



Filed by:

Glenn Shepherd, SDS Specialist II - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbsite.com

September 17, 2020

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

RE: Notice of Exempt Modification
160 Wampus Lane, Milford, CT
Latitude: 41.225166
Longitude: -73.042361
T-Mobile Site #: CTNH003A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 105-foot level of the existing 120-foot Monopole Tower at 160 Wampus Lane, Milford, CT. The 120-foot tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Cutting Edge Technologies, LLC. T-Mobile now intends to replace three (3) 600/700 MHz antennas with (3) new 600/700 MHz antennas and install (3) 1900/2100 MHz antennas, for a total of twelve (12) antennas. The new antennas would be installed at the 105-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) LNX-6515DS-A1M (Remove) – (3) APXVAARR24_43-U-NA20 600/700 MHz antenna (Replace)
- (3) RRU Ericsson S11B12 (Remove) – (3) RRU Ericsson 4449 B71+B12 (Replace)

Install New:

- (3) Ericsson AIR32 KRD901146-1_B66A_B2A – antenna
- (3) Ericsson Radio 4415 B25 – RRU
- (3) 1-5/8" Fiber

Existing Equipment to Remain:

- Platform w/handrail
- (1) Metrosite Kicker Support Kit: MS-K122-5
- (1) Metrosite Light Collar Mount Plate Assembly: MS-1436
- (1) 1-5/8" Fiber
- (6) 1-5/8" Coax
- (3) Ericsson AIR21 B2A/B4P 1900/2100 MHz antenna
- (3) Ericsson AIR21 B4A/B2P 2100 MHZ antenna
- (3) KRY 112 144/1 TMA

Entitlements:

- (3) 1-5/8" Coax

GROUND

Install New:

- Equipment inside existing 6131 cabinet
- 6160 & B160 Cabinets on existing 15' x 15' pad

This facility was approved by the City of Milford's Planning and Zoning Board on June 5, 2001. Zoning Permit 166 was issued for a 120' tower to accommodate four carrier antenna arrays. The original zoning approval documents do not appear to still be on file with the City and we are unaware of any further post construction stipulations having been set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the City of Milford's Mayor, Benjamin Blake, and Zoning Enforcement Officer, Stephen Harris, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.



4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

G. Scott Shepherd
SDS 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: The Honorable Benjamin Blake / with attachments
City of Milford, 70 West River Street, Milford, CT 06460
Stephen Harris, Zoning Enforcement Officer / with attachments
City of Milford, 70 West River Street, Milford, CT 06460
Cutting Edge Technologies, LLC / with attachments
160 Wampus Lane, Milford CT 06460 (SBA's address on file – the address on Town Property Card is for SBA corporate office in Boca Raton)

Exhibit List

Exhibit 1	Check Copy	X To Be Invoiced by CSC 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 Milford Planning and Zoning Board 6/5/01
Exhibit 6	Construction Drawings	B+T Group 9/2/20
Exhibit 7	Structural Analysis	TES 8/3/20
Exhibit 8	Post-Mod Mount Analysis	TES 7/23/20
Exhibit 9	Mount Mod Drawings	TES 7/28/20
Exhibit 10	EME Report	EBI Consulting 9/15/20

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

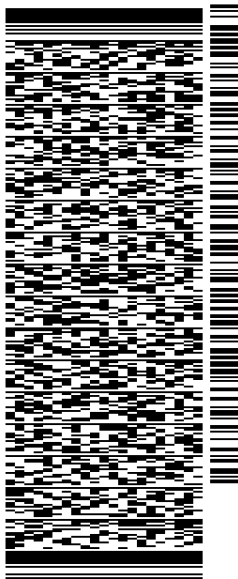
SHIP DATE: 17SEP20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

BILL SENDER

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

NEW BRITAIN CT 06051

(508) 251-0720 X 302 REF: 105692009-6089
INV.
PO: DEPT:

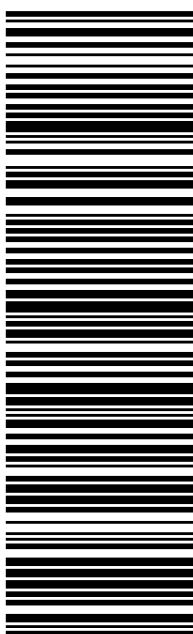


J2020071401uv

TRK# 7715 5753 4143
0201
FRI - 18 SEP 10:30A
PRIORITY OVERNIGHT

EBBDLA

06051
CT:US BDL



56B,J6/1545/B766

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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

