	10.645	0.60	0.80	1.22	31.80	0.000	0.000	13.03	0.00	0.00
21	148.00	Powerwave LGP21401	6	9.678	10.645	0.60	0.80	4.64	84.60	0.000	0.000	49.44	0.00	0.00
22	148.00	Powerwave 7770	3	9.678	10.645	0.61	0.80	10.13	105.00	0.000	0.000	107.83	0.00	0.00
23	148.00	T-Arms w/ Modifications	3	9.678	10.645	0.60	0.80	21.60	1350.00	0.000	0.000	229.94	0.00	0.00
24	148.00	CCI HPA-65R-BUU-H8	4	9.678	10.645	0.63	0.80	32.81	272.00	0.000	0.000	349.31	0.00	0.00
25	148.00	Cci OPA-65R-LCUU-H6	1	9.678	10.645	0.63	0.80	6.11	73.00	0.000	0.000	64.99	0.00	0.00
26	148.00	Cci OPA-65R-LCUU-H8	2	9.678	10.645	0.63	0.80	16.12	176.00	0.000	0.000	171.56	0.00	0.00
27	148.00	CCI HPA-65R-BUU-H6	2	9.678	10.645	0.68	0.80	13.14	102.00	0.000	0.000	139.86	0.00	0.00
28	148.00	Raycap	2	9.678	10.645	0.81	0.90	2.38	65.60	0.000	0.000	25.35	0.00	0.00
29	148.00	Powerwave 1001940-Bias	3	9.678	10.645	0.72	0.80	0.15	6.00	0.000	0.000	1.61	0.00	0.00
30	148.00	Ericsson RRUS 32-RRU	9	9.678	10.645	0.56	0.80	8.32	693.00	0.000	0.000	88.53	0.00	0.00
31	148.00	Commscope	1	9.678	10.645	1.00	1.00	1.19	6.60	0.000	0.000	12.67	0.00	0.00
32	148.00	Ericsson RRUS-11-RRU	3	9.678	10.645	0.61	0.80	4.60	150.00	0.000	0.000	48.93	0.00	0.00
33	127.00	Horizon Duo	4	9.264	10.190	0.60	0.80	1.42	28.00	0.000	0.000	14.43	0.00	0.00
34	127.00	VHLP800-11	1	9.264	10.190	1.00	1.00	8.43	48.00	1.455	0.000	85.90	124.99	0.00
35	127.00	1900MHz RRH	3	9.264	10.190	0.74	0.75	6.17	180.00	0.000	0.000	62.87	0.00	0.00
36	127.00	VHLP2-11	3	9.264	10.190	1.00	1.00	14.04	81.00	1.455	0.000	143.07	208.17	0.00
37	127.00	NNVV-65B-R4	3	9.264	10.190	0.55	0.75	20.43	232.20	0.000	0.000	208.18	0.00	0.00
38	127.00	800 MHz RRH	6	9.264	10.190	0.69	0.75	10.31	318.00	0.000	0.000	105.04	0.00	0.00
39	127.00	TD-RRH8x20-25	3	9.264	10.190	0.52	0.75	6.29	210.00	0.000	0.000	64.07	0.00	0.00
40	127.00	AAHC	3	9.264	10.190	0.56	0.75	7.10	310.80	0.000	0.000	72.39	0.00	0.00
41	127.00	RMQP-4096-HK	1	9.264	10.190	1.00	1.00	51.70	2645.00	0.000	0.000	526.82	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	9.049	9.954	0.54	0.80	2.20	59.40	0.000	0.000	21.93	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	9.049	9.954	0.54	0.80	1.99	88.20	0.000	0.000	19.85	0.00	0.00
44	117.00	Standoff Sector Frame	3	9.049	9.954	0.56	0.75	25.48	1185.00	0.000	0.000	253.64	0.00	0.00
45	117.00	Comba	3	9.049	9.954	0.56	0.80	8.15	75.30	0.000	0.000	81.11	0.00	0.00
							Totals:		**13,058.10**			**5,085.53**		

Total Applied Force Summary

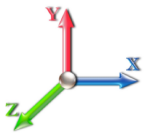
Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		103.23	1608.73	0.00	0.00
10.00		101.38	1585.10	0.00	0.00
15.00		99.52	1561.47	0.00	0.00
20.00		97.67	1537.84	0.00	0.00
25.00		95.81	1514.21	0.00	0.00
30.00		94.04	1490.58	0.00	0.00
35.00		96.33	1466.95	0.00	0.00
40.00		98.06	1443.33	0.00	0.00
40.75		14.61	214.46	0.00	0.00
45.00		85.63	2031.07	0.00	0.00
47.00		40.27	944.83	0.00	0.00
50.00		60.84	751.44	0.00	0.00
55.00		102.44	1236.20	0.00	0.00
60.00		102.76	1215.95	0.00	0.00
65.00		102.82	1195.70	0.00	0.00
70.00		102.66	1175.45	0.00	0.00
75.00		102.29	1155.19	0.00	0.00
80.00		101.73	1134.94	0.00	0.00
85.00		101.01	1114.69	0.00	0.00
89.25		85.07	931.56	0.00	0.00
90.00		15.05	242.36	0.00	0.00
91.50		30.07	482.44	0.00	0.00
94.25		54.99	876.59	0.00	0.00
95.00		14.90	123.00	0.00	0.00
96.75		34.71	285.83	0.00	0.00
97.00		4.94	40.70	0.00	0.00
100.00		59.25	485.74	0.00	0.00
102.25		44.10	361.11	0.00	0.00
105.00		53.58	437.65	0.00	0.00
110.00		96.63	785.26	0.00	0.00
115.00		95.14	771.76	0.00	0.00
117.00	(11) attachments	414.00	1712.82	0.00	0.00
120.00		55.80	450.47	0.00	0.00
125.00		91.85	739.98	0.00	0.00
127.00	(27) attachments	1318.91	4345.21	333.15	0.00
130.00		53.70	417.60	0.00	0.00
135.00		88.19	685.20	0.00	0.00
139.00		69.07	525.96	0.00	0.00
140.00		17.23	187.19	0.00	0.00
142.75		47.05	509.90	0.00	0.00
145.00		38.02	239.34	0.00	0.00
148.00	(45) attachments	1353.12	3431.52	0.00	0.00
150.00	(1) attachments	70.32	281.91	0.00	0.00
155.00		80.99	447.69	0.00	0.00
157.00	(26) attachments	1055.48	1858.44	0.00	0.00
160.00		46.88	201.38	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 49

Tower Engineering Solutions

165.00	(6) attachments	682.41	1028.94	0.00	0.00
167.00	(18) attachments	485.78	2126.18	0.00	62.81
169.00		29.43	97.25	0.00	0.00
	Totals:	**8,289.77**	**49,489.10**	**333.15**	**62.81**

Linear Appurtenance Segment Forces (Factored)

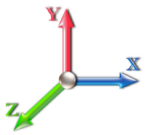
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

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)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.035	0.000	6.129	0.00	31.20
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	6.129	0.00	31.20
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.036	0.000	6.129	0.00	31.20
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.037	0.000	6.129	0.00	31.20
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	6.129	0.00	31.20
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.038	0.000	6.134	0.00	31.20
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.039	0.000	6.410	0.00	31.20
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.040	0.000	6.659	0.00	31.20
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	6.695	0.00	4.68
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	6.887	0.00	26.52
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	6.973	0.00	12.48
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.041	0.000	7.098	0.00	18.72
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.042	0.000	7.294	0.00	31.20
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.043	0.000	7.477	0.00	31.20
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.044	0.000	7.650	0.00	31.20
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.045	0.000	7.814	0.00	31.20
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.046	0.000	7.969	0.00	31.20
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.047	0.000	8.118	0.00	31.20
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.048	0.000	8.260	0.00	31.20
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	8.376	0.00	26.52
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	8.396	0.00	4.68
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	8.396	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	8.435	0.00	9.36
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	8.435	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	8.507	0.00	17.16
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	8.507	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	8.526	0.00	4.68
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	8.526	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	8.571	0.00	10.92
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	8.571	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	8.577	0.00	1.56
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	8.577	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.078	0.000	8.652	0.00	18.72
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	8.652	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	8.652	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	8.707	0.00	14.04
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	8.707	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	8.774	0.00	17.16
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	8.774	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.054	0.000	8.891	0.00	31.20
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.056	0.000	9.005	0.00	31.20
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	9.049	0.00	12.48
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.058	0.000	9.115	0.00	18.72
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.059	0.000	9.222	0.00	31.20
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	9.264	0.00	12.48
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.061	0.000	9.326	0.00	18.72
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.063	0.000	9.427	0.00	31.20

