



Filed by:

G. Scott Shepherd, Site Development Specialist II - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - gshepherd@sbsite.com

March 16, 2021

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

RE: Notice of Exempt Modification
360 Rockland Rd., (A.K.A 370 Rockland Rd.) Guilford, CT 06437
Latitude: 41.396833
Longitude: -72.688805
Sprint, now a part of T-Mobile USA #: CTNH324A_Sprint Keep

Dear Ms. Bachman:

Sprint, now a part of T-Mobile USA, hereinafter referred to as "Sprint/T-Mobile" currently maintains nine (9) antennas at the 147-foot level of the existing 159-foot Monopole Tower at 370/360 Rockland Rd., CT. Please note that the property address of the Woodbridge Sportsmen Club is 360 Rockland Rd. The Woodbridge Sportsmen Club has a separate 1-acre lot on the property where the cell tower is located. According to the Town of Guilford Assessor's Office, 370 Rockland Rd. is in fact 360 Rockland Rd. The 159-foot tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Woodbridge Sportsmen Club, Inc. Sprint/T-Mobile now intends to remove six (6) antennas and replace with six (6) new L700/L600/1900/2100 MHz antennas and install three (3) new 2500 MHz antenna for a total of nine (9) antennas.

The new antennas support 5G services and would be installed at the 147-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:

- N/A

Remove and Replace:

- (3) RFS APXVSPP18-C-A20 antenna (remove) – (3) AIR32 KRD901146-1_B66_B2A 1900/2100 MHz antenna (replace)
- (3) RFS APXVTM14-C-I20 antenna (remove) – (3) RFS APXVAALL24_43-U-NA20 600/700/1900 MHz antenna (replace)
- (3) ALU 1900MHZ RRH/RRU (remove) – (3) Ericsson 4415 B25 RRU (replace)
- (3) ALU TD-RRH8x20-25 RRU Remove) – (3) Ericsson 4449 B71 + B85 RRU (replace)

Install New:

- (3) Ericsson AIR6449 B41 2500 MHz antenna
- (4) MS-HRCP-35, (1) MS-H1436, (1) MS-TAW-35ORO, (3) PST350-15, (1) collar Mount
- (3) 2" Hybrid

Existing Equipment to Remain:

- (4) ACU-A20-N RET
- (3) ALU 800 MHz RRH/RRU
- (3) ALU 800 MHz filter
- (3) T-Arms

Entitlements:

- (4) 1-1/4" fiber

GROUND

Remove:

- Sprint Equipment
- Sprint fiber box

Install New:

- (5) 2" conduit
- (1) 1' conduit (underground)
- (1) B160 Battery cabinet
- (1) 6160 cabinet
- (1) AAV cabinet

This facility was originally approved by the Connecticut Siting Council under Docket No. 257 for a Development Management Plan submitted by Sprint Spectrum on August 10, 2004 and August 20, 2004. Approval was given for a monopole no taller than 150 feet above ground level. Approval was later given under CSC Petition No. 899 on May 19, 2009 to add a 10-foot extension. On May 6, 2009, Verizon filed a petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing telecommunications tower in Guilford, Connecticut. Connecticut Siting Council member Phil Ashton and Council staff member David Martin conducted a field review of the proposed modifications on May 19, 2009. Sprint will install antennas on a t-arm mounted at the 147-foot level and will not exceed a total height of 150-feet agl. Space will be available at the 137-foot six-inch level and the 127-foot six-inch level to accommodate future carriers. Sprint will also install a GPS antenna at the 75-foot level on the southwest side of the Tower. The 150-foot tower is designed to withstand a 90-mile per hour

Wind speed with 1.2 inch of radial ice. A Connecticut licensed engineer has certified the tower and foundation design. The compound will be 60-feet by 40-feet, within a 100-foot by 100-foot lease area, and surrounded by a six-foot high chain link fence. Sprint will install equipment cabinets on an 18-foot by nine-foot six-inch concrete pad. Sprint has complied with the Council's Decision and Order dated April 15, 2004 for the Guilford site and Council staff recommends approval of this D&M plan with the condition that landscaping surrounding the compound is planted in an irregular, natural way. 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 Town of Guilford's Town Planner, George Krai, the Zoning Enforcement Officer, Erin Mannix, 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, for the foregoing reasons, Sprint/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@sbsite.com



Attachments

cc:

- George Krai, Town Planner / with attachments
Town of Guilford, 50 Boston St., Guilford, CT 06437
- Erin Mannix, Zone Enforcement Officer / with attachments
Town of Guilford, 50 Boston St., Guilford, CT 06437
- Woodbridge Sportsmen Club / with attachments
19 Rockdale Rd., West Haven, CT 06516 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Guilford Permit No. 04-3767 9/22/04, CSC Docket No. 257, CSC Petition No. 899 5/19/09
Exhibit 6	Construction Drawings	Centerline 2/26/20
Exhibit 7	Structural Analysis	TES 1/8/21
Exhibit 8	Mount Mod Drawings	TES 12/30/20
Exhibit 9	Post-Mod Mount Analysis	TES 3/15/21
Exhibit 10	EME Report	EBI Consulting 2/23/21

EXHIBIT 1

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

EXHIBIT 2

ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

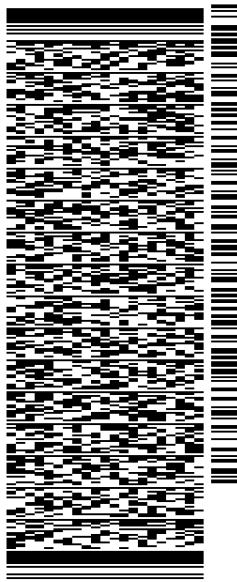
SHIP DATE: 16MAR21
ACTWGT: 1.00 LB
CAD: 105843304/NET14340

BILL SENDER

TO MELANIE A. BACHMAN EXEC. DIR
CONNECTICUT SITING COUNCIL
TEN FRANKLIN SQUARE

NEW BRITAIN CT 06051

(508) 251-0720 X.3807 REF: 105692009-6089
INV# PO: DEPT:

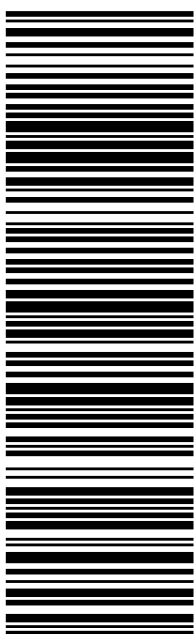


56DJ3/AC39/FE4A

TRK# 7731 7047 4280
0201
WED - 17 MAR 10:30A
PRIORITY OVERNIGHT

EB BDLA

06051
BDL
CT-US



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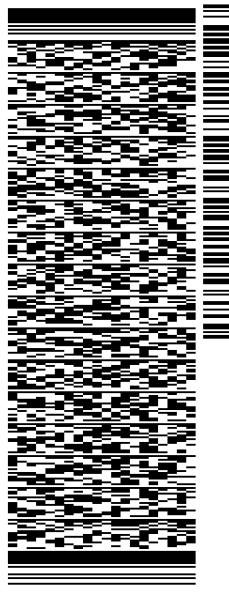
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SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 16MAR21
ACTWGT: 1.00 LB
CAD: 105843304/NET14340
BILL SENDER

TO
GEORGE KRAI, TOWN PLANNER
TOWN OF GUILFORD
50 BOSTON ST

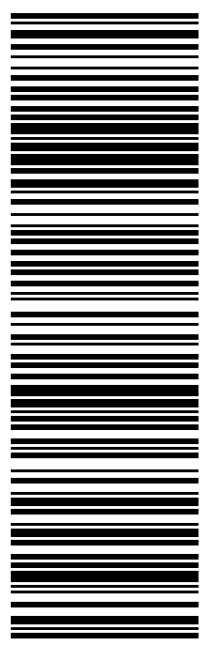
GUILFORD CT 06437
(508) 251-0720 X 3807
INV#
PO:
REF: 105692009-6089
DEPT:

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TRK# 7731 7050 5032
0201
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06437
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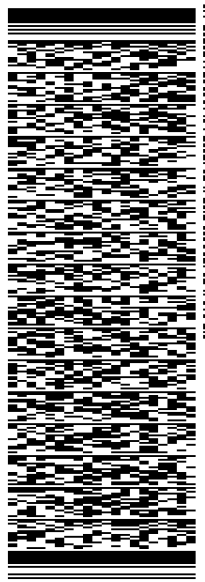
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BILL SENDER

TO ERIN MANNIX, ZONE ENF. OFFICER
TOWN OF GUILFORD
50 BOSTON ST

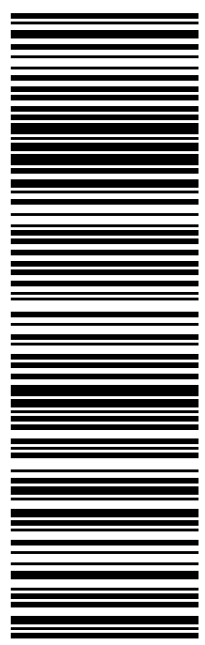
GUILFORD CT 06437
(508) 251-0720 X 3807 REF: 105692009-6089
INV. PO. DEPT.



J211121011901uv

TRK# 7731 7051 5710
0201
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PRIORITY OVERNIGHT

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06437
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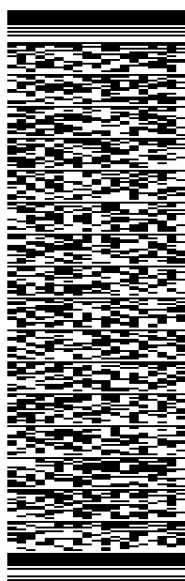
SHIP DATE: 16MAR21
ACTWGT: 1.00 LB
CAD: 105843304/NET14340
BILL SENDER

TO

WOODBIDGE SPORTSMEN CLUB
19 ROCKDALE RD.

WEST HAVEN CT 06516

(508) 251-0720 X 3807 REF: 105692009-6089
INV# PO: DEPT:



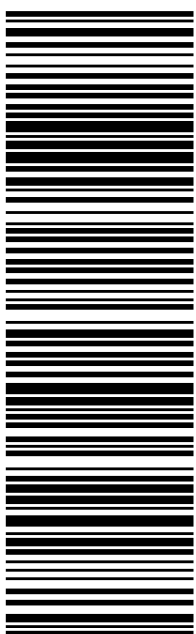
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TRK# 7731 7053 8527
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EXHIBIT 3

All information is for assessment purposes only. Assessments are calculated at 70% of the estimated October 1, 2017 market value which was the date of the last revaluation as completed by eQuality Valuation Services, LLC.



"Discover a piece of Connecticut History"

Information on the Property Records for the Municipality of Guilford was last updated on 3/13/2021.

Parcel Information

Location:	360 ROCKLAND RD	Map and Parcel:	123004	Census Tract:	1903
Zoning:	R-8	Developer's Map:		Developer's Lot:	
Total Acreage:	87	Farm, Forest, Open Space Acres:	75	Unique ID:	7896

Value Information

	Appraised Value	Assessed Value
Land	795,414	270,100
Buildings	20,261	14,180
Detached Outbuildings	0	0
Total	815,675	284,280

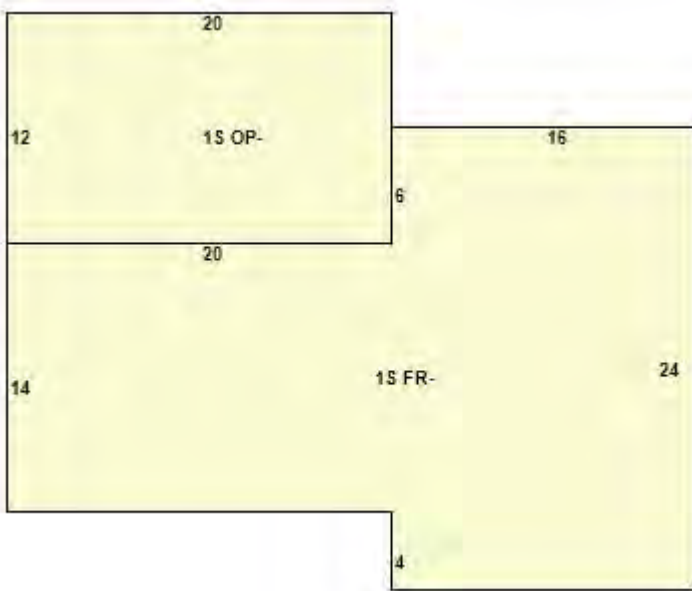
Owner's Information

Owner's Data

WOODBIDGE SPORTSMENS CLUB INC
C/O ANTHONY BALZANO TREASURER
15 FARM RIVER DR
NORTHFORD, CT 06472

Building 1

Photo Not Available



Occupancy:	SINGLE FAMILY	Construction:	WOOD FRAME	Design:	1.0 RANCH
Story Height:	1.00	Living Area Above Ground:	664	Year Built:	1930
Year Remodeled:		Condition:	AVERAGE	Foundation:	CONC CIND BLK
Exterior Siding:	LOG	Roofing:	ASPHALT	Heating:	OTHER

Fuel:	PROPANE	A/C Percent:	0%	Total Rooms:	2
Total Bedrooms:	1	Kitchens:	1	Full Baths:	0
Half Baths:	0	Extra Fixtures:	0	Basement Finished Area:	0

Special Features

CHIMNEYS	1
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Attached Components

Type:	Year Built:	Area:
OPEN PORCH	1965	240

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
WOODBIDGE SPORTSMENS CLUB INC	0141	0511	05/17/1961		No	\$0

Information Published With Permission From The Assessor

EXHIBIT 4

EXHIBIT 5

Petition No. 899
Cellco Partnership d/b/a Verizon Wireless
Guilford, Connecticut
Staff Report
May 19, 2009

On May 6, 2009, Verizon filed a petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing telecommunications tower in Guilford, Connecticut. Connecticut Siting Council member Phil Ashton and Council staff member David Martin conducted a field review of the proposed modifications on May 19, 2009. Rachel Mayo represented Verizon at the field review.

Verizon proposes to add a ten-foot extension to an existing 150-foot monopole tower located at 370 Rockland Road in Guilford. The existing tower is owned by TowerCo and was certificated by the Council in Docket 271, which was approved on April 15, 2004. The application for this certificate was submitted by Sprint. Verizon would use T-arm mounts to attach its antennas to the tower in accordance with the Decision and Order for this docket.

From this location, Verizon is seeking to cover an area that encompasses portions of Route 77 in the northern section of Guilford along with local streets in the surrounding vicinity. There are currently antenna arrays installed at centerline heights of 147 and 137 feet above ground level. Verizon asserts that it cannot achieve its coverage objectives at the next available height of 127 feet above ground level. For this reason, Verizon seeks to add ten feet onto the tower's height in order to install its antennas at a centerline height of 157 feet.

The tower is located on an 87-acre parcel owned by the Woodbridge Sportsmen Club and used primarily for hunting and fishing. The property is heavily wooded with little development nearby. There is a small agricultural operation and one large single-family home to the south of the tower. Although the top of the tower is barely visible from a short stretch of the road that passes the agricultural operation, the tower is not visible from the operation itself or the residence. The top of the tower is visible from the southern end of Quonnipaug Lake, but the view is so far that the tower is barely noticeable, even to those who are actively looking for it. An additional ten feet should not result in any significant difference in visibility.

Verizon notified the Town of Guilford, the owner of the host property, and abutting property owners of its proposal to extend the height of this tower.

The addition of Verizon's antennas would bring the cumulative power density of the antenna systems on the tower to 25.33% of the FCC limit.

View of Tower and Compound



View of Tower from Quonnipaug Lake



SITE NAME: West Haven-rt15 /Woodbridge SITE ID: CT46139-A

Transaction: TowerCo

ZONING/PERMITTING COMPLETION FORM

Address: 370 Rockland Road, Guilford, CT 06437

Jurisdiction: Connecticut Siting Council Zoning District: _____

Zoning Approval Type: Certificate of Environmental Compatibility and Case #: Docket No. 271

Approval Date: 8/26/2004 Public Need Approved Height: 150'

Conditions of Approval:	Yes
Removal Bond _____	<input type="checkbox"/>
Site Plan Submittal _____	<input type="checkbox"/>
Fall Zone _____	<input type="checkbox"/>
Periodic Inspections _____	<input type="checkbox"/>
Periodic Reporting _____	<input type="checkbox"/>
Approval Renewal _____	<input type="checkbox"/>
Additional Conditions _____	<input checked="" type="checkbox"/>

Constructed no taller than 150' AGL. **2009 Approved by CSC to extend tower by 10' in height.

JURISDICTION POC/DEPT.

Planning/Zoning: _____

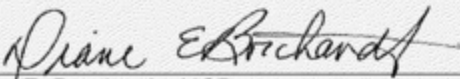
Phone: _____ Email: _____

Bldg./Code Enforcement: Town of Guilford

Phone: _____ Email: _____

Submitted by:  Date: 7/18/2016
Zoning Compliance

TO BE COMPLETED BY CORPORATE

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	
Zoning Approval Attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building Permit Attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Date Recd</u>
<u># 04-3767</u>				<u>9/22/2004</u>
Certificate of Occupancy or Compliance (CO) attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/9/2007</u>
Zoning Manager Approval: <u></u>				Date <u>8/1/2016</u>
<u>Diane E. Borchardt, AICP</u>				



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@po.state.ct.us

www.ct.gov/csc

Certified Mail

August 27, 2004

Thomas J. Regan, Esq.
Brown, Rudnick, Berlack, Israels LLP
CityPlace I
Hartford, CT 06103

RE: **DOCKET NO. 271** - Sprint Spectrum, L.P., d/b/a Sprint PCS Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 370 Rockland Road, Guilford, Connecticut.

Dear Mr. Regan:

At a public meeting held on August 26, 2004, the Connecticut Siting Council (Council) considered and approved the Development and Management Plan (D&M Plan) for the site at 370 Rockland Road, Guilford, Connecticut, with the condition that landscaping of the compound is be planted in a less regimented, more naturalistic manner. To this end, the Certificate Holder is directed to submit a revised landscaping plan for staff review.

This approval applies only to the D&M Plan as submitted on August 10, 2004 and on August 20, 2004. Any other changes to this D&M Plan require advance Council notification and approval. Failure to obtain Council approval before implementing any changes to this D&M plan may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Please notify the Council when the conditions of the approval are completed.

Enclosed is a copy of the staff report on the D&M Plan, dated August 26, 2004.

Very truly yours,


Pamela B. Katz, P.E.
Chairman

PBK/CML

c: Parties and Intervenor

Enclosure (1)



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@po.state.ct.us

www.ct.gov/csc

Docket No. 271

Sprint Spectrum LP d/b/a Sprint PCS

Development and Management Plan

370 Rockland Road, Guilford

August 26, 2004

Sprint Spectrum LP d/b/a Sprint PCS (Sprint) has submitted a Development and Management (D&M) Plan to the Connecticut Siting Council (Council) consistent with the Council's decision of April 15, 2004.

Consistent with the Council's Decision and Order (D&O), Condition (1) the telecommunications monopole will be constructed no taller than 150 feet above ground level (agl). Sprint will install antennas on a t-arm mounted at the 147-foot six-inch level. Sprint's antennas will not exceed a total height of 150 feet agl. Space will be available at the 137-foot six-inch level and the 127-foot six-inch level to accommodate future carriers. Sprint will also install a GPS antenna at the 75-foot level on the southwest side of the tower. The 150-foot tower is designed to withstand a 90 mile per hour (mph) wind speed with ½ inch of radial ice. A Connecticut licensed engineer has certified the tower and foundation design.

The compound will be 60 feet by 40 feet, within a 100-foot by 100-foot lease area, and surrounded by a six-foot high chain link fence with three strands of barbed wire at the top. Sprint will install equipment cabinets on an 18-foot by nine-foot six-inch concrete pad.

Access to the site will extend from Rockland Road along an existing access road for a distance of approximately 1,350 feet. Sprint will pave the first 520 feet of the existing access road and the remaining portion of the access road will be resurfaced gravel. Sprint will install rip rap aprons with pressure treated spreaders at approximately 170 feet, 300 feet and 370 feet into the access road. Sprint will also replace an existing culvert located approximately 300 feet into the access road. Utilities will run underground along the access road from a nearby utility pole to the site.

Sprint will remove vegetation that is within the compound area. The paved section of the access road will have two foot wide by six inch deep swales on both sides. Silt fencing will be installed along both sides of the access road on the downslope of the swale, and backed with staked hay bales, prior to construction. Silt fencing will extend along both sides of the access road to the compound. An erosion control blanket will be located in a swale surrounding the compound. A 25-foot level spreader will be installed on the west side of the compound. Several Blue Spruce trees will be planted around the equipment compound.

Jaworski Geotech, Inc. (JGI) performed an engineering evaluation on the subsurface conditions at the site. Bedrock was encountered at the site at a depth between 6.5 feet and 7.8 feet. JGI made recommendations for the construction of the tower and equipment. The foundation design was based on the recommendations of JGI.

Consistent with the Council's D&O, Condition (3), the worst-case radio frequency power density level for Sprint would be approximately 8.5% of the applicable ANSI standard at the closest point of uncontrolled access at the tower base.

Sprint has complied with the Council's Decision and Order dated April 15, 2004 for the Guilford site and Council staff recommends approval of this D&M plan with the condition that landscaping surrounding the compound is planted in an irregular, natural pattern.



CT33X0087

**Town of Guilford
Building Permit - Zoning Compliance Permit**

Permit No. 04-3767
(BP) \$1,525.00
(EF) \$24.40
Total Paid: \$1,549.40
Date Issued: 9/22/2004

INLAND WETLANDS PERMIT

This building permit is issued pursuant to the Connecticut Building codes and is subject to the provisions thereof. It is issued on the basis of the application submitted and approved and is valid only for the work indicated in Item 4.

1. Location Street: Rockland Road Street No. 370
 Assessor's Map No: 123 Assessor's Lot No. 4
 Subdivision Name: _____ Lot No. _____

2. Owner Name: Woodbridge Sportsmens Club Inc./Sprint PCS (lessee)
c/o Ed Wendland, Treasurer/ 1 International Blvd., Suite 800
 Mailing Address: 19 Rockdale Road, West Haven, CT 06516/Mahwah, NJ 07495 (201)684-4000

3. TYPE OF CONSTRUCTION: _____ **NATURE OF WORK:** _____
 1:2:3:4:5: _____ New Construction _____ Moving of Structure
 OCCUPANCY LOAD _____ Addition _____ Demolition
 USE GROUP _____ Alteration _____ Rehabilitation
 _____ Repair _____ Other

4. TYPE OF WORK: (This permit is valid only for boxes checked.)
 Structural _____ Insulation _____
 Electrical _____ Oil Burner _____
 Heating and Ventilation _____ Sewage Disposal* _____
 Plumbing _____ Gal. Septic Tank Required _____
 Swimming Pool _____ Sq. ft. leaching area required** _____
 Other _____ Water Conditioning _____

* In accordance with CT State Public Health Code
 ** Reserve seepage are equal to area used in required

Construction of new 150 ft. cellular monopole for Sprint PCS with associated ground equipment
 Permit valid one year. Permit will expire if work is not started within six months from date of issuance. Upon written request, and payment of \$15.00, permit may be renewed for six months at the discretion of the Building Officials. Required building inspections are (1 temporary electric service 2) footing 3) rough electrical, HVAC, plumbing and framing 4) insulation 5) permanent electrical 6) final.
CALL 453-8029 Monday-Friday 8:30 A.M. - 4:30 P.M. to SCHEDULE INSPECTIONS. 24 HOUR ADVANCE NOTICE IS REQUIRED. There is a charge for certificate of occupancy.
PROPERTY OWNER IS RESPONSIBLE TO SCHEDULE A FINAL INSPECTION.

The following special conditions must be met:
 Approved with conditions by CT Siting Council 8/26/04. Conditions - submit revised landscaping plan with less regimented, more naturalistic planting for staff review. Regina J. Reid, ZEO & IWEO

- Per site plan by Martinez Couch & Assoc. 8/25/04, rev. 8/28/04, 2. Driveway width to be 12 ft. minimum in all portions;
- Proposed 24 in. culverts to be far enough apart to machine compact bedding between them, 4. Culvert & driveway inspection required. Mark Damiani, Asst. Town Engineer

1. Closure report required prior to issuance of certificate of occupancy (all aspects of construction). George Gdovin, Bldg. Official
 This permit is issued with a red field card which must be conspicuously posted on the site. Neither the Town of Guilford nor any authorized agent assume any responsibility for the construction or maintenance of any facility built under this permit.

George Gdovin Regina J. Reid Mark Damiani Dennis Johnson
 Building Official Zoning Enforcement Officer Asst. Town Engineer Director of Health
 Inland Wetlands Officer

1-Original * 2-File * 3-File Marshal * 4-Contractor * 5-Assessor's Office * 6-Planning & Zoning *

kw

**Town of Guilford
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 Mailing Address: 19 Rockdale Road, West Haven, CT 06516/Mahwah, NJ 07495 (201)684-4000

3. TYPE OF CONSTRUCTION: _____ **NATURE OF WORK:** _____
 1:2:3:4:5: _____ **New Construction** _____ Moving of Structure
OCCUPANCY LOAD _____ **Addition** _____ Demolition
USE GROUP _____ **Alteration** _____ Rehabilitation
 _____ **Repair** _____ Other

4. TYPE OF WORK: (This permit is valid only for boxes checked.)
 Structural _____ Insulation _____
 Electrical _____ Oil Burner _____
 Heating and Ventilation _____ Sewage Disposal* _____
 Plumbing _____ Gal. Septic Tank Required _____
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Approved with conditions by CT Siting Council 8/26/04. Conditions - submit revised landscaping plan with less regimented, more naturalistic planting for staff review. Regina J. Reid, ZEO & IWEO

- Per site plan by Martinez Couch & Assoc. 8/25/04, rev. 8/28/04;
- Driveway width to be 12 ft. minimum in all portions;
- Proposed 24 in. culverts to be far enough apart to machine compact bedding between them;
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George Gdovin Regina J. Reid Mark Damiani Dennis Johnson
 Building Official Zoning Enforcement Officer Asst. Town Engineer Director of Health
 Inland Wetlands Officer

TOWN OF GUILFORD

ENGINEERING DEPARTMENT
PLANNING AND ZONING COMMISSION
AND INLAND WETLANDS COMMISSION

Certificate of Occupancy No. 07-779A
Building Permit No. 04-3767

CERTIFICATE of OCCUPANCY
and
ZONING COMPLIANCE
AND INLAND WETLAND COMPLIANCE

This is to certify that the following described structure has been constructed in accordance with the Basic Building Code of the State of Connecticut and Ordinances and Zoning Regulations of the Town of Guilford and is hereby approved for Occupancy as specified herein. Any alteration or change in use requires a new Certificate of Occupancy.

LOCATION - Street Rockland Road Street No. 370
Assessor's Map No. 123 Lot No. 4
Subdivision Name _____ Lot No. _____

OWNER Woodbridge Sportsmens Club Inc./Sprint PCS (lessee)
Address c/c Ed Wendland, Treasurer/1 International Blvd., Suite 800
19 Rockdale Road, West Haven, CT 06516/Mahwah, NJ 07495 (201)684-4000

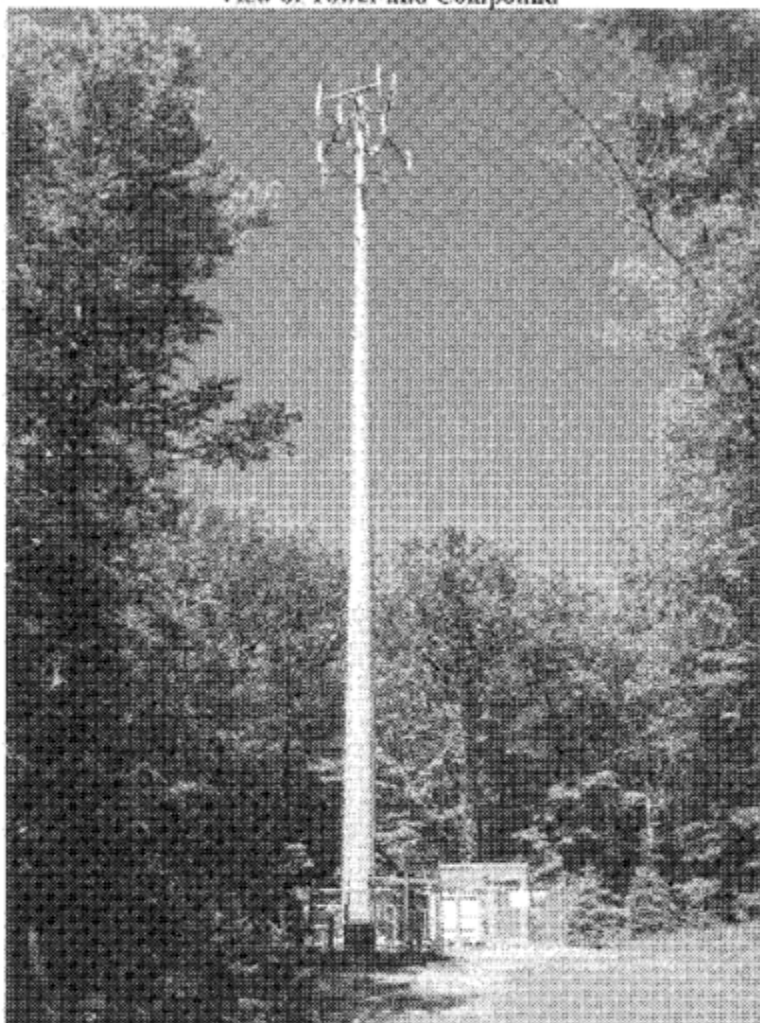
PLANNING STATISTICS:

Type of Structure cell tower New Alteration, Addition, etc.
Use of Structure commercial

11/9/07
Date
11/8/07
Date
01/08/07
Date

[Signature]
Building Official
[Signature]
Town Engineer
[Signature]
Zoning Enforcement Officer

View of Tower and Compound



TOWN OF GUILFORD

ENGINEERING DEPARTMENT
PLANNING AND ZONING COMMISSION
AND INLAND WETLANDS COMMISSION

Certificate of Occupancy No. 09-2687
Building Permit No. 09-2395; 09-2526; 09-2559

CERTIFICATE of OCCUPANCY
and
ZONING COMPLIANCE
AND INLAND WETLAND COMPLIANCE

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LOCATION - Street Rockland Road Street No. 370
Assessor's Map No. 123 Lot No. 4
Subdivision Name _____ Lot No. _____

OWNER TowerCo Assets LLC
Address 5000 Valleystone Drive, Cary, NC 27519

PLANNING STATISTICS:

Type of Structure _____ New Alteration, Addition, etc.
Use of Structure _____

9/9/09
Date

9/9/09
Date

09/09/09
Date

[Signature]
Building Official
[Signature]
Town Engineer
[Signature]
Zoning Enforcement Officer

EXHIBIT 6

PROJECT INFORMATION

TOWER OWNER: SBA PROPERTIES, LLC
8501 CONGRESS AVENUE
BOCA RATON, FL 33487
PHONE: 561-226-9523

SBA TOWER ID: CT46139-A

SBA SITE NAME: WEST HAVEN-RT 15/WOODBRIDGE

T-MOBILE SITE NAME: CT33XC087

T-MOBILE SITE NUMBER: CTNH324A

SBA SITE ADDRESS: 370 ROCKLAND RD
GUILFORD, CT 06437

LATITUDE: 41.39685000

LONGITUDE: -72.68880800

TOWER HEIGHT: 158'-0"± AGL

RAD CENTER: 147'-0"± AGL

ZONING JURISDICTION: TOWN OF GUILFORD

COUNTY: NEW HAVEN COUNTY

DESCRIPTION OF WORK:
TELECOMMUNICATIONS FACILITY UPGRADE (SPRINT RETAIN);
MONOPOLE

COMPLIANCE CODES:

- BUILDING CODE:
IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
- ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
- CONCRETE CODE:
AMERICAN CONCRETE INSTITUTE (ACI) 318
- STEEL CODE:
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC),
14TH EDITION
- TELECOMMUNICATIONS CODE:
EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL

BASED ON INFORMATION PROVIDED BY T-MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).

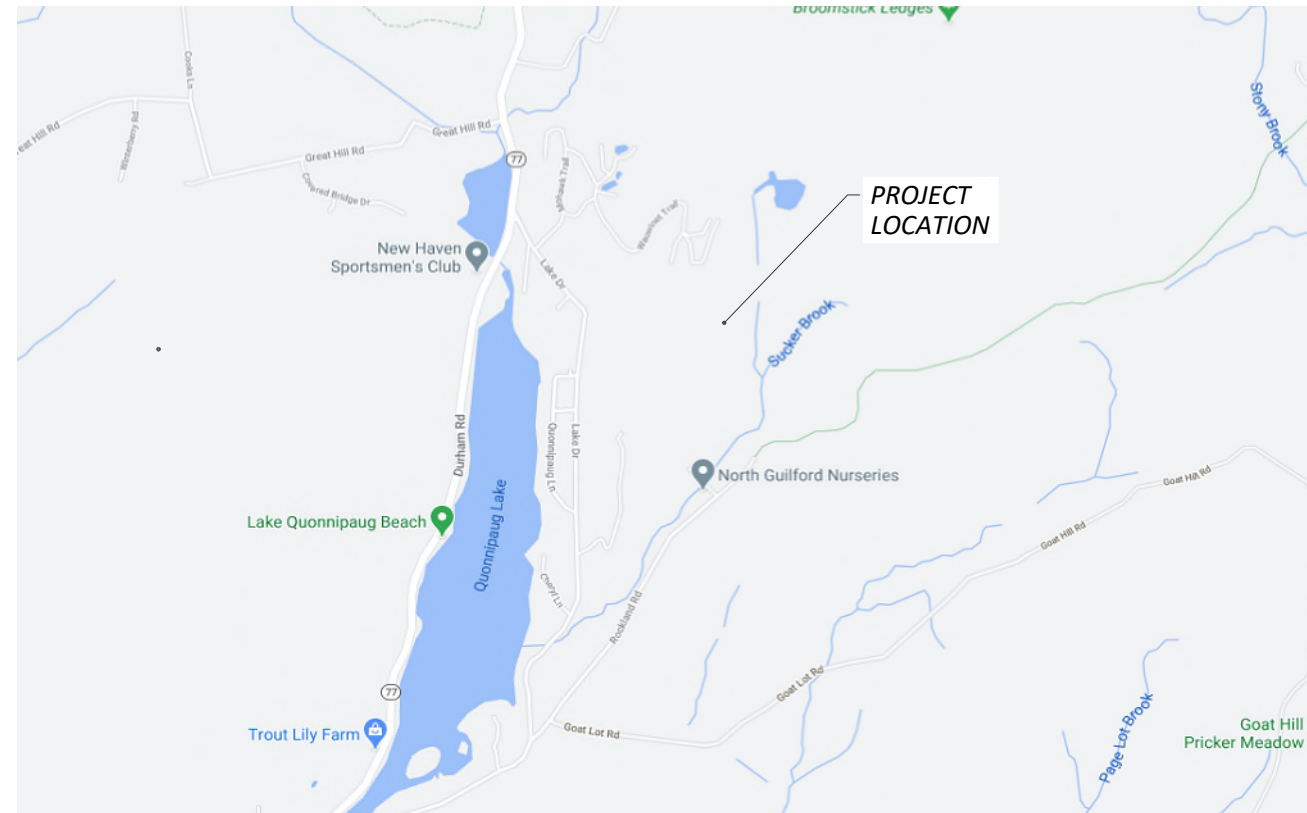
PROJECT DIRECTORY

A&E / PROJECT MANAGER:
CENTERLINE COMMUNICATIONS
750 WEST CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE 781.713.4725

APPLICANT:
T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

SITE NAME: CT33XC087
370 ROCKLAND RD
GUILFORD, CT 06437

SITE NUMBER: CTNH324A
SBA SITE #: CT46139-A
PROJECT: SPRINT RETAIN
CONFIGURATION: 67D5A997DB 6160 (GSM ONLY)



VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

DRAWING INDEX

NO.	DESCRIPTION	REV.	DATE
T-1	TITLE SHEET	1	02/26/20
GN-1	GENERAL NOTES	1	02/26/20
A-1	COMPOUND & EQUIPMENT PLANS	1	02/26/20
A-2	ANTENNA LAYOUT & ELEVATIONS	1	02/26/20
A-3	DETAILS	1	02/26/20
SN-1	STRUCTURAL NOTES	1	02/26/20
RF-1	RF PLUMBING DIAGRAM	1	02/26/20
G-1	GROUNDING DETAILS	1	02/26/20

T-Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893



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

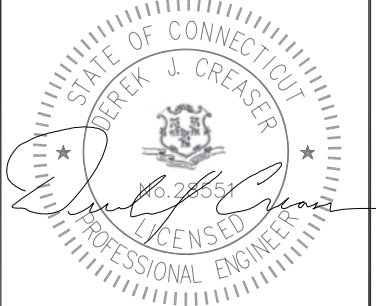


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

NO.	DATE	DESCRIPTION
1	02/26/21	ISSUED FOR CONSTRUCTION
0	12/16/20	ISSUED FOR REVIEW

DESIGNED BY: AG APPROVED BY: DC



DATE: 02/26/20

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING, THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.



SITE NAME: CT33XC087

SITE NUMBER: CTNH324A

SITE ADDRESS:
370 ROCKLAND RD
GUILFORD, CT 06437

PROJECT TYPE:
SPRINT RETAIN

SHEET TITLE:
TITLE SHEET

DRAWING #: T-1 REVISION: 1

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR – CENTERLINE COMMUNICATIONS
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE

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

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

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

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

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 SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, 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.

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 OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."

17. 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.

18. THE EXISTING CELL SITE IS 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.

19. SINCE THE 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 ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES: SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
LIGHTNING CODE: NFPA 70-2017

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,
STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

RF NOTES

1. ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR

2. THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.

3. RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.

4. ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.

5. RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.

6. THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.

7. DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.

8. ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.

9. 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.

10. USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.

11. ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.

12. CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

ANTENNA CABLE AND SCHEDULING NOTES

1. SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.

2. TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:

- TOP OF TOWER END OF MAIN COAX
- BOTTOM OF TOWER END OF MAIN COAX
- DIRECTLY BEFORE AND AFTER RF EQUIPMENT
- END OF JUMPERS AT BTS EQUIPMENT

3. ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.

4. PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

T-Mobile

NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893



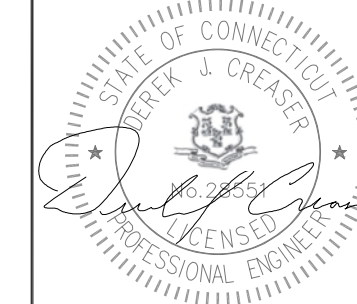
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
PHONE: (508) 251-0720



750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

NO.	DATE	DESCRIPTION
1	02/26/21	ISSUED FOR CONSTRUCTION
0	12/16/20	ISSUED FOR REVIEW
DESIGNED BY:	AG	APPROVED BY:
		DC



DATE: 02/26/20

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ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

SITE NAME: CT33XC087

SITE NUMBER: CTNH324A

SITE ADDRESS:
370 ROCKLAND RD
GUILFORD, CT 06437

PROJECT TYPE:
SPRINT RETAIN

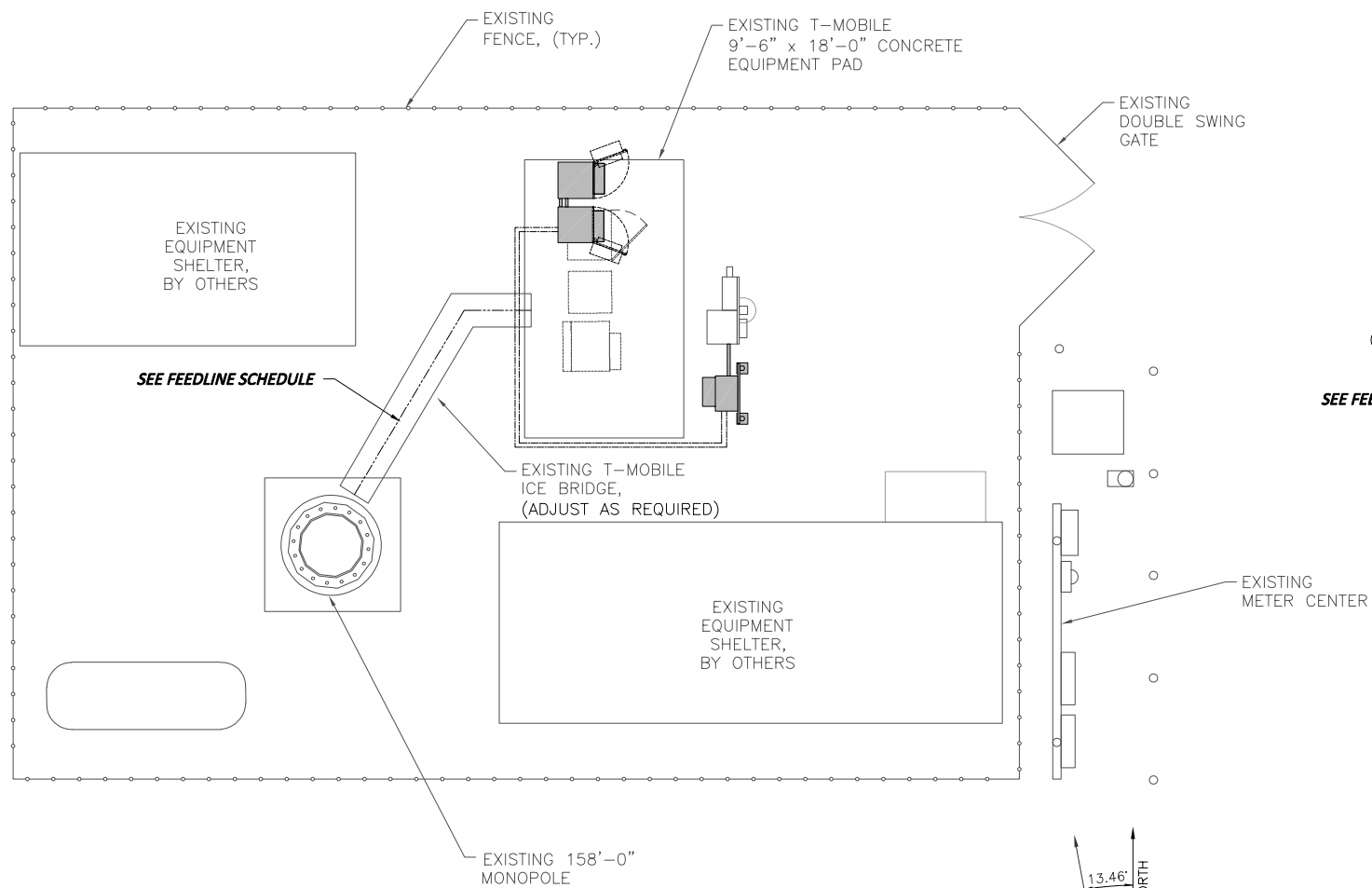
SHEET TITLE:
GENERAL NOTES

DRAWING #: GN-1 REVISION: 1

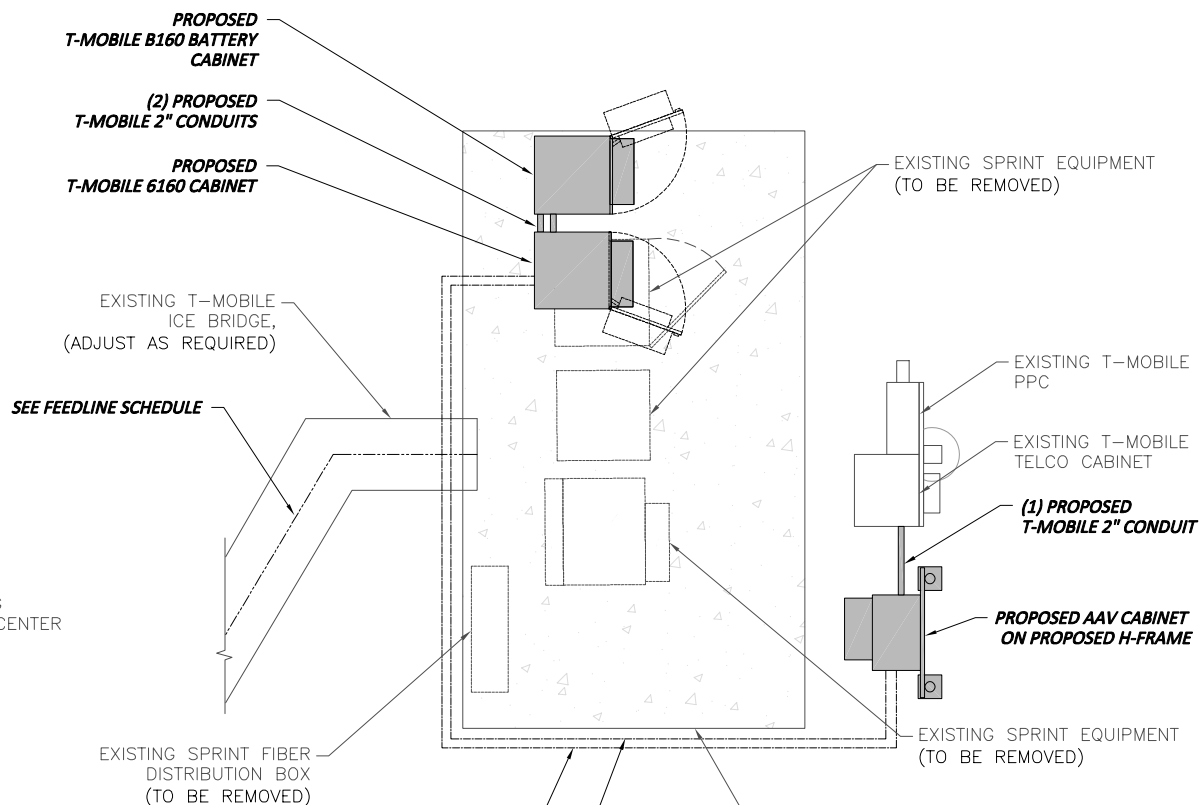
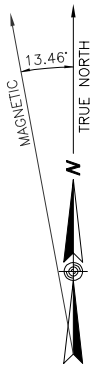
- NOTES:**
1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
 2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO BE REMOVED: (3) 1-5/8" HYBRID CABLES	UP INSIDE MONOPOLE TO RAD
B	PROPOSED: (3) 6x12 (1-5/8") HYBRID FIBER	UP INSIDE MONOPOLE TO RAD

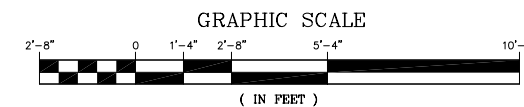
NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON COLLOCATION APPLICATION AND SBA RECORD, NOT FIELD OBSERVATIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.
SEE STRUCTURAL ANALYSIS FOR FEEDLINE INSTALLATION.



COMPOUND PLAN
SCALE: 3/16" = 1'-0" (22"X34")
3/32" = 1'-0" (11"X17")



EQUIPMENT PLAN
SCALE: 3/8" = 1'-0" (22"X34")
3/16" = 1'-0" (11"X17")



T-Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST, LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

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

CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS	
NO.	DESCRIPTION
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0	12/16/20 ISSUED FOR REVIEW

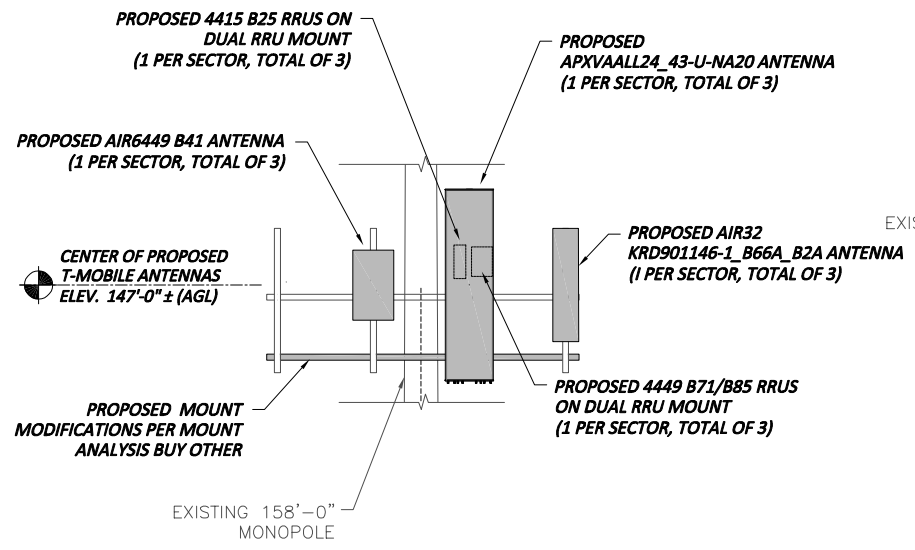
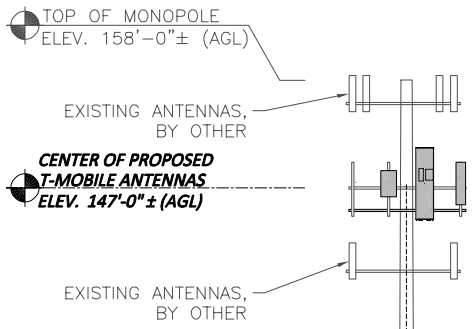
DESIGNED BY: AG APPROVED BY: DC



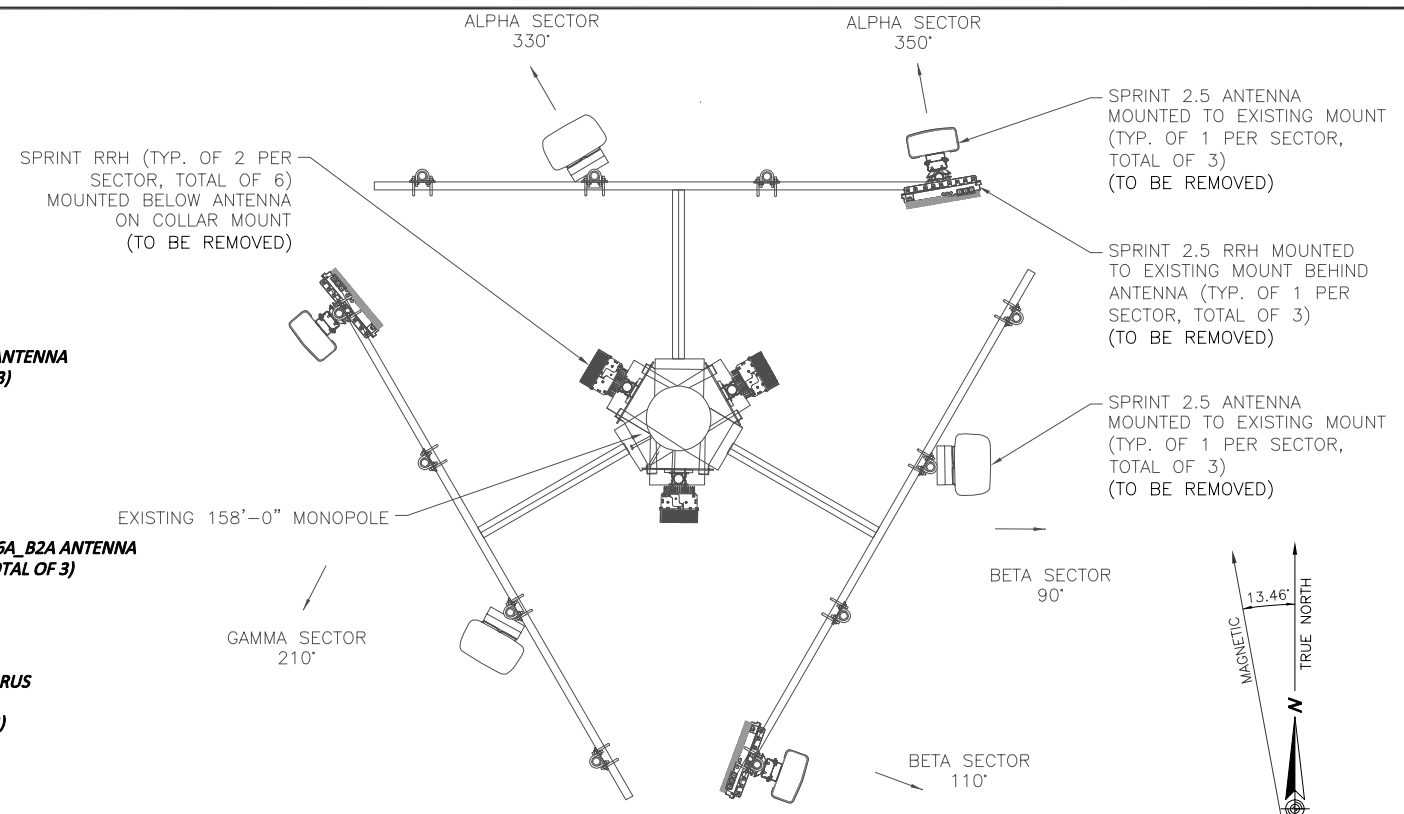
DATE: 02/26/20

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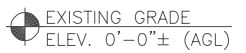
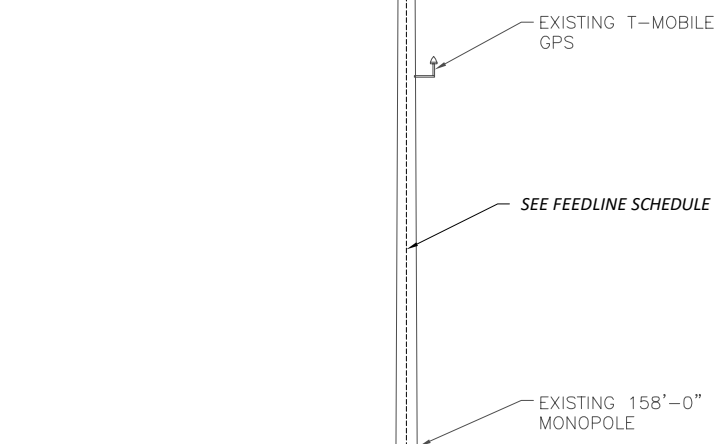
SITE NAME: CT33XC087
SITE NUMBER: CTNH324A
SITE ADDRESS: 370 ROCKLAND RD, GUILFORD, CT 06437
PROJECT TYPE: SPRINT RETAIN
SHEET TITLE: COMPOUND & EQUIPMENT PLANS
DRAWING #: A-1 REVISION: 1



ENLARGED ANTENNA ELEVATION
SCALE: N.T.S



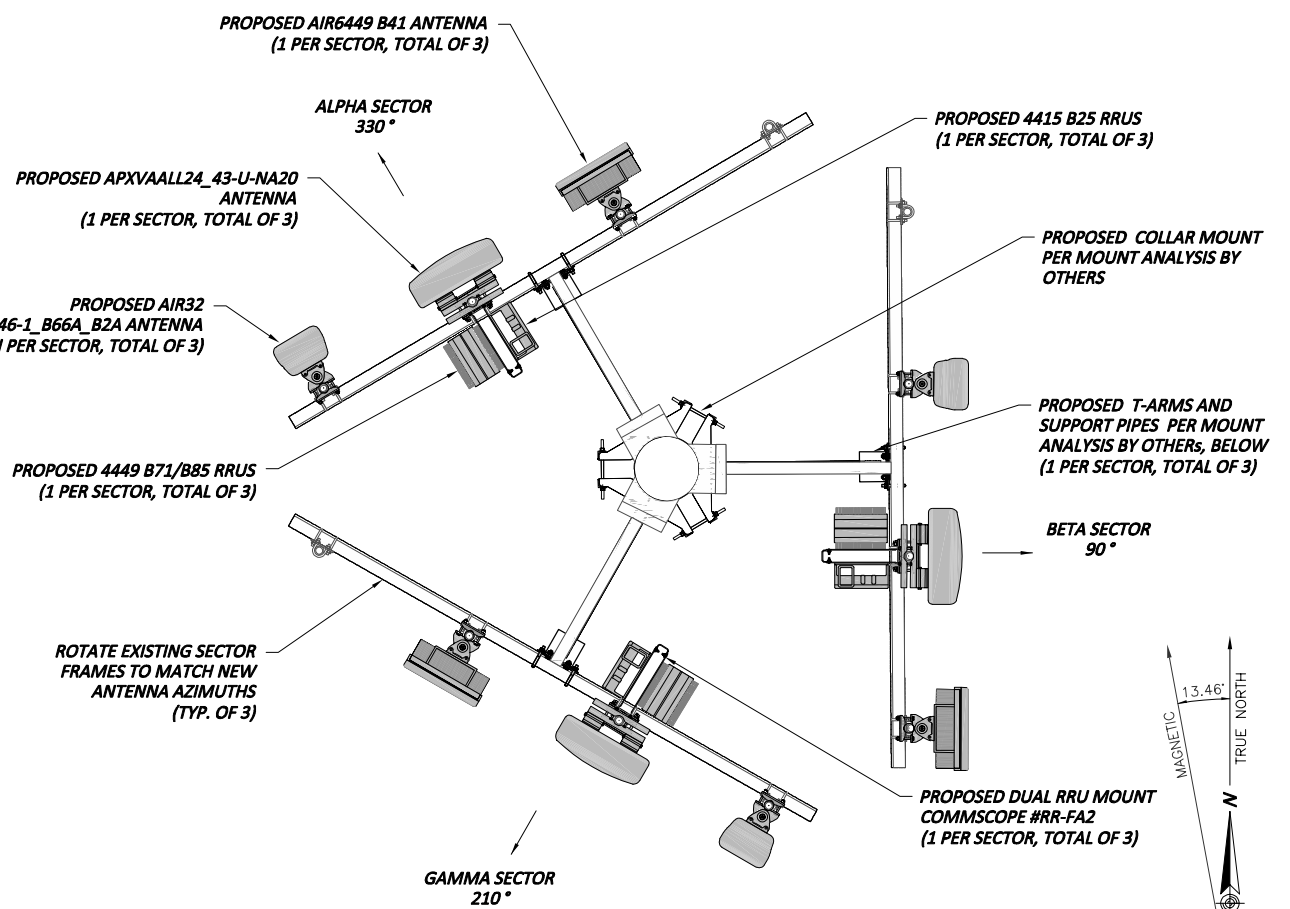
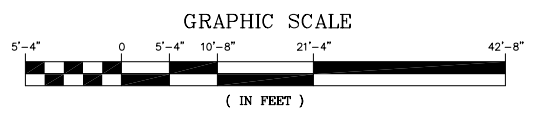
EXISTING ANTENNA CONFIGURATION
SCALE: N.T.S



TOWER ELEVATION
SCALE: 3/32" = 1'-0" (22"x34")
3/64" = 1'-0" (11"x17")

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

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 OR RELOCATION.



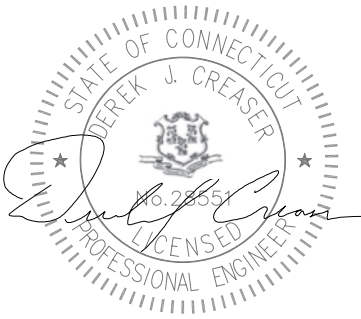
PROPOSED ANTENNA CONFIGURATION
SCALE: N.T.S

T-Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST, LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

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

CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

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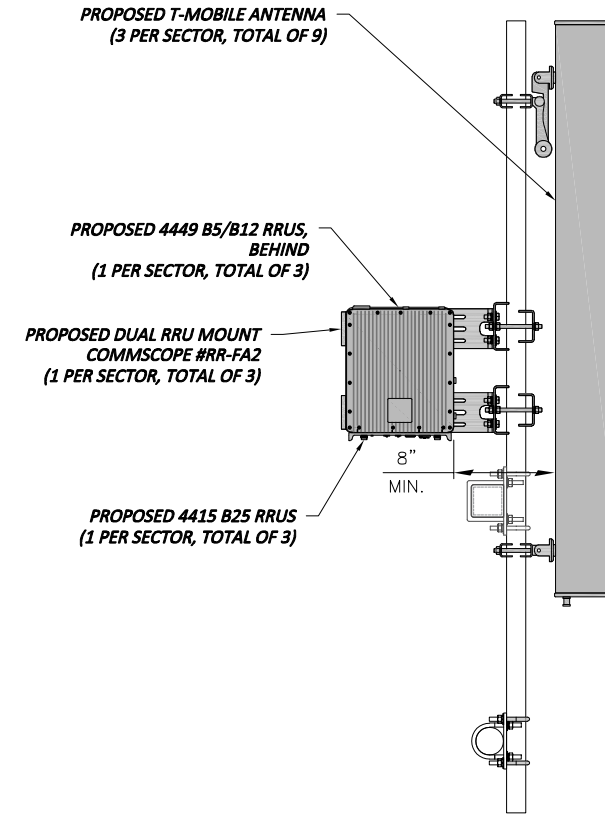
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SITE NUMBER:	CTNH324A
SITE ADDRESS:	370 ROCKLAND RD GUILFORD, CT 06437
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	ANTENNA LAYOUT & ELEVATIONS
DRAWING #:	A-2
REVISION:	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Ø HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER
A1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2A	56.6x12.9x8.7	±147'	330°	-	-	-	
A2	PROPOSED	L700, L600, N600, L1900	RFS-APXVALL24_4 3-U-NA20	95.9x24.0x8.7	±147'	330°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	
A3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±147'	330°	-	-	-	
B1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2A	56.6x12.9x8.7	±147'	90°	-	-	-	
B2	PROPOSED	L700, L600, N600, L1900	RFS-APXVALL24_4 3-U-NA20	95.9x24.0x8.7	±147'	90°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	(P) (3) 6X12 HCS
B3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±147'	90°	-	-	-	
C1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2A	56.6x12.9x8.7	±147'	210°	-	-	-	
C2	PROPOSED	L700, L600, N600, L1900	RFS-APXVALL24_4 3-U-NA20	95.9x24.0x8.7	±147'	210°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	
C3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±147'	210°	-	-	-	



ANTENNA MOUNTING DETAIL
N.T.S.

- NOTES:**
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 - REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4449 B71/B85	15.0"	13.2"	10.4"
3(P)	4415 B25	16.5"	13.4"	5.9"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.



RRUS DETAIL
N.T.S.

REFER TO THE FINAL RFDS AND TABLE FOR THE PROPOSED RRUS MODEL, QUANTITY, AND DIMENSIONS



ERICSSON RBS6160 EQUIPMENT CABINET
ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 63" X 25.6" X 33.5"
WEIGHT: 188LBS (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

EQUIPMENT CABINET DETAIL
N.T.S.



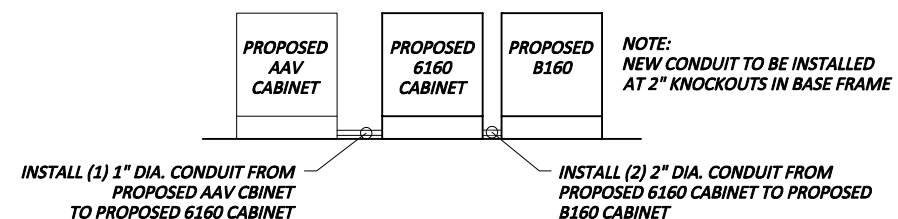
ERICSSON B160 BATTERY CABINET
ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 63" X 26" X 26"
WEIGHT: 188LBS (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

N.T.S.



EMERSON NETXTEND COMPACT 2416 CABINET
ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 24" X 24" X 25.25"
WEIGHT: 64LBS (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

AAV CABINET DETAIL
N.T.S.



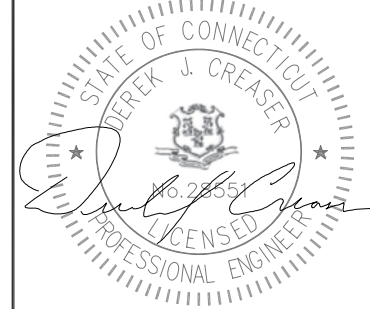
CONDUIT DETAIL
N.T.S.

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NORTHEAST LLC
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15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
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SITE ADDRESS:	370 ROCKLAND RD GUILFORD, CT 06437
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	DETAILS
DRAWING #:	A-3
REVISION:	1

STRUCTURAL NOTES:

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**T-Mobile
NORTHEAST LLC**

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

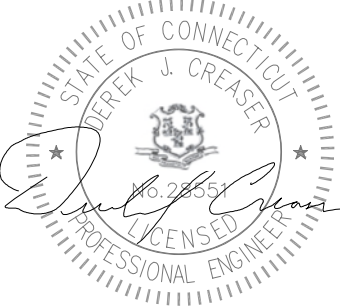


SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
PHONE: (508) 251-0720



750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS		
1	02/26/21	ISSUED FOR CONSTRUCTION
0	12/16/20	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION
DESIGNED BY:		APPROVED BY:
AG		DC



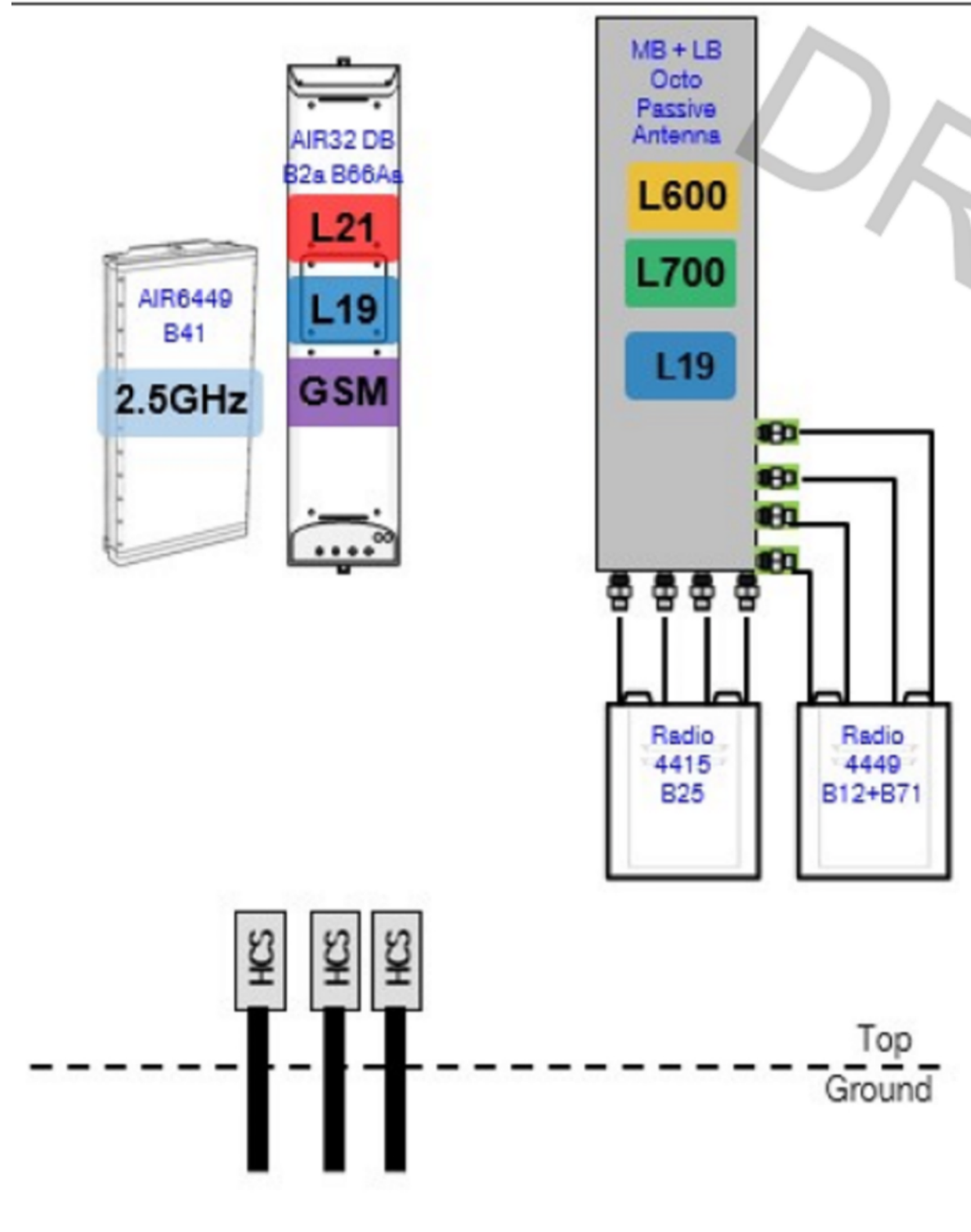
DATE: 02/26/20

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Blank area for additional notes or signatures.

SITE NAME:	CT33XC087
SITE NUMBER:	CTNH324A
SITE ADDRESS:	370 ROCKLAND RD GUILFORD, CT 06437
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	STRUCTURAL NOTES
DRAWING #:	SN-1
REVISION:	1

67D5A997DB_2xAIR+1xOP.jpg



PLUMBING DIAGRAM
N.T.S.

T - Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

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

CENTERLINE
COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

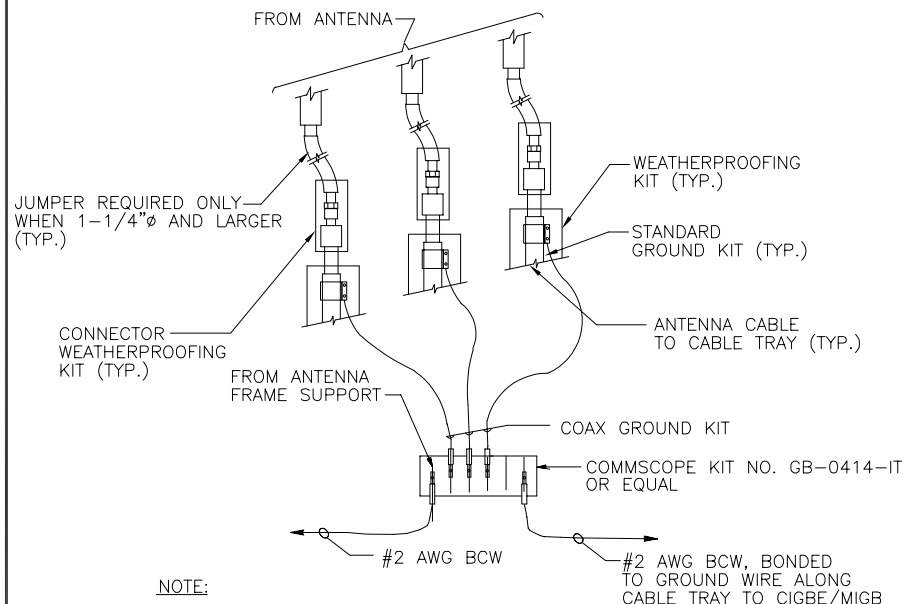
REVISIONS		
NO.	DATE	DESCRIPTION
1	02/26/21	ISSUED FOR CONSTRUCTION
0	12/16/20	ISSUED FOR REVIEW
DESIGNED BY:		APPROVED BY:
AG		DC



DATE: 02/26/20

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SITE NAME:	CT33XC087
SITE NUMBER:	CTNH324A
SITE ADDRESS:	370 ROCKLAND RD GUILFORD, CT 06437
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	RF PLUMBING DIAGRAM
DRAWING #:	RF-1
REVISION:	1



GROUNDING RISER DIAGRAM

N.T.S.

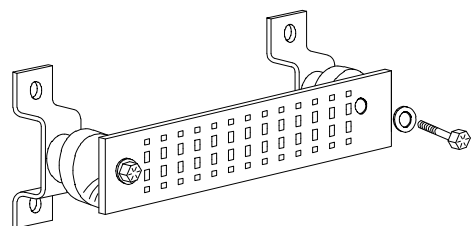
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

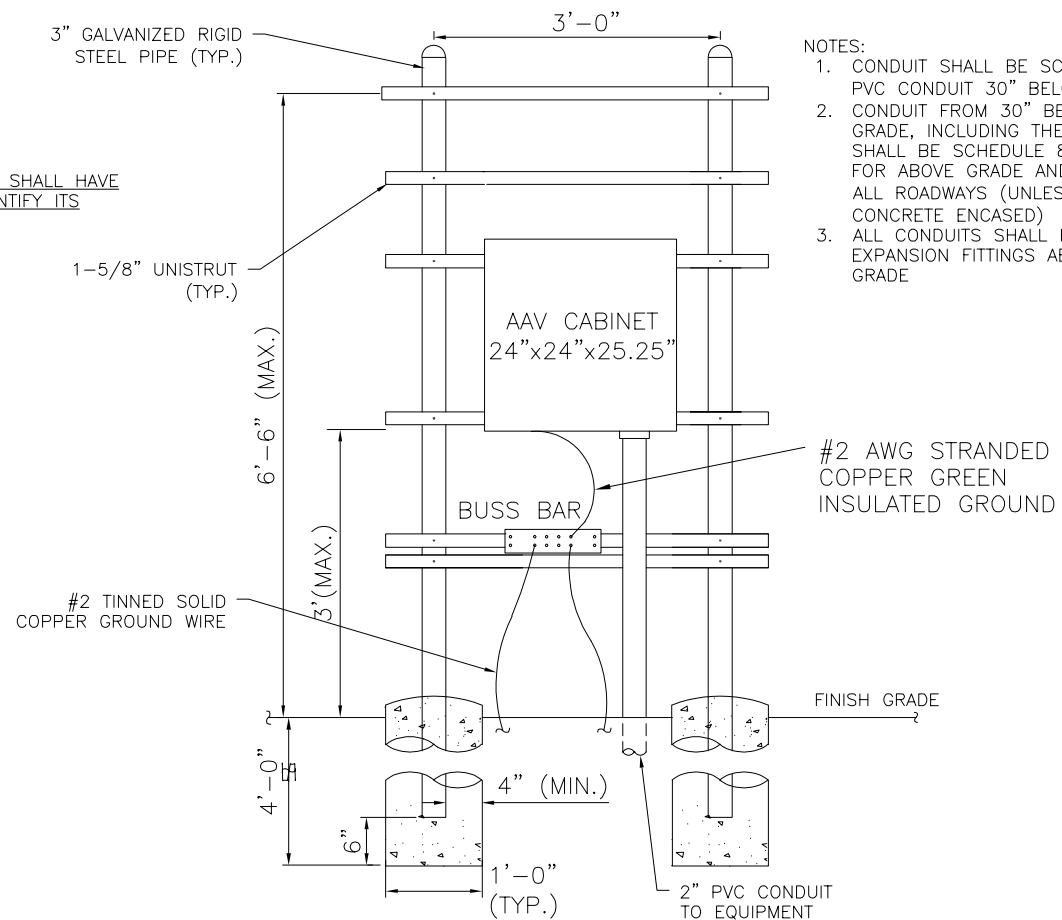
SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



GROUND BAR DETAIL

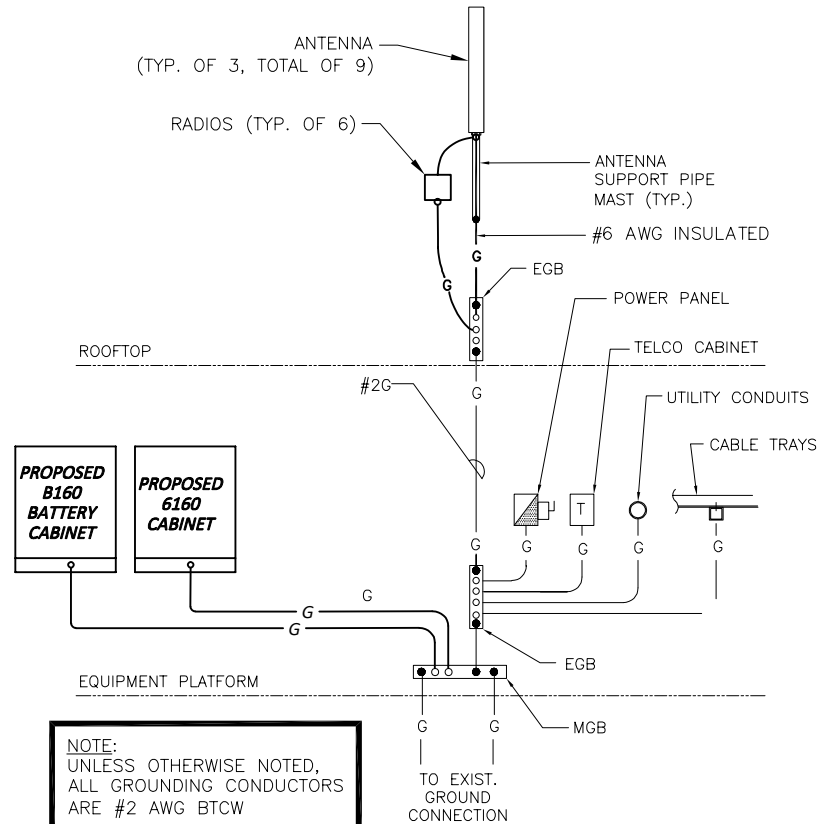
N.T.S.



H-FRAME DETAIL

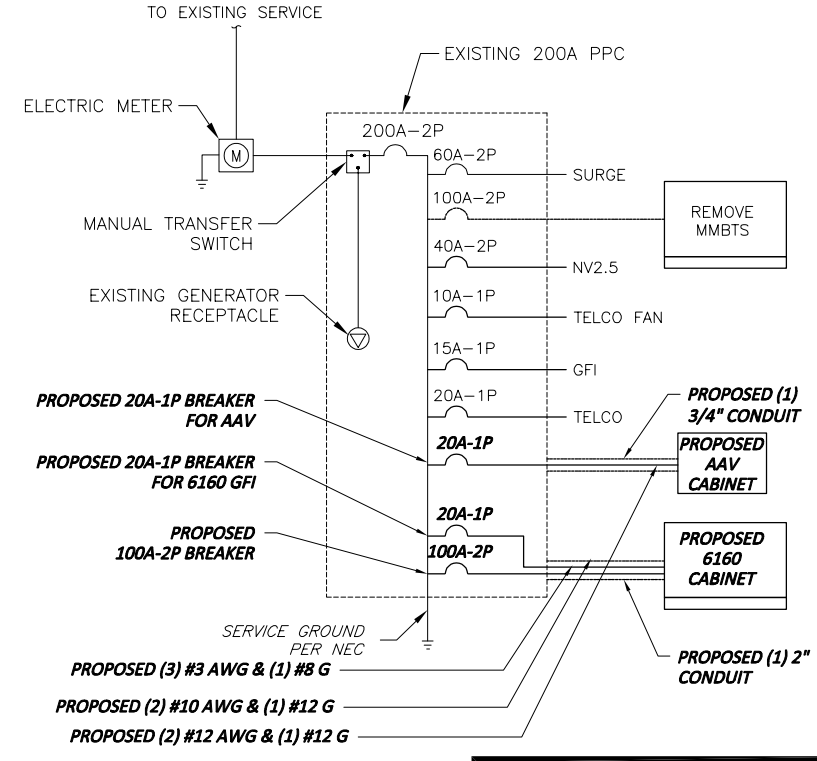
N.T.S.

- NOTES:
- CONDUIT SHALL BE SCHEDULE 40 PVC CONDUIT 30" BELOW GRADE
 - CONDUIT FROM 30" BELOW GRADE, INCLUDING THE SWEEP, SHALL BE SCHEDULE 80 PVC FOR ABOVE GRADE AND UNDER ALL ROADWAYS (UNLESS CONCRETE ENCASED)
 - ALL CONDUITS SHALL HAVE EXPANSION FITTINGS ABOVE GRADE



GROUNDING RISER DIAGRAM

N.T.S.



ONE LINE POWER DIAGRAM

N.T.S.

