



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

Web Site: [portal.ct.gov/csc](http://portal.ct.gov/csc)

**VIA ELECTRONIC MAIL**

April 9, 2021

Glenn Scott Shepherd  
Site Development Specialist II  
SBA Communications  
134 Flanders Road, Suite 125  
Westborough, MA 01581  
[GShepherd@sbsite.com](mailto:GShepherd@sbsite.com)

RE: **EM-T-MOBILE-126-210316** - T-Mobile notice of intent to modify an existing telecommunications facility located at 162 Birdseye Road, Shelton, Connecticut.

Dear Mr. Shepherd:

The Connecticut Siting Council (Council) is in receipt of your correspondence of April 8, 2021 submitted in response to the Council's April 6, 2021 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

*s/Melanie A. Bachman*

Melanie A. Bachman  
Executive Director

MAB/IN/laf

**From:** Glenn Shepherd <GShepherd@sbsite.com>  
**Sent:** Thursday, April 8, 2021 10:47 AM  
**To:** Fontaine, Lisa <Lisa.Fontaine@ct.gov>; CSC-DL Siting Council <Siting.Council@ct.gov>  
**Subject:** FW: [External] Council Incomplete Letter for EM-T-MOBILE-126-210316 Birdseye Rd., Shelton

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Lisa,

Per your attached letter of incomplete, proof of mailing to the property owner of the entire exempt modification request was not provided in the original request.

In response to the attached letter of incomplete, please find a revised Notice of intent to make exempt modifications: 162 Birdseye Rd., Shelton, CT, which includes the addition of the Property Owner's Rudolph and Karen E. Hudak as recipients of the filing via Fedex.

Please let me know if this does not in fact satisfy your requirement as stated in the attached letter of incomplete.

Thanks,

**G. Scott Shepherd**

*Site Development Specialist II*

508.251.0720 Ext.3807 + **T**  
508.366.2610 + F + **F**  
508.868.6000 + C + **C**



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**  
**162 Birdseye Rd., Shelton, CT 06484**  
**Latitude: 41.325777**  
**Longitude: -73.148694**  
**Sprint, now a part of T-Mobile USA #: CTFF198A\_Sprint Keep**

Dear Ms. Bachman:

Sprint, now a part of T-Mobile USA, hereinafter referred to as "Sprint/T-Mobile" currently maintains six (6) antennas at the 118-foot level of the existing 118-foot Monopole Tower at 162 Birdseye Rd. Shelton, CT. The 118-foot tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Rudolph and Karen E. Hudak. Sprint/T-Mobile now intends to remove six (6) antennas and replace with three (3) new L700/L600/1900/2100 MHz antennas and install three (3) new 2500 MHz antennas for a total of nine (9) antennas.

**The new antennas support 5Gg services and would be installed at the 118-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) Ericsson AIR32 KRD901146-1\_B66A\_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) Alcatel Lucent-TD-RRH8x20-25 RRH (remove) – (3) Ericsson 4449 B71 + B85 RRUs (replace)
- (3) ALU 1900MHz RRH (remove) – Ericsson 4415 B25 RRUs (replace)

Install New:

- (3) Ericsson AIR6449 B41 2500 MHz antenna
- Kicker w/Collar mount and horizontal braces (support rails)

Existing Equipment to Remain:

- (1) Platform w/Handrails
- (4) RFS ACU-A20-N-RET
- (3) ALU 800 MHz RRH
- (3) ALU 800 MHz filter

Entitlements:

- (4) 1-1/4" hybrid
- (3) 1-5/8" hybrid

## GROUND

Remove:

- (3) Sprint equipment cabinet

Install New:

- (4) 2" hybrid
- (1) T-Mobile 6160 Cabinet
- (1) T-Mobile B160 Battery cabinet
- (1) T-Mobile 2416 AAV cabinet

Remain:

- 20' x 20' concrete pad
- T-Mobile GPS on existing ice bridge

This facility was approved by the City of Shelton Building Department on October 26, 2000 under Permit No. 1652. The permit granted permission to build a cell tower located at 162 Birdseye Rd. Shelton, CT. All work done must comply with the requirements of the Connecticut State Building Code and Standards set forth therein, and all regulations of the City of Shelton that apply. There were no tower height requirements or stipulations set forth in the permit. As of March 16, 2021, per the Planning & Zoning Department there is nothing else on file for this tower facility. The Connecticut Siting Council has since approved numerous Intent to Modify the Existing tower applications, however, the original approval CSC approval cannot be located. Please see attached.



Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the City of Shelton's Mayor, Mark A. Lauretti, and Planning and Zoning Chairman, Virginia M. Harger, 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, 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:

Mark A. Lauretti, Mayor / with attachments  
*City of Shelton, 54 Hill St., Shelton, CT 06484*  
Virginia M. Harger, Chairman, Planning & Zoning / with attachments  
*City of Shelton, 54 Hill St., Shelton, CT 06484*  
Rudolph Hudak & Karen E. Hudak / with attachments  
*162 Birdseye Rd. Shelton, CT 06484-2104*

**EXHIBIT LIST**

Exhibit 1	Check Copy	x 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	City of Shelton 10/26/04
Exhibit 6	Construction Drawings	Centerline 2/24/21
Exhibit 7	Structural Analysis	TES 12/18/20
Exhibit 8	Post-Mod Mount Analysis	TES 12/17/20
Exhibit 9	Mount Mod Drawings	TES 12/31/20 Job# 100807
Exhibit 10	EME Report	EBI Consulting 2/22/21

## 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: 09APR21  
ACTWGT: 1.00 LB  
CAD: 105843304/NET14340

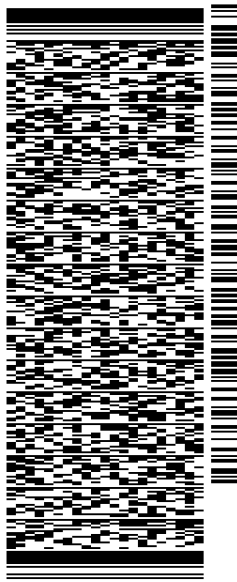
BILL SENDER

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

**NEW BRITAIN CT 06051**

REF: 105692009-6089

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



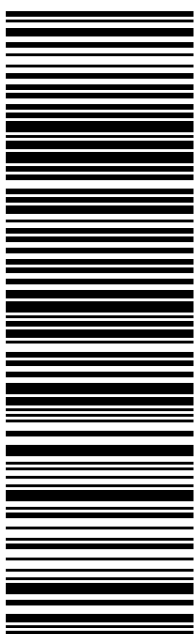
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TRK# 7733 8781 3636  
0201  
FRI - 09 APR 10:30A  
PRIORITY OVERNIGHT

**EB BDLA**

06051  
BDL  
CT:US



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

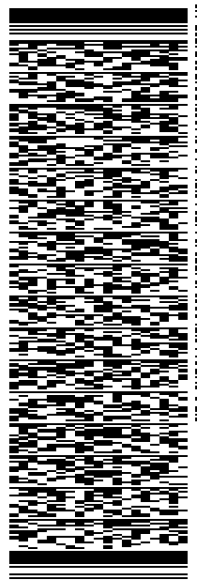
ORIGIN ID:BFBA (508) 614-0389  
RICK WOODS  
SBA COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 09APR21  
ACTWGT: 1.00 LB  
CAD: 105843304/NET14340  
BILL SENDER

TO RUDOLPH & KARE E. HUDAK  
162 BIRDSEUE RD.

SHELLTON CT 06484  
(508) 251-0720 X.3807  
REF: 1056920096089  
PO: DEPT:

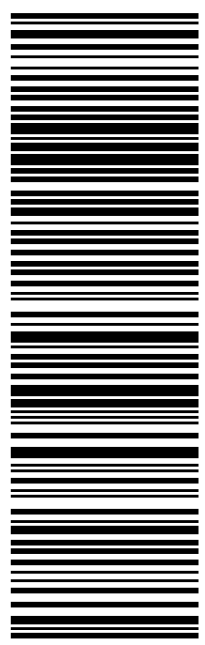
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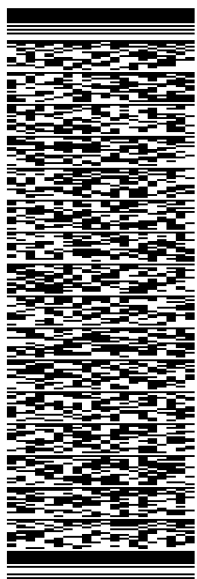
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SBA COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 09APR21  
ACTWGT: 1.00 LB  
CAD: 105843304/NET4340  
BILL SENDER

TO VIRGINIA M. HARGER, PLANNING & ZONE  
CITY OF SHELTON  
54 HILL ST.

SHELTON CT 06484

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

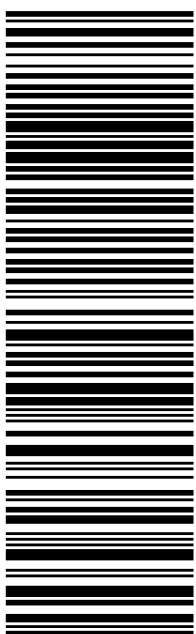


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FRI - 09 APR 10:30A  
PRIORITY OVERNIGHT

EB CIVA

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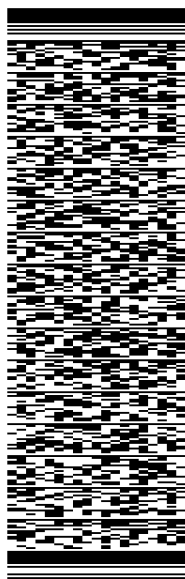
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SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 09APR21  
ACTWGT: 1.00 LB  
CAD: 105843304/NET14340  
BILL SENDER

TO **MARK A. LAURETTI, MAYOR**  
**CITY OF SHELTON**  
**54 HILL ST.**

**SHELTON CT 06484**  
(508) 251-0720 X 3807  
INV#  
PO:  
REF: 105692009-6089  
DEPT:

56D,J25EF2/FE4A

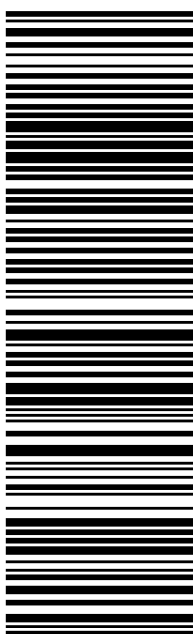


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0201  
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PRIORITY OVERNIGHT

**EB CIVA**

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# EXHIBIT 3

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2016.



## City of Shelton, Connecticut

*Vision to See, Faith to Believe, Courage to Do...*

Information on the Property Records for the Municipality of Shelton was last updated on 2/18/2021.

### Parcel Information

Location:	162 BIRDSEYE RD	Property Use:	Cell Tower	Primary Use:	Cell Site
Unique ID:	134 3 1	Map Block Lot:	134 3 1	Acres:	0.00
490 Acres:	0.00	Zone:	R-1	Volume / Page:	2651/0094
Developers Map / Lot:		Census:			

### Value Information

	Appraised Value	Assessed Value
Land	0	0
Buildings	100,000	70,000
Detached Outbuildings	0	0
Total	100,000	70,000

## Owner's Information

### Owner's Data

HUDAK RUDOLPH & KAREN E  
MCGUIRE TRS OF ROBERTA G HUDAK  
162 BIRDSEYE ROAD  
SHELTON, CT 06484

### Building 1



Sketch Not Available

Category:	Cell Tower	Use:	Cell Site	GLA:	1
Stories:	1.00	Construction:	None	Year Built:	2017
Heating:		Fuel:		Cooling Percent:	0
Siding:		Roof Material:		Beds/Units:	0

## Special Features

## Attached Components

## Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
HUDAK RUDOLPH & KAREN E	2651	0094	02/06/2006	Name Change	No	\$0

Information Published With Permission From The Assessor



# EXHIBIT 4



162 Birdseye Rd



Imagery ©2021 Maxar Technologies, New York GIS, USDA Farm Service Agency, Map data ©2021 100 ft



## 162 Birdseye Rd

Shelton, CT 06484  
Building



Directions



Save



Nearby



Send to your phone



Share



8VF2+WJ Shelton, Connecticut

### Photos



# EXHIBIT 5

\*\*\*\*\*  
\* CITY OF SHELTON \*  
\* BUILDING DEPARTMENT \*  
\* SHELTON, CONN. 06484 \*  
\*\*\*\*\*

PERMIT TYPE : BUILDING  
PERMIT NO. : 1652  
DATE ISSUED : 10/26/00  
EST. VALUE : 120000.00

RECEIVED

MAIL TO :

DIVERSIFIED TECHNOLOGY  
556 WASHINGTON AVENUE  
NORTH HAVEN, CT 06473

OCT 30 2000

DIC

\*\*\*\*\*

All work done shall comply with the requirements of the Connecticut State Building Code and Standards set forth therein, and all regulations of the City of Shelton that apply.

\*\*\*\*\*

THIS IS TO CERTIFY THAT : DAN BOLAN, AGENT

Has been granted permission to : BUILD CELL TOWER - A.P.P.

OWNER : RUDOLF HUDAK  
At : 162 BIRDSEYE ROAD  
Use - \*\*\* Use code 0 not on file

ZONING # : 200 MAP # : 134 LOT # : 3 CENSUS # : REF # 0

FEE : 1229.20 RECEIPT # : 21138 PAYMENT TYPE : CHECK

SIGNED Elliot H. H. H. Building Official

# EXHIBIT 6



## GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – CENTERLINE COMMUNICATIONS  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – T-MOBILE
- 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.
- 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.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- "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.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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.
- 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.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- 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.

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

- ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
- THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
- RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
- 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.
- 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.
- THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
- 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.
- ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
- 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.
- 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.
- ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
- 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

- SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
- 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
- ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
- PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

## 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 TRANSCIEVER 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		

# T - Mobile

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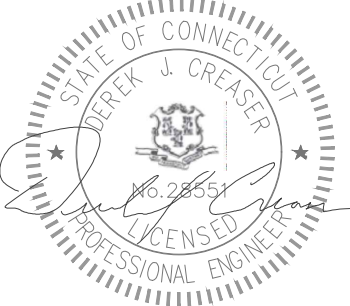


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 134 FLANDERS ROAD, SUITE 125  
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REVISIONS		
1	02/24/21	ISSUED FOR CONSTRUCTION
0	12/10/20	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION
DESIGNED BY:	APPROVED BY:	
KT	DC	



**DATE: 02/24/21**

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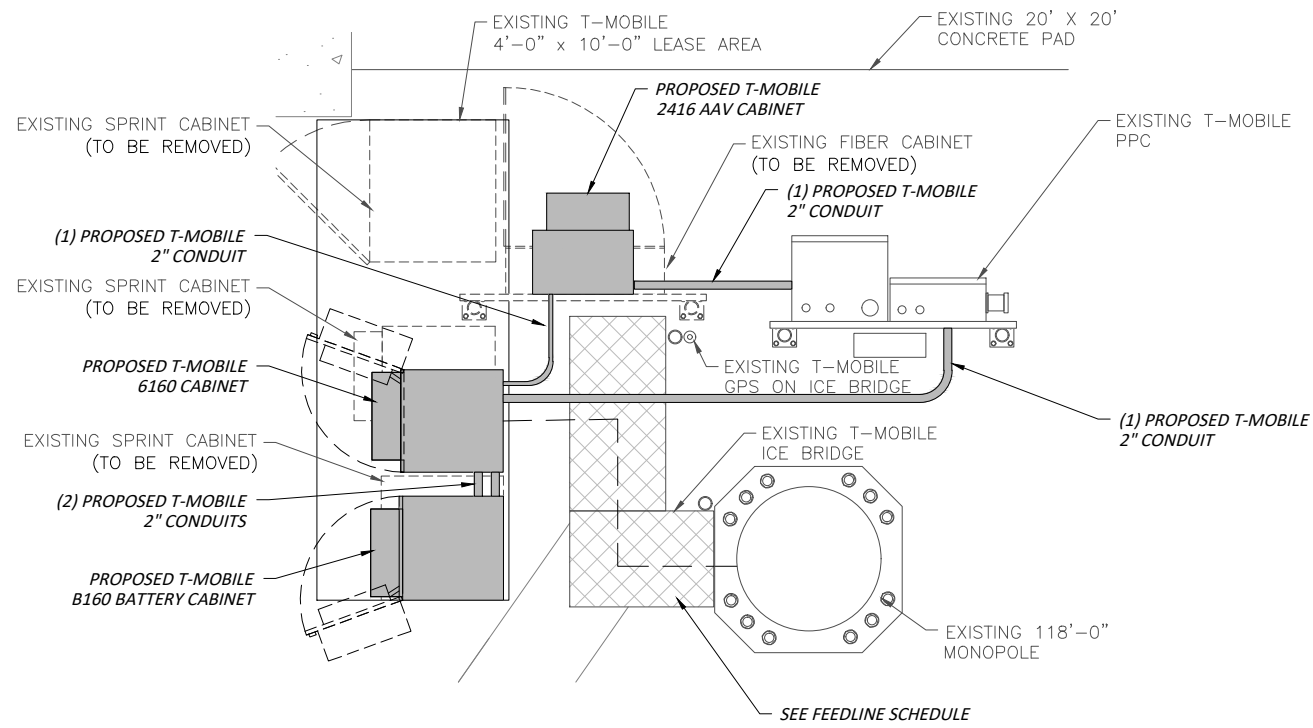
SITE NAME:	CT73XC004
SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	GENERAL NOTES
DRAWING #:	GN-1
REVISION:	1



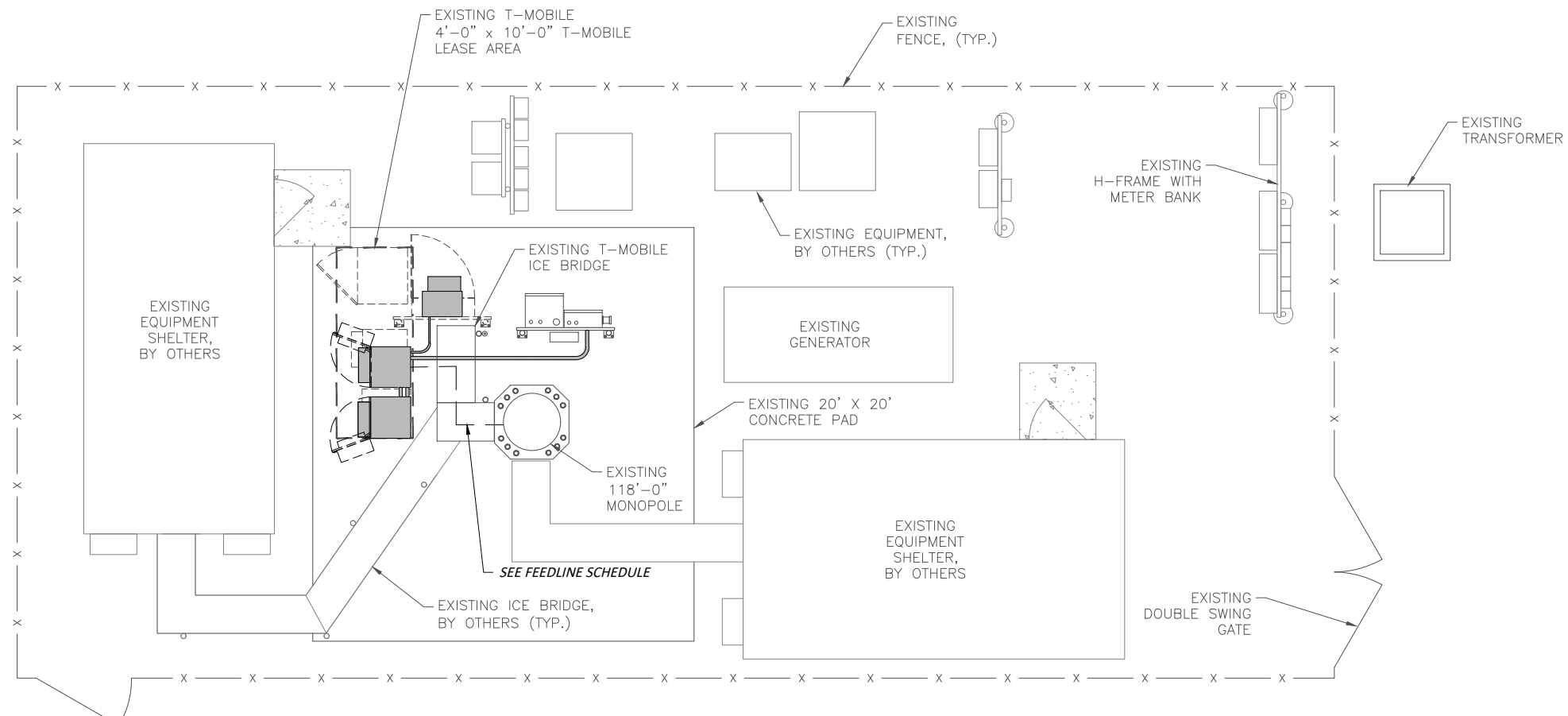
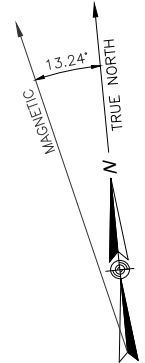
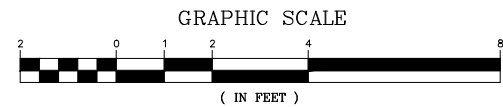
- NOTES:**
1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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

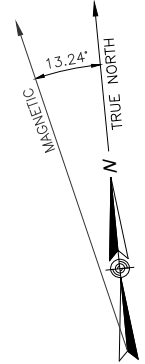
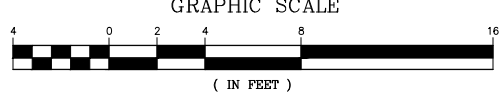
**NOTE:**  
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON COLLOCATION APPLICATION AND SBA RECORD, NOT FIELD OBSERVATIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.  
SEE STRUCTURAL ANALYSIS FOR FEEDLINE INSTALLATION.



**EQUIPMENT PLAN**  
SCALE: 1/2" = 1'-0" (22"X34")  
1/4" = 1'-0" (11"X17")



**COMPOUND PLAN**  
SCALE: 1/4" = 1'-0" (22"X34")  
1/8" = 1'-0" (11"X17")



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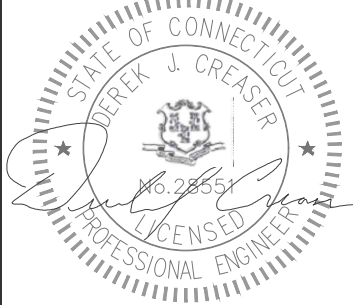
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DESIGNED BY: KT      APPROVED BY: DC



**DATE: 02/24/21**

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SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	COMPOUND & EQUIPMENT PLANS
DRAWING #:	A-1
REVISION:	1

REVISIONS	
NO.	DESCRIPTION
1	02/24/21 ISSUED FOR CONSTRUCTION
0	12/10/20 ISSUED FOR REVIEW
DESIGNED BY:	APPROVED BY:
KT	DC

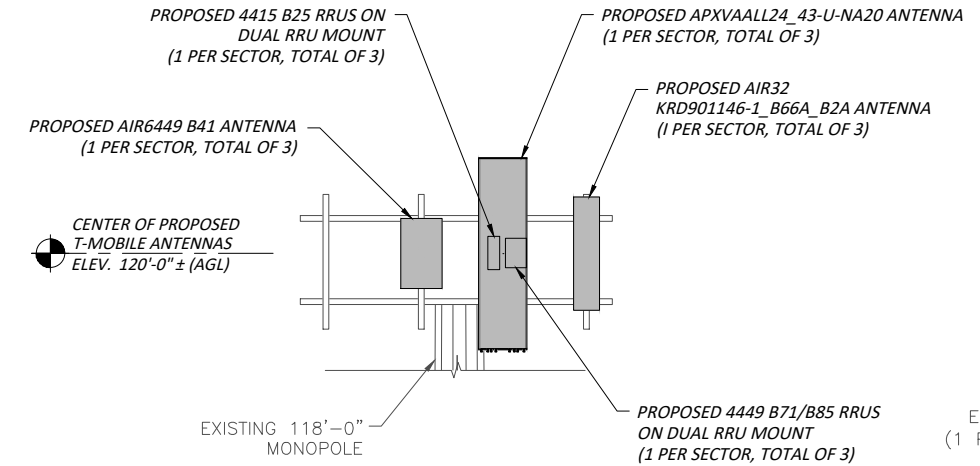
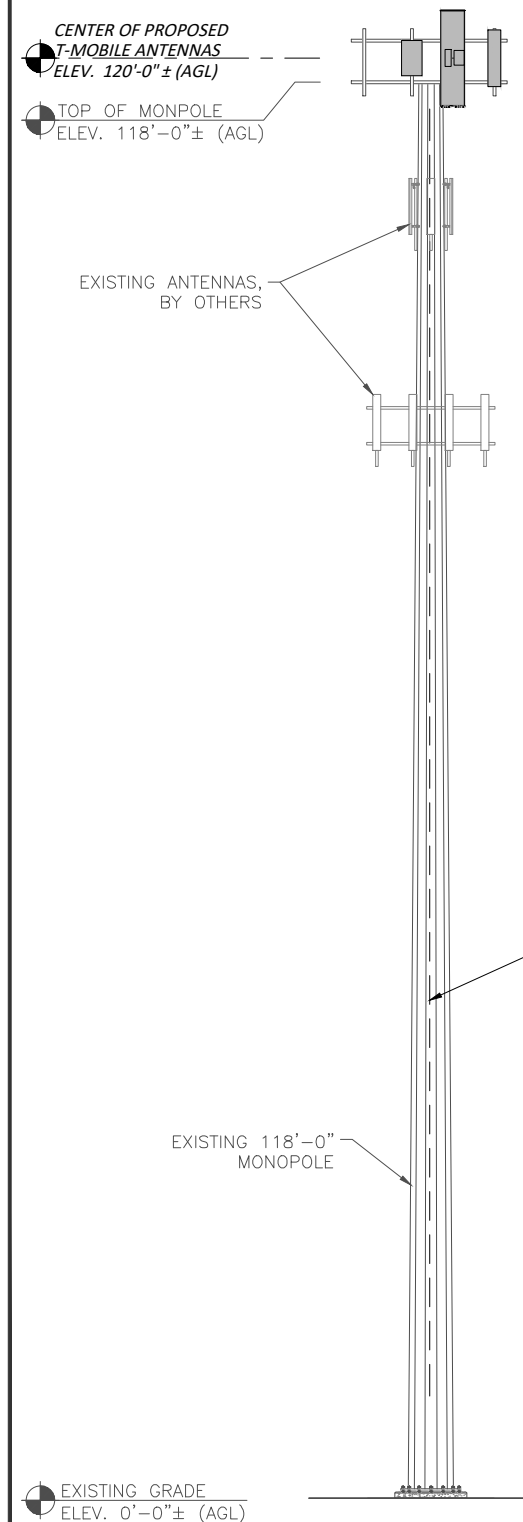


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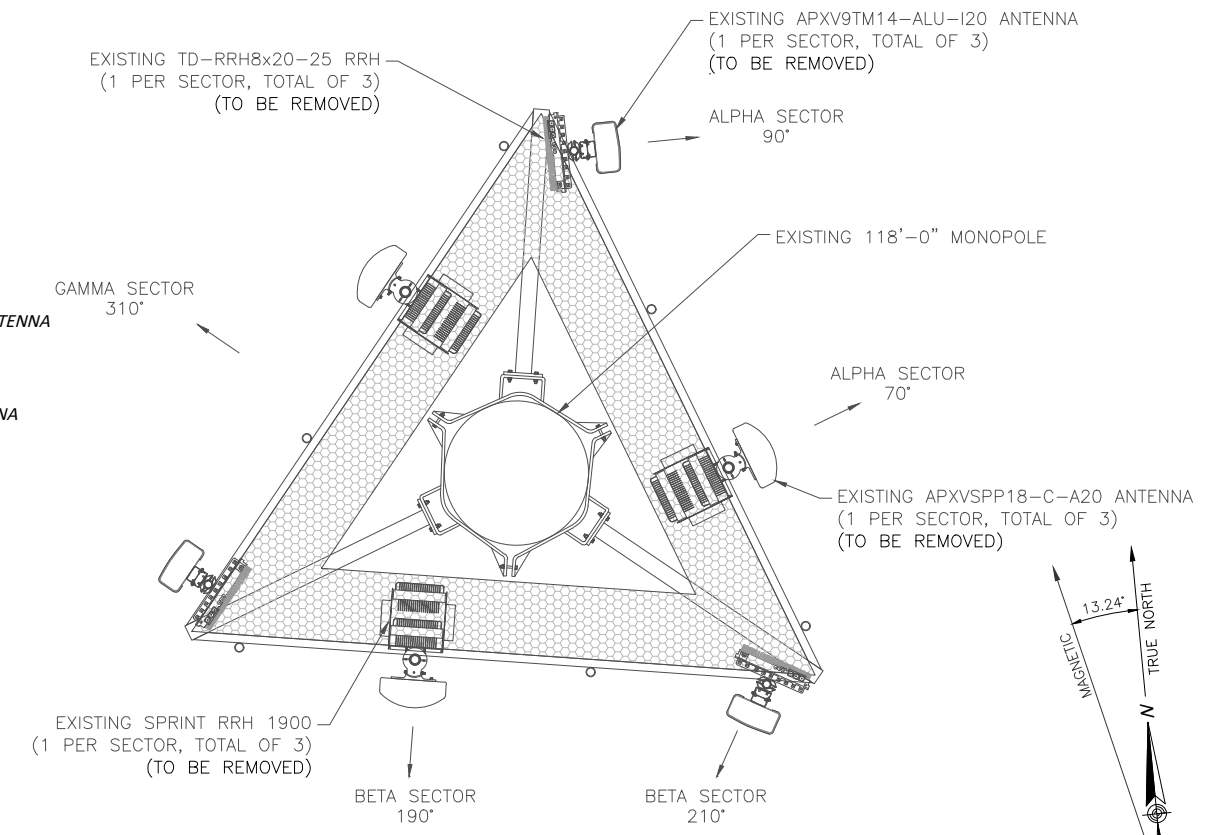
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SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	ANTENNA LAYOUT & ELEVATIONS
DRAWING #:	A-2
REVISION:	1

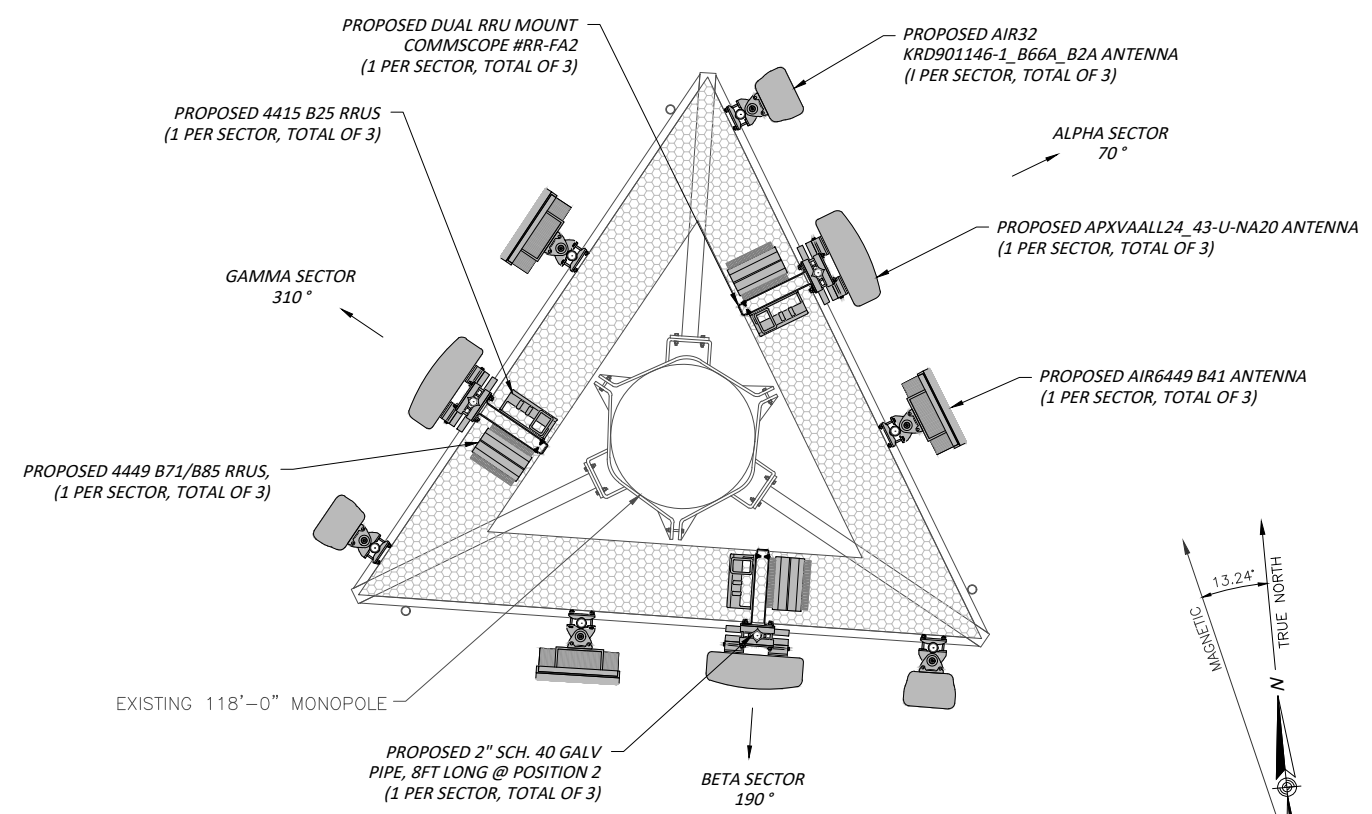
- NOTES:**
1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



**ENLARGED ANTENNA ELEVATION**  
 SCALE: N.T.S



**EXISTING ANTENNA CONFIGURATION**  
 SCALE: N.T.S

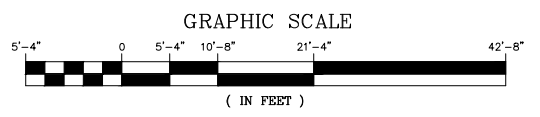


**PROPOSED ANTENNA CONFIGURATION**  
 SCALE: N.T.S

**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.

**TOWER ELEVATION**  
 SCALE: 1/8" = 1'-0" (22"x34")  
 1/16" = 1'-0" (11"x17")



**ANTENNA SCHEDULE**

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL. HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE ( INCHES) (L x W x D)	FEEDER
A1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2	56.6x12.9x8.7	±120'	70°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	(P) (3) 6x12 FIBER
A2	PROPOSED	L700, L600, N600, L1900	APXVAALL24_43-U -NA20	95.9x24x8.5	±120'	70°	-	-	-	
A3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±120'	70°	-	-	-	
B1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2	56.6x12.9x8.7	±120'	190°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	
B2	PROPOSED	L700, L600, N600, L1900	APXVAALL24_43-U -NA20	95.9x24x8.5	±120'	190°	-	-	-	
B3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±120'	190°	-	-	-	
G1	PROPOSED	L2100, G1900, L1900	AIR32 KRD901146-1 B66A_B2	56.6x12.9x8.7	±120'	310°	-	(P) (1) 4449 B71 B85 RRUS (P) (1) 4415 B25 RRUS	15x13.2x10.4 16.5x13.4x5.9	
G2	PROPOSED	L700, L600, N600, L1900	APXVAALL24_43-U -NA20	95.9x24x8.5	±120'	310°	-	-	-	
G3	PROPOSED	L2500, N2500	AIR6449 B41	33.1x20.6x8.6	±120'	310°	-	-	-	

**NOTES:**

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2. 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.



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

**RRUS DETAIL**

N.T.S.



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.