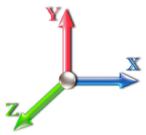
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

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)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	9.506	0.00	24.96
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	9.525	0.00	6.24
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	9.578	0.00	17.16
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	9.621	0.00	14.04
148.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.50	0.00	0.068	0.000	9.678	0.00	18.72
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	9.715	0.00	12.48
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.83	0.00	0.071	0.000	9.806	0.00	31.20
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	9.842	0.00	12.48
										Totals:	**0.0**	**979.7**

Calculated Forces

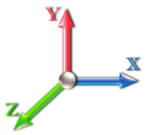
Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

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	-49.49	-8.31	-0.33	-1056.7	0.00	1056.70	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.182
5.00	-47.87	-8.25	-0.33	-1015.1	0.00	1015.15	5261.08	2630.54	11832.5	5925.09	0.03	-0.048	0.000	0.180
10.00	-46.28	-8.18	-0.33	-973.91	0.00	973.91	5196.80	2598.40	11472.7	5744.92	0.10	-0.098	0.000	0.178
15.00	-44.71	-8.12	-0.33	-932.99	0.00	932.99	5131.34	2565.67	11115.7	5566.13	0.23	-0.147	0.000	0.176
20.00	-43.16	-8.06	-0.33	-892.39	0.00	892.39	5064.69	2532.35	10761.6	5388.80	0.41	-0.198	0.000	0.174
25.00	-41.64	-7.99	-0.33	-852.11	0.00	852.11	4996.86	2498.43	10410.5	5212.99	0.65	-0.249	0.000	0.172
30.00	-40.15	-7.93	-0.33	-812.16	0.00	812.16	4927.84	2463.92	10062.6	5038.79	0.94	-0.301	0.000	0.169
35.00	-38.67	-7.86	-0.33	-772.52	0.00	772.52	4857.63	2428.82	9718.08	4866.26	1.28	-0.353	0.000	0.167
40.00	-37.23	-7.77	-0.33	-733.24	0.00	733.24	4786.24	2393.12	9377.03	4695.49	1.68	-0.406	0.000	0.164
40.75	-37.01	-7.77	-0.33	-727.41	0.00	727.41	4775.43	2387.72	9326.19	4670.03	1.74	-0.414	0.000	0.164
45.00	-34.97	-7.69	-0.33	-694.39	0.00	694.39	4713.67	2356.83	9039.63	4526.53	2.13	-0.459	0.000	0.161
47.00	-34.03	-7.66	-0.33	-679.01	0.00	679.01	3877.89	1938.95	7512.92	3762.05	2.33	-0.481	0.000	0.189
50.00	-33.27	-7.62	-0.33	-656.03	0.00	656.03	3845.09	1922.55	7353.82	3682.38	2.64	-0.514	0.000	0.187
55.00	-32.03	-7.54	-0.33	-617.94	0.00	617.94	3789.47	1894.74	7090.51	3550.52	3.21	-0.573	0.000	0.183
60.00	-30.80	-7.45	-0.33	-580.26	0.00	580.26	3732.67	1866.34	6829.63	3419.89	3.84	-0.633	0.000	0.178
65.00	-29.60	-7.37	-0.33	-542.99	0.00	542.99	3674.68	1837.34	6571.34	3290.55	4.54	-0.693	0.000	0.173
70.00	-28.42	-7.28	-0.33	-506.15	0.00	506.15	3615.51	1807.76	6315.78	3162.58	5.30	-0.753	0.000	0.168
75.00	-27.26	-7.19	-0.33	-469.75	0.00	469.75	3555.15	1777.58	6063.10	3036.06	6.12	-0.813	0.000	0.162
80.00	-26.12	-7.10	-0.33	-433.79	0.00	433.79	3493.61	1746.80	5813.45	2911.05	7.00	-0.873	0.000	0.157
85.00	-25.00	-7.00	-0.33	-398.30	0.00	398.30	3430.88	1715.44	5566.98	2787.63	7.95	-0.932	0.000	0.150
89.25	-24.06	-6.92	-0.33	-368.53	0.00	368.53	3376.63	1688.32	5360.08	2684.02	8.80	-0.982	-0.001	0.144
90.00	-23.82	-6.90	-0.33	-363.34	0.00	363.34	3366.97	1683.48	5323.83	2665.87	8.96	-0.991	-0.001	0.143
91.50	-23.34	-6.87	-0.33	-352.99	0.00	352.99	3347.56	1673.78	5251.55	2629.68	9.27	-1.008	-0.001	0.106
94.25	-22.46	-6.81	-0.33	-334.09	0.00	334.09	1944.87	972.44	3066.99	1535.78	9.86	-1.032	-0.001	0.119
95.00	-22.33	-6.80	-0.33	-328.98	0.00	328.98	1940.65	970.33	3048.28	1526.41	10.02	-1.039	-0.001	0.152
96.75	-22.05	-6.76	-0.33	-317.09	0.00	317.09	1930.70	965.35	3004.67	1504.57	10.41	-1.058	-0.001	0.104
97.00	-22.01	-6.76	-0.33	-315.40	0.00	315.40	1929.27	964.63	2998.44	1501.45	10.46	-1.060	-0.001	0.135
100.00	-21.52	-6.70	-0.33	-295.12	0.00	295.12	1911.84	955.92	2923.84	1464.09	11.14	-1.090	-0.001	0.129
102.25	-21.15	-6.66	-0.33	-280.04	0.00	280.04	1898.49	949.24	2868.04	1436.15	11.66	-1.111	-0.001	0.124
102.25	-21.15	-6.66	-0.33	-280.04	0.00	280.04	1898.49	949.24	2868.04	1436.15	11.66	-1.111	-0.001	0.124
105.00	-20.71	-6.62	-0.33	-261.73	0.00	261.73	1881.84	940.92	2800.02	1402.09	12.30	-1.137	-0.001	0.198
110.00	-19.92	-6.53	-0.33	-228.65	0.00	228.65	1850.66	925.33	2676.97	1340.48	13.53	-1.210	-0.001	0.181
115.00	-19.15	-6.43	-0.33	-196.01	0.00	196.01	1818.29	909.14	2554.84	1279.32	14.84	-1.280	-0.001	0.164
117.00	-17.44	-5.99	-0.33	-183.15	0.00	183.15	1805.01	902.50	2506.28	1255.00	15.38	-1.307	-0.001	0.156
120.00	-16.99	-5.94	-0.33	-165.18	-0.01	165.18	1784.73	892.37	2433.78	1218.70	16.22	-1.345	-0.001	0.145
125.00	-16.24	-5.84	-0.33	-135.49	-0.01	135.49	1749.99	875.00	2313.93	1158.68	17.66	-1.404	-0.001	0.126
127.00	-11.93	-4.42	0.00	-123.82	0.00	123.82	1735.77	867.88	2266.36	1134.86	18.25	-1.426	-0.001	0.116
130.00	-11.51	-4.36	0.00	-110.56	0.00	110.56	1714.07	857.04	2195.44	1099.35	19.16	-1.457	-0.001	0.107
135.00	-10.83	-4.26	0.00	-88.75	0.00	88.75	1676.96	838.48	2078.45	1040.77	20.71	-1.503	-0.001	0.092
139.00	-10.30	-4.18	0.00	-71.69	0.00	71.69	1646.42	823.21	1986.05	994.50	21.98	-1.537	-0.001	0.078
140.00	-10.11	-4.17	0.00	-67.51	0.00	67.51	1638.67	819.33	1963.12	983.02	22.30	-1.544	-0.001	0.075
142.75	-9.60	-4.11	0.00	-56.05	0.00	56.05	1100.62	550.31	1316.21	659.08	23.20	-1.564	-0.001	0.094
145.00	-9.36	-4.07	0.00	-46.81	0.00	46.81	1091.20	545.60	1284.61	643.26	23.94	-1.578	-0.001	0.081
148.00	-5.97	-2.62	0.00	-34.62	0.00	34.62	1078.27	539.14	1242.60	622.22	24.94	-1.597	-0.001	0.061
150.00	-5.69	-2.54	0.00	-29.38	0.00	29.38	1069.42	534.71	1214.68	608.24	25.61	-1.609	-0.001	0.054
155.00	-5.24	-2.45	0.00	-16.66	0.00	16.66	1046.45	523.23	1145.25	573.48	27.31	-1.629	-0.001	0.034
157.00	-3.42	-1.34	0.00	-11.76	0.00	11.76	1036.93	518.47	1117.66	559.66	27.99	-1.635	-0.001	0.024
160.00	-3.22	-1.29	0.00	-7.74	0.00	7.74	1022.30	511.15	1076.48	539.04	29.02	-1.641	-0.001	0.018