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

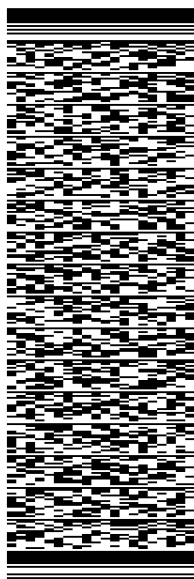
SHIP DATE: 17SEP20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

BILL SENDER

TO THE HONORABLE BENJAMIN BLAKE
CITY OF MILFORD
70 WEST RIVER ST

MILFORD CT 06460

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

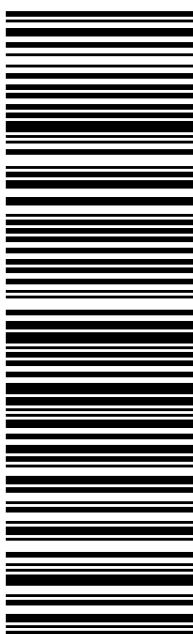


J2020071401uv

TRK# 7715 5758 5074 FRI - 18 SEP 10:30A
0201 PRIORITY OVERNIGHT

EB OXCA

06460
CT:US BDL



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WESTBOROUGH, MA 01581
UNITED STATES US

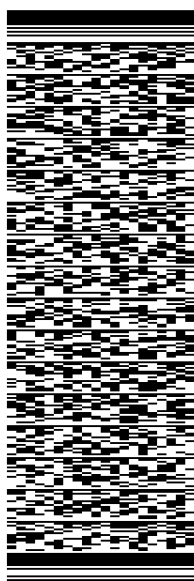
SHIP DATE: 17SEP20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

BILL SENDER

TO **STEPHEN HARRIS, ZONE ENF. OFFICER**
CITY OF MILFORD
70 WEST RIVER ST

MILFORD CT 06460

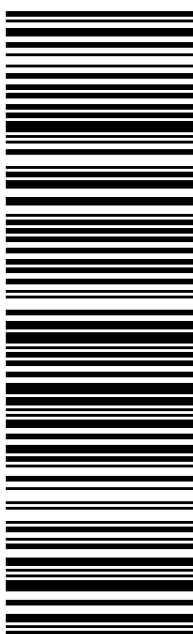
(508) 251-0720 X 3807 REF: 105692009-6089
INV. PO. DEPT.



TRK# 7715 5761 6743
0201
FRI - 18 SEP 10:30A
PRIORITY OVERNIGHT

EB OXCA

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

SHIP DATE: 17SEP20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

BILL SENDER

TO

CUTTING EDGE TECHNOLOGIES, LLC
160 WAMPUS LANE

MILFORD CT 06460

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

56B,J6/1545/B766

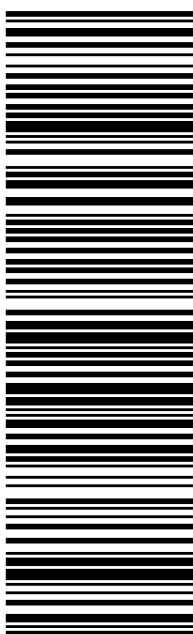


J2020071401uv

TRK# 7715 5766 0350 FRI - 18 SEP 10:30A
0201 PRIORITY OVERNIGHT

EB OXCA

06460
CT:US BDL



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EXHIBIT 3



Property Information

Property Location	160 WAMPUS LN #CELL
Owner	CUTTING EDGE TECHNOLOGIES LLC
Co-Owner	
Mailing Address	8051 CONGRESS AVE BOCA RATON FL 33487-1307
Land Use	4340 CELL TOWER MDL-96
Land Class	I
Zoning Code	
Census Tract	1509

Neighborhood	F
Acreage	0
Utilities	All Public,Public Sewer
Lot Setting/Desc	Industrial Level
Additional Info	

Photo



Sketch

Primary Construction Details

Year Built	2003
Stories	1
Building Style	Commercial
Building Use	Industrial
Building Condition	GOOD
Floors	Concr-Finished
Total Rooms	

Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	n/a
Kitchen Style	n/a
Roof Style	Flat
Roof Cover	Rolled Compos

Exterior Walls	Brick/Stn Vene
Interior Walls	Minim/Masonry
Heating Type	Hot Air-no Duc
Heating Fuel	Electric
AC Type	Central
Gross Bldg Area	240
Total Living Area	240



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

Item	Appraised	Assessed
Buildings	22150	15510
Extras	0	0
Improvements		
Outbuildings	251140	175800
Land	0	0
Total	273290	191310

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	240	240
Total Area	240	240

Outbuilding and Extra Items

Type	Description
CEL TWR SITE	1 UNITS
FENCE-8' CHAIN	190 L.F.

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
CUTTING EDGE TECHNOLOGIES LLC	02253/0055	12/15/1997	

EXHIBIT 4

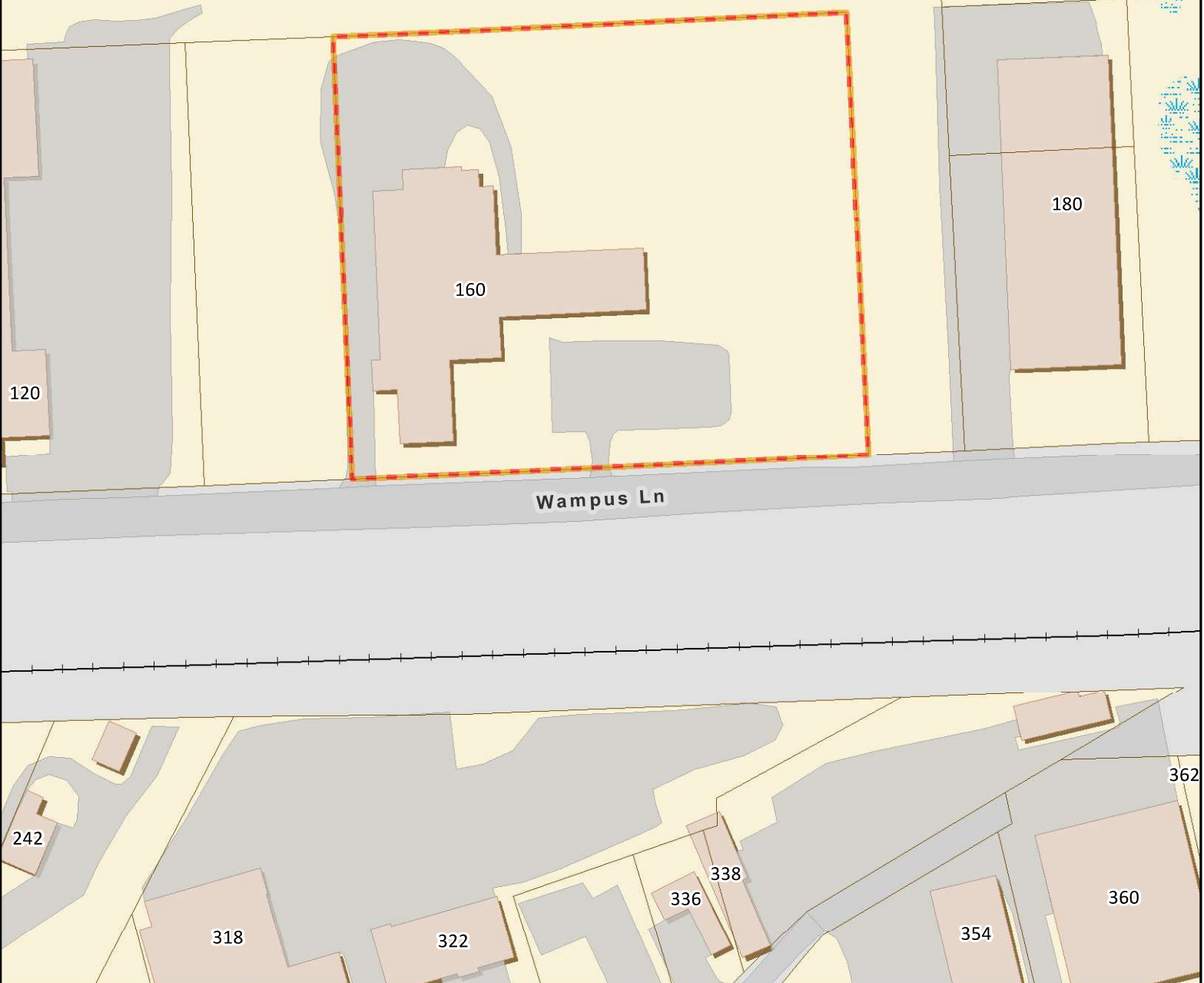


City of Milford, Connecticut. Assessment Parcel Map

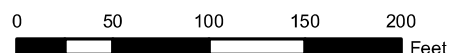
Parcel ID: **13774**

Address: **160 WAMPUS LN**

813



1 inch = 100 feet



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

Map Produced: July 2016

EXHIBIT 5



City of Milford, Connecticut

Founded 1639

PLANNING AND ZONING BOARD

70 WEST RIVER STREET
MILFORD, CONNECTICUT 06460
TELEPHONE 783-3245

June 6, 2001

Attorney John Knuff
147 North Broad Street
Milford, CT 06460

RE: 166 WAMPUS LANE (NEXTEL)

Dear Mr. Knuff:

At its meeting held on Tuesday, June 5, 2001 the Milford Planning & Zoning Board moved to grant Coastal Area Management Site Plan Review approval to Nextel Communications to construct a 120' tall enhanced specialized mobile radio monopole. This approval shall include 12 antennas (4 elements) facing in 3 different directions) at the top most portion of the tower. The height of the tower will allow co-location of 3 additional (lower) antenna arrays. All work shall be performed in conjunction with the following plan prepared by URS Corporation AES.

Title Sheet (T-1)

Survey dated January 1; revised to April 12, 2001

Site Plan, Legend & Zoning Table (2-1) revised to April 23, 2001

Compound Plan, Tower Elevation & Details (2-2) revised to April 23, 2001

The following city department reports shall apply: Fire Department report dated May 9, 2001 from Edward L. Beatty; Department of Public Works memo from B. C. Kolwicz dated May 15, 2001 and Inland Wetland letter from Mary Rose Palumbo dated May 22, 2001.