NOTE: ALL WORK NEEDS TO BE PERFORMED BY LICENSED ELECTRICIAN ADHERING TO THE NEC AND LOCAL CODE REQUIREMENTS

T-Mobile
NORTHEAST LLC
 T-MOBILE NORTHEAST, LLC.
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 PHONE: (508) 286-2700
 FAX: (508) 286-2893

SBA COMMUNICATIONS

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

CENTERLINE COMMUNICATIONS

750 W CENTER ST, SUITE 301
 WEST BRIDGEWATER, MA 02379
 PHONE: 781.713.4725

REVISIONS		
NO.	DATE	DESCRIPTION
1	02/26/21	ISSUED FOR CONSTRUCTION
0	12/16/20	ISSUED FOR REVIEW
DESIGNED BY:	AG	APPROVED BY:
		DC

STATE OF CONNECTICUT
 DEREK J. CREASER
 No. 28551
 LICENSED PROFESSIONAL ENGINEER

DATE: 02/26/20

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SITE NAME:	CT33XC087
SITE NUMBER:	CTNH324A
SITE ADDRESS:	370 ROCKLAND RD GUILFORD, CT 06437
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	GROUNDING DETAILS
DRAWING #:	G-1
REVISION:	1

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 159 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46139-A

Customer Site Name: West Haven-rt15 /Woodbridge

Carrier Name: T-Mobile Sprint (App#: 144007, V1)

Carrier Site ID / Name: CT33XC087

Site Location: 370 Rockland Road

Guilford, Connecticut

New Heaven County

Latitude: 41.396833

Longitude: -72.688805



Analysis Result:

Max Structural Usage: 86.8% [Pass]

Max Foundation Usage: 64% [Pass]

Additional Usage Caused by New Mount/Mount Modification: + 3%

Report Prepared By : Andrew Edwards

Introduction

The purpose of this report is to summarize the analysis results on the 159 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing by Engineered Endeavors, Job#12806-E01 dated 7/30/04
Foundation Drawing	Foundation Design by Vertical Solutions, Job# 121192.02 dated 7/16/12
Geotechnical Report	Geotechnical Report by Jaworski, Job# 04197G, dated 3/24/04
Modification Drawings	VS#: 090845.01 dated 7/13/09, VS#: 120109 dated 3/6/12, PCI VS#: 131360.01 dated 2/10/14
Mount Analysis	TES Project# 101022

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 $V_{ult} = 130$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 101.0$ 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:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.176$, $S_1 = 0.061$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	157.0	6	Decibel - DB846F65ZAXY - Panel	(3) T-Arms	(18) 1 5/8"	Verizon
2		3	Antel - BXA171063/12BF - Panel			
3		4	Antel - BXA70063/6CF - Panel			
4		2	Antel - BXA-171063/8BF - Panel			
5	147.0	3	RFS - APXVSP18-C-A20 - Panel	(3) T-Arms (1) Collar Mount	(4) 1 1/4" Fiber	T-Mobile Sprint
7		3	RFS - APXVTM14-C-I20 - Panel			
10		4	RFS - ACU-A20-N RET - RET			
11		3	ALU - 1900MHz RRH - RRU			
13		3	ALU - 800 MHz RRH - RRU			
14		3	ALU - TD-RRH8x20-25 - RRU			
16		3	ALU - 800 MHz Filter - Filter			
17	137.0	6	Powerwave - RA21.7770.00 - Panel	(3) T-Arms	(12) 1 5/8" (1) 1/2" Fiber (2) 3/4" DC Power	AT&T
18		3	KMW - AM-X-CD-16-65-00T - Panel			
19		6	Ericsson - RRUS11 - RRU			
20		12	Powerwave - LGP21401-TMA			
21		1	Raycap - DC6-48-60-18-8F- OVP			

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
6	147.0	3	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo) - Panel	(3) T-Arms (4) MS-HRCP-35 (1) MS-H1436 (1) MS-TAW-350RO (3) PST350-15 (1) Collar Mount	(3) 2" Hybrid	T-Mobile Sprint
8		3	RFS - APXVAALL24_43-U-NA20 - Panel			
9		3	Ericsson - AIR6449 B41 - Panel			
10		4	RFS - ACU-A20-N RET - RET			
12		3	Ericsson - 4415 B25 - RRU			
13		3	ALU - 800 MHz RRH - RRU			
15		3	Ericsson - 4449 B71 + B85 - RRU			
16		3	ALU - 800 MHz Filter - Filter			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	82.9%	64.0%	86.8%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3496.3	31.2	38.4

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.3523 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 TIA-222 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 ANSI/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 81.25% at 120.0ft

Structure: CT46139-A-SBA

Code: EIA/TIA-222-G

1/8/2021



Site Name: West Haven-rt15 /Woodbridge

Exposure: C

Height: 158.50 (ft)

Gh: 1.1

Page: 1

Base Elev: 0.000 (ft)

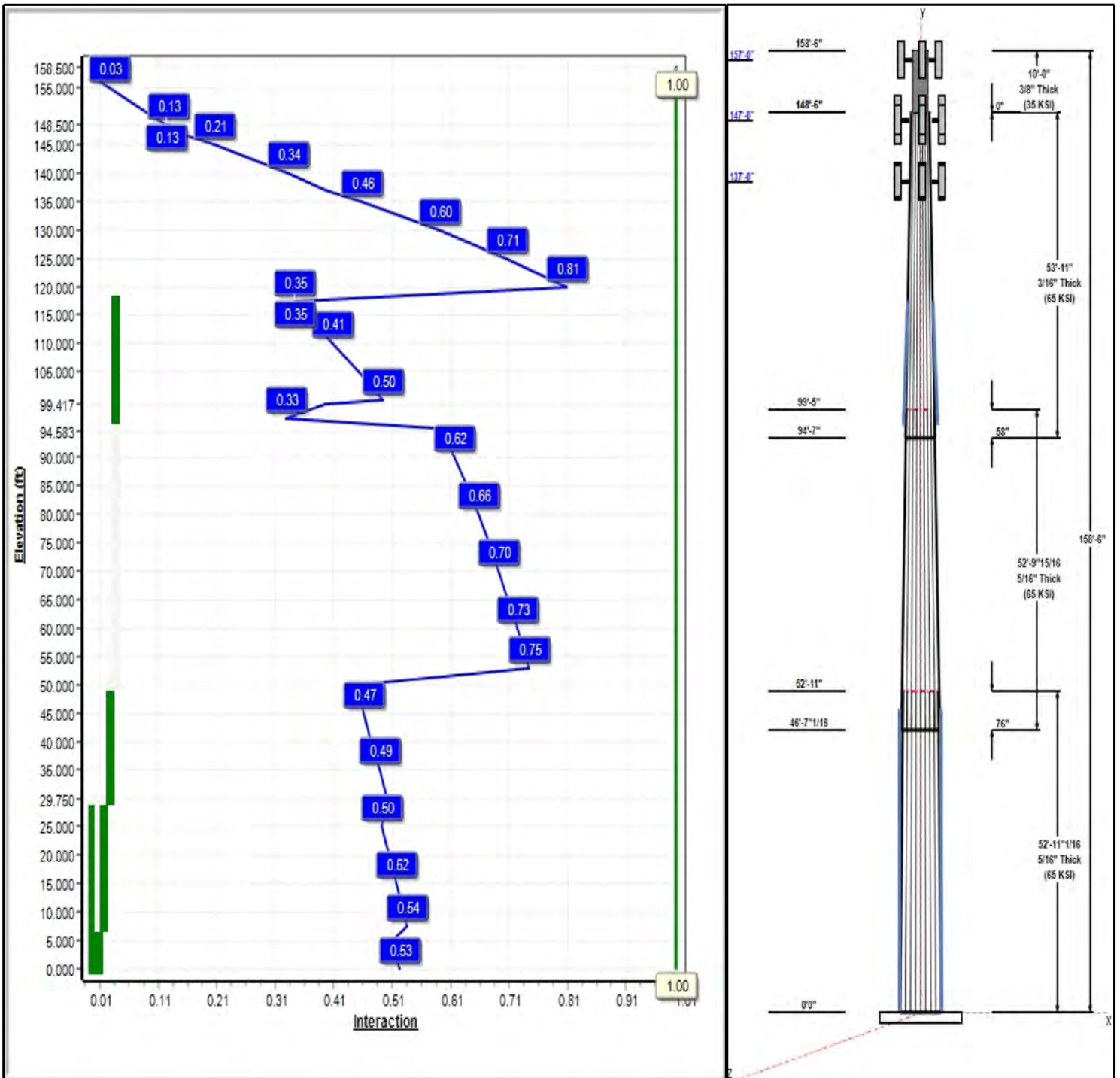
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Iterations: 24

Load Case : 1.2D + 1.6W 101 mph Wind



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Structure: CT46139-A-SBA

Type: Custom
Site Name: West Haven-rt15 /Woodbridge
Height: 158.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.25926

1/8/2021

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.92	44.28	58.00	0.313		0.25926	65
2	52.83	32.85	46.55	0.313	Slip	0.25926	65
3	53.92	20.50	34.48	0.188	Slip	0.25926	65
4	10.00	20.00	20.00	0.375	Butt	0.00000	35

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
157.00	157.00	6	DB846F65ZAXY	Verizon
157.00	157.00	4	BXA-70063/6CF_	Verizon
157.00	157.00	3	BXA-171063-12BF-EDIN-X	Verizon
157.00	157.00	2	BXA-171063-8BF-EDIN-X	Verizon
157.00	157.00	3	T-Arm (Flat)	T-Mobile Sprint
147.00	147.00	3	800 MHz RRH	T-Mobile Sprint
147.00	147.00	3	ALU 800MHz External	T-Mobile Sprint
147.00	147.00	1	(3) T-Arm Kit	T-Mobile Sprint
147.00	147.00	3	T-Arm (Flat)	T-Mobile Sprint
147.00	147.00	3	KRD 9011461-B66A-B2A	T-Mobile Sprint
147.00	147.00	3	APXVAARR24_43-U-NA20	T-Mobile Sprint
147.00	147.00	3	AIR6449 B41	T-Mobile Sprint
147.00	147.00	4	ACU-A20-N	T-Mobile Sprint
147.00	147.00	3	RRUS 4415 B25	T-Mobile Sprint
147.00	147.00	3	4449 B71 + B85	T-Mobile Sprint
137.00	137.00	3	T-Arm (Flat)	T-Mobile Sprint
137.00	137.00	1	DC6-48-60-18-8F	AT&T
137.00	137.00	6	RA21.7770.00	AT&T
137.00	137.00	6	RRUS 11	AT&T
137.00	137.00	3	AM-X-CD-16-65-00T-RET	AT&T
137.00	137.00	12	LGP21401	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	157.00	Inside	1 5/8" Coax	Verizon
0.00	147.00	Inside	1 5/8" Hybrid	T-Mobile Sprint
0.00	137.00	Inside	1 5/8" Coax	AT&T
0.00	137.00	Inside	1/2" Coax	AT&T
0.00	137.00	Inside	3/4" DC	AT&T
94.50	104.50	Outside	1.25" Reinforcing plate	
8.92	53.00	Outside	1.25" Reinforcing plate	
0.00	8.92	Outside	1.25" Reinforcing plate	

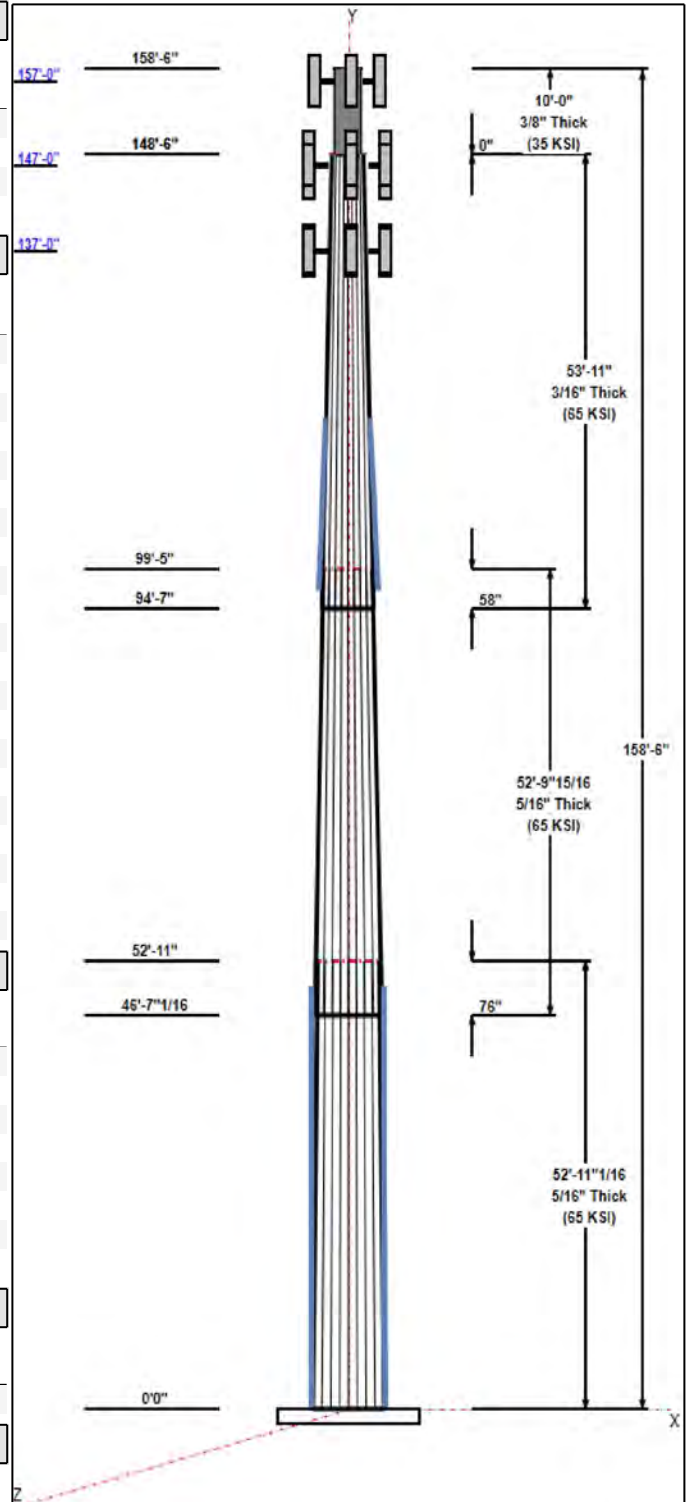
Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	72.0	60.0	Round

Reactions



Structure: CT46139-A-SBA

Type: Custom

Base Shape: 18 Sided

1/8/2021

Site Name: West Haven-rt15 /Woodbridge

Taper: 0.00000

Height: 158.50 (ft)

Base Elev: 0.00 (ft)

Page: 3



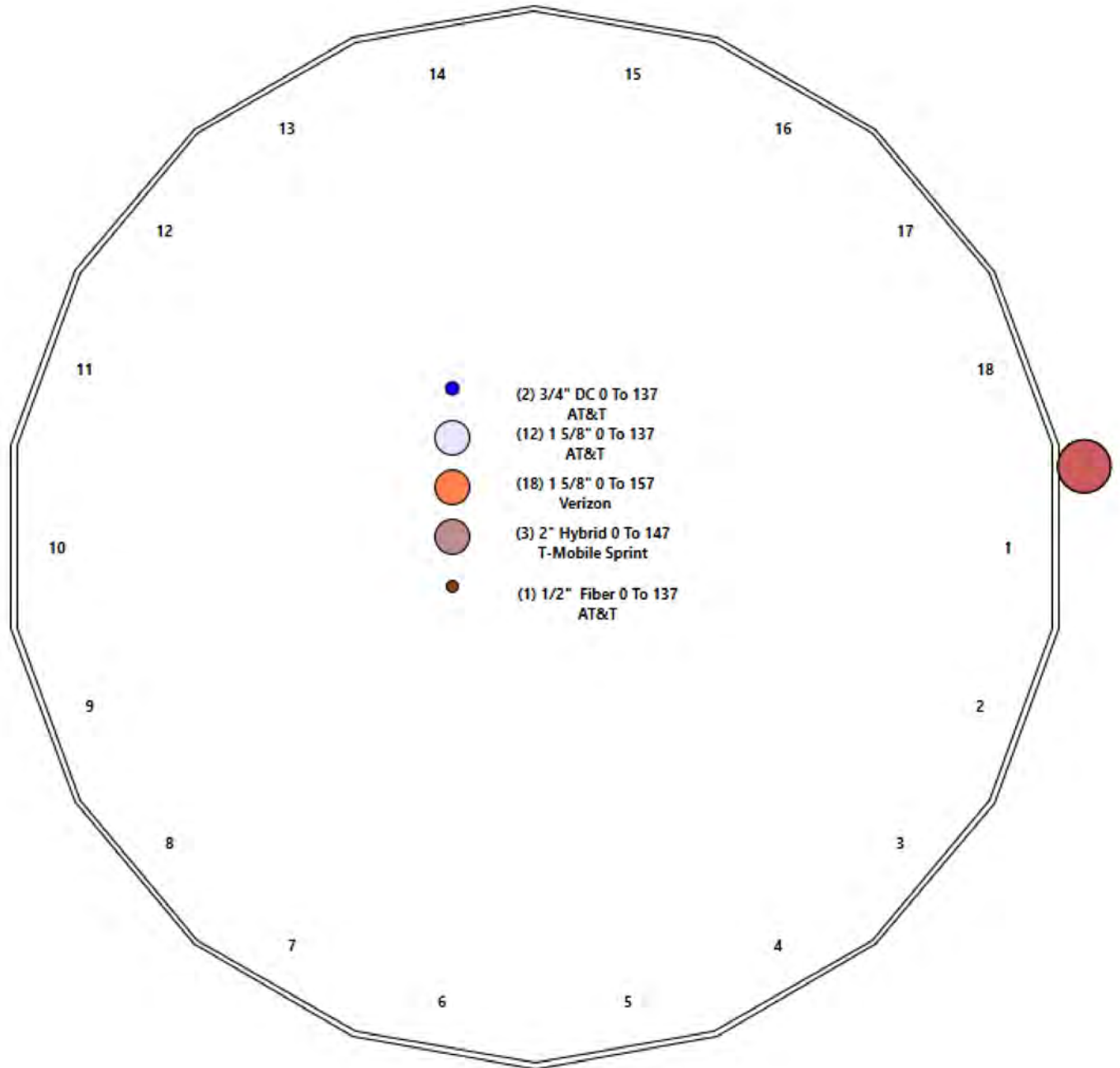
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	3496.3	31.2	38.4
0.9D + 1.6W 101 mph Wind	3468.3	31.1	28.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	909.2	8.3	59.1
1.2D + 1.0E	145.2	1.2	38.4
0.9D + 1.0E	144.0	1.2	28.8
1.0D + 1.0W 60 mph Wind	767.9	6.9	32.0

Structure: CT46139-A-SBA - Coax Line Placement

Type: Monopole
Site Name: West Haven-rt15 /Woodbridge
Height: 158.50 (ft)

1/8/2021

Page: 4



Shaft Properties

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	52.920	0.3125	65		0.00	9,078
2	18	52.830	0.3125	65	Slip	76.00	7,023
3	18	53.917	0.1875	65	Slip	58.00	2,981
4	R	10.000	0.3750	35	Flange	0.00	787
Total Shaft Weight:							19,868

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	58.00	0.00	57.22	24056.89	31.32	185.60	44.28	52.92	43.61	10650.9	23.57	141.7	0.259259
2	46.55	46.59	45.86	12384.89	24.85	148.95	32.85	99.42	32.27	4316.77	17.13	105.1	0.259259
3	34.48	94.58	20.41	3031.67	31.01	183.88	20.50	148.50	12.09	630.14	17.87	109.3	0.259259
4	20.00	148.5	23.12	1113.92	0.00	53.33	20.00	158.50	23.12	1113.92	0.00	53.33	0.000000

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors			Termination Connectors		
							Description	Spacing (in)	Spacing (in)	Description	Spacing (in)	Lower Qty
0.00	29.75	2	PLT 7.25x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	15.00	AJM20&sleeve	3.00	13	9
0.00	7.42	2	PLT 7.25x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	15.00	AJM20&sleeve	3.00	9	9
7.42	29.75	1	PLT 7.25x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	15.00	AJM20&sleeve	3.00	13	9
29.75	50.00	3	PLT 6.5x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	13	12
96.75	117.2	3	PLT 5"x1.5" (1.25" Hole)	50	65	0.00	AJM20&sleeve	21.00	AJM20&sleeve	3.00	9	7

Load Summary

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 6

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	157.00	DB846F65ZAXY	6	21.00	7.05	0.93	219.47	8.287	0.93	0.00	0.00
2	157.00	BXA-70063/6CF_	4	17.00	7.57	0.70	159.36	10.346	0.70	0.00	0.00
3	157.00	BXA-171063-12BF-EDIN-X	3	15.00	4.74	0.84	110.37	7.100	0.84	0.00	0.00
4	157.00	BXA-171063-8BF-EDIN-X	2	10.50	2.94	0.84	76.34	4.606	0.84	0.00	0.00
5	157.00	T-Arm (Flat)	3	400.00	10.00	0.75	680.51	18.766	0.75	0.00	0.00
6	147.00	800 MHz RRH	3	53.00	2.49	0.67	126.81	3.631	0.67	0.00	0.00
7	147.00	ALU 800MHz External Notch Filt	3	8.80	0.78	0.67	26.41	1.426	0.67	0.00	0.00
8	147.00	(3) T-Arm Kit	1	500.00	16.50	1.00	1092.18	32.593	1.00	0.00	0.00
9	147.00	T-Arm (Flat)	3	400.00	10.00	0.75	678.67	18.709	0.75	0.00	0.00
10	147.00	KRD 9011461-B66A-B2A	3	132.20	6.51	0.87	315.00	7.629	0.87	0.00	0.00
11	147.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	544.98	22.136	0.70	0.00	0.00
12	147.00	AIR6449 B41	3	103.00	5.65	0.71	239.84	6.599	0.71	0.00	0.00
13	147.00	ACU-A20-N	4	1.00	0.14	0.67	5.29	0.436	0.67	0.00	0.00
14	147.00	RRUS 4415 B25	3	46.00	1.64	0.67	87.02	2.154	0.67	0.00	0.00
15	147.00	4449 B71 + B85	3	73.20	1.97	0.67	130.83	2.538	0.67	0.00	0.00
16	137.00	T-Arm (Flat)	3	400.00	10.00	0.75	676.71	18.647	0.75	0.00	0.00
17	137.00	DC6-48-60-18-8F	1	31.80	0.92	1.00	93.07	1.354	1.00	0.00	0.00
18	137.00	RA21.7770.00	6	37.20	6.55	0.73	166.31	8.997	0.73	0.00	0.00
19	137.00	RRUS 11	6	50.70	2.52	0.67	138.91	3.165	0.67	0.00	0.00
20	137.00	AM-X-CD-16-65-00T-RET	3	48.50	8.02	0.75	209.31	10.789	0.75	0.00	0.00
21	137.00	LGP21401	12	14.10	1.29	0.67	38.88	2.118	0.67	0.00	0.00
Totals:			78	6,870.50			17,090.57				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	157.00	(18) 1 5/8" Coax	0.00	Inside
0.00	147.00	(3) 1 5/8" Hybrid	0.00	Inside
0.00	137.00	(12) 1 5/8" Coax	0.00	Inside
0.00	137.00	(1) 1/2" Coax	0.00	Inside
0.00	137.00	(2) 3/4" DC	0.00	Inside
94.50	104.50	(1) 1.25" Reinforcing plate	1.50	Outside
8.92	53.00	(1) 1.25" Reinforcing plate	1.50	Outside
0.00	8.92	(1) 1.25" Reinforcing plate	3.00	Outside

Shaft Section Properties

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 7

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)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1 RB2	0.3125	58.000	57.217	24056.9	31.32	185.60	65	65	0.0	43.50	20646.9	16791.8	
5.00		0.3125	56.704	55.931	22471.3	30.58	181.45	65	65	962.5	43.50	19749.9	16072.5	700.2
7.42	RT2 RB3	0.3125	56.076	55.309	21729.6	30.23	179.44	65	66	458.0	32.63	13593.6	13593.6	254.2
10.00		0.3125	55.407	54.645	20957.0	29.85	177.30	65	66	482.7	32.63	13281.3	13281.3	271.0
15.00		0.3125	54.111	53.360	19512.3	29.12	173.16	65	67	918.8	32.63	12686.5	12686.5	525.1
20.00		0.3125	52.815	52.074	18135.5	28.39	169.01	65	68	896.9	32.63	12105.4	12105.4	525.1
25.00		0.3125	51.519	50.788	16825.1	27.66	164.86	65	69	875.0	32.63	11538.0	11538.0	525.1
29.75	RT1 RT3 RB4	0.3125	50.287	49.567	15640.1	26.96	160.92	65	70	811.0	29.25	9859.9	9859.9	472.8
30.00		0.3125	50.222	49.502	15579.4	26.93	160.71	65	70	42.1	29.25	9835.4	9835.4	24.9
35.00		0.3125	48.926	48.217	14396.7	26.20	156.56	65	71	831.3	29.25	9351.3	9351.3	497.7
40.00		0.3125	47.630	46.931	13275.5	25.46	152.41	65	71	809.4	29.25	8879.4	8879.4	497.7
45.00		0.3125	46.333	45.645	12214.0	24.73	148.27	65	72	787.5	29.25	8419.8	8419.8	497.7
46.59	Bot - Section 2	0.3125	45.922	45.237	11889.4	24.50	146.95	65	73	245.3	29.25	8276.6	8276.6	157.9
50.00	RT4	0.3125	45.037	44.360	11210.7	24.00	144.12	65	73	1047.9	29.25	8186.7	8186.7	339.8
52.92	Top - Section 1	0.3125	44.905	44.229	11111.7	23.93	143.70	65	73	880.2				
55.00		0.3125	44.366	43.694	10713.4	23.62	141.97	65	74	311.1				
60.00		0.3125	43.069	42.408	9795.2	22.89	137.82	65	74	732.5				
65.00		0.3125	41.773	41.122	8931.1	22.16	133.67	65	75	710.6				
70.00		0.3125	40.477	39.837	8119.3	21.43	129.53	65	76	688.7				
75.00		0.3125	39.181	38.551	7358.2	20.70	125.38	65	77	666.8				
80.00		0.3125	37.884	37.265	6646.3	19.97	121.23	65	78	645.0				
85.00		0.3125	36.588	35.979	5981.8	19.23	117.08	65	79	623.1				
90.00		0.3125	35.292	34.694	5363.2	18.50	112.93	65	80	601.2				
94.58	Bot - Section 3	0.3125	34.103	33.515	4835.0	17.83	109.13	65	80	531.9				
95.00		0.3125	33.995	33.408	4788.7	17.77	108.79	65	80	76.3				
96.75	RB5	0.3125	33.542	32.958	4597.8	17.52	107.33	65	81	317.9	22.50	3553.4	3553.4	134.0
99.42	Top - Section 2	0.1875	33.225	19.661	2711.3	29.83	177.20	65	66	476.2	22.50	3417.0	3417.0	204.2
100.00		0.1875	33.074	19.571	2674.2	29.69	176.40	65	66	38.9	22.50	3387.5	3387.5	44.7
105.00		0.1875	31.778	18.799	2370.3	28.47	169.48	65	68	326.4	22.50	3140.1	3140.1	382.8
110.00		0.1875	30.481	18.028	2090.3	27.25	162.57	65	69	313.3	22.50	2902.2	2902.2	382.8
115.00		0.1875	29.185	17.257	1833.3	26.04	155.65	65	71	300.2	22.50	2673.7	2673.7	382.8
117.25	RT5	0.1875	28.602	16.909	1724.9	25.49	152.54	65	71	130.8	22.50	2574.0	2574.0	172.3
120.00		0.1875	27.889	16.485	1598.3	24.82	148.74	65	72	156.2				
125.00		0.1875	26.593	15.714	1384.2	23.60	141.83	65	74	273.9				
130.00		0.1875	25.296	14.942	1190.2	22.38	134.91	65	75	260.8				
135.00		0.1875	24.000	14.171	1015.2	21.16	128.00	65	77	247.7				
137.00		0.1875	23.481	13.862	950.3	20.67	125.23	65	77	95.4				
140.00		0.1875	22.704	13.399	858.3	19.94	121.09	65	78	139.1				
145.00		0.1875	21.407	12.628	718.4	18.72	114.17	65	79	221.4				
147.00		0.1875	20.889	12.319	667.0	18.23	111.41	65	80	84.9				
148.50	Top - Section 3	0.1875	20.500	12.088	630.1	17.87	109.33	65	80	62.3				
148.50	Bot - Section 4	0.3750	20.000	23.120	1113.9	8.93	54.67	35	35					
150.00		0.3750	20.000	23.120	1113.9	0.00	53.33	35	35	118.0				
155.00		0.3750	20.000	23.120	1113.9	0.00	53.33	35	35	393.4				
157.00		0.3750	20.000	23.120	1113.9	0.00	53.33	35	35	157.3				
158.50		0.3750	20.000	23.120	1113.9	0.00	53.33	35	35	118.0				
Total Weight										19868.3				
											6992.8			

Wind Loading - Shaft

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 101 mph Wind	Iterations 24
Dead Load Factor 1.20	
Wind Load Factor 1.60	



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	RB1 RB2	1.00	0.85	21.088	23.20	457.01	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	446.80	0.650	0.000	5.00	24.265	15.77	585.4	0.0	1155.0
7.42	RT2 RB3	1.00	0.85	21.088	23.20	441.85	0.650	0.000	2.42	11.547	7.51	278.6	0.0	549.6
10.00		1.00	0.85	21.088	23.20	436.58	0.650	0.000	2.58	12.169	7.91	293.6	0.0	579.2
15.00		1.00	0.85	21.088	23.20	426.37	0.650	0.000	5.00	23.168	15.06	558.9	0.0	1102.5
20.00		1.00	0.90	22.375	24.61	428.67	0.650	0.000	5.00	22.620	14.70	579.0	0.0	1076.3
25.00		1.00	0.95	23.451	25.80	428.08	0.650	0.000	5.00	22.071	14.35	592.1	0.0	1050.0
29.75	RT1 RT3 RB4	1.00	0.98	24.326	26.76	425.57	0.650	0.000	4.75	20.460	13.30	569.4	0.0	973.2
30.00		1.00	0.98	24.369	26.81	425.40	0.650	0.000	0.25	1.063	0.69	29.6	0.0	50.6
35.00		1.00	1.01	25.172	27.69	421.20	0.650	0.000	5.00	20.975	13.63	604.0	0.0	997.5
40.00		1.00	1.04	25.890	28.48	415.84	0.650	0.000	5.00	20.426	13.28	605.0	0.0	971.3
45.00		1.00	1.07	26.540	29.19	409.57	0.650	0.000	5.00	19.878	12.92	603.5	0.0	945.0
46.59	Bot - Section 2	1.00	1.08	26.734	29.41	407.42	0.650	0.000	1.59	6.193	4.03	189.4	0.0	294.4
50.00	RT4	1.00	1.09	27.135	29.85	402.55	0.650	0.000	3.41	13.316	8.66	413.4	0.0	1257.4
52.92	Top - Section 1	1.00	1.11	27.461	30.21	398.16	0.650	0.000	2.92	11.189	7.27	351.5	0.0	1056.3
55.00		1.00	1.12	27.685	30.45	400.55	0.650	0.000	2.08	7.856	5.11	248.8	0.0	373.4
60.00		1.00	1.14	28.197	31.02	392.43	0.650	0.000	5.00	18.497	12.02	596.7	0.0	879.0
65.00		1.00	1.16	28.676	31.54	383.83	0.650	0.000	5.00	17.948	11.67	588.8	0.0	852.7
70.00		1.00	1.17	29.127	32.04	374.84	0.650	0.000	5.00	17.400	11.31	579.8	0.0	826.5
75.00		1.00	1.19	29.553	32.51	365.48	0.650	0.000	5.00	16.851	10.95	569.7	0.0	800.2
80.00		1.00	1.21	29.958	32.95	355.79	0.650	0.000	5.00	16.303	10.60	558.7	0.0	774.0
85.00		1.00	1.22	30.342	33.38	345.82	0.650	0.000	5.00	15.754	10.24	546.9	0.0	747.7
90.00		1.00	1.24	30.710	33.78	335.58	0.650	0.000	5.00	15.206	9.88	534.2	0.0	721.5
94.58	Bot - Section 3	1.00	1.25	31.033	34.14	325.98	0.650	0.000	4.58	13.457	8.75	477.7	0.0	638.3
95.00		1.00	1.25	31.061	34.17	325.10	0.650	0.000	0.42	1.214	0.79	43.1	0.0	91.6
96.75	RB5	1.00	1.26	31.181	34.30	321.38	0.650	0.000	1.75	5.056	3.29	180.4	0.0	381.5
99.42	Top - Section 2	1.00	1.26	31.360	34.50	315.65	0.650	0.000	2.67	7.575	4.92	271.8	0.0	571.5
100.00		1.00	1.27	31.399	34.54	318.00	0.650	0.000	0.58	1.636	1.06	58.8	0.0	46.7
105.00		1.00	1.28	31.723	34.89	307.11	0.650	0.000	5.00	13.719	8.92	497.9	0.0	391.7
110.00		1.00	1.29	32.035	35.24	296.03	0.650	0.000	5.00	13.171	8.56	482.7	0.0	375.9
115.00		1.00	1.30	32.336	35.57	284.77	0.650	0.000	5.00	12.622	8.20	466.9	0.0	360.2
117.25	RT5	1.00	1.31	32.468	35.72	279.65	0.650	0.000	2.25	5.501	3.58	204.3	0.0	157.0
120.00		1.00	1.32	32.627	35.89	273.34	0.650	0.000	2.75	6.573	4.27	245.3	0.0	187.5
125.00		1.00	1.33	32.909	36.20	261.76	0.650	0.000	5.00	11.525	7.49	433.9	0.0	328.7
130.00		1.00	1.34	33.182	36.50	250.03	0.650	0.000	5.00	10.977	7.14	416.7	0.0	312.9
135.00		1.00	1.35	33.446	36.79	238.16	0.650	0.000	5.00	10.428	6.78	399.0	0.0	297.2
137.00	Appurtenance(s)	1.00	1.35	33.550	36.90	233.38	0.650	0.000	2.00	4.018	2.61	154.2	0.0	114.5
140.00		1.00	1.36	33.703	37.07	226.16	0.650	0.000	3.00	5.862	3.81	226.0	0.0	167.0
145.00		1.00	1.37	33.953	37.35	214.04	0.650	0.000	5.00	9.332	6.07	362.5	0.0	265.7
147.00	Appurtenance(s)	1.00	1.37	34.051	37.46	209.15	0.650	0.000	2.00	3.579	2.33	139.4	0.0	101.9
148.50	Top - Section 3	1.00	1.38	34.124	37.54	205.48	0.650	0.000	1.50	2.627	1.71	102.5	0.0	74.7
150.00		1.00	1.38	34.196	37.62	197.63	0.600	0.000	1.50	2.500	1.50	90.3	0.0	141.6
155.00		1.00	1.39	34.433	37.88	198.32	0.600	0.000	5.00	8.333	5.00	303.0	0.0	472.0
157.00	Appurtenance(s)	1.00	1.39	34.526	37.98	198.58	0.600	0.000	2.00	3.333	2.00	121.5	0.0	188.8
158.50		1.00	1.39	34.596	38.06	198.78	0.600	0.000	1.50	2.500	1.50	91.3	0.0	141.6
Totals:									158.50			16,246.3		23,841.9

Discrete Appurtenance Forces

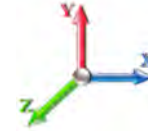
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 101 mph Wind

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.60



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	157.00	T-Arm (Flat)	3	34.526	37.979	0.56	0.75	16.88	1440.00	0.000	0.000	1025.43	0.00	0.00
2	157.00	BXA-171063-8BF-EDIN-X	2	34.526	37.979	0.67	0.80	3.95	25.20	0.000	0.000	240.11	0.00	0.00
3	157.00	BXA-171063-12BF-EDIN-	3	34.526	37.979	0.67	0.80	9.56	54.00	0.000	0.000	580.67	0.00	0.00
4	157.00	BXA-70063/6CF_	4	34.526	37.979	0.56	0.80	16.96	81.60	0.000	0.000	1030.40	0.00	0.00
5	157.00	DB846F65ZAXY	6	34.526	37.979	0.74	0.80	31.47	151.20	0.000	0.000	1912.39	0.00	0.00
6	147.00	4449 B71 + B85	3	34.051	37.456	0.54	0.80	3.17	263.52	0.000	0.000	189.84	0.00	0.00
7	147.00	RRUS 4415 B25	3	34.051	37.456	0.54	0.80	2.64	165.60	0.000	0.000	158.04	0.00	0.00
8	147.00	ACU-A20-N	4	34.051	37.456	0.54	0.80	0.30	4.80	0.000	0.000	17.99	0.00	0.00
9	147.00	AIR6449 B41	3	34.051	37.456	0.57	0.80	9.63	370.80	0.000	0.000	576.99	0.00	0.00
10	147.00	APXVAARR24_43-U-NA2	3	34.051	37.456	0.56	0.80	34.00	460.80	0.000	0.000	2037.82	0.00	0.00
11	147.00	KRD 9011461-B66A-B2A	3	34.051	37.456	0.70	0.80	13.59	475.92	0.000	0.000	814.63	0.00	0.00
12	147.00	T-Arm (Flat)	3	34.051	37.456	0.56	0.75	16.88	1440.00	0.000	0.000	1011.32	0.00	0.00
13	147.00	(3) T-Arm Kit	1	34.051	37.456	0.75	0.75	12.38	600.00	0.000	0.000	741.64	0.00	0.00
14	147.00	ALU 800MHz External	3	34.051	37.456	0.54	0.80	1.25	31.68	0.000	0.000	75.17	0.00	0.00
15	147.00	800 MHz RRH	3	34.051	37.456	0.54	0.80	4.00	190.80	0.000	0.000	239.96	0.00	0.00
16	137.00	LGP21401	12	33.550	36.905	0.54	0.80	8.30	203.04	0.000	0.000	489.94	0.00	0.00
17	137.00	AM-X-CD-16-65-00T-RET	3	33.550	36.905	0.60	0.80	14.44	174.60	0.000	0.000	852.42	0.00	0.00
18	137.00	RRUS 11	6	33.550	36.905	0.54	0.80	8.10	365.04	0.000	0.000	478.54	0.00	0.00
19	137.00	RA21.7770.00	6	33.550	36.905	0.58	0.80	22.95	267.84	0.000	0.000	1355.22	0.00	0.00
20	137.00	DC6-48-60-18-8F	1	33.550	36.905	0.80	0.80	0.74	38.16	0.000	0.000	43.46	0.00	0.00
21	137.00	T-Arm (Flat)	3	33.550	36.905	0.56	0.75	16.88	1440.00	0.000	0.000	996.43	0.00	0.00
Totals:									8,244.60			14,868.43		

Total Applied Force Summary

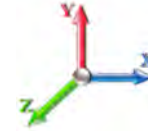
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

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		585.38	1367.81	0.00	0.00
7.42		278.57	652.59	0.00	0.00
10.00		293.58	688.97	0.00	0.00
15.00		558.92	1315.31	0.00	0.00
20.00		578.99	1289.06	0.00	0.00
25.00		592.13	1262.81	0.00	0.00
29.75		569.37	1175.35	0.00	0.00
30.00		29.64	61.20	0.00	0.00
35.00		604.01	1210.31	0.00	0.00
40.00		604.98	1184.06	0.00	0.00
45.00		603.52	1157.81	0.00	0.00
46.59		189.41	361.92	0.00	0.00
50.00		413.38	1402.66	0.00	0.00
52.92		351.51	1180.52	0.00	0.00
55.00		248.82	461.88	0.00	0.00
60.00		596.66	1091.72	0.00	0.00
65.00		588.80	1065.47	0.00	0.00
70.00		579.79	1039.22	0.00	0.00
75.00		569.73	1012.97	0.00	0.00
80.00		558.72	986.72	0.00	0.00
85.00		546.86	960.47	0.00	0.00
90.00		534.21	934.21	0.00	0.00
94.58		477.74	833.30	0.00	0.00
95.00		43.13	109.33	0.00	0.00
96.75		180.35	455.98	0.00	0.00
99.42		271.77	684.94	0.00	0.00
100.00		58.78	71.55	0.00	0.00
105.00		497.88	604.46	0.00	0.00
110.00		482.68	588.71	0.00	0.00
115.00		466.93	572.96	0.00	0.00
117.25		204.33	252.69	0.00	0.00
120.00		245.33	304.52	0.00	0.00
125.00		433.90	541.46	0.00	0.00
130.00		416.68	525.71	0.00	0.00
135.00		399.02	509.96	0.00	0.00
137.00	(31) attachments	4370.22	2688.25	0.00	0.00
140.00		226.03	246.25	0.00	0.00
145.00		362.46	397.82	0.00	0.00
147.00	(29) attachments	6002.82	4158.64	0.00	0.00
148.50		102.54	108.44	0.00	0.00
150.00		90.28	175.31	0.00	0.00
155.00		303.01	584.36	0.00	0.00
157.00	(18) attachments	4910.55	1985.74	0.00	0.00
158.50		91.33	141.61	0.00	0.00
Totals:		31,114.75	38,405.01	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

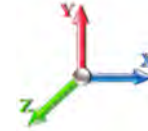
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