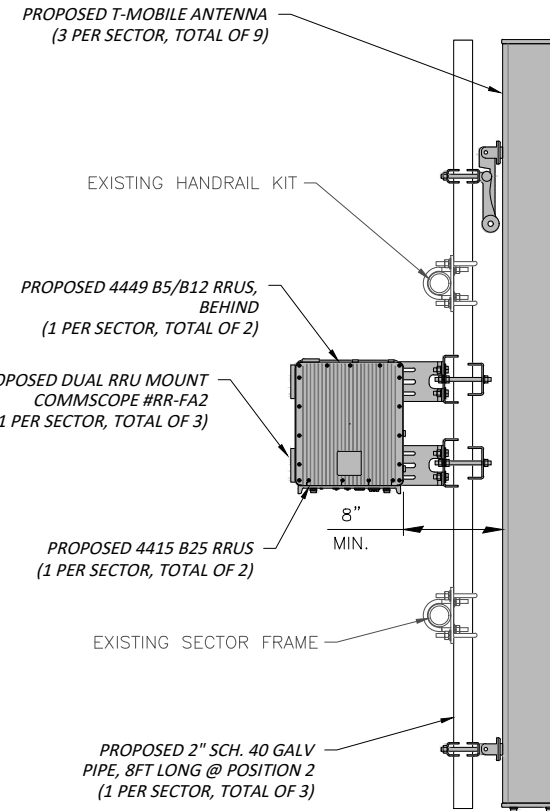


ERICSSON B160 BATTERY CABINET

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

**EQUIPMENT CABINET DETAIL**

N.T.S.



**ANTENNA MOUNTING DETAIL**

N.T.S.

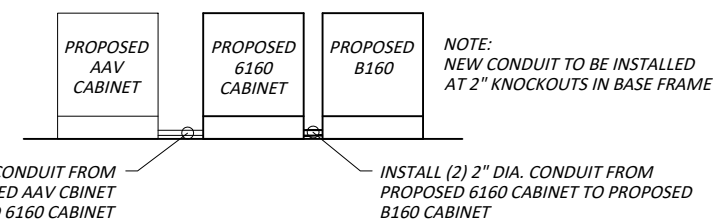


EMMERSON NETXTEND COMPACT 2416 CABINET

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.



INSTALL (1) 1" DIA. CONDUIT FROM PROPOSED AAV CABINET TO PROPOSED 6160 CABINET

INSTALL (2) 2" DIA. CONDUIT FROM PROPOSED 6160 CABINET TO PROPOSED B160 CABINET

**CONDUIT DETAIL**

N.T.S.

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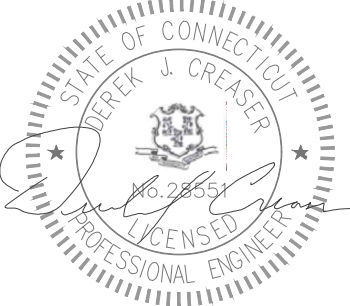


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SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	DETAILS
DRAWING #:	A-3
REVISION:	1

**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 UN.
- 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 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.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	
<b>BEFORE CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>
ADDITIONAL TESTING AND INSPECTIONS:	
<b>DURING CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
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:	
<b>AFTER CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	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

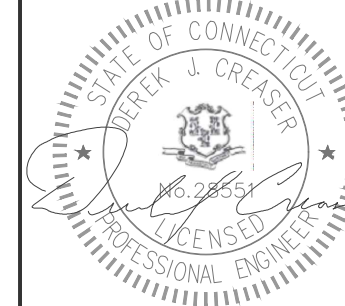


SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
PHONE: (508) 251-0720



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

REVISIONS		
1	02/24/21	ISSUED FOR CONSTRUCTION
0	12/10/20	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION
DESIGNED BY:		APPROVED BY:
KT		DC



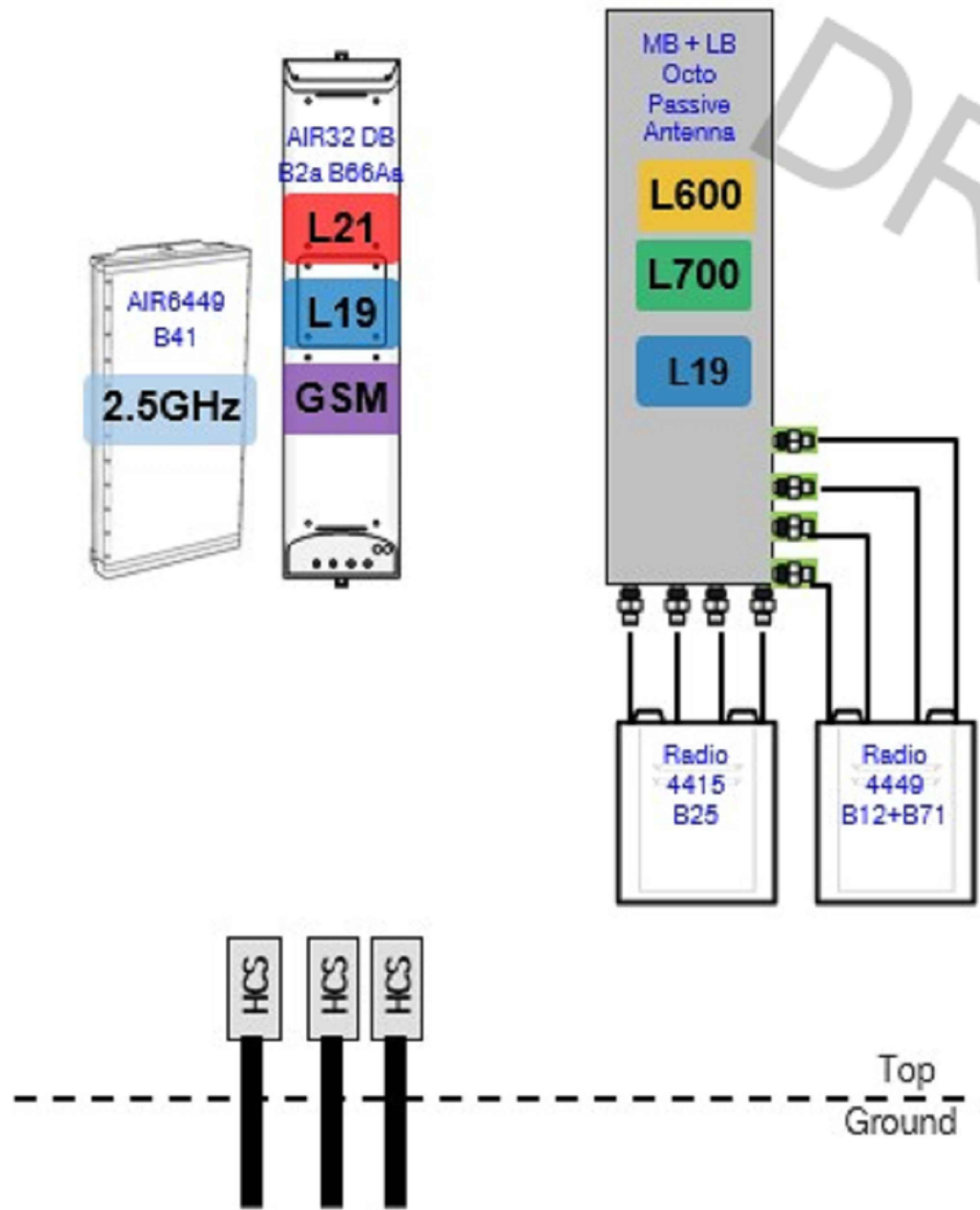
**DATE: 02/24/21**

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Blank area for additional notes or signatures.

SITE NAME:	CT73XC004
SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
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  
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**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	02/24/21	ISSUED FOR CONSTRUCTION
0	12/10/20	ISSUED FOR REVIEW
DESIGNED BY:		APPROVED BY:
KT		DC



DATE: 02/24/21

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SITE NAME:	CT73XC004
SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	RF PLUMBING DIAGRAM
DRAWING #:	RF-1
REVISION:	1

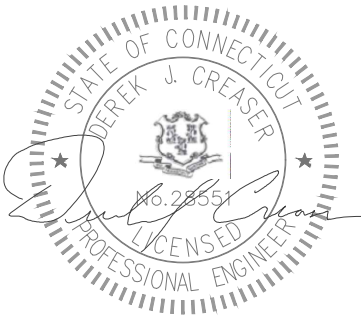


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PHONE: 781.713.4725

REVISIONS	
NO.	DESCRIPTION
1	02/24/21 ISSUED FOR CONSTRUCTION
0	12/10/20 ISSUED FOR REVIEW
DESIGNED BY:	APPROVED BY:
KT	DC



DATE: 02/24/21

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SITE NAME:	CT73XC004
SITE NUMBER:	CTFF198A
SITE ADDRESS:	162 BIRDSEYE ROAD SHELTON, CT 06484
PROJECT TYPE:	SPRINT RETAIN
SHEET TITLE:	GROUNDING DETAILS
DRAWING #:	G-1
REVISION:	1

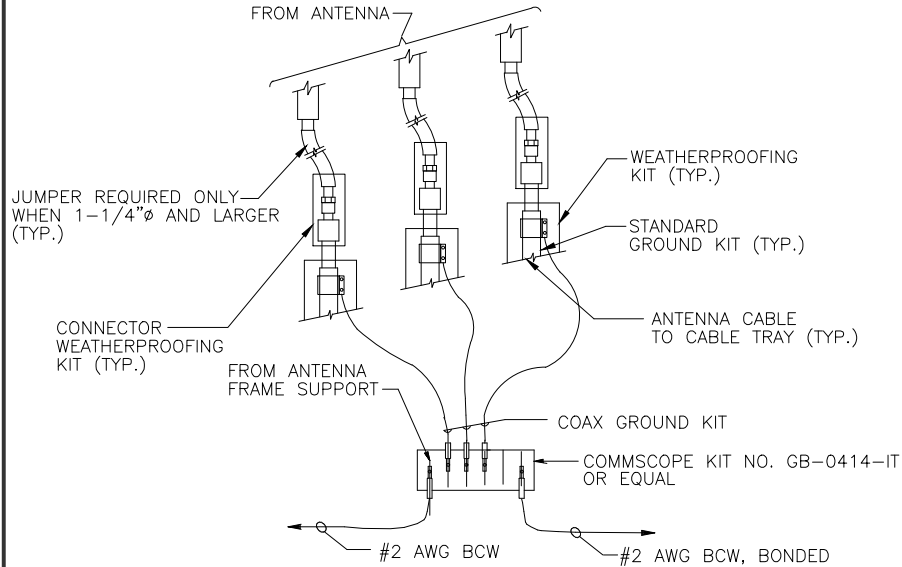
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

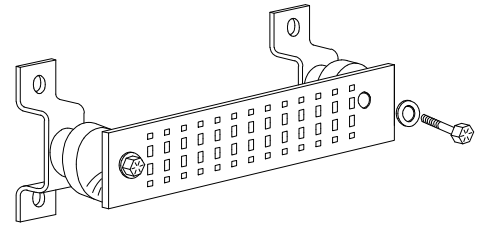
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

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)



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

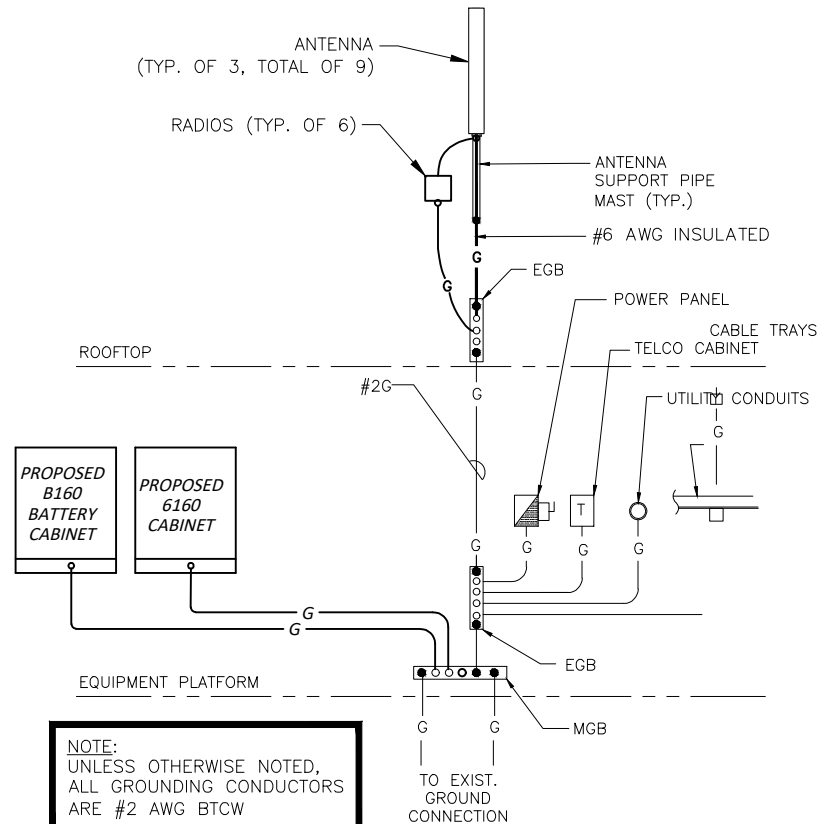


GROUND BAR DETAIL

N.T.S.

GROUNDING RISER DIAGRAM

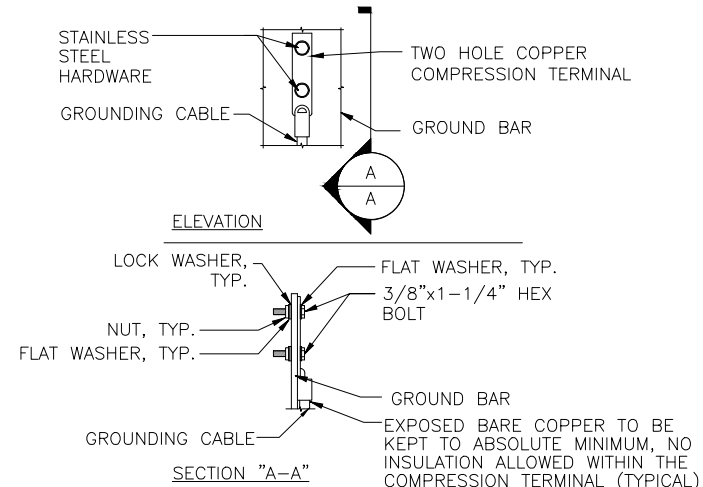
N.T.S.



NOTE:  
UNLESS OTHERWISE NOTED, ALL GROUNDING CONDUCTORS ARE #2 AWG BTCW

GROUNDING RISER DIAGRAM

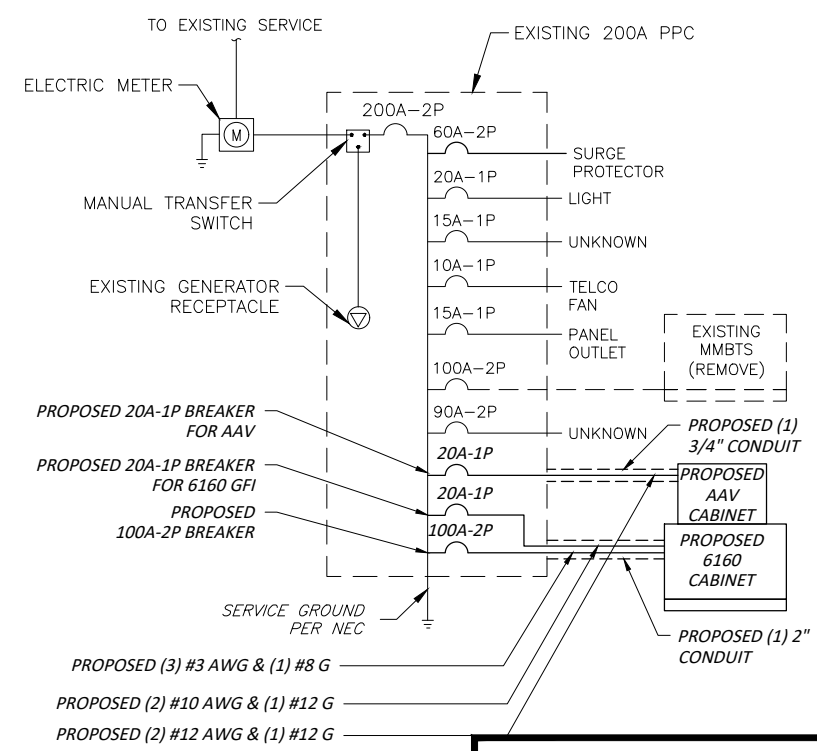
N.T.S.



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

GROUND BAR CONNECTION DETAIL

N.T.S.



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

ONE LINE POWER DIAGRAM

N.T.S.

# EXHIBIT 7



**Tower Engineering Solutions**

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

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## **Structural Analysis Report**

**Existing 118 ft SUMMIT Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT46133-A**

**Customer Site Name: Shelton-north**

**Carrier Name: T-Mobile Sprint (App#: 143978, V2)**

**Carrier Site ID / Name: CT73XC004**

**Site Location: 162 Birdseye Rd**

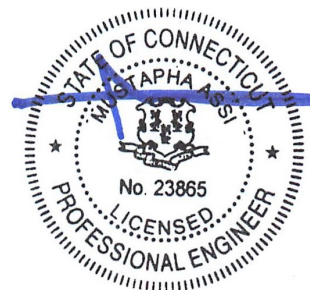
**Shelton, Connecticut**

**Fairfield County**

**Latitude: 41.325777**

**Longitude: -73.148694**

Exp.01/31/2021



### **Analysis Result:**

12/18/2020

**Max Structural Usage: 99.6% [Pass]**

**Max Foundation Usage: 83.0% [Pass]**

**Additional Usage Caused by Mount Modification:+1.8%**

**Report Prepared By : Dipika Dhungana**



## Introduction

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

## Sources of Information

<b>Tower Drawings</b>	Paul J. Ford and Company, Job # 29200-1700 dated 11/15/2000.
<b>Foundation Drawing</b>	Paul J. Ford and Company, Job # 29200-1700 dated 11/15/2000.
<b>Geotechnical Report</b>	Dr. Clarence Welti, P.E., P.C. Project # CT-0921 dated 06/05/2000.
<b>Modification Drawings</b>	Vertical Solutions, Project #130664.01, rev.1 As-Built, dated 07/10/13.
<b>Mount Analysis</b>	Post MOD MA Report by TES, Project# 100807, dated 12/17/2020

## 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.

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_S = 0.2, S_1 = 0.064$

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
-	118.0	3	RFS - APXVSP18-C-A20 - Panel	Platform w/ Hand Rails	(4) 1-1/4" Hybrid	Sprint
-		3	RFS - APXVC-120 - Panel			
-		4	RFS - ACU-A20-N – RET			
-		3	Ericsson – RRU (26.1"x18.6"x6.7") – RRU			
-		3	Alcatel Lucent - TD-RRH8x20-25 – RRH			
-		3	Alcatel Lucent - 800 MHz – RRH			
-		3	Alcatel Lucent - External Notch Filters			
9	108.0	3	Kathrein - 800-10121 - Panel	Platform w/ Handrail & V-Brace	(6) 1 1/4" (1) 1/2" RET (1) 3/8" Fiber (2) 5/8" DC	AT&T
10		3	CCI - HPA-65R-BUU-H6 - Panel			
11		6	Powerwave - LGP21401 - TMA			
12		6	Kathrein - 860 10025 - RET			
13		3	Ericsson - RRUS-11 - RRU			
14		3	Ericsson - RRUS-32 B2 - RRU			
15		1	Raycap - DC6-48-60-18-8F - SP			
16	101.0	3	Alcatel Lucent - RRH2x60-AWS - RRH	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
17		3	Alcatel Lucent - RRH2X60-700 - RRH			
18		1	RFS - DB-T1-6Z-8AB-OZ – Distribution Box			
19	99.0	6	Andrew - SBNHH-1D65A - Panel			
20		3	Andrew - LNX-6514DS-VTM - Panel			
21		3	Antel - BXA-171063-12BF - Panel			

## Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	118.0	3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)	Platform w/ Hand Rails + Kicker with collar mount and horizontal braces	(3) 2" Hybrid	T-Mobile Sprint
2		3	RFS APXVAALL24-43-U-NA20			
3		3	Ericsson AIR6449 B41			
4		4	RFS ACU-A20-N RET			
5		3	Ericsson 4415 B25			
6		3	Ericsson 4449 B71 + B85			
7		3	ALU 800 MHz RRH			
8		3	ALU 800 MHz Filter			

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

## **Analysis Results**

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	<b>99.6%</b>	<b>84.3%</b>	<b>62.8%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	2533.9	28.5

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 1.6300 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 99.65% at 80.8ft

**Structure:** CT46133-A-SBA  
**Site Name:** Shelton-north  
**Height:** 118.00 (ft)  
**Base Elev:** 0.000 (ft)

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

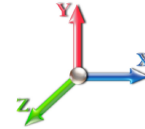
12/18/2020



Page: 1

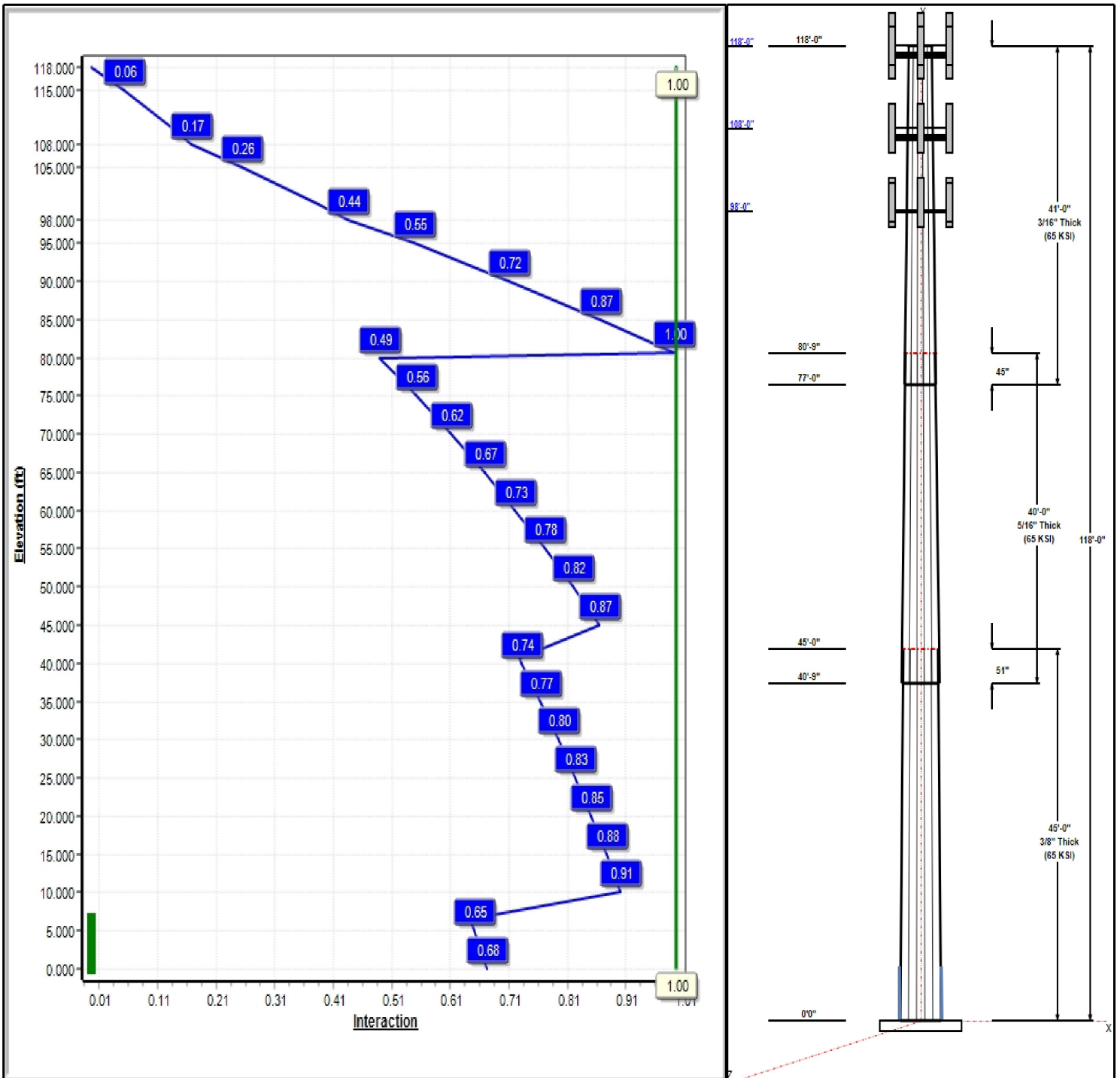
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

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



**Iterations:** 23

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## Structure: CT46133-A-SBA

**Type:** Tapered  
**Site Name:** Shelton-north  
**Height:** 118.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 12 Sided  
**Taper:** 0.16500

12/18/2020

Page: 2



### Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	33.05	40.47	0.375		0.16500	65
2	40.00	27.77	34.37	0.313	Slip	0.16500	65
3	41.00	22.00	28.77	0.188	Slip	0.16500	65

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
118.00	118.00	3	APXVAALL24_43-U-NA20	T-Mobile Sprint
118.00	120.00	3	800 MHz RRH	T-Mobile Sprint
118.00	120.00	4	ACU-A20-N	T-Mobile Sprint
118.00	118.00	3	KRD 9011461-B66A-B2A	T-Mobile Sprint
118.00	118.00	1	Platform w/ Hand Rails	T-Mobile Sprint
118.00	120.00	3	ALU - External Notch	T-Mobile Sprint
118.00	118.00	3	AIR6449 B41	T-Mobile Sprint
118.00	118.00	3	RRUS 4415 B25	T-Mobile Sprint
118.00	118.00	3	4449 B71 + B85	T-Mobile Sprint
118.00	118.00	1	(Kickers and braces)	T-Mobile Sprint
118.00	118.00	1	MS-H1436 (Heavy Collar)	T-Mobile Sprint
108.00	108.00	3	800-10121	AT&T
108.00	108.00	6	LGP21401	AT&T
108.00	108.00	1	DC6-48-60-18-8F	AT&T
108.00	108.00	3	HPA-65R-BUU-H6	AT&T
108.00	108.00	6	860 10025	AT&T
108.00	108.00	3	RRUS-32 B2	AT&T
108.00	108.00	3	RRUS-11	AT&T
108.00	108.00	1	Platform + HR & V-Brace	AT&T
98.00	101.00	1	DB-T1-6Z-8AB-0Z	Verizon
98.00	99.00	3	LNx-6514DS-VTM	Verizon
98.00	99.00	3	BXA-171063-12BF	Verizon
98.00	98.00	1	Low Profile Platform	Verizon
98.00	99.00	6	SBNHH-1D65A	Verizon
98.00	101.00	3	RRH2X60-700	Verizon
98.00	101.00	3	RRH2X60-AWS	Verizon

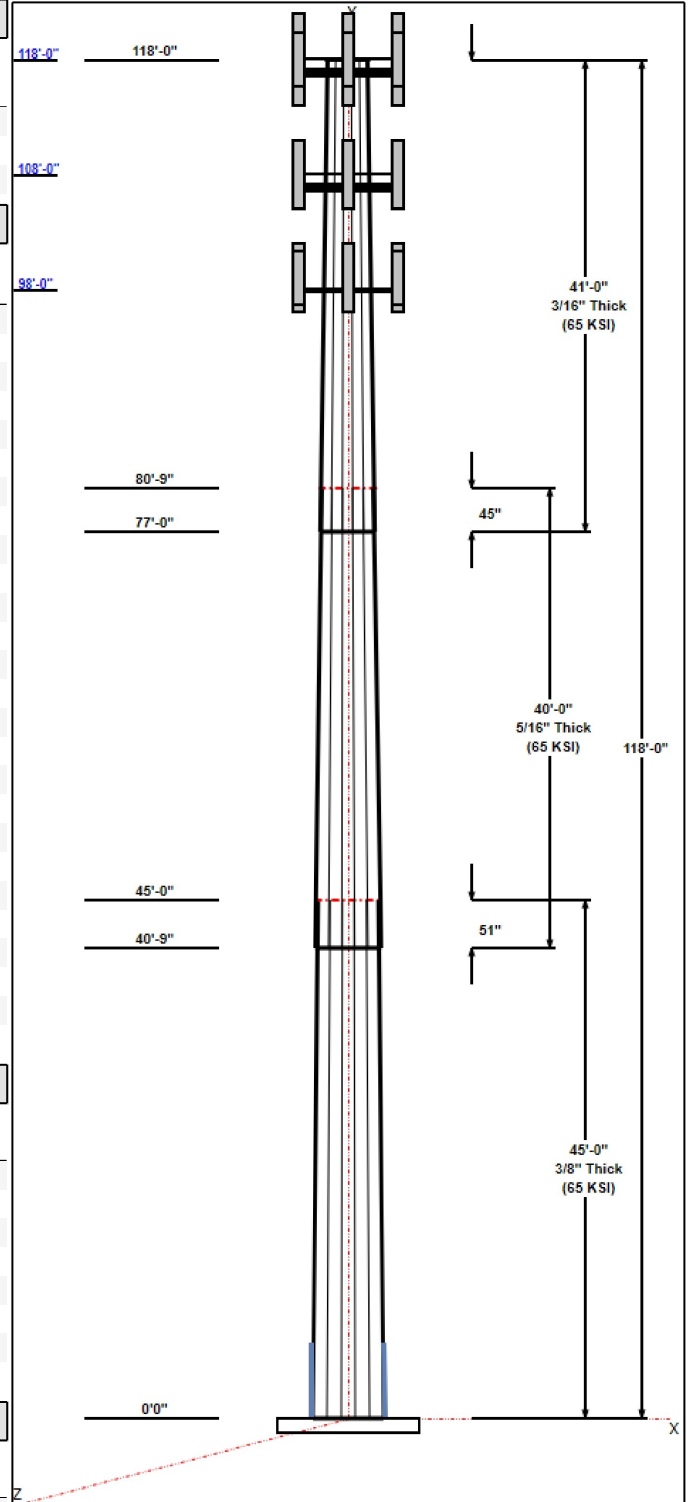
### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	118.00	Inside	2" Hybrid	T-Mobile Sprint
0.00	108.00	Inside	1 1/4" Coax	AT&T
0.00	108.00	Inside	1/2" RET	AT&T
0.00	108.00	Inside	3/8" Fiber	AT&T
0.00	108.00	Inside	5/8" DC	AT&T
0.00	99.00	Inside	1 5/8" Coax	Verizon
0.00	99.00	Inside	1 5/8" Hybrid	Verizon
0.00	9.25	Inside	1.5" Reinforcing Plate	

### Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Cluster

### Base Plate



## Structure: CT46133-A-SBA

**Type:** Tapered  
**Site Name:** Shelton-north  
**Height:** 118.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 12 Sided  
**Taper:** 0.16500

12/18/2020

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Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	46.0	50.0	Clipped

### Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	2533.9	28.5	29.5
0.9D + 1.6W 97 mph Wind	2505.0	28.5	22.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	613.6	6.5	47.3
1.2D + 1.0E	213.5	2.0	29.5
0.9D + 1.0E	210.7	2.0	22.2
1.0D + 1.0W 60 mph Wind	602.6	6.8	24.6

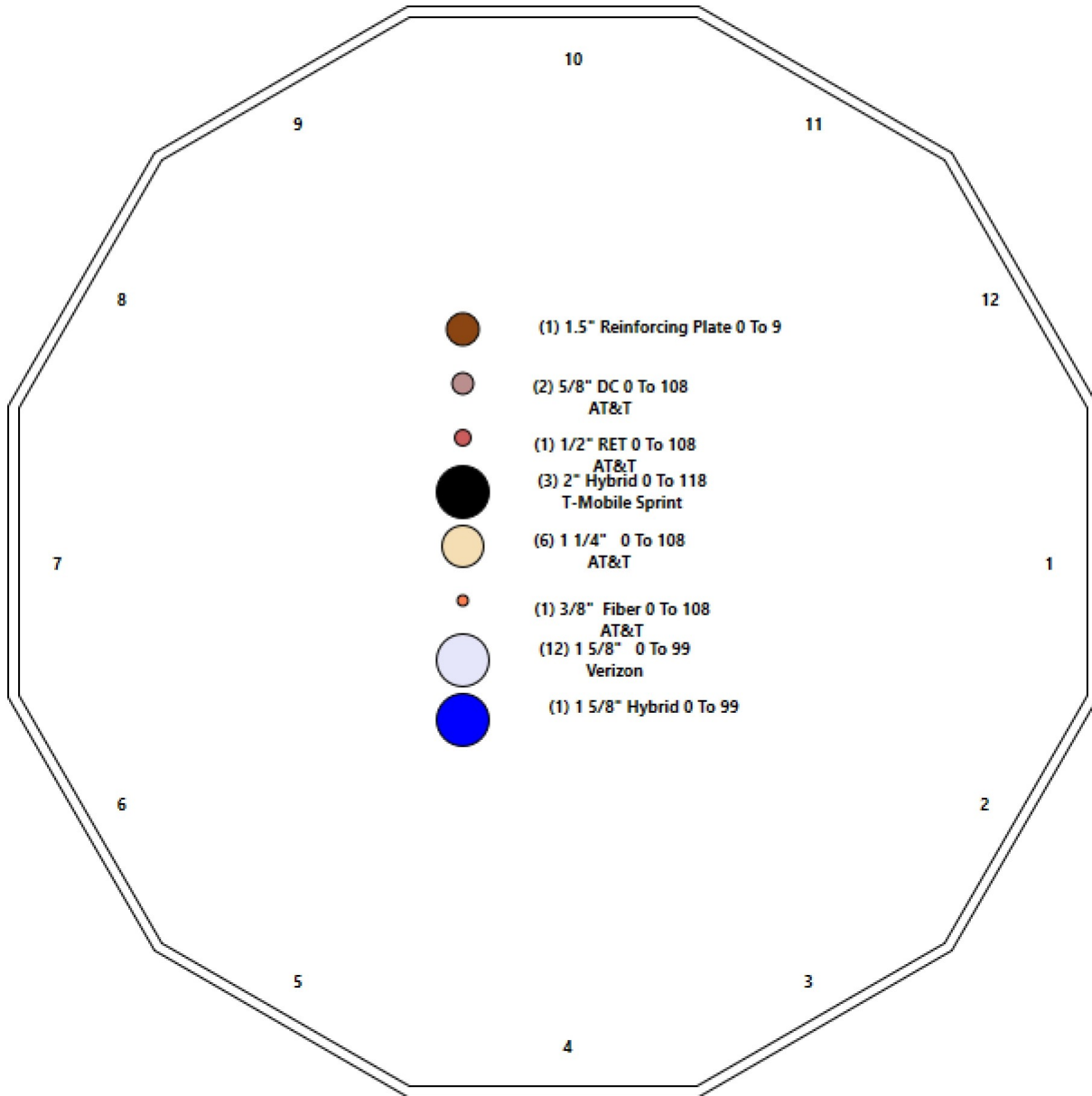
# Structure: CT46133-A-SBA - Coax Line Placement

**Type:** Monopole  
**Site Name:** Shelton-north  
**Height:** 118.00 (ft)

12/18/2020



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## Shaft Properties

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	45.000	0.3750	65		0.00	6,727
2	12	40.000	0.3125	65	Slip	51.00	4,213
3	12	41.000	0.1875	65	Slip	45.00	2,122
<b>Total Shaft Weight:</b>							<b>13,062</b>

### Bottom

### Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	40.47	0.00	48.41	9934.45	26.77	107.92	33.05	45.00	39.45	5374.28	21.47	88.12	0.165000
2	34.37	40.75	34.27	5074.32	27.33	109.99	27.77	80.75	27.63	2659.10	21.67	88.87	0.165000
3	28.77	77.00	17.25	1798.52	38.96	153.41	22.00	118.00	13.17	799.76	29.30	117.3	0.165000

### Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	6.50	4	PLT 6"x1.5"(1.25" Hole)	50	65	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	11	11