Very truly yours,

WADE E. PIERCE

Executive Secretary to the
Planning & Zoning Board

WEP/cv



City of Milford, Connecticut

Founded 1639

INLAND WETLANDS
OFFICE

CERTIFIED MAIL #7000 1670 0011 1309 3698

70 West River Street
Milford, CT 06460-3317
Telephone (203) 783-3256

May 22, 2001

Mr. John Knuff
Hurwitz & Sagarin, L.L.C.
147 North Broad Street
P.O. Box 112
Milford, Connecticut 06460

Re: Jurisdictional Ruling IW-JR-01-022; 166 Wampus Lane, Map 56, Block 813, Parcel 1-B; Nextel Communications. Proposed Wireless Telecommunications Facility with no work proposed within a wetland or 50' review area in the Indian River Watershed. Jurisdictional Ruling to be issued.

Dear Mr. Knuff:

Pursuant to Section 22a-42a of the Connecticut General Statutes and Milford Inland Wetlands Regulations Sections 6-12, this is to inform you that the Milford Inland Wetlands Agency voted to authorize the Designated Agent to issue a Jurisdictional Ruling for your application IW-A-01-022 - 166 Wampus Lane, based on the information in the file, presented at the meeting and the plans entitled "Nextel Communications of the Mid-Atlantic, Inc. DBA Nextel Communications Site Number CT 0638, Milford, 166 Wampus Lane, Milford, CT" by URS Corporation AES, cover & 3 sheets, cover, sheets Z1 & Z2 dated 5/2/01, Boundary & Topographic Survey dated January 2001, last revised 4/12/01". The Agency also moved that the Designated Agent can authorize a reconfigured footprint as discussed at the meeting.

Therefore, I am issuing you this Jurisdictional Ruling allowing the construction of a wireless telecommunications facility and associated structures as shown on the plans referenced above within 50' of wetlands in the Indian River Watershed.

Prior to the start of construction you must install soil erosion and sedimentation controls as required on the plans to prevent erosion into wetlands both on and off site during construction. As soon as the disturbed soils on site are stabilized the soil erosion and sedimentation controls can be removed. At no time during construction can soils be stockpiled or deposited within the wetlands or regulated area on the property.