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	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.052	0.000	21.088	0.00	0.00
7.42	1.25" Reinforcing	Yes	2.42	0.000	3.00	0.60	0.00	0.052	0.000	21.088	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.08	0.000	1.50	0.14	0.00	0.042	0.000	21.088	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.50	0.000	3.00	0.38	0.00	0.042	0.000	21.088	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.027	0.000	21.088	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	22.375	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	23.451	0.00	0.00
29.75	1.25" Reinforcing	Yes	4.75	0.000	1.50	0.59	0.00	0.029	0.000	24.326	0.00	0.00
30.00	1.25" Reinforcing	Yes	0.25	0.000	1.50	0.03	0.00	0.029	0.000	24.369	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.030	0.000	25.172	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	25.890	0.00	0.00
45.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	26.540	0.00	0.00
46.59	1.25" Reinforcing	Yes	1.59	0.000	1.50	0.20	0.00	0.032	0.000	26.734	0.00	0.00
50.00	1.25" Reinforcing	Yes	3.41	0.000	1.50	0.43	0.00	0.032	0.000	27.135	0.00	0.00
52.92	1.25" Reinforcing	Yes	2.92	0.000	1.50	0.37	0.00	0.033	0.000	27.461	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	27.685	0.00	0.00
94.58	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	31.033	0.00	0.00
95.00	1.25" Reinforcing	Yes	0.42	0.000	1.50	0.05	0.00	0.043	0.000	31.061	0.00	0.00
96.75	1.25" Reinforcing	Yes	1.75	0.000	1.50	0.22	0.00	0.044	0.000	31.181	0.00	0.00
99.42	1.25" Reinforcing	Yes	2.67	0.000	1.50	0.33	0.00	0.044	0.000	31.360	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	1.50	0.07	0.00	0.045	0.000	31.399	0.00	0.00
105.00	1.25" Reinforcing	Yes	4.50	0.000	1.50	0.56	0.00	0.041	0.000	31.723	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind	Iterations 24
Dead Load Factor 1.20	
Wind Load Factor 1.60	

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.37	-31.15	0.00	-3496.3	0.00	3496.30	3324.94	1662.47	7900.55	3956.15	0.00	0.000	0.000	0.527
5.00	-36.96	-30.62	0.00	-3340.5	0.00	3340.53	3293.53	1646.77	7649.11	3830.24	0.06	-0.119	0.000	0.515
7.42	-36.27	-30.38	0.00	-3266.4	0.00	3266.42	3277.61	1638.81	7526.99	3769.09	0.14	-0.178	0.000	0.540
10.00	-35.53	-30.15	0.00	-3188.0	0.00	3188.03	3260.13	1630.06	7396.53	3703.76	0.26	-0.245	0.000	0.534
15.00	-34.15	-29.66	0.00	-3037.2	0.00	3037.29	3224.74	1612.37	7143.12	3576.87	0.58	-0.374	0.000	0.521
20.00	-32.80	-29.15	0.00	-2888.9	0.00	2888.98	3187.35	1593.68	6889.21	3449.73	1.04	-0.505	0.000	0.509
25.00	-31.48	-28.61	0.00	-2743.2	0.00	2743.25	3147.98	1573.99	6635.12	3322.49	1.64	-0.638	0.000	0.496
29.75	-30.28	-28.07	0.00	-2607.3	0.00	2607.33	3108.73	1554.36	6393.85	3201.68	2.34	-0.765	0.000	0.506
30.00	-30.18	-28.08	0.00	-2600.3	0.00	2600.32	3106.61	1553.31	6381.16	3195.32	2.38	-0.773	0.000	0.505
35.00	-28.91	-27.53	0.00	-2459.9	0.00	2459.94	3063.26	1531.63	6127.67	3068.39	3.27	-0.914	0.000	0.492
40.00	-27.67	-26.97	0.00	-2322.3	0.00	2322.32	3017.91	1508.96	5874.95	2941.84	4.30	-1.057	0.000	0.479
45.00	-26.48	-26.39	0.00	-2187.4	0.00	2187.47	2970.57	1485.29	5623.33	2815.85	5.49	-1.202	0.000	0.466
46.59	-26.09	-26.22	0.00	-2145.6	0.00	2145.60	2955.13	1477.57	5543.77	2776.00	5.90	-1.250	0.000	0.461
50.00	-24.65	-25.82	0.00	-2056.0	0.00	2056.09	2921.24	1460.62	5373.14	2690.56	6.83	-1.351	0.000	0.447
52.92	-23.44	-25.48	0.00	-1980.7	0.00	1980.70	2916.11	1458.05	5347.75	2677.85	7.68	-1.437	0.000	0.748
55.00	-22.90	-25.29	0.00	-1927.7	0.00	1927.70	2894.92	1447.46	5244.24	2626.02	8.33	-1.546	0.000	0.742
60.00	-21.72	-24.76	0.00	-1801.2	0.00	1801.25	2842.57	1421.28	4996.81	2502.12	10.08	-1.793	0.000	0.728
65.00	-20.57	-24.23	0.00	-1677.4	0.00	1677.47	2788.22	1394.11	4751.61	2379.34	12.10	-2.046	0.000	0.713
70.00	-19.45	-23.69	0.00	-1556.3	0.00	1556.34	2731.89	1365.95	4508.96	2257.83	14.38	-2.303	0.000	0.697
75.00	-18.35	-23.17	0.00	-1437.8	0.00	1437.87	2673.57	1336.78	4269.18	2137.76	16.93	-2.566	0.000	0.680
80.00	-17.29	-22.64	0.00	-1322.0	0.00	1322.04	2613.25	1306.63	4032.59	2019.29	19.76	-2.833	0.000	0.662
85.00	-16.25	-22.13	0.00	-1208.8	0.00	1208.82	2550.95	1275.47	3799.51	1902.58	22.87	-3.103	0.000	0.642
90.00	-15.25	-21.61	0.00	-1098.1	0.00	1098.19	2486.65	1243.33	3570.26	1787.78	26.27	-3.378	0.000	0.621
94.58	-14.39	-21.12	0.00	-999.14	0.00	999.14	2425.96	1212.98	3363.76	1684.38	29.64	-3.633	0.000	0.599
95.00	-14.26	-21.08	0.00	-990.34	0.00	990.34	2420.36	1210.18	3345.16	1675.07	29.95	-3.657	0.000	0.597
96.75	-13.79	-20.90	0.00	-953.45	0.00	953.45	2396.69	1198.35	3267.42	1636.14	31.31	-3.758	0.000	0.332
99.42	-13.10	-20.59	0.00	-897.73	0.00	897.73	1173.34	586.67	1596.31	799.34	33.44	-3.844	0.000	0.399
100.00	-13.00	-20.55	0.00	-885.71	0.00	885.71	1170.92	585.46	1585.67	794.02	33.91	-3.863	0.000	0.499
105.00	-12.36	-20.06	0.00	-782.95	0.00	782.95	1149.02	574.51	1494.34	748.28	38.06	-4.059	0.000	0.456
110.00	-11.75	-19.57	0.00	-682.67	0.00	682.67	1125.14	562.57	1402.88	702.48	42.41	-4.248	0.000	0.413
115.00	-11.17	-19.09	0.00	-584.82	0.00	584.82	1099.26	549.63	1311.60	656.78	46.95	-4.429	0.000	0.368
117.25	-10.90	-18.88	0.00	-541.88	0.00	541.88	1086.96	543.48	1270.68	636.28	49.05	-4.509	0.000	0.347
117.25	-10.90	-18.88	0.00	-541.88	0.00	541.88	1086.96	543.48	1270.68	636.28	49.05	-4.509	0.000	0.347
120.00	-10.54	-18.66	0.00	-489.96	0.00	489.96	1071.39	535.70	1220.84	611.33	51.68	-4.603	0.000	0.813
125.00	-9.91	-18.25	0.00	-396.68	0.00	396.68	1041.53	520.77	1130.90	566.29	56.71	-4.997	0.000	0.711
130.00	-9.32	-17.84	0.00	-305.45	0.00	305.45	1009.68	504.84	1042.12	521.83	62.14	-5.358	0.000	0.596
135.00	-8.79	-17.42	0.00	-216.26	0.00	216.26	975.84	487.92	954.81	478.11	67.92	-5.670	0.000	0.463
137.00	-6.52	-12.82	0.00	-181.42	0.00	181.42	961.75	480.87	920.37	460.87	70.31	-5.781	0.000	0.401
140.00	-6.26	-12.59	0.00	-142.95	0.00	142.95	940.01	470.00	869.29	435.29	73.99	-5.927	0.000	0.336
145.00	-5.88	-12.20	0.00	-80.00	0.00	80.00	902.19	451.09	785.88	393.52	80.29	-6.112	0.000	0.211
147.00	-2.39	-5.79	0.00	-55.60	0.00	55.60	886.50	443.25	753.18	377.15	82.86	-6.166	0.000	0.150
148.50	-2.29	-5.68	0.00	-46.92	0.00	46.92	874.53	437.26	728.93	365.00	84.80	-6.198	0.000	0.131
148.50	-2.29	-5.68	0.00	-46.92	0.00	46.92	728.28	364.14	584.01	379.17	84.80	-6.198	0.000	0.127
150.00	-2.12	-5.57	0.00	-38.41	0.00	38.41	728.28	364.14	584.01	379.17	86.75	-6.227	0.000	0.104
155.00	-1.57	-5.20	0.00	-10.57	0.00	10.57	728.28	364.14	584.01	379.17	93.28	-6.258	0.000	0.030
157.00	-0.13	-0.11	0.00	-0.16	0.00	0.16	728.28	364.14	584.01	379.17	95.90	-6.261	0.000	0.001
158.50	0.00	-0.09	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	97.86	-6.261	0.000	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Wind Loading - Shaft

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind	Iterations 24
Dead Load Factor 0.90	
Wind Load Factor 1.60	

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	RB1 RB2	1.00	0.85	21.088	23.20	457.01	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	446.80	0.650	0.000	5.00	24.265	15.77	585.4	0.0	866.3
7.42	RT2 RB3	1.00	0.85	21.088	23.20	441.85	0.650	0.000	2.42	11.547	7.51	278.6	0.0	412.2
10.00		1.00	0.85	21.088	23.20	436.58	0.650	0.000	2.58	12.169	7.91	293.6	0.0	434.4
15.00		1.00	0.85	21.088	23.20	426.37	0.650	0.000	5.00	23.168	15.06	558.9	0.0	826.9
20.00		1.00	0.90	22.375	24.61	428.67	0.650	0.000	5.00	22.620	14.70	579.0	0.0	807.2
25.00		1.00	0.95	23.451	25.80	428.08	0.650	0.000	5.00	22.071	14.35	592.1	0.0	787.5
29.75	RT1 RT3 RB4	1.00	0.98	24.326	26.76	425.57	0.650	0.000	4.75	20.460	13.30	569.4	0.0	729.9
30.00		1.00	0.98	24.369	26.81	425.40	0.650	0.000	0.25	1.063	0.69	29.6	0.0	37.9
35.00		1.00	1.01	25.172	27.69	421.20	0.650	0.000	5.00	20.975	13.63	604.0	0.0	748.2
40.00		1.00	1.04	25.890	28.48	415.84	0.650	0.000	5.00	20.426	13.28	605.0	0.0	728.5
45.00		1.00	1.07	26.540	29.19	409.57	0.650	0.000	5.00	19.878	12.92	603.5	0.0	708.8
46.59	Bot - Section 2	1.00	1.08	26.734	29.41	407.42	0.650	0.000	1.59	6.193	4.03	189.4	0.0	220.8
50.00	RT4	1.00	1.09	27.135	29.85	402.55	0.650	0.000	3.41	13.316	8.66	413.4	0.0	943.1
52.92	Top - Section 1	1.00	1.11	27.461	30.21	398.16	0.650	0.000	2.92	11.189	7.27	351.5	0.0	792.2
55.00		1.00	1.12	27.685	30.45	400.55	0.650	0.000	2.08	7.856	5.11	248.8	0.0	280.0
60.00		1.00	1.14	28.197	31.02	392.43	0.650	0.000	5.00	18.497	12.02	596.7	0.0	659.2
65.00		1.00	1.16	28.676	31.54	383.83	0.650	0.000	5.00	17.948	11.67	588.8	0.0	639.5
70.00		1.00	1.17	29.127	32.04	374.84	0.650	0.000	5.00	17.400	11.31	579.8	0.0	619.8
75.00		1.00	1.19	29.553	32.51	365.48	0.650	0.000	5.00	16.851	10.95	569.7	0.0	600.2
80.00		1.00	1.21	29.958	32.95	355.79	0.650	0.000	5.00	16.303	10.60	558.7	0.0	580.5
85.00		1.00	1.22	30.342	33.38	345.82	0.650	0.000	5.00	15.754	10.24	546.9	0.0	560.8
90.00		1.00	1.24	30.710	33.78	335.58	0.650	0.000	5.00	15.206	9.88	534.2	0.0	541.1
94.58	Bot - Section 3	1.00	1.25	31.033	34.14	325.98	0.650	0.000	4.58	13.457	8.75	477.7	0.0	478.7
95.00		1.00	1.25	31.061	34.17	325.10	0.650	0.000	0.42	1.214	0.79	43.1	0.0	68.7
96.75	RB5	1.00	1.26	31.181	34.30	321.38	0.650	0.000	1.75	5.056	3.29	180.4	0.0	286.1
99.42	Top - Section 2	1.00	1.26	31.360	34.50	315.65	0.650	0.000	2.67	7.575	4.92	271.8	0.0	428.6
100.00		1.00	1.27	31.399	34.54	318.00	0.650	0.000	0.58	1.636	1.06	58.8	0.0	35.0
105.00		1.00	1.28	31.723	34.89	307.11	0.650	0.000	5.00	13.719	8.92	497.9	0.0	293.8
110.00		1.00	1.29	32.035	35.24	296.03	0.650	0.000	5.00	13.171	8.56	482.7	0.0	282.0
115.00		1.00	1.30	32.336	35.57	284.77	0.650	0.000	5.00	12.622	8.20	466.9	0.0	270.1
117.25	RT5	1.00	1.31	32.468	35.72	279.65	0.650	0.000	2.25	5.501	3.58	204.3	0.0	117.7
120.00		1.00	1.32	32.627	35.89	273.34	0.650	0.000	2.75	6.573	4.27	245.3	0.0	140.6
125.00		1.00	1.33	32.909	36.20	261.76	0.650	0.000	5.00	11.525	7.49	433.9	0.0	246.5
130.00		1.00	1.34	33.182	36.50	250.03	0.650	0.000	5.00	10.977	7.14	416.7	0.0	234.7
135.00		1.00	1.35	33.446	36.79	238.16	0.650	0.000	5.00	10.428	6.78	399.0	0.0	222.9
137.00	Appurtenance(s)	1.00	1.35	33.550	36.90	233.38	0.650	0.000	2.00	4.018	2.61	154.2	0.0	85.9
140.00		1.00	1.36	33.703	37.07	226.16	0.650	0.000	3.00	5.862	3.81	226.0	0.0	125.2
145.00		1.00	1.37	33.953	37.35	214.04	0.650	0.000	5.00	9.332	6.07	362.5	0.0	199.3
147.00	Appurtenance(s)	1.00	1.37	34.051	37.46	209.15	0.650	0.000	2.00	3.579	2.33	139.4	0.0	76.4
148.50	Top - Section 3	1.00	1.38	34.124	37.54	205.48	0.650	0.000	1.50	2.627	1.71	102.5	0.0	56.1
150.00		1.00	1.38	34.196	37.62	197.63	0.600	0.000	1.50	2.500	1.50	90.3	0.0	106.2
155.00		1.00	1.39	34.433	37.88	198.32	0.600	0.000	5.00	8.333	5.00	303.0	0.0	354.0
157.00	Appurtenance(s)	1.00	1.39	34.526	37.98	198.58	0.600	0.000	2.00	3.333	2.00	121.5	0.0	141.6
158.50		1.00	1.39	34.596	38.06	198.78	0.600	0.000	1.50	2.500	1.50	91.3	0.0	106.2
Totals:								158.50				16,246.3		17,881.4

Discrete Appurtenance Forces

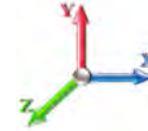
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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	157.00	T-Arm (Flat)	3	34.526	37.979	0.56	0.75	16.88	1080.00	0.000	0.000	1025.43	0.00	0.00
2	157.00	BXA-171063-8BF-EDIN-X	2	34.526	37.979	0.67	0.80	3.95	18.90	0.000	0.000	240.11	0.00	0.00
3	157.00	BXA-171063-12BF-EDIN-	3	34.526	37.979	0.67	0.80	9.56	40.50	0.000	0.000	580.67	0.00	0.00
4	157.00	BXA-70063/6CF_	4	34.526	37.979	0.56	0.80	16.96	61.20	0.000	0.000	1030.40	0.00	0.00
5	157.00	DB846F65ZAXY	6	34.526	37.979	0.74	0.80	31.47	113.40	0.000	0.000	1912.39	0.00	0.00
6	147.00	4449 B71 + B85	3	34.051	37.456	0.54	0.80	3.17	197.64	0.000	0.000	189.84	0.00	0.00
7	147.00	RRUS 4415 B25	3	34.051	37.456	0.54	0.80	2.64	124.20	0.000	0.000	158.04	0.00	0.00
8	147.00	ACU-A20-N	4	34.051	37.456	0.54	0.80	0.30	3.60	0.000	0.000	17.99	0.00	0.00
9	147.00	AIR6449 B41	3	34.051	37.456	0.57	0.80	9.63	278.10	0.000	0.000	576.99	0.00	0.00
10	147.00	APXVAARR24_43-U-NA2	3	34.051	37.456	0.56	0.80	34.00	345.60	0.000	0.000	2037.82	0.00	0.00
11	147.00	KRD 9011461-B66A-B2A	3	34.051	37.456	0.70	0.80	13.59	356.94	0.000	0.000	814.63	0.00	0.00
12	147.00	T-Arm (Flat)	3	34.051	37.456	0.56	0.75	16.88	1080.00	0.000	0.000	1011.32	0.00	0.00
13	147.00	(3) T-Arm Kit	1	34.051	37.456	0.75	0.75	12.38	450.00	0.000	0.000	741.64	0.00	0.00
14	147.00	ALU 800MHz External	3	34.051	37.456	0.54	0.80	1.25	23.76	0.000	0.000	75.17	0.00	0.00
15	147.00	800 MHz RRH	3	34.051	37.456	0.54	0.80	4.00	143.10	0.000	0.000	239.96	0.00	0.00
16	137.00	LGP21401	12	33.550	36.905	0.54	0.80	8.30	152.28	0.000	0.000	489.94	0.00	0.00
17	137.00	AM-X-CD-16-65-00T-RET	3	33.550	36.905	0.60	0.80	14.44	130.95	0.000	0.000	852.42	0.00	0.00
18	137.00	RRUS 11	6	33.550	36.905	0.54	0.80	8.10	273.78	0.000	0.000	478.54	0.00	0.00
19	137.00	RA21.7770.00	6	33.550	36.905	0.58	0.80	22.95	200.88	0.000	0.000	1355.22	0.00	0.00
20	137.00	DC6-48-60-18-8F	1	33.550	36.905	0.80	0.80	0.74	28.62	0.000	0.000	43.46	0.00	0.00
21	137.00	T-Arm (Flat)	3	33.550	36.905	0.56	0.75	16.88	1080.00	0.000	0.000	996.43	0.00	0.00
Totals:									6,183.45			14,868.43		

Total Applied Force Summary

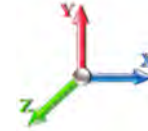
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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		585.38	1025.86	0.00	0.00
7.42		278.57	489.44	0.00	0.00
10.00		293.58	516.73	0.00	0.00
15.00		558.92	986.48	0.00	0.00
20.00		578.99	966.79	0.00	0.00
25.00		592.13	947.11	0.00	0.00
29.75		569.37	881.52	0.00	0.00
30.00		29.64	45.90	0.00	0.00
35.00		604.01	907.73	0.00	0.00
40.00		604.98	888.04	0.00	0.00
45.00		603.52	868.36	0.00	0.00
46.59		189.41	271.44	0.00	0.00
50.00		413.38	1052.00	0.00	0.00
52.92		351.51	885.39	0.00	0.00
55.00		248.82	346.41	0.00	0.00
60.00		596.66	818.79	0.00	0.00
65.00		588.80	799.10	0.00	0.00
70.00		579.79	779.41	0.00	0.00
75.00		569.73	759.72	0.00	0.00
80.00		558.72	740.04	0.00	0.00
85.00		546.86	720.35	0.00	0.00
90.00		534.21	700.66	0.00	0.00
94.58		477.74	624.98	0.00	0.00
95.00		43.13	81.99	0.00	0.00
96.75		180.35	341.99	0.00	0.00
99.42		271.77	513.71	0.00	0.00
100.00		58.78	53.66	0.00	0.00
105.00		497.88	453.34	0.00	0.00
110.00		482.68	441.53	0.00	0.00
115.00		466.93	429.72	0.00	0.00
117.25		204.33	189.52	0.00	0.00
120.00		245.33	228.39	0.00	0.00
125.00		433.90	406.09	0.00	0.00
130.00		416.68	394.28	0.00	0.00
135.00		399.02	382.47	0.00	0.00
137.00	(31) attachments	4370.22	2016.19	0.00	0.00
140.00		226.03	184.69	0.00	0.00
145.00		362.46	298.36	0.00	0.00
147.00	(29) attachments	6002.82	3118.98	0.00	0.00
148.50		102.54	81.33	0.00	0.00
150.00		90.28	131.48	0.00	0.00
155.00		303.01	438.27	0.00	0.00
157.00	(18) attachments	4910.55	1489.31	0.00	0.00
158.50		91.33	106.21	0.00	0.00
Totals:		31,114.75	28,803.76	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

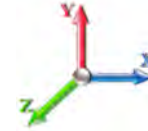
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.052	0.000	21.088	0.00	0.00
7.42	1.25" Reinforcing	Yes	2.42	0.000	3.00	0.60	0.00	0.052	0.000	21.088	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.08	0.000	1.50	0.14	0.00	0.042	0.000	21.088	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.50	0.000	3.00	0.38	0.00	0.042	0.000	21.088	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.027	0.000	21.088	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	22.375	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	23.451	0.00	0.00
29.75	1.25" Reinforcing	Yes	4.75	0.000	1.50	0.59	0.00	0.029	0.000	24.326	0.00	0.00
30.00	1.25" Reinforcing	Yes	0.25	0.000	1.50	0.03	0.00	0.029	0.000	24.369	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.030	0.000	25.172	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	25.890	0.00	0.00
45.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	26.540	0.00	0.00
46.59	1.25" Reinforcing	Yes	1.59	0.000	1.50	0.20	0.00	0.032	0.000	26.734	0.00	0.00
50.00	1.25" Reinforcing	Yes	3.41	0.000	1.50	0.43	0.00	0.032	0.000	27.135	0.00	0.00
52.92	1.25" Reinforcing	Yes	2.92	0.000	1.50	0.37	0.00	0.033	0.000	27.461	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	27.685	0.00	0.00
94.58	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	31.033	0.00	0.00
95.00	1.25" Reinforcing	Yes	0.42	0.000	1.50	0.05	0.00	0.043	0.000	31.061	0.00	0.00
96.75	1.25" Reinforcing	Yes	1.75	0.000	1.50	0.22	0.00	0.044	0.000	31.181	0.00	0.00
99.42	1.25" Reinforcing	Yes	2.67	0.000	1.50	0.33	0.00	0.044	0.000	31.360	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	1.50	0.07	0.00	0.045	0.000	31.399	0.00	0.00
105.00	1.25" Reinforcing	Yes	4.50	0.000	1.50	0.56	0.00	0.041	0.000	31.723	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Iterations 24

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.77	-31.14	0.00	-3468.3	0.00	3468.33	3324.94	1662.47	7900.55	3956.15	0.00	0.000	0.000	0.522
5.00	-27.70	-30.60	0.00	-3312.6	0.00	3312.61	3293.53	1646.77	7649.11	3830.24	0.06	-0.118	0.000	0.509
7.42	-27.18	-30.35	0.00	-3238.5	0.00	3238.56	3277.61	1638.81	7526.99	3769.09	0.14	-0.177	0.000	0.534
10.00	-26.61	-30.10	0.00	-3160.2	0.00	3160.25	3260.13	1630.06	7396.53	3703.76	0.25	-0.243	0.000	0.528
15.00	-25.56	-29.59	0.00	-3009.7	0.00	3009.76	3224.74	1612.37	7143.12	3576.87	0.58	-0.371	0.000	0.515
20.00	-24.53	-29.06	0.00	-2861.7	0.00	2861.79	3187.35	1593.68	6889.21	3449.73	1.04	-0.501	0.000	0.503
25.00	-23.53	-28.51	0.00	-2716.4	0.00	2716.48	3147.98	1573.99	6635.12	3322.49	1.63	-0.632	0.000	0.490
29.75	-22.62	-27.96	0.00	-2581.0	0.00	2581.04	3108.73	1554.36	6393.85	3201.68	2.32	-0.758	0.000	0.499
30.00	-22.54	-27.96	0.00	-2574.0	0.00	2574.05	3106.61	1553.31	6381.16	3195.32	2.36	-0.766	0.000	0.499
35.00	-21.57	-27.40	0.00	-2434.2	0.00	2434.25	3063.26	1531.63	6127.67	3068.39	3.24	-0.906	0.000	0.486
40.00	-20.63	-26.83	0.00	-2297.2	0.00	2297.28	3017.91	1508.96	5874.95	2941.84	4.27	-1.047	0.000	0.472
45.00	-19.73	-26.24	0.00	-2163.1	0.00	2163.15	2970.57	1485.29	5623.33	2815.85	5.44	-1.191	0.000	0.459
46.59	-19.43	-26.07	0.00	-2121.5	0.00	2121.52	2955.13	1477.57	5543.77	2776.00	5.84	-1.237	0.000	0.455
50.00	-18.34	-25.66	0.00	-2032.5	0.00	2032.54	2921.24	1460.62	5373.14	2690.56	6.77	-1.337	0.000	0.441
52.92	-17.42	-25.32	0.00	-1957.6	0.00	1957.61	2916.11	1458.05	5347.75	2677.85	7.61	-1.423	0.000	0.737
55.00	-17.01	-25.11	0.00	-1904.9	0.00	1904.94	2894.92	1447.46	5244.24	2626.02	8.25	-1.530	0.000	0.732
60.00	-16.10	-24.56	0.00	-1779.3	0.00	1779.38	2842.57	1421.28	4996.81	2502.12	9.99	-1.775	0.000	0.717
65.00	-15.21	-24.02	0.00	-1656.5	0.00	1656.57	2788.22	1394.11	4751.61	2379.34	11.98	-2.024	0.000	0.702
70.00	-14.35	-23.47	0.00	-1536.4	0.00	1536.49	2731.89	1365.95	4508.96	2257.83	14.24	-2.279	0.000	0.686
75.00	-13.51	-22.93	0.00	-1419.1	0.00	1419.14	2673.57	1336.78	4269.18	2137.76	16.76	-2.538	0.000	0.669
80.00	-12.70	-22.40	0.00	-1304.4	0.00	1304.48	2613.25	1306.63	4032.59	2019.29	19.56	-2.801	0.000	0.651
85.00	-11.90	-21.87	0.00	-1192.5	0.00	1192.50	2550.95	1275.47	3799.51	1902.58	22.64	-3.068	0.000	0.632
90.00	-11.14	-21.35	0.00	-1083.1	0.00	1083.14	2486.65	1243.33	3570.26	1787.78	26.00	-3.339	0.000	0.611
94.58	-10.49	-20.86	0.00	-985.29	0.00	985.29	2425.96	1212.98	3363.76	1684.38	29.32	-3.590	0.000	0.590
95.00	-10.39	-20.82	0.00	-976.60	0.00	976.60	2420.36	1210.18	3345.16	1675.07	29.64	-3.614	0.000	0.588
96.75	-10.03	-20.64	0.00	-940.16	0.00	940.16	2396.69	1198.35	3267.42	1636.14	30.98	-3.714	0.000	0.327
99.42	-9.51	-20.34	0.00	-885.13	0.00	885.13	1173.34	586.67	1596.31	799.34	33.08	-3.799	0.000	0.392
100.00	-9.43	-20.30	0.00	-873.26	0.00	873.26	1170.92	585.46	1585.67	794.02	33.54	-3.818	0.000	0.490
105.00	-8.94	-19.80	0.00	-771.78	0.00	771.78	1149.02	574.51	1494.34	748.28	37.64	-4.011	0.000	0.448
110.00	-8.47	-19.31	0.00	-672.79	0.00	672.79	1125.14	562.57	1402.88	702.48	41.94	-4.197	0.000	0.406
115.00	-8.04	-18.83	0.00	-576.23	0.00	576.23	1099.26	549.63	1311.60	656.78	46.43	-4.375	0.000	0.361
117.25	-7.84	-18.63	0.00	-533.86	0.00	533.86	1086.96	543.48	1270.68	636.28	48.51	-4.454	0.000	0.341
117.25	-7.84	-18.63	0.00	-533.86	0.00	533.86	1086.96	543.48	1270.68	636.28	48.51	-4.454	0.000	0.341
120.00	-7.55	-18.40	0.00	-482.63	0.00	482.63	1071.39	535.70	1220.84	611.33	51.10	-4.546	0.000	0.798
125.00	-7.06	-17.98	0.00	-390.65	0.00	390.65	1041.53	520.77	1130.90	566.29	56.07	-4.935	0.000	0.698
130.00	-6.61	-17.57	0.00	-300.77	0.00	300.77	1009.68	504.84	1042.12	521.83	61.43	-5.290	0.000	0.584
135.00	-6.20	-17.15	0.00	-212.94	0.00	212.94	975.84	487.92	954.81	478.11	67.13	-5.597	0.000	0.453
137.00	-4.60	-12.62	0.00	-178.64	0.00	178.64	961.75	480.87	920.37	460.87	69.50	-5.707	0.000	0.393
140.00	-4.40	-12.39	0.00	-140.79	0.00	140.79	940.01	470.00	869.29	435.29	73.13	-5.850	0.000	0.329
145.00	-4.12	-12.00	0.00	-78.86	0.00	78.86	902.19	451.09	785.88	393.52	79.35	-6.032	0.000	0.206
147.00	-1.65	-5.71	0.00	-54.85	0.00	54.85	886.50	443.25	753.18	377.15	81.89	-6.085	0.000	0.147
148.50	-1.58	-5.60	0.00	-46.30	0.00	46.30	874.53	437.26	728.93	365.00	83.80	-6.118	0.000	0.129
148.50	-1.58	-5.60	0.00	-46.30	0.00	46.30	728.28	364.14	584.01	379.17	83.80	-6.118	0.000	0.125
150.00	-1.45	-5.49	0.00	-37.90	0.00	37.90	728.28	364.14	584.01	379.17	85.73	-6.146	0.000	0.102
155.00	-1.05	-5.14	0.00	-10.44	0.00	10.44	728.28	364.14	584.01	379.17	92.17	-6.177	0.000	0.029
157.00	-0.10	-0.10	0.00	-0.15	0.00	0.15	728.28	364.14	584.01	379.17	94.75	-6.180	0.000	0.001
158.50	0.00	-0.09	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	96.69	-6.180	0.000	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Wind Loading - Shaft

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II

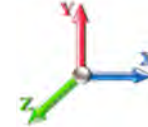


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00



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	RB1 RB2	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.300	30.36	172.6	446.3	1601.3
7.42	RT2 RB3	1.00	0.85	5.168	5.68	0.00	1.200	1.292	2.42	12.069	14.48	82.3	222.5	772.1
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	2.58	12.742	15.29	86.9	241.7	820.8
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.324	29.19	165.9	477.0	1579.6
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	23.809	28.57	172.3	479.8	1556.1
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.287	27.94	176.7	479.2	1529.3
29.75	RT1 RT3 RB4	1.00	0.98	5.962	6.56	0.00	1.200	1.485	4.75	21.635	25.96	170.3	452.7	1425.9
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	0.25	1.125	1.35	8.9	23.8	74.4
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.232	26.68	181.0	471.8	1469.4
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	21.700	26.04	181.7	466.1	1437.4
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.167	25.40	181.7	459.3	1404.4
46.59	Bot - Section 2	1.00	1.08	6.552	7.21	0.00	1.200	1.553	1.59	6.604	7.92	57.1	145.0	439.4
50.00	RT4	1.00	1.09	6.650	7.32	0.00	1.200	1.564	3.41	14.206	17.05	124.7	312.5	1570.0
52.92	Top - Section 1	1.00	1.11	6.730	7.40	0.00	1.200	1.573	2.92	11.954	14.35	106.2	264.6	1320.9
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.08	8.403	10.08	75.3	187.1	560.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	19.824	23.79	180.8	440.9	1319.9
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	19.286	23.14	178.9	431.7	1284.4
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	18.747	22.50	176.6	422.0	1248.5
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	18.208	21.85	174.1	411.9	1212.1
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	17.669	21.20	171.2	401.5	1175.5
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	17.128	20.55	168.1	390.8	1138.5
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	16.588	19.91	164.8	379.8	1101.3
94.58	Bot - Section 3	1.00	1.25	7.605	8.37	0.00	1.200	1.667	4.58	14.730	17.68	147.9	338.7	977.0
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	0.42	1.330	1.60	13.4	31.0	122.6
96.75	RB5	1.00	1.26	7.642	8.41	0.00	1.200	1.670	1.75	5.543	6.65	55.9	129.0	510.5
99.42	Top - Section 2	1.00	1.26	7.685	8.45	0.00	1.200	1.675	2.67	8.320	9.98	84.4	193.2	764.7
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	0.58	1.799	2.16	18.3	42.1	88.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	15.123	18.15	155.2	349.3	741.0
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	14.581	17.50	151.1	337.4	713.3
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	14.039	16.85	146.9	325.3	685.5
117.25	RT5	1.00	1.31	7.957	8.75	0.00	1.200	1.703	2.25	6.140	7.37	64.5	143.9	300.9
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	2.75	7.355	8.83	77.6	172.2	359.7
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	12.953	15.54	137.9	300.6	629.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	12.411	14.89	133.2	288.0	601.0
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	11.868	14.24	128.4	275.3	572.5
137.00	Appurtenance(s)	1.00	1.35	8.222	9.04	0.00	1.200	1.729	2.00	4.594	5.51	49.9	108.1	222.5
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	3.00	6.729	8.07	73.4	157.5	324.4
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	10.781	12.94	118.4	249.4	515.1
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	4.160	4.99	45.8	97.7	199.6
148.50	Top - Section 3	1.00	1.38	8.363	9.20	0.00	1.200	1.743	1.50	3.063	3.68	33.8	72.1	146.8
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	1.50	2.936	3.52	32.5	69.5	211.2
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	9.792	11.75	109.1	232.6	704.7
157.00	Appurtenance(s)	1.00	1.39	8.462	9.31	0.00	1.200	1.753	2.00	3.918	4.70	43.8	93.2	282.0
158.50		1.00	1.39	8.478	9.33	0.00	1.200	1.755	1.50	2.939	3.53	32.9	70.0	211.6
Totals:									158.50			5,012.4	35,926.1	

Discrete Appurtenance Forces

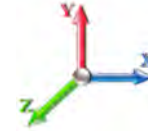
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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	157.00	T-Arm (Flat)	3	8.462	9.308	0.56	0.75	31.67	2041.53	0.000	0.000	294.75	0.00	0.00	
2	157.00	BXA-171063-8BF-EDIN-X	2	8.462	9.308	0.67	0.80	6.19	119.29	0.000	0.000	57.62	0.00	0.00	
3	157.00	BXA-171063-12BF-EDIN-	3	8.462	9.308	0.67	0.80	14.31	258.50	0.000	0.000	133.23	0.00	0.00	
4	157.00	BXA-70063/6CF_	4	8.462	9.308	0.56	0.80	23.18	488.63	0.000	0.000	215.71	0.00	0.00	
5	157.00	DB846F65ZAXY	6	8.462	9.308	0.74	0.80	36.99	1342.04	0.000	0.000	344.33	0.00	0.00	
6	147.00	4449 B71 + B85	3	8.345	9.180	0.54	0.80	4.08	261.20	0.000	0.000	37.47	0.00	0.00	
7	147.00	RRUS 4415 B25	3	8.345	9.180	0.54	0.80	3.46	260.46	0.000	0.000	31.80	0.00	0.00	
8	147.00	ACU-A20-N	4	8.345	9.180	0.54	0.80	0.94	16.75	0.000	0.000	8.58	0.00	0.00	
9	147.00	AIR6449 B41	3	8.345	9.180	0.57	0.80	11.24	686.23	0.000	0.000	103.22	0.00	0.00	
10	147.00	APXVAARR24_43-U-NA2	3	8.345	9.180	0.56	0.80	37.19	1711.75	0.000	0.000	341.38	0.00	0.00	
11	147.00	KRD 9011461-B66A-B2A	3	8.345	9.180	0.70	0.80	15.93	1024.32	0.000	0.000	146.23	0.00	0.00	
12	147.00	T-Arm (Flat)	3	8.345	9.180	0.56	0.75	31.57	2036.01	0.000	0.000	289.80	0.00	0.00	
13	147.00	(3) T-Arm Kit	1	8.345	9.180	0.75	0.75	24.44	1042.18	0.000	0.000	224.39	0.00	0.00	
14	147.00	ALU 800MHz External	3	8.345	9.180	0.54	0.80	2.29	69.50	0.000	0.000	21.04	0.00	0.00	
15	147.00	800 MHz RRH	3	8.345	9.180	0.54	0.80	5.84	348.93	0.000	0.000	53.60	0.00	0.00	
16	137.00	LGP21401	12	8.222	9.044	0.54	0.80	13.62	415.15	0.000	0.000	123.22	0.00	0.00	
17	137.00	AM-X-CD-16-65-00T-RET	3	8.222	9.044	0.60	0.80	19.42	517.54	0.000	0.000	175.64	0.00	0.00	
18	137.00	RRUS 11	6	8.222	9.044	0.54	0.80	10.18	894.30	0.000	0.000	92.06	0.00	0.00	
19	137.00	RA21.7770.00	6	8.222	9.044	0.58	0.80	31.52	818.70	0.000	0.000	285.13	0.00	0.00	
20	137.00	DC6-48-60-18-8F	1	8.222	9.044	0.80	0.80	1.08	81.73	0.000	0.000	9.80	0.00	0.00	
21	137.00	T-Arm (Flat)	3	8.222	9.044	0.56	0.75	31.47	2030.14	0.000	0.000	284.61	0.00	0.00	
Totals:									16,464.87						3,273.60

Total Applied Force Summary

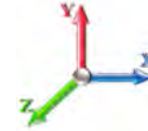
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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		172.59	1841.76	0.00	0.00
7.42		82.33	889.10	0.00	0.00
10.00		86.92	946.17	0.00	0.00
15.00		165.93	1824.01	0.00	0.00
20.00		172.33	1801.73	0.00	0.00
25.00		176.66	1775.81	0.00	0.00
29.75		170.25	1660.86	0.00	0.00
30.00		8.87	86.75	0.00	0.00
35.00		181.04	1717.39	0.00	0.00
40.00		181.75	1685.99	0.00	0.00
45.00		181.73	1653.55	0.00	0.00
46.59		57.11	518.56	0.00	0.00
50.00		124.70	1740.41	0.00	0.00
52.92		106.20	1466.87	0.00	0.00
55.00		75.26	649.54	0.00	0.00
60.00		180.83	1532.63	0.00	0.00
65.00		178.91	1497.14	0.00	0.00
70.00		176.65	1461.21	0.00	0.00
75.00		174.08	1424.90	0.00	0.00
80.00		171.23	1388.25	0.00	0.00
85.00		168.13	1351.28	0.00	0.00
90.00		164.79	1314.03	0.00	0.00
94.58		147.87	1172.69	0.00	0.00
95.00		13.36	143.71	0.00	0.00
96.75		55.91	599.04	0.00	0.00
99.42		84.40	899.74	0.00	0.00
100.00		18.28	118.38	0.00	0.00
105.00		155.19	990.39	0.00	0.00
110.00		151.10	926.09	0.00	0.00
115.00		146.85	898.26	0.00	0.00
117.25		64.49	396.60	0.00	0.00
120.00		77.63	476.69	0.00	0.00
125.00		137.90	842.07	0.00	0.00
130.00		133.22	813.74	0.00	0.00
135.00		128.40	785.26	0.00	0.00
137.00	(31) attachments	1020.31	5065.19	0.00	0.00
140.00		73.36	403.71	0.00	0.00
145.00		118.42	647.26	0.00	0.00
147.00	(29) attachments	1303.33	7709.73	0.00	0.00
148.50		33.81	180.52	0.00	0.00
150.00		32.48	244.85	0.00	0.00
155.00		109.08	817.00	0.00	0.00
157.00	(18) attachments	1089.40	4576.92	0.00	0.00
158.50		32.89	211.57	0.00	0.00
Totals:		8,285.99	59,147.38	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