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G
Site Name:	Woodbridge	**Exposure:**	B
Height:	169.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

7/7/2020

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165.00	-2.21	-0.58	0.00	-1.28	0.00	1.28	996.96	498.48	1008.51	505.00	30.74	-1.646	-0.001	0.005
167.00	-0.10	-0.03	0.00	-0.06	0.00	0.06	986.50	493.25	981.58	491.52	31.43	-1.646	-0.001	0.000
169.00	0.00	-0.03	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	32.12	-1.647	-0.001	0.000

Final Analysis Summary

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	7/7/2020	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 54	

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	34.8	0.00	59.32	0.02	0.85	4452.62
0.9D + 1.6W 97 mph Wind	34.7	0.00	44.48	0.01	0.85	4389.47
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.4	0.00	93.18	0.00	0.29	1207.91
1.2D + 1.0E	1.9	0.00	59.39	0.00	0.00	239.56
0.9D + 1.0E	1.9	0.00	44.54	0.00	0.00	235.78
1.0D + 1.0W 60 mph Wind	8.3	0.00	49.49	0.00	0.33	1056.70

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-22.68	-27.95	-0.86	-1104.7	-0.05	-1104.7	1881.84	940.92	2800.02	1402.09	105.00	0.801
0.9D + 1.6W 97 mph Wind	-16.49	-27.38	-0.86	-1081.4	-0.04	-1081.4	1881.84	940.92	2800.02	1402.09	105.00	0.781
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-47.01	-7.61	-0.29	-294.28	-0.01	-294.28	1881.84	940.92	2800.02	1402.09	105.00	0.235
1.2D + 1.0E	-25.01	-1.39	0.00	-74.46	0.00	-74.46	1881.84	940.92	2800.02	1402.09	105.00	0.066
0.9D + 1.0E	-18.75	-1.35	0.00	-72.99	0.00	-72.99	1881.84	940.92	2800.02	1402.09	105.00	0.062
1.0D + 1.0W 60 mph Wind	-20.71	-6.62	-0.33	-261.73	0.00	-261.73	1881.84	940.92	2800.02	1402.09	105.00	0.198

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
91.5	97.0	(3) LNP-LP6X100-G-10TT	-387.4	-8.91	25.3	182.1	25.3	8	9	154.6	25.3	7	9	222.72	301.8	288.75	0.771
96.8	102.3	(3) LNP-LP6X100-G-10TT	389.0	8.95	25.3	158.8	25.3	7	9	196.2	25.3	8	9	211.15	301.8	288.75	0.731

Base Plate Summary

Structure:	CT13071-A-SB		**Code:**	EIA/TIA-222-G	7/7/2020
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 55

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	4977.00
Axial (kip):	60.20
Shear (kip):	43.70

Analysis (1.2D + 1.6W)

Moment (kip-ft):	4452.62
Axial (kip):	59.32
Shear (kip):	34.77

Base Plate

Yield (ksi):	60.00
Width (in):	61.25
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	12.00
Effective Len (in):	8.31
Moment (kip-in):	617.84
Allow Stress (ksi):	81.00
Applied Stress (ksi):	49.41
Stress Ratio:	0.61

Anchor Bolts

Bolt Circle:	62.75
Number Bolts:	16.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	186.75
Allowable (kip):	260.00
Ratio:	0.74

Tension

Force (kip):	175.11
Allowable (kip):	260.00
Ratio:	0.69

Monopole Mat Foundation Design

			Date: 7/7/2020
Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	169
Site Number:	CT13071-A-SBA	**Engineer Name:**	J. Tibbetts
Engr. Number:	95057	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

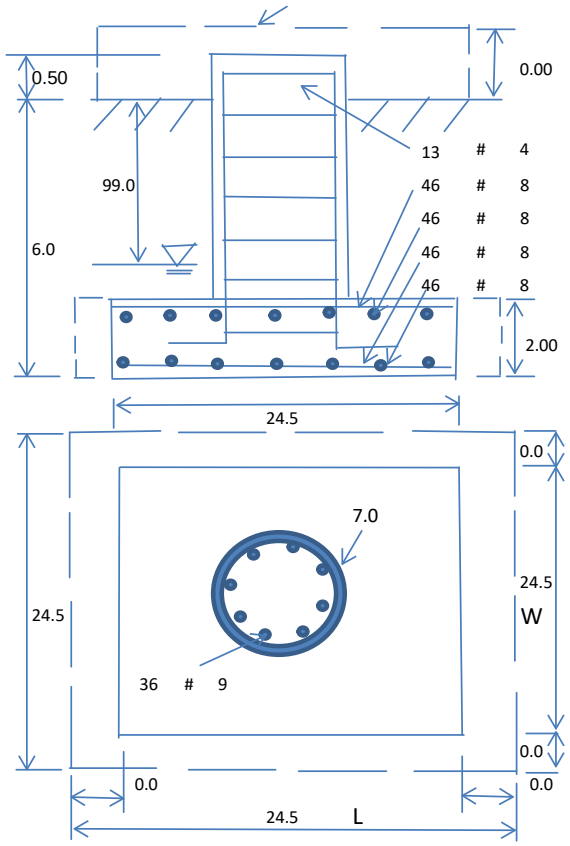
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	59.3	Shear Force (Kips):	34.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4452.6
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5
Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
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):	46	Qty. of Rebar in Pad (W):	46

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	46	Qty. of Rebar in Pad (W):	46
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	200	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2247.06	Total Dry Soil Weight (Kips):	269.65
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	269.65	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1373.68	Total Dry Concrete Weight (Kips):	206.05
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	206.05	Total Vertical Load on Base (Kips):	535.00

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3768	<	Allowable Factored Soil Bearing (psf):	7500	0.50	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5971.0	>	Design Factored Momont (kips-ft):	4679	0.78	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.28	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	>	Design Factored Moment (Mu, Kips-F	4609.2	0.76	OK!
Calculated Shear Capacity (Kips):	794.5	>	Design Factored Shear (Kips):	34.8	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9734.2	>	Design Factored Axial Load (Pu Kips):	59.3	0.01	OK!
Moment & Axial Strength Combination:	0.76	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	571.8	>	One-Way Factored Shear (L-D. Kips):	297.7	0.52	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	571.8	>	One-Way Factored Shear (W-D., Kips)	297.7	0.52	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	565.5	>	One-Way Factored Shear (C-C, Kips):	313.5	0.55	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0060	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0060		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3174.0	>	Moment at Bottom (L-Dir. K-Ft):	1412.6	0.45	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3174.0	>	Moment at Bottom (W-Dir. K-Ft):	1412.6	0.45	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4424.9	>	Moment at Bottom (C-C Dir. K-Ft):	1997.7	0.45	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0060	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0060		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3174.0	>	Moment at the top (L-Dir K-Ft):	687.9	0.22	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3174.0	>	Moment at the top (W-Dir K-Ft):	687.9	0.22	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4424.9	>	Moment at the top (C-C Dir. K-Ft):	645.9	0.15	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1781.0	k-ft.	Max. factored shear stress v_{u_CD}:		4.8	Psi
Max. factored shear stress v_{u_AB}:	19.5	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	19.5	Psi	Check Usage of Punching Shear Capacity:		0.10	OK!

EXHIBIT 8

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

Antenna Mount Analysis Report

Existing 169-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13071-A-SBA

Customer Site Name: Woodbridge

Carrier Name: T-Mobile (App#: 117042, V2)

Carrier Site ID / Name: CTNH209A / NH209 / OptaGeleertnerFT

Site Location: 1 Deerfield Lane

Ansonia, Connecticut

New Haven County

Latitude: 41.350750

Longitude: -73.049250

Analysis Result:

Max Structural Usage: 59% [Pass]

Report Prepared By: Khaibar Noorzad

Introduction

The purpose of this report is to summarize the analysis results on the (3) T-Arms with CommScope Reinforcement Kit (VSR-MS-B) at 167.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Mapping	Provided by Full Metal Tower Services; Dated 04/26/2019
Antenna Loading	Provided by SBA; Application #: 117042, v2

Analysis Criteria

Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA 222-G/2015 IBC/2018 CSBC
Exposure Category: B
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

The site is a Risk Category II structure per IBC Table 1604.5. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(3) T-Arms with CommScope Reinforcement Kit (VSR-MS-B) at 167.00' elevation

Final Antenna Configuration

3 RFS APXVAA24_43-U-A20
3 Ericsson Air 32 KRD901146-1_B66A_B2A
3 Ericsson KRY 112 144/1
3 Ericsson AIR 21 B2A/B4P
3 Ericsson AIR6449 B41
3 Ericsson Radio 4449 B71 + B85
3 Ericsson Radio 4415 B25

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 59%, which occurs in the standoff arm. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. Mount Mapping Information
4. Analysis Calculations

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.