Should you have any questions concerning this matter, please contact the Inland Wetlands Agency Office at 783-3256.

Sincerely,

Mary Rose Patumbo
Inland Wetlands Compliance Officer

cc: Planning & Zoning
City Engineer

PLANNING & ZONING
CITY OF MILFORD, CONNECTICUT

No 376

CT-0638

Date 7.18-01

Received of Peter H. Maxwell

Twenty-two & 00/100

Dollars \$ 22.00 (599)

In Payment of EP-166 Wampus Lane

BY B. Hayes

WHITE COPY - ORIGINAL

YELLOW COPY - DEPARTMENT COPY

WIDTH OF STREET RIGHT OF WAY LESS THAN 50 FT.? YES NO CORNER LOT

IS ANY PORTION OF THE LOT BELOW REGULATORY FLOOD ELEVATION? YES NO CAM YES NO

CITY WATER PRIVATE WELL SEWER SEPTIC ENGINEERING OFF STREET PERMIT # 5/15/01

OWNER Cutting Edge Technologies, LLC

ADDRESS OF OWNER 160 - 76 South Main Street, Norwalk CT 06850

PRESENT USE OF PROPERTY unoccupied VACANT LAND

PROPOSED CONSTRUCTION NEW ADDITION ALTERATION REPAIR

SIZE/USE OF PROPOSED CONSTRUCTION cellular telecommunications facility for Nextel Communications 120' HIGH

NO. OF STORIES 1 HEIGHT 120' REQUIRED PARKING SPACES LOT COVERAGE %

DATE OF APPROVALS: ZBA 6/5/01 CASPR 6/5/01 SPR SPEC. PERMIT SPEC. EXCEPT.

EXEMPTION ISSUED 7/18/01 SUBDIV. NAME HISTORIC DIST. CERT. OF APPROPRIATENESS N/A

CERTIFICATION: (WARNING) I hereby certify that I am making this application on behalf of and with full authority of the owner of the property and that I am aware of the Zoning regulations pertinent in this case and that the statements made herein are true and correct. APPROVAL SHALL BE VALID FOR PLANS AS SUBMITTED.

THE OCCUPANCY AND USE OF LAND AND BUILDINGS OR STRUCTURES PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY IS PROHIBITED

APPROVED BY: [Signature] ZONING OFFICIAL

DATE ISSUED 7/18/01

APPLICANT: NAME: [Signature]

SIGNATURE Peter H. Maxwell

ADDRESS URS Corp, 795 Brook St, Bldg 5

CITY Rocky Hill STATE CT ZIP 06067

TELEPHONE NO. (860) 529-8882

*Permit required from State Health Dept. for apartments, subdivisions, trailer parks, shopping centers and public buildings.
**Permits for sewer connections are granted by Sewer Commission
***Septic system approvals are granted by Health Department

9069

URS CORPORATION - CONNECTICUT

500 ENTERPRISE DR., STE 38
ROCKY HILL, CT 06067
860-529-8882

FLEET
01070 ROCKY HILL OFFICE
ROCKY HILL, CONNECTICUT 06067
61-57-119

7/16/2001

PAY TO THE ORDER OF CITY OF MILFORD

\$ 1,071.00

One Thousand Seventy-One and 00/100

DOLLARS

TWO SIGNATURES REQUIRED IN EXCESS OF \$500.00

Paul F. Schmidt

MEMO BUILDING PERMIT

⑈009069⑈ ⑆011900571⑆ 93981 97763⑈

RS CORPORATION - CONNECTICUT

CITY OF MILFORD
F30000173144-F15-42922EX

7/16/2001

1,071.00 9069

Fleet Bank

BUILDING PERMIT

1,071.00

CITY OF MILFORD, CONN.

BUILDING PERMIT

No 33671

Estimate cost (structural) - \$176,275.00
Fee - \$1,086.00

Date issued: 06-03-2001

Permission is hereby granted to Cutting Edge Technologies LLC/Owner - Spectrasite Const., Inc./Contractor
to erect a new cellular telecommunications facility for Nextel Communications 120' high

Address 166 Wampus Lane (map 56, block 813, parcel 1B)
as follows: - Size ft. long, ft. wide, stories high;
supported on roof covered with
walls to be (EXTERIOR) (INTERIOR); No. of house-keeping units.