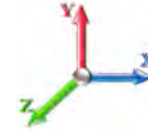
Page: 23

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

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



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	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.29	0.00	0.052	0.000	5.168	0.00	27.67
7.42	1.25" Reinforcing	Yes	2.42	0.000	3.00	1.13	0.00	0.052	0.000	5.168	0.00	14.05
10.00	1.25" Reinforcing	Yes	1.08	0.000	1.50	0.37	0.00	0.042	0.000	5.168	0.00	6.50
10.00	1.25" Reinforcing	Yes	1.50	0.000	3.00	0.71	0.00	0.042	0.000	5.168	0.00	9.03
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.78	0.00	0.027	0.000	5.168	0.00	31.67
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.81	0.00	0.028	0.000	5.483	0.00	32.84
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.84	0.00	0.028	0.000	5.747	0.00	33.78
29.75	1.25" Reinforcing	Yes	4.75	0.000	1.50	1.77	0.00	0.029	0.000	5.962	0.00	32.81
30.00	1.25" Reinforcing	Yes	0.25	0.000	1.50	0.09	0.00	0.029	0.000	5.972	0.00	1.73
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.88	0.00	0.030	0.000	6.169	0.00	35.27
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.90	0.00	0.031	0.000	6.345	0.00	35.88
45.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	1.91	0.00	0.031	0.000	6.504	0.00	36.43
46.59	1.25" Reinforcing	Yes	1.59	0.000	1.50	0.61	0.00	0.032	0.000	6.552	0.00	11.61
50.00	1.25" Reinforcing	Yes	3.41	0.000	1.50	1.32	0.00	0.032	0.000	6.650	0.00	25.21
52.92	1.25" Reinforcing	Yes	2.92	0.000	1.50	1.13	0.00	0.033	0.000	6.730	0.00	21.73
55.00	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.03	0.00	0.001	0.000	6.785	0.00	0.60
94.58	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.03	0.00	0.001	0.000	7.605	0.00	0.67
95.00	1.25" Reinforcing	Yes	0.42	0.000	1.50	0.17	0.00	0.043	0.000	7.612	0.00	3.35
96.75	1.25" Reinforcing	Yes	1.75	0.000	1.50	0.71	0.00	0.044	0.000	7.642	0.00	14.10
99.42	1.25" Reinforcing	Yes	2.67	0.000	1.50	1.08	0.00	0.044	0.000	7.685	0.00	21.56
100.00	1.25" Reinforcing	Yes	0.58	0.000	1.50	0.24	0.00	0.045	0.000	7.695	0.00	4.72
105.00	1.25" Reinforcing	Yes	4.50	0.000	1.50	1.83	0.00	0.041	0.000	7.774	0.00	36.65
Totals:											0.0	437.9

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-59.15	-8.30	0.00	-909.25	0.00	909.25	3324.94	1662.47	7900.55	3956.15	0.00	0.000	0.000	0.145
5.00	-57.30	-8.15	0.00	-867.74	0.00	867.74	3293.53	1646.77	7649.11	3830.24	0.02	-0.031	0.000	0.142
7.42	-56.41	-8.09	0.00	-848.01	0.00	848.01	3277.61	1638.81	7526.99	3769.09	0.04	-0.046	0.000	0.149
10.00	-55.46	-8.02	0.00	-827.15	0.00	827.15	3260.13	1630.06	7396.53	3703.76	0.07	-0.064	0.000	0.147
15.00	-53.63	-7.89	0.00	-787.04	0.00	787.04	3224.74	1612.37	7143.12	3576.87	0.15	-0.097	0.000	0.144
20.00	-51.82	-7.74	0.00	-747.62	0.00	747.62	3187.35	1593.68	6889.21	3449.73	0.27	-0.131	0.000	0.140
25.00	-50.04	-7.59	0.00	-708.92	0.00	708.92	3147.98	1573.99	6635.12	3322.49	0.43	-0.165	0.000	0.136
29.75	-48.38	-7.43	0.00	-672.87	0.00	672.87	3108.73	1554.36	6393.85	3201.68	0.61	-0.198	0.000	0.139
30.00	-48.29	-7.43	0.00	-671.02	0.00	671.02	3106.61	1553.31	6381.16	3195.32	0.62	-0.200	0.000	0.139
35.00	-46.57	-7.28	0.00	-633.85	0.00	633.85	3063.26	1531.63	6127.67	3068.39	0.85	-0.237	0.000	0.135
40.00	-44.88	-7.12	0.00	-597.47	0.00	597.47	3017.91	1508.96	5874.95	2941.84	1.12	-0.274	0.000	0.131
45.00	-43.23	-6.94	0.00	-561.89	0.00	561.89	2970.57	1485.29	5623.33	2815.85	1.42	-0.311	0.000	0.127
46.59	-42.71	-6.90	0.00	-550.87	0.00	550.87	2955.13	1477.57	5543.77	2776.00	1.53	-0.323	0.000	0.126
50.00	-40.96	-6.78	0.00	-527.32	0.00	527.32	2921.24	1460.62	5373.14	2690.56	1.77	-0.349	0.000	0.122
52.92	-39.49	-6.68	0.00	-507.52	0.00	507.52	2916.11	1458.05	5347.75	2677.85	1.99	-0.371	0.000	0.203
55.00	-38.84	-6.63	0.00	-493.62	0.00	493.62	2894.92	1447.46	5244.24	2626.02	2.16	-0.399	0.000	0.201
60.00	-37.30	-6.48	0.00	-460.45	0.00	460.45	2842.57	1421.28	4996.81	2502.12	2.61	-0.462	0.000	0.197
65.00	-35.80	-6.33	0.00	-428.03	0.00	428.03	2788.22	1394.11	4751.61	2379.34	3.13	-0.527	0.000	0.193
70.00	-34.33	-6.18	0.00	-396.37	0.00	396.37	2731.89	1365.95	4508.96	2257.83	3.71	-0.592	0.000	0.188
75.00	-32.90	-6.03	0.00	-365.46	0.00	365.46	2673.57	1336.78	4269.18	2137.76	4.37	-0.659	0.000	0.183
80.00	-31.51	-5.88	0.00	-335.31	0.00	335.31	2613.25	1306.63	4032.59	2019.29	5.10	-0.727	0.000	0.178
85.00	-30.15	-5.73	0.00	-305.91	0.00	305.91	2550.95	1275.47	3799.51	1902.58	5.90	-0.795	0.000	0.173
90.00	-28.84	-5.58	0.00	-277.26	0.00	277.26	2486.65	1243.33	3570.26	1787.78	6.77	-0.865	0.000	0.167
94.58	-27.66	-5.43	0.00	-251.68	0.00	251.68	2425.96	1212.98	3363.76	1684.38	7.63	-0.929	0.000	0.161
95.00	-27.52	-5.42	0.00	-249.42	0.00	249.42	2420.36	1210.18	3345.16	1675.07	7.71	-0.935	0.000	0.160
96.75	-26.92	-5.37	0.00	-239.93	0.00	239.93	2396.69	1198.35	3267.42	1636.14	8.06	-0.961	0.000	0.089
99.42	-26.02	-5.27	0.00	-225.62	0.00	225.62	1173.34	586.67	1596.31	799.34	8.60	-0.982	0.000	0.107
100.00	-25.90	-5.27	0.00	-222.54	0.00	222.54	1170.92	585.46	1585.67	794.02	8.72	-0.987	0.000	0.134
105.00	-24.91	-5.11	0.00	-196.21	0.00	196.21	1149.02	574.51	1494.34	748.28	9.78	-1.036	0.000	0.123
110.00	-23.98	-4.97	0.00	-170.64	0.00	170.64	1125.14	562.57	1402.88	702.48	10.89	-1.084	0.000	0.111
115.00	-23.08	-4.81	0.00	-145.81	0.00	145.81	1099.26	549.63	1311.60	656.78	12.05	-1.129	0.000	0.099
117.25	-22.68	-4.75	0.00	-134.98	0.00	134.98	1086.96	543.48	1270.68	636.28	12.59	-1.149	0.000	0.094
117.25	-22.68	-4.75	0.00	-134.98	0.00	134.98	1086.96	543.48	1270.68	636.28	12.59	-1.149	0.000	0.094
120.00	-22.20	-4.69	0.00	-121.92	0.00	121.92	1071.39	535.70	1220.84	611.33	13.26	-1.172	0.000	0.220
125.00	-21.36	-4.57	0.00	-98.48	0.00	98.48	1041.53	520.77	1130.90	566.29	14.54	-1.270	0.000	0.194
130.00	-20.54	-4.44	0.00	-75.65	0.00	75.65	1009.68	504.84	1042.12	521.83	15.92	-1.360	0.000	0.165
135.00	-19.75	-4.31	0.00	-53.42	0.00	53.42	975.84	487.92	954.81	478.11	17.39	-1.437	0.000	0.132
137.00	-14.71	-3.17	0.00	-44.80	0.00	44.80	961.75	480.87	920.37	460.87	17.99	-1.464	0.000	0.113
140.00	-14.31	-3.10	0.00	-35.27	0.00	35.27	940.01	470.00	869.29	435.29	18.93	-1.500	0.000	0.096
145.00	-13.67	-2.97	0.00	-19.77	0.00	19.77	902.19	451.09	785.88	393.52	20.52	-1.546	0.000	0.065
147.00	-5.99	-1.46	0.00	-13.82	0.00	13.82	886.50	443.25	753.18	377.15	21.18	-1.559	0.000	0.043
148.50	-5.81	-1.42	0.00	-11.63	0.00	11.63	874.53	437.26	728.93	365.00	21.67	-1.567	0.000	0.039
148.50	-5.81	-1.42	0.00	-11.63	0.00	11.63	728.28	364.14	584.01	379.17	21.67	-1.567	0.000	0.039
150.00	-5.57	-1.39	0.00	-9.49	0.00	9.49	728.28	364.14	584.01	379.17	22.16	-1.574	0.000	0.033
155.00	-4.76	-1.25	0.00	-2.57	0.00	2.57	728.28	364.14	584.01	379.17	23.81	-1.582	0.000	0.013
157.00	-0.21	-0.04	0.00	-0.06	0.00	0.06	728.28	364.14	584.01	379.17	24.48	-1.583	0.000	0.000
158.50	0.00	-0.03	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	24.97	-1.583	0.000	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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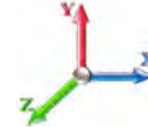
Seismic Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.14	Ss 0.18
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.37	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	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
5.00		962.54	0.00	0.03	0.02	12.70	
7.42	RT2 RB3	458.01	0.00	0.04	0.02	7.64	
10.00		482.65	0.01	0.05	0.03	9.32	
15.00		918.79	0.02	0.06	0.04	20.59	
20.00		896.92	0.03	0.07	0.04	21.56	
25.00		875.04	0.05	0.07	0.04	21.86	
29.75	RT1 RT3 RB4	811.03	0.07	0.07	0.04	20.78	
30.00		42.14	0.07	0.07	0.04	1.08	
35.00		831.29	0.09	0.07	0.04	21.82	
40.00		809.42	0.12	0.07	0.03	21.73	
45.00		787.54	0.15	0.07	0.03	21.55	
46.59	Bot - Section 2	245.34	0.16	0.07	0.03	6.74	
50.00	RT4	1047.8	0.19	0.06	0.02	28.94	
52.92	Top - Section 1	880.22	0.21	0.06	0.02	24.23	
55.00		311.15	0.23	0.06	0.02	8.49	
60.00		732.46	0.27	0.05	0.01	19.04	
65.00		710.59	0.32	0.04	0.01	16.51	
70.00		688.71	0.37	0.03	0.01	12.76	
75.00		666.84	0.42	0.01	0.01	7.77	
80.00		644.96	0.48	-0.01	0.01	1.87	
85.00		623.09	0.54	-0.03	0.01	-4.18	
90.00		601.21	0.61	-0.06	0.02	-9.45	
94.58	Bot - Section 3	531.89	0.67	-0.08	0.02	-11.82	
95.00		76.33	0.68	-0.08	0.03	-1.73	
96.75	RB5	317.93	0.70	-0.09	0.03	-7.78	
99.42	Top - Section 2	476.22	0.74	-0.10	0.04	-12.58	
100.00		38.94	0.75	-0.10	0.04	-1.04	
105.00		326.41	0.83	-0.12	0.06	-8.94	
110.00		313.29	0.91	-0.12	0.09	-7.71	
115.00		300.16	0.99	-0.11	0.13	-5.55	
117.25	RT5	130.79	1.03	-0.10	0.15	-1.91	
120.00		156.25	1.08	-0.08	0.18	-1.41	
125.00		273.91	1.18	-0.02	0.24	1.03	
130.00		260.79	1.27	0.08	0.31	5.17	
135.00		247.66	1.37	0.23	0.40	9.72	
137.00	Appurtenance(s)	2169.2	1.41	0.31	0.44	104.00	
140.00		139.15	1.47	0.44	0.51	8.63	
145.00		221.41	1.58	0.72	0.65	19.54	
147.00	Appurtenance(s)	3421.4	1.63	0.86	0.71	341.27	
148.50	Top - Section 3	62.29	1.66	0.97	0.75	6.77	
150.00		118.01	1.69	1.09	0.80	13.93	
155.00		393.36	1.81	1.57	0.99	59.56	
157.00	Appurtenance(s)	1617.3	1.85	1.80	1.07	268.12	
158.50		118.01	1.89	1.98	1.14	20.88	
Totals:		26,738.8				1,091.5	Total Wind: 31,114.7

Seismic Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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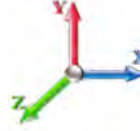
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.14	Ss 0.18
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.37	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	-38.40	-1.17	0.00	-145.24	0.00	145.24	3324.94	1662.47	7900.55	3956.15	0.00	0.00	0.00	0.028
5.00	-37.04	-1.16	0.00	-139.41	0.00	139.41	3293.53	1646.77	7649.11	3830.24	0.00	0.00	0.00	0.028
7.42	-36.38	-1.15	0.00	-136.61	0.00	136.61	3277.61	1638.81	7526.99	3769.09	0.01	-0.01	-0.01	0.029
10.00	-35.70	-1.14	0.00	-133.64	0.00	133.64	3260.13	1630.06	7396.53	3703.76	0.01	-0.01	-0.01	0.029
15.00	-34.38	-1.13	0.00	-127.93	0.00	127.93	3224.74	1612.37	7143.12	3576.87	0.02	-0.02	-0.02	0.028
20.00	-33.09	-1.11	0.00	-122.30	0.00	122.30	3187.35	1593.68	6889.21	3449.73	0.04	-0.02	-0.02	0.028
25.00	-31.83	-1.09	0.00	-116.76	0.00	116.76	3147.98	1573.99	6635.12	3322.49	0.07	-0.03	-0.03	0.027
29.75	-30.65	-1.07	0.00	-111.60	0.00	111.60	3108.73	1554.36	6393.85	3201.68	0.10	-0.03	-0.03	0.028
30.00	-30.59	-1.07	0.00	-111.33	0.00	111.33	3106.61	1553.31	6381.16	3195.32	0.10	-0.03	-0.03	0.028
35.00	-29.38	-1.05	0.00	-105.99	0.00	105.99	3063.26	1531.63	6127.67	3068.39	0.14	-0.04	-0.04	0.027
40.00	-28.20	-1.03	0.00	-100.74	0.00	100.74	3017.91	1508.96	5874.95	2941.84	0.18	-0.04	-0.04	0.026
45.00	-27.04	-1.01	0.00	-95.60	0.00	95.60	2970.57	1485.29	5623.33	2815.85	0.23	-0.05	-0.05	0.026
46.59	-26.68	-1.00	0.00	-93.99	0.00	93.99	2955.13	1477.57	5543.77	2776.00	0.25	-0.05	-0.05	0.025
50.00	-25.27	-0.97	0.00	-90.57	0.00	90.57	2921.24	1460.62	5373.14	2690.56	0.29	-0.06	-0.06	0.025
52.92	-24.09	-0.95	0.00	-87.72	0.00	87.72	2916.11	1458.05	5347.75	2677.85	0.32	-0.06	-0.06	0.041
55.00	-23.63	-0.95	0.00	-85.74	0.00	85.74	2894.92	1447.46	5244.24	2626.02	0.35	-0.07	-0.07	0.041
60.00	-22.54	-0.93	0.00	-81.02	0.00	81.02	2842.57	1421.28	4996.81	2502.12	0.43	-0.08	-0.08	0.040
65.00	-21.47	-0.92	0.00	-76.37	0.00	76.37	2788.22	1394.11	4751.61	2379.34	0.52	-0.09	-0.09	0.040
70.00	-20.43	-0.91	0.00	-71.79	0.00	71.79	2731.89	1365.95	4508.96	2257.83	0.61	-0.10	-0.10	0.039
75.00	-19.42	-0.90	0.00	-67.26	0.00	67.26	2673.57	1336.78	4269.18	2137.76	0.73	-0.11	-0.11	0.039
80.00	-18.43	-0.90	0.00	-62.76	0.00	62.76	2613.25	1306.63	4032.59	2019.29	0.85	-0.13	-0.13	0.038
85.00	-17.47	-0.90	0.00	-58.26	0.00	58.26	2550.95	1275.47	3799.51	1902.58	0.99	-0.14	-0.14	0.037
90.00	-16.54	-0.90	0.00	-53.75	0.00	53.75	2486.65	1243.33	3570.26	1787.78	1.14	-0.15	-0.15	0.037
94.58	-15.71	-0.90	0.00	-49.60	0.00	49.60	2425.96	1212.98	3363.76	1684.38	1.29	-0.16	-0.16	0.036
95.00	-15.60	-0.90	0.00	-49.23	0.00	49.23	2420.36	1210.18	3345.16	1675.07	1.31	-0.17	-0.17	0.036
96.75	-15.14	-0.90	0.00	-47.65	0.00	47.65	2396.69	1198.35	3267.42	1636.14	1.37	-0.17	-0.17	0.020
99.42	-14.46	-0.90	0.00	-45.24	0.00	45.24	1173.34	586.67	1596.31	799.34	1.47	-0.17	-0.17	0.024
100.00	-14.38	-0.90	0.00	-44.71	0.00	44.71	1170.92	585.46	1585.67	794.02	1.49	-0.18	-0.18	0.031
105.00	-13.78	-0.90	0.00	-40.19	0.00	40.19	1149.02	574.51	1494.34	748.28	1.68	-0.19	-0.19	0.029
110.00	-13.19	-0.90	0.00	-35.67	0.00	35.67	1125.14	562.57	1402.88	702.48	1.88	-0.20	-0.20	0.026
115.00	-12.62	-0.90	0.00	-31.15	0.00	31.15	1099.26	549.63	1311.60	656.78	2.09	-0.20	-0.20	0.024
117.25	-12.36	-0.90	0.00	-29.12	0.00	29.12	1086.96	543.48	1270.68	636.28	2.18	-0.21	-0.21	0.023
117.25	-12.36	-0.90	0.00	-29.12	0.00	29.12	1086.96	543.48	1270.68	636.28	2.18	-0.21	-0.21	0.023
120.00	-12.06	-0.91	0.00	-26.63	0.00	26.63	1071.39	535.70	1220.84	611.33	2.31	-0.21	-0.21	0.055
125.00	-11.52	-0.91	0.00	-22.10	0.00	22.10	1041.53	520.77	1130.90	566.29	2.54	-0.24	-0.24	0.050
130.00	-10.99	-0.90	0.00	-17.57	0.00	17.57	1009.68	504.84	1042.12	521.83	2.80	-0.26	-0.26	0.045
135.00	-10.48	-0.89	0.00	-13.05	0.00	13.05	975.84	487.92	954.81	478.11	3.08	-0.27	-0.27	0.038
137.00	-7.79	-0.78	0.00	-11.27	0.00	11.27	961.75	480.87	920.37	460.87	3.20	-0.28	-0.28	0.033
140.00	-7.55	-0.77	0.00	-8.93	0.00	8.93	940.01	470.00	869.29	435.29	3.38	-0.29	-0.29	0.029
145.00	-7.15	-0.75	0.00	-5.09	0.00	5.09	902.19	451.09	785.88	393.52	3.69	-0.30	-0.30	0.021
147.00	-2.99	-0.39	0.00	-3.59	0.00	3.59	886.50	443.25	753.18	377.15	3.81	-0.31	-0.31	0.013
148.50	-2.89	-0.38	0.00	-3.02	0.00	3.02	874.53	437.26	728.93	365.00	3.91	-0.31	-0.31	0.012
148.50	-2.89	-0.38	0.00	-3.02	0.00	3.02	728.28	364.14	584.01	379.17	3.91	-0.31	-0.31	0.012
150.00	-2.71	-0.36	0.00	-2.45	0.00	2.45	728.28	364.14	584.01	379.17	4.01	-0.31	-0.31	0.010
155.00	-2.13	-0.30	0.00	-0.63	0.00	0.63	728.28	364.14	584.01	379.17	4.33	-0.31	-0.31	0.005
157.00	-0.14	-0.02	0.00	-0.03	0.00	0.03	728.28	364.14	584.01	379.17	4.46	-0.31	-0.31	0.000
158.50	0.00	-0.02	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	4.56	-0.31	-0.31	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



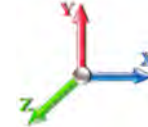
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Seismic Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.14	Ss 0.18
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.37	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	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
5.00		962.54	0.00	0.03	0.02	12.70	
7.42	RT2 RB3	458.01	0.00	0.04	0.02	7.64	
10.00		482.65	0.01	0.05	0.03	9.32	
15.00		918.79	0.02	0.06	0.04	20.59	
20.00		896.92	0.03	0.07	0.04	21.56	
25.00		875.04	0.05	0.07	0.04	21.86	
29.75	RT1 RT3 RB4	811.03	0.07	0.07	0.04	20.78	
30.00		42.14	0.07	0.07	0.04	1.08	
35.00		831.29	0.09	0.07	0.04	21.82	
40.00		809.42	0.12	0.07	0.03	21.73	
45.00		787.54	0.15	0.07	0.03	21.55	
46.59	Bot - Section 2	245.34	0.16	0.07	0.03	6.74	
50.00	RT4	1047.8	0.19	0.06	0.02	28.94	
52.92	Top - Section 1	880.22	0.21	0.06	0.02	24.23	
55.00		311.15	0.23	0.06	0.02	8.49	
60.00		732.46	0.27	0.05	0.01	19.04	
65.00		710.59	0.32	0.04	0.01	16.51	
70.00		688.71	0.37	0.03	0.01	12.76	
75.00		666.84	0.42	0.01	0.01	7.77	
80.00		644.96	0.48	-0.01	0.01	1.87	
85.00		623.09	0.54	-0.03	0.01	-4.18	
90.00		601.21	0.61	-0.06	0.02	-9.45	
94.58	Bot - Section 3	531.89	0.67	-0.08	0.02	-11.82	
95.00		76.33	0.68	-0.08	0.03	-1.73	
96.75	RB5	317.93	0.70	-0.09	0.03	-7.78	
99.42	Top - Section 2	476.22	0.74	-0.10	0.04	-12.58	
100.00		38.94	0.75	-0.10	0.04	-1.04	
105.00		326.41	0.83	-0.12	0.06	-8.94	
110.00		313.29	0.91	-0.12	0.09	-7.71	
115.00		300.16	0.99	-0.11	0.13	-5.55	
117.25	RT5	130.79	1.03	-0.10	0.15	-1.91	
120.00		156.25	1.08	-0.08	0.18	-1.41	
125.00		273.91	1.18	-0.02	0.24	1.03	
130.00		260.79	1.27	0.08	0.31	5.17	
135.00		247.66	1.37	0.23	0.40	9.72	
137.00	Appurtenance(s)	2169.2	1.41	0.31	0.44	104.00	
140.00		139.15	1.47	0.44	0.51	8.63	
145.00		221.41	1.58	0.72	0.65	19.54	
147.00	Appurtenance(s)	3421.4	1.63	0.86	0.71	341.27	
148.50	Top - Section 3	62.29	1.66	0.97	0.75	6.77	
150.00		118.01	1.69	1.09	0.80	13.93	
155.00		393.36	1.81	1.57	0.99	59.56	
157.00	Appurtenance(s)	1617.3	1.85	1.80	1.07	268.12	
158.50		118.01	1.89	1.98	1.14	20.88	
Totals:		26,738.8				1,091.5	Total Wind: 31,114.7

Seismic Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

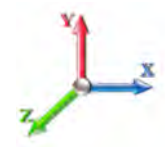
Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E	Iterations 22
Gust Response Factor 1.10	Sds 0.14
Dead Load Factor 0.90	Ss 0.18
Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	SA 0.03
Structure Frequency (f1) 0.37	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	-28.80	-1.17	0.00	-143.97	0.00	143.97	3324.94	1662.47	7900.55	3956.15	0.00	0.00	0.00	0.026
5.00	-27.78	-1.16	0.00	-138.14	0.00	138.14	3293.53	1646.77	7649.11	3830.24	0.00	0.00	0.00	0.026
7.42	-27.29	-1.15	0.00	-135.35	0.00	135.35	3277.61	1638.81	7526.99	3769.09	0.01	-0.01	-0.01	0.027
10.00	-26.77	-1.14	0.00	-132.38	0.00	132.38	3260.13	1630.06	7396.53	3703.76	0.01	-0.01	-0.01	0.027
15.00	-25.78	-1.12	0.00	-126.68	0.00	126.68	3224.74	1612.37	7143.12	3576.87	0.02	-0.02	-0.02	0.026
20.00	-24.82	-1.10	0.00	-121.06	0.00	121.06	3187.35	1593.68	6889.21	3449.73	0.04	-0.02	-0.02	0.026
25.00	-23.87	-1.08	0.00	-115.54	0.00	115.54	3147.98	1573.99	6635.12	3322.49	0.07	-0.03	-0.03	0.025
29.75	-22.99	-1.06	0.00	-110.40	0.00	110.40	3108.73	1554.36	6393.85	3201.68	0.10	-0.03	-0.03	0.026
30.00	-22.94	-1.06	0.00	-110.13	0.00	110.13	3106.61	1553.31	6381.16	3195.32	0.10	-0.03	-0.03	0.026
35.00	-22.04	-1.04	0.00	-104.81	0.00	104.81	3063.26	1531.63	6127.67	3068.39	0.14	-0.04	-0.04	0.025
40.00	-21.15	-1.02	0.00	-99.60	0.00	99.60	3017.91	1508.96	5874.95	2941.84	0.18	-0.04	-0.04	0.025
45.00	-20.28	-1.00	0.00	-94.48	0.00	94.48	2970.57	1485.29	5623.33	2815.85	0.23	-0.05	-0.05	0.024
46.59	-20.01	-1.00	0.00	-92.89	0.00	92.89	2955.13	1477.57	5543.77	2776.00	0.25	-0.05	-0.05	0.024
50.00	-18.96	-0.97	0.00	-89.49	0.00	89.49	2921.24	1460.62	5373.14	2690.56	0.29	-0.06	-0.06	0.023
52.92	-18.07	-0.94	0.00	-86.66	0.00	86.66	2916.11	1458.05	5347.75	2677.85	0.32	-0.06	-0.06	0.039
55.00	-17.72	-0.94	0.00	-84.69	0.00	84.69	2894.92	1447.46	5244.24	2626.02	0.35	-0.07	-0.07	0.038
60.00	-16.90	-0.92	0.00	-80.01	0.00	80.01	2842.57	1421.28	4996.81	2502.12	0.42	-0.08	-0.08	0.038
65.00	-16.11	-0.91	0.00	-75.40	0.00	75.40	2788.22	1394.11	4751.61	2379.34	0.51	-0.09	-0.09	0.037
70.00	-15.33	-0.90	0.00	-70.87	0.00	70.87	2731.89	1365.95	4508.96	2257.83	0.61	-0.10	-0.10	0.037
75.00	-14.57	-0.89	0.00	-66.39	0.00	66.39	2673.57	1336.78	4269.18	2137.76	0.72	-0.11	-0.11	0.037
80.00	-13.83	-0.89	0.00	-61.94	0.00	61.94	2613.25	1306.63	4032.59	2019.29	0.84	-0.12	-0.12	0.036
85.00	-13.10	-0.89	0.00	-57.49	0.00	57.49	2550.95	1275.47	3799.51	1902.58	0.98	-0.14	-0.14	0.035
90.00	-12.40	-0.89	0.00	-53.03	0.00	53.03	2486.65	1243.33	3570.26	1787.78	1.13	-0.15	-0.15	0.035
94.58	-11.78	-0.89	0.00	-48.95	0.00	48.95	2425.96	1212.98	3363.76	1684.38	1.28	-0.16	-0.16	0.034
95.00	-11.70	-0.89	0.00	-48.58	0.00	48.58	2420.36	1210.18	3345.16	1675.07	1.29	-0.16	-0.16	0.034
96.75	-11.35	-0.89	0.00	-47.01	0.00	47.01	2396.69	1198.35	3267.42	1636.14	1.35	-0.17	-0.17	0.019
99.42	-10.84	-0.89	0.00	-44.64	0.00	44.64	1173.34	586.67	1596.31	799.34	1.45	-0.17	-0.17	0.023
100.00	-10.79	-0.89	0.00	-44.12	0.00	44.12	1170.92	585.46	1585.67	794.02	1.47	-0.17	-0.17	0.029
105.00	-10.33	-0.89	0.00	-39.66	0.00	39.66	1149.02	574.51	1494.34	748.28	1.66	-0.18	-0.18	0.027
110.00	-9.89	-0.89	0.00	-35.20	0.00	35.20	1125.14	562.57	1402.88	702.48	1.85	-0.19	-0.19	0.025
115.00	-9.46	-0.89	0.00	-30.74	0.00	30.74	1099.26	549.63	1311.60	656.78	2.06	-0.20	-0.20	0.023
117.25	-9.27	-0.89	0.00	-28.73	0.00	28.73	1086.96	543.48	1270.68	636.28	2.16	-0.21	-0.21	0.022
117.25	-9.27	-0.89	0.00	-28.73	0.00	28.73	1086.96	543.48	1270.68	636.28	2.16	-0.21	-0.21	0.022
120.00	-9.04	-0.89	0.00	-26.28	0.00	26.28	1071.39	535.70	1220.84	611.33	2.28	-0.21	-0.21	0.051
125.00	-8.64	-0.89	0.00	-21.81	0.00	21.81	1041.53	520.77	1130.90	566.29	2.51	-0.23	-0.23	0.047
130.00	-8.24	-0.89	0.00	-17.34	0.00	17.34	1009.68	504.84	1042.12	521.83	2.77	-0.25	-0.25	0.041
135.00	-7.86	-0.88	0.00	-12.89	0.00	12.89	975.84	487.92	954.81	478.11	3.04	-0.27	-0.27	0.035
137.00	-5.84	-0.77	0.00	-11.13	0.00	11.13	961.75	480.87	920.37	460.87	3.16	-0.28	-0.28	0.030
140.00	-5.66	-0.76	0.00	-8.83	0.00	8.83	940.01	470.00	869.29	435.29	3.34	-0.29	-0.29	0.026
145.00	-5.36	-0.74	0.00	-5.03	0.00	5.03	902.19	451.09	785.88	393.52	3.64	-0.30	-0.30	0.019
147.00	-2.24	-0.38	0.00	-3.56	0.00	3.56	886.50	443.25	753.18	377.15	3.77	-0.30	-0.30	0.012
148.50	-2.16	-0.37	0.00	-2.98	0.00	2.98	874.53	437.26	728.93	365.00	3.86	-0.30	-0.30	0.011
148.50	-2.16	-0.37	0.00	-2.98	0.00	2.98	728.28	364.14	584.01	379.17	3.86	-0.30	-0.30	0.011
150.00	-2.03	-0.36	0.00	-2.42	0.00	2.42	728.28	364.14	584.01	379.17	3.96	-0.31	-0.31	0.009
155.00	-1.59	-0.30	0.00	-0.63	0.00	0.63	728.28	364.14	584.01	379.17	4.28	-0.31	-0.31	0.004
157.00	-0.11	-0.02	0.00	-0.03	0.00	0.03	728.28	364.14	584.01	379.17	4.41	-0.31	-0.31	0.000
158.50	0.00	-0.02	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	4.51	-0.31	-0.31	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Wind Loading - Shaft

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II

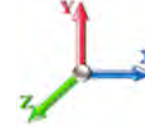


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00
Wind Load Factor 1.00



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	RB1 RB2	1.00	0.85	7.442	8.19	271.49	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	265.42	0.650	0.000	5.00	24.265	15.77	129.1	0.0	962.5
7.42	RT2 RB3	1.00	0.85	7.442	8.19	262.49	0.650	0.000	2.42	11.547	7.51	61.4	0.0	458.0
10.00		1.00	0.85	7.442	8.19	259.36	0.650	0.000	2.58	12.169	7.91	64.8	0.0	482.7
15.00		1.00	0.85	7.442	8.19	253.29	0.650	0.000	5.00	23.168	15.06	123.3	0.0	918.8
20.00		1.00	0.90	7.896	8.69	254.65	0.650	0.000	5.00	22.620	14.70	127.7	0.0	896.9
25.00		1.00	0.95	8.276	9.10	254.31	0.650	0.000	5.00	22.071	14.35	130.6	0.0	875.0
29.75	RT1 RT3 RB4	1.00	0.98	8.585	9.44	252.82	0.650	0.000	4.75	20.460	13.30	125.6	0.0	811.0
30.00		1.00	0.98	8.600	9.46	252.71	0.650	0.000	0.25	1.063	0.69	6.5	0.0	42.1
35.00		1.00	1.01	8.883	9.77	250.22	0.650	0.000	5.00	20.975	13.63	133.2	0.0	831.3
40.00		1.00	1.04	9.137	10.05	247.04	0.650	0.000	5.00	20.426	13.28	133.4	0.0	809.4
45.00		1.00	1.07	9.366	10.30	243.31	0.650	0.000	5.00	19.878	12.92	133.1	0.0	787.5
46.59	Bot - Section 2	1.00	1.08	9.435	10.38	242.03	0.650	0.000	1.59	6.193	4.03	41.8	0.0	245.3
50.00	RT4	1.00	1.09	9.576	10.53	239.14	0.650	0.000	3.41	13.316	8.66	91.2	0.0	1047.9
52.92	Top - Section 1	1.00	1.11	9.691	10.66	236.53	0.650	0.000	2.92	11.189	7.27	77.5	0.0	880.2
55.00		1.00	1.12	9.770	10.75	237.95	0.650	0.000	2.08	7.856	5.11	54.9	0.0	311.1
60.00		1.00	1.14	9.951	10.95	233.12	0.650	0.000	5.00	18.497	12.02	131.6	0.0	732.5
65.00		1.00	1.16	10.120	11.13	228.02	0.650	0.000	5.00	17.948	11.67	129.9	0.0	710.6
70.00		1.00	1.17	10.279	11.31	222.67	0.650	0.000	5.00	17.400	11.31	127.9	0.0	688.7
75.00		1.00	1.19	10.430	11.47	217.11	0.650	0.000	5.00	16.851	10.95	125.7	0.0	666.8
80.00		1.00	1.21	10.572	11.63	211.36	0.650	0.000	5.00	16.303	10.60	123.2	0.0	645.0
85.00		1.00	1.22	10.708	11.78	205.44	0.650	0.000	5.00	15.754	10.24	120.6	0.0	623.1
90.00		1.00	1.24	10.838	11.92	199.35	0.650	0.000	5.00	15.206	9.88	117.8	0.0	601.2
94.58	Bot - Section 3	1.00	1.25	10.952	12.05	193.65	0.650	0.000	4.58	13.457	8.75	105.4	0.0	531.9
95.00		1.00	1.25	10.962	12.06	193.13	0.650	0.000	0.42	1.214	0.79	9.5	0.0	76.3
96.75	RB5	1.00	1.26	11.004	12.10	190.92	0.650	0.000	1.75	5.056	3.29	39.8	0.0	317.9
99.42	Top - Section 2	1.00	1.26	11.067	12.17	187.52	0.650	0.000	2.67	7.575	4.92	59.9	0.0	476.2
100.00		1.00	1.27	11.081	12.19	188.91	0.650	0.000	0.58	1.636	1.06	13.0	0.0	38.9
105.00		1.00	1.28	11.195	12.31	182.44	0.650	0.000	5.00	13.719	8.92	109.8	0.0	326.4
110.00		1.00	1.29	11.305	12.44	175.86	0.650	0.000	5.00	13.171	8.56	106.5	0.0	313.3
115.00		1.00	1.30	11.412	12.55	169.17	0.650	0.000	5.00	12.622	8.20	103.0	0.0	300.2
117.25	RT5	1.00	1.31	11.458	12.60	166.13	0.650	0.000	2.25	5.501	3.58	45.1	0.0	130.8
120.00		1.00	1.32	11.514	12.67	162.38	0.650	0.000	2.75	6.573	4.27	54.1	0.0	156.2
125.00		1.00	1.33	11.614	12.78	155.50	0.650	0.000	5.00	11.525	7.49	95.7	0.0	273.9
130.00		1.00	1.34	11.710	12.88	148.53	0.650	0.000	5.00	10.977	7.14	91.9	0.0	260.8
135.00		1.00	1.35	11.803	12.98	141.48	0.650	0.000	5.00	10.428	6.78	88.0	0.0	247.7
137.00	Appurtenance(s)	1.00	1.35	11.840	13.02	138.64	0.650	0.000	2.00	4.018	2.61	34.0	0.0	95.4
140.00		1.00	1.36	11.894	13.08	134.35	0.650	0.000	3.00	5.862	3.81	49.9	0.0	139.1
145.00		1.00	1.37	11.982	13.18	127.15	0.650	0.000	5.00	9.332	6.07	79.9	0.0	221.4
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	124.25	0.650	0.000	2.00	3.579	2.33	30.8	0.0	84.9
148.50	Top - Section 3	1.00	1.38	12.043	13.25	122.07	0.650	0.000	1.50	2.627	1.71	22.6	0.0	62.3
150.00		1.00	1.38	12.068	13.27	117.41	0.600	0.000	1.50	2.500	1.50	19.9	0.0	118.0
155.00		1.00	1.39	12.152	13.37	117.81	0.600	0.000	5.00	8.333	5.00	66.8	0.0	393.4
157.00	Appurtenance(s)	1.00	1.39	12.185	13.40	117.97	0.600	0.000	2.00	3.333	2.00	26.8	0.0	157.3
158.50		1.00	1.39	12.209	13.43	118.09	0.600	0.000	1.50	2.500	1.50	20.1	0.0	118.0
Totals:									158.50			3,583.4		19,868.3

Discrete Appurtenance Forces

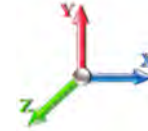
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	157.00	T-Arm (Flat)	3	12.185	13.403	0.56	0.75	16.88	1200.00	0.000	0.000	226.18	0.00	0.00
2	157.00	BXA-171063-8BF-EDIN-X	2	12.185	13.403	0.67	0.80	3.95	21.00	0.000	0.000	52.96	0.00	0.00
3	157.00	BXA-171063-12BF-EDIN-	3	12.185	13.403	0.67	0.80	9.56	45.00	0.000	0.000	128.08	0.00	0.00
4	157.00	BXA-70063/6CF_	4	12.185	13.403	0.56	0.80	16.96	68.00	0.000	0.000	227.27	0.00	0.00
5	157.00	DB846F65ZAXY	6	12.185	13.403	0.74	0.80	31.47	126.00	0.000	0.000	421.81	0.00	0.00
6	147.00	4449 B71 + B85	3	12.017	13.219	0.54	0.80	3.17	219.60	0.000	0.000	41.87	0.00	0.00
7	147.00	RRUS 4415 B25	3	12.017	13.219	0.54	0.80	2.64	138.00	0.000	0.000	34.86	0.00	0.00
8	147.00	ACU-A20-N	4	12.017	13.219	0.54	0.80	0.30	4.00	0.000	0.000	3.97	0.00	0.00
9	147.00	AIR6449 B41	3	12.017	13.219	0.57	0.80	9.63	309.00	0.000	0.000	127.26	0.00	0.00
10	147.00	APXVAARR24_43-U-NA2	3	12.017	13.219	0.56	0.80	34.00	384.00	0.000	0.000	449.48	0.00	0.00
11	147.00	KRD 9011461-B66A-B2A	3	12.017	13.219	0.70	0.80	13.59	396.60	0.000	0.000	179.68	0.00	0.00
12	147.00	T-Arm (Flat)	3	12.017	13.219	0.56	0.75	16.88	1200.00	0.000	0.000	223.06	0.00	0.00
13	147.00	(3) T-Arm Kit	1	12.017	13.219	0.75	0.75	12.38	500.00	0.000	0.000	163.58	0.00	0.00
14	147.00	ALU 800MHz External	3	12.017	13.219	0.54	0.80	1.25	26.40	0.000	0.000	16.58	0.00	0.00
15	147.00	800 MHz RRH	3	12.017	13.219	0.54	0.80	4.00	159.00	0.000	0.000	52.93	0.00	0.00
16	137.00	LGP21401	12	11.840	13.024	0.54	0.80	8.30	169.20	0.000	0.000	108.06	0.00	0.00
17	137.00	AM-X-CD-16-65-00T-RET	3	11.840	13.024	0.60	0.80	14.44	145.50	0.000	0.000	188.01	0.00	0.00
18	137.00	RRUS 11	6	11.840	13.024	0.54	0.80	8.10	304.20	0.000	0.000	105.55	0.00	0.00
19	137.00	RA21.7770.00	6	11.840	13.024	0.58	0.80	22.95	223.20	0.000	0.000	298.92	0.00	0.00
20	137.00	DC6-48-60-18-8F	1	11.840	13.024	0.80	0.80	0.74	31.80	0.000	0.000	9.59	0.00	0.00
21	137.00	T-Arm (Flat)	3	11.840	13.024	0.56	0.75	16.88	1200.00	0.000	0.000	219.78	0.00	0.00
Totals:									6,870.50			3,279.48		