## Load Summary

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	118.00	APXVAALL24_43-U-NA20	3	128.00	20.24	0.70	534.79	22.093	0.70	0.00	0.00
2	118.00	800 MHz RRH	3	53.00	2.49	0.50	125.21	3.607	0.50	0.00	2.00
3	118.00	ACU-A20-N	4	1.00	0.14	0.50	5.19	0.430	0.50	0.00	2.00
4	118.00	KRD 9011461-B66A-B2A	3	132.20	6.51	0.87	310.32	7.603	0.87	0.00	0.00
5	118.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4044.60	60.446	1.00	0.00	0.00
6	118.00	ALU - External Notch Filters	3	8.80	0.78	0.50	26.02	1.411	0.50	0.00	2.00
7	118.00	AIR6449 B41	3	103.00	5.65	0.71	236.87	6.578	0.71	0.00	0.00
8	118.00	RRUS 4415 B25	3	46.00	1.64	0.50	86.13	2.143	0.50	0.00	0.00
9	118.00	4449 B71 + B85	3	73.20	1.97	0.50	129.57	2.526	0.50	0.00	0.00
10	118.00	(Kickers and braces)	1	146.00	7.00	1.00	345.01	14.156	1.00	0.00	0.00
11	118.00	MS-H1436 (Heavy Collar Mount)	1	136.70	2.25	1.00	323.03	4.550	1.00	0.00	0.00
12	108.00	800-10121	3	44.10	5.15	0.82	155.25	7.189	0.84	0.00	0.00
13	108.00	LGP21401	6	19.00	1.26	0.50	43.07	2.061	0.50	0.00	0.00
14	108.00	DC6-48-60-18-8F	1	31.80	1.47	1.00	91.63	2.147	1.00	0.00	0.00
15	108.00	HPA-65R-BUJ-H6	3	51.00	9.66	0.85	286.34	10.985	0.85	0.00	0.00
16	108.00	860 10025	6	1.20	0.18	0.50	7.00	0.547	0.50	0.00	0.00
17	108.00	RRUS-32 B2	3	60.00	2.74	0.50	144.50	3.443	0.50	0.00	0.00
18	108.00	RRUS-11	3	51.00	2.52	0.50	120.94	3.133	0.50	0.00	0.00
19	108.00	Platform + HR & V-Brace	1	2246.00	49.00	1.00	5280.46	84.087	1.00	0.00	0.00
20	98.00	DB-T1-6Z-8AB-OZ	1	18.90	4.80	0.50	134.93	8.653	0.50	0.00	3.00
21	98.00	LNx-6514DS-VTM	3	33.10	8.09	0.83	200.53	10.769	0.85	0.00	1.00
22	98.00	BXA-171063-12BF	3	15.00	4.74	0.88	105.98	6.991	0.90	0.00	1.00
23	98.00	Low Profile Platform	1	1500.00	22.00	1.00	2754.36	38.926	1.00	0.00	0.00
24	98.00	SBNHH-1D65A	6	33.50	5.88	0.83	178.99	6.911	0.85	0.00	1.00
25	98.00	RRH2X60-700	3	60.00	3.50	0.50	143.65	4.256	0.50	0.00	3.00
26	98.00	RRH2X60-AWS	3	60.00	3.50	0.50	143.65	4.256	0.50	0.00	3.00
<b>Totals:</b>			<b>74</b>	<b>9,160.80</b>			<b>22,618.44</b>				

### Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	118.00	(3) 2" Hybrid	0.00	Inside
0.00	108.00	(6) 1 1/4" Coax	0.00	Inside
0.00	108.00	(1) 1/2" RET	0.00	Inside
0.00	108.00	(1) 3/8" Fiber	0.00	Inside
0.00	108.00	(2) 5/8" DC	0.00	Inside
0.00	99.00	(12) 1 5/8" Coax	0.00	Inside
0.00	99.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	9.25	(1) 1.5" Reinforcing Plate	0.00	Inside

## Shaft Section Properties

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Increment Length:** 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	0.3750	40.470	48.415	9934.4	26.77	107.92	65	76	0.0	36.00	11922.1	4046.0	
5.00		0.3750	39.645	47.419	9333.7	26.18	105.72	65	76	815.2	36.00	11459.2	3891.7	612.5
6.50	RT1	0.3750	39.398	47.120	9158.4	26.01	105.06	65	76	241.3	36.00	11322.1	3846.0	183.8
10.00		0.3750	38.820	46.422	8757.8	25.59	103.52	65	77	557.0				
15.00		0.3750	37.995	45.426	8206.0	25.01	101.32	65	77	781.3				
20.00		0.3750	37.170	44.430	7677.8	24.42	99.12	65	78	764.4				
25.00		0.3750	36.345	43.434	7172.9	23.83	96.92	65	79	747.5				
30.00		0.3750	35.520	42.438	6690.6	23.24	94.72	65	79	730.5				
35.00		0.3750	34.695	41.441	6230.4	22.65	92.52	65	80	713.6				
40.00		0.3750	33.870	40.445	5791.8	22.06	90.32	65	81	696.6				
40.75	Bot - Section 2	0.3750	33.746	40.296	5727.8	21.97	89.99	65	81	103.0				
45.00	Top - Section 1	0.3125	33.670	33.566	4767.3	26.73	107.74	65	76	1067.2				
50.00		0.3125	32.845	32.736	4422.3	26.02	105.10	65	76	564.0				
55.00		0.3125	32.020	31.906	4094.3	25.31	102.46	65	77	549.9				
60.00		0.3125	31.195	31.076	3782.9	24.60	99.82	65	78	535.8				
65.00		0.3125	30.370	30.245	3487.8	23.90	97.18	65	79	521.7				
70.00		0.3125	29.545	29.415	3208.4	23.19	94.54	65	79	507.5				
75.00		0.3125	28.720	28.585	2944.4	22.48	91.90	65	80	493.4				
77.00	Bot - Section 3	0.3125	28.390	28.253	2842.9	22.20	90.85	65	81	193.4				
80.00		0.3125	27.895	27.755	2695.2	21.77	89.26	65	81	460.5				
80.75	Top - Section 2	0.1875	28.146	16.880	1684.2	38.08	150.11	65	63	113.8				
85.00		0.1875	27.445	16.457	1560.6	37.08	146.37	65	64	241.1				
90.00		0.1875	26.620	15.959	1423.2	35.90	141.97	65	66	275.8				
95.00		0.1875	25.795	15.461	1294.0	34.72	137.57	65	67	267.3				
98.00		0.1875	25.300	15.162	1220.4	34.01	134.93	65	68	156.3				
100.00		0.1875	24.970	14.962	1172.9	33.54	133.17	65	68	102.5				
105.00		0.1875	24.145	14.464	1059.7	32.36	128.77	65	69	250.3				
108.00		0.1875	23.650	14.165	995.3	31.65	126.13	65	70	146.1				
110.00		0.1875	23.320	13.966	953.9	31.18	124.37	65	71	95.7				
115.00		0.1875	22.495	13.468	855.5	30.00	119.97	65	72	233.4				
118.00		0.1875	22.000	13.169	799.8	29.30	117.33	65	73	136.0				
<b>Total Weight</b>										<b>13062.1</b>				
											<b>796.3</b>			

## Wind Loading - Shaft

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

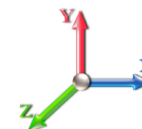


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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



**Iterations** 23

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	1.00	0.85	19.450	21.40	312.24	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	305.88	1.000	0.000	5.00	17.279	17.28	591.5	0.0	978.3
6.50	RT1	1.00	0.85	19.450	21.40	303.97	1.000	0.000	1.50	5.114	5.11	175.1	0.0	289.5
10.00		1.00	0.85	19.450	21.40	299.51	1.000	0.000	3.50	11.809	11.81	404.3	0.0	668.4
15.00		1.00	0.85	19.450	21.40	293.15	1.000	0.000	5.00	16.568	16.57	567.2	0.0	937.6
20.00		1.00	0.90	20.638	22.70	295.40	1.000	0.000	5.00	16.212	16.21	588.8	0.0	917.3
25.00		1.00	0.95	21.630	23.79	295.71	1.000	0.000	5.00	15.856	15.86	603.6	0.0	896.9
30.00		1.00	0.98	22.477	24.72	294.60	1.000	0.000	5.00	15.500	15.50	613.2	0.0	876.6
35.00		1.00	1.01	23.218	25.54	292.46	1.000	0.000	5.00	15.144	15.14	618.8	0.0	856.3
40.00		1.00	1.04	23.880	26.27	289.55	1.000	0.000	5.00	14.788	14.79	621.5	0.0	835.9
40.75	Bot - Section 2	1.00	1.05	23.974	26.37	289.06	1.000	0.000	0.75	2.188	2.19	92.3	0.0	123.6
45.00	Top - Section 1	1.00	1.07	24.479	26.93	286.02	1.000	0.000	4.25	12.474	12.47	537.4	0.0	1280.6
50.00		1.00	1.09	25.029	27.53	287.46	1.000	0.000	5.00	14.346	14.35	631.9	0.0	676.8
55.00		1.00	1.12	25.536	28.09	283.07	1.000	0.000	5.00	13.990	13.99	628.8	0.0	659.9
60.00		1.00	1.14	26.008	28.61	278.31	1.000	0.000	5.00	13.634	13.63	624.1	0.0	642.9
65.00		1.00	1.16	26.450	29.09	273.24	1.000	0.000	5.00	13.278	13.28	618.1	0.0	626.0
70.00		1.00	1.17	26.866	29.55	267.90	1.000	0.000	5.00	12.923	12.92	611.0	0.0	609.0
75.00		1.00	1.19	27.259	29.98	262.32	1.000	0.000	5.00	12.567	12.57	602.9	0.0	592.1
77.00	Bot - Section 3	1.00	1.20	27.410	30.15	260.03	1.000	0.000	2.00	4.927	4.93	237.7	0.0	232.1
80.00		1.00	1.21	27.632	30.39	256.52	1.000	0.000	3.00	7.381	7.38	358.9	0.0	552.6
80.75	Top - Section 2	1.00	1.21	27.686	30.45	255.63	1.000	0.000	0.75	1.825	1.83	88.9	0.0	136.6
85.00		1.00	1.22	27.987	30.79	254.00	1.000	0.000	4.25	10.192	10.19	502.0	0.0	289.3
90.00		1.00	1.24	28.325	31.16	247.85	1.000	0.000	5.00	11.661	11.66	581.3	0.0	330.9
95.00		1.00	1.25	28.650	31.51	241.54	1.000	0.000	5.00	11.305	11.31	570.0	0.0	320.7
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	237.68	1.000	0.000	3.00	6.612	6.61	335.6	0.0	187.6
100.00		1.00	1.27	28.961	31.86	235.08	1.000	0.000	2.00	4.337	4.34	221.1	0.0	123.0
105.00		1.00	1.28	29.260	32.19	228.48	1.000	0.000	5.00	10.593	10.59	545.5	0.0	300.4
108.00	Appurtenance(s)	1.00	1.29	29.434	32.38	224.46	1.000	0.000	3.00	6.185	6.19	320.4	0.0	175.4
110.00		1.00	1.29	29.548	32.50	221.76	1.000	0.000	2.00	4.052	4.05	210.7	0.0	114.9
115.00		1.00	1.30	29.826	32.81	214.92	1.000	0.000	5.00	9.881	9.88	518.7	0.0	280.1
118.00	Appurtenance(s)	1.00	1.31	29.988	32.99	210.76	1.000	0.000	3.00	5.758	5.76	303.9	0.0	163.2
<b>Totals:</b>								<b>118.00</b>			<b>13,925.5</b>	<b>15,674.5</b>		

## Discrete Appurtenance Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 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	118.00	RRUS 4415 B25	3	29.988	32.986	0.38	0.75	1.84	165.60	0.000	0.000	97.38	0.00	0.00
2	118.00	KRD 9011461-B66A-B2A	3	29.988	32.986	0.65	0.75	12.74	475.92	0.000	0.000	672.57	0.00	0.00
3	118.00	Platform w/ Hand Rails	1	29.988	32.986	1.00	1.00	40.00	2400.00	0.000	0.000	2111.13	0.00	0.00
4	118.00	ALU - External Notch	3	30.094	33.103	0.38	0.75	0.88	31.68	0.000	2.000	46.48	0.00	92.95
5	118.00	AIR6449 B41	3	29.988	32.986	0.53	0.75	9.03	370.80	0.000	0.000	476.37	0.00	0.00
6	118.00	ACU-A20-N	4	30.094	33.103	0.38	0.75	0.21	4.80	0.000	2.000	11.12	0.00	22.25
7	118.00	4449 B71 + B85	3	29.988	32.986	0.38	0.75	2.22	263.52	0.000	0.000	116.97	0.00	0.00
8	118.00	(Kickers and braces)	1	29.988	32.986	1.00	1.00	7.00	175.20	0.000	0.000	369.45	0.00	0.00
9	118.00	MS-H1436 (Heavy Collar	1	29.988	32.986	1.00	1.00	2.25	164.04	0.000	0.000	118.75	0.00	0.00
10	118.00	APXVAALL24_43-U-NA20	3	29.988	32.986	0.52	0.75	31.88	460.80	0.000	0.000	1682.47	0.00	0.00
11	118.00	800 MHz RRH	3	30.094	33.103	0.38	0.75	2.80	190.80	0.000	2.000	148.37	0.00	296.74
12	108.00	800-10121	3	29.434	32.377	0.61	0.75	9.50	158.76	0.000	0.000	492.22	0.00	0.00
13	108.00	Platform + HR & V-Brace	1	29.434	32.377	1.00	1.00	49.00	2695.20	0.000	0.000	2538.37	0.00	0.00
14	108.00	RRUS-11	3	29.434	32.377	0.38	0.75	2.83	183.60	0.000	0.000	146.86	0.00	0.00
15	108.00	860 10025	6	29.434	32.377	0.38	0.75	0.41	8.64	0.000	0.000	20.98	0.00	0.00
16	108.00	HPA-65R-BUU-H6	3	29.434	32.377	0.64	0.75	18.47	183.60	0.000	0.000	957.06	0.00	0.00
17	108.00	DC6-48-60-18-8F	1	29.434	32.377	0.75	0.75	1.10	38.16	0.000	0.000	57.11	0.00	0.00
18	108.00	LGP21401	6	29.434	32.377	0.38	0.75	2.83	136.80	0.000	0.000	146.86	0.00	0.00
19	108.00	RRUS-32 B2	3	29.434	32.377	0.38	0.75	3.08	216.00	0.000	0.000	159.68	0.00	0.00
20	98.00	BXA-171063-12BF	3	28.900	31.790	0.70	0.80	10.01	54.00	0.000	1.000	509.19	0.00	509.19
21	98.00	DB-T1-6Z-8AB-0Z	1	29.021	31.924	0.40	0.80	1.92	22.68	0.000	3.000	98.07	0.00	294.21
22	98.00	LNx-6514DS-VTM	3	28.900	31.790	0.66	0.80	16.12	119.16	0.000	1.000	819.67	0.00	819.67
23	98.00	RRH2X60-700	3	29.021	31.924	0.40	0.80	4.20	216.00	0.000	3.000	214.53	0.00	643.58
24	98.00	RRH2X60-AWS	3	29.021	31.924	0.40	0.80	4.20	216.00	0.000	3.000	214.53	0.00	643.58
25	98.00	Low Profile Platform	1	28.838	31.722	1.00	1.00	22.00	1800.00	0.000	0.000	1116.60	0.00	0.00
26	98.00	SBNHH-1D65A	6	28.900	31.790	0.66	0.80	23.43	241.20	0.000	1.000	1191.52	0.00	1191.52

**Totals: 10,992.96**

**14,534.32**

## Total Applied Force Summary

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 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		591.52	1115.76	0.00	0.00
6.50		175.08	330.76	0.00	0.00
10.00		404.26	764.66	0.00	0.00
15.00		567.15	1075.08	0.00	0.00
20.00		588.85	1054.74	0.00	0.00
25.00		603.62	1034.40	0.00	0.00
30.00		613.16	1014.06	0.00	0.00
35.00		618.84	993.72	0.00	0.00
40.00		621.53	973.39	0.00	0.00
40.75		92.30	144.25	0.00	0.00
45.00		537.43	1397.43	0.00	0.00
50.00		631.95	814.29	0.00	0.00
55.00		628.76	797.34	0.00	0.00
60.00		624.10	780.39	0.00	0.00
65.00		618.14	763.44	0.00	0.00
70.00		611.03	746.49	0.00	0.00
75.00		602.90	729.55	0.00	0.00
77.00		237.69	287.07	0.00	0.00
80.00		358.95	635.05	0.00	0.00
80.75		88.94	157.24	0.00	0.00
85.00		502.00	406.11	0.00	0.00
90.00		581.33	468.37	0.00	0.00
95.00		570.04	458.20	0.00	0.00
98.00	(20) attachments	4499.70	2939.08	0.00	4101.75
100.00		221.06	161.69	0.00	0.00
105.00		545.52	356.38	0.00	0.00
108.00	(26) attachments	4839.57	3829.71	0.00	0.00
110.00		210.73	126.46	0.00	0.00
115.00		518.71	309.04	0.00	0.00
118.00	(28) attachments	6154.96	4883.70	0.00	411.94
	<b>Totals:</b>	<b>28,459.80</b>	<b>29,547.86</b>	<b>0.00</b>	<b>4,513.69</b>

## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

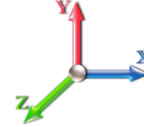


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**Load Case:** 1.2D + 1.6W 97 mph Wind

**Iterations** 23

**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	-29.48	-28.53	0.00	-2533.8	0.00	2533.86	3290.40	1645.20	5438.37	2685.80	0.00	0.000	0.000	0.676
5.00	-28.29	-28.01	0.00	-2391.2	0.00	2391.24	3250.13	1625.07	5260.26	2597.84	0.13	-0.251	0.000	0.655
6.50	-27.90	-27.90	0.00	-2349.2	0.00	2349.22	3237.83	1618.92	5207.01	2571.54	0.23	-0.327	0.000	0.649
6.50	-27.90	-27.90	0.00	-2349.2	0.00	2349.22	3237.83	1618.92	5207.01	2571.54	0.23	-0.327	0.000	0.649
10.00	-27.01	-27.61	0.00	-2251.5	0.00	2251.59	3208.72	1604.36	5083.09	2510.35	0.53	-0.503	0.000	0.906
15.00	-25.77	-27.19	0.00	-2113.5	0.00	2113.52	3166.15	1583.07	4906.98	2423.37	1.25	-0.858	0.000	0.881
20.00	-24.56	-26.74	0.00	-1977.5	0.00	1977.56	3122.42	1561.21	4732.05	2336.98	2.34	-1.212	0.000	0.854
25.00	-23.38	-26.25	0.00	-1843.8	0.00	1843.87	3077.54	1538.77	4558.41	2251.23	3.80	-1.566	0.000	0.827
30.00	-22.23	-25.75	0.00	-1712.6	0.00	1712.60	3031.51	1515.76	4386.18	2166.17	5.62	-1.919	0.000	0.798
35.00	-21.11	-25.22	0.00	-1583.8	0.00	1583.87	2984.33	1492.17	4215.48	2081.87	7.82	-2.269	0.000	0.768
40.00	-20.08	-24.63	0.00	-1457.7	0.00	1457.77	2936.00	1468.00	4046.44	1998.38	10.38	-2.617	0.000	0.737
40.75	-19.86	-24.59	0.00	-1439.3	0.00	1439.30	2928.65	1464.32	4021.23	1985.93	10.80	-2.670	0.000	0.732
45.00	-18.36	-24.09	0.00	-1334.7	0.00	1334.79	2282.79	1141.40	3138.94	1550.20	13.31	-2.963	0.000	0.870
50.00	-17.44	-23.52	0.00	-1214.3	0.00	1214.36	2249.07	1124.53	3015.37	1489.18	16.59	-3.300	0.000	0.824
55.00	-16.53	-22.95	0.00	-1096.7	0.00	1096.76	2214.18	1107.09	2892.60	1428.55	20.25	-3.672	0.000	0.776
60.00	-15.66	-22.37	0.00	-982.02	0.00	982.02	2178.15	1089.08	2770.77	1368.38	24.28	-4.033	0.000	0.725
65.00	-14.81	-21.79	0.00	-870.16	0.00	870.16	2140.97	1070.48	2649.98	1308.73	28.69	-4.381	0.000	0.672
70.00	-14.00	-21.20	0.00	-761.23	0.00	761.23	2102.63	1051.31	2530.36	1249.65	33.46	-4.714	0.000	0.616
75.00	-13.24	-20.59	0.00	-655.24	0.00	655.24	2063.13	1031.57	2412.02	1191.21	38.56	-5.028	0.000	0.557
77.00	-12.93	-20.36	0.00	-614.07	0.00	614.07	2047.01	1023.51	2365.08	1168.02	40.69	-5.151	0.000	0.532
80.00	-12.29	-19.97	0.00	-553.00	0.00	553.00	2022.49	1011.24	2295.09	1133.46	43.98	-5.326	0.000	0.494
80.75	-12.09	-19.89	0.00	-538.02	0.00	538.02	959.89	479.95	1109.20	547.79	44.82	-5.369	0.000	0.996
85.00	-11.63	-19.41	0.00	-453.49	0.00	453.49	952.00	476.00	1072.31	529.57	49.69	-5.594	0.000	0.870
90.00	-11.11	-18.85	0.00	-356.42	0.00	356.42	941.66	470.83	1028.33	507.86	55.75	-5.964	0.000	0.715
95.00	-10.65	-18.28	0.00	-262.15	0.00	262.15	930.16	465.08	983.85	485.89	62.16	-6.273	0.000	0.553
98.00	-8.20	-13.50	0.00	-203.20	0.00	203.20	922.71	461.35	956.96	472.61	66.14	-6.427	0.000	0.440
100.00	-8.03	-13.28	0.00	-176.20	0.00	176.20	917.51	458.75	938.97	463.72	68.85	-6.516	0.000	0.390
105.00	-7.71	-12.72	0.00	-109.79	0.00	109.79	903.70	451.85	893.83	441.43	75.76	-6.689	0.000	0.258
108.00	-4.47	-7.46	0.00	-71.64	0.00	71.64	894.87	447.43	866.66	428.01	79.98	-6.762	0.000	0.173
110.00	-4.36	-7.24	0.00	-56.72	0.00	56.72	888.75	444.37	848.53	419.06	82.81	-6.799	0.000	0.141
115.00	-4.11	-6.69	0.00	-20.50	0.00	20.50	872.64	436.32	803.20	396.67	89.95	-6.857	0.000	0.057
118.00	0.00	-6.15	0.00	-0.41	0.00	0.41	862.42	431.21	776.03	383.25	94.26	-6.867	0.000	0.001

## Wind Loading - Shaft

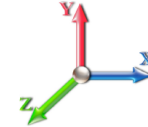
<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 23

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	1.00	0.85	19.450	21.40	312.24	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	305.88	1.000	0.000	5.00	17.279	17.28	591.5	0.0	733.7
6.50	RT1	1.00	0.85	19.450	21.40	303.97	1.000	0.000	1.50	5.114	5.11	175.1	0.0	217.1
10.00		1.00	0.85	19.450	21.40	299.51	1.000	0.000	3.50	11.809	11.81	404.3	0.0	501.3
15.00		1.00	0.85	19.450	21.40	293.15	1.000	0.000	5.00	16.568	16.57	567.2	0.0	703.2
20.00		1.00	0.90	20.638	22.70	295.40	1.000	0.000	5.00	16.212	16.21	588.8	0.0	688.0
25.00		1.00	0.95	21.630	23.79	295.71	1.000	0.000	5.00	15.856	15.86	603.6	0.0	672.7
30.00		1.00	0.98	22.477	24.72	294.60	1.000	0.000	5.00	15.500	15.50	613.2	0.0	657.5
35.00		1.00	1.01	23.218	25.54	292.46	1.000	0.000	5.00	15.144	15.14	618.8	0.0	642.2
40.00		1.00	1.04	23.880	26.27	289.55	1.000	0.000	5.00	14.788	14.79	621.5	0.0	626.9
40.75	Bot - Section 2	1.00	1.05	23.974	26.37	289.06	1.000	0.000	0.75	2.188	2.19	92.3	0.0	92.7
45.00	Top - Section 1	1.00	1.07	24.479	26.93	286.02	1.000	0.000	4.25	12.474	12.47	537.4	0.0	960.4
50.00		1.00	1.09	25.029	27.53	287.46	1.000	0.000	5.00	14.346	14.35	631.9	0.0	507.6
55.00		1.00	1.12	25.536	28.09	283.07	1.000	0.000	5.00	13.990	13.99	628.8	0.0	494.9
60.00		1.00	1.14	26.008	28.61	278.31	1.000	0.000	5.00	13.634	13.63	624.1	0.0	482.2
65.00		1.00	1.16	26.450	29.09	273.24	1.000	0.000	5.00	13.278	13.28	618.1	0.0	469.5
70.00		1.00	1.17	26.866	29.55	267.90	1.000	0.000	5.00	12.923	12.92	611.0	0.0	456.8
75.00		1.00	1.19	27.259	29.98	262.32	1.000	0.000	5.00	12.567	12.57	602.9	0.0	444.1
77.00	Bot - Section 3	1.00	1.20	27.410	30.15	260.03	1.000	0.000	2.00	4.927	4.93	237.7	0.0	174.1
80.00		1.00	1.21	27.632	30.39	256.52	1.000	0.000	3.00	7.381	7.38	358.9	0.0	414.4
80.75	Top - Section 2	1.00	1.21	27.686	30.45	255.63	1.000	0.000	0.75	1.825	1.83	88.9	0.0	102.5
85.00		1.00	1.22	27.987	30.79	254.00	1.000	0.000	4.25	10.192	10.19	502.0	0.0	216.9
90.00		1.00	1.24	28.325	31.16	247.85	1.000	0.000	5.00	11.661	11.66	581.3	0.0	248.2
95.00		1.00	1.25	28.650	31.51	241.54	1.000	0.000	5.00	11.305	11.31	570.0	0.0	240.6
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	237.68	1.000	0.000	3.00	6.612	6.61	335.6	0.0	140.7
100.00		1.00	1.27	28.961	31.86	235.08	1.000	0.000	2.00	4.337	4.34	221.1	0.0	92.3
105.00		1.00	1.28	29.260	32.19	228.48	1.000	0.000	5.00	10.593	10.59	545.5	0.0	225.3
108.00	Appurtenance(s)	1.00	1.29	29.434	32.38	224.46	1.000	0.000	3.00	6.185	6.19	320.4	0.0	131.5
110.00		1.00	1.29	29.548	32.50	221.76	1.000	0.000	2.00	4.052	4.05	210.7	0.0	86.2
115.00		1.00	1.30	29.826	32.81	214.92	1.000	0.000	5.00	9.881	9.88	518.7	0.0	210.0
118.00	Appurtenance(s)	1.00	1.31	29.988	32.99	210.76	1.000	0.000	3.00	5.758	5.76	303.9	0.0	122.4
<b>Totals:</b>								<b>118.00</b>			<b>13,925.5</b>	<b>11,755.8</b>		



## Discrete Appurtenance Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 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	118.00	RRUS 4415 B25	3	29.988	32.986	0.38	0.75	1.84	124.20	0.000	0.000	97.38	0.00	0.00
2	118.00	KRD 9011461-B66A-B2A	3	29.988	32.986	0.65	0.75	12.74	356.94	0.000	0.000	672.57	0.00	0.00
3	118.00	Platform w/ Hand Rails	1	29.988	32.986	1.00	1.00	40.00	1800.00	0.000	0.000	2111.13	0.00	0.00
4	118.00	ALU - External Notch	3	30.094	33.103	0.38	0.75	0.88	23.76	0.000	2.000	46.48	0.00	92.95
5	118.00	AIR6449 B41	3	29.988	32.986	0.53	0.75	9.03	278.10	0.000	0.000	476.37	0.00	0.00
6	118.00	ACU-A20-N	4	30.094	33.103	0.38	0.75	0.21	3.60	0.000	2.000	11.12	0.00	22.25
7	118.00	4449 B71 + B85	3	29.988	32.986	0.38	0.75	2.22	197.64	0.000	0.000	116.97	0.00	0.00
8	118.00	(Kickers and braces)	1	29.988	32.986	1.00	1.00	7.00	131.40	0.000	0.000	369.45	0.00	0.00
9	118.00	MS-H1436 (Heavy Collar	1	29.988	32.986	1.00	1.00	2.25	123.03	0.000	0.000	118.75	0.00	0.00
10	118.00	APXVAALL24_43-U-NA20	3	29.988	32.986	0.52	0.75	31.88	345.60	0.000	0.000	1682.47	0.00	0.00
11	118.00	800 MHz RRH	3	30.094	33.103	0.38	0.75	2.80	143.10	0.000	2.000	148.37	0.00	296.74
12	108.00	800-10121	3	29.434	32.377	0.61	0.75	9.50	119.07	0.000	0.000	492.22	0.00	0.00
13	108.00	Platform + HR & V-Brace	1	29.434	32.377	1.00	1.00	49.00	2021.40	0.000	0.000	2538.37	0.00	0.00
14	108.00	RRUS-11	3	29.434	32.377	0.38	0.75	2.83	137.70	0.000	0.000	146.86	0.00	0.00
15	108.00	860 10025	6	29.434	32.377	0.38	0.75	0.41	6.48	0.000	0.000	20.98	0.00	0.00
16	108.00	HPA-65R-BUU-H6	3	29.434	32.377	0.64	0.75	18.47	137.70	0.000	0.000	957.06	0.00	0.00
17	108.00	DC6-48-60-18-8F	1	29.434	32.377	0.75	0.75	1.10	28.62	0.000	0.000	57.11	0.00	0.00
18	108.00	LGP21401	6	29.434	32.377	0.38	0.75	2.83	102.60	0.000	0.000	146.86	0.00	0.00
19	108.00	RRUS-32 B2	3	29.434	32.377	0.38	0.75	3.08	162.00	0.000	0.000	159.68	0.00	0.00
20	98.00	BXA-171063-12BF	3	28.900	31.790	0.70	0.80	10.01	40.50	0.000	1.000	509.19	0.00	509.19
21	98.00	DB-T1-6Z-8AB-0Z	1	29.021	31.924	0.40	0.80	1.92	17.01	0.000	3.000	98.07	0.00	294.21
22	98.00	LNx-6514DS-VTM	3	28.900	31.790	0.66	0.80	16.12	89.37	0.000	1.000	819.67	0.00	819.67
23	98.00	RRH2X60-700	3	29.021	31.924	0.40	0.80	4.20	162.00	0.000	3.000	214.53	0.00	643.58
24	98.00	RRH2X60-AWS	3	29.021	31.924	0.40	0.80	4.20	162.00	0.000	3.000	214.53	0.00	643.58
25	98.00	Low Profile Platform	1	28.838	31.722	1.00	1.00	22.00	1350.00	0.000	0.000	1116.60	0.00	0.00
26	98.00	SBNHH-1D65A	6	28.900	31.790	0.66	0.80	23.43	180.90	0.000	1.000	1191.52	0.00	1191.52

**Totals:** 8,244.72

14,534.32

## Total Applied Force Summary

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 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		591.52	836.82	0.00	0.00
6.50		175.08	248.07	0.00	0.00
10.00		404.26	573.49	0.00	0.00
15.00		567.15	806.31	0.00	0.00
20.00		588.85	791.06	0.00	0.00
25.00		603.62	775.80	0.00	0.00
30.00		613.16	760.55	0.00	0.00
35.00		618.84	745.29	0.00	0.00
40.00		621.53	730.04	0.00	0.00
40.75		92.30	108.19	0.00	0.00
45.00		537.43	1048.07	0.00	0.00
50.00		631.95	610.72	0.00	0.00
55.00		628.76	598.01	0.00	0.00
60.00		624.10	585.29	0.00	0.00
65.00		618.14	572.58	0.00	0.00
70.00		611.03	559.87	0.00	0.00
75.00		602.90	547.16	0.00	0.00
77.00		237.69	215.30	0.00	0.00
80.00		358.95	476.29	0.00	0.00
80.75		88.94	117.93	0.00	0.00
85.00		502.00	304.58	0.00	0.00
90.00		581.33	351.27	0.00	0.00
95.00		570.04	343.65	0.00	0.00
98.00	(20) attachments	4499.70	2204.31	0.00	4101.75
100.00		221.06	121.27	0.00	0.00
105.00		545.52	267.28	0.00	0.00
108.00	(26) attachments	4839.57	2872.28	0.00	0.00
110.00		210.73	94.85	0.00	0.00
115.00		518.71	231.78	0.00	0.00
118.00	(28) attachments	6154.96	3662.78	0.00	411.94
	<b>Totals:</b>	<b>28,459.80</b>	<b>22,160.89</b>	<b>0.00</b>	<b>4,513.69</b>

## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Iterations** 23

**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	-22.10	-28.51	0.00	-2504.9	0.00	2504.98	3290.40	1645.20	5438.37	2685.80	0.00	0.000	0.000	0.667
5.00	-21.18	-27.97	0.00	-2362.4	0.00	2362.44	3250.13	1625.07	5260.26	2597.84	0.13	-0.248	0.000	0.646
6.50	-20.88	-27.84	0.00	-2320.4	0.00	2320.48	3237.83	1618.92	5207.01	2571.54	0.22	-0.323	0.000	0.639
6.50	-20.88	-27.84	0.00	-2320.4	0.00	2320.48	3237.83	1618.92	5207.01	2571.54	0.22	-0.323	0.000	0.639
10.00	-20.18	-27.53	0.00	-2223.0	0.00	2223.02	3208.72	1604.36	5083.09	2510.35	0.52	-0.497	0.000	0.892
15.00	-19.21	-27.07	0.00	-2085.3	0.00	2085.38	3166.15	1583.07	4906.98	2423.37	1.23	-0.847	0.000	0.867
20.00	-18.27	-26.58	0.00	-1950.0	0.00	1950.04	3122.42	1561.21	4732.05	2336.98	2.31	-1.197	0.000	0.841
25.00	-17.35	-26.06	0.00	-1817.1	0.00	1817.14	3077.54	1538.77	4558.41	2251.23	3.75	-1.546	0.000	0.813
30.00	-16.46	-25.53	0.00	-1686.8	0.00	1686.83	3031.51	1515.76	4386.18	2166.17	5.55	-1.893	0.000	0.784
35.00	-15.59	-24.98	0.00	-1559.2	0.00	1559.20	2984.33	1492.17	4215.48	2081.87	7.72	-2.238	0.000	0.754
40.00	-14.80	-24.37	0.00	-1434.3	0.00	1434.32	2936.00	1468.00	4046.44	1998.38	10.25	-2.580	0.000	0.723
40.75	-14.62	-24.32	0.00	-1416.0	0.00	1416.04	2928.65	1464.32	4021.23	1985.93	10.66	-2.633	0.000	0.718
45.00	-13.47	-23.81	0.00	-1312.6	0.00	1312.68	2282.79	1141.40	3138.94	1550.20	13.13	-2.921	0.000	0.853
50.00	-12.76	-23.22	0.00	-1193.6	0.00	1193.64	2249.07	1124.53	3015.37	1489.18	16.37	-3.252	0.000	0.808
55.00	-12.05	-22.63	0.00	-1077.5	0.00	1077.54	2214.18	1107.09	2892.60	1428.55	19.97	-3.618	0.000	0.760
60.00	-11.38	-22.04	0.00	-964.37	0.00	964.37	2178.15	1089.08	2770.77	1368.38	23.95	-3.972	0.000	0.710
65.00	-10.73	-21.45	0.00	-854.16	0.00	854.16	2140.97	1070.48	2649.98	1308.73	28.29	-4.314	0.000	0.658
70.00	-10.10	-20.85	0.00	-746.93	0.00	746.93	2102.63	1051.31	2530.36	1249.65	32.98	-4.641	0.000	0.603
75.00	-9.53	-20.24	0.00	-642.68	0.00	642.68	2063.13	1031.57	2412.02	1191.21	38.00	-4.949	0.000	0.545
77.00	-9.29	-20.01	0.00	-602.20	0.00	602.20	2047.01	1023.51	2365.08	1168.02	40.10	-5.069	0.000	0.520
80.00	-8.81	-19.62	0.00	-542.18	0.00	542.18	2022.49	1011.24	2295.09	1133.46	43.33	-5.241	0.000	0.483
80.75	-8.65	-19.54	0.00	-527.46	0.00	527.46	959.89	479.95	1109.20	547.79	44.16	-5.283	0.000	0.974
85.00	-8.30	-19.06	0.00	-444.40	0.00	444.40	952.00	476.00	1072.31	529.57	48.96	-5.504	0.000	0.849
90.00	-7.90	-18.49	0.00	-349.10	0.00	349.10	941.66	470.83	1028.33	507.86	54.91	-5.866	0.000	0.697
95.00	-7.55	-17.92	0.00	-256.65	0.00	256.65	930.16	465.08	983.85	485.89	61.22	-6.169	0.000	0.538
98.00	-5.82	-13.22	0.00	-198.79	0.00	198.79	922.71	461.35	956.96	472.61	65.14	-6.320	0.000	0.428
100.00	-5.69	-13.00	0.00	-172.35	0.00	172.35	917.51	458.75	938.97	463.72	67.80	-6.407	0.000	0.379
105.00	-5.46	-12.44	0.00	-107.37	0.00	107.37	903.70	451.85	893.83	441.43	74.59	-6.576	0.000	0.250
108.00	-3.16	-7.30	0.00	-70.06	0.00	70.06	894.87	447.43	866.66	428.01	78.74	-6.648	0.000	0.167
110.00	-3.09	-7.08	0.00	-55.46	0.00	55.46	888.75	444.37	848.53	419.06	81.53	-6.684	0.000	0.136
115.00	-2.91	-6.54	0.00	-20.04	0.00	20.04	872.64	436.32	803.20	396.67	88.55	-6.740	0.000	0.054
118.00	0.00	-6.15	0.00	-0.41	0.00	0.41	862.42	431.21	776.03	383.25	92.78	-6.750	0.000	0.001