Owner Cutting Edge Technologies LLC

BUILDING DEPARTMENT, CITY OF MILFORD, CONN.
Thomas Rauri/ea Building Inspector

CITY OF MILFORD, CONNECTICUT

Date 8/9/01

Received of URS Corp - CT
One thousand seventy one Dollars \$ 1071 -
In payment of BP # 33671

CRK # 9069

DEPARTMENT BY [Signature]

WHITE COPY - ORIGINAL

YELLOW COPY - DEPARTMENT COPY

URS GENERAL

CHECK REQUEST

ROUTE TO:

- Regional Accounts Payable
- Local Accounts Payable

MAILING INSTRUCTIONS

- Mail
- DO NOT MAIL. Return Check to: Peter Maxwell

DATE REQUESTED:

7/9

CONTRIBUTION YES NO

DATE CHECK NEEDED:

7/13

SALES TAX DUE YES NO

PAYABLE TO:

Payee: Town City of Milford
 Street: Parsons Office Complex
70 West River Road
 City/State/Zip: Milford, CT 06460

#NAME?

AMOUNT:

\$ 15.00

PURPOSE:

Certificate of use fee: New requirement for building permits; reimbursible service to client (Nextel)

SPECIAL INSTRUCTIONS:

OFFICE CODE /

PROJECT NO./TASK NO.

F301731.44/F15

ACCOUNT NO.

APPROVALS:

Requested by: [Signature] Date: 8/9/01
 (SIGNATURE)

Approved by: [Signature] Date: 8/9/01
 (SIGNATURE)

Approved/Reviewed by Finance Manager: _____

ACCOUNTS PAYABLE INFORMATION:

Always require an Original Invoice/Receipt from Payee to be submitted to Accounts Payable Department upon receipt. Include specific detail items noted below.

FOR ACCOUNTING USE ONLY:

Vendor #	Reference
Voucher #	Project No.
Invoice Date	Task No.
Invoice Date	Account No.
Invoice #	Amount
Pay Date	CKREQ.WK4

9106

URS CORPORATION - CONNECTICUT

200 ENTERPRISE DR. STE 8B
ROCKY HILL, CT 06067
800-550-8100

FLEET

01070 ROCKY HILL OFFICE
ROCKY HILL, CONNECTICUT 06067
51-57-118

8/13/2001

PAY TO THE ORDER OF
CITY OF MILFORD

\$ 15.00

Fifteen and 00/100

DOLLARS

00100473.00

TWO SIGNATURES REQUIRED IN EXCESS OF \$500.00

Paul F. Schmidt

MEMO

BUILDING PERMIT

⑆009106⑆ ⑆011900571⑆ 9398 97763⑆

URS CORPORATION - CONNECTICUT

CITY OF MILFORD
F30000173144-F15-42922EX

8/13/2001

9106
15.00

Fleet Bank

BUILDING PERMIT

15.00

URS GREINER

CHECK REQUEST

ROUTE TO:

Regional Accounts Payable

Local Accounts Payable

MAILING INSTRUCTIONS

Mail

DO NOT MAIL. Return Check to

Peter Maxwell

DATE REQUESTED:

7/18/01

CONTRIBUTION YES NO

DATE CHECK NEEDED:

7/16/01

SALES TAX DUE YES NO

PAYABLE TO:

Payee: City of Milford

#NAME?

Street: Parsons Office Complex

70 West River Road

City/State/Zip: Milford, CT 06460

AMOUNT:

\$ 1071.00

($\$6/1000 \times 177,000 + \9)

PURPOSE:

Building permit application fee - reimbursible service to client (Nextel)

SPECIAL INSTRUCTIONS:

OFFICE CODE / PROJECT NO/TASK NO.

F300001731.44 / F15

ACCOUNT NO.