Total Applied Force Summary

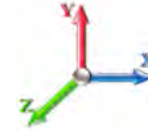
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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		129.11	1139.84	0.00	0.00
7.42		61.44	543.83	0.00	0.00
10.00		64.75	574.14	0.00	0.00
15.00		123.28	1096.09	0.00	0.00
20.00		127.71	1074.22	0.00	0.00
25.00		130.60	1052.34	0.00	0.00
29.75		125.58	979.46	0.00	0.00
30.00		6.54	51.00	0.00	0.00
35.00		133.22	1008.59	0.00	0.00
40.00		133.44	986.72	0.00	0.00
45.00		133.12	964.84	0.00	0.00
46.59		41.78	301.60	0.00	0.00
50.00		91.18	1168.89	0.00	0.00
52.92		77.53	983.76	0.00	0.00
55.00		54.88	384.90	0.00	0.00
60.00		131.60	909.76	0.00	0.00
65.00		129.87	887.89	0.00	0.00
70.00		127.88	866.01	0.00	0.00
75.00		125.66	844.14	0.00	0.00
80.00		123.24	822.26	0.00	0.00
85.00		120.62	800.39	0.00	0.00
90.00		117.83	778.51	0.00	0.00
94.58		105.37	694.42	0.00	0.00
95.00		9.51	91.11	0.00	0.00
96.75		39.78	379.99	0.00	0.00
99.42		59.94	570.78	0.00	0.00
100.00		12.96	59.62	0.00	0.00
105.00		109.82	503.71	0.00	0.00
110.00		106.46	490.59	0.00	0.00
115.00		102.99	477.46	0.00	0.00
117.25		45.07	210.58	0.00	0.00
120.00		54.11	253.76	0.00	0.00
125.00		95.70	451.21	0.00	0.00
130.00		91.91	438.09	0.00	0.00
135.00		88.01	424.96	0.00	0.00
137.00	(31) attachments	963.93	2240.21	0.00	0.00
140.00		49.85	205.21	0.00	0.00
145.00		79.95	331.51	0.00	0.00
147.00	(29) attachments	1324.02	3465.53	0.00	0.00
148.50		22.62	90.37	0.00	0.00
150.00		19.91	146.09	0.00	0.00
155.00		66.83	486.96	0.00	0.00
157.00	(18) attachments	1083.10	1654.79	0.00	0.00
158.50		20.14	118.01	0.00	0.00
Totals:		6,862.87	32,004.17	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Page: 37
	Struct Class: II	



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.052	0.000	7.442	0.00	0.00
7.42	1.25" Reinforcing	Yes	2.42	0.000	3.00	0.60	0.00	0.052	0.000	7.442	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.08	0.000	1.50	0.14	0.00	0.042	0.000	7.442	0.00	0.00
10.00	1.25" Reinforcing	Yes	1.50	0.000	3.00	0.38	0.00	0.042	0.000	7.442	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.027	0.000	7.442	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	7.896	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.028	0.000	8.276	0.00	0.00
29.75	1.25" Reinforcing	Yes	4.75	0.000	1.50	0.59	0.00	0.029	0.000	8.585	0.00	0.00
30.00	1.25" Reinforcing	Yes	0.25	0.000	1.50	0.03	0.00	0.029	0.000	8.600	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.030	0.000	8.883	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	9.137	0.00	0.00
45.00	1.25" Reinforcing	Yes	5.00	0.000	1.50	0.63	0.00	0.031	0.000	9.366	0.00	0.00
46.59	1.25" Reinforcing	Yes	1.59	0.000	1.50	0.20	0.00	0.032	0.000	9.435	0.00	0.00
50.00	1.25" Reinforcing	Yes	3.41	0.000	1.50	0.43	0.00	0.032	0.000	9.576	0.00	0.00
52.92	1.25" Reinforcing	Yes	2.92	0.000	1.50	0.37	0.00	0.033	0.000	9.691	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	9.770	0.00	0.00
94.58	1.25" Reinforcing	Yes	0.08	0.000	1.50	0.01	0.00	0.001	0.000	10.952	0.00	0.00
95.00	1.25" Reinforcing	Yes	0.42	0.000	1.50	0.05	0.00	0.043	0.000	10.962	0.00	0.00
96.75	1.25" Reinforcing	Yes	1.75	0.000	1.50	0.22	0.00	0.044	0.000	11.004	0.00	0.00
99.42	1.25" Reinforcing	Yes	2.67	0.000	1.50	0.33	0.00	0.044	0.000	11.067	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	1.50	0.07	0.00	0.045	0.000	11.081	0.00	0.00
105.00	1.25" Reinforcing	Yes	4.50	0.000	1.50	0.56	0.00	0.041	0.000	11.195	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

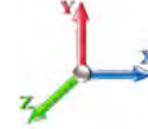
Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.00	-6.87	0.00	-767.94	0.00	767.94	3324.94	1662.47	7900.55	3956.15	0.00	0.000	0.000	0.120
5.00	-30.86	-6.75	0.00	-733.60	0.00	733.60	3293.53	1646.77	7649.11	3830.24	0.01	-0.026	0.000	0.117
7.42	-30.31	-6.70	0.00	-717.26	0.00	717.26	3277.61	1638.81	7526.99	3769.09	0.03	-0.039	0.000	0.123
10.00	-29.74	-6.64	0.00	-699.99	0.00	699.99	3260.13	1630.06	7396.53	3703.76	0.06	-0.054	0.000	0.121
15.00	-28.64	-6.53	0.00	-666.78	0.00	666.78	3224.74	1612.37	7143.12	3576.87	0.13	-0.082	0.000	0.118
20.00	-27.56	-6.42	0.00	-634.12	0.00	634.12	3187.35	1593.68	6889.21	3449.73	0.23	-0.111	0.000	0.116
25.00	-26.51	-6.30	0.00	-602.04	0.00	602.04	3147.98	1573.99	6635.12	3322.49	0.36	-0.140	0.000	0.113
29.75	-25.53	-6.17	0.00	-572.13	0.00	572.13	3108.73	1554.36	6393.85	3201.68	0.51	-0.168	0.000	0.115
30.00	-25.47	-6.18	0.00	-570.58	0.00	570.58	3106.61	1553.31	6381.16	3195.32	0.52	-0.170	0.000	0.115
35.00	-24.46	-6.05	0.00	-539.71	0.00	539.71	3063.26	1531.63	6127.67	3068.39	0.72	-0.201	0.000	0.112
40.00	-23.47	-5.93	0.00	-509.45	0.00	509.45	3017.91	1508.96	5874.95	2941.84	0.95	-0.232	0.000	0.109
45.00	-22.51	-5.80	0.00	-479.81	0.00	479.81	2970.57	1485.29	5623.33	2815.85	1.21	-0.264	0.000	0.105
46.59	-22.20	-5.76	0.00	-470.61	0.00	470.61	2955.13	1477.57	5543.77	2776.00	1.29	-0.274	0.000	0.105
50.00	-21.03	-5.67	0.00	-450.94	0.00	450.94	2921.24	1460.62	5373.14	2690.56	1.50	-0.296	0.000	0.101
52.92	-20.05	-5.60	0.00	-434.37	0.00	434.37	2916.11	1458.05	5347.75	2677.85	1.69	-0.315	0.000	0.169
55.00	-19.66	-5.55	0.00	-422.73	0.00	422.73	2894.92	1447.46	5244.24	2626.02	1.83	-0.339	0.000	0.168
60.00	-18.74	-5.43	0.00	-394.96	0.00	394.96	2842.57	1421.28	4996.81	2502.12	2.21	-0.393	0.000	0.164
65.00	-17.85	-5.32	0.00	-367.79	0.00	367.79	2788.22	1394.11	4751.61	2379.34	2.66	-0.449	0.000	0.161
70.00	-16.98	-5.20	0.00	-341.22	0.00	341.22	2731.89	1365.95	4508.96	2257.83	3.16	-0.505	0.000	0.157
75.00	-16.13	-5.08	0.00	-315.23	0.00	315.23	2673.57	1336.78	4269.18	2137.76	3.72	-0.563	0.000	0.154
80.00	-15.31	-4.96	0.00	-289.83	0.00	289.83	2613.25	1306.63	4032.59	2019.29	4.34	-0.621	0.000	0.149
85.00	-14.50	-4.85	0.00	-265.01	0.00	265.01	2550.95	1275.47	3799.51	1902.58	5.02	-0.681	0.000	0.145
90.00	-13.72	-4.74	0.00	-240.76	0.00	240.76	2486.65	1243.33	3570.26	1787.78	5.77	-0.741	0.000	0.140
94.58	-13.03	-4.63	0.00	-219.06	0.00	219.06	2425.96	1212.98	3363.76	1684.38	6.50	-0.797	0.000	0.135
95.00	-12.94	-4.62	0.00	-217.13	0.00	217.13	2420.36	1210.18	3345.16	1675.07	6.57	-0.802	0.000	0.135
96.75	-12.55	-4.58	0.00	-209.04	0.00	209.04	2396.69	1198.35	3267.42	1636.14	6.87	-0.824	0.000	0.075
99.42	-11.98	-4.51	0.00	-196.83	0.00	196.83	1173.34	586.67	1596.31	799.34	7.34	-0.843	0.000	0.090
100.00	-11.92	-4.51	0.00	-194.20	0.00	194.20	1170.92	585.46	1585.67	794.02	7.44	-0.847	0.000	0.113
105.00	-11.42	-4.40	0.00	-171.67	0.00	171.67	1149.02	574.51	1494.34	748.28	8.35	-0.890	0.000	0.103
110.00	-10.92	-4.29	0.00	-149.69	0.00	149.69	1125.14	562.57	1402.88	702.48	9.31	-0.932	0.000	0.094
115.00	-10.45	-4.18	0.00	-128.24	0.00	128.24	1099.26	549.63	1311.60	656.78	10.30	-0.971	0.000	0.084
117.25	-10.24	-4.14	0.00	-118.83	0.00	118.83	1086.96	543.48	1270.68	636.28	10.77	-0.989	0.000	0.079
117.25	-10.24	-4.14	0.00	-118.83	0.00	118.83	1086.96	543.48	1270.68	636.28	10.77	-0.989	0.000	0.079
120.00	-9.98	-4.09	0.00	-107.45	0.00	107.45	1071.39	535.70	1220.84	611.33	11.34	-1.009	0.000	0.185
125.00	-9.52	-4.00	0.00	-87.00	0.00	87.00	1041.53	520.77	1130.90	566.29	12.45	-1.096	0.000	0.163
130.00	-9.08	-3.91	0.00	-67.00	0.00	67.00	1009.68	504.84	1042.12	521.83	13.64	-1.175	0.000	0.137
135.00	-8.66	-3.82	0.00	-47.45	0.00	47.45	975.84	487.92	954.81	478.11	14.91	-1.244	0.000	0.108
137.00	-6.44	-2.81	0.00	-39.81	0.00	39.81	961.75	480.87	920.37	460.87	15.44	-1.268	0.000	0.093
140.00	-6.23	-2.76	0.00	-31.37	0.00	31.37	940.01	470.00	869.29	435.29	16.24	-1.300	0.000	0.079
145.00	-5.90	-2.68	0.00	-17.57	0.00	17.57	902.19	451.09	785.88	393.52	17.63	-1.341	0.000	0.051
147.00	-2.47	-1.27	0.00	-12.22	0.00	12.22	886.50	443.25	753.18	377.15	18.19	-1.352	0.000	0.035
148.50	-2.38	-1.25	0.00	-10.31	0.00	10.31	874.53	437.26	728.93	365.00	18.62	-1.360	0.000	0.031
148.50	-2.38	-1.25	0.00	-10.31	0.00	10.31	728.28	364.14	584.01	379.17	18.62	-1.360	0.000	0.030
150.00	-2.23	-1.22	0.00	-8.44	0.00	8.44	728.28	364.14	584.01	379.17	19.05	-1.366	0.000	0.025
155.00	-1.75	-1.15	0.00	-2.32	0.00	2.32	728.28	364.14	584.01	379.17	20.48	-1.373	0.000	0.009
157.00	-0.12	-0.02	0.00	-0.03	0.00	0.03	728.28	364.14	584.01	379.17	21.06	-1.373	0.000	0.000
158.50	0.00	-0.02	0.00	0.00	0.00	0.00	728.28	364.14	584.01	379.17	21.49	-1.373	0.000	0.000

Calculated Forces

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Final Analysis Summary

Structure: CT46139-A-SBA	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 101 mph Wind	31.2	0.00	38.37	0.00	0.00	3496.30
0.9D + 1.6W 101 mph Wind	31.1	0.00	28.77	0.00	0.00	3468.33
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.3	0.00	59.15	0.00	0.00	909.25
1.2D + 1.0E	1.2	0.00	38.40	0.00	0.00	145.24
0.9D + 1.0E	1.2	0.00	28.80	0.00	0.00	143.97
1.0D + 1.0W 60 mph Wind	6.9	0.00	32.00	0.00	0.00	767.94

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 101 mph Wind	-10.54	-18.66	0.00	-489.96	0.00	-489.96	1071.39	535.70	1220.84	611.33	120.00	0.813
0.9D + 1.6W 101 mph Wind	-7.55	-18.40	0.00	-482.63	0.00	-482.63	1071.39	535.70	1220.84	611.33	120.00	0.798
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-22.20	-4.69	0.00	-121.92	0.00	-121.92	1071.39	535.70	1220.84	611.33	120.00	0.220
1.2D + 1.0E	-12.06	-0.91	0.00	-26.63	0.00	-26.63	1071.39	535.70	1220.84	611.33	120.00	0.055
0.9D + 1.0E	-9.04	-0.89	0.00	-26.28	0.00	-26.28	1071.39	535.70	1220.84	611.33	120.00	0.051
1.0D + 1.0W 60 mph Wind	-9.98	-4.09	0.00	-107.45	0.00	-107.45	1071.39	535.70	1220.84	611.33	120.00	0.185

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max 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
0.0	29.8	(2) PLT-7.25x1.5(31mm Hole)	296.5	4.45	37.1	338.9	37.1	10	13	330.6	37.1	9	9	347.41	478.8	440.94	0.788
0.0	7.4	(2) PLT-7.25x1.5(31mm Hole)	211.9	3.18	37.1	278.2	37.1	8	9	273.4	37.1	8	9	278.21	478.8	440.94	0.631
7.4	29.8	(1) PLT-7.25x1.5(31mm Hole)	296.5	4.45	37.1	347.4	37.1	10	13	330.6	37.1	9	9	347.41	478.8	440.94	0.788
29.8	50.0	(3) PLT-6.5x1.5(31mm Hole)	306.0	5.51	37.1	309.8	37.1	9	13	292.4	37.1	8	12	309.76	425.1	386.10	0.802
96.8	117.3	(3) PLT-5"x1.5" (1.25" Hole)	-495.7	-10.41	37.1	186.4	37.1	6	9	170.7	37.1	5	7	227.33	323.3	274.22	0.829

Base Plate Summary

Structure: CT46139-A-SB	Code: EIA/TIA-222-G	1/8/2021
Site Name: West Haven-rt15 /Woodbridge	Exposure: C	
Height: 158.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 41



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 66.00
Moment (kip-ft): 2913.30	Width (in): 72.00	Number Bolts: 16.00
Axial (kip): 22.90	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 28.25	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 3496.30	Effective Len (in): 15.04	Ultimate (ksi): 100.00
Axial (kip): 38.37	Moment (kip-in): 539.90	Arrangement: Radial
Shear (kip): 31.15	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 70.47	Start Angle (deg): 0.00
	Stress Ratio: 0.87	Compression
		Force (kip): 162.62
		Allowable (kip): 260.00
		Ratio: 0.64
		Tension
		Force (kip): 155.23
		Allowable (kip): 260.00
		Ratio: 0.61



Monopole Mat Foundation Design

Date

1/7/2021

Customer Name:	T-Mobile Sprint	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	158.5
Site Number:	CT46139-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	100548	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	38.4	Shear Force (Kips):	31.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3496.3

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	8.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Depth of Base BG (ft.):	6.0
Length of Pad (ft.):	24.5	Thickness of Pad (ft.):	3.00
Final 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 Rebar Info:

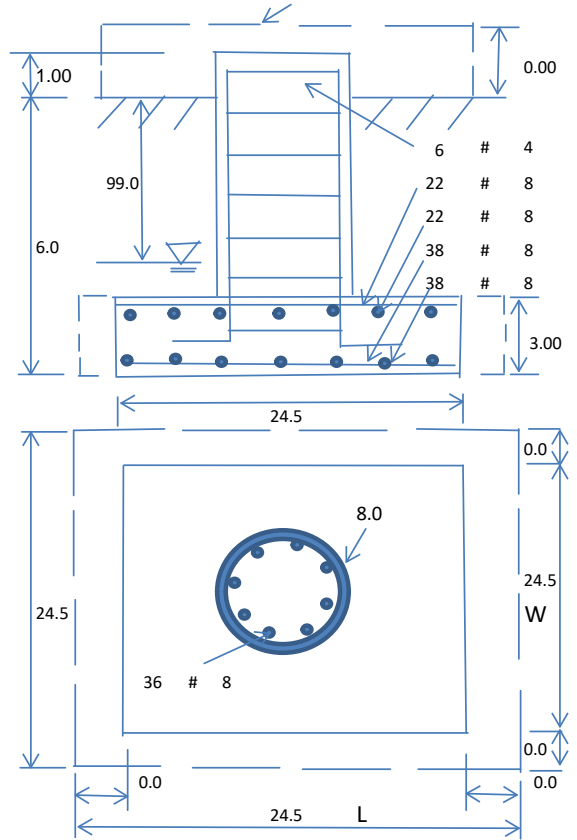
Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	18.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38
Rebar at the top of the concrete pad:			
Qty. of Rebar in Pad (L):	22	Qty. of Rebar in Pad (W):	22

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	57.6	Pcf	
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:
Ultimate Bearing Pressure (psf):	16000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:
Consider soil hor. resist. for OTM.:	Yes	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.):	1649.95	Total Dry Soil Weight (Kips):	197.99	
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00	
Total Effective Soil Weight (Kips):	197.99	Weight from the Concrete Block at Top (K):	0.00	
Total Dry Concrete Volume (cu. Ft.):	2001.81	Total Dry Concrete Weight (Kips):	300.27	
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00	
Total Effective Concrete Weight (Kips):	300.27	Total Vertical Load on Base (Kips):	536.67	

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2660	<	Allowable Factored Soil Bearing (psf):	12000	0.22	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5963.8	>	Design Factored Momont (kips-ft):	3562	0.60	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.67					OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

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

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	5646.8	> Design Factored Moment (Mu, Kips-F	3621.1	0.64	OK!
Calculated Shear Capacity (Kips):	789.1	> Design Factored Shear (Kips):	31.2	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1535.8	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12746.9	> Design Factored Axial Load (Pu Kips):	38.4	0.00	OK!
Moment & Axial Strength Combination:	0.64	OK! Check Tie Spacing (Design/Required):		1.5	NG!
Pier Reinforcement Ratio:	0.004	Reinforcement Ratio is too small			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	906.5	> One-Way Factored Shear (L-D. Kips):	204.6	0.23	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	906.5	> One-Way Factored Shear (W-D., Kips)	204.6	0.23	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	785.5	> One-Way Factored Shear (C-C, Kips):	198.2	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0031	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0031		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	4268.7	> Moment at Bottom (L-Dir. K-Ft):	1071.1	0.25	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	4268.7	> Moment at Bottom (W-Dir. K-Ft):	1071.1	0.25	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	5985.2	> Moment at Bottom (C-C Dir. K-Ft):	1514.8	0.25	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0018		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2501.0	> Moment at the top (L-Dir K-Ft):	484.1	0.19	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2501.0	> Moment at the top (W-Dir K-Ft):	484.1	0.19	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	3519.7	> Moment at the top (C-C Dir. K-Ft):	457.8	0.13	OK!

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

Moment transferred by punching shear:	1398.5	k-ft.	Max. factored shear stress $v_{u,CD}$:	2.7	Psi
Max. factored shear stress $v_{u,AB}$:	7.4	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	7.4	Psi	Check Usage of Punching Shear Capacity:	0.04	OK!

EXHIBIT 8

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE SPRINT

TOWER OWNER: SBA / TOWER OWNER SITE #: CT46139-A

CARRIER SITE #/NAME: CT33XC087

COORDINATES (LATITUDE: 41.396833°, LONGITUDE: -72.688805°)

PLEASE NOTE THIS SET OF DRAWINGS ARE FOR INSTALLATION AND ASSEMBLY ONLY. FABRICATION DETAIL DRAWINGS ARE NOT PROVIDED AND MUST BE COMPLETED BY THE STEEL FABRICATOR SELECTED. TES CAN PROVIDE THE FABRICATION DETAIL DRAWINGS FOR AN ADDITIONAL FEE.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
SAF-1	SAFETY CABLE GUIDE DETAILS	0
MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT	
MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	
MPHW-1	METROSITE HEAVY COLLAR MOUNT PLATE WELDMENT	
MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT	

NOTE:

- THE MODIFICATION DRAWINGS ARE BASED ON THE TES PROJECT NO. 100547, DATED 12/18/2020.



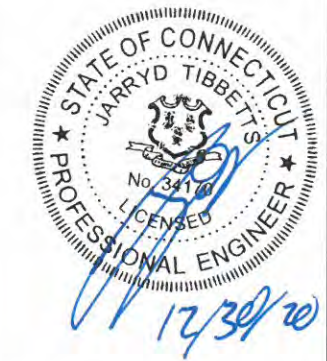
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607



5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
101022

CUSTOMER SITE NO:
CT46139-A-SBA
CUSTOMER SITE NAME:
WEST HAVEN-RT15/WOODBRIDGE
370 ROCKLAND ROAD
GUILFORD, CT 06437



DRAWN BY: RA | CHECKED BY: AL/FL

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	RA	12/30/20
△			
△			
△			

SHEET TITLE:

TITLE SHEET

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SHEET NUMBER: T-1 | REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
MATERIAL & HARDWARE							
4	4	MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT	A-1, MS-HRCP-35	23.0	92.0	Galvanized
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	A-1, MS-H1436	136.7	136.7	Galvanized
1	1	MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT	A-1, MS-TAW-350RO	284.0	284.0	Galvanized
FOLLOWING ITEMS ARE "CUSTOM" PARTS							
3	3	PST350-15	3" PST (3.50" O.D. X 0.216" THK) X 15'-0" A53 GR-B 35KSI	A-1	116.31	348.9	GALVANIZED (FINAL CUT LENGTH TO BE DETERMINED IN FIELD)
1	1	TMP-2	PL 1/4" X 2" X 7" A36	SAF-1	1.01	1.0	GALVANIZED
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)	SAF-1	0.00	0.0	GALVANIZED
2	3	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5	SAF-1	0.00	0.0	(2) HHN & LKW-EA GALVANIZED
1	2	---	BOLT 5/8" X 2" A325	SAF-1	0.38	0.8	(1) HHN & LKW-EA GALVANIZED
<p align="center">ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.</p> <p align="center">180 IND PARK BLVD COMMERCE, GA 30529</p> <p align="center">OFFICE: (706) 335-7045</p> <p align="center">FAX: (706) 335-7056</p>							
<p align="center">NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.</p>							
					TOTAL WEIGHT (LBS) =	863.4	



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TES JOB NO:
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CUSTOMER SITE NO:
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 CUSTOMER SITE NAME:
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 370 ROCKLAND ROAD
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BILL OF MATERIALS

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SHEET NUMBER: **BOM** | REV #: **0**

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.
7. IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
8. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESORDERS@TESTOWER.US

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNO. (E70XX UNLESS NOTED OTHERWISE).
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES.
3. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
4. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
5. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RSCC.
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
5. HB HOLLO-BOLT SHALL BE INSTALLED PER ICC ESR-3330 INSTRUCTIONS.

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2015 SECTION 1705 FOR STEEL CONSTRUCTION AND TABLE 1705.3 FOR CONCRETE CONSTRUCTION.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING^{a,b}

BOLT LENGTH ^f	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 ^d	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS ^d
NOT MORE THAN 4d _b	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d _b BUT NOT MORE THAN 8d _b	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d _b BUT NOT MORE THAN 12d _b	2/3 TURN	5/6 TURN	1 TURN

^a NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.

^b APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

^c WHEN THE BOLT LENGTH EXCEEDS 12d_b, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

^d BEVELED WASHER NOT USED.

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

1. HB12 HOLLO BOLT: 59 FT-LBS
2. HB16 HOLLO BOLT: 140 FT-LBS
3. HB20 HOLLO BOLT: 221 FT-LBS
4. M20 AJAX BOLT: 280 FT-LBS.

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

1. CONTRACTOR'S RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
2. HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPT.
3. CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
5. ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASE, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
6. FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
7. CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
8. ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
9. IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING THE PLATES.
10. PLEASE REPORT ANY FIELD ISSUE TO TES @ 972-483-0607.



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(800)-487-SITE

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GN-1 | 0

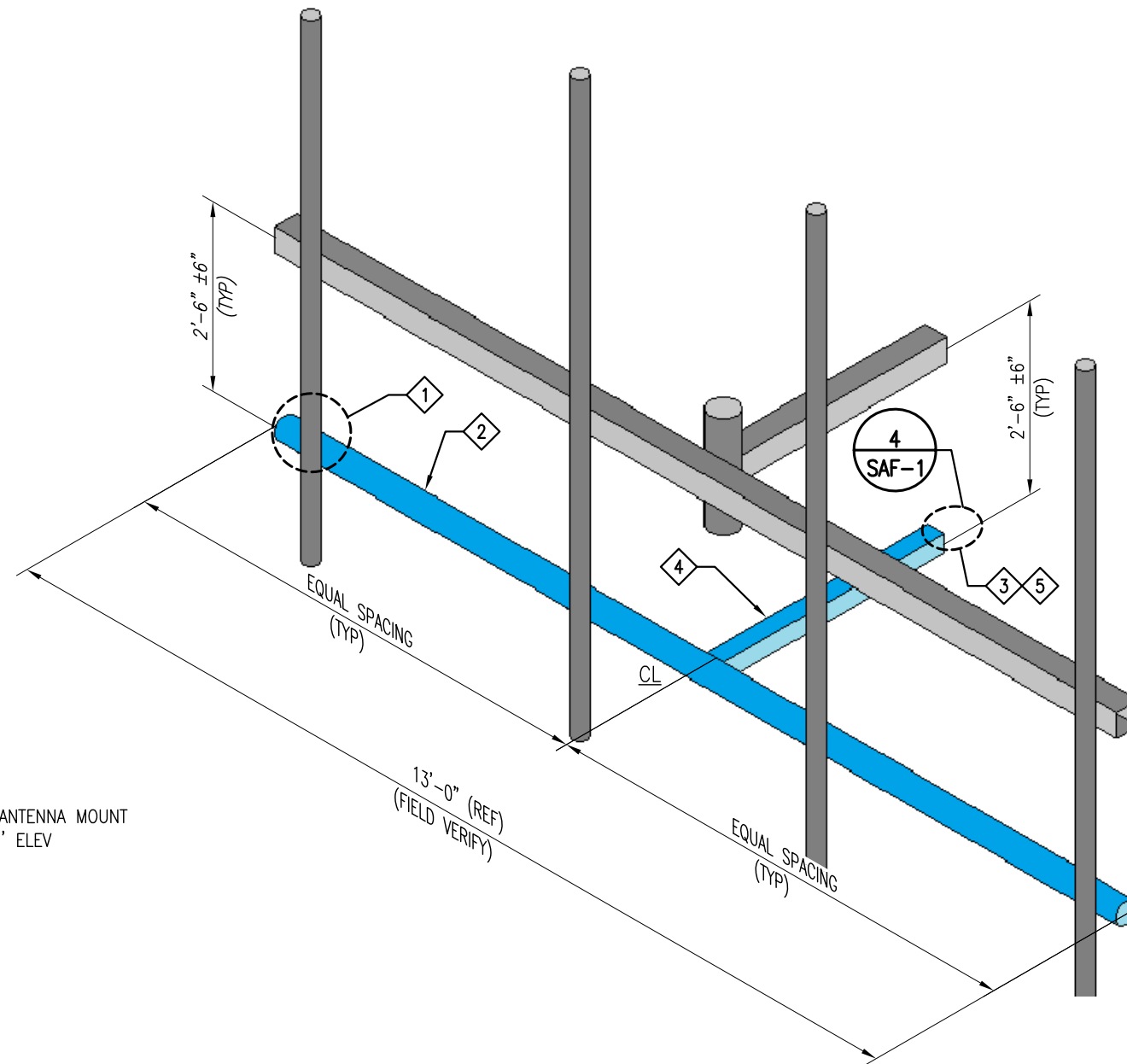
SCOPE OF WORK

1. INSTALL NEW SUPPORT RAIL CENTER PIPE KITS ON EXISTING ANTENNA MOUNT PIPES TO ACCOMMODATE INSTALLATION OF NEW SUPPORT RAIL PIPE, (4) PER SECTOR. SEE SHEET MS-HRCP-35 FOR DETAILS.
2. INSTALL NEW 3" SUPPORT RAIL PIPE, (1) PER SECTOR AS SHOWN.
3. INSTALL NEW HEAVY COLLAR MOUNT (NOT SHOWN FOR CLARITY) BELOW EXISTING COLLAR MOUNT TO ACCOMMODATE THE INSTALLATION OF NEW T-ARM AS SHOWN. SEE SHEET MS-H1436 FOR DETAILS.
4. INSTALL NEW T-ARM KIT. SEE SHEET MS-TAW-350RO FOR DETAILS.
5. INSTALL NEW SAFETY CLIMB GUIDE TO PREVENT EXISTING SAFETY CLIMB FROM RUBBING AGAINST NEW COLLAR MOUNT. SEE SHEET SAF-1 FOR DETAILS.
6. CONTRACTOR TO COORDINATE WITH TOWER OWNER AND CARRIER REGARDING PRESENCE OF BIRD NEST ON EXISTING TOWER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.



PHOTO 1

EXISTING ANTENNA MOUNT @ 146.50' ELEV



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 146.50' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)

CONTRACTOR NOTE:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THERE IS NO INTERFERENCES WITH (PORT HOLES, SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
2. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESORDERS@TESTOWER.US

NOTES:

1. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE LEGS AND/OR ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR.
2. WHEN FIELD CUTTING AND DRILLING ANGLES, USE SAME GAGE LINES AND EDGE DISTANCES AS INDICATED ON SHOP CUT AND DRILLED ENDS.
3. APPLY (2) COATS OF ZINGA COLD GALVANIZING COMPOUND AS PER THE MANUFACTURER'S SPECIFICATIONS TO ALL FIELD CUT AND DRILLED AREAS.
4. MEMBERS IN BLUE COLOR ARE NEW REINFORCEMENTS.

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	4	MS-HRCP-35	METROSITE SUPPORT RAIL CENTER PIPE KIT
2	3	PST350-15	3" PST (3.50" O.D. X 0.216" THK) X 15'-0" A53 GR-B 35KSI
3	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY
4	1	MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT



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IRVING, TX 75038
PH: (972) 483-0607



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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
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CUSTOMER SITE NO:
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CUSTOMER SITE NAME:

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370 ROCKLAND ROAD
GUILFORD, CT 06437

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REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	RA	12/30/20

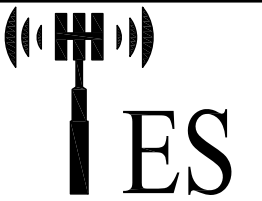
SHEET TITLE:

ANTENNA MOUNT
MODIFICATION DETAILS

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A-1 | 0



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SHEET TITLE:

ANTENNA MOUNT
PHOTOS

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SHEET NUMBER: | REV #:

A-2 | 0



PHOTO 1



PHOTO 2

CONTRACTOR TO COORDINATE WITH TOWER OWNER AND CARRIER REGARDING THE PRESENCE OF BIRD NEST ON EXISTING TOWER.



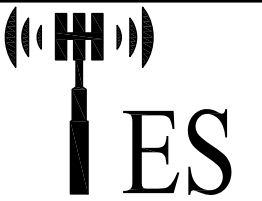
PHOTO 3

INSTALL NEW SAFETY CLIMB GUIDE TO PREVENT EXISTING SAFETY CABLE FROM RUBBING AGAINST NEW COLLAR MOUNT. SEE SHEET SAF-1 FOR DETAILS.



PHOTO 4

NOTE:
EXISTING RRUS/EQUIPMENT MAY BE RELOCATED ALONG THE MEMBER TO ACCOMMODATE THE INSTALLATION OF NEW MOUNT MODIFICATION



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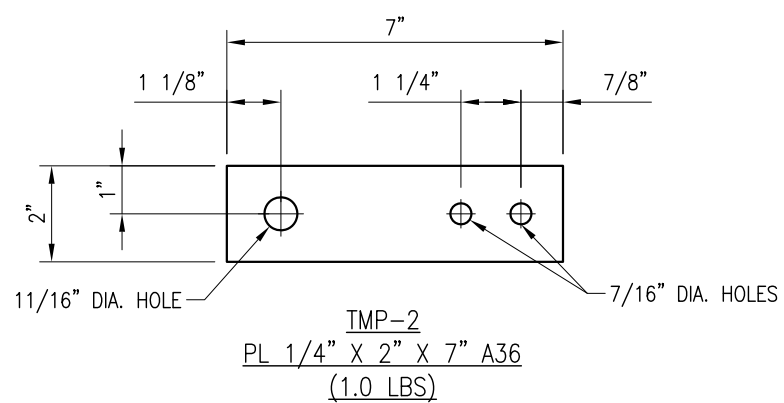


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SHEET NUMBER: D-1 | REV #: 0

- NOTES:
- HOT-DIPPED GALVANIZED PER ASTM A123.
 - ALL HOLES ARE 11/16" DIA. U.N.O



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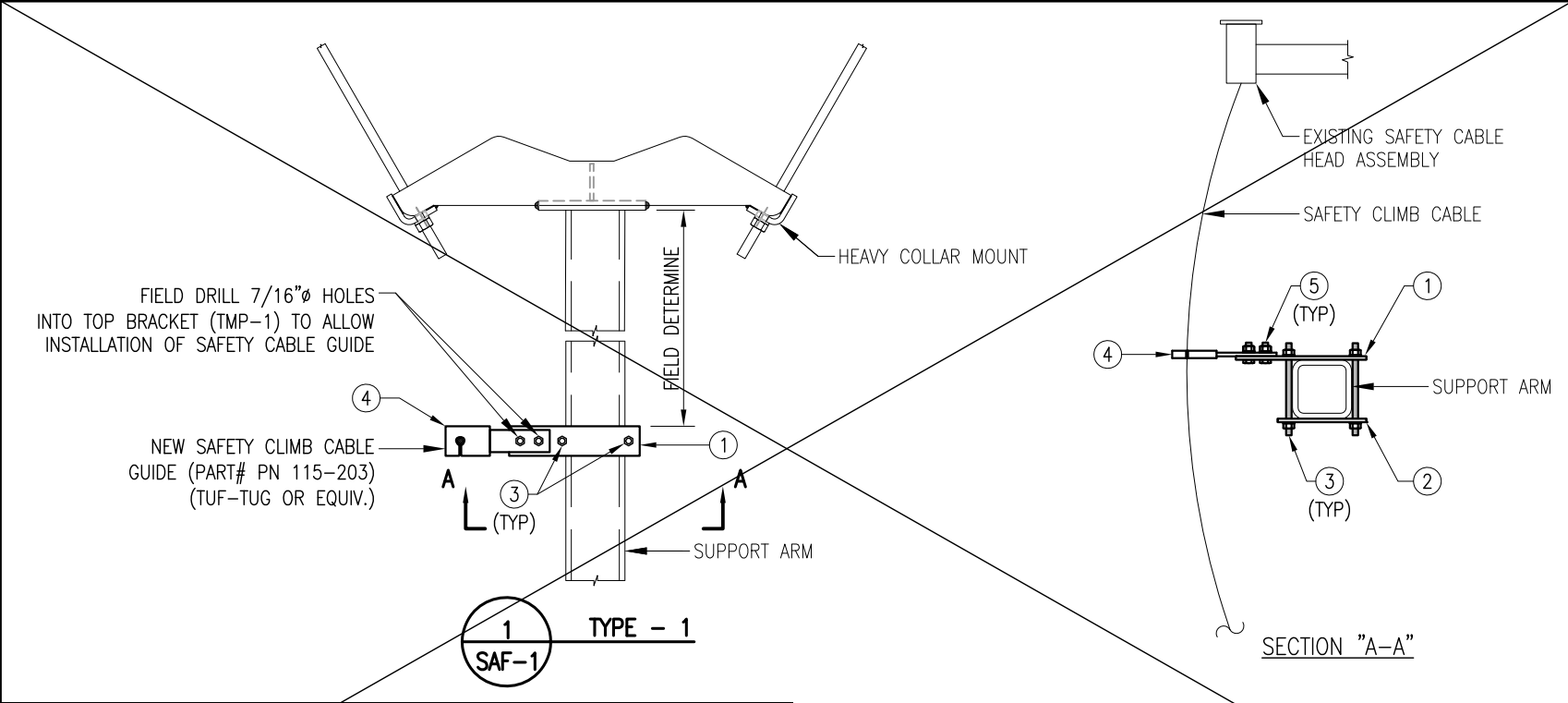
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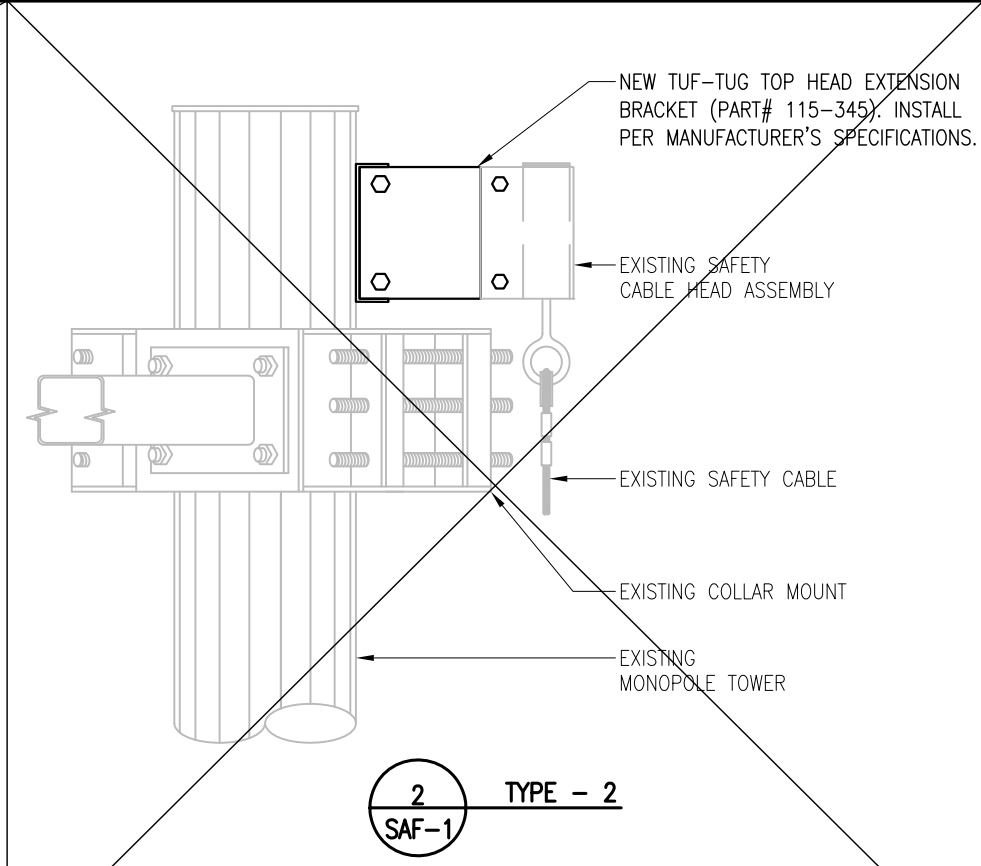
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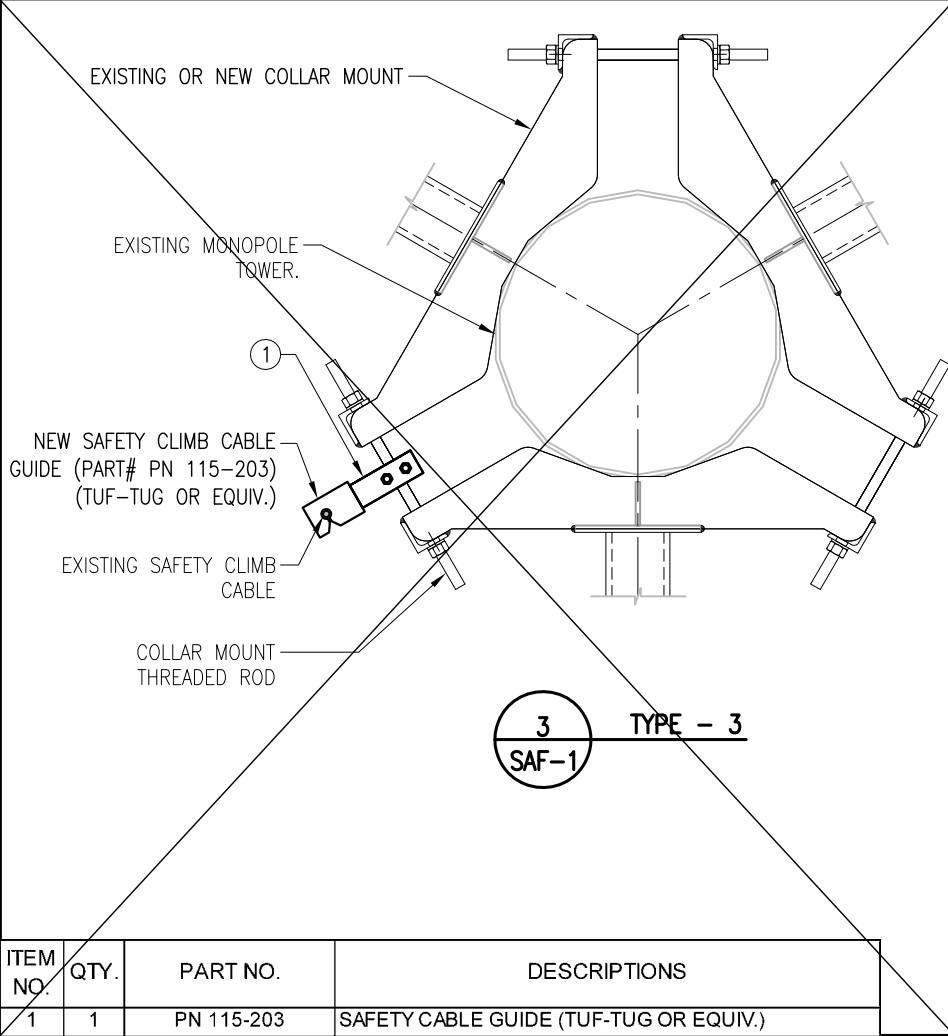


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	TMP-1	PL 1/4" X 2" X 9 1/2" A36
2	1	BMP-1	PL 1/4" X 2" X 6 1/2" A36
3	2	---	THREADED ROD 3/8" X 8" A36
4	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
5	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5

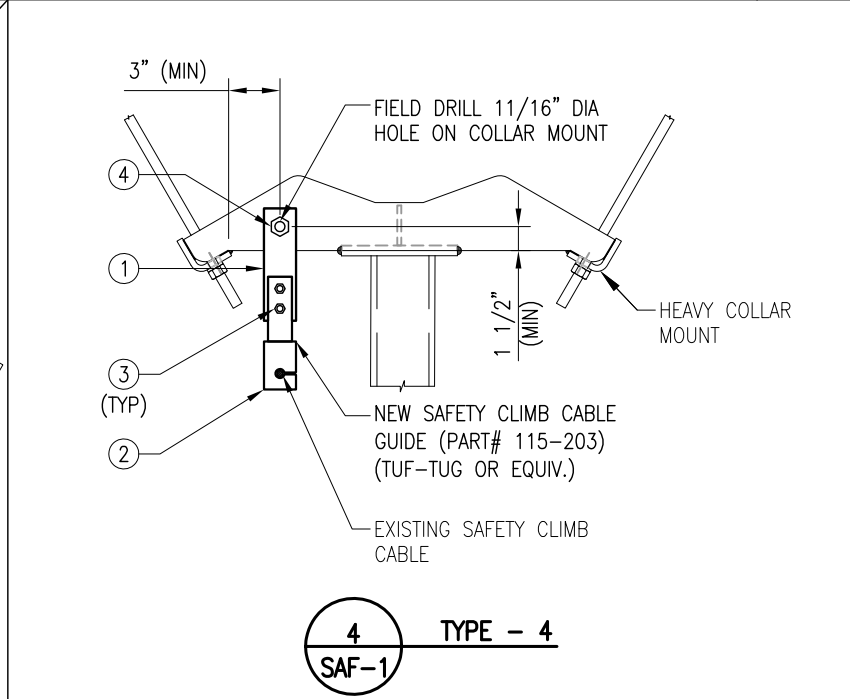
NOTE:
SAFETY CLIMB GUIDE MAY BE INSTALLED ON EITHER LEFT OR RIGHT SIDE OF THE SUPPORT ARM, DEPENDING ON WHERE THE EXISTING SAFETY CLIMB IS LOCATED.



ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	115-345	TUF-TUG MONOPOLE HEAD EXTENSION ASSEMBLY

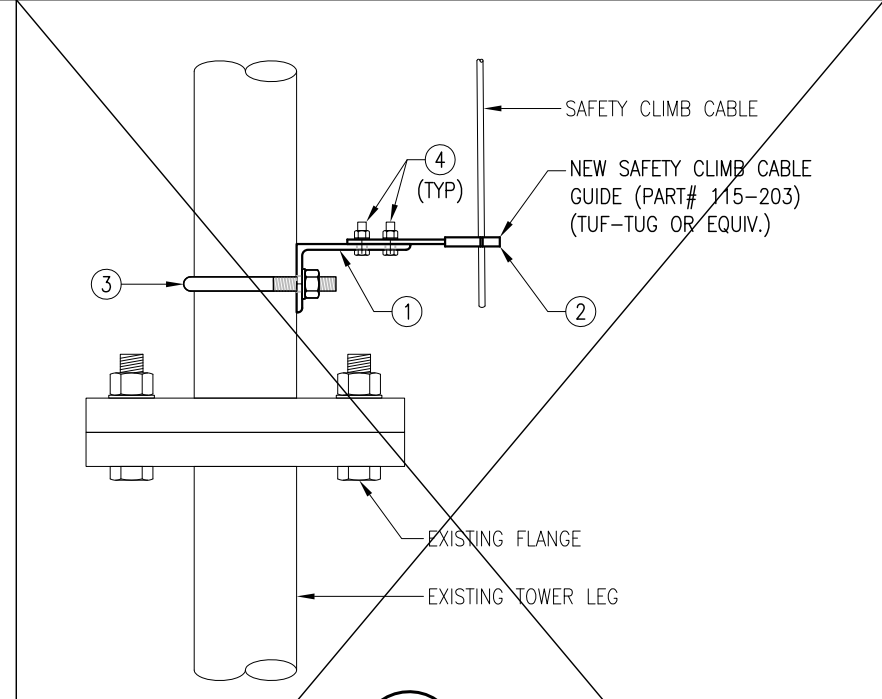


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)



NOTE:
SAFETY CLIMB GUIDE MAY BE INSTALLED ON EITHER LEFT OR RIGHT SIDE OF THE COLLAR MOUNT, DEPENDING ON WHERE THE EXISTING SAFETY CLIMB IS LOCATED.

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	TMP-2	PL 1/4" X 2" X 7" A36
2	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
3	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5
4	1	---	BOLT 5/8" X 2" A325



ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	SCGB-4	L 5" X 3" X 1/4" X 7 1/2" A36
2	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
3	1	MS02-625-4625-700	RU-BOLT 5/8" X 4 5/8" I.W. X 7" I.L. A36 (OR EQUIV.)
4	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5

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SHEET TITLE:
SAFETY CABLE GUIDE DETAILS

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SHEET NUMBER: SAF-1	REV #: 0
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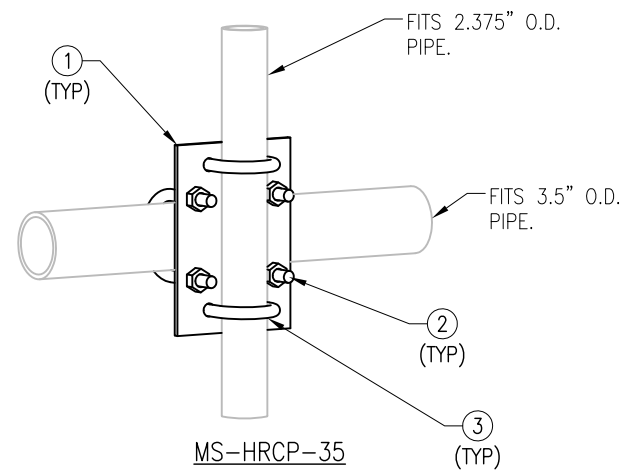
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PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

NOTES:

1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.

MS-HRCP-35						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	PL375-10	PL 3/8" X 7 1/8" X 10"	A36	TAF-1	23.1
2	6	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
3	6	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
GALVANIZED WT						23

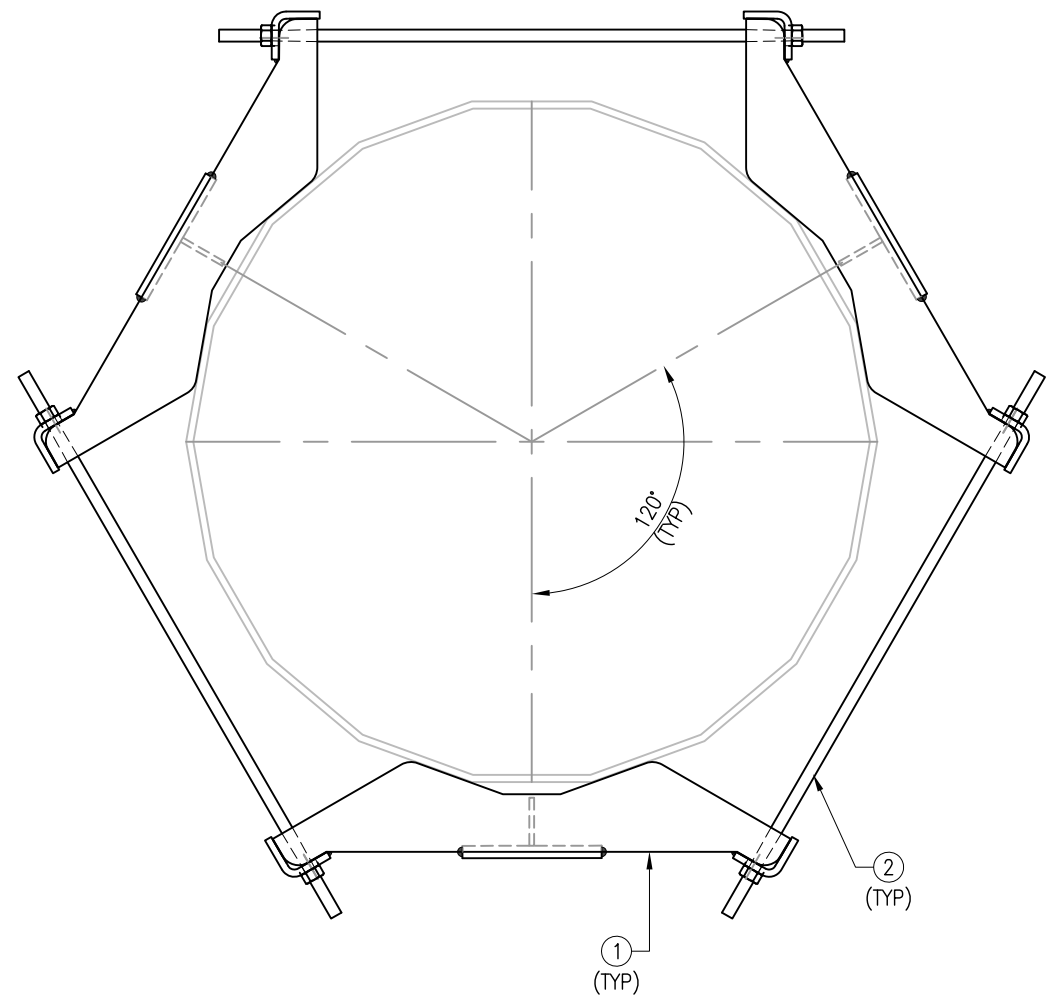


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DECIMALS .X ± 0.1 .XX ± 0.02 .XXX ± 0.005	ANGLES ± 1° FRACTIONS ± 1/32	DRAWN BY XXX	REVIEWED XXX	05/12/17	-
TITLE MS-HRCP-35 SUPPORT RAIL CENTER PIPE KIT			SIZE/DWG NO B MS-HRCP-35	SCALE -	REV 0
SHEET 1 OF 1					

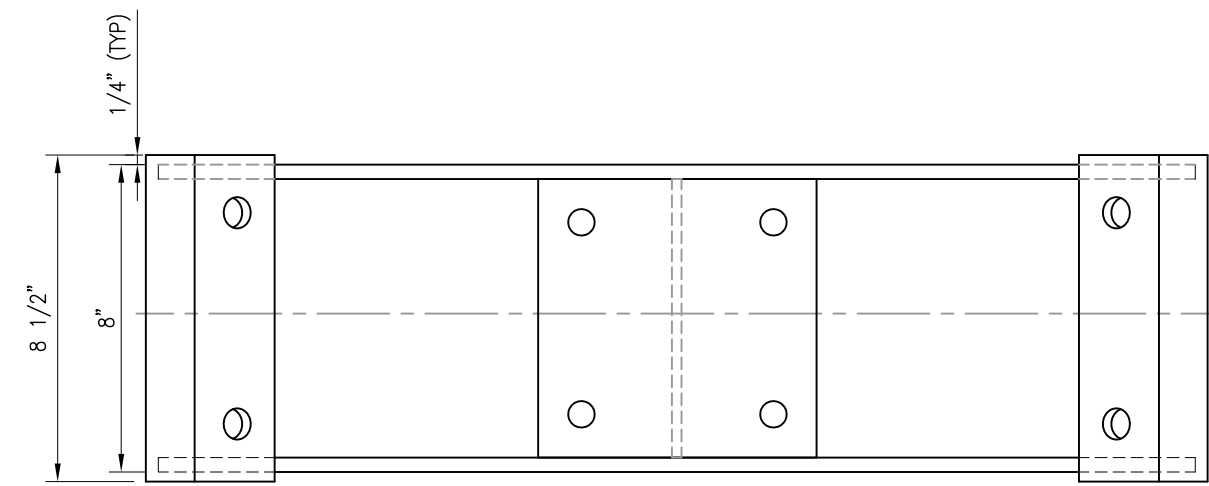
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 2'-4 3/4" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 136.7 LBS

NOTE:
1) FITS 12" DIA TO 32" DIA.



TOP VIEW

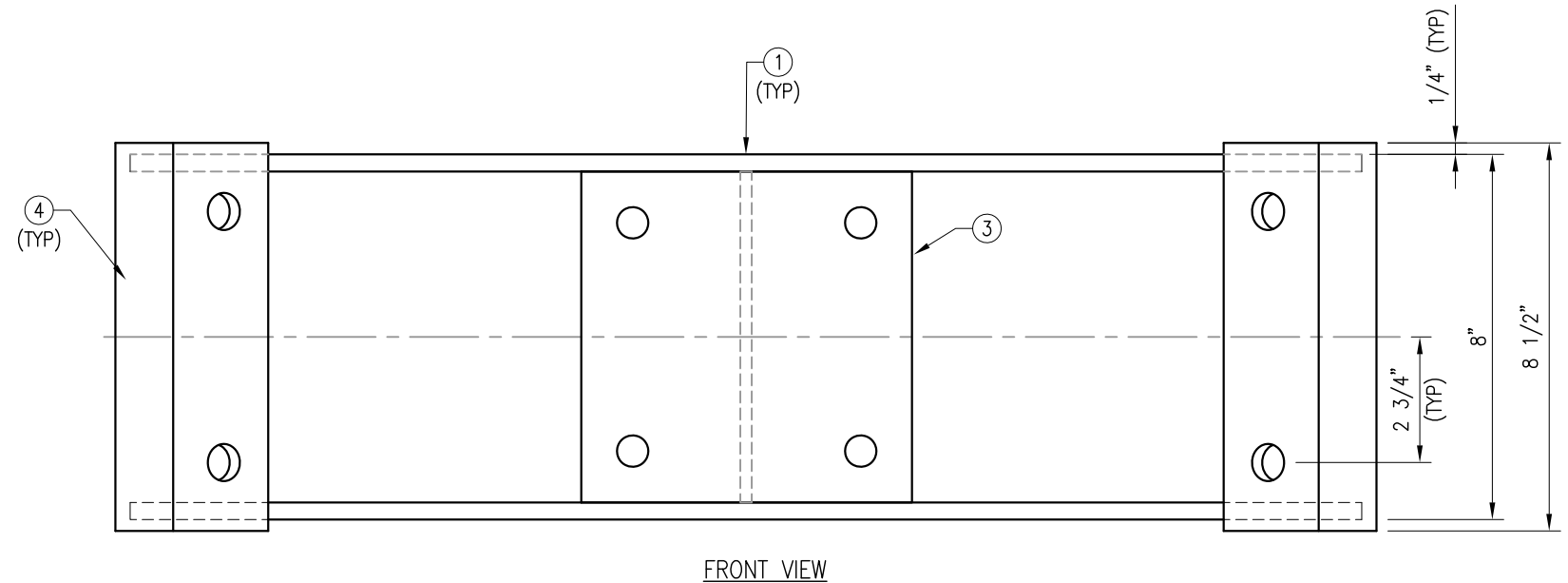
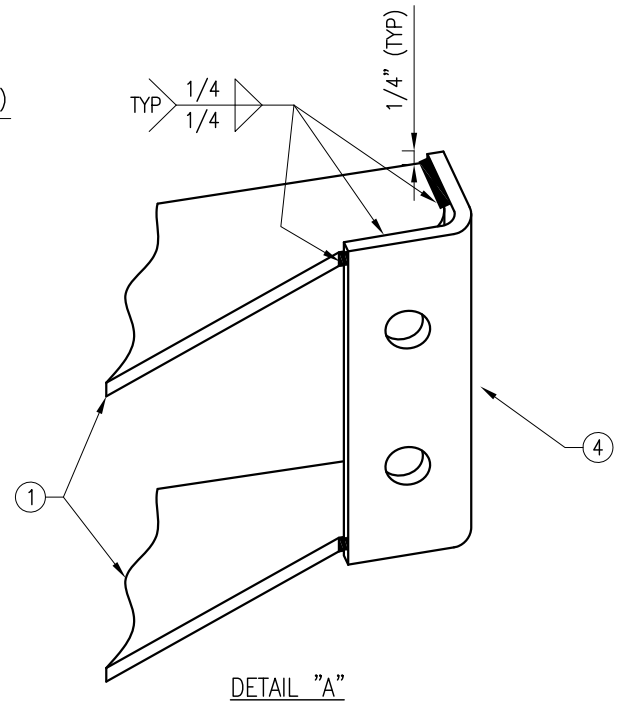
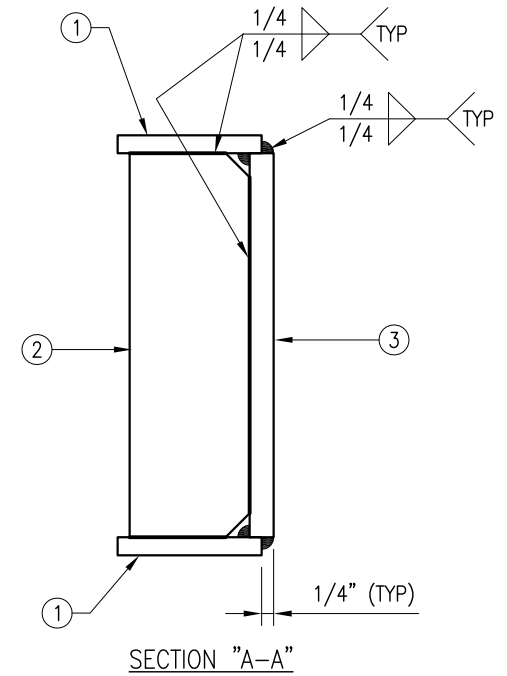
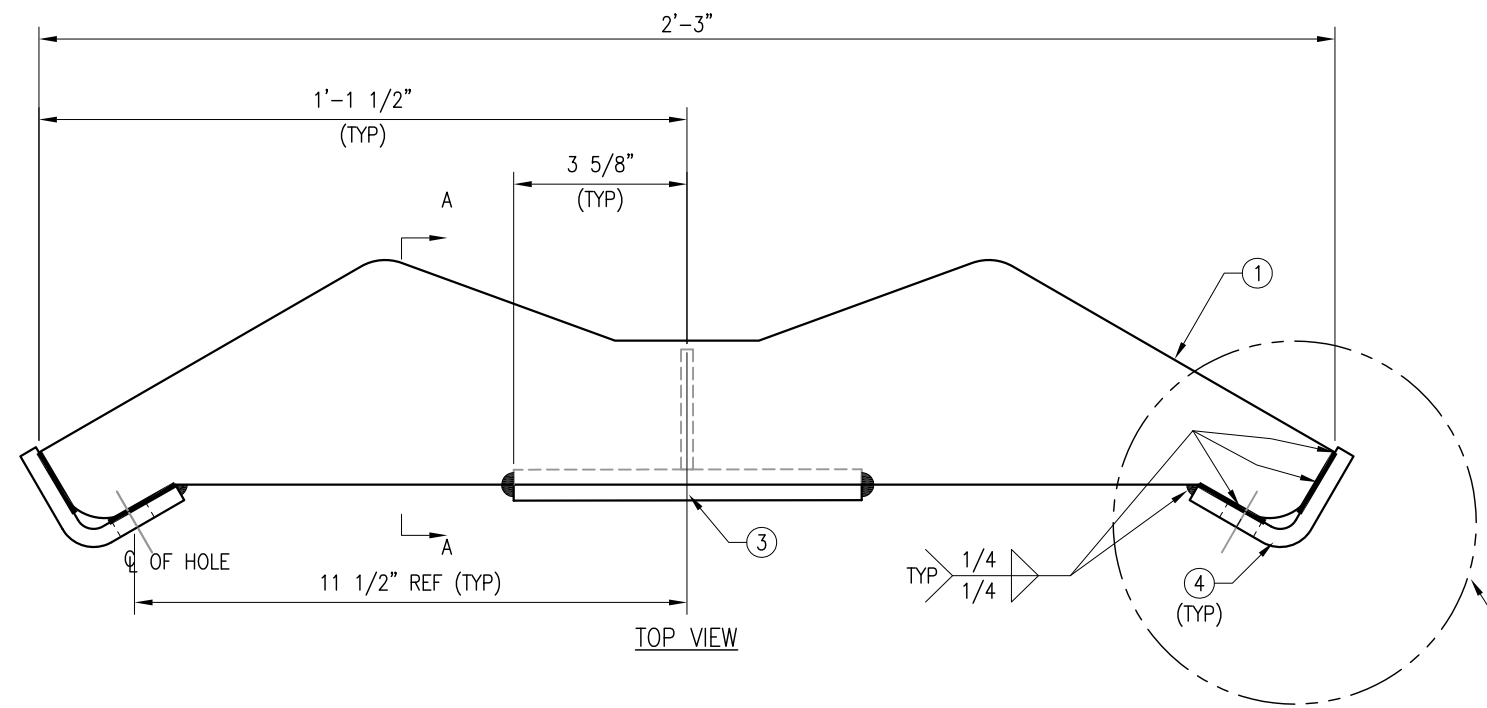


FRONT VIEW

THIRD ANGLE PROJECTION			METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
			TITLE HEAVY COLLAR MOUNT PLATE ASSEMBLY DETAIL MS-H1436	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH		CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC		SIZE/DWG NO B MS-H1436
STANDARD SHEET TOLERANCES		APPROVAL / SIGNATURES DRAWN BY: XXX REVIEWED: XXX APPROVED: XXX	DATE 05/12/17 - -	REV 1
DECIMALS .X ± 0.1 .XX ± 0.02 .XXX ± 0.005	ANGLES ± 1° FRACTIONS ± 1/32	SCALE -		SHEET 1 OF 1

- NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.
 2. WELD TYPE: E70XX.

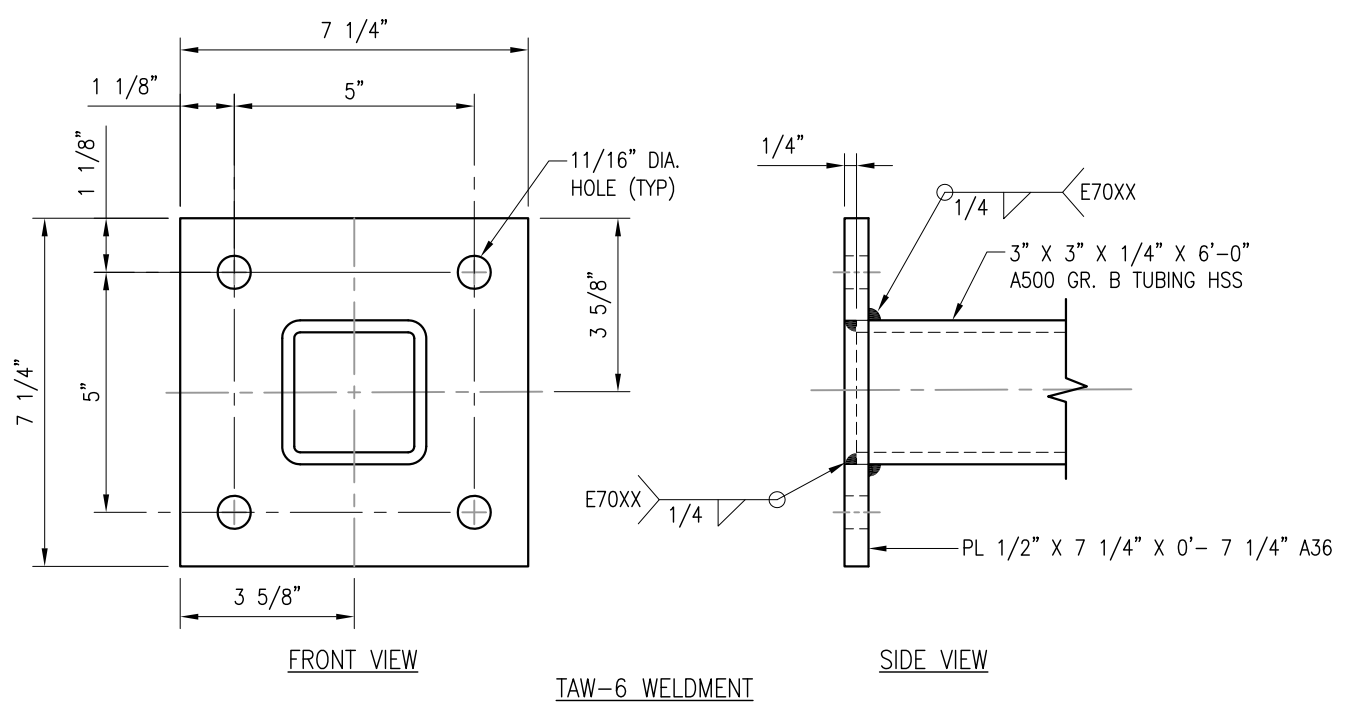
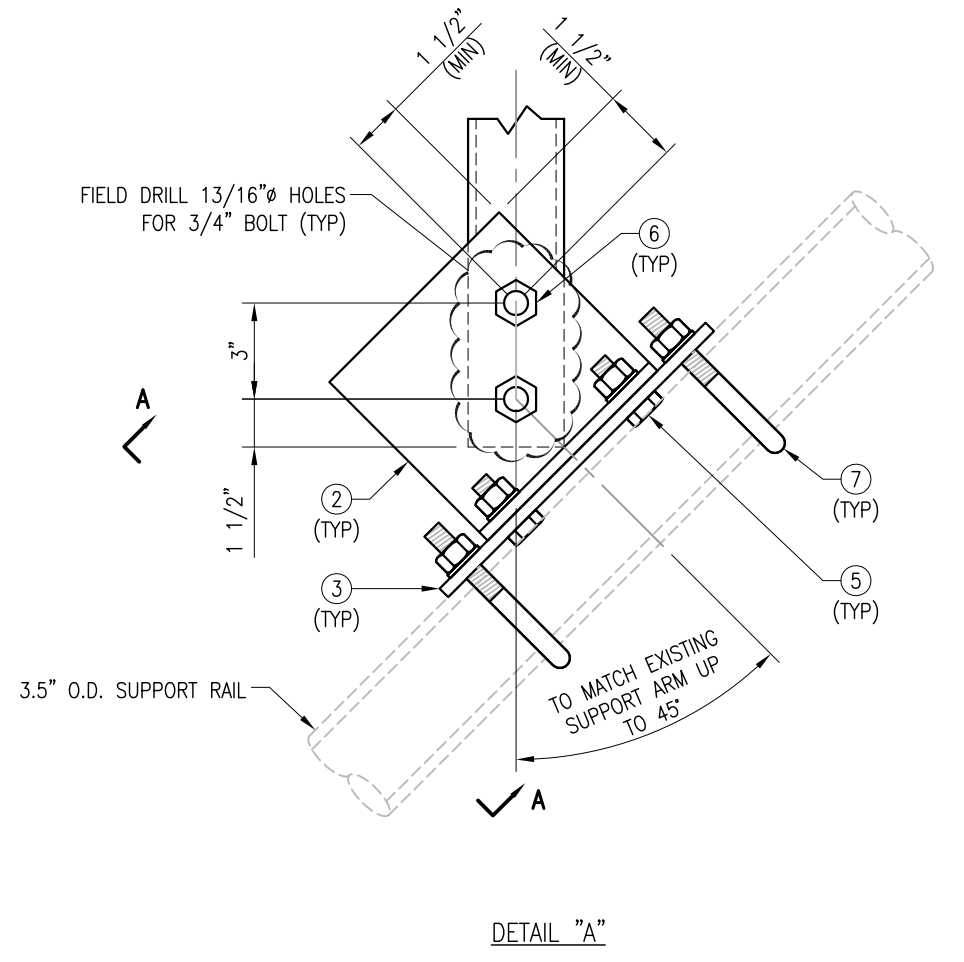
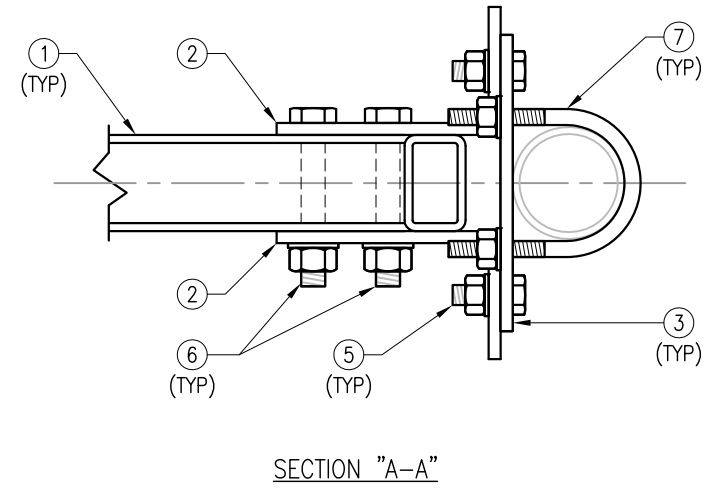
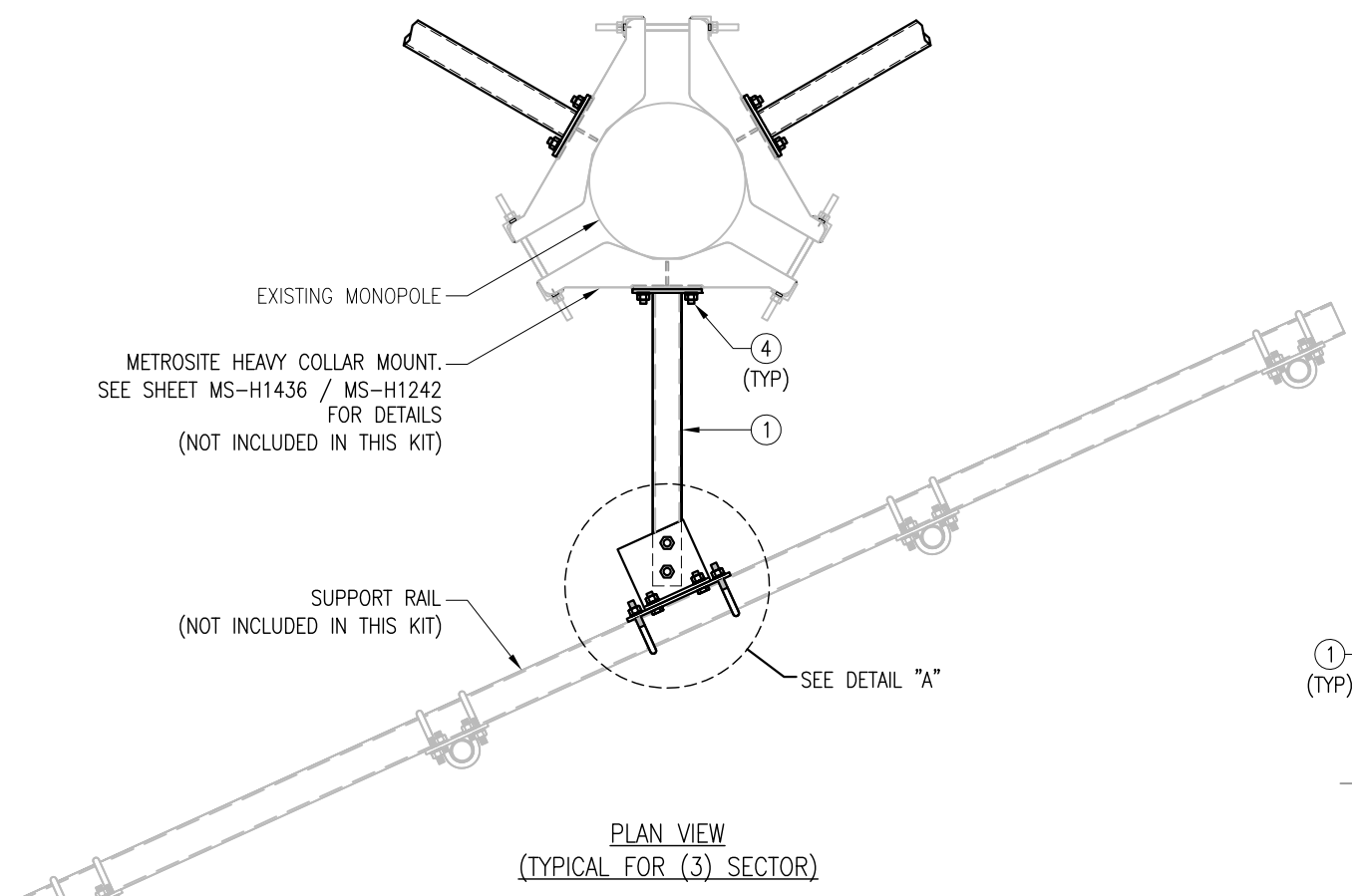
MPHW-1 WELDMENT						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	2	PL-4	PL 3/8" X 5 3/8" X 2'-3"	A36	F-2	18.8
2	1	PL-5	PL 3/8" X 2 1/2" X 0'-7 1/4"	A36	F-2	1.9
3	1	PL-6	PL 1/2" X 7 1/4" X 0'-7 1/4"	A36	F-2	7.5
4	2	PL-7	PL 3/8" X 4 3/8" X 8 1/2"	A36	F-2	7.8
BLACK WT						36
GALVANIZED WT						38



FRONT VIEW
 MPW-1 WELDMENT

THIRD ANGLE PROJECTION						METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH				CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC			
STANDARD SHEET TOLERANCES DECIMALS .X ± 0.1 .XX ± 0.02 .XXX ± 0.005				ANGLES ± 1° FRACTIONS ± 1/32		APPROVAL / SIGNATURES DRAWN BY: XXX REVIEWED: XXX APPROVED: XXX	
		DATE: 05/12/17		TITLE HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL		SIZE/DWG NO B MPHW-1	
						SCALE: -	
						SHEET 1 OF 1	

ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	TAW-6	T-ARM WELDMENT	A36	TAW-6	192
2	6	TARM-CPL-750	PL 3/8" X 7 1/2" X 9 7/16" A36 BENT PLATE	A36	BK-5	47.4
3	3	TARM-CPL-1175	PL 3/8" X 9 1/4" X 11 3/4"	A36	BK-5	36.3
4	12	---	BOLT 5/8" X 2 1/4" A325 W/ HHN & LKW EA.	A325	---	---
5	12	---	BOLT 5/8" X 2" A325 W/ HHN & LKW EA.	A325	---	---
6	6	---	BOLT 3/4" X 5" A325 W/ HHN & LKW EA.	A325	---	---
7	6	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	---	RBC-1	8.7
GALVANIZED WT						284



- NOTES:
- HOT-DIPPED GALVANIZED PER ASTM A123.
 - ALL HOLES ARE 11/16" DIA. U.N.O

THIRD ANGLE PROJECTION						METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH				CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC			
STANDARD SHEET TOLERANCES		APPROVAL / SIGNATURES		DATE		TITLE	
DECIMALS	ANGLES	DRAWN BY XXX		11/19/18		SIZE DWG NO	
.X ± 0.1	± 1°	REVIEWED XXX		-		B MS-TAW-350RO	
.XX ± 0.02	FRACTIONS	APPROVED XXX		-		SCALE	
.XXX ± 0.005	± 1/32					SHEET 1 OF 1	

EXHIBIT 9



Tower Engineering Solutions

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

Post-Mod Antenna Mount Analysis Report

Existing 158-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT46139-A-SBA / West Haven-rt15 /Woodbridge

Customer Site Name: West Haven-rt15 /Woodbridge

Carrier Name: T-Mobile Sprint (App#: 144007, V1)

Carrier Site ID / Name: CT33XC087

Site Location: 370 Rockland Road

Guilford, Connecticut

New Heaven County

Latitude: 41.396833

Longitude: -72.688805

Exp.10/31/2021



Analysis Result:

Max Structural Usage: 97.9% [Pass]

03/15/2021

Report Prepared By: Anita Lama

Introduction

The purpose of this report is to summarize the analysis results on the (3) T-Arm at 146.50' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping by TEP dated 12/16/2020
Antenna Loading	SBA Application #: 144007, v1
Existing Modification	N/A
Proposed Modification	TES Project No. 101022

Analysis Criteria

Basic Wind Speed Used in the Analysis: $V_{ULT} = 125$ mph (3-Sec. Gust) / Equivalent to
 $V_{ASD} = 97$ mph (3-Sec. Gust)

Basic 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/EIA 222-G/2015 IBC / 2018 Connecticut State Building Code

Exposure Category: C

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 (4) MS-HRCP-35+(1) MS-H1436+(1) MS-TAW-350RO+(3) PST350-15 at 146.50' elevation

Final Antenna Configuration

3 Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)
3 RFS APXVAALL24_43-U-NA20
3 Ericsson AIR6449 B41
4 RFS ACU-A20-N RET
3 Ericsson 4415 B25
3 Alcatel-Lucent 800 MHz RRH
3 Ericsson 4449 B71 + B85
3 Alcatel-Lucent 800 MHz Filter

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 97.9%, which occurs in the mount pipe. 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 Before Modification
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.