## Wind Loading - Shaft

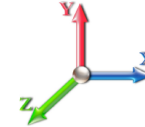
<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 22

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	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	18.314	21.98	124.9	328.8	1307.1	
6.50	RT1	1.00	0.85	5.168	5.68	0.00	1.200	1.275	1.50	5.433	6.52	37.1	100.7	390.3	
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	3.50	12.586	15.10	85.9	242.2	910.7	
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	17.723	21.27	120.9	353.4	1291.1	
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	17.401	20.88	125.9	356.5	1273.8	
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	17.072	20.49	129.5	357.0	1254.0	
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	16.738	20.09	131.9	355.9	1232.5	
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	16.402	19.68	133.6	353.6	1209.8	
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	16.063	19.28	134.5	350.4	1186.3	
40.75	Bot - Section 2	1.00	1.05	6.370	7.01	0.00	1.200	1.532	0.75	2.379	2.85	20.0	52.5	176.1	
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.200	1.547	4.25	13.570	16.28	116.5	299.8	1580.4	
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	15.649	18.78	137.4	348.2	1025.0	
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	15.306	18.37	137.1	343.2	1003.1	
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	14.961	17.95	136.5	337.9	980.8	
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	14.616	17.54	135.6	332.1	958.1	
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	14.270	17.12	134.5	326.1	935.1	
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	13.924	16.71	133.1	319.7	911.8	
77.00	Bot - Section 3	1.00	1.20	7.283	8.01	0.00	1.200	1.633	2.00	5.471	6.57	52.6	126.9	358.9	
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	3.00	8.200	9.84	79.5	190.3	742.9	
80.75	Top - Section 2	1.00	1.21	7.356	8.09	0.00	1.200	1.640	0.75	2.030	2.44	19.7	47.4	184.0	
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.25	11.359	13.63	111.5	263.8	553.1	
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	13.043	15.65	129.6	303.4	634.3	
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	12.694	15.23	127.6	296.2	616.9	
98.00	Appurtenance(s)	1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	7.448	8.94	75.3	175.1	362.6	
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	4.896	5.87	49.7	115.5	238.5	
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	11.997	14.40	123.1	281.3	581.7	
108.00	Appurtenance(s)	1.00	1.29	7.821	8.60	0.00	1.200	1.689	3.00	7.030	8.44	72.6	166.1	341.4	
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	4.616	5.54	47.8	109.5	224.3	
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	11.298	13.56	118.2	265.9	545.9	
118.00	Appurtenance(s)	1.00	1.31	7.968	8.76	0.00	1.200	1.704	3.00	6.610	7.93	69.5	156.7	319.8	
<b>Totals:</b>								<b>118.00</b>				<b>3,051.6</b>	<b>23,330.5</b>		

## Discrete Appurtenance Forces

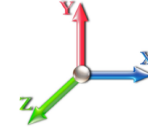
<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 22

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	118.00	RRUS 4415 B25	3	7.968	8.765	0.38	0.75	2.41	257.79	0.000	0.000	21.13	0.00	0.00	
2	118.00	KRD 9011461-B66A-B2A	3	7.968	8.765	0.65	0.75	14.88	1010.27	0.000	0.000	130.45	0.00	0.00	
3	118.00	Platform w/ Hand Rails	1	7.968	8.765	1.00	1.00	60.45	3844.60	0.000	0.000	529.79	0.00	0.00	
4	118.00	ALU - External Notch	3	7.996	8.796	0.38	0.75	1.59	68.35	0.000	2.000	13.97	0.00	27.93	
5	118.00	AIR6449 B41	3	7.968	8.765	0.53	0.75	10.51	677.30	0.000	0.000	92.10	0.00	0.00	
6	118.00	ACU-A20-N	4	7.996	8.796	0.38	0.75	0.64	16.38	0.000	2.000	5.67	0.00	11.34	
7	118.00	4449 B71 + B85	3	7.968	8.765	0.38	0.75	2.84	257.44	0.000	0.000	24.91	0.00	0.00	
8	118.00	(Kickers and braces)	1	7.968	8.765	1.00	1.00	14.16	310.21	0.000	0.000	124.07	0.00	0.00	
9	118.00	MS-H1436 (Heavy Collar	1	7.968	8.765	1.00	1.00	4.55	290.27	0.000	0.000	39.88	0.00	0.00	
10	118.00	APXVAALL24_43-U-NA20	3	7.968	8.765	0.52	0.75	34.80	1681.18	0.000	0.000	304.98	0.00	0.00	
11	118.00	800 MHz RRH	3	7.996	8.796	0.38	0.75	4.06	344.12	0.000	2.000	35.69	0.00	71.38	
12	108.00	800-10121	3	7.821	8.603	0.63	0.75	13.59	393.51	0.000	0.000	116.88	0.00	0.00	
13	108.00	Platform + HR & V-Brace	1	7.821	8.603	1.00	1.00	84.09	4725.66	0.000	0.000	723.38	0.00	0.00	
14	108.00	RRUS-11	3	7.821	8.603	0.38	0.75	3.52	345.41	0.000	0.000	30.32	0.00	0.00	
15	108.00	860 10025	6	7.821	8.603	0.38	0.75	1.23	33.86	0.000	0.000	10.58	0.00	0.00	
16	108.00	HPA-65R-BUU-H6	3	7.821	8.603	0.64	0.75	21.01	717.42	0.000	0.000	180.73	0.00	0.00	
17	108.00	DC6-48-60-18-8F	1	7.821	8.603	0.75	0.75	1.61	80.29	0.000	0.000	13.85	0.00	0.00	
18	108.00	LGP21401	6	7.821	8.603	0.38	0.75	4.64	238.59	0.000	0.000	39.89	0.00	0.00	
19	108.00	RRUS-32 B2	3	7.821	8.603	0.38	0.75	3.87	469.51	0.000	0.000	33.33	0.00	0.00	
20	98.00	BXA-171063-12BF	3	7.679	8.447	0.72	0.80	15.10	245.33	0.000	1.000	127.56	0.00	127.56	
21	98.00	DB-T1-6Z-8AB-0Z	1	7.711	8.482	0.40	0.80	3.46	111.61	0.000	3.000	29.36	0.00	88.08	
22	98.00	LNx-6514DS-VTM	3	7.679	8.447	0.68	0.80	21.97	471.45	0.000	1.000	185.56	0.00	185.56	
23	98.00	RRH2X60-700	3	7.711	8.482	0.40	0.80	5.11	406.95	0.000	3.000	43.32	0.00	129.97	
24	98.00	RRH2X60-AWS	3	7.711	8.482	0.40	0.80	5.11	406.95	0.000	3.000	43.32	0.00	129.97	
25	98.00	Low Profile Platform	1	7.662	8.429	1.00	1.00	38.93	2754.36	0.000	0.000	328.09	0.00	0.00	
26	98.00	SBNHH-1D65A	6	7.679	8.447	0.68	0.80	28.20	902.37	0.000	1.000	238.15	0.00	238.15	
<b>Totals:</b>									<b>21,061.20</b>						<b>3,466.95</b>

## Total Applied Force Summary

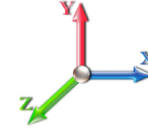
<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 22

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		124.94	1444.59	0.00	0.00
6.50		37.06	431.50	0.00	0.00
10.00		85.86	1006.90	0.00	0.00
15.00		120.90	1428.53	0.00	0.00
20.00		125.95	1411.24	0.00	0.00
25.00		129.51	1391.43	0.00	0.00
30.00		131.95	1369.97	0.00	0.00
35.00		133.56	1347.31	0.00	0.00
40.00		134.53	1323.74	0.00	0.00
40.75		20.00	196.72	0.00	0.00
45.00		116.51	1697.20	0.00	0.00
50.00		137.37	1162.50	0.00	0.00
55.00		137.08	1140.59	0.00	0.00
60.00		136.47	1118.26	0.00	0.00
65.00		135.59	1095.57	0.00	0.00
70.00		134.46	1072.57	0.00	0.00
75.00		133.12	1049.28	0.00	0.00
77.00		52.60	413.93	0.00	0.00
80.00		79.47	825.33	0.00	0.00
80.75		19.71	204.66	0.00	0.00
85.00		111.50	669.90	0.00	0.00
90.00		129.57	771.73	0.00	0.00
95.00		127.56	754.38	0.00	0.00
98.00	(20) attachments	1070.70	5744.14	0.00	899.29
100.00		49.73	277.23	0.00	0.00
105.00		123.11	637.70	0.00	0.00
108.00	(26) attachments	1221.52	7379.25	0.00	0.00
110.00		47.84	235.93	0.00	0.00
115.00		118.18	574.92	0.00	0.00
118.00	(28) attachments	1392.15	9095.15	0.00	110.65
<b>Totals:</b>		<b>6,518.51</b>	<b>47,272.16</b>	<b>0.00</b>	<b>1,009.94</b>

## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

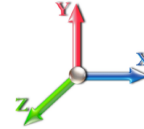


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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 22

**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	-47.27	-6.54	0.00	-613.64	0.00	613.64	3290.40	1645.20	5438.37	2685.80	0.00	0.000	0.000	0.171
5.00	-45.82	-6.45	0.00	-580.92	0.00	580.92	3250.13	1625.07	5260.26	2597.84	0.03	-0.061	0.000	0.166
6.50	-45.38	-6.44	0.00	-571.24	0.00	571.24	3237.83	1618.92	5207.01	2571.54	0.05	-0.079	0.000	0.164
6.50	-45.38	-6.44	0.00	-571.24	0.00	571.24	3237.83	1618.92	5207.01	2571.54	0.05	-0.079	0.000	0.164
10.00	-44.37	-6.40	0.00	-548.72	0.00	548.72	3208.72	1604.36	5083.09	2510.35	0.13	-0.122	0.000	0.232
15.00	-42.93	-6.34	0.00	-516.72	0.00	516.72	3166.15	1583.07	4906.98	2423.37	0.30	-0.209	0.000	0.227
20.00	-41.51	-6.27	0.00	-485.03	0.00	485.03	3122.42	1561.21	4732.05	2336.98	0.57	-0.296	0.000	0.221
25.00	-40.11	-6.19	0.00	-453.68	0.00	453.68	3077.54	1538.77	4558.41	2251.23	0.92	-0.383	0.000	0.215
30.00	-38.73	-6.11	0.00	-422.72	0.00	422.72	3031.51	1515.76	4386.18	2166.17	1.37	-0.469	0.000	0.208
35.00	-37.38	-6.02	0.00	-392.17	0.00	392.17	2984.33	1492.17	4215.48	2081.87	1.91	-0.556	0.000	0.201
40.00	-36.05	-5.90	0.00	-362.07	0.00	362.07	2936.00	1468.00	4046.44	1998.38	2.54	-0.642	0.000	0.193
40.75	-35.85	-5.91	0.00	-357.65	0.00	357.65	2928.65	1464.32	4021.23	1985.93	2.64	-0.655	0.000	0.192
45.00	-34.15	-5.82	0.00	-332.54	0.00	332.54	2282.79	1141.40	3138.94	1550.20	3.26	-0.728	0.000	0.229
50.00	-32.98	-5.72	0.00	-303.45	0.00	303.45	2249.07	1124.53	3015.37	1489.18	4.07	-0.812	0.000	0.218
55.00	-31.83	-5.61	0.00	-274.87	0.00	274.87	2214.18	1107.09	2892.60	1428.55	4.97	-0.905	0.000	0.207
60.00	-30.71	-5.51	0.00	-246.81	0.00	246.81	2178.15	1089.08	2770.77	1368.38	5.96	-0.996	0.000	0.194
65.00	-29.61	-5.39	0.00	-219.29	0.00	219.29	2140.97	1070.48	2649.98	1308.73	7.05	-1.084	0.000	0.181
70.00	-28.53	-5.28	0.00	-192.32	0.00	192.32	2102.63	1051.31	2530.36	1249.65	8.23	-1.168	0.000	0.167
75.00	-27.48	-5.15	0.00	-165.92	0.00	165.92	2063.13	1031.57	2412.02	1191.21	9.50	-1.247	0.000	0.153
77.00	-27.06	-5.11	0.00	-155.62	0.00	155.62	2047.01	1023.51	2365.08	1168.02	10.03	-1.278	0.000	0.146
80.00	-26.24	-5.02	0.00	-140.30	0.00	140.30	2022.49	1011.24	2295.09	1133.46	10.85	-1.323	0.000	0.137
80.75	-26.03	-5.01	0.00	-136.53	0.00	136.53	959.89	479.95	1109.20	547.79	11.06	-1.334	0.000	0.276
85.00	-25.35	-4.92	0.00	-115.23	0.00	115.23	952.00	476.00	1072.31	529.57	12.27	-1.391	0.000	0.244
90.00	-24.58	-4.81	0.00	-90.64	0.00	90.64	941.66	470.83	1028.33	507.86	13.78	-1.485	0.000	0.205
95.00	-23.82	-4.68	0.00	-66.60	0.00	66.60	930.16	465.08	983.85	485.89	15.38	-1.563	0.000	0.163
98.00	-18.11	-3.46	0.00	-51.65	0.00	51.65	922.71	461.35	956.96	472.61	16.37	-1.602	0.000	0.129
100.00	-17.83	-3.42	0.00	-44.73	0.00	44.73	917.51	458.75	938.97	463.72	17.05	-1.625	0.000	0.116
105.00	-17.20	-3.28	0.00	-27.64	0.00	27.64	903.70	451.85	893.83	441.43	18.78	-1.669	0.000	0.082
108.00	-9.86	-1.85	0.00	-17.79	0.00	17.79	894.87	447.43	866.66	428.01	19.83	-1.687	0.000	0.053
110.00	-9.62	-1.80	0.00	-14.09	0.00	14.09	888.75	444.37	848.53	419.06	20.54	-1.696	0.000	0.044
115.00	-9.05	-1.66	0.00	-5.10	0.00	5.10	872.64	436.32	803.20	396.67	22.32	-1.711	0.000	0.023
118.00	0.00	-1.39	0.00	-0.11	0.00	0.11	862.42	431.21	776.03	383.25	23.40	-1.713	0.000	0.000

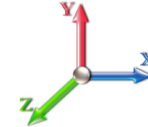
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E		<b>Iterations</b> 21
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.21	<b>Ss</b> 0.20
<b>Dead Load Factor</b> 1.20	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.36	<b>SA</b> 0.04
		<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		815.25	0.00	0.04	0.02	19.90	
6.50	RT1	241.27	0.01	0.05	0.03	6.75	
10.00		557.03	0.01	0.06	0.03	18.56	
15.00		781.35	0.03	0.07	0.04	28.91	
20.00		764.40	0.05	0.07	0.04	29.64	
25.00		747.45	0.08	0.07	0.04	29.92	
30.00		730.50	0.12	0.07	0.03	30.14	
35.00		713.55	0.17	0.07	0.03	30.14	
40.00		696.60	0.22	0.06	0.02	29.38	
40.75	Bot - Section 2	103.03	0.23	0.06	0.02	4.33	
45.00	Top - Section 1	1067.1	0.27	0.05	0.01	42.32	
50.00		564.03	0.34	0.04	0.01	18.54	
55.00		549.90	0.41	0.01	0.01	11.11	
60.00		535.78	0.49	-0.01	0.01	1.07	
65.00		521.65	0.57	-0.04	0.01	-9.41	
70.00		507.53	0.67	-0.08	0.02	-17.36	
75.00		493.40	0.76	-0.10	0.04	-20.94	
77.00	Bot - Section 3	193.41	0.80	-0.11	0.06	-8.34	
80.00		460.48	0.87	-0.12	0.08	-19.03	
80.75	Top - Section 2	113.85	0.89	-0.12	0.08	-4.59	
85.00		241.06	0.98	-0.11	0.12	-7.44	
90.00		275.76	1.10	-0.07	0.19	-3.13	
95.00		267.28	1.23	0.03	0.27	4.58	
98.00	Appurtenance(s)	2380.5	1.30	0.13	0.34	91.80	
100.00		102.51	1.36	0.21	0.39	5.60	
105.00		250.33	1.50	0.49	0.54	25.38	
108.00	Appurtenance(s)	3163.4	1.58	0.73	0.65	423.67	
110.00		95.73	1.64	0.92	0.73	15.08	
115.00		233.38	1.80	1.52	0.97	52.15	
118.00	Appurtenance(s)	4055.2	1.89	1.98	1.14	1086.03	
<b>Totals:</b>		<b>22,222.9</b>				<b>1,914.8</b>	<b>Total Wind: 28,459.8</b>

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



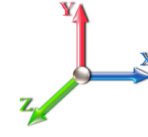
## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E						<b>Iterations</b> 21
<b>Gust Response Factor</b>	1.10			<b>Sds</b>	0.21	<b>Ss</b> 0.20
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.10	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.36	<b>SA</b>	0.04	<b>Seismic Importance Factor</b> 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.55	-2.01	0.00	-213.45	0.00	213.45	3290.40	1645.20	5438.37	2685.80	0.00	0.00	0.00	0.062
5.00	-28.43	-2.00	0.00	-203.40	0.00	203.40	3250.13	1625.07	5260.26	2597.84	0.01	-0.02	0.060	
6.50	-28.10	-2.00	0.00	-200.41	0.00	200.41	3237.83	1618.92	5207.01	2571.54	0.02	-0.03	0.060	
6.50	-28.10	-2.00	0.00	-200.41	0.00	200.41	3237.83	1618.92	5207.01	2571.54	0.02	-0.03	0.060	
10.00	-27.33	-1.99	0.00	-193.43	0.00	193.43	3208.72	1604.36	5083.09	2510.35	0.04	-0.04	0.086	
15.00	-26.26	-1.97	0.00	-183.49	0.00	183.49	3166.15	1583.07	4906.98	2423.37	0.11	-0.07	0.084	
20.00	-25.20	-1.95	0.00	-173.64	0.00	173.64	3122.42	1561.21	4732.05	2336.98	0.20	-0.10	0.082	
25.00	-24.17	-1.93	0.00	-163.87	0.00	163.87	3077.54	1538.77	4558.41	2251.23	0.33	-0.14	0.081	
30.00	-23.15	-1.91	0.00	-154.19	0.00	154.19	3031.51	1515.76	4386.18	2166.17	0.48	-0.17	0.079	
35.00	-22.16	-1.89	0.00	-144.62	0.00	144.62	2984.33	1492.17	4215.48	2081.87	0.68	-0.20	0.077	
40.00	-21.18	-1.87	0.00	-135.15	0.00	135.15	2936.00	1468.00	4046.44	1998.38	0.90	-0.23	0.075	
40.75	-21.04	-1.87	0.00	-133.75	0.00	133.75	2928.65	1464.32	4021.23	1985.93	0.94	-0.24	0.075	
45.00	-19.64	-1.83	0.00	-125.81	0.00	125.81	2282.79	1141.40	3138.94	1550.20	1.16	-0.26	0.090	
50.00	-18.83	-1.82	0.00	-116.66	0.00	116.66	2249.07	1124.53	3015.37	1489.18	1.45	-0.30	0.087	
55.00	-18.03	-1.81	0.00	-107.56	0.00	107.56	2214.18	1107.09	2892.60	1428.55	1.78	-0.33	0.083	
60.00	-17.25	-1.82	0.00	-98.49	0.00	98.49	2178.15	1089.08	2770.77	1368.38	2.15	-0.37	0.080	
65.00	-16.48	-1.82	0.00	-89.39	0.00	89.39	2140.97	1070.48	2649.98	1308.73	2.55	-0.40	0.076	
70.00	-15.73	-1.83	0.00	-80.27	0.00	80.27	2102.63	1051.31	2530.36	1249.65	2.99	-0.44	0.072	
75.00	-15.00	-1.83	0.00	-71.12	0.00	71.12	2063.13	1031.57	2412.02	1191.21	3.47	-0.47	0.067	
77.00	-14.72	-1.83	0.00	-67.47	0.00	67.47	2047.01	1023.51	2365.08	1168.02	3.67	-0.48	0.065	
80.00	-14.08	-1.83	0.00	-61.97	0.00	61.97	2022.49	1011.24	2295.09	1133.46	3.98	-0.50	0.062	
80.75	-13.92	-1.83	0.00	-60.60	0.00	60.60	959.89	479.95	1109.20	547.79	4.06	-0.51	0.125	
85.00	-13.52	-1.84	0.00	-52.82	0.00	52.82	952.00	476.00	1072.31	529.57	4.52	-0.53	0.114	
90.00	-13.05	-1.84	0.00	-43.64	0.00	43.64	941.66	470.83	1028.33	507.86	5.11	-0.58	0.100	
95.00	-12.59	-1.84	0.00	-34.44	0.00	34.44	930.16	465.08	983.85	485.89	5.73	-0.62	0.084	
98.00	-9.65	-1.72	0.00	-28.93	0.00	28.93	922.71	461.35	956.96	472.61	6.13	-0.64	0.072	
100.00	-9.49	-1.71	0.00	-25.50	0.00	25.50	917.51	458.75	938.97	463.72	6.40	-0.65	0.065	
105.00	-9.13	-1.69	0.00	-16.94	0.00	16.94	903.70	451.85	893.83	441.43	7.09	-0.68	0.048	
108.00	-5.30	-1.22	0.00	-11.88	0.00	11.88	894.87	447.43	866.66	428.01	7.52	-0.69	0.034	
110.00	-5.18	-1.20	0.00	-9.45	0.00	9.45	888.75	444.37	848.53	419.06	7.81	-0.69	0.028	
115.00	-4.87	-1.15	0.00	-3.44	0.00	3.44	872.64	436.32	803.20	396.67	8.55	-0.70	0.014	
118.00	0.00	-1.09	0.00	0.00	0.00	0.00	862.42	431.21	776.03	383.25	8.99	-0.71	0.000	

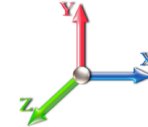
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E				<b>Iterations</b> 21
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.21	<b>Ss</b> 0.20
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.36	<b>SA</b> 0.04
				<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		815.25	0.00	0.04	0.02	19.90	
6.50	RT1	241.27	0.01	0.05	0.03	6.75	
10.00		557.03	0.01	0.06	0.03	18.56	
15.00		781.35	0.03	0.07	0.04	28.91	
20.00		764.40	0.05	0.07	0.04	29.64	
25.00		747.45	0.08	0.07	0.04	29.92	
30.00		730.50	0.12	0.07	0.03	30.14	
35.00		713.55	0.17	0.07	0.03	30.14	
40.00		696.60	0.22	0.06	0.02	29.38	
40.75	Bot - Section 2	103.03	0.23	0.06	0.02	4.33	
45.00	Top - Section 1	1067.1	0.27	0.05	0.01	42.32	
50.00		564.03	0.34	0.04	0.01	18.54	
55.00		549.90	0.41	0.01	0.01	11.11	
60.00		535.78	0.49	-0.01	0.01	1.07	
65.00		521.65	0.57	-0.04	0.01	-9.41	
70.00		507.53	0.67	-0.08	0.02	-17.36	
75.00		493.40	0.76	-0.10	0.04	-20.94	
77.00	Bot - Section 3	193.41	0.80	-0.11	0.06	-8.34	
80.00		460.48	0.87	-0.12	0.08	-19.03	
80.75	Top - Section 2	113.85	0.89	-0.12	0.08	-4.59	
85.00		241.06	0.98	-0.11	0.12	-7.44	
90.00		275.76	1.10	-0.07	0.19	-3.13	
95.00		267.28	1.23	0.03	0.27	4.58	
98.00	Appurtenance(s)	2380.5	1.30	0.13	0.34	91.80	
100.00		102.51	1.36	0.21	0.39	5.60	
105.00		250.33	1.50	0.49	0.54	25.38	
108.00	Appurtenance(s)	3163.4	1.58	0.73	0.65	423.67	
110.00		95.73	1.64	0.92	0.73	15.08	
115.00		233.38	1.80	1.52	0.97	52.15	
118.00	Appurtenance(s)	4055.2	1.89	1.98	1.14	1086.03	
<b>Totals:</b>		<b>22,222.9</b>				<b>1,914.8</b>	<b>Total Wind: 28,459.8</b>

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

## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E						<b>Iterations</b> 21
<b>Gust Response Factor</b>	1.10			<b>Sds</b>	0.21	<b>Ss</b> 0.20
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.10	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.36	<b>SA</b>	0.04	<b>Seismic Importance Factor</b> 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-22.16	-2.01	0.00	-210.74	0.00	210.74	3290.40	1645.20	5438.37	2685.80	0.00	0.00	0.00	0.060
5.00	-21.32	-1.99	0.00	-200.70	0.00	200.70	3250.13	1625.07	5260.26	2597.84	0.01	-0.02	0.058	
6.50	-21.07	-1.99	0.00	-197.71	0.00	197.71	3237.83	1618.92	5207.01	2571.54	0.02	-0.03	0.058	
6.50	-21.07	-1.99	0.00	-197.71	0.00	197.71	3237.83	1618.92	5207.01	2571.54	0.02	-0.03	0.058	
10.00	-20.50	-1.98	0.00	-190.74	0.00	190.74	3208.72	1604.36	5083.09	2510.35	0.04	-0.04	0.082	
15.00	-19.69	-1.96	0.00	-180.84	0.00	180.84	3166.15	1583.07	4906.98	2423.37	0.10	-0.07	0.081	
20.00	-18.90	-1.94	0.00	-171.04	0.00	171.04	3122.42	1561.21	4732.05	2336.98	0.20	-0.10	0.079	
25.00	-18.12	-1.92	0.00	-161.34	0.00	161.34	3077.54	1538.77	4558.41	2251.23	0.32	-0.13	0.078	
30.00	-17.36	-1.90	0.00	-151.75	0.00	151.75	3031.51	1515.76	4386.18	2166.17	0.48	-0.16	0.076	
35.00	-16.62	-1.87	0.00	-142.28	0.00	142.28	2984.33	1492.17	4215.48	2081.87	0.67	-0.20	0.074	
40.00	-15.89	-1.84	0.00	-132.92	0.00	132.92	2936.00	1468.00	4046.44	1998.38	0.89	-0.23	0.072	
40.75	-15.78	-1.84	0.00	-131.53	0.00	131.53	2928.65	1464.32	4021.23	1985.93	0.93	-0.23	0.072	
45.00	-14.73	-1.81	0.00	-123.69	0.00	123.69	2282.79	1141.40	3138.94	1550.20	1.14	-0.26	0.086	
50.00	-14.12	-1.79	0.00	-114.67	0.00	114.67	2249.07	1124.53	3015.37	1489.18	1.43	-0.29	0.083	
55.00	-13.52	-1.79	0.00	-105.70	0.00	105.70	2214.18	1107.09	2892.60	1428.55	1.76	-0.33	0.080	
60.00	-12.93	-1.79	0.00	-96.77	0.00	96.77	2178.15	1089.08	2770.77	1368.38	2.12	-0.36	0.077	
65.00	-12.36	-1.79	0.00	-87.83	0.00	87.83	2140.97	1070.48	2649.98	1308.73	2.51	-0.40	0.073	
70.00	-11.80	-1.80	0.00	-78.86	0.00	78.86	2102.63	1051.31	2530.36	1249.65	2.95	-0.43	0.069	
75.00	-11.25	-1.80	0.00	-69.88	0.00	69.88	2063.13	1031.57	2412.02	1191.21	3.42	-0.46	0.064	
77.00	-11.03	-1.80	0.00	-66.29	0.00	66.29	2047.01	1023.51	2365.08	1168.02	3.61	-0.48	0.062	
80.00	-10.56	-1.80	0.00	-60.90	0.00	60.90	2022.49	1011.24	2295.09	1133.46	3.92	-0.50	0.059	
80.75	-10.44	-1.80	0.00	-59.55	0.00	59.55	959.89	479.95	1109.20	547.79	4.00	-0.50	0.120	
85.00	-10.13	-1.80	0.00	-51.91	0.00	51.91	952.00	476.00	1072.31	529.57	4.45	-0.53	0.109	
90.00	-9.78	-1.80	0.00	-42.91	0.00	42.91	941.66	470.83	1028.33	507.86	5.03	-0.57	0.095	
95.00	-9.44	-1.80	0.00	-33.88	0.00	33.88	930.16	465.08	983.85	485.89	5.64	-0.61	0.080	
98.00	-7.23	-1.69	0.00	-28.48	0.00	28.48	922.71	461.35	956.96	472.61	6.03	-0.63	0.068	
100.00	-7.11	-1.68	0.00	-25.10	0.00	25.10	917.51	458.75	938.97	463.72	6.30	-0.64	0.062	
105.00	-6.84	-1.66	0.00	-16.69	0.00	16.69	903.70	451.85	893.83	441.43	6.98	-0.67	0.045	
108.00	-3.98	-1.20	0.00	-11.72	0.00	11.72	894.87	447.43	866.66	428.01	7.40	-0.68	0.032	
110.00	-3.88	-1.18	0.00	-9.31	0.00	9.31	888.75	444.37	848.53	419.06	7.69	-0.68	0.027	
115.00	-3.65	-1.13	0.00	-3.39	0.00	3.39	872.64	436.32	803.20	396.67	8.41	-0.69	0.013	
118.00	0.00	-1.09	0.00	0.00	0.00	0.00	862.42	431.21	776.03	383.25	8.85	-0.69	0.000	

## Wind Loading - Shaft

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

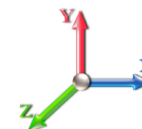


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



**Iterations** 22

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	1.00	0.85	7.442	8.19	193.14	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	189.20	1.000	0.000	5.00	17.279	17.28	141.5	0.0	815.2
6.50	RT1	1.00	0.85	7.442	8.19	188.02	1.000	0.000	1.50	5.114	5.11	41.9	0.0	241.3
10.00		1.00	0.85	7.442	8.19	185.26	1.000	0.000	3.50	11.809	11.81	96.7	0.0	557.0
15.00		1.00	0.85	7.442	8.19	181.33	1.000	0.000	5.00	16.568	16.57	135.6	0.0	781.3
20.00		1.00	0.90	7.896	8.69	182.72	1.000	0.000	5.00	16.212	16.21	140.8	0.0	764.4
25.00		1.00	0.95	8.276	9.10	182.91	1.000	0.000	5.00	15.856	15.86	144.3	0.0	747.5
30.00		1.00	0.98	8.600	9.46	182.23	1.000	0.000	5.00	15.500	15.50	146.6	0.0	730.5
35.00		1.00	1.01	8.883	9.77	180.91	1.000	0.000	5.00	15.144	15.14	148.0	0.0	713.6
40.00		1.00	1.04	9.137	10.05	179.10	1.000	0.000	5.00	14.788	14.79	148.6	0.0	696.6
40.75	Bot - Section 2	1.00	1.05	9.173	10.09	178.80	1.000	0.000	0.75	2.188	2.19	22.1	0.0	103.0
45.00	Top - Section 1	1.00	1.07	9.366	10.30	176.92	1.000	0.000	4.25	12.474	12.47	128.5	0.0	1067.2
50.00		1.00	1.09	9.576	10.53	177.81	1.000	0.000	5.00	14.346	14.35	151.1	0.0	564.0
55.00		1.00	1.12	9.770	10.75	175.09	1.000	0.000	5.00	13.990	13.99	150.4	0.0	549.9
60.00		1.00	1.14	9.951	10.95	172.15	1.000	0.000	5.00	13.634	13.63	149.2	0.0	535.8
65.00		1.00	1.16	10.120	11.13	169.02	1.000	0.000	5.00	13.278	13.28	147.8	0.0	521.7
70.00		1.00	1.17	10.279	11.31	165.71	1.000	0.000	5.00	12.923	12.92	146.1	0.0	507.5
75.00		1.00	1.19	10.430	11.47	162.26	1.000	0.000	5.00	12.567	12.57	144.2	0.0	493.4
77.00	Bot - Section 3	1.00	1.20	10.488	11.54	160.84	1.000	0.000	2.00	4.927	4.93	56.8	0.0	193.4
80.00		1.00	1.21	10.572	11.63	158.67	1.000	0.000	3.00	7.381	7.38	85.8	0.0	460.5
80.75	Top - Section 2	1.00	1.21	10.593	11.65	158.12	1.000	0.000	0.75	1.825	1.83	21.3	0.0	113.8
85.00		1.00	1.22	10.708	11.78	157.11	1.000	0.000	4.25	10.192	10.19	120.0	0.0	241.1
90.00		1.00	1.24	10.838	11.92	153.31	1.000	0.000	5.00	11.661	11.66	139.0	0.0	275.8
95.00		1.00	1.25	10.962	12.06	149.41	1.000	0.000	5.00	11.305	11.31	136.3	0.0	267.3
98.00	Appurtenance(s)	1.00	1.26	11.034	12.14	147.02	1.000	0.000	3.00	6.612	6.61	80.3	0.0	156.3
100.00		1.00	1.27	11.081	12.19	145.41	1.000	0.000	2.00	4.337	4.34	52.9	0.0	102.5
105.00		1.00	1.28	11.195	12.31	141.33	1.000	0.000	5.00	10.593	10.59	130.5	0.0	250.3
108.00	Appurtenance(s)	1.00	1.29	11.262	12.39	138.84	1.000	0.000	3.00	6.185	6.19	76.6	0.0	146.1
110.00		1.00	1.29	11.305	12.44	137.17	1.000	0.000	2.00	4.052	4.05	50.4	0.0	95.7
115.00		1.00	1.30	11.412	12.55	132.94	1.000	0.000	5.00	9.881	9.88	124.0	0.0	233.4
118.00	Appurtenance(s)	1.00	1.31	11.474	12.62	130.37	1.000	0.000	3.00	5.758	5.76	72.7	0.0	136.0
<b>Totals:</b>								<b>118.00</b>			<b>3,330.0</b>	<b>13,062.1</b>		

## Discrete Appurtenance Forces

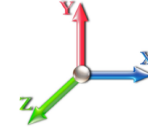
<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	118.00	RRUS 4415 B25	3	11.474	12.621	0.38	0.75	1.84	138.00	0.000	0.000	23.29	0.00	0.00
2	118.00	KRD 9011461-B66A-B2A	3	11.474	12.621	0.65	0.75	12.74	396.60	0.000	0.000	160.83	0.00	0.00
3	118.00	Platform w/ Hand Rails	1	11.474	12.621	1.00	1.00	40.00	2000.00	0.000	0.000	504.84	0.00	0.00
4	118.00	ALU - External Notch	3	11.514	12.666	0.38	0.75	0.88	26.40	0.000	2.000	11.11	0.00	22.23
5	118.00	AIR6449 B41	3	11.474	12.621	0.53	0.75	9.03	309.00	0.000	0.000	113.92	0.00	0.00
6	118.00	ACU-A20-N	4	11.514	12.666	0.38	0.75	0.21	4.00	0.000	2.000	2.66	0.00	5.32
7	118.00	4449 B71 + B85	3	11.474	12.621	0.38	0.75	2.22	219.60	0.000	0.000	27.97	0.00	0.00
8	118.00	(Kickers and braces)	1	11.474	12.621	1.00	1.00	7.00	146.00	0.000	0.000	88.35	0.00	0.00
9	118.00	MS-H1436 (Heavy Collar	1	11.474	12.621	1.00	1.00	2.25	136.70	0.000	0.000	28.40	0.00	0.00
10	118.00	APXVAALL24_43-U-NA20	3	11.474	12.621	0.52	0.75	31.88	384.00	0.000	0.000	402.33	0.00	0.00
11	118.00	800 MHz RRH	3	11.514	12.666	0.38	0.75	2.80	159.00	0.000	2.000	35.48	0.00	70.96
12	108.00	800-10121	3	11.262	12.388	0.61	0.75	9.50	132.30	0.000	0.000	117.71	0.00	0.00
13	108.00	Platform + HR & V-Brace	1	11.262	12.388	1.00	1.00	49.00	2246.00	0.000	0.000	607.01	0.00	0.00
14	108.00	RRUS-11	3	11.262	12.388	0.38	0.75	2.83	153.00	0.000	0.000	35.12	0.00	0.00
15	108.00	860 10025	6	11.262	12.388	0.38	0.75	0.41	7.20	0.000	0.000	5.02	0.00	0.00
16	108.00	HPA-65R-BUU-H6	3	11.262	12.388	0.64	0.75	18.47	153.00	0.000	0.000	228.86	0.00	0.00
17	108.00	DC6-48-60-18-8F	1	11.262	12.388	0.75	0.75	1.10	31.80	0.000	0.000	13.66	0.00	0.00
18	108.00	LGP21401	6	11.262	12.388	0.38	0.75	2.83	114.00	0.000	0.000	35.12	0.00	0.00
19	108.00	RRUS-32 B2	3	11.262	12.388	0.38	0.75	3.08	180.00	0.000	0.000	38.19	0.00	0.00
20	98.00	BXA-171063-12BF	3	11.057	12.163	0.70	0.80	10.01	45.00	0.000	1.000	121.76	0.00	121.76
21	98.00	DB-T1-6Z-8AB-0Z	1	11.104	12.214	0.40	0.80	1.92	18.90	0.000	3.000	23.45	0.00	70.35
22	98.00	LNx-6514DS-VTM	3	11.057	12.163	0.66	0.80	16.12	99.30	0.000	1.000	196.01	0.00	196.01
23	98.00	RRH2X60-700	3	11.104	12.214	0.40	0.80	4.20	180.00	0.000	3.000	51.30	0.00	153.90
24	98.00	RRH2X60-AWS	3	11.104	12.214	0.40	0.80	4.20	180.00	0.000	3.000	51.30	0.00	153.90
25	98.00	Low Profile Platform	1	11.034	12.137	1.00	1.00	22.00	1500.00	0.000	0.000	267.02	0.00	0.00
26	98.00	SBNHH-1D65A	6	11.057	12.163	0.66	0.80	23.43	201.00	0.000	1.000	284.93	0.00	284.93