APPROVALS:

Requested by:

[Signature]
(SIGNATURE)

Date:

7/13/01

Approved by:

[Signature]
(SIGNATURE)

Date:

7/14/01

Approved/Reviewed by Finance Manager:

ACCOUNTS PAYABLE INFORMATION:

Always require an Original Invoice/Receipt from Payee to be submitted to Accounts Payable Department upon receipt. Include specific detail items noted below

FOR ACCOUNTING USE ONLY:

Vendor #	Reference
Voucher #	Project No.
Voucher Date	Task No.
Invoice Date	Account No.
Invoice #	Amount
Pay Date	CKREQ.WK4

EXHIBIT 6

SITE NAME: CTNH003/NEXTEK MILFORD

160 WAMPUS LANE
MILFORD, CT 06460

SITE NUMBER: CTNH003A

SITE CONFIG: 67D5A992DB



T-MOBILE NORTHEAST, LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

CTNH003A

CTNH003/NEXTEK
MILFORD

160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO: 101029.004.01

CHECKED BY: GEH

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	6/26/20	GEH	ISSUED FOR REVIEW
1	8/14/20	JJD	ISSUED FOR REVIEW
2	8/19/20	JJD	ISSUED FOR REVIEW
3	9/2/20	JJD	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21



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SHEET NUMBER: T-1 REVISION: 3

T-1 3

PROJECT NOTES

GENERAL NOTES:

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC, ROUTINE MAINTENANCE AND THEREFORE, DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES:

TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE-BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

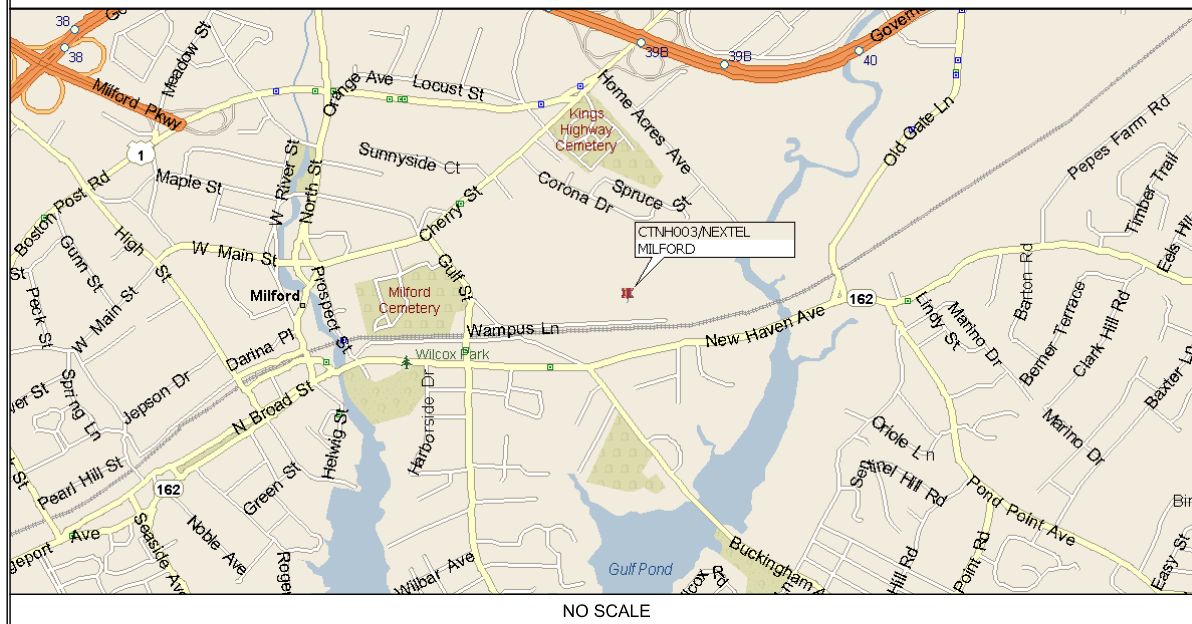
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND HAS DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOAD. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

B+T GROUP ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTIONS ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES.