2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.

4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.

5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.

7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.

8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.

9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.


04.26.2019 07:39


04.26.2019 07:12

Structure: CT13071-A-SBA - Woodbridge

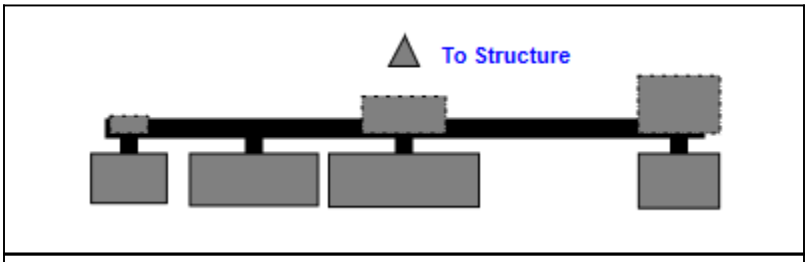
Sector: A

Structure Type: Monopole

Mount Elev: 167.00

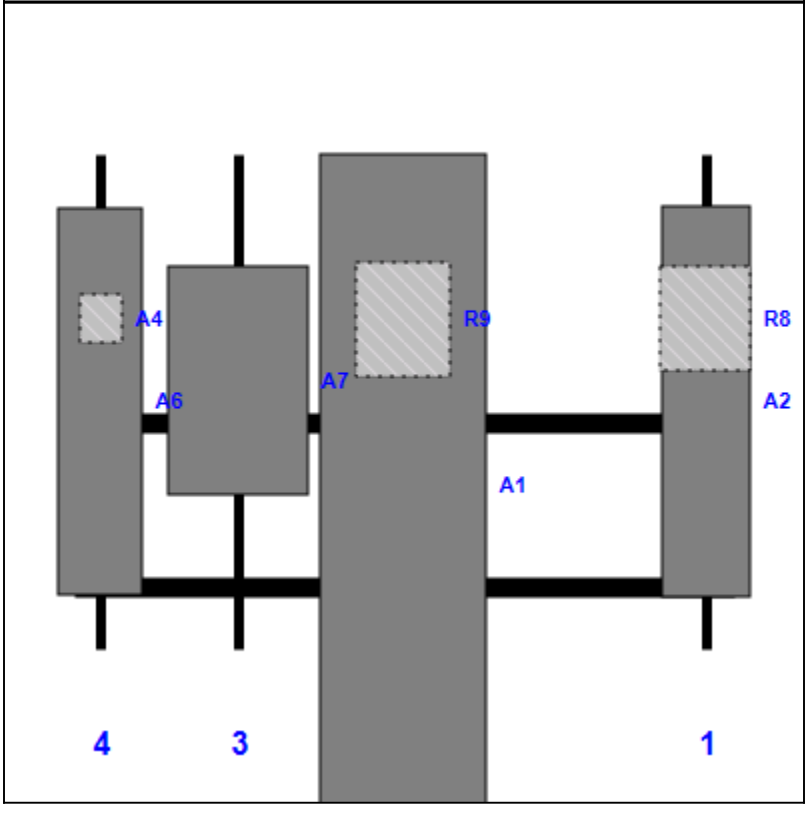
7/6/2020

Plan View



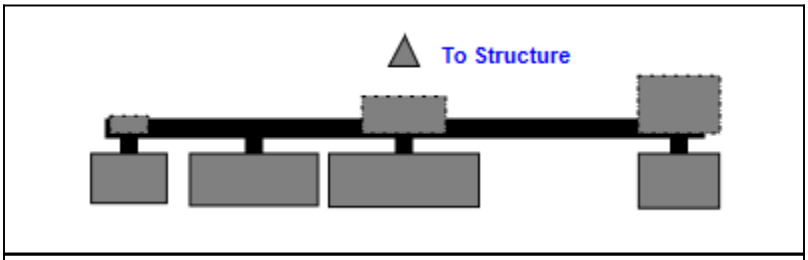
Front View

Looking Toward Structure



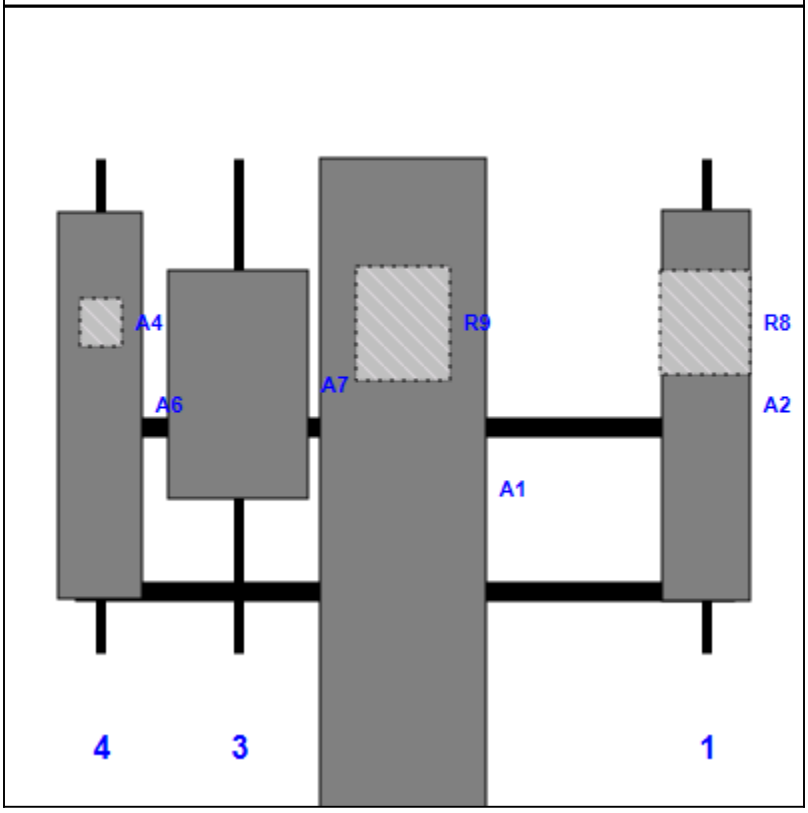
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	Air 32	57.00	12.90	92.00	1	a	Front	36.00			
R8	Radio 4449 B71 + B85	15.00	13.10	92.00	1	a	Behind	24.00			
A1	APXVAA24_43-U-A20	95.90	24.00	48.00	2	a	Front	48.00			
R9	Radio 4415 B25	16.50	13.40	48.00	2	a	Behind	24.00			
A7	AIR6449 B41	33.10	20.50	24.00	3	a	Front	33.00			
A6	AIR 21 B2A/B4P	56.00	12.10	4.00	4	a	Front	36.00			
A4	KRY 112 144/1	6.93	6.10	4.00	4	a	Behind	24.00			