**Totals: 9,160.80**

**3,475.63**

## Total Applied Force Summary

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 22

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		141.45	929.80	0.00	0.00
6.50		41.87	275.63	0.00	0.00
10.00		96.67	637.21	0.00	0.00
15.00		135.62	895.90	0.00	0.00
20.00		140.81	878.95	0.00	0.00
25.00		144.35	862.00	0.00	0.00
30.00		146.63	845.05	0.00	0.00
35.00		147.99	828.10	0.00	0.00
40.00		148.63	811.15	0.00	0.00
40.75		22.07	120.21	0.00	0.00
45.00		128.52	1164.52	0.00	0.00
50.00		151.12	678.58	0.00	0.00
55.00		150.36	664.45	0.00	0.00
60.00		149.24	650.33	0.00	0.00
65.00		147.82	636.20	0.00	0.00
70.00		146.12	622.08	0.00	0.00
75.00		144.17	607.95	0.00	0.00
77.00		56.84	239.23	0.00	0.00
80.00		85.84	529.21	0.00	0.00
80.75		21.27	131.03	0.00	0.00
85.00		120.04	338.42	0.00	0.00
90.00		139.01	390.31	0.00	0.00
95.00		136.31	381.83	0.00	0.00
98.00	(20) attachments	1076.03	2449.23	0.00	980.86
100.00		52.86	134.75	0.00	0.00
105.00		130.45	296.98	0.00	0.00
108.00	(26) attachments	1157.30	3191.42	0.00	0.00
110.00		50.39	105.39	0.00	0.00
115.00		124.04	257.53	0.00	0.00
118.00	(28) attachments	1471.85	4069.75	0.00	98.51
	<b>Totals:</b>	<b>6,805.67</b>	<b>24,623.21</b>	<b>0.00</b>	<b>1,079.37</b>

## Calculated Forces

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

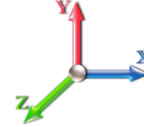


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 22

**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	-24.62	-6.82	0.00	-602.57	0.00	602.57	3290.40	1645.20	5438.37	2685.80	0.00	0.000	0.000	0.164
5.00	-23.69	-6.69	0.00	-568.48	0.00	568.48	3250.13	1625.07	5260.26	2597.84	0.03	-0.060	0.000	0.159
6.50	-23.41	-6.66	0.00	-558.44	0.00	558.44	3237.83	1618.92	5207.01	2571.54	0.05	-0.078	0.000	0.157
6.50	-23.41	-6.66	0.00	-558.44	0.00	558.44	3237.83	1618.92	5207.01	2571.54	0.05	-0.078	0.000	0.157
10.00	-22.76	-6.59	0.00	-535.12	0.00	535.12	3208.72	1604.36	5083.09	2510.35	0.13	-0.120	0.000	0.220
15.00	-21.86	-6.48	0.00	-502.17	0.00	502.17	3166.15	1583.07	4906.98	2423.37	0.30	-0.204	0.000	0.214
20.00	-20.97	-6.37	0.00	-469.75	0.00	469.75	3122.42	1561.21	4732.05	2336.98	0.56	-0.288	0.000	0.208
25.00	-20.10	-6.25	0.00	-437.90	0.00	437.90	3077.54	1538.77	4558.41	2251.23	0.90	-0.372	0.000	0.201
30.00	-19.25	-6.13	0.00	-406.65	0.00	406.65	3031.51	1515.76	4386.18	2166.17	1.34	-0.456	0.000	0.194
35.00	-18.41	-6.00	0.00	-376.02	0.00	376.02	2984.33	1492.17	4215.48	2081.87	1.86	-0.539	0.000	0.187
40.00	-17.60	-5.85	0.00	-346.04	0.00	346.04	2936.00	1468.00	4046.44	1998.38	2.47	-0.622	0.000	0.179
40.75	-17.47	-5.84	0.00	-341.65	0.00	341.65	2928.65	1464.32	4021.23	1985.93	2.57	-0.634	0.000	0.178
45.00	-16.30	-5.72	0.00	-316.81	0.00	316.81	2282.79	1141.40	3138.94	1550.20	3.16	-0.704	0.000	0.212
50.00	-15.62	-5.59	0.00	-288.20	0.00	288.20	2249.07	1124.53	3015.37	1489.18	3.94	-0.784	0.000	0.200
55.00	-14.95	-5.45	0.00	-260.27	0.00	260.27	2214.18	1107.09	2892.60	1428.55	4.81	-0.872	0.000	0.189
60.00	-14.29	-5.31	0.00	-233.02	0.00	233.02	2178.15	1089.08	2770.77	1368.38	5.77	-0.958	0.000	0.177
65.00	-13.65	-5.17	0.00	-206.47	0.00	206.47	2140.97	1070.48	2649.98	1308.73	6.82	-1.040	0.000	0.164
70.00	-13.02	-5.03	0.00	-180.62	0.00	180.62	2102.63	1051.31	2530.36	1249.65	7.95	-1.119	0.000	0.151
75.00	-12.41	-4.89	0.00	-155.47	0.00	155.47	2063.13	1031.57	2412.02	1191.21	9.16	-1.194	0.000	0.137
77.00	-12.17	-4.83	0.00	-145.70	0.00	145.70	2047.01	1023.51	2365.08	1168.02	9.67	-1.223	0.000	0.131
80.00	-11.64	-4.74	0.00	-131.20	0.00	131.20	2022.49	1011.24	2295.09	1133.46	10.45	-1.264	0.000	0.122
80.75	-11.51	-4.72	0.00	-127.65	0.00	127.65	959.89	479.95	1109.20	547.79	10.65	-1.275	0.000	0.245
85.00	-11.17	-4.61	0.00	-107.59	0.00	107.59	952.00	476.00	1072.31	529.57	11.81	-1.328	0.000	0.215
90.00	-10.78	-4.47	0.00	-84.55	0.00	84.55	941.66	470.83	1028.33	507.86	13.25	-1.416	0.000	0.178
95.00	-10.39	-4.34	0.00	-62.18	0.00	62.18	930.16	465.08	983.85	485.89	14.77	-1.489	0.000	0.139
98.00	-7.97	-3.20	0.00	-48.18	0.00	48.18	922.71	461.35	956.96	472.61	15.72	-1.526	0.000	0.111
100.00	-7.84	-3.15	0.00	-41.78	0.00	41.78	917.51	458.75	938.97	463.72	16.37	-1.547	0.000	0.099
105.00	-7.54	-3.01	0.00	-26.03	0.00	26.03	903.70	451.85	893.83	441.43	18.01	-1.588	0.000	0.067
108.00	-4.38	-1.77	0.00	-16.99	0.00	16.99	894.87	447.43	866.66	428.01	19.01	-1.605	0.000	0.045
110.00	-4.28	-1.72	0.00	-13.45	0.00	13.45	888.75	444.37	848.53	419.06	19.69	-1.614	0.000	0.037
115.00	-4.03	-1.59	0.00	-4.86	0.00	4.86	872.64	436.32	803.20	396.67	21.39	-1.628	0.000	0.017
118.00	0.00	-1.47	0.00	-0.10	0.00	0.10	862.42	431.21	776.03	383.25	22.41	-1.630	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> CT46133-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	28.5	0.00	29.48	0.00	0.00	2533.86
0.9D + 1.6W 97 mph Wind	28.5	0.00	22.10	0.00	0.00	2504.98
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.5	0.00	47.27	0.00	0.00	613.64
1.2D + 1.0E	2.0	0.00	29.55	0.00	0.00	213.45
0.9D + 1.0E	2.0	0.00	22.16	0.00	0.00	210.74
1.0D + 1.0W 60 mph Wind	6.8	0.00	24.62	0.00	0.00	602.57

### Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-12.09	-19.89	0.00	-538.02	0.00	-538.02	959.89	479.95	1109.20	547.79	80.75	0.996
0.9D + 1.6W 97 mph Wind	-8.65	-19.54	0.00	-527.46	0.00	-527.46	959.89	479.95	1109.20	547.79	80.75	0.974
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-26.03	-5.01	0.00	-136.53	0.00	-136.53	959.89	479.95	1109.20	547.79	80.75	0.276
1.2D + 1.0E	-13.92	-1.83	0.00	-60.60	0.00	-60.60	959.89	479.95	1109.20	547.79	80.75	0.125
0.9D + 1.0E	-10.44	-1.80	0.00	-59.55	0.00	-59.55	959.89	479.95	1109.20	547.79	80.75	0.120
1.0D + 1.0W 60 mph Wind	-11.51	-4.72	0.00	-127.65	0.00	-127.65	959.89	479.95	1109.20	547.79	80.75	0.245

### 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	6.5	(4) PLT-6"x1.5"(1.25" Hole)	293.4	5.28	37.1	306.5	37.1	9	11	296.5	37.1	8	11	306.53	392.4	347.34	0.882



## Base Plate Summary

<b>Structure:</b> CT46133-A-SB	<b>Code:</b> EIA/TIA-222-G	12/18/2020
<b>Site Name:</b> Shelton-north	<b>Exposure:</b> C	
<b>Height:</b> 118.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 29



Reactions	Base Plate	Anchor Bolts
Original Design	<b>Yield (ksi):</b> 50.00	<b>Bolt Circle:</b> 48.15
<b>Moment (kip-ft):</b> 1810.00	<b>Width (in):</b> 46.00	<b>Number Bolts:</b> 12.00
<b>Axial (kip):</b> 18.50	<b>Style:</b> Clipped	<b>Bolt Type:</b> 2.25" 18J
<b>Shear (kip):</b> 20.00	<b>Polygon Sides:</b> 0.00	<b>Bolt Diameter (in):</b> 2.25
Analysis (1.2D + 1.6W)	<b>Clip Length (in):</b> 6.00	<b>Yield (ksi):</b> 75.00
<b>Moment (kip-ft):</b> 2533.86	<b>Effective Len (in):</b> 11.03	<b>Ultimate (ksi):</b> 100.00
<b>Axial (kip):</b> 29.48	<b>Moment (kip-in):</b> 823.44	<b>Arrangement:</b> Clustered
<b>Shear (kip):</b> 28.53	<b>Allow Stress (ksi):</b> 67.50	<b>Cluster Dist (in):</b> 5.00
	<b>Applied Stress (ksi):</b> 42.52	<b>Start Angle (deg):</b> 45.00
	<b>Stress Ratio:</b> 0.63	Compression
		<b>Force (kip):</b> 214.44
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.84
		Tension
		<b>Force (kip):</b> 206.56
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.81



# Monopole Mat Foundation Design

Date  
12/18/2020

<b>Customer Name:</b>	T-Mobile Sprint	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	118
<b>Site Number:</b>	CT46133-A-SBA	<b>Engineer Name:</b>	J. Chen
<b>Engr. Number:</b>	100516	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations
Monopole
Analysis

**Structure Type:**

**Analysis or Design?**

**Base Reactions (Factored):**

Axial Load (Kips):	29.5	Shear Force (Kips):	28.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2533.9

Allowable overstress %: 5.0%

**Foundation Geometries:**

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	4.5	Depth of Base BG (ft.):	3.5
Pier Height A. G. (ft.):	0.00	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	22	Width of Pad (ft.):	22

Final Length of pad (ft)	22.0	Final width of pad (ft):	22.0
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**Material Properties and Rebar Info:**

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	20	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
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):	24	Qty. of Rebar in Pad (W):	24
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24
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Apply 1.35 factor for e/w Per G: 1.35

**Soil Design Parameters:**

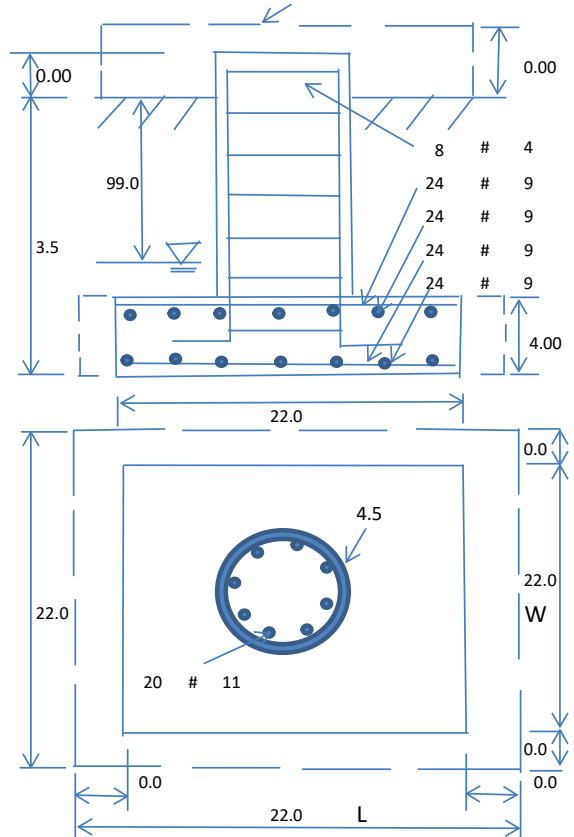
Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	70.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.94	Total Dry Soil Weight (Kips):	0.12
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.12	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1936.11	Total Dry Concrete Weight (Kips):	290.42
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	290.42	Total Vertical Load on Base (Kips):	320.03

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	3066	< Allowable Factored Soil Bearing (psf):	9000	0.34	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	3200.8	> Design Factored Momont (kips-ft):	2648	0.83	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.21				OK!



**Check the capacities of Reinforcing Concrete:**

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

Load/  
Capacity  
Ratio

**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	3101.6	> Design Factored Moment (Mu, Kips-F	2519.7	0.81	OK!
Calculated Shear Capacity (Kips):	303.4	> Design Factored Shear (Kips):	28.5	0.09	OK!
Calculated Tension Capacity (Tn, Kips):	1684.8	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	2995.5	> Design Factored Axial Load (Pu Kips):	29.5	0.01	OK!
Moment & Axial Strength Combination:	0.81	OK! Check Tie Spacing (Design/Required):	0.5		OK!
Pier Reinforcement Ratio:	0.014	Reinforcement Ratio is satisfied per ACI			

**(2).Concrete Pad:**

One-Way Design Shear Capacity (L-Direction, Kips):	963.8	> One-Way Factored Shear (L-D. Kips):	170.7	0.18	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	963.8	> One-Way Factored Shear (W-D., Kips)	170.7	0.18	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	841.5	> One-Way Factored Shear (C-C, Kips):	172.9	0.21	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0020	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0020		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	4683.7	> Moment at Bottom ( L-Dir. K-Ft):	920.1	0.20	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	4683.7	> Moment at Bottom ( W-Dir. K-Ft):	920.1	0.20	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	6596.2	> Moment at Bottom ( C-C Dir. K-Ft):	1301.2	0.20	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct. ):	0.0020	OK! Upper Steel Reinf. Ratio (W-Dir. ):	0.0020		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4683.7	> Moment at the top (L-Dir K-Ft):	501.9	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4683.7	> Moment at the top (W-Dir K-Ft):	501.9	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	6596.2	> Moment at the top (C-C Dir. K-Ft):	468.0	0.07	OK!

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

Moment transferred by punching shear:	1013.6	k-ft.	Max. factored shear stress $v_{u,CD}$ :	6.8	Psi
Max. factored shear stress $v_{u,AB}$ :	9.7	Psi	Factored shear Strength $\phi v_n$ :	164.3	Psi
Max. factored shear stress $v_u$ :	9.7	Psi	Check Usage of Punching Shear Capacity:	0.06	OK!

# EXHIBIT 8



**Tower Engineering Solutions**

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

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## Post-Mod Antenna Mount Analysis Report

**Existing 120-Ft Monopole Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT46133-A-SBA / Shelton-north**

**Customer Site Name: Shelton-north**

**Carrier Name: T-Mobile Sprint (App#: 143978, V2)**

**Carrier Site ID / Name: CT73XC004**

**Site Location: 162 Birdseye Rd**

**Shelton, Connecticut**

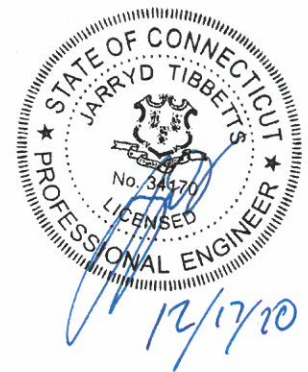
**Fairfield County**

**Latitude: 41.325777**

**Longitude: -73.148694**

**Analysis Result:**

**Max Structural Usage: 87.5% [Pass]**



**Report Prepared By : Prakash Koirala**

## **Introduction**

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Support Rails at 118.00' 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 12/10/2020.
Antenna Loading	SBA- Application #: 143978, v2
Existing Modification	N/A
Proposed Modification	TES Project No. 100807

## **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

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**

(1) Platform w/ Support Rails at 118.00' elevation

## **Final Antenna Configuration**

- 3 RFS APXVAALL24-43-U-NA20
- 3 Ericsson AIR32 KRD901146-1\_B66A\_B2A
- 3 Ericsson AIR6449 B41
- 4 RFS ACU-A20-N RET
- 3 Ericsson 4415 B25
- 3 Ericsson 4449 B71 + B85

- 3 Alcatel-Lucent 800 MHz RRH
- 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 87.5%, which occurs in the face horizontal. 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.

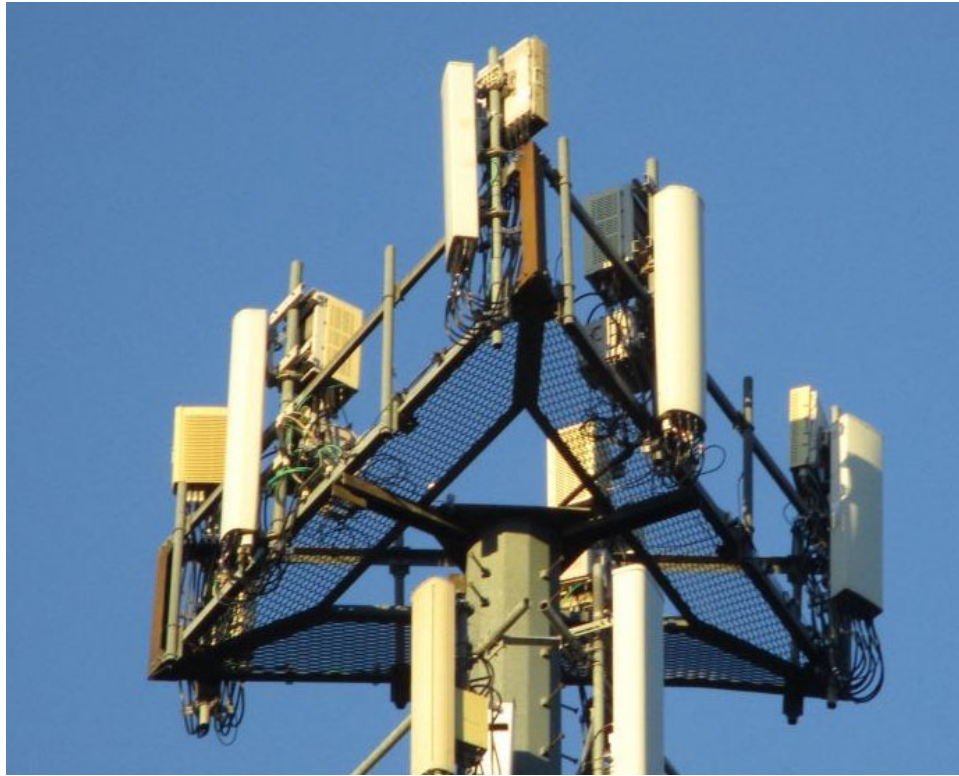
### **Attachments**

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.





Sector: **A**

12/17/2020

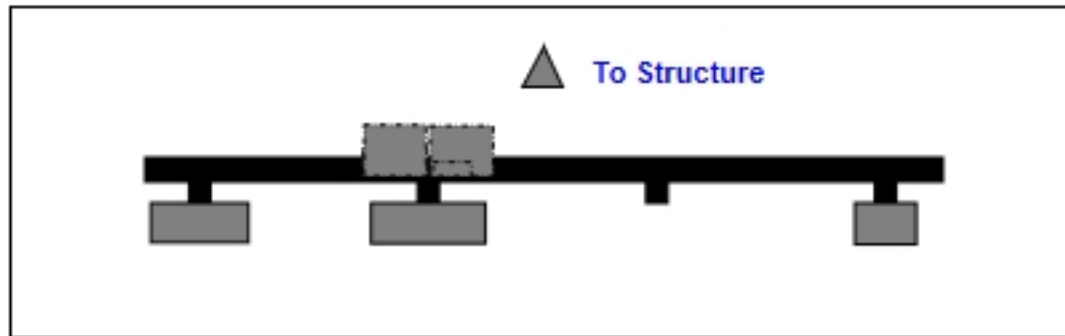


Structure Type: Monopole

Mount Elev: 118

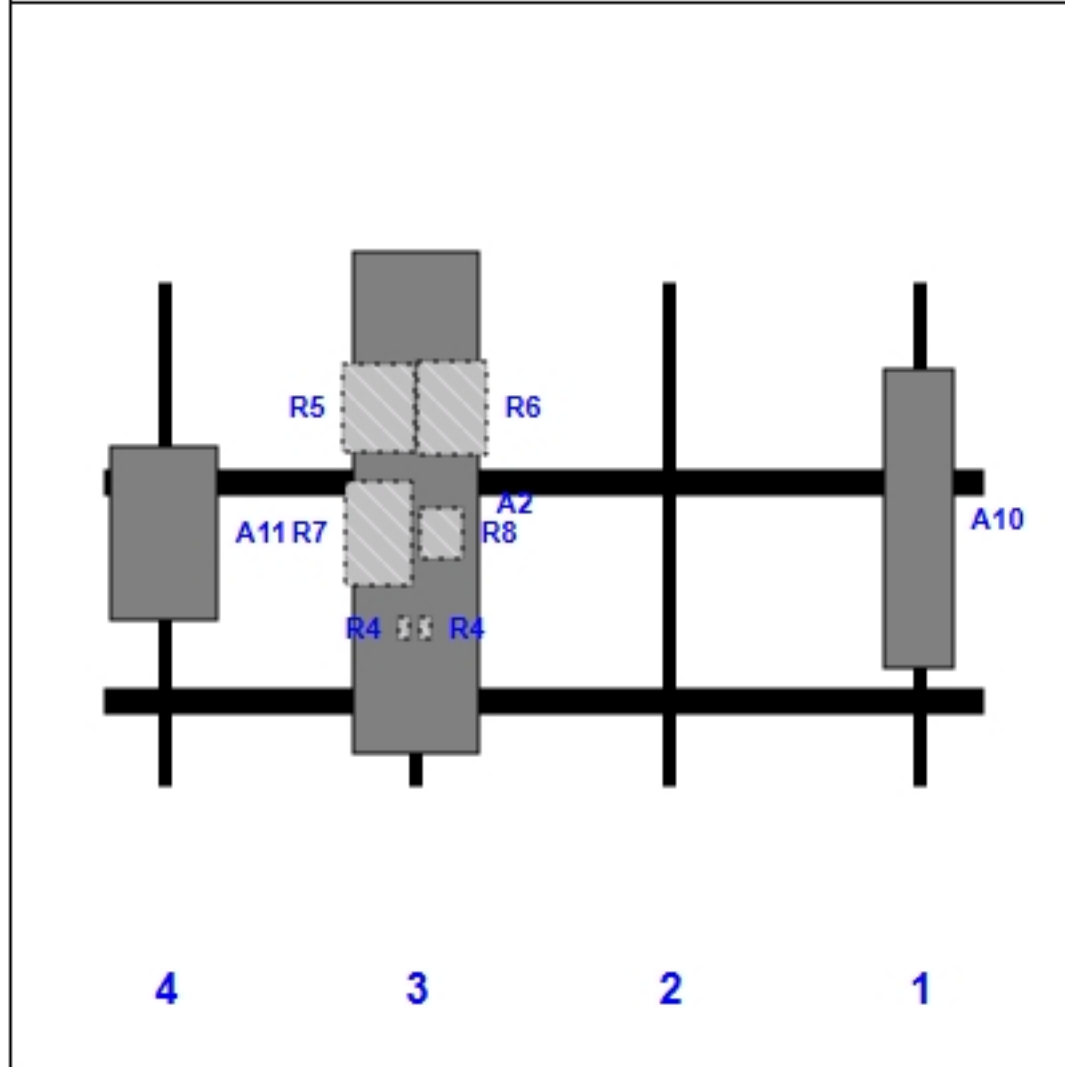
Page: 1

**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
A10	AIR32 KRD901146-1_B66A_B2A	57.00	12.90	156.00	1	a	Front	45.00		Added	
A2	APXVAALL24-43-U-NA20	95.90	24.00	60.00	3	a	Front	42.00		Added	
R4	ACU-A20-N RET	4.00	2.00	60.00	3	a	Behind	66.00	-2.00	Retained	
R5	4415 B25	16.50	13.40	60.00	3	a	Behind	24.00	-7.00	Added	
R6	4449 B71 + B85	17.90	13.20	60.00	3	a	Behind	24.00	7.00	Added	
R7	800 MHz RRH	19.70	13.00	60.00	3	a	Behind	48.00	-7.00	Added	
R8	800 MHz Filter	10.00	8.00	60.00	3	a	Behind	48.00	5.00	Added	
R4	ACU-A20-N RET	4.00	2.00	60.00	3	b	Behind	66.00	2.00	Retained	
A11	AIR6449 B41	33.10	20.50	12.00	4	a	Front	48.00		Added	

Sector: **B**

12/17/2020

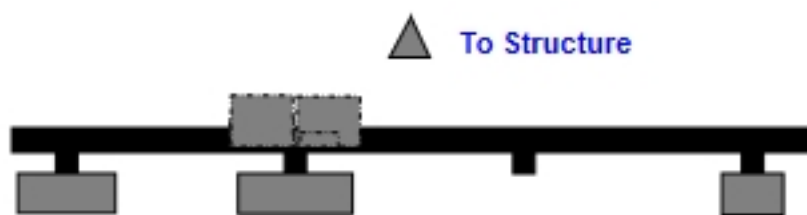


Structure Type: Monopole

Mount Elev: 118

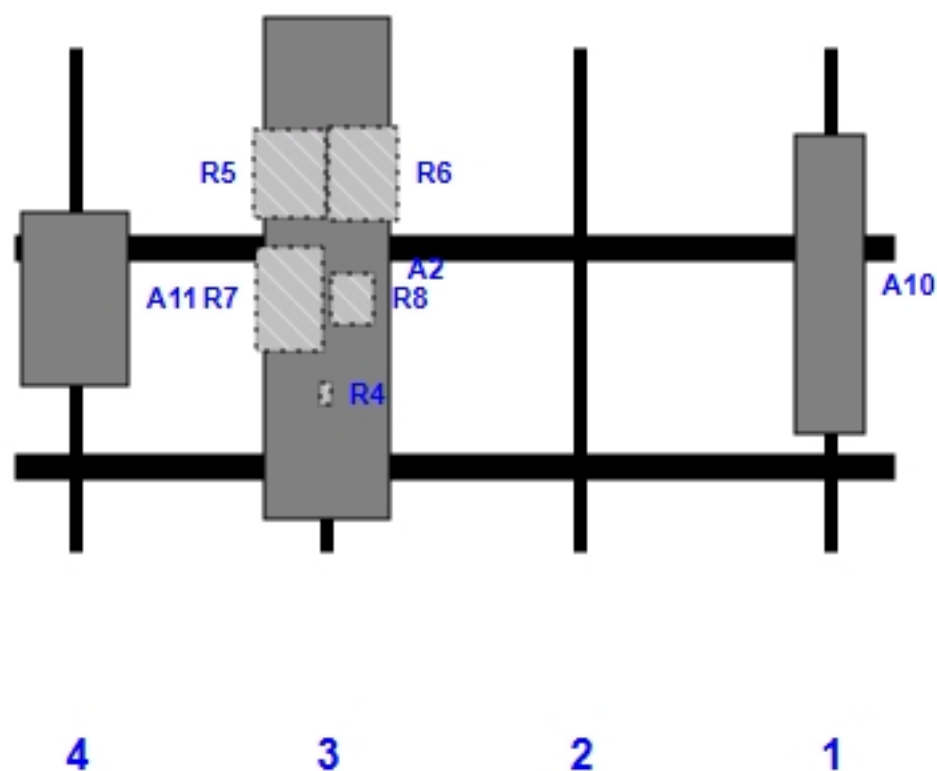
Page: 2

**Plan View**



**Front View**

Looking Toward Structure



Ref #	Model	Height (n)	Width (n)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A10	AIR32 KRD901146-1_B66A_B2A	57.00	12.90	156.00	1	a	Front	45.00		Added	
A2	APXVAALL24-43-U-NA20	95.90	24.00	60.00	3	a	Front	42.00		Added	
R4	ACU-A20-N RET	4.00	2.00	60.00	3	a	Behind	66.00		Retained	
R5	4415 B25	16.50	13.40	60.00	3	a	Behind	24.00	-7.00	Added	
R6	4449 B71 + B85	17.90	13.20	60.00	3	a	Behind	24.00	7.00	Added	
R7	800 MHz RRH	19.70	13.00	60.00	3	a	Behind	48.00	-7.00	Added	
R8	800 MHz Filter	10.00	8.00	60.00	3	a	Behind	48.00	5.00	Added	
A11	AIR6449 B41	33.10	20.50	12.00	4	a	Front	48.00		Added	

Sector: **C**

12/17/2020



Structure Type: Monopole

Mount Elev: 118

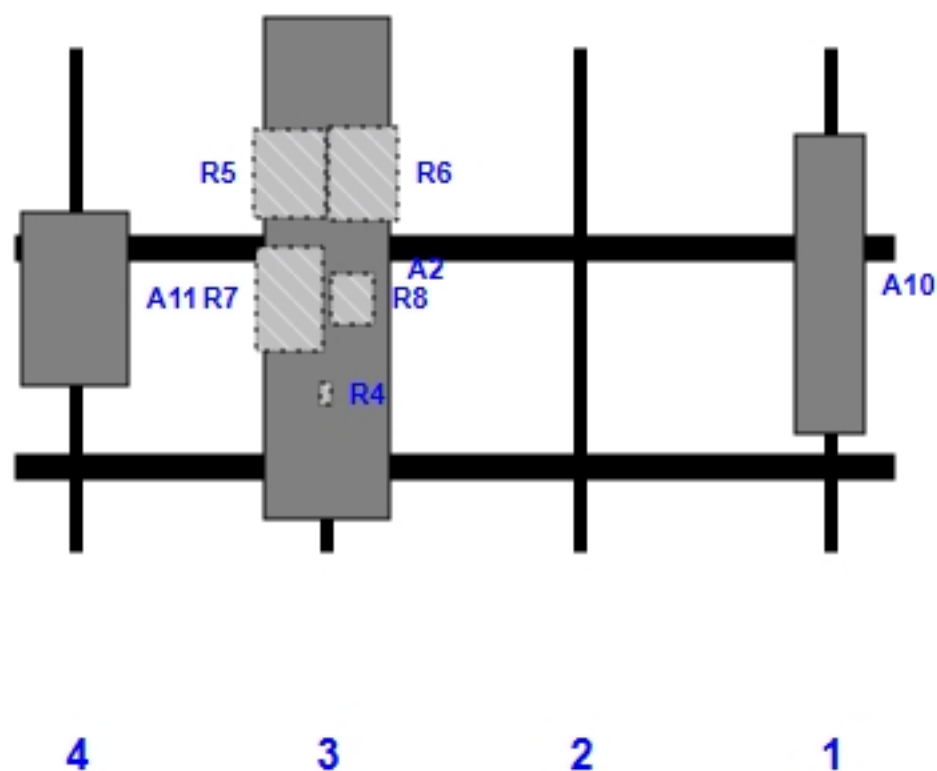
Page: 3

**Plan View**



**Front View**

Looking Toward Structure

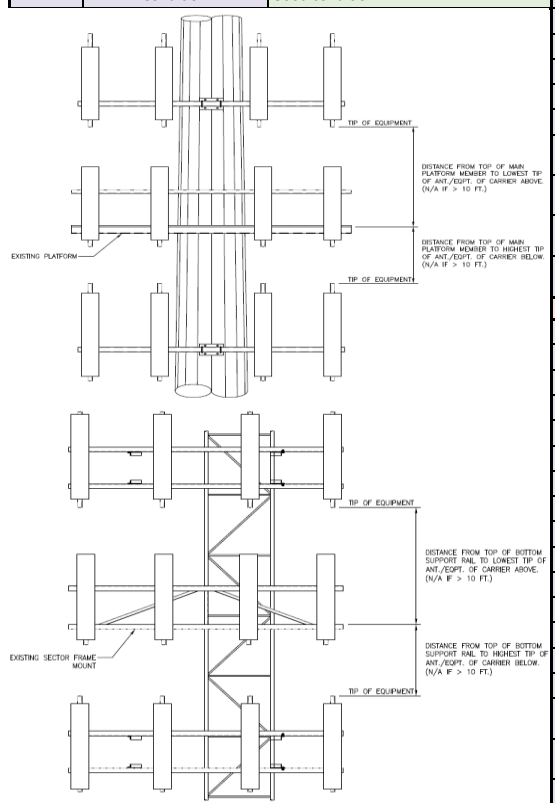


Ref #	Model	Height (n)	Width (n)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A10	AIR32 KRD901146-1_B66A_B2A	57.00	12.90	156.00	1	a	Front	45.00		Added	
A2	APXVAALL24-43-U-NA20	95.90	24.00	60.00	3	a	Front	42.00		Added	
R4	ACU-A20-N RET	4.00	2.00	60.00	3	a	Behind	66.00		Retained	
R5	4415 B25	16.50	13.40	60.00	3	a	Behind	24.00	-7.00	Added	
R6	4449 B71 + B85	17.90	13.20	60.00	3	a	Behind	24.00	7.00	Added	
R7	800 MHz RRH	19.70	13.00	60.00	3	a	Behind	48.00	-7.00	Added	
R8	800 MHz Filter	10.00	8.00	60.00	3	a	Behind	48.00	5.00	Added	
A11	AIR6449 B41	33.10	20.50	12.00	4	a	Front	48.00		Added	



Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector		Sector B										
Sector A:	60.00	Deg	Leg A:	Deg		Ant <sub>1a</sub>										
Sector B:	180.00	Deg	Leg B:	Deg		Ant <sub>1b</sub>	APXVTM14-ALU-120	12.60	6.30	56.30	r from 1 1	126.333	32.00	7.00	210.00	190
Sector C:	300.00	Deg	Leg C:	Deg		Ant <sub>1c</sub>	RRH 8x20-25-FEU	17.52	5.71	25.39	r from 1 1	127.833	14.00	-4.00		192
Sector D:		Deg	Leg D:	Deg		Ant <sub>2a</sub>										
						Ant <sub>2b</sub>	Empty					126.917				

Climbing Facility Information		
Location:	195.00 Deg	Sector B
Climbing Facility	Corrosion Type:	Good condition.
	Access:	Climbing path was unobstructed.
	Condition:	Good condition.