Structure: CT46139-A-SBA - West Haven-rt15 /Woodbridge

Sector: **A**

12/18/2020

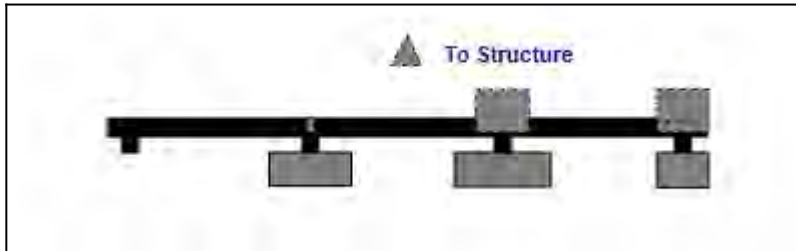
Structure Type: Monopole

Mount Elev: 146.50

Page: 1

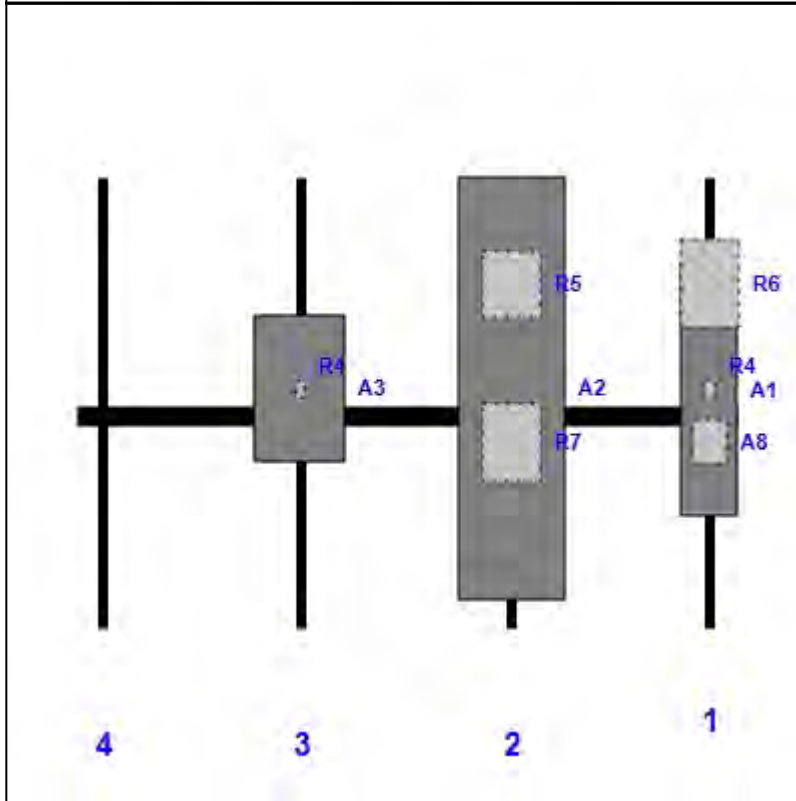


Plan View



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
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	57.00	12.90	144.00	1	a	Front	48.00			
R4	ACU-A20-N RET	4.00	2.00	144.00	1	a	Behind	48.00			
R6	800 MHz RRH	19.70	13.00	144.00	1	a	Behind	24.00			
A8	800 MHz Filter	10.00	8.00	144.00	1	a	Behind	60.00			
A2	APXVAALL24_43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R5	RRUS 4415 B25	15.00	13.20	99.00	2	a	Behind	24.00			
R7	4449 B71 + B85	17.90	13.20	99.00	2	a	Behind	60.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	48.00			
R4	ACU-A20-N RET	4.00	2.00	51.00	3	a	Behind	48.00			

Structure: CT46139-A-SBA - West Haven-rt15 /Woodbridge

Sector: B

12/18/2020

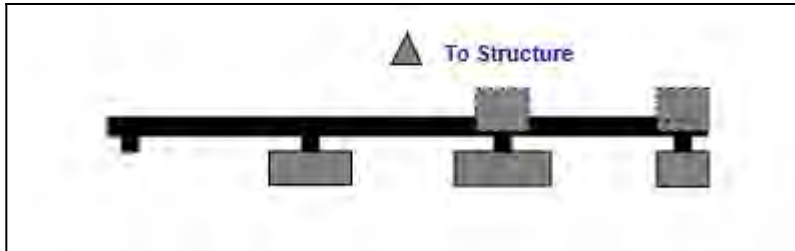


Structure Type: Monopole

Page: 2

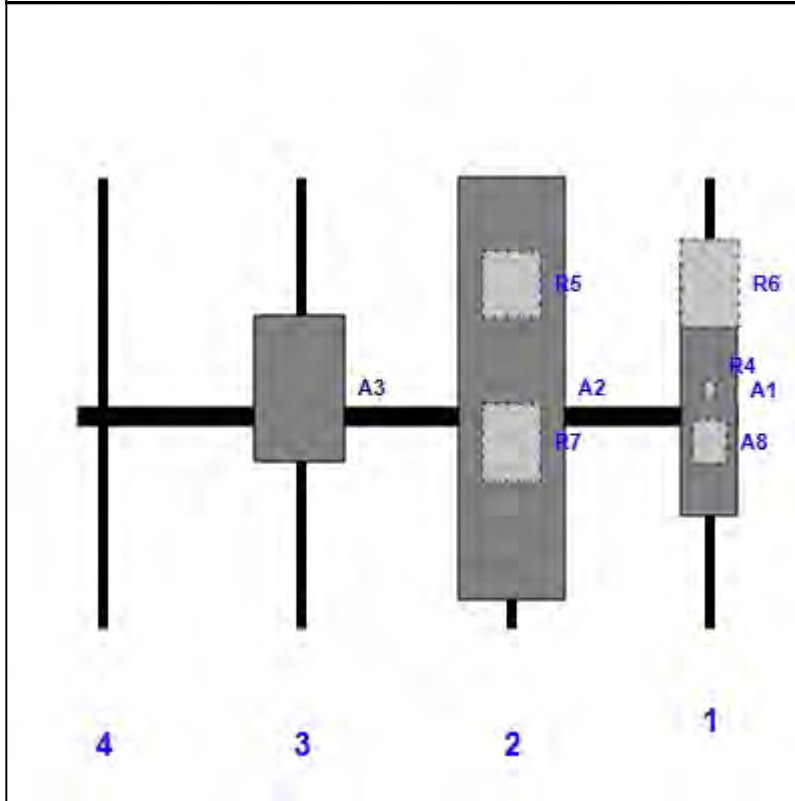
Mount Elev: 146.50

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
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	57.00	12.90	144.00	1	a	Front	48.00			
R4	ACU-A20-N RET	4.00	2.00	144.00	1	a	Behind	48.00			
R6	800 MHz RRH	19.70	13.00	144.00	1	a	Behind	24.00			
A8	800 MHz Filter	10.00	8.00	144.00	1	a	Behind	60.00			
A2	APXVAALL24_43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R5	RRUS 4415 B25	15.00	13.20	99.00	2	a	Behind	24.00			
R7	4449 B71 + B85	17.90	13.20	99.00	2	a	Behind	60.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	48.00			

Structure: CT46139-A-SBA - West Haven-rt15 /Woodbridge

Sector: C

12/18/2020

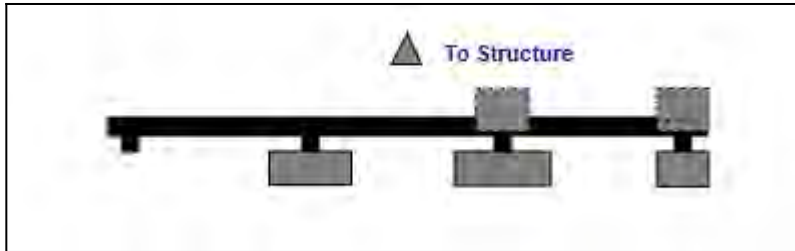


Structure Type: Monopole

Page: 3

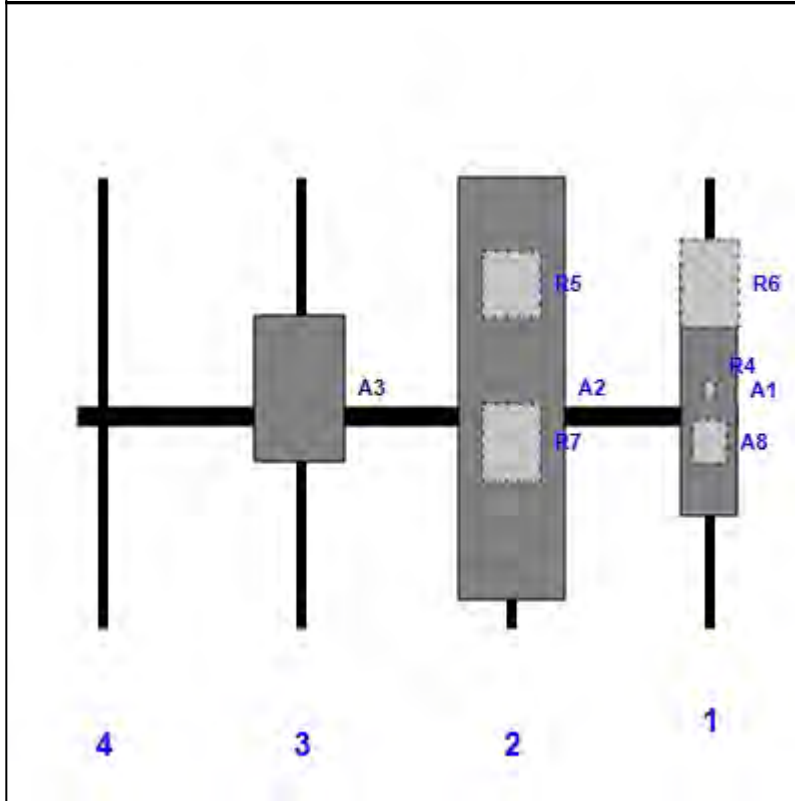
Mount Elev: 146.50

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
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	57.00	12.90	144.00	1	a	Front	48.00			
R4	ACU-A20-N RET	4.00	2.00	144.00	1	a	Behind	48.00			
R6	800 MHz RRH	19.70	13.00	144.00	1	a	Behind	24.00			
A8	800 MHz Filter	10.00	8.00	144.00	1	a	Behind	60.00			
A2	APXVAALL24_43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R5	RRUS 4415 B25	15.00	13.20	99.00	2	a	Behind	24.00			
R7	4449 B71 + B85	17.90	13.20	99.00	2	a	Behind	60.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	48.00			

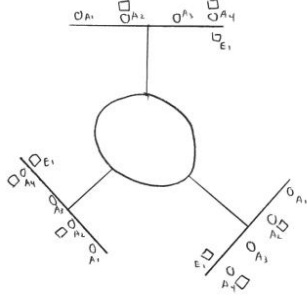


Antenna Mount Mapping Form (PATENT PENDING)

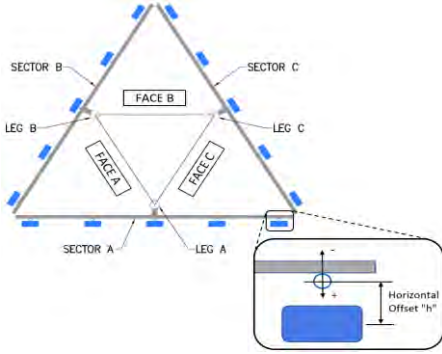
FCC #
1270237

Tower Owner:	SBA Communications	Mapping Date:	12/16/2020
Site Name:	West Haven-RT15/Woodbridge	Tower Type:	Monopole
Site Number or ID:	CT46139-A-SBA	Tower Height (Ft.):	160
Mapping Contractor:	TEP	Mount Elevation (Ft.):	146

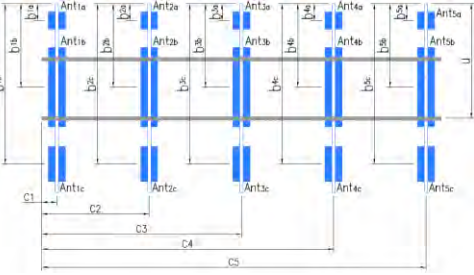
This antenna mapping form is the property of TES and under PATENT PENDING. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.



Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "y"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "y"	Horizontal Offset "C1, C2, C3, etc."
A1	2.4"Øx8'-6"x0.154"TH	54.00	6.00	C1	2.4"Øx8'-6"x0.154"TH	54.00	6.00
A2	2.4"Øx8'-6"x0.154"TH	54.00	54.00	C2	2.4"Øx8'-6"x0.154"TH	54.00	54.00
A3	2.4"Øx8'-6"x0.154"TH	54.00	102.00	C3	2.4"Øx8'-6"x0.154"TH	54.00	102.00
A4	2.4"Øx7'-0"x0.154"TH	38.00	150.00	C4	2.4"Øx7'-0"x0.154"TH	38.00	150.00
A5				C5			
A6				C6			
B1	2.4"Øx8'-6"x0.154"TH	54.00	6.00	D1			
B2	2.4"Øx8'-6"x0.154"TH	54.00	54.00	D2			
B3	2.4"Øx8'-6"x0.154"TH	54.00	102.00	D3			
B4	2.4"Øx7'-0"x0.154"TH	38.00	150.00	D4			
B5				D5			
B6				D6			
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :							
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.):							4.5
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.):							3
Please enter additional information or comments below.							
Tower Face Width at Mount Elev. (ft.):		Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):		22.69			



Ants. Items	Enter antenna model. If not labeled, enter "Unknown".					Mounting Locations [Units are inches and degrees]				Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	
Sector A										
Ant _{1a}						150.5				
Ant _{1b}	Empty									
Ant _{1c}										
Ant _{2a}										
Ant _{2b}	APXVSP18	11.80	7.90	72.00	nper from	148.167	28.00	8.00	350.00	120
Ant _{2c}										
Ant _{3a}										
Ant _{3b}	Empty					150.5				
Ant _{3c}										
Ant _{4a}	RRH 8x20-25	17.52	5.71	25.39	1) 1/4" F	148.458	8.50	6.50		131
Ant _{4b}	APXVTM14-ALU-120	12.60	6.30	56.30	nper from	147.167	24.00	10.00	350.00	128
Ant _{4c}										
Ant _{5a}										
Ant _{5b}										
Ant _{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower	RRH 1900-4x45	11.10	11.40	25.00	1) 1/4" HY					166
Ant on Tower	RRH 2x50-800	13.00	14.00	15.80	nper from HY					198



Antenna Layout (Looking Out From Tower)

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector				Sector B											
Sector A:	350.00	Deg	Leg A:		Deg			Ant _{1a}											
Sector B:	145.00	Deg	Leg B:		Deg			Ant _{1b}	Empty					150.5					
Sector C:	240.00	Deg	Leg C:		Deg			Ant _{1c}											
Sector D:		Deg	Leg D:		Deg			Ant _{1d}	APXVSP18	11.80	7.90	72.00	nper from	148.167	28.00	8.00	145.00	138	
Climbing Facility Information								Ant _{2c}											
Location:	200.00	Deg	Sector C					Ant _{3a}											
Climbing Facility	Corrosion Type:		Good condition.					Ant _{3b}	Empty						150.5				
	Access:		Climbing path was unobstructed.					Ant _{3c}											
	Condition:		Good condition.					Ant _{4a}	RRH 8x20-25	17.52	5.71	25.39) 1 1/4" F	148.458	8.50	6.50		145	
							Ant _{4b}	APXVTM14-ALU-120	12.60	6.30	56.30	nper from	147.167	24.00	10.00	145.00	143		
							Ant _{4c}												
							Ant _{5a}												
							Ant _{5b}												
							Ant _{5c}												
							Ant on Standoff												
							Ant on Standoff												
							Ant on Tower	RRH 1900-4x45	11.10	11.40	25.00	nper from HY						168	
							Ant on Tower	RRH 2x50-800	13.00	14.00	15.80	nper from HY						200	
Sector C								Ant _{1a}											
							Ant _{1b}	Empty						150.5					
							Ant _{1c}												
							Ant _{1d}												
							Ant _{2b}	APXVSP18	11.80	7.90	72.00	nper from	148.167	28.00	8.00	240.00	153		
							Ant _{2c}												
							Ant _{3a}												
							Ant _{3b}	Empty						150.5					
							Ant _{3c}												
							Ant _{4a}	RRH 8x20-25	17.52	5.71	25.39) 1 1/4" F	148.458	8.50	6.50		161		
							Ant _{4b}	APXVTM14-ALU-120	12.60	6.30	56.30	nper from	147.167	24.00	10.00	240.00	159		
							Ant _{4c}												
							Ant _{5a}												
							Ant _{5b}												
							Ant _{5c}												
							Ant on Standoff												
							Ant on Standoff												
							Ant on Tower	RRH 1900-4x45	11.10	11.40	25.00	nper from HY						170	
							Ant on Tower	RRH 2x50-800	13.00	14.00	15.80	nper from HY						202	
Sector D								Ant _{1a}											
							Ant _{1b}												
							Ant _{1c}												
							Ant _{1d}												
							Ant _{2b}												
							Ant _{2c}												
							Ant _{3a}												
							Ant _{3b}												
							Ant _{3c}												
							Ant _{4a}												
							Ant _{4b}												
							Ant _{4c}												
							Ant _{5a}												
							Ant _{5b}												
							Ant _{5c}												
							Ant on Standoff												
							Ant on Standoff												
							Ant on Tower												
							Ant on Tower												

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #

1		
2		
3		
4		
5		
6		
7		
8		

Mapping Notes

1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

Standard Conditions

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.



Antenna Mount Mapping Form (PATENT PENDING)

FCC #
1270237

Tower Owner:	SBA Communications	Mapping Date:	12/16/2020
Site Name:	West Haven-RT15/Woodbridge	Tower Type:	Monopole
Site Number or ID:	CT46139-A-SBA	Tower Height (Ft.):	160
Mapping Contractor:	TEP	Mount Elevation (Ft.):	146

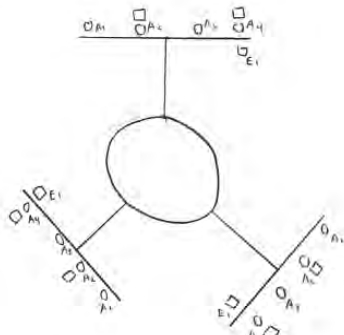
This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.

Please Insert Sketches of the Antenna Mount

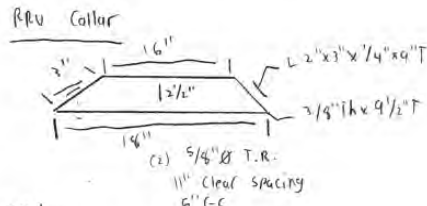
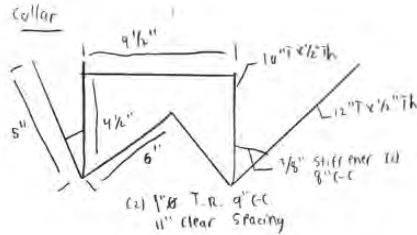
West Haven-RT15/Woodbridge

Ladder @ 200"
 (2) 1 1/4" x 1/4"
 (3) 1 1/4" x 1/4"
 Tot @ 160'-0"

A₂
 A = 350"
 B = 145"
 C = 240"



To MNT Below 3'-0"
 To MNT above 4'-6"
 WAF = 4"
 MNT elevation 146'-0"



Equipment

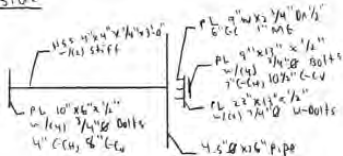
	MP	Model	U	B	H
A ₁	2-4' x 8'-6"	Empty	54"	-	-
A ₂	↓	ATXVSPP14	↓	24"	8"
A ₃	↓	Empty	↓	-	-
A ₄	2-4' x 7'-0"	APXVMM14-ALU-120	36"	24"	10"
E ₁	Pos 4	R.H 5x20-25	-	8 1/2"	6 1/2"
E ₂	RRU Rack	R.H 1400-4x45	-	-	-
E ₃	↓	R.H 2400-400	-	-	-

Back

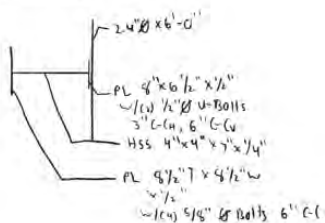


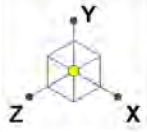
MP Connec
 PL 8 1/2" x 7" x 1/8"
 - (1) 1/2" U-bolts
 FP: 6" C-C, 5" C-C
 MP: 7" C-C, 3" C-C

Side



RRU Side





Tower Engineering Solutio...

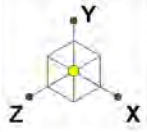
CT46139-A-SBA_MT_LOT_Loads Only_Sector A_G

SK - 2

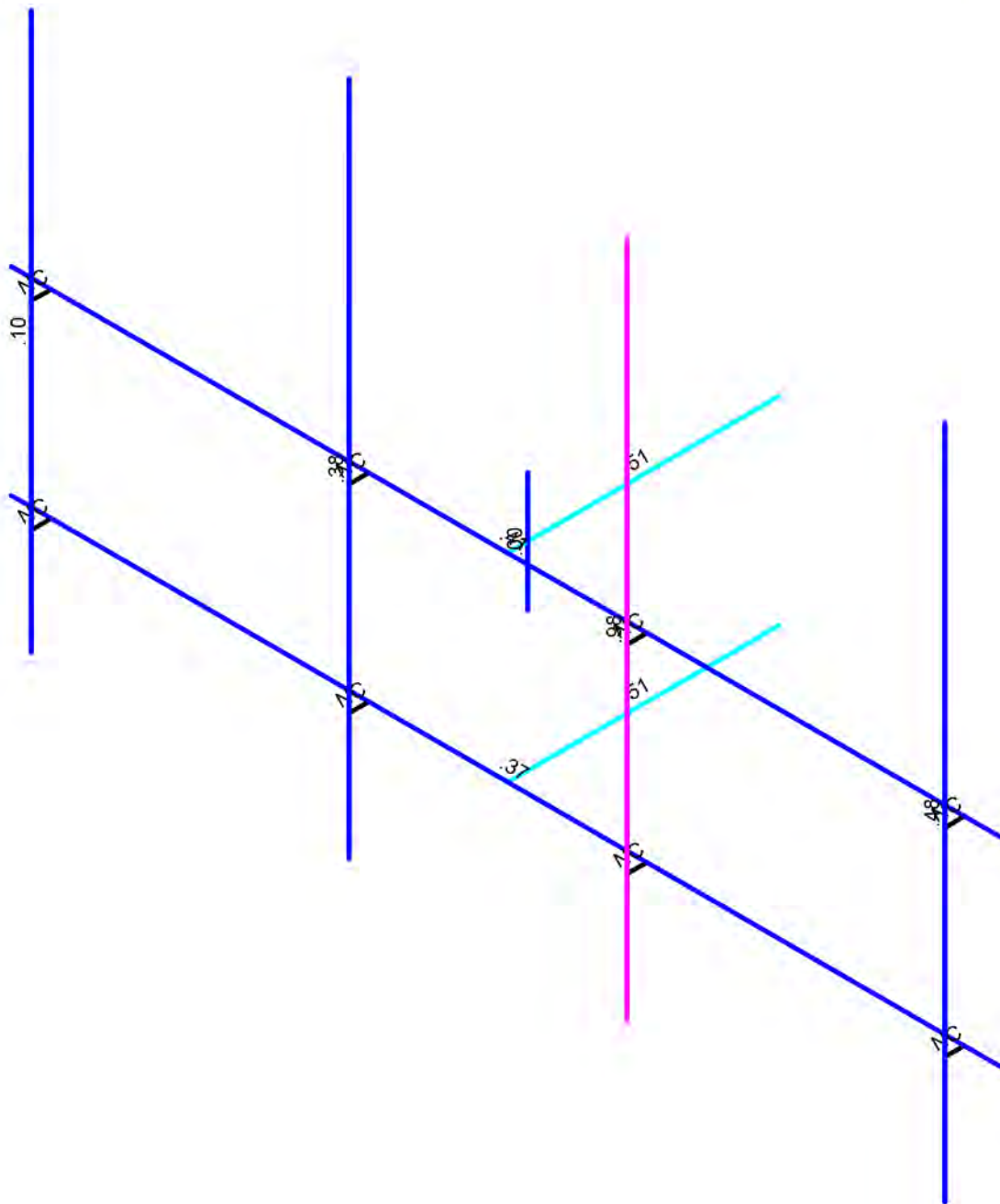
Dec 23, 2020 at 3:59 PM

TES Project No. 101022

CT46139-A-SBA_101022_G_RISA_...

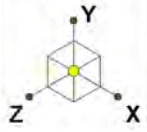


Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50

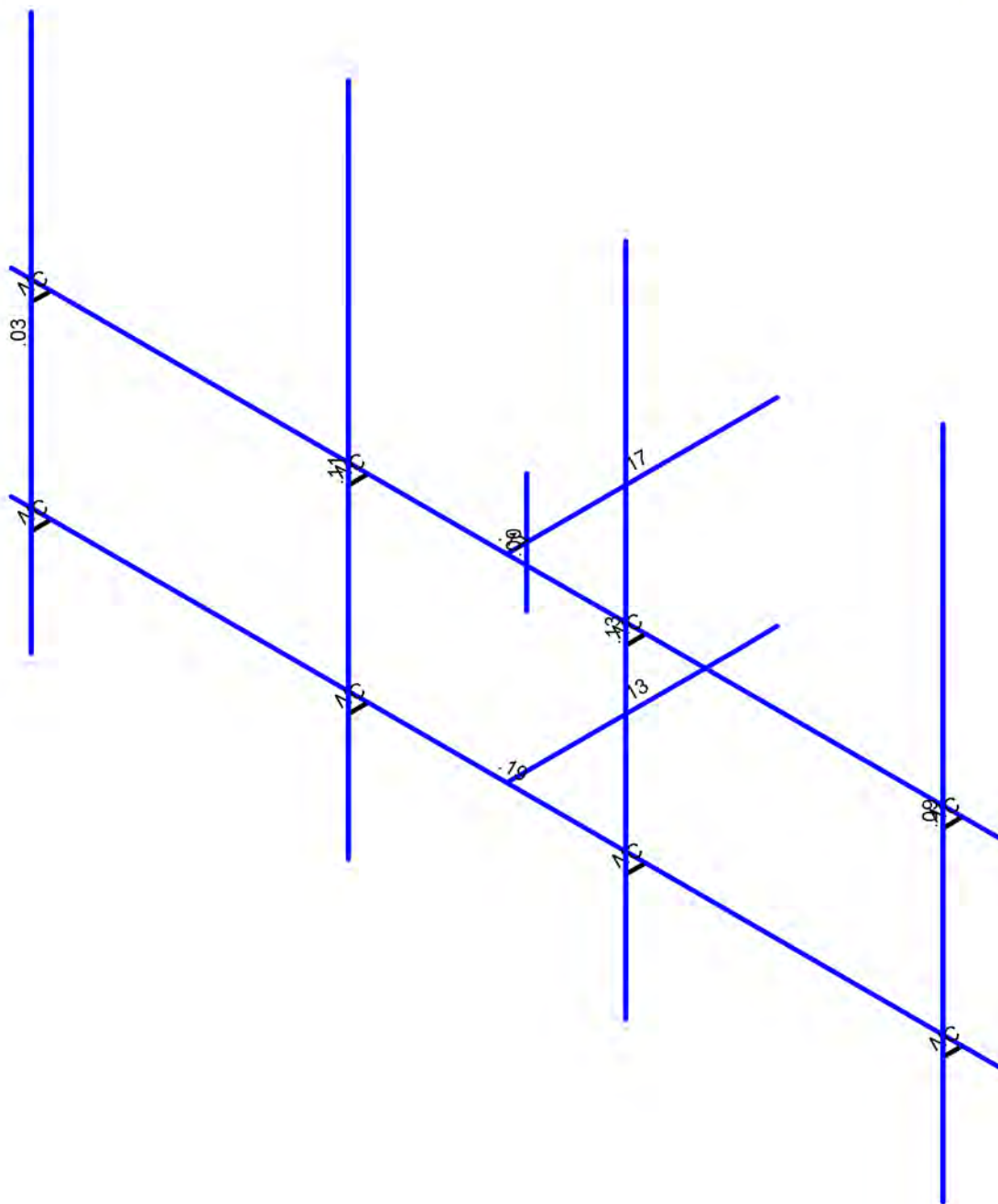


Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...	CT46139-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 3
TES Project No. 101022		Dec 23, 2020 at 4:00 PM
		CT46139-A-SBA_101022_G_RISA_...



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



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

Tower Engineering Solutio...	CT46139-A-SBA_MT_LOT_Loads Only_Sector A_G	SK - 4
		Dec 23, 2020 at 4:00 PM
TES Project No. 101022		CT46139-A-SBA_101022_G_RISA_...



6 UqjW@ UX'7 UqYg

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

@ UX'7 ca VjbUjcbg

Description	S...	PDelta	S...	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 (Front)	Yes	Y	1	1.2	9	1.2	2	1	10	1	4	1	12	1							
6	1.2D+1.0Di+1.0Wi (Back)	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 (Right)	Yes	Y	1	1.2	9	1.2	2	1	10	1	6	-1	14	-1							
9	1.2D+1.5L1+.16W (Maint...)	Yes	Y	1	1.2	9	1.2	7	1.5	3	.16	11	.16									
10	1.2D+1.5L2+.16W (Maint...)	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															

>cjbh7 ccfXj bUjYg UbX'HYa dYUj fYg

Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0	
2	N2	0	0	3.413333	0
3	N3	-6.25	0	3.413333	0
4	N4	6.25	0	3.413333	0
5	NP1	5.750033	4.416333	3.663333	0
6	NP2	5.750033	-4.083667	3.663333	0
7	N16	5.750033	0	3.413333	0
8	N26	6.083333	0	3.413333	0
9	N27	-6.083333	0	3.413333	0
10	N28	0	0	2.583333	0
11	N29	0	0	.5	0
12	N44	-.25	2	1.333333	0
13	N44A	-.25	-2.5	1.333333	0
14	N45	0	0	1.333333	0



>c]bh7 ccfX]bUhg'UbX'HYa dYUhi fYg'f7 cb]bi YXL

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
15	N39	5.750033	0	3.663333	0	
16	N43A	0	0	3.163333	0	
17	N44C	0	.75	3.163333	0	
18	N45A	0	-.75	3.163333	0	
19	N45B	1.750033	4.416333	3.663333	0	
20	N46	1.750033	-4.083667	3.663333	0	
21	N47	1.750033	0	3.413333	0	
22	N49	1.750033	0	3.663333	0	
23	N51	-5.750033	3.166333	3.663333	0	
24	N52	-5.750033	-3.833667	3.663333	0	
25	N53	-5.750033	0	3.413333	0	
26	N55	-5.750033	0	3.663333	0	
27	N57	-1.750033	4.416333	3.663333	0	
28	N58	-1.750033	-4.083667	3.663333	0	
29	N59	-1.750033	0	3.413333	0	
30	N61	-1.750033	0	3.663333	0	
31	N31	0	-2.5	0	0	
32	N32	0	-2.5	3.413333	0	
33	N33	-6.25	-2.5	3.413333	0	
34	N34	6.25	-2.5	3.413333	0	
35	N35	5.750033	-2.5	3.413333	0	
36	N36	6.083333	-2.5	3.413333	0	
37	N37	-6.083333	-2.5	3.413333	0	
38	N39A	0	-2.5	.5	0	
39	N40	0	-2.5	1.333333	0	
40	N41	5.750033	-2.5	3.663333	0	
41	N43	1.750033	-2.5	3.413333	0	
42	N44B	1.750033	-2.5	3.663333	0	
43	N45C	-5.750033	-2.5	3.413333	0	
44	N46A	-5.750033	-2.5	3.663333	0	
45	N47A	-1.750033	-2.5	3.413333	0	
46	N48	-1.750033	-2.5	3.663333	0	

<chFc`YX'GhY'GYW]cb'GYlg

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	xxxxx	HSS16x0.438	Beam	None	A572 ...	Typical	19.9	606	606	1210
2	angle	L2x2x2	Beam	None	A36 Gr...	Typical	.491	.189	.189	.003

7c`X: cfa YX'GhY'GYW]cb'GYlg

	Label	Shape	Type	Design Li...	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF	4CU5.25X0375	Beam	CU	A570 Gr...	Typical	4.854	13.238	12.817	.228
2	brace	5.5CU3.5X1875	Beam	CU	A570 Gr...	Typical	2.385	4.006	12.117	.028

5`i a]bi a 'GYW]cb'GYlg

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1A	AACS14X13.9	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19



<chFc`YX`GhY`DfcdYfhYg

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...Density[k/ft...	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

7c`X: cfa`YX`GhY`DfcdYfhYg

	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

5`i`a`jbi`a`DfcdYfhYg

	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

A`Ya`VYf`Df`ja`Ufm8`UU

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N4			HSS4x4x4	Beam	Pipe	A500 Gr.B...	DR1
2	M2	N1	N2			HSS4x4x4	Beam	None	A500 Gr.B...	DR1
3	MP1A	NP1	NP2			PIPE 2.0	Beam	Pipe	A53 Gr.B	DR1
4	M15	N16	N39			RIGID	Beam	None	RIGID	DR1
5	M20B	N44C	N45A			PIPE 4.0	Beam	Wide Flange	A53 Gr.B	Typical
6	MP2A	N45B	N46			PIPE 2.0	Beam	Pipe	A53 Gr.B	DR1
7	M22	N47	N49			RIGID	Beam	None	RIGID	DR1
8	MP4A	N51	N52			PIPE 2.0	Beam	Pipe	A53 Gr.B	DR1
9	M25	N53	N55			RIGID	Beam	None	RIGID	DR1
10	MP3A	N57	N58			PIPE 2.0	Beam	Pipe	A53 Gr.B	DR1
11	M28	N59	N61			RIGID	Beam	None	RIGID	DR1
12	M12	N33	N34			PIPE 3.0	Beam	Pipe	A53 Gr.B	DR1
13	M13	N31	N32			HSS3x3x4	Beam	None	A500 Gr.B...	DR1
14	M14	N35	N41			RIGID	Beam	None	RIGID	DR1
15	M15A	N43	N44B			RIGID	Beam	None	RIGID	DR1
16	M16	N45C	N46A			RIGID	Beam	None	RIGID	DR1
17	M17	N47A	N48			RIGID	Beam	None	RIGID	DR1



A Ya VYf'5 Xj Ub WX'8 UH

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	M1						Yes			None
2	M2						Yes			None
3	MP1A						Yes	-z		None
4	M15						Yes			None
5	M20B						Yes			None
6	MP2A						Yes	-z		None
7	M22						Yes			None
8	MP4A						Yes	-z		None
9	M25						Yes			None
10	MP3A						Yes	-z		None
11	M28						Yes			None
12	M12						Yes			None
13	M13						Yes			None
14	M14						Yes			None
15	M15A						Yes			None
16	M16						Yes			None
17	M17						Yes			None

<chFc`YX'GhYY'8 Yg]] b'DUFUa Yhfg

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
1	M1	HSS4x4x4	12.5			Lbyy						Lateral
2	M2	HSS4x4x4	3.413			Lbyy						Lateral
3	MP1A	PIPE 2.0	8.5			Lbyy						Gravity
4	M20B	PIPE 4.0	1.5			Lbyy						Lateral
5	MP2A	PIPE 2.0	8.5			Lbyy						Gravity
6	MP4A	PIPE 2.0	7			Lbyy						Gravity
7	MP3A	PIPE 2.0	8.5			Lbyy						Gravity
8	M12	PIPE 3.0	12.5			Lbyy						Lateral
9	M13	HSS3x3x4	3.413			Lbyy						Lateral

7c`X: cfa YX'GhYY'8 Yg]] b'DUFUa Yhfg

Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-torque...	Kyy	Kzz	Cm-...	Cm-...	Cb	R	a[ft]	y sw...	z sw...
No Data to Print ...																

5`i a]bi a `8 Yg]] b'DUFUa Yhfg

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

>c]bh@UXg'UbX'9 bZ'f WX'8]gd'UWVa Ybfg`

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



>c]bh6 ci bXUf mi7 c bX]h]cbg

	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	N29						
3	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N39A						

9bj YcdY>c]bhFYUM]cbg

	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	1288.751	4	1978.181	5	2321.769	1	-1.594	1	4.592	4	1.682	7
2		min	-1917.154	3	465.539	2	-3225.818	2	-5.19	6	-5.842	3	.004	4
3	N31	max	868.313	8	1071.534	6	1283.217	5	-.242	1	1.967	8	.679	7
4		min	73.704	3	103.48	1	72.639	2	-2.466	6	-.577	1	-.003	4
5	Totals:	max	1843.446	4	2923.517	5	3153.18	1						
6		min	-1843.45	3	1151.862	2	-3153.178	2						

9bj YcdY5-G7 % H fl * \$!%\$L @F: 8 GHY7cXY7\ YWg

Member	Shape	Code Check	Loc[ft]	LC	Shear ... Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
1	M1	HSS4x4x4	.407	6.25	2	.170	6.25	z	1	72549.7...	139518	16.181	16.181	1...H1-1b
2	M2	HSS4x4x4	.506	0	7	.173	0	y	7	132878....	139518	16.181	16.181	2...H1-1b
3	MP1A	PIPE 2.0	.483	4.339	2	.091	4.427		6	13511.2...	32130	1.872	1.872	3...H1-1b
4	M20B	PIPE 4.0	.001	.75	2	.001	.75		2	92571.3...	93240	10.631	10.631	1 H1-1b
5	MP2A	PIPE 2.0	.979	4.339	2	.130	4.427		6	13511.2...	32130	1.872	1.872	2...H1-1b
6	MP4A	PIPE 2.0	.102	3.208	8	.035	5.615		6	17855.0...	32130	1.872	1.872	1...H1-1b
7	MP3A	PIPE 2.0	.379	4.427	6	.113	4.427		6	13511.2...	32130	1.872	1.872	2...H1-1b
8	M12	PIPE 3.0	.368	6.25	5	.186	6.25		6	28250.5...	65205	5.749	5.749	1...H1-1b
9	M13	HSS3x3x4	.514	0	6	.130	0	y	7	92212.5...	101016	8.556	8.556	2...H1-1b

9bj YcdY5-G-G\$%\$!%\$. @F: 8 7c X': cfa YX'GHY7cXY7\ YWg

Member	Shape	Code..	Loc[ft]	LC	Shea...	Loc[ft]	Dir	LC	phi*Pn...	phi*Tn...	phi*M...	phi*M...	Cb	Cmy	Cmzz	Eqn
No Data to Print ...																

9bj YcdY55 58A %\$%. 5 G8 !'6i]X]b] '5'i a]bi a '7cXY7\ YWg

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 10

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

T-Mobile Existing Facility

Site ID: CTNH324A

CT33XC087

370 Rockland Road
Guilford, Connecticut 06437

February 23, 2021

EBI Project Number: 6221000650

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	14.74%

February 23, 2021

T-Mobile

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

Emissions Analysis for Site: CTNH324A - CT33XC087

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **370 Rockland Road in Guilford, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 370 Rockland Road in Guilford, 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) 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.
- 6) 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.

- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) 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.
- 10) 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.
- 11) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 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.
- 12) The antenna mounting height centerline of the proposed antennas is 147 feet above ground level (AGL).



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- 13) 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.
- 14) 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 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
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 / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A1 MPE %:	2.14%	Antenna B1 MPE %:	2.14%	Antenna C1 MPE %:	2.14%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_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 / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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):	8,360.85	ERP (W):	8,360.85	ERP (W):	8,360.85
Antenna A2 MPE %:	2.34%	Antenna B2 MPE %:	2.34%	Antenna C2 MPE %:	2.34%
Antenna #:	3	Antenna #:	3	Antenna #:	3
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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	38,477.89	ERP (W):	38,477.89	ERP (W):	38,477.89
Antenna A3 MPE %:	6.40%	Antenna B3 MPE %:	6.40%	Antenna C3 MPE %:	6.40%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	10.88%
Sprint	0.32%
AT&T	1.87%
Verizon	1.67%
Site Total MPE % :	14.74%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	10.88%
T-Mobile Sector B Total:	10.88%
T-Mobile Sector C Total:	10.88%
Site Total MPE % :	14.74%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	147.0	6.84	1900 MHz GSM	1000	0.68%
T-Mobile 1900 MHz LTE	2	2056.61	147.0	6.84	1900 MHz LTE	1000	0.68%
T-Mobile 2100 MHz LTE	2	2307.55	147.0	7.68	2100 MHz LTE	1000	0.77%
T-Mobile 600 MHz LTE	2	591.73	147.0	1.97	600 MHz LTE	400	0.49%
T-Mobile 600 MHz NR	1	1577.94	147.0	2.63	600 MHz NR	400	0.66%
T-Mobile 700 MHz LTE	2	695.22	147.0	2.31	700 MHz LTE	467	0.50%
T-Mobile 1900 MHz LTE	2	2104.51	147.0	7.00	1900 MHz LTE	1000	0.70%
T-Mobile 2500 MHz LTE	1	19238.94	147.0	32.01	2500 MHz LTE	1000	3.20%
T-Mobile 2500 MHz NR	1	19238.94	147.0	32.01	2500 MHz NR	1000	3.20%
						Total:	10.88%

• 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:	10.88%
Sector B:	10.88%
Sector C:	10.88%
T-Mobile Maximum MPE % (Sector A):	10.88%
Site Total:	14.74%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **14.74%** 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.