Plan View



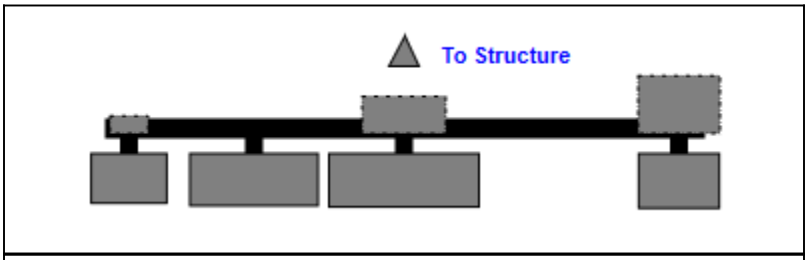
Front View

Looking Toward Structure



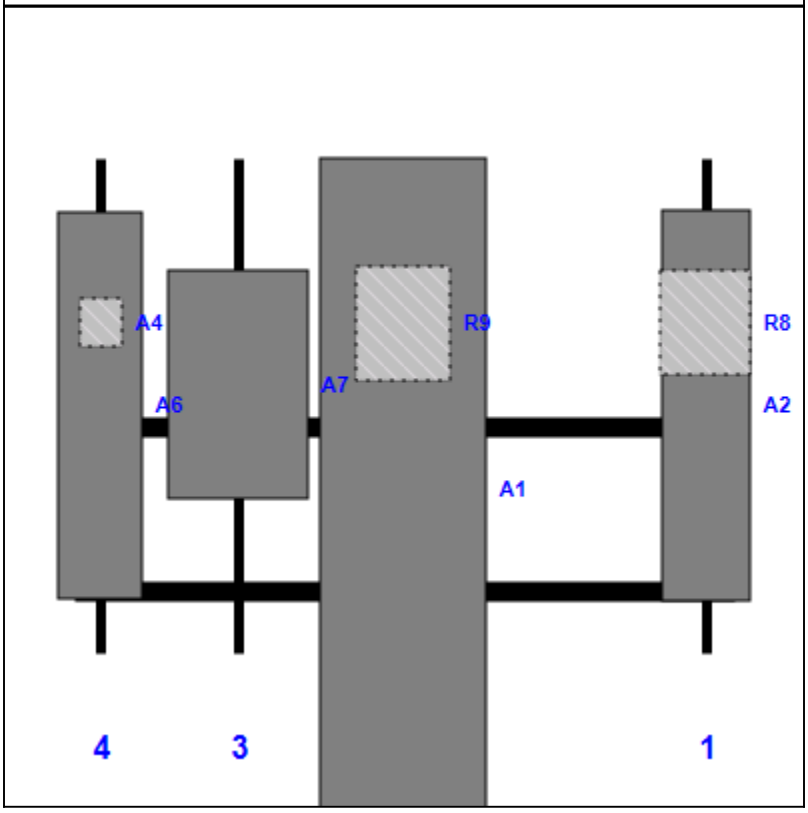
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	Air 32	57.00	12.90	92.00	1	a	Front	36.00			
R8	Radio 4449 B71 + B85	15.00	13.10	92.00	1	a	Behind	24.00			
A1	APXVAA24_43-U-A20	95.90	24.00	48.00	2	a	Front	48.00			
R9	Radio 4415 B25	16.50	13.40	48.00	2	a	Behind	24.00			
A7	AIR6449 B41	33.10	20.50	24.00	3	a	Front	33.00			
A6	AIR 21 B2A/B4P	56.00	12.10	4.00	4	a	Front	36.00			
A4	KRY 112 144/1	6.93	6.10	4.00	4	a	Behind	24.00			

Plan View



Front View

Looking Toward Structure

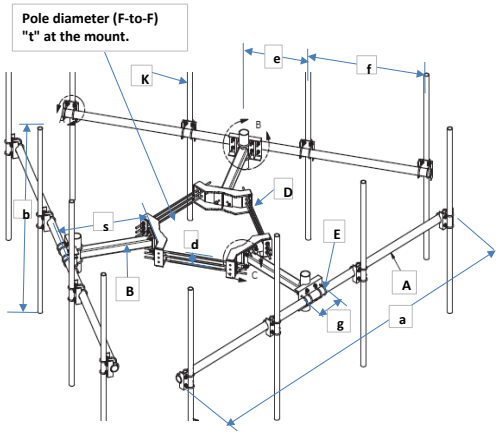


Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	Air 32	57.00	12.90	92.00	1	a	Front	36.00			
R8	Radio 4449 B71 + B85	15.00	13.10	92.00	1	a	Behind	24.00			
A1	APXVAA24_43-U-A20	95.90	24.00	48.00	2	a	Front	48.00			
R9	Radio 4415 B25	16.50	13.40	48.00	2	a	Behind	24.00			
A7	AIR6449 B41	33.10	20.50	24.00	3	a	Front	33.00			
A6	AIR 21 B2A/B4P	56.00	12.10	4.00	4	a	Front	36.00			
A4	KRY 112 144/1	6.93	6.10	4.00	4	a	Behind	24.00			

Antenna Mount Type "MT-Z" Mapping Form (PATENT PENDING)

FCC # 1261858

Tower Owner:	SBA Communications	**Mapping Date:**	4/26/19
Site Name:	Woodbridge	**Structure Type:**	Monopole
Site Number or ID:	CT13071-A-SBA	**Structure Height (Ft.):**	171
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	165



Geometries (Unit: inches)

a	96	**e**	1	**j**		**o**		**s**	48
b	96	**f**	43	**k**		**p**		**t**	18
c		**g**	12	**m**		**q**		**u ***	51
d	6	**h**		**n**		**r**		**v ***	96

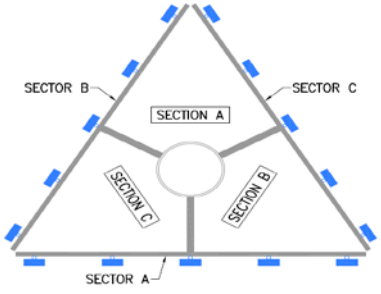
Members/Bolts (Unit: inches) — *** - See Ant. Layout for "u", "v" and member "K" (pipe)**

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	**F**				
B	Tubing 4x4x1/4	4	4	0.25	**G**				
C					**H**				
D	5/8" Bolt	24			**J**				
E	5/8" Bolt	U-Bolt			**K* (pipe)**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

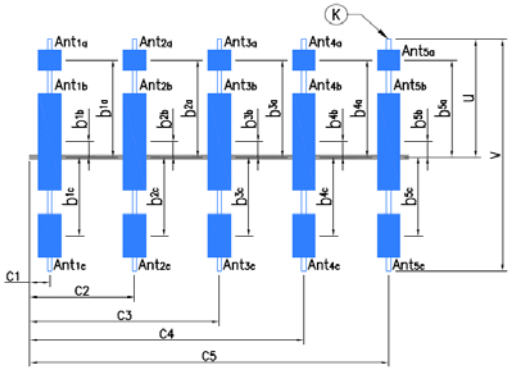
Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)	N/A
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)	3.5'

Please enter the infomation below if members can't be found from the drop down lists

Mount has "V-boom" reinforcement support underneath original mount to a "footrail".