Ant <sub>2c</sub>																
Ant <sub>3a</sub>	RRH 1900 4x45	11.10	11.40	25.00	r from 1 1	127.333	22.00	-8.00			199					
Ant <sub>3b</sub>	APXVSPP18	11.80	7.90	72.00	r from 1 1	124.833	52.00	9.00	210.00		197					
Ant <sub>3c</sub>	RRH 2x50-800	13.00	14.00	15.80	r from 1 1	124.5	56.00	-8.00			202					
Ant <sub>4a</sub>																
Ant <sub>4b</sub>	Empty						126.917									
Ant <sub>4c</sub>																
Ant <sub>5a</sub>																
Ant <sub>5b</sub>																
Ant <sub>5c</sub>																
Ant on Standoff																
Ant on Standoff																
Ant on Tower																
Ant on Tower																

Sector C																
Ant <sub>1a</sub>																
Ant <sub>1b</sub>	APXVTM14-ALU-120	12.60	6.30	56.30	r from 1 1	126.333	32.00	7.00	340.00		211					
Ant <sub>1c</sub>	RRH 8x20-25-FEU	17.52	5.71	25.39	r from 1 1	127.833	14.00	-4.00			215					
Ant <sub>2a</sub>																
Ant <sub>2b</sub>	Empty						126.917									
Ant <sub>2c</sub>																
Ant <sub>3a</sub>	RRH 1900 4x45	11.10	11.40	25.00	r from 1 1	127.333	22.00	-8.00			222					
Ant <sub>3b</sub>	APXVSPP18	11.80	7.90	72.00	r from 1 1	124.833	52.00	9.00	340.00		220					
Ant <sub>3c</sub>	RRH 2x50-800	13.00	14.00	15.80	r from 1 1	124.5	56.00	-8.00			224					
Ant <sub>4a</sub>																
Ant <sub>4b</sub>	Empty						126.917									
Ant <sub>4c</sub>																
Ant <sub>5a</sub>																
Ant <sub>5b</sub>																
Ant <sub>5c</sub>																
Ant on Standoff																
Ant on Standoff																
Ant on Tower																
Ant on Tower																

Sector D																
Ant <sub>1a</sub>																
Ant <sub>1b</sub>																
Ant <sub>1c</sub>																
Ant <sub>2a</sub>																
Ant <sub>2b</sub>																
Ant <sub>2c</sub>																
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Ant <sub>4c</sub>																
Ant <sub>5a</sub>																
Ant <sub>5b</sub>																
Ant <sub>5c</sub>																
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 #  
1270234

<b>Tower Owner:</b>	SBA	<b>Mapping Date:</b>	12/10/2020
<b>Site Name:</b>	Shelton-north	<b>Tower Type:</b>	Monopole
<b>Site Number or ID:</b>	CT46133-A-SBA	<b>Tower Height (Ft.):</b>	122.5
<b>Mapping Contractor:</b>	TEP	<b>Mount Elevation (Ft.):</b>	122.5

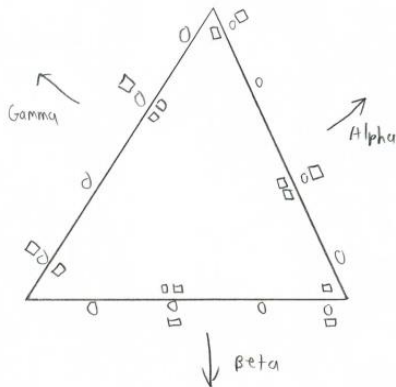
This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is 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**

shelton - North

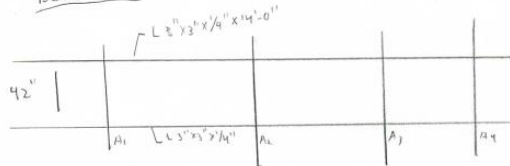
Safety @ 195°  
 Coax: (1) 1 1/4" FH  
 (1) 1/2" FH  
 8'-0" to MNT Below  
 WAF: 5 3/4"  
 Elev: 122'-6"

Plan



Az  
 MNT  
 A: 60°  
 B: 150°  
 C: 300°  
 ANT  
 A: 60°  
 B: 210°  
 C: 300°

Back View



M P Connection

A3: (1) 1/2" Ø U-Bolt  
 3/4" C-C

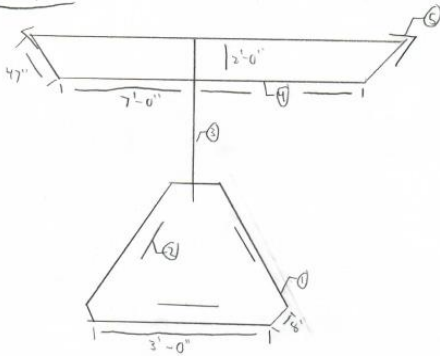
Top

L 3/4 x 6" x 5" w x 1/4"  
 w/ (1) 1/2" Ø U-Bolt 3" C-C  
 w/ (1) Z PL 5" x 1 1/2" x 1" D x 1/2" Th  
 w/ (1) 1/2" Ø Bolt

Bottom

W/ (1) 1/2" x 1'-0" T x 5" w x 5" D x 1/4" w th  
 w/ (1) 1/2" Ø U-Bolts 3" C-C, 10" C-C  
 w/ (1) Z PL 5" w x 1 1/2" T x 1" D x 1/2" Th  
 w/ (1) 1/2" Ø Bolt  
 w/ (1) PL 2" x 5" x 1/4"  
 w/ (1) 1/2" Ø Bolts

Steel Plan



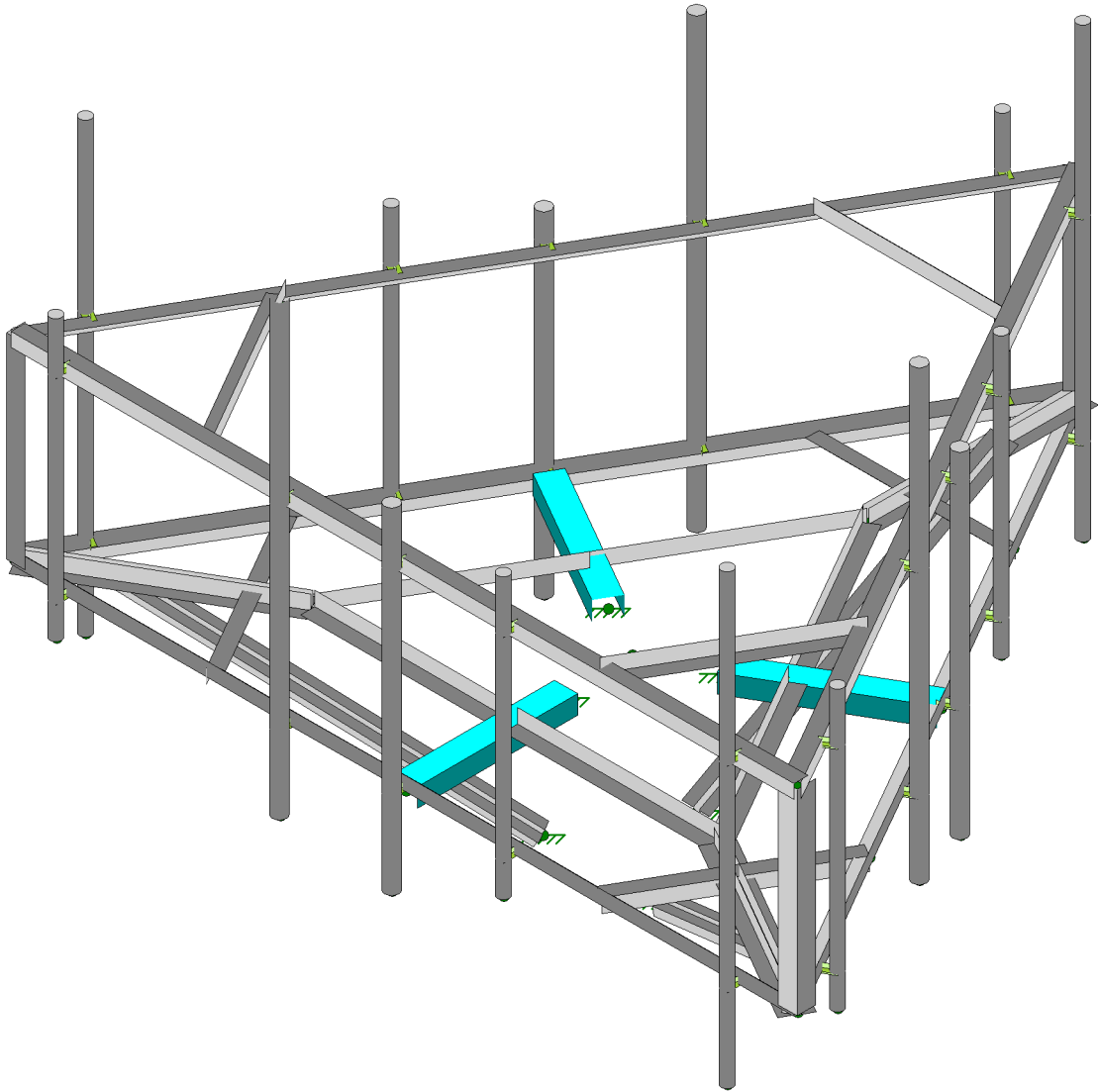
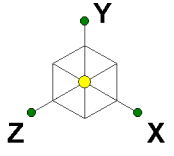
- ① PL 3/4" Th  
 w/ (1) sets of 3/4" Ø Bolts  
 3/4" C-C, 1 1/2" Between sets
- ② L 4" x 4" x 5" w x 3/4"
- ③ C 4" T x 5" w x 3/4" L x 3/8" Th  
 w/ (1) 1" Ø Bolts 5" C-C  
 w/ (1) 3/4" Ø Bolts 1 1/4" ME to Grating
- ④ L 3" x 3" x 1/4" w/ 1/2" Ø Bolts 10" C-C
- ⑤ B PL 7" x 1" x 2 1/2" T x 1/4" Th  
 w/ (1) 1/2" Ø Bolts per side  
 2 1/2" C-C

Equipment

	M P	Model	U	C	B	H
A1	2.4" Ø x 8'-0"	APYV (M14-ALU)	78"	12"	32"	7"
A2	2.4" Ø x 5'-0"	Empty	53"	60"	-	-
A3	2.4" Ø x 8'-0"	APYV SFP15	80"	108"	52"	9"
A4	2.4" Ø x 5'-0"	Empty	53"	156"	-	-
E1	Pos 1	RRH 4x20-25-FEU	-	-	14"	4"
E2	Pos 2	RRH 400 4x45	-	-	22"	8"
E3	Pos 3	RRH 2x50-500	-	-	56"	8"

All sectors the same





Tower Engineering Solutio...

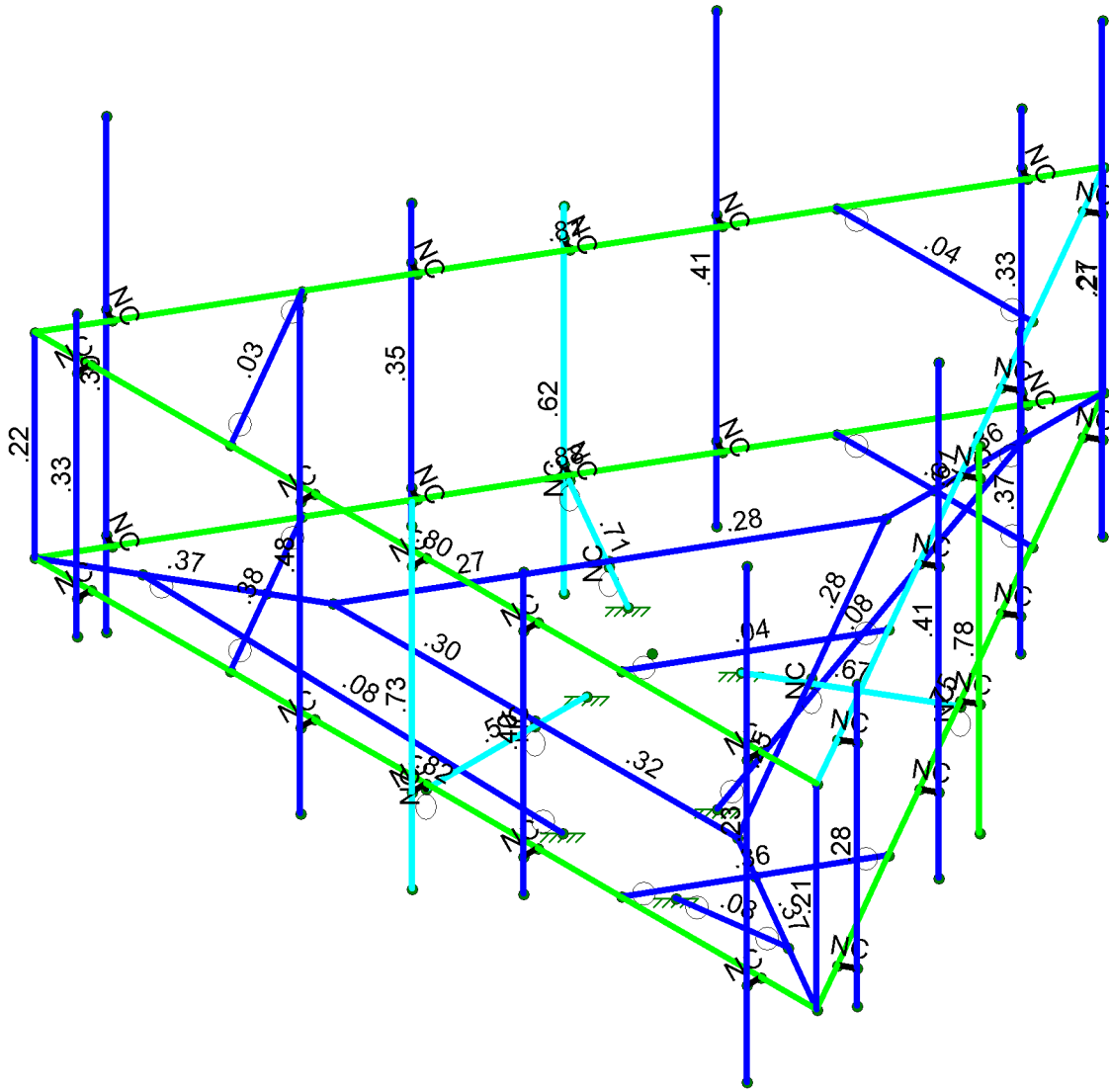
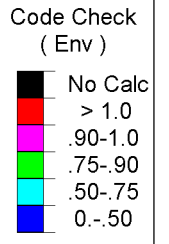
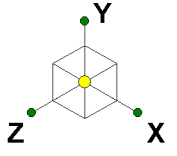
TES Project No. 100807

CT46133-A-SBA\_MT\_LO\_Loads Only\_G

SK - 1

Dec 17, 2020 at 8:32 AM

CT46133-A-SBA\_100807\_G\_RISA\_...



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

Tower Engineering Solutio...

CT46133-A-SBA\_MT\_LO\_Loads Only\_G

SK - 2

Dec 17, 2020 at 8:32 AM

TES Project No. 100807

CT46133-A-SBA\_100807\_G\_RISA\_...







Ô [ { ] æ ^ K V [ , ^ / À ) \* ä ^ i ä \* Á U [ ( ç ) • Æ Š Š Ó  
 Ô • ä } ^ K  
 Æ à Á { ^ ! K V Ò Ò Á U [ ( ç ) ä ^ i ä \* Á U [ ( ç ) • Æ Š Š Ó  
 T [ ä ^ / Á æ ^ K Ò V I F H Æ È Ú Ó Æ T V ' Š U ' Š [ ä • Á U ] ( ç ) Ô

Ô & Á I È G E G E  
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 Ô @ & ^ a Á Ô K ' ' ' '

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	Š a a \ ]	Y Ä c ä	Y Ä c ä	Z Ä c ä	V \ ] Ä z ä	Ö c ä & Ø [ { / Å ä j È È
Fí	PH	Í	HÉ	I È J Í	€	
Fİ	ÖUÖ	€	€	€	€	
Fĩ	PH	G	€	I È I Í	€	
Fì	PH	G	€	I È J Í	€	
FJ	PH ÇE	G	HÉ	I È I Í	€	
GE	PH ÇE	G	HÉ	I È J Í	€	
GF	PHJ	ÈG	€	I È I Í	€	
GG	PIE	ÈG	€	I È J Í	€	
GH	PIF	ÈG	HÉ	I È I Í	€	
G	PIG	ÈG	HÉ	I È J Í	€	
G	PIÍ	È	€	I È I Í	€	
G	PIÎ	È	€	I È J Í	€	
G	PIÏ	È	HÉ	I È I Í	€	
G	PIÌ	È	HÉ	I È J Í	€	
GJ	PIH	Í	Í È	I È J Í	€	
H€	PII	Í	È È	I È J Í	€	
HF	PI ÇE	G	I È F I Í Í	I È J Í	€	
HG	PI ÇE	G	È È I H H	I È J Í	€	
HH	PI ÇE	ÈG	I È I Í Í	I È J Í	€	
H	PI ÇE	ÈG	È È H H H	I È J Í	€	
H	PIJ	È	I È F I Í Í	I È J Í	€	
H	PIE	È	È È I H H H	I È J Í	€	
H	PIF	È È J I F	€	È È F J F H G	€	
H	PIG	È È G I Í	€	È È I I È G	€	
HJ	PIH	È È J I F	HÉ	È È F J F H G	€	
I€	PII	È È G I Í	HÉ	È È I I È G	€	
IF	PIÍ	G È Ç E H	€	È È I H J I J	€	
IG	PIÎ	G È G I Í	€	È È I È H F	€	
IH	PIÏ	G È Ç E H	HÉ	È È I H J I J	€	
I	PIÌ	G È G I Í	HÉ	È È I È H F	€	
I	PIJ	I È È F I Í	€	È È I I Í Í	€	
I	PIE	I È G I Í	€	È È F I F J J	€	
I	PIF	I È È F I Í	HÉ	È È I I Í Í	€	
I	PIG	I È G I Í	HÉ	È È F I F J J	€	
IJ	PIH	I È J I G I	€	H È I I F I	€	
I€	PII	I È G I Í J	€	H È I J È G	€	
IF	PIÍ	I È J I G I	HÉ	H È I I F I	€	
IG	PIÎ	I È G I Í J	HÉ	H È I J È G	€	
IH	PIÏ	È È G I Í	Í È	È È I I È G	€	
I	PIÌ	È È G I Í	È È	È È I I È G	€	
I	PIJ	G È G I Í	I È F I Í Í	È È I È H F	€	
I	PIE	G È G I Í	È È I H H	È È I È H F	€	
I	PIF	I È G I Í	I È I Í Í	È È F I F J J	€	
I	PIG	I È G I Í	È È H H H	È È F I F J J	€	
IJ	PIH	I È G I Í	I È F I Í Í	H È I J È G	€	
I€	PII	I È G I Í	È È I H H H	H È I J È G	€	
IF	PIÍ	È È J I I F I	€	H È I I I J	€	
IG	PIÎ	È È G I Í	€	H È I J È G	€	
IH	PIÏ	È È J I I F I	HÉ	H È I I I J	€	
I	PIÌ	È È G I Í	HÉ	H È I J È G	€	
I	PIJ	È È J I I F I	€	È È I I F H	€	
I	PIE	È È G I Í	€	È È F I F J J	€	







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 T [ a / A a ^ K ÓVI Í FH E E U Ó E T V ' ŠU ' Š [ a a • ÁU } r ' Ó

Ó• A F Í E G E G E  
 Í K H A E T  
 Ó @ & ^ a Á Ó K ' ' '

**<chFc`YX'GhY'DfcdYfHjYg**

Saa\	Ó• a	Ó• a	p`	V@{ (AFOH) • a Ž D e E Y a j a Ž • a	Ü`	Ø Ž • a	Üc			
F	OEJG	GJEEE	FFFÍ	EH	EÍ	EJ	Í€	FÈ	ÍÍ	FÈ
G	OEÍ ÁÓ:EH	GJEEE	FFFÍ	EH	EÍ	EJ	HÍ	FÈ	ÍÍ	FÈ
H	OEÍ GÓ:IE	GJEEE	FFFÍ	EH	EÍ	EJ	Í€	FÈ	ÍÍ	FÈ
I	OEÍ EÁÓ:EOAUPO	GJEEE	FFFÍ	EH	EÍ	EJ	IG	FÈ	ÍÍ	FÈ
Í	OEÍ EÁÓ:EOA^&c	GJEEE	FFFÍ	EH	EÍ	EJ	IÍ	FÈ	ÍÍ	FÈ
Î	OEÍ HÓ:EO	GJEEE	FFFÍ	EH	EÍ	EJ	HÍ	FÈ	Í€	FÈ
Ï	OEÍ	GJEEE	FFFÍ	EH	EÍ	EJ	Í€	FÈ	ÍÍ	FÈ

**7c`X: cfa YX'GhY'DfcdYfHjYg**

Saa\	Ó• a	Ó• a	p`	V@{ (AFOH) • a Ž D e a h Y a j a Ž • a	Ø Ž • a			
F	OEÍ HÁUÁÓ:HH	GJÍ€€	FFHÍ	EH	EÍ	EJ	HH	ÍÍ
G	OEÍ HÁUÁÓ:IE	GJÍ€€	FFHÍ	EH	EÍ	EJ	Í€	ÍÍ

**5`i a jbi a`DfcdYfHjYg**

Saa\	Ó• a	Ó• a	p`	V@{ (AFOH) • a Ž D e a h A Ó E \c	Ø Ž • a	Ø Ž • a	Ø Ž • a	Ø Ž • a	Öc			
F	HEHPFI	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	FJ	FÍ	FH	FG	FIF
G	Í€ FÉVÍ	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	HÍ	HÍ	HÍ	G	FIF
H	Í€ HÉVÍ	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	GG	FÍ	FÍ	FH	FIF
I	Í€ HÉVÍ	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	H€	G	G	FJ	FIF
Í	Í€ GPHI	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	HÍ	G	G	G€	FIF
Î	Í€ FÉVÍ Á	FEE	HIIIE	EH	FEH	EIH	Vaa^AÓE F	G	FÍ	FÍ	FÍ	FIF

**A Ya Vyf Df ja Ufm8 UU**

Saa\	Q\ a c	R\ a c	S\ a c	Ü{ a e G H E ^ & a } U{ } ^	V{ } ^	Ó• a } A a c	T a e i a e	Ó• a } ÁU{ } ^	
F	TÍ	pFI	pÍOE		U{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
G	TFH	pFÍOE	pFÍOE	FÍ€	U{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
H	TFÍ	pFÍOE	pH		Ó{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
I	TFÍ	pFÍOE	pI	J€	Ó{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
Í	TFÍ	pFJ	pÍ	GG	Ó{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
Î	TÍÍ	pÍOE	pFGOE		U{ } ^	Ó• a	Ua * ^ A Ó * ^	OEÍ ÁÓ:EH	V{ } ^
Ï	TGG	pFI	pI	FÍ€	Ó{ } ^	Ó• a	Ó{ } ^	OEÍ ÁÓ:EH	V{ } ^
Ü	TGH	pFGOE	pH	FÍ€	Ó{ } ^	Ó• a	Ó{ } ^	OEÍ ÁÓ:EH	V{ } ^
J	TG	pÍ	pFÍ	FÍ€	Ó{ } ^	Ó• a	Ó{ } ^	OEÍ ÁÓ:EH	V{ } ^
F€	TGJ	pG	pGJ		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FF	THG	pH	pH		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FG	THGE	pH	pH		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FH	THH	pH OE	pH OE		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FI	THÍ	pHJ	pÍ€		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FÍ	THÍ	pIF	pIG		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FÍ	THÍ	pÍ	pÍ		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FÏ	THU	pÍ	pÍ		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
FÍ	TUFCE	pIH	pII		T{ } ^	Ó• a	Ua ^	OEÍ HÓ:EO	V{ } ^
FJ	TUGOE	pÍ OE	pÍ OE		T{ } ^	Ó• a	Ua ^	OEÍ HÓ:EO	V{ } ^
G€	TUHCE	pÍ OE	pÍ OE		T{ } ^	Ó• a	Ua ^	OEÍ HÓ:EO	V{ } ^
GF	TUI CE	pIJ	pÍ€		T{ } ^	Ó• a	Ua ^	OEÍ HÓ:EO	V{ } ^
GG	TIF	pIF	pIG		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^
GH	TIG	pIH	pII		Ü{ } ^	p{ } ^	p{ } ^	Ü{ } ^	V{ } ^











Ó[ ]əˆ K V[ , ^/Á) \* ă^!ă \* ÁU[ ]ă ) • ĚĚŠÓ  
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 T[ ] ă / ă ă ^ K ÒVI Ī FH ĚĚ ĚĚ ĚĚ TV' ŠU' Š[ ] ă • ÁU[ ] ˆ Ó

Ó• & Ā Ī ĚĚĚĚ  
 Ī KH ĀĚ  
 Ó @ & ^ ă Á Ó K ' ' ' '

**<chFc`YX'GhY'8 YgJ] b'DUFUa YhYfg f'7 cbh]bi YXL**

Šăă\	Úăă^	Š')* cŹcá	Šă^^Zcá	Šă::Zcá	Š&[ ] Á[ ]ZcáŠ&[ ] Á[ ]cŹcáŠĚ[ ] ŠĚ S^^	S::	Óă	Ů' } & cĭ
Ì	TGH	Ó[ ]^/Á)~ ĚĚ	HĚ JJ		Šă^^			Šăă\ă
J	TG	Ó[ ]^/Á)~ ĚĚ	HĚ JJ		Šă^^			Šăă\ă
FĚ	T ÚFOĚ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FF	T ÚGOĚ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FG	T ÚHOĚ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FH	T ÚIOĚ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FI	T ÚFÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FÍ	T ÚGÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FĪ	T ÚHÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FĪ	T ÚÍ Ó	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FÌ	T ÚFÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
FJ	T ÚGÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
GE	T ÚHÓ	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
GF	T ÚÍ Ó	T[ ]^} ă Źă^•	Ī		Šă^^			Šăă\ă
GG	T Í Ī Ě	Ú[ ] ] [ ] ă Źă^•	FI ĚĚĚ		Šă^^			Šăă\ă
GH	T Í Ī Ě	Ú[ ] ] [ ] ă Źă^•	FI ĚĚĚ		Šă^^			Šăă\ă
G	T Í Ī Ě	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
G	T Í Ī Ě	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
G	T Í Ī	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
G	T Í Í Ó	Ú[ ] ] [ ] ă Źă^•	HĚ GH		Šă^^			Šăă\ă
G	T Í J Ó	Ú[ ] ] [ ] ă Źă^•	FI	Ī	Šă^^			Šăă\ă
GJ	T Í Ě Ó	Ú[ ] ] [ ] ă Źă^•	FI ĚĚĚ	Ī	Šă^^			Šăă\ă
HĚ	T Í F	Ú[ ] ] [ ] ă Źă^•	FI ĚĚĚ	Ī	Šă^^			Šăă\ă
HF	T Í Ī	Ó[ ]^/Á)~ ĚĚ	Ī Ě Ī		Šă^^			Šăă\ă
HG	T Í J	Ú[ ] ] [ ] ă Źă^•	Ī		Šă^^			Šăă\ă
HH	T Í Ě	Ú[ ] ] [ ] ă Źă^•	Ī		Šă^^			Šăă\ă
HI	T Í F	Ú[ ] ] [ ] ă Źă^•	Ī		Šă^^			Šăă\ă
HÍ	T Í Ī	Ú[ ] ] [ ] ă Źă^•	HĚ		Šă^^			Šăă\ă
HĪ	T Í Ī	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
HĪ	T Í Ī	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
HĪ	T Í J	Ú[ ] ] [ ] ă Źă^•	HĚ		Šă^^			Šăă\ă
HJ	T Í Ě	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
I Ě	T Í F	Ú[ ] ] [ ] ă Źă^•	HĚ Ě		Šă^^			Šăă\ă
IF	T Í ĚĚ	Ó[ ]^/Á)~ ĚĚ	Ī Ě Ī		Šă^^			Šăă\ă
IG	T Í FOĚ	Ó[ ]^/Á)~ ĚĚ	Ī Ě Ī		Šă^^			Šăă\ă

**7c`X: cfa YX'GhY'8 YgJ] b'DUFUa YhYfg**

Šăă\	Úăă^	Š')* cŹcá	Šă^^Zcá	Šă::Zcá	Š&[ ] Á[ ]ZcáŠ&[ ] Á[ ]cŹcáŠĚ[ ] ŠĚ S^^	S::	Ó[ ] ĚĚ[ ] ĚĚ Óă	Ú	ă Źă^•	Ā, ĚĚĀ, ĚĚ
F	T Í Ě	Ú[ ] ] [ ] ă Źă^•	ĚĚ Ī Ī		Šă^^					
G	T Í F	Ú[ ] ] [ ] ă Źă^•	ĚĚ Ī F		Šă^^					
H	T Í G	Ú[ ] ] [ ] ă Źă^•	ĚĚ Ī Ī		Šă^^					

**5`i a ]bi a`8 YgJ] b'DUFUa YhYfg**

Šăă\	Úăă^	Š')* cŹcá	Šă^^Zcá	Šă::Zcá	Š&[ ] Á[ ]ZcáŠ&[ ] Á[ ]cŹcáŠĚ[ ] ŠĚ S^^	S::	Óă	Ů' } & cĭ
P[ ] Á[ ] cŹcá Á[ ] Á[ ] ă ĚĚ								









Ô[ { ]æ ^ K V[ , ^!Á) \* á ^!á \* Á[ ]'ç } • ÉŠŠÓ  
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 Ô @ & ^ Á Ó K ' ' ' '

**A Ya Vyf'Dc]bhi@UXg'f6 @ ' ) : ' 5 bhYbbUK 'GJXYL'f c bh]bi YXL**

	T ^ { a ^! / b æ ^ }	Öä ^ & ç }	T æ } æ ^ á ^ ž a ě É e á	Š ě & ç } Ž e ě á
Í	T ÚFÓ	Ý	F e e ě ĩ	F
Î	T ÚFÓ	Ý	F e e ě ĩ	Î ě
İ	T ÚHÖE	Ý	F İ ě ĩ	İ ě
Ï	T ÚHÖE	Ý	F İ ě ĩ	Ï ě
J	T ÚHÓ	Ý	G ĩ ě U G	Ě
F€	T ÚHÓ	Ý	G ĩ ě U G	Î ě
FF	T ÚHÓ	Ý	G ĩ ě U G	Ě
FG	T ÚHÓ	Ý	G ĩ ě U G	Î ě
FH	T ÚI ÖE	Ý	H ě ĩ G	Ě
FI	T ÚI ÖE	Ý	H ě ĩ G	İ ě
FÍ	T ÚI Ó	Ý	İ ě ĩ H	Ě
FÎ	T ÚI Ó	Ý	İ ě ĩ H	İ ě
Fİ	T ÚI Ö	Ý	İ ě ĩ H	Ě
FÏ	T ÚI Ö	Ý	İ ě ĩ H	İ ě
FJ	T ÚHÖE	Ý	H ě ĩ G	Î ě
G€	T ÚHÓ	Ý	İ ě ĩ F	Î ě
GF	T ÚHÓ	Ý	İ ě ĩ F	Î ě
GG	T ÚHÖE	Ý	H ě ĩ G	Î ě
GH	T ÚHÖE	Ý	G ě ĩ	G
G	T ÚHÓ	Ý	İ ě ĩ ĩ	G
G	T ÚHÓ	Ý	İ ě ĩ ĩ	G
G	T ÚHÖE	Ý	İ ě ĩ G	G
G	T ÚHÓ	Ý	İ ě ĩ ĩ	G
GJ	T ÚHÖE	Ý	İ ě ĩ J G	İ
H€	T ÚHÓ	Ý	İ ě ĩ J	İ
HF	T ÚHÓ	Ý	İ ě ĩ J	İ
HG	T ÚHÖE	Ý	İ ě ĩ F	İ
HH	T ÚHÓ	Ý	G ě ĩ ĩ	İ
HI	T ÚHÓ	Ý	G ě ĩ ĩ	İ

**A Ya Vyf'Dc]bhi@UXg'f6 @ ' \* : ' 5 bhYbbUK ]GJXYL**

	T ^ { a ^! / b æ ^ }	Öä ^ & ç }	T æ } æ ^ á ^ ž a ě É e á	Š ě & ç } Ž e ě á
F	T ÚFÖE	Ý	G ě ě J	F
G	T ÚFÖE	Ý	G ě ě J	Î ě
H	T ÚFÓ	Ý	H ě ě	F
I	T ÚFÓ	Ý	H ě ě	Î ě
Í	T ÚFÓ	Ý	H ě ě	F
Î	T ÚFÓ	Ý	H ě ě	Î ě
İ	T ÚHÖE	Ý	İ ě ě ĩ	Ě
Ï	T ÚHÖE	Ý	İ ě ě ĩ	Ï ě
J	T ÚHÓ	Ý	İ ě ě ĩ	Ě
F€	T ÚHÓ	Ý	İ ě ě ĩ	Î ě
FF	T ÚHÓ	Ý	İ ě ě ĩ	Ě
FG	T ÚHÓ	Ý	İ ě ě ĩ	Î ě
FH	T ÚI ÖE	Ý	F ě ě H	Ě
FI	T ÚI ÖE	Ý	F ě ě H	İ ě
FÍ	T ÚI Ó	Ý	G ě ě J	Ě
FÎ	T ÚI Ó	Ý	G ě ě J	İ ě
Fİ	T ÚI Ö	Ý	G ě ě J	Ě
FÏ	T ÚI Ö	Ý	G ě ě J	İ ě







Ô[ { ] æ ^ K V[ , ^ ] Ô ) \* a ^ a i a \* ÂU [ r ç ] • Æ S Ô  
 Ô • a ) ^ i K  
 R à A ^ { a ! K V Ò U Â U [ b & a b ] Æ e e i e i  
 T [ a ^ ] A æ ^ K Ô V I F H H Ô U Ô E T V ' S U ' S [ a a ^ Â U ] r ' Ô

Ô & A F I È G E G E  
 I K H A E T  
 Ô @ & a ^ a Ô K ' ' ' '

**9bj YcdY>c]bhF YUM]cbg]f7 cb]jbi YXL**

	R ā c	Y Ā á	S Ō	Y Ā á	S Ō	Z Ā á	S Ō	T Y Ā É c á	S Ō	T Y Ā É c á	S Ō	T Z Ā É c á	S Ō
FH	V   ç K	{ æ JG I È J	I	J I F È H	I	J È F È G	F						
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**9bj YcdY>c]bh8 ]gd' UWA Yb]g**

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# EXHIBIT 9

# MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE SPRINT

TOWER OWNER: SBA / TOWER OWNER SITE #: CT46133-A

CARRIER SITE #/NAME: CT73XC004

COORDINATES (LATITUDE: 41.325777°, LONGITUDE: -73.148694°)

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
D-2	STANDARD DETAILS	0
D-3	STANDARD DETAILS	0
D-4	STANDARD DETAILS	0
D-5	STANDARD DETAILS	0
D-6	STANDARD DETAILS	0
SAF-1	SAFETY CABLE GUIDE DETAILS	0
MS-H1242	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY (LARGE DIA. POLE)	
MPHW-1	METROSITE HEAVY COLLAR MOUNT PLATE WELDMENT	

**NOTE:**

1. THE MODIFICATION DRAWINGS ARE BASED ON THE TES PROJECT NO. 100515, DATED 12/11/2020.



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(800)-487-SITE

TES JOB NO:  
100807

CUSTOMER SITE NO:  
CT46133-A-SBA  
CUSTOMER SITE NAME:  
SHELTON-NORTH  
162 BIRDSEYE RD  
SHELTON, CT 06484

Exp.10/31/2021



12/31/2020

DRAWN BY: SP      CHECKED BY: PK/SK

REV.	DESCRIPTION	BY	DATE
△ 1	FIRST ISSUE	SP	12/31/20
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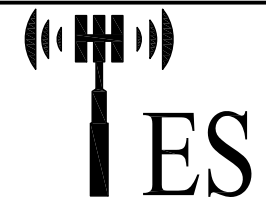
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SHEET NUMBER:      REV #:  
T-1                      0

**BILL OF MATERIALS**

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
<b>MATERIAL &amp; HARDWARE</b>							
1	1	MS-H1242	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY (LARGE DIA. POLE)	A-1, MS-H1242	151.0	151.0	Galvanized
<b>FOLLOWING ITEMS ARE "CUSTOM" PARTS</b>							
3	3	PST2875-6	2 1/2" PST (2.875" O.D. X 0.203" THK) X 6'-0" A53 GR-B 35KSI	A-1	35.59	106.8	GALVANIZED
18	19	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	D-1	1.17	22.2	(2) HHN & LKW-EA GALVANIZED
12	13	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	D-1	1.37	18.7	(2) HHN & LKW-EA GALVANIZED
6	6	L2225-10	L2" X 2" X 1/4" X 10'-0" A36	D-2	32.57	195.4	GALVANIZED (FINAL CUT LENGTH TO BE DETERMINED IN FIELD)
3	3	BRKW-HK	WELDMENT BRACKET	D-2, D-5	7.80	23.4	GALVANIZED
3	3	BRKW-3AL	WELDMENT BRACKET	D-2, D-6	4.90	14.7	GALVANIZED
12	13	---	BOLT 5/8" X 2" A325	D-2	0.38	4.9	(1) HHN & LKW-EA GALVANIZED
21	23	---	BOLT 5/8" X 2 1/4" A325	D-2	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
3	3	---	SPACER/SHIM FOR 5/8" BOLT (3/8" THICK)	D-2	0.00	0.0	GALVANIZED
6	6	L3325-6	L 3" X 3" X 1/4" X 6'-0" A36	D-3, D-4	30.01	180.0	GALVANIZED (FINAL CUT LENGTH TO BE DETERMINED IN FIELD)
18	19	---	BOLT 5/8" X 1 3/4" A325	D-3, D-4	0.36	6.8	(1) HHN & LKW-EA GALVANIZED
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)	SAF-1	0.00	0.0	GALVANIZED
<p align="center"><b>ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.</b></p> <p align="center"><b>180 IND PARK BLVD COMMERCE, GA 30529</b></p> <p align="center"><b>OFFICE: (706) 335-7045</b></p> <p align="center"><b>FAX: (706) 335-7056</b></p>							
NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.							
					<b>TOTAL WEIGHT (LBS) =</b>	<b>724.0</b>	



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TES JOB NO:  
 100807

CUSTOMER SITE NO:  
 CT46133-A-SBA  
 CUSTOMER SITE NAME:  
 SHELTON-NORTH  
 162 BIRDSEYE RD  
 SHELTON, CT 06484

DRAWN BY: SP      CHECKED BY: PK/SK

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	SP	12/31/20

SHEET TITLE:

**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, 2018 CONNECTICUT STATE BUILDING CODE 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](mailto: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<sup>a,b</sup>

BOLT LENGTH <sup>f</sup>	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 <sup>d</sup>	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS <sup>d</sup>
NOT MORE THAN 4d <sub>b</sub>	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d <sub>b</sub> BUT NOT MORE THAN 8d <sub>b</sub>	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d <sub>b</sub> BUT NOT MORE THAN 12d <sub>b</sub>	2/3 TURN	5/6 TURN	1 TURN

<sup>a</sup> 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.