Climbing ladder is Located at Section A, at 45° Degree Azimuth



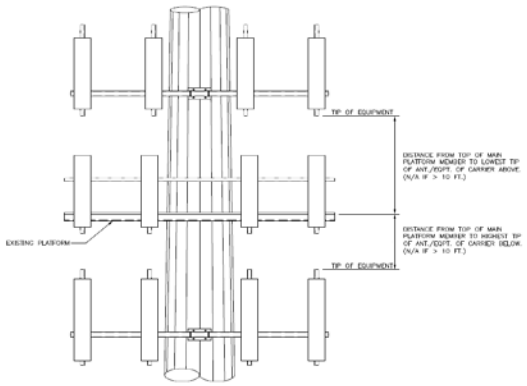
Antenna Layout

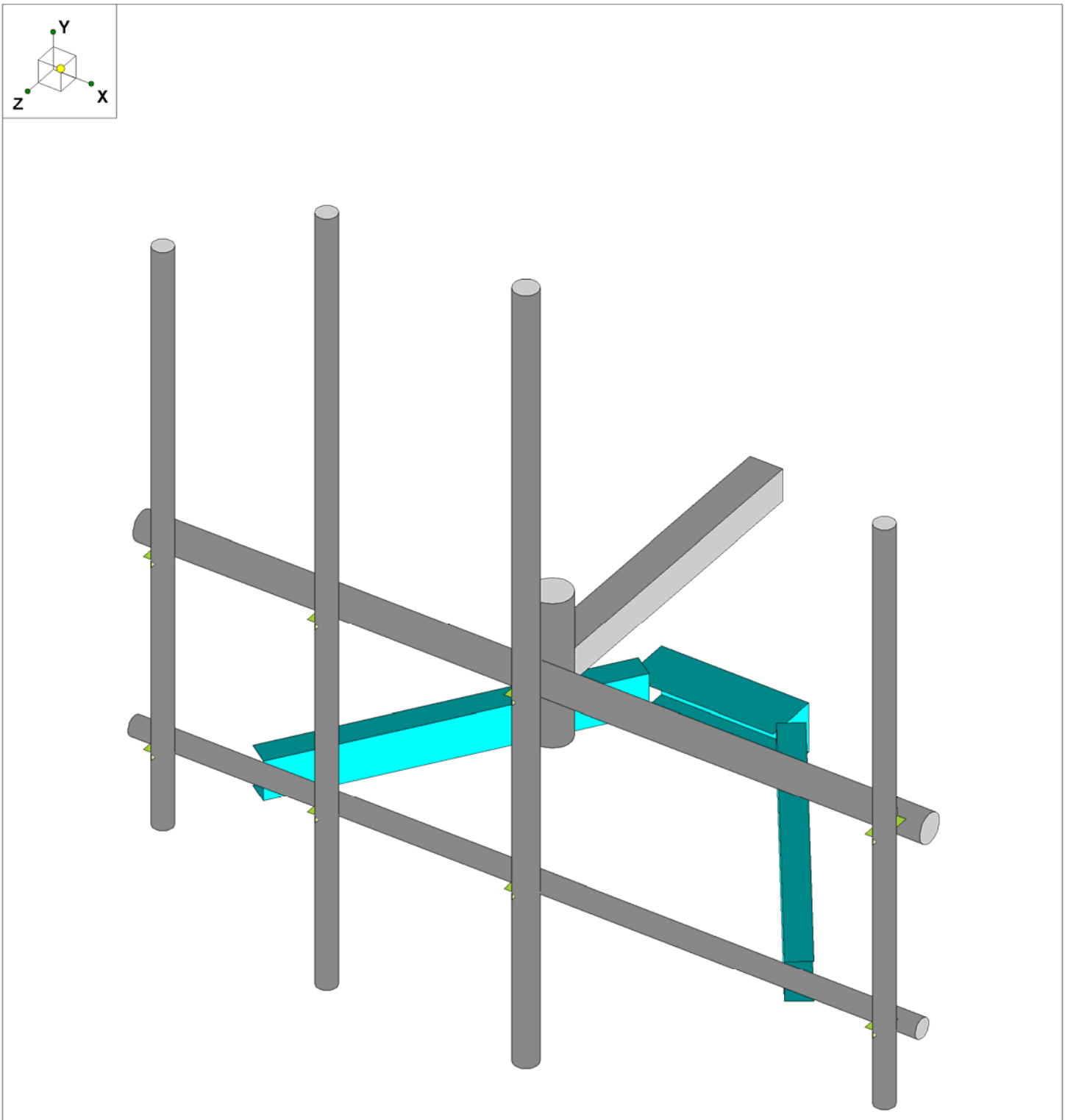
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Mounting Locations (Unit: inches) Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photos of antennas Photo Numbers
	Sector A								
Ant_{1a}								92	
Ant_{1b}	Antenna A	12	8	56	1/2" (1)	3	7	4	
Ant_{1c}									
Ant_{2a}								48	
Ant_{2b}	Antenna B	12	7.5	96.5	1/2" (2)	10	7	47	
Ant_{2c}	RRH A	17	7	20	1/2" (2)	28		47	
Ant_{3a}								4	
Ant_{3b}	Antenna C	13	9	57	1/2" (2)	4	8	93	
Ant_{3c}	TMA A	6	2.5	8	1/2" (2)	9		93	
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?		Yes	**Antennas on Sector B are the same as Sector A**						

Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	330°	Deg	
Sector B:	120°	Deg	
Sector C:	250°	Deg	
Climbing	45°	Deg	Located at Section A
Climbing Facility	Corrosion Type:		No corrosion observed
	Access:		Climbing path was obstructed.
	Condition:		Missing climbing member observed.

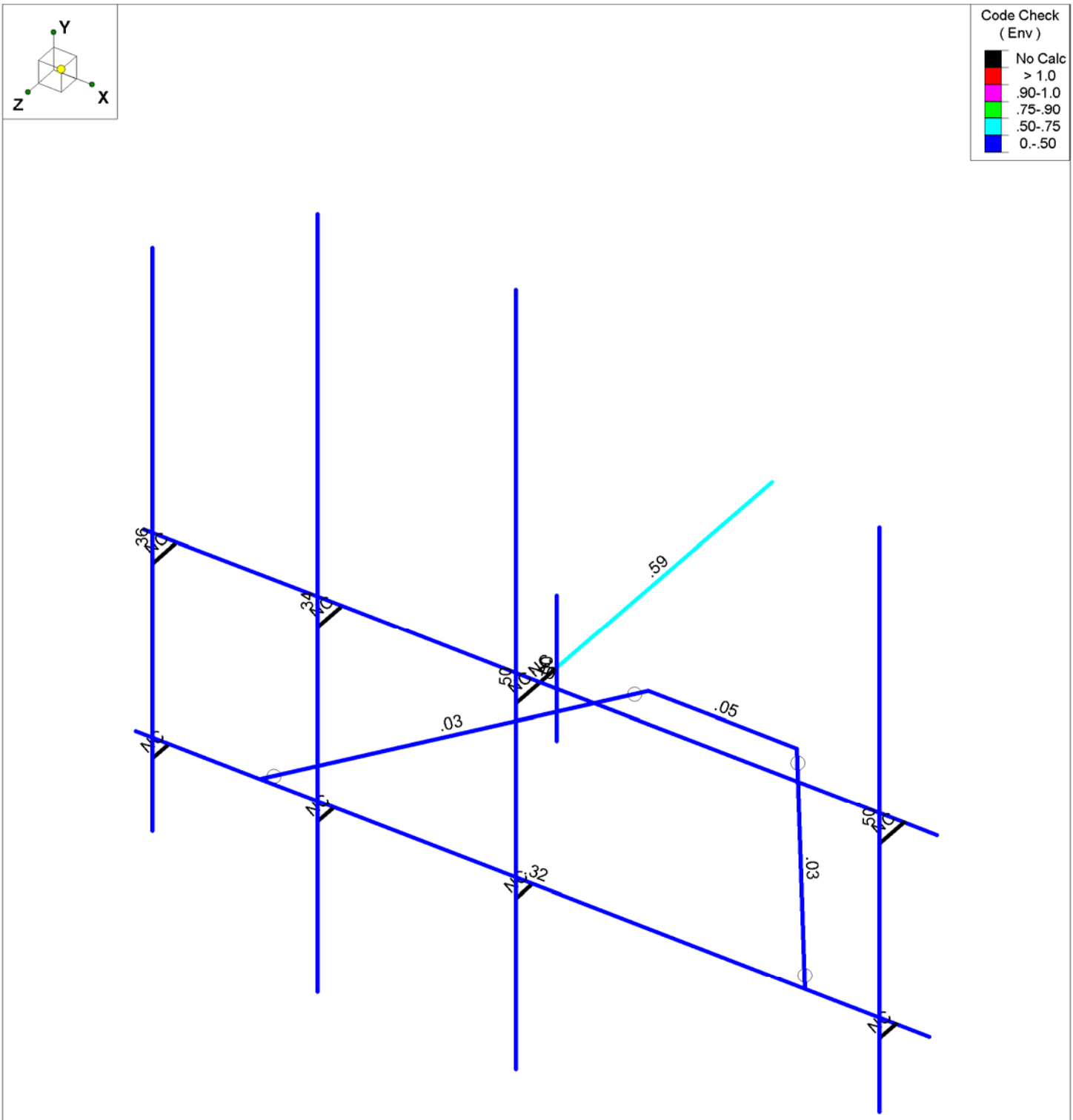
Are Ant same as sector A/B?	Same As A	**Antennas on Sector C are the same as Sector A**