<sup>b</sup> APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

<sup>c</sup> WHEN THE BOLT LENGTH EXCEEDS 12d<sub>b</sub>, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

<sup>d</sup> 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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SHEET NUMBER:

GN-1

REV #:

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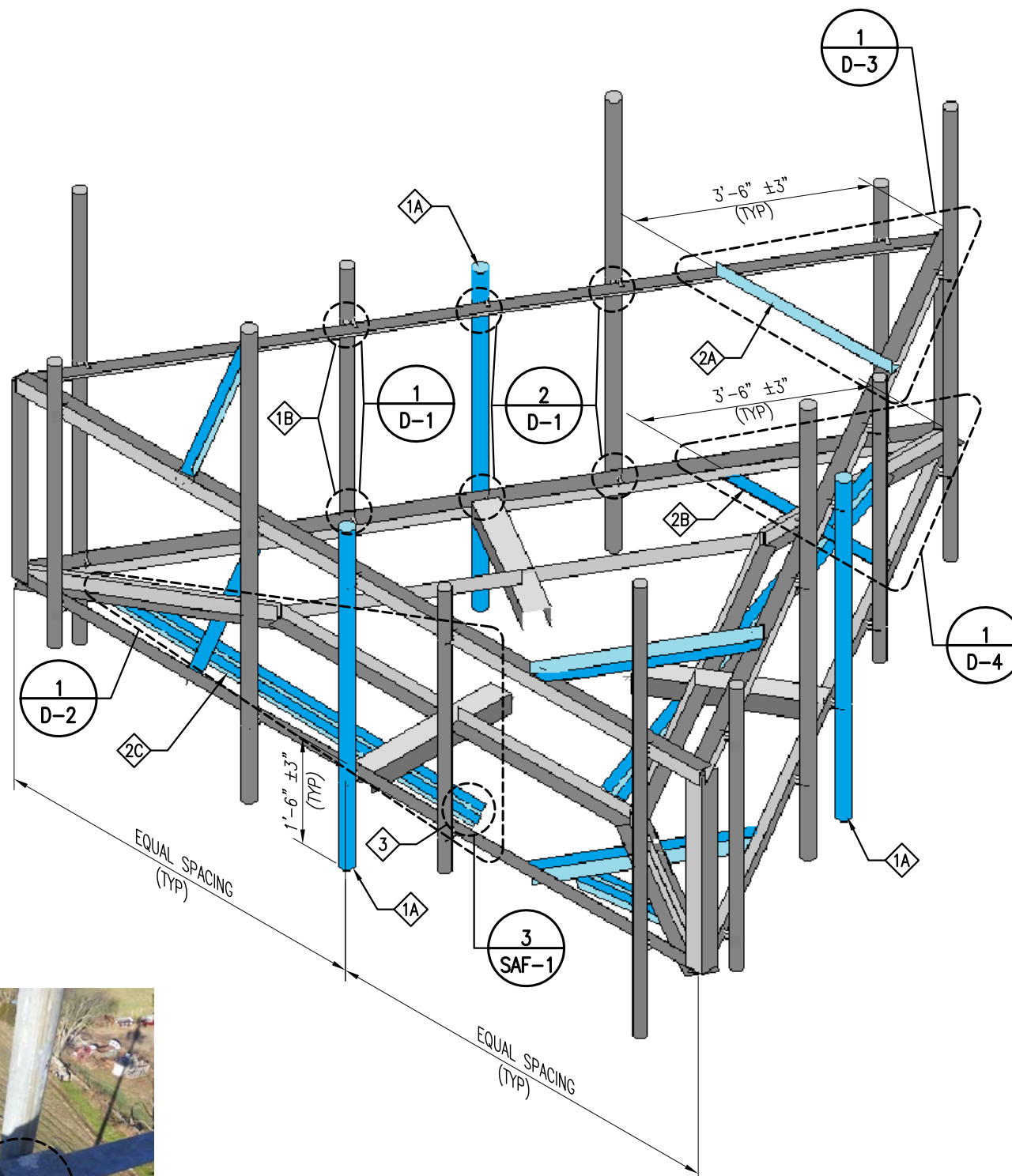
**SCOPE OF WORK**

- 1 A. INSTALL NEW 2 1/2" PST MOUNT PIPE (6'-0" LONG), (1) PER SECTOR AS SHOWN. SEE SHEET D-1 FOR DETAILS.
- B. REMOVE ALL EXISTING PIPE CONNECTION PLATES THEN RELOCATE EXISTING ANTENNA MOUNT PIPE DIRECTLY TO EXISTING HORIZONTALS. RELOCATE EXISTING ANTENNAS TO EXISTING RELOCATED ANTENNA MOUNT PIPES. EXISTING ANTENNA RAD CENTER TO BE MAINTAINED.
- 2 A. INSTALL NEW END CONNECTION ON EXISTING TOP HORIZONTALS. SEE SHEET D-3 FOR DETAILS.
- B. INSTALL NEW END CONNECTION ON EXISTING BOTTOM HORIZONTALS. SEE SHEET D-4 FOR DETAILS.
- C. INSTALL NEW HEAVY COLLAR MOUNT (NOT SHOWN FOR CLARITY) AND KICKER. SEE SHEETS D-2 AND MS-H1242 FOR DETAILS.
- 3 INSTALL NEW SAFETY CLIMB CABLE GUIDES TO PREVENT EXISTING SAFETY CLIMB FROM RUBBING AGAINST THE NEW COLLAR MOUNT. SEE SHEET SAF-1 FOR DETAILS.
- 4 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 @ 118' ELEV



ISOMETRIC VIEW  
EXISTING ANTENNA MOUNT @ 118' ELEV.

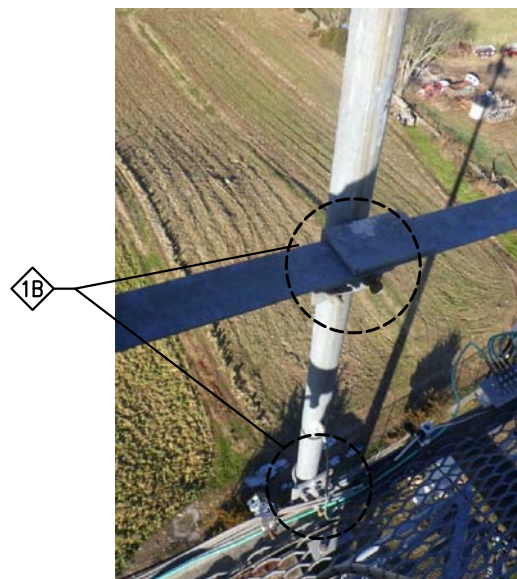


PHOTO 2

**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](mailto: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.



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DRAWN BY: SP | CHECKED BY: PK/SK

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SHEET TITLE:  
**ANTENNA MOUNT  
MODIFICATION DETAILS**

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SHEET NUMBER: **A-1** | REV #: **0**

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	3	PST2875-6	2 1/2" PST (2.875" O.D. X 0.203" THK) X 6'-0" A53 GR-B 35
2	1	MS-H1242	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY



PHOTO 1



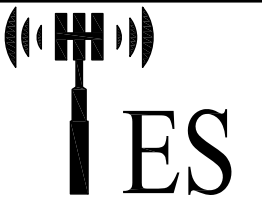
PHOTO 2

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



PHOTO 3

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



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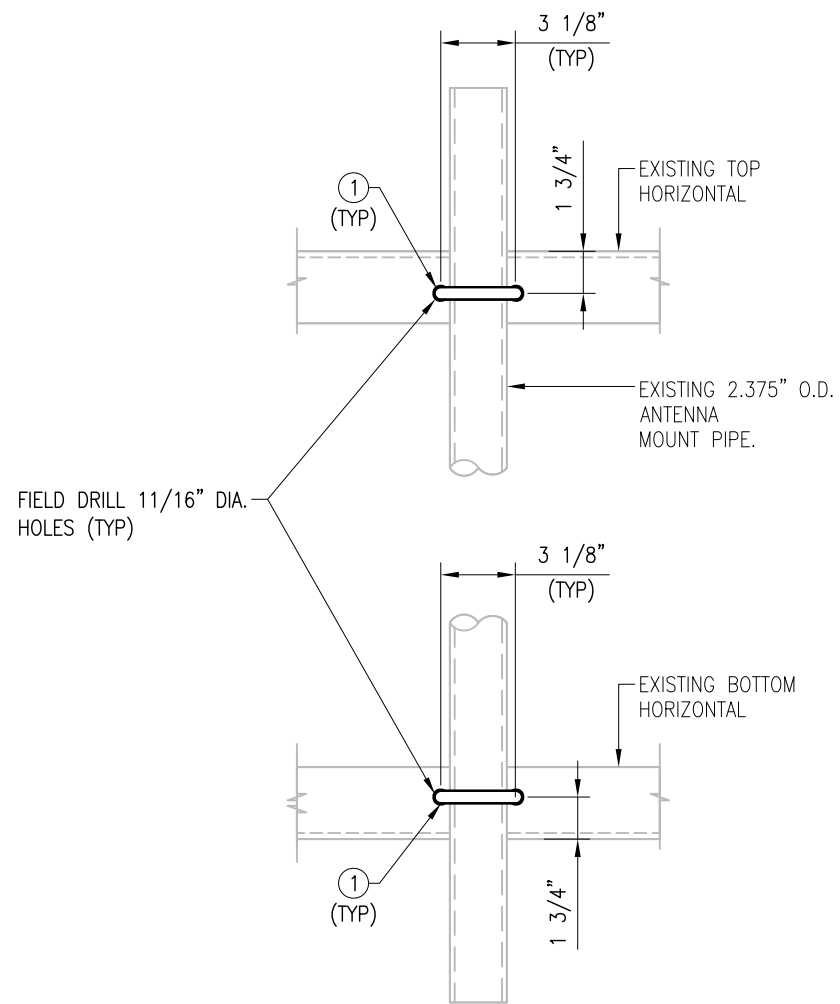
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ANTENNA MOUNT PHOTOS

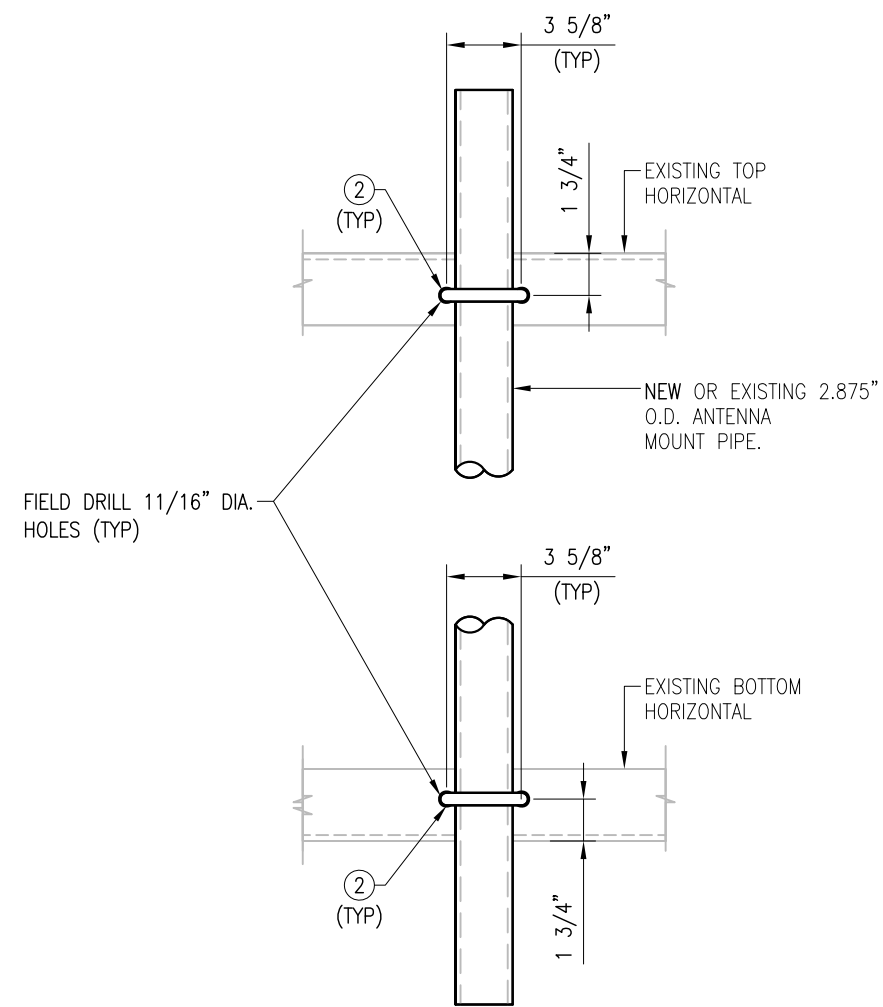
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SHEET NUMBER: A-2 | REV #: 0

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1  
D-1  
DETAIL



2  
D-1  
DETAIL

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	18	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)
2	12	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)



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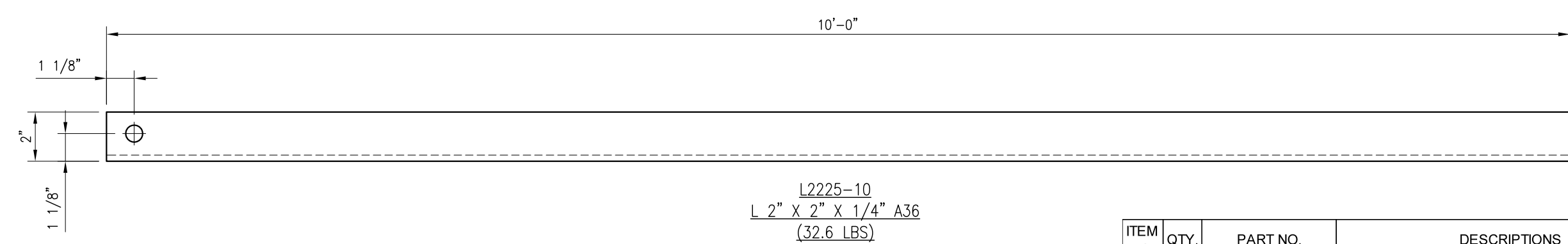
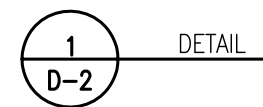
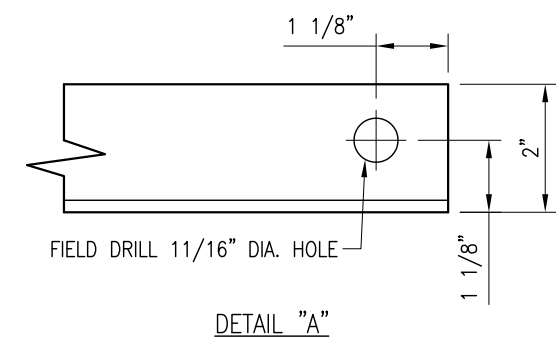
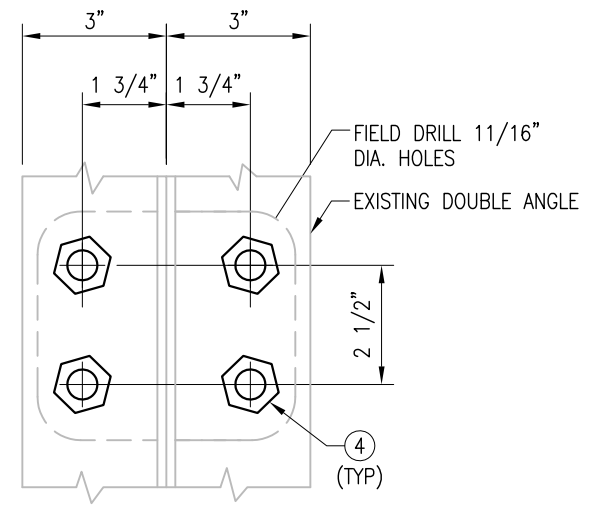
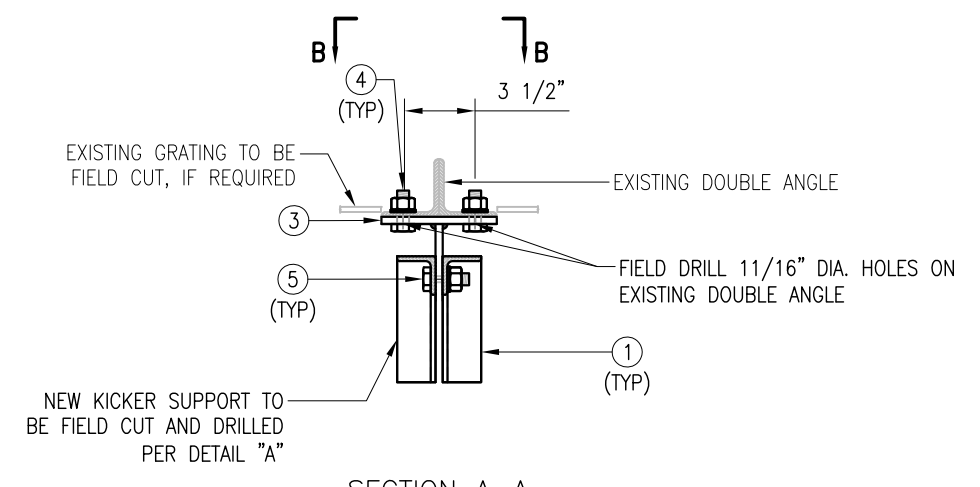
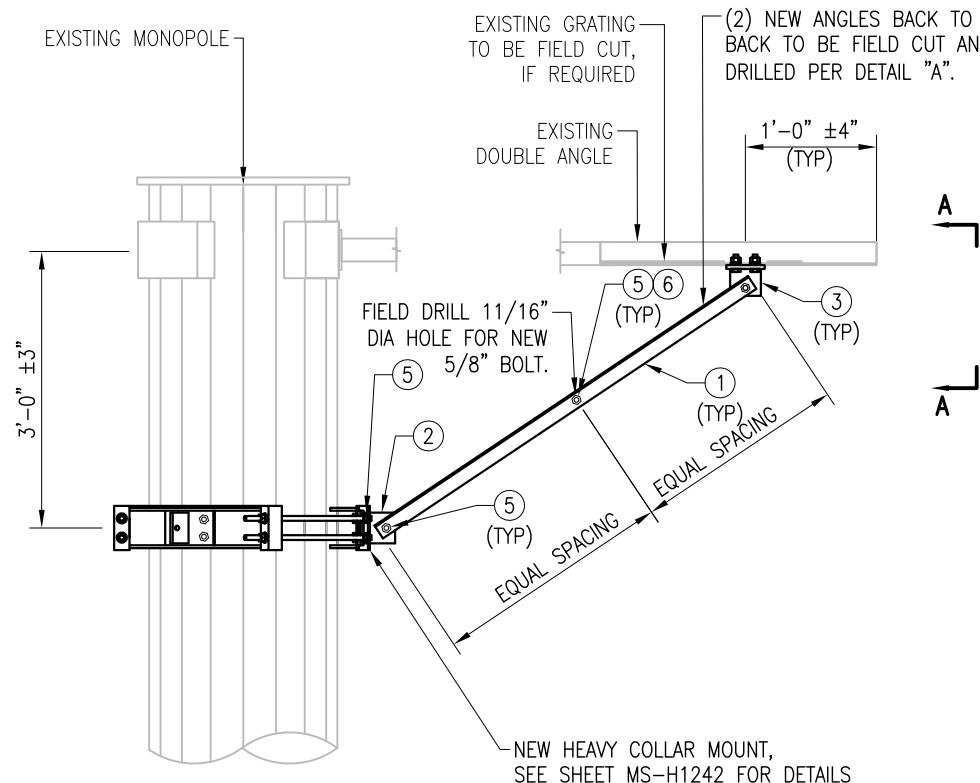
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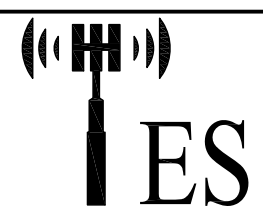
SHEET NUMBER:      REV #:  
 D-1      0



L2225-10  
L 2" X 2" X 1/4" A36  
(32.6 LBS)

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	L2225-10	L2" X 2" X 1/4" X 10'-0" A36
2	3	BRKW-HK	WELDMENT BRACKET
3	3	BRKW-3AL	WELDMENT BRACKET
4	12	---	BOLT 5/8" X 2" A325
5	21	---	BOLT 5/8" X 2 1/4" A325
6	3	---	SPACER/SHIM FOR 5/8" BOLT (3/8" THICK)

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



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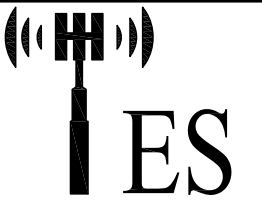
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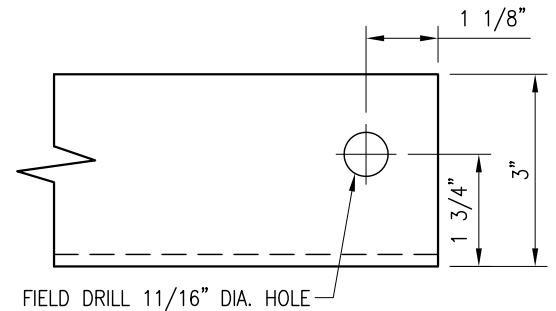
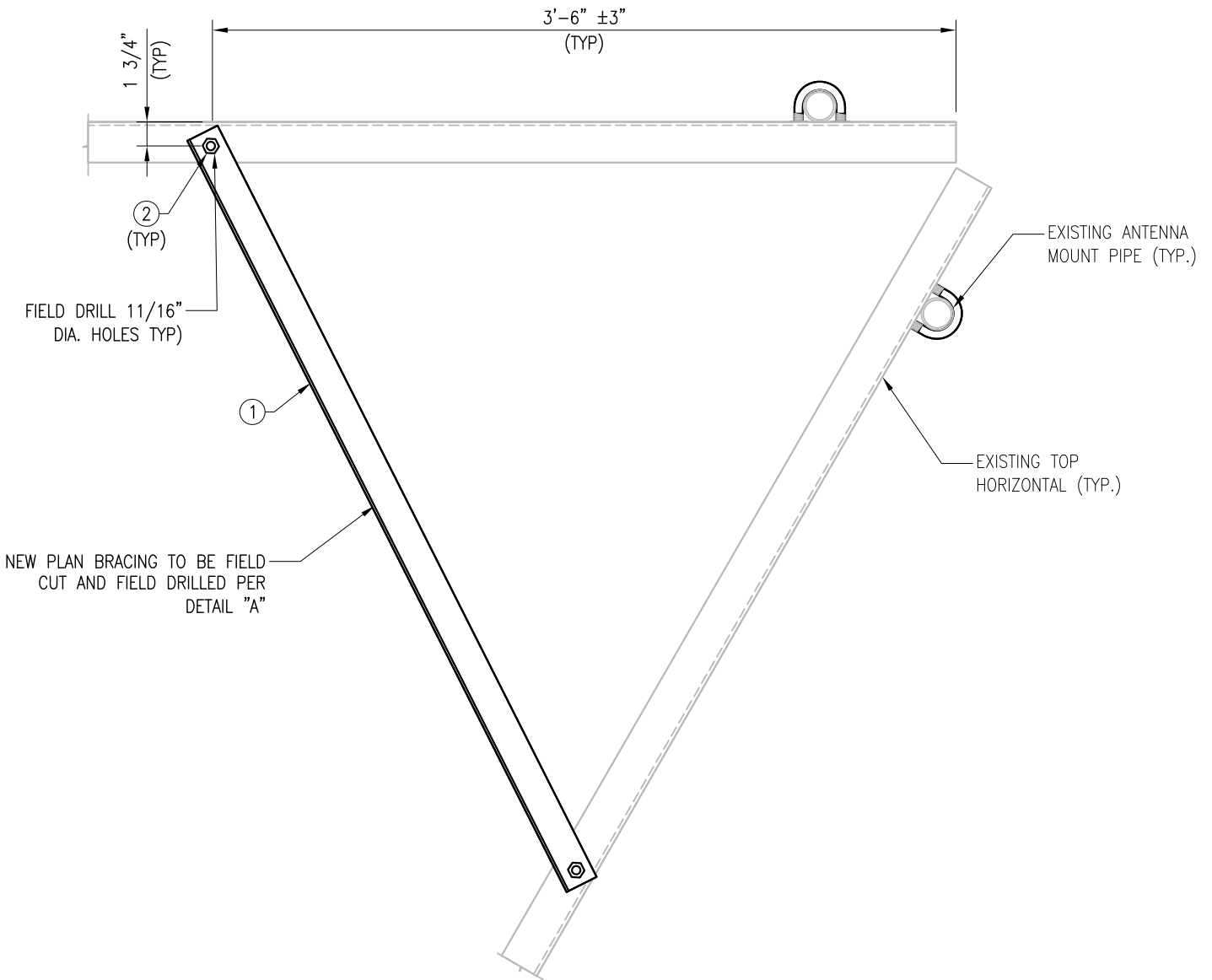
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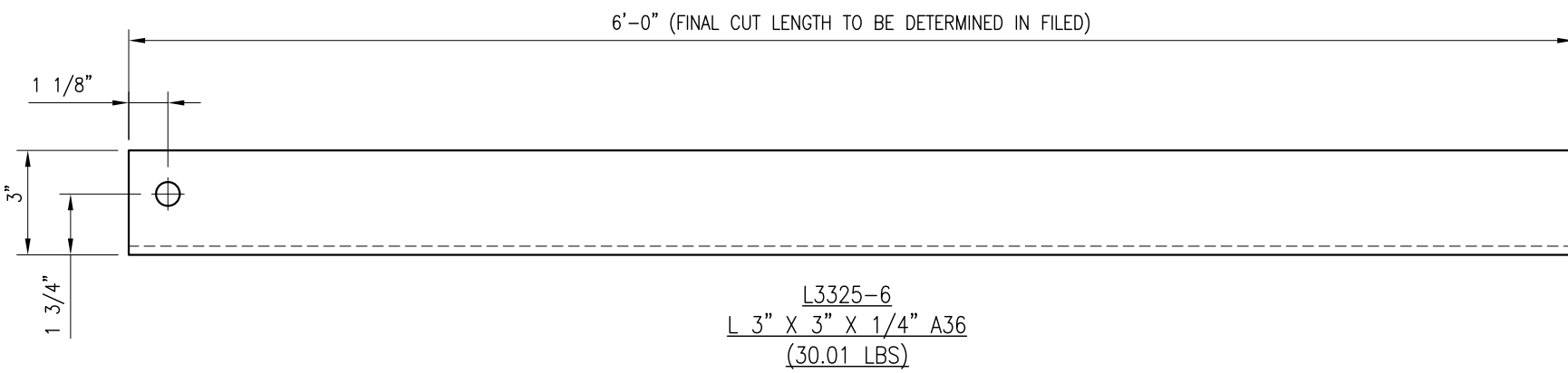
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SHEET NUMBER: | REV #:

D-3 | 0



DETAIL "A"



L3325-6  
 L 3" X 3" X 1/4" A36  
 (30.01 LBS)

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	3	L3325-6	L 3" X 3" X 1/4" X 6'-0" A36
2	6	---	BOLT 5/8" X 1 3/4" A325



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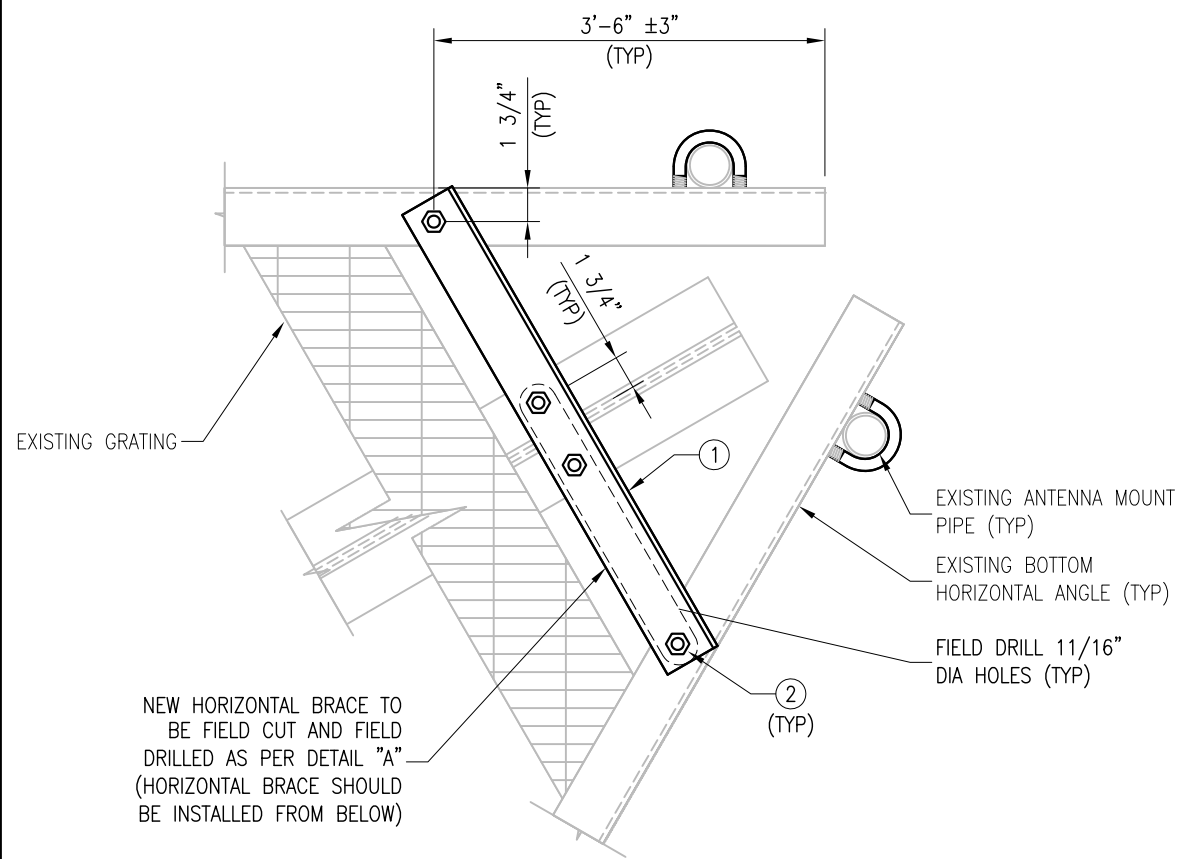
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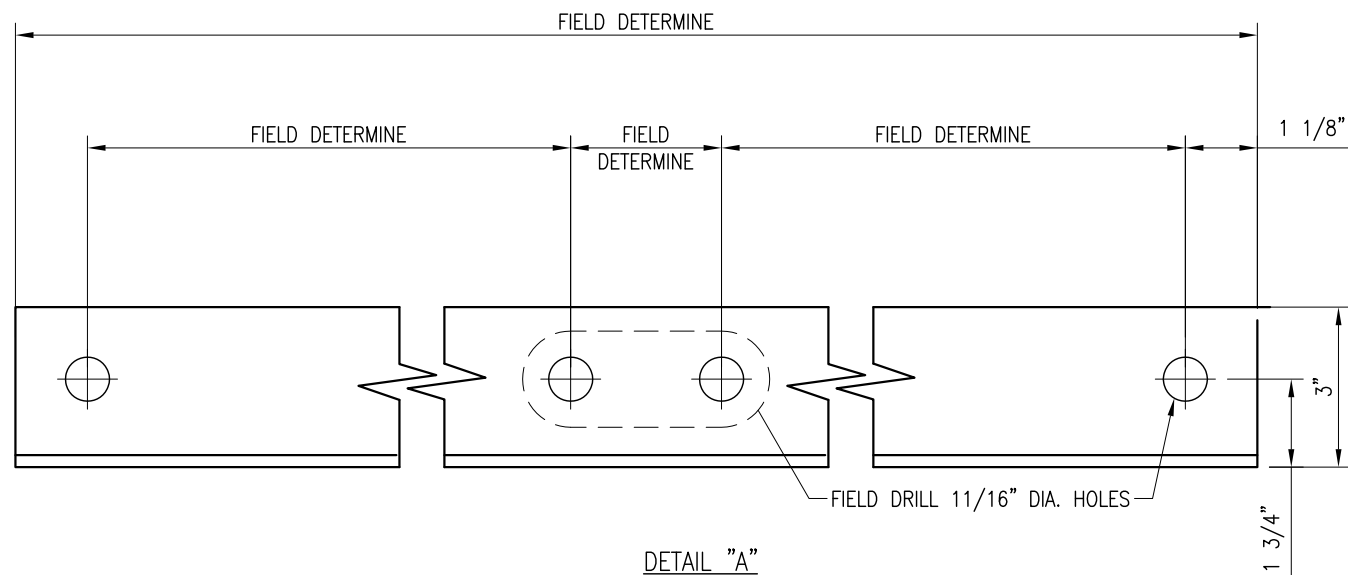
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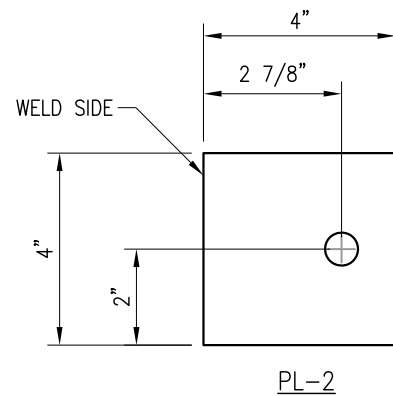
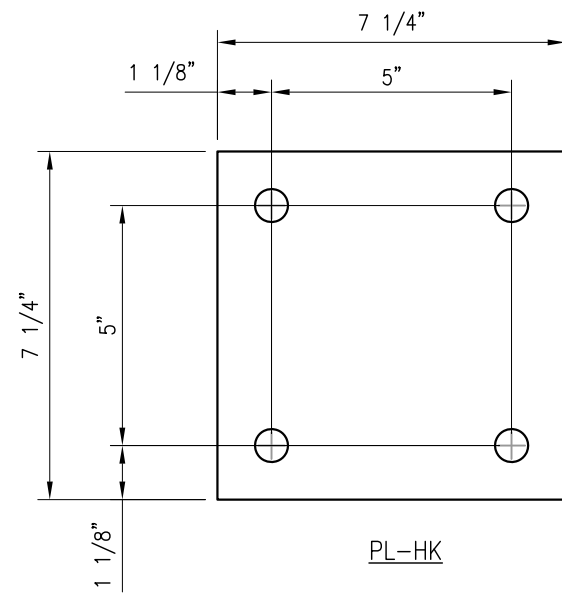