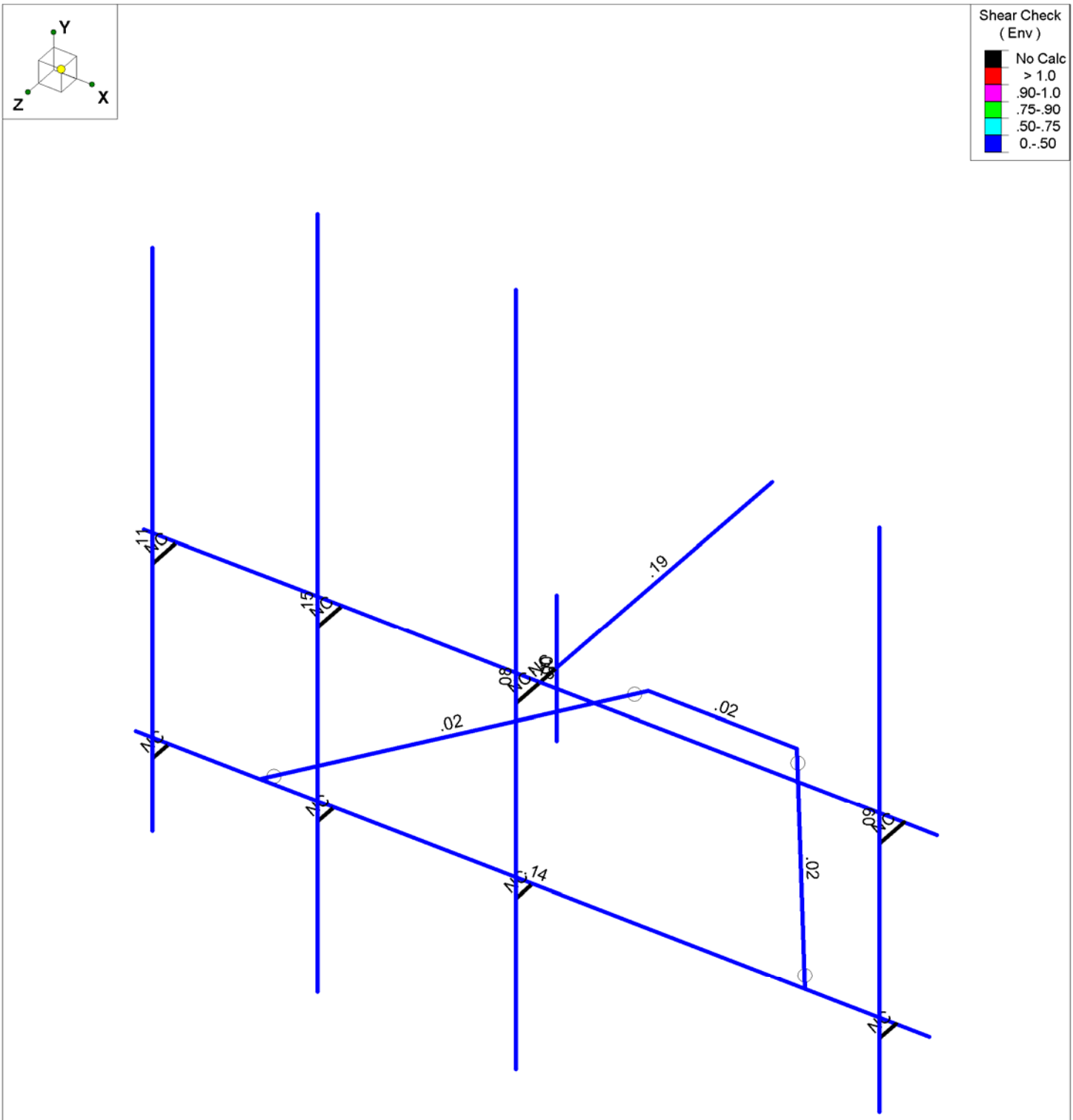
Loads: BLC 20,

Tower Engineering Solutio...	CT13071-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 1
		July 6, 2020 at 1:33 PM
TES Project No. 95056		CT13071-A-SBA_95056_G_RISA_L...



Member Code Checks Displayed (Enveloped)
Loads: BLC 20,
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...	CT13071-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 2
		July 6, 2020 at 1:33 PM
TES Project No. 95056		CT13071-A-SBA_95056_G_RISA_L...



Member Shear Checks Displayed (Enveloped)
Loads: BLC 20,
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...	CT13071-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 3
		July 6, 2020 at 1:34 PM
TES Project No. 95056		CT13071-A-SBA_95056_G_RISA_L...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Member)	Surface(...
1	Antenna D	None					11			
2	Antenna Di	None					11			
3	Antenna W Front	None					11			
4	Antenna Wi Front	None					11			
5	Antenna W Side	None					11			
6	Antenna Wi Side	None					11			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1						
10	Structure Di	None						11		
11	Structure W Front	None						11		
12	Structure Wi Front	None						11		
13	Structure W Side	None						11		
14	Structure Wi Side	None						11		

Load Combinations

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D+1.6W (Front)	Yes	Y		1	1.2	9	1.2	3	1.6	11	1.6												
2	1.2D+1.6W (Back)	Yes	Y		1	1.2	9	1.2	3	-1.6	11	-1.6												
3	1.2D+1.6W (Left)	Yes	Y		1	1.2	9	1.2	5	1.6	13	1.6												
4	1.2D+1.6W (Right)	Yes	Y		1	1.2	9	1.2	5	-1.6	13	-1.6												
5	1.2D+1.0Di+1.0Wi (Fro...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1								
6	1.2D+1.0Di+1.0Wi (Ba...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1								
7	1.2D+1.0Di+1.0Wi (Left)	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	1	14	1								
8	1.2D+1.0Di+1.0Wi (Rig...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	-1	14	-1								
9	1.2D+1.5L1+.16W (Mai...	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16										
10	1.2D+1.5L2+.16W (Mai...	Yes	Y		1	1.2	9	1.2	8	1.5	3	.16	11	.16										
11	1.4D	Yes	Y		1	1.4	9	1.4																

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
1	N1	0	0	0	0	
2	N2	0	0	3.25	0	
3	N3	-4	0	3.5	0	
4	N4	4	0	3.5	0	
5	N5	3.666667	3.25	3.8698	0	
6	N6	3.666667	-2.75	3.8698	0	
7	N7	0	4.25	3.8698	0	
8	N8	0	-3.75	3.8698	0	
9	N9	-3.666667	3.25	3.8698	0	
10	N10	-3.666667	-2.75	3.8698	0	
11	N11	0	.75	3.25	0	
12	N12	0	-.75	3.25	0	
13	N13	0	0	3.5	0	
14	N14	3.666667	0	3.5	0	
15	N15	-3.666667	0	3.5	0	
16	N16	0	0	3.8698	0	
17	N17	3.666667	0	3.8698	0	
18	N18	-3.666667	0	3.8698	0	
19	N19	0	-2	.75	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
20	N20	-4	-2	3.6198	0	
21	N21	4	-2	3.6198	0	
22	N22	2.75	-2	3.6198	0	
23	N23	-2.75	-2	3.6198	0	
24	N24	-.75	-2	.75	0	
25	N25	.75	-2	.75	0	
26	N26	3.666667	-2	3.8698	0	
27	N27	0	-2	3.8698	0	
28	N28	-3.666667	-2	3.8698	0	
29	N29	3.666667	-2	3.6198	0	
30	N30	0	-2	3.6198	0	
31	N31	-3.666667	-2	3.6198	0	
32	N32	-2	0	3.5	0	
33	N33	-2	-2	3.6198	0	
34	N34	-2	4.25	3.8698	0	
35	N35	-2	-3.75	3.8698	0	
36	N36	-2	0	3.8698	0	
37	N37	-2	-2	3.8698	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Support Rail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	V-Brace	5CUX3X188	Beam	CU	A570 Gr.33	Typical	2.034	1.85	7.999	.027
2	End Connection	6CU6.5X250	Beam	CU	A570 Gr.33	Typical	4.491	20.132	29.124	.094

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1A	AACS14...	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570 Gr.33	29500	11346	.3	.65	.49	33	52
2	A607 C1 Gr.55	29500	11346	.3	.65	.49	55	70

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[...	Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B....	1	19	16	13	12	141
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B....	1	38	35	35	24	141
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B....	1	22	16	16	13	141
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B....	1	30	25	25	19	141
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B....	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B....	1	24	15	15	15	141

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotat...	Section/Shape	Type	Design List	Material	Design ...
1	M1	N3	N4			PIPE_3.0	Beam	Pipe	A53 Gr.B	DR1
2	M2	N1	N2			HSS4X4X4	Beam	None	A500 Gr.B Rect	DR1
3	MP1A	N5	N6			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
4	MP2A	N7	N8			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
5	MP4A	N9	N10			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
6	M6	N11	N12			PIPE_4.0	Beam	Pipe	A53 Gr.B	Typical
7	M7	N2	N13			RIGID	Beam	None	RIGID	DR1
8	M8	N15	N18			RIGID	Beam	None	RIGID	DR1
9	M9	N13	N16			RIGID	Beam	None	RIGID	DR1
10	M10	N14	N17			RIGID	Beam	None	RIGID	DR1
11	M11	N20	N21			Support Rail	Beam	Pipe	A53 Gr.B	Typical
12	M12	N24	N23			V-Brace	Beam	CU	A570 Gr.33	Typical
13	M13	N25	N22		180	V-Brace	Beam	CU	A570 Gr.33	Typical
14	M14	N25	N24		180	End Connection	Beam	CU	A570 Gr.33	Typical
15	M15	N29	N26			RIGID	Beam	None	RIGID	DR1
16	M16	N30	N27			RIGID	Beam	None	RIGID	DR1
17	M17	N31	N28			RIGID	Beam	None	RIGID	DR1
18	MP3A	N34	N35			PIPE_2.0	Beam	Pipe	A53 Gr.B	DR1
19	M19	N32	N36			RIGID	Beam	None	RIGID	DR1
20	M20	N33	N37			RIGID	Beam	None	RIGID	DR1

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	MP1A						Yes		-z		None
4	MP2A						Yes		-z		None
5	MP4A						Yes		-z		None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12	BenPIN	BenPIN				Yes				None
13	M13	BenPIN	BenPIN				Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	MP3A						Yes		-z		None
19	M19						Yes				None
20	M20						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[..	Lcomp bot[..	L-torqu...	Kyy	Kzz	Cb	Functi...
1	M1	PIPE_3.0	8			Lbyy			2.1	2.1		Gravity
2	M2	HSS4X4X4	3.25			Lbyy			2.1	2.1		Gravity
3	MP1A	PIPE_2.0	6			Lbyy			2.1	2.1		Gravity
4	MP2A	PIPE_2.5	8			Lbyy			2.1	2.1		Lateral
5	MP4A	PIPE_2.0	6			Lbyy			2.1	2.1		Lateral
6	M6	PIPE_4.0	1.5			Lbyy			2.1	2.1		Lateral
7	M11	Support Rail	8			Lbyy			2.1	2.1		Lateral
8	MP3A	PIPE_2.0	8			Lbyy			2.1	2.1		Lateral

Cold Formed Steel Design Parameters

	Label	Shape	Len...	Lbyy[ft]	Lbzz[ft]	Lcomp..	Lcomp..	L-torq...	Kyy	Kzz	Cm...	Cm...	Cb	R	a[ft]	y s...	z s...
1	M12	V-Brace	3.498			Lbyy											
2	M13	V-Brace	3.498			Lbyy											
3	M14	End Connection	1.5			Lbyy											

Aluminum Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
No Data to Print ...											

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
No Data to Print ...			

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24						
4	N25						

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	1818.276	4	2682.959	5	1753.652	1	-1.439	1	5.983	4	.191	4
2		min	-1839.309	3	1035.041	2	-2606.12	2	-8.365	6	-5.977	3	-1.913	9
3	N19	max	133.531	3	138.476	6	1258.432	5	.001	1	.389	9	0	4
4		min	-355.727	9	48.586	9	-134.984	2	0	2	-.258	3	-.001	9
5	Totals:	max	1705.778	4	2820.532	5	2741.108	1						
6		min	-1705.778	3	1091.505	2	-2741.104	2						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y [...	phi*Mn z-z...	Cb	Eqn
1	M2	HSS4X4...	.594	0	7	.187	0	y	9	114806...	139518	16.181	16.181	1.75	H1-1b
2	MP1A	PIPE_2.0	.497	3.25	7	.086	3.25		7	6195.892	32130	1.872	1.872	3.837	H1-1b
3	MP2A	PIPE_2.5	.497	4.25	2	.081	6.25		9	8059.847	50715	3.596	3.596	2.607	H1-1b
4	M1	PIPE_3.0	.401	4	2	.177	4		9	15841.7...	65205	5.749	5.749	1.618	H1-1b
5	MP4A	PIPE_2.0	.356	3.25	9	.107	5.25		9	6195.892	32130	1.872	1.872	4.518	H1-1b
6	MP3A	PIPE_2.0	.337	4.25	6	.147	6.25		9	3485.189	32130	1.872	1.872	2.955	H1-1b
7	M11	PIPE_2.0	.323	4	7	.141	2		9	3485.189	32130	1.872	1.872	1.511	H1-1b
8	M6	PIPE_4.0	.001	.75	2	.001	.75		2	90327.0...	93240	10.631	10.631	1	H1-1b

Envelope AISI S100-12: LRFD Cold Formed Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*Pn...	phi*Tn...	phi*Mn...	phi*Mn...	Cb	Cmyy	Cmzz	Eqn
1	M12	5CUX3X188	.029	1.785	4	.022	3.498	y	9	48392...	60414...	2.213	7.918	1.136	1	1	C5.2....
2	M13	5CUX3X188	.029	1.785	3	.015	0	y	9	48392...	60414...	2.213	7.918	1.136	1	1	C5.2....
3	M14	6CU6.5X250	.047	.75	5	.016	.75	z	9	97347...	13337...	12.126	18.263	1.38	.85	.85	C5.2....

Envelope AA ADM1-10: ASD - Building Aluminum Code Checks

Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Pnc/O...	Pnt/Om...	Mny/O...	Mnz/O...	Vny/O...	Vnz/O...	Cb	Eqn
No Data to Print ...																

EXHIBIT 9

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH209A

NH209/OptaGelertnerFT
1 Deerfield Lane
Ansonia, Connecticut 06401

July 28, 2020

EBI Project Number: 6220003456

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**18.27%**

July 28, 2020

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

Emissions Analysis for Site: CTNH209A - NH209/OptaGelertnerFT

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1 Deerfield Lane** in **Ansonia, Connecticut** 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 1 Deerfield Lane in Ansonia, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

8) 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.

9) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

10) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

11) 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.

12) 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

13) The antennas used in this modeling are the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

14) The antenna mounting height centerline of the proposed antennas is 167 feet above ground level (AGL).

15) 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.

16) 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:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd
Height (AGL):	167 feet	Height (AGL):	167 feet	Height (AGL):	167 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,226.43	ERP (W):	8,226.43	ERP (W):	8,226.43
Antenna A1 MPE %:	**1.06%**	Antenna B1 MPE %:	**1.06%**	Antenna C1 MPE %:	**1.06%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd
Height (AGL):	167 feet	Height (AGL):	167 feet	Height (AGL):	167 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,466.41	ERP (W):	8,466.41	ERP (W):	8,466.41
Antenna A2 MPE %:	**1.82%**	Antenna B2 MPE %:	**1.82%**	Antenna C2 MPE %:	**1.82%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	167 feet	Height (AGL):	167 feet	Height (AGL):	167 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A3 MPE %:	**1.13%**	Antenna B3 MPE %:	**1.13%**	Antenna C3 MPE %:	**1.13%**
Antenna #:	**4**	Antenna #:	**4**	Antenna #:	**4**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	167 feet	Height (AGL):	167 feet	Height (AGL):	167 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A4 MPE %:	**3.31%**	Antenna B4 MPE %:	**3.31%**	Antenna C4 MPE %:	**3.31%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	7.31%
Dish	1.72%
Sprint	3.14%
Clearwire	0.05%
Verizon	2.04%
Metro PCS	0.4%
AT&T	3.61%
Site Total MPE % :	18.27%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	7.31%
T-Mobile Sector B Total:	7.31%
T-Mobile Sector C Total:	7.31%
Site Total MPE % :	18.27%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	167.0	5.30	1900 MHz GSM	1000	0.53%
T-Mobile 1900 MHz UMTS	2	1028.30	167.0	2.65	1900 MHz UMTS	1000	0.27%
T-Mobile 2100 MHz UMTS	2	1028.30	167.0	2.65	2100 MHz UMTS	1000	0.27%
T-Mobile 600 MHz LTE	2	591.73	167.0	1.53	600 MHz LTE	400	0.38%
T-Mobile 600 MHz NR	1	1577.94	167.0	2.03	600 MHz NR	400	0.51%
T-Mobile 700 MHz LTE	2	648.82	167.0	1.67	700 MHz LTE	467	0.36%
T-Mobile 1900 MHz LTE	2	2203.69	167.0	5.68	1900 MHz LTE	1000	0.57%
T-Mobile 1900 MHz LTE	2	2056.61	167.0	5.30	1900 MHz LTE	1000	0.53%
T-Mobile 2100 MHz LTE	2	2307.55	167.0	5.95	2100 MHz LTE	1000	0.59%
T-Mobile 2500 MHz LTE	2	6412.98	167.0	16.53	2500 MHz LTE	1000	1.65%
T-Mobile 2500 MHz NR	2	6412.98	167.0	16.53	2500 MHz NR	1000	1.65%
						Total:	**7.31%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	7.31%
Sector B:	7.31%
Sector C:	7.31%
T-Mobile Maximum MPE % (Sector A):	7.31%
Site Total:	18.27%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **18.27%** 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.