1  
 D-4  
 DETAIL (SHOWN FROM BELOW)



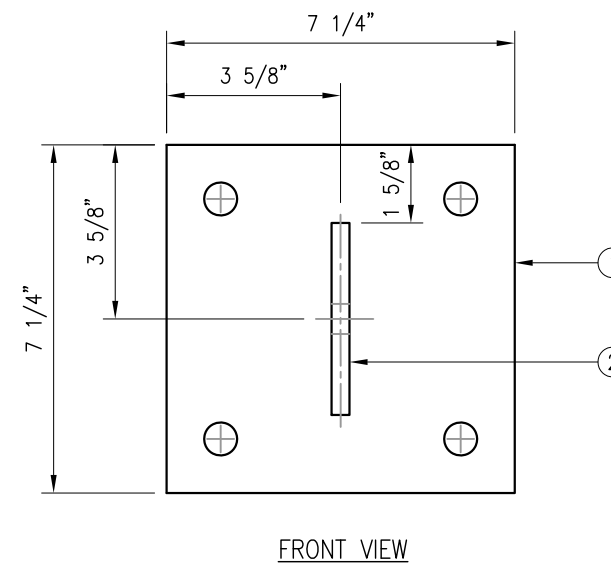
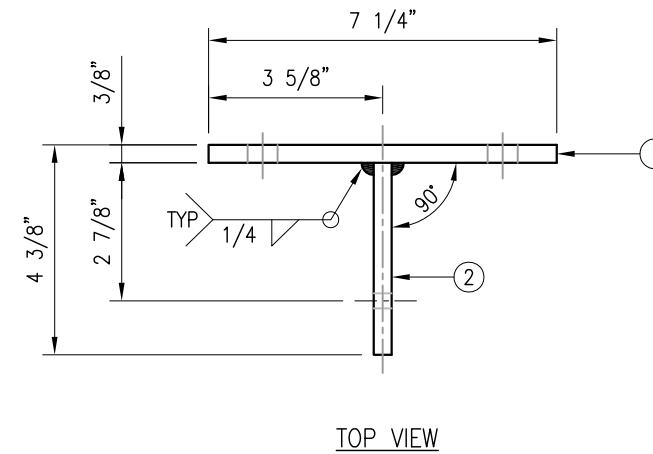
- NOTES:
- HOT-DIPPED GALVANIZED PER ASTM A123.
  - ALL HOLES ARE 11/16" DIA. U.N.O

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	3	L3325-6	L 3" X 3" X 1/4" X 6'-0" A36
2	12	---	BOLT 5/8" X 1 3/4" A325



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

BRKW-HK WELDMENT					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	WT
1	1	PL-HK	PL 3/8" X 7 1/4" X 0'-7 1/4"	A36	5.67
2	1	PL-2	PL 3/8" X 4" X 0'-4"	A36	1.73
BLACK WT					7.4
GALVANIZED WT					7.8



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



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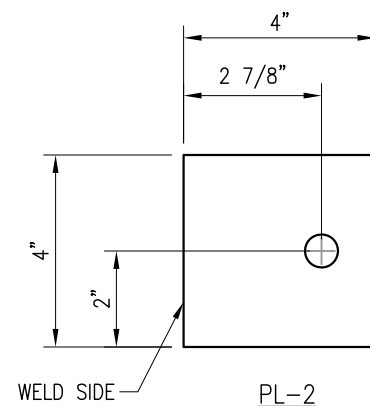
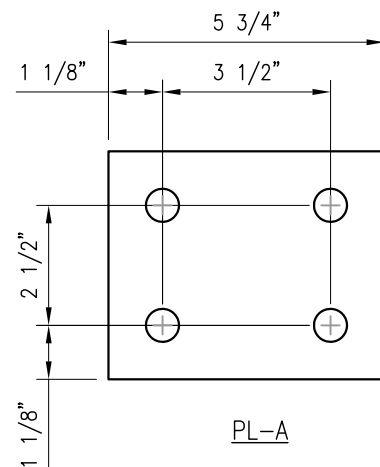
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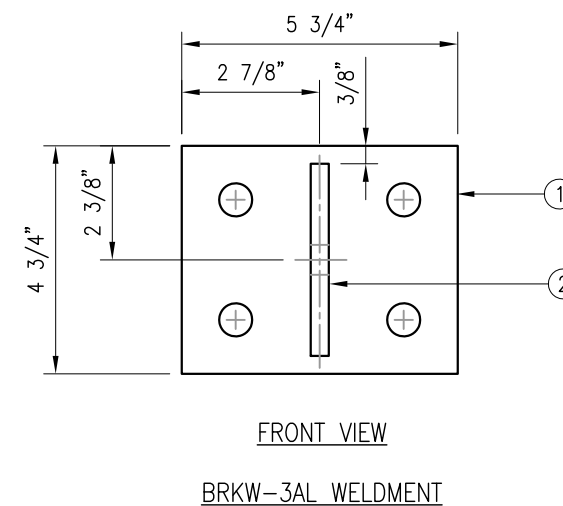
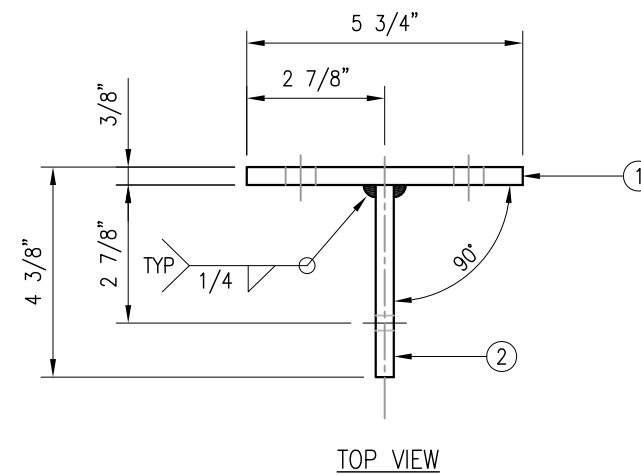
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SHEET NUMBER: <span style="font-size: 24pt;">D-5</span>	REV #: <span style="font-size: 24pt;">0</span>
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**NOTES:**  
1. ALL HOLES ARE 11/16" DIA. U.N.O

BRKW-3AL WELDMENT						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	WT	
1	1	PL-A	PL 3/8" X 4 3/4" X 0'-5 3/4"	A36	2.9	
2	1	PL-2	PL 3/8" X 4" X 0'-4"	A36	1.8	
					BLACK WT	4.7
					GALVANIZED WT	4.9



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



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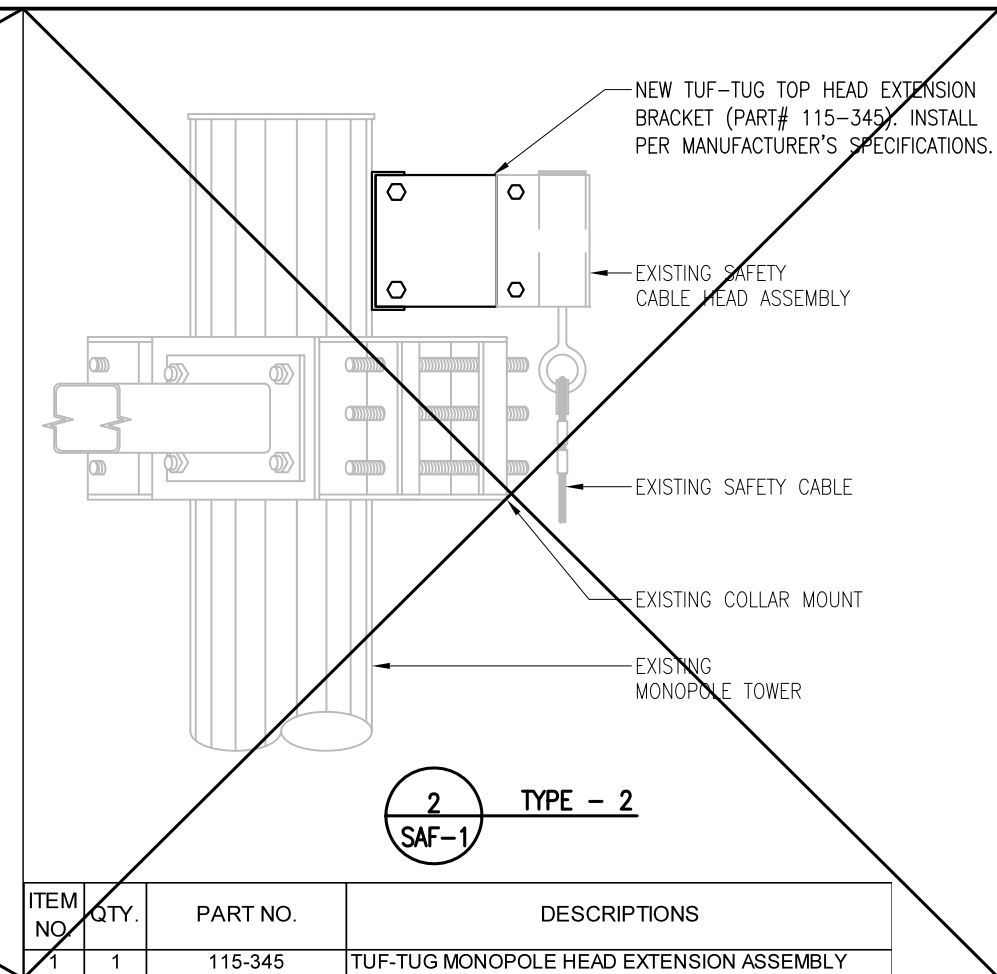
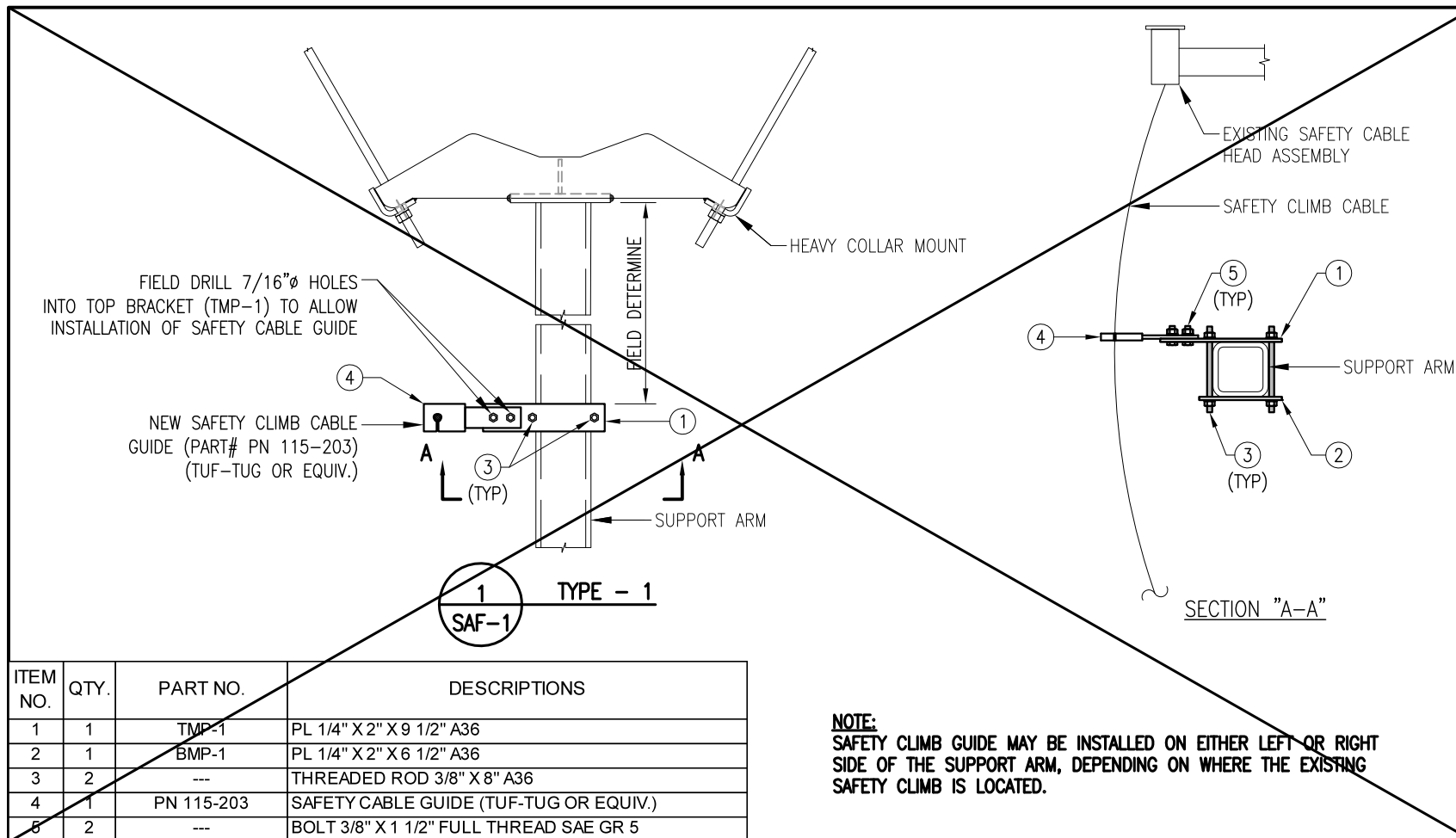
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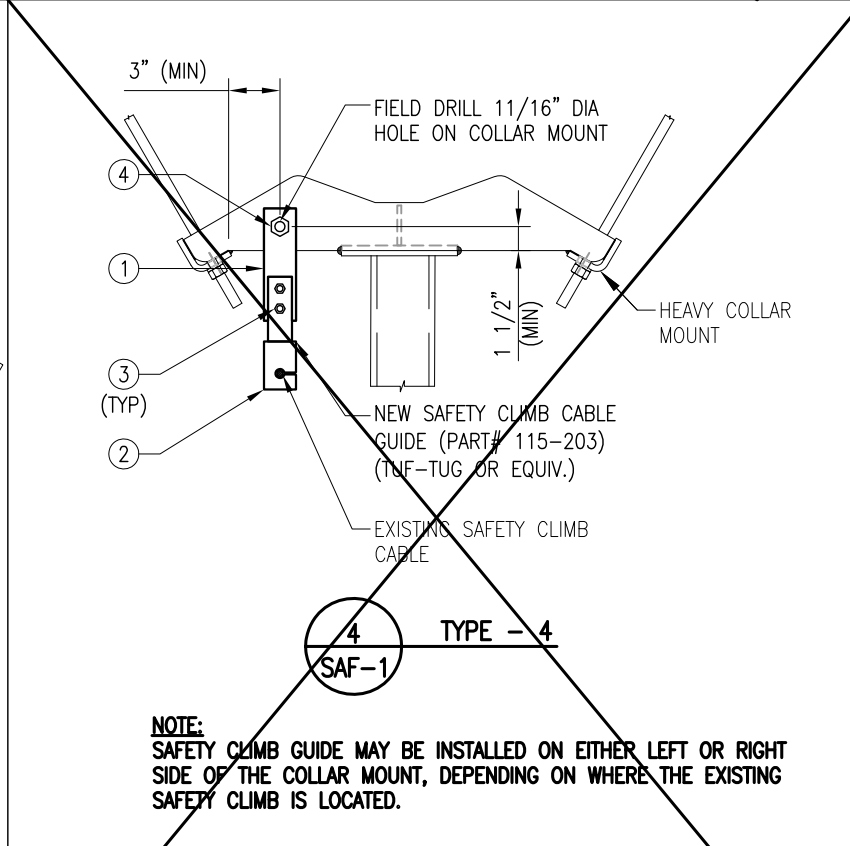
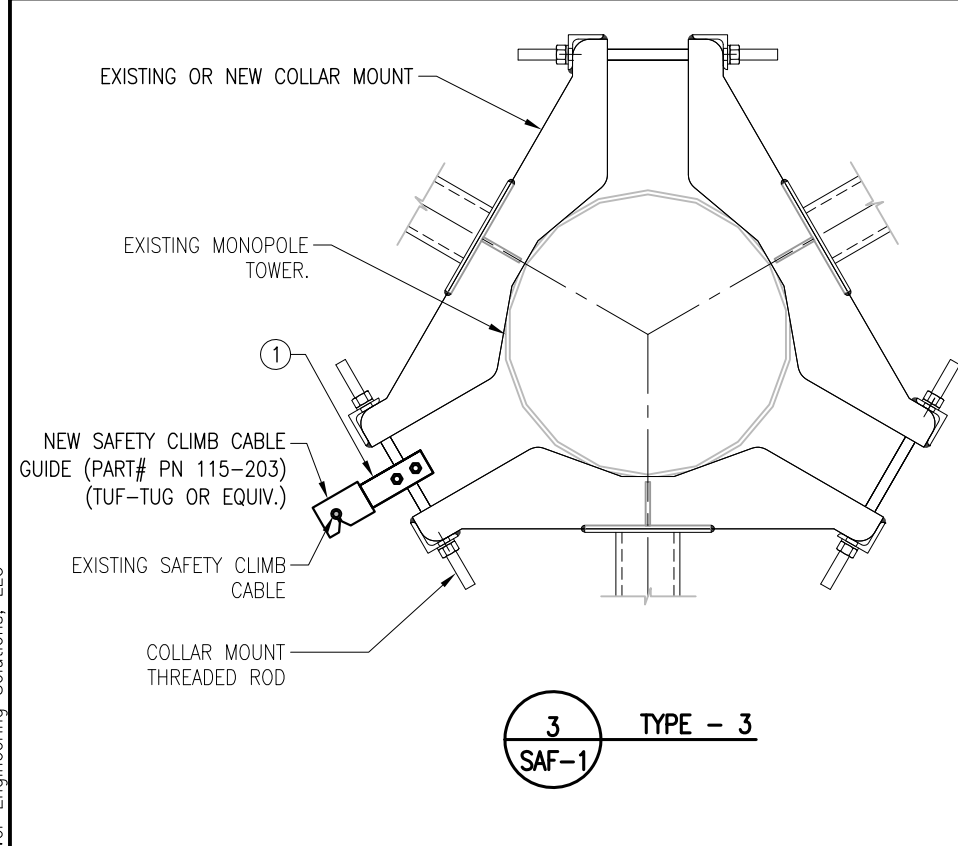
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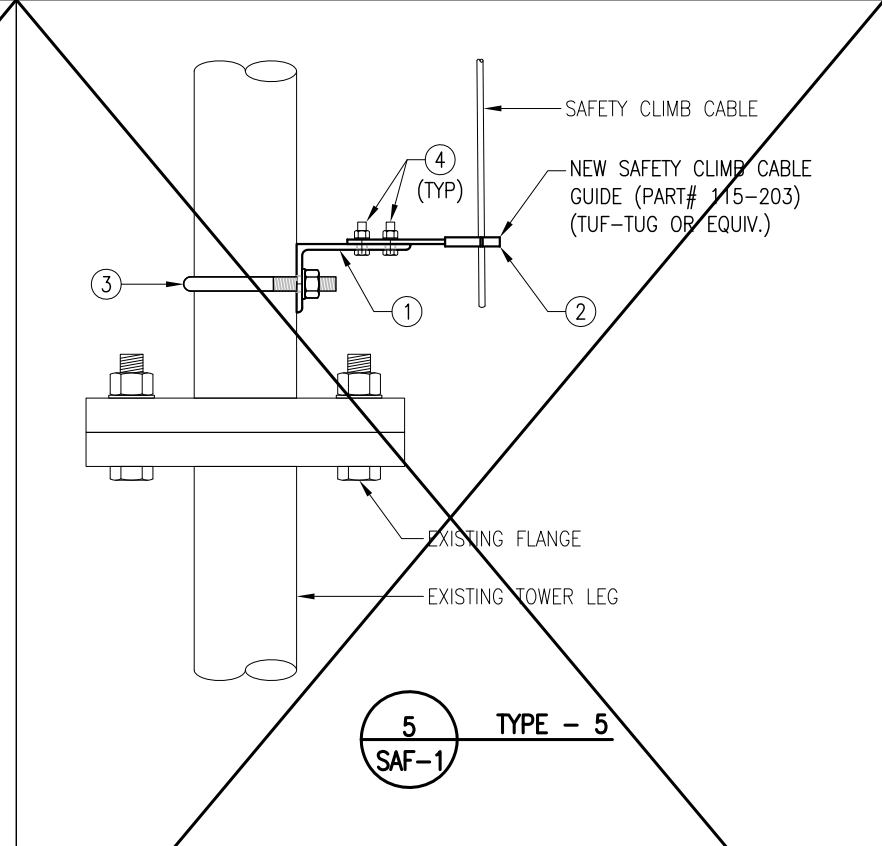
ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	TMP-1	PL 1/4" X 2" X 9 1/2" A36
2	1	BMP-1	PL 1/4" X 2" X 6 1/2" A36
3	2	---	THREADED ROD 3/8" X 8" A36
4	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
5	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5

**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



**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	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)

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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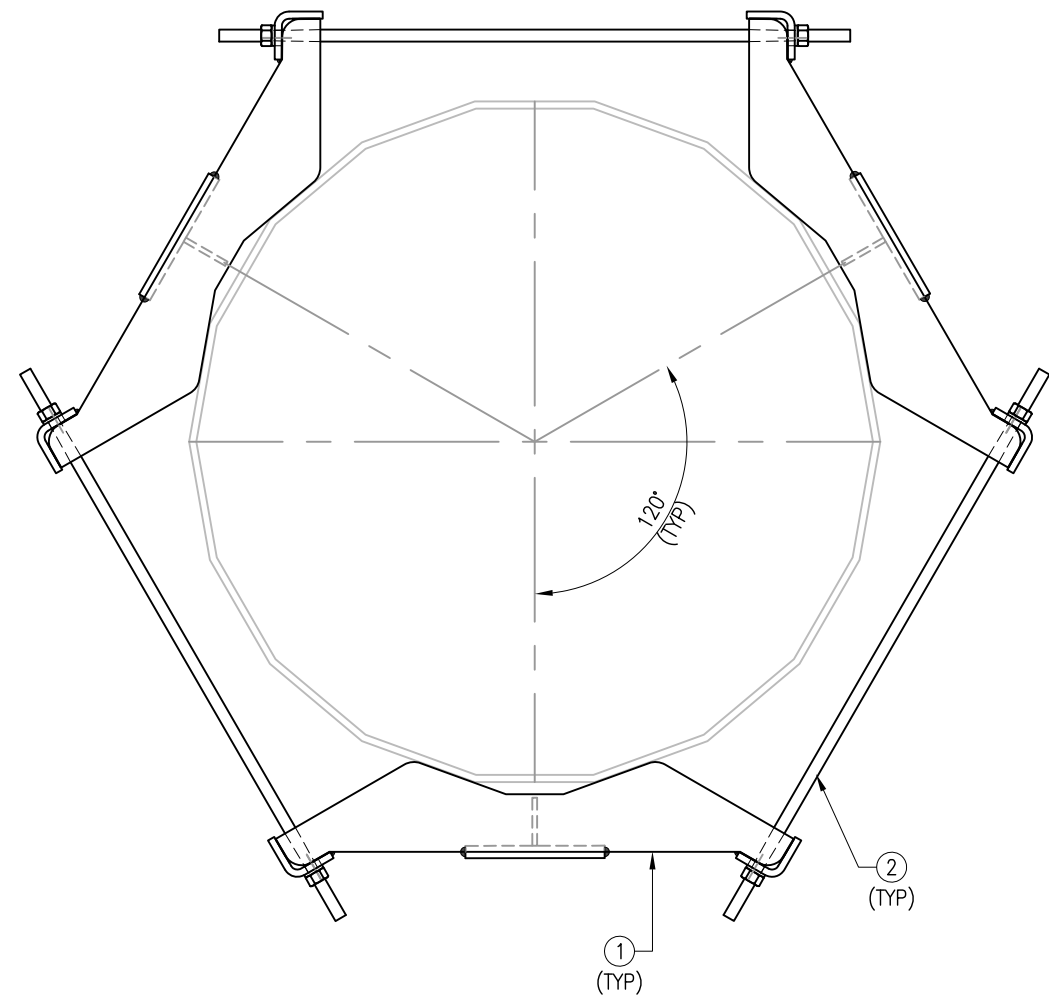
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PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

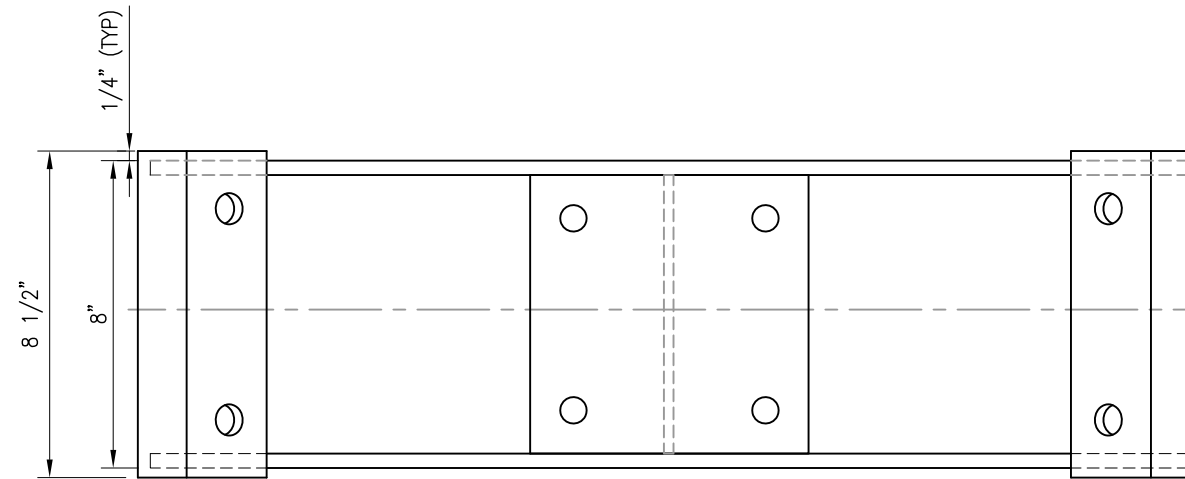
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 4'-0" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 150.6 LBS



NOTE:  
1) FITS 12" DIA TO 42" DIA.



TOP VIEW

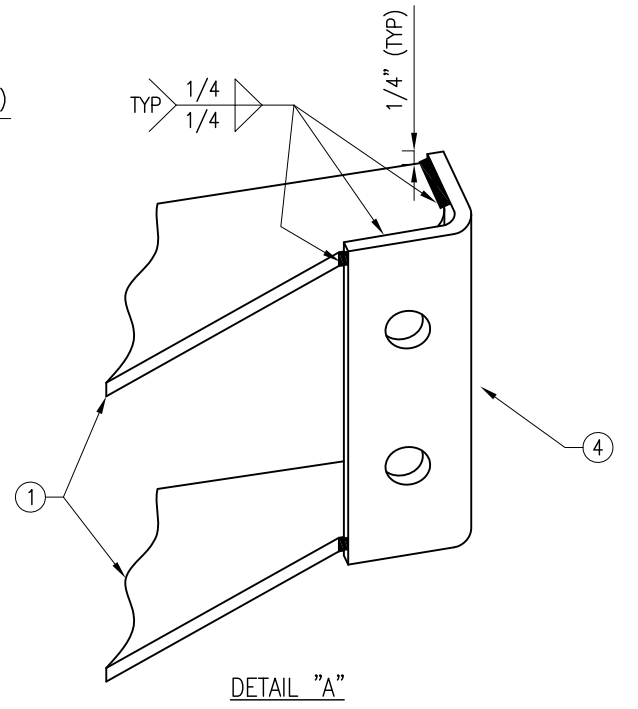
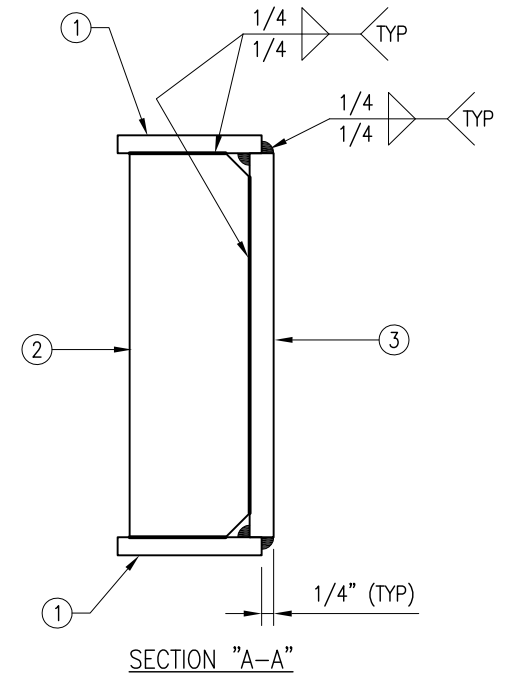
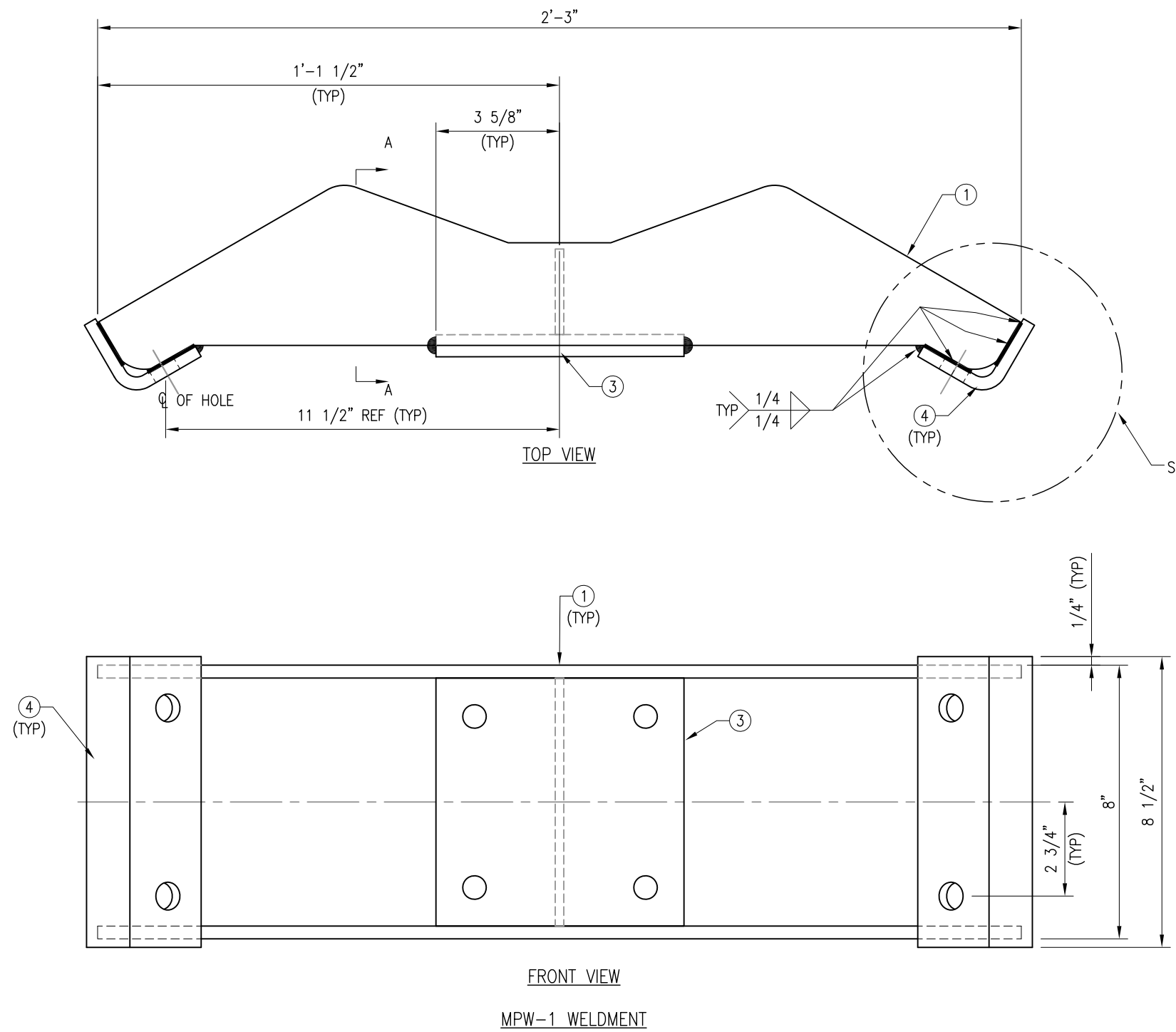


FRONT VIEW

THIRD ANGLE PROJECTION			METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
			TITLE <b>HEAVY COLLAR MOUNT PLATE          ASSEMBLY DETAIL MS-H1242</b>	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH		CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC		REV 0
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 - -	SIZE/DWG NO <b>B MS-H1242</b> 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



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 <b>HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL</b>		SIZE/DWG NO <b>B MPHW-1</b>	
						REV 0	
						SCALE: - SHEET 1 OF 1	



# EXHIBIT 10

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

T-Mobile Existing Facility

Site ID: CTFF198A

CT73XC004

162 Birdseye Road  
Shelton, Connecticut 06484

**February 22, 2021**

**EBI Project Number: 6221000644**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>25.57%</b>

February 22, 2021

T-Mobile

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

Emissions Analysis for Site: CTFF198A - CT73XC004

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **162 Birdseye Road in Shelton, 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 162 Birdseye Road in Shelton, 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 118 feet above ground level (AGL).

- 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):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 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 %:	3.32%	Antenna B1 MPE %:	3.32%	Antenna C1 MPE %:	3.32%
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):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 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 %:	3.64%	Antenna B2 MPE %:	3.64%	Antenna C2 MPE %:	3.64%
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):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 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 %:	9.93%	Antenna B3 MPE %:	9.93%	Antenna C3 MPE %:	9.93%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	16.89%
AT&T	4.22%
Sprint	0.05%
Nextel	0.43%
Verizon	3.98%
<b>Site Total MPE % :</b>	<b>25.57%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	16.89%
T-Mobile Sector B Total:	16.89%
T-Mobile Sector C Total:	16.89%
Site Total MPE % :	25.57%

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	118.0	10.62	1900 MHz GSM	1000	1.06%
T-Mobile 1900 MHz LTE	2	2056.61	118.0	10.62	1900 MHz LTE	1000	1.06%
T-Mobile 2100 MHz LTE	2	2307.55	118.0	11.92	2100 MHz LTE	1000	1.19%
T-Mobile 600 MHz LTE	2	591.73	118.0	3.06	600 MHz LTE	400	0.76%
T-Mobile 600 MHz NR	1	1577.94	118.0	4.07	600 MHz NR	400	1.02%
T-Mobile 700 MHz LTE	2	695.22	118.0	3.59	700 MHz LTE	467	0.77%
T-Mobile 1900 MHz LTE	2	2104.51	118.0	10.87	1900 MHz LTE	1000	1.09%
T-Mobile 2500 MHz LTE	1	19238.94	118.0	49.67	2500 MHz LTE	1000	4.97%
T-Mobile 2500 MHz NR	1	19238.94	118.0	49.67	2500 MHz NR	1000	4.97%
						<b>Total:</b>	<b>16.89%</b>

• 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:	16.89%
Sector B:	16.89%
Sector C:	16.89%
T-Mobile Maximum MPE % (Sector A):	16.89%
Site Total:	25.57%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **25.57%** 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.