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS	LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS NOT PERMITTED	DIPLEXERS:	UNRESTRICTED
SECTOR B:	ACCESS NOT PERMITTED	RADIO CABINETS:	UNRESTRICTED
SECTOR C:	ACCESS NOT PERMITTED	PPC DISCONNECT:	UNRESTRICTED
RRH:	ACCESS NOT PERMITTED	MAIN CIRCUIT D/C:	UNRESTRICTED
TMA:	ACCESS NOT PERMITTED	NIU/T DEMARC:	UNRESTRICTED
GPS/LMU:	CAUTION: OSHA APPROVED PORTABLE 8' STEP-LADDER REQUIRED	OTHER/SPECIAL:	NONE

LOCATION MAP



NO SCALE

APPROVALS

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

ACCEPTANCE DOES NOT CONSTITUTE APPROVAL OF DESIGN, CALCULATIONS, ANALYSIS, TEST METHODS OF MATERIALS DEVELOPED OR SELECTED BY THE SUBCONTRACTOR AND DOES NOT RELIEVE SUBCONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION
ZONING JURISDICTION: (TOWN OF MILFORD)	BASED ON INFORMATION PROVIDED BY T-MOBILE, REGULATORY COMPLIANCE AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409 AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).
SITE ADDRESS:	160 WAMPUS LANE MILFORD, CT 06460
LATITUDE:	41.225142° N
LONGITUDE:	73.042377° W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES & ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
TOWER OWNER:	SBA 2012 TC ASSETS, LLC
SBA SITE ID:	CT46128-A
SBA SITE NAME:	MILFORD-WEST
SBA REGIONAL SITE MANAGER:	STEPHEN ROTH (860) 539-4920 sroth@sbase.com

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	3
GN-1	GENERAL NOTES	3
C-1	COMPOUND AND ELEVATION PLAN	3
C-2	EXISTING AND PROPOSED ANTENNA PLANS	3
C-3	DETAILS	3
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RF-1	RFDS DIAGRAMS	3
E-1	GROUNDING DETAILS AND NOTES	3
-	MOUNT MODIFICATIONS	-



CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!



GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI OR NFPA) LIGHTING PROTECTION CODE AND GENERAL COMPLIANCE WITH TELECORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATION OR ADVERSE FINDING TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GE'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BUS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDED FITTINGS OR BY BINDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20' OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BAR TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR: SBA COMMUNICATIONS CORP.
 SUBCONTRACTOR: GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER: T-MOBILE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALL AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY, SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS NOTED OTHERWISE, PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WETHER SHALL BE HOT DIPPED GALVANIZED. TOUCH-UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW, USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, AL 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 IF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 BUILDING CODE: IBC 2015
 ELECTRICAL CODE: NEC 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)

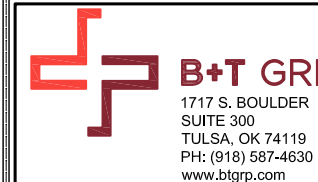
MANUAL OF STEEL CONSTRUCTION; ASD, FOURTEENTH EDITION

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, METHOD 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.

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	GC	GENERAL CONTRACTOR	REF.	REFERENCE
AWG	AMERICAN WIRE GAUGE	MAX.	MAXIMUM	REQ.	REQUIRED
BCW	BARE COPPER WIRE	MGB	MASTER GROUND BAR	RF	RADIO FREQUENCY
BTS	BASE TRANSCEIVER STATION	MIN.	MINIMUM	T.B.D.	TO BE DETERMINED
(E)	EXISTING	(N)	PROPOSED	T.B.R.	TO BE REMOVED
EG	EQUIPMENT GROUND	N.T.S.	NOT TO SCALE	T.B.R.R.	TO BE REMOVED AND REPLACED
EGR	EQUIPMENT GROUND RING	RE:	REFERENCE	(TYP)	TYPICAL



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SHEET NUMBER: GN-1 REVISION: 3

ANTENNA MOUNT STRUCTURAL DESIGN NOTE:

ENGINEER-OF-RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS, AND RECOMMENDS THAT EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT, SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.

SPECIAL PRE-CONSTRUCTION WORK NOTE:

GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

TOP OF TOWER
ELEV. = 120'-0" ± A.G.L.

(E) OTHERS ANTENNAS
ELEV. = 116'-6" ± A.G.L.

$\frac{2}{C-2}$ $\frac{ALL}{C-3}$ T-MOBILE MOUNT
ELEV. = 105' ± A.G.L. (SBA*)

EXISTING T-MOBILE PANEL ANTENNA (TYP)

MODIFY EXISTING MOUNT PER MODIFICATION DESIGN DRAWINGS BY TOWER ENGINEERING SOLUTIONS DATED 7/28/20

EXISTING MONOPOLE
T-MOBILE FEEDLINES ROUTED INSIDE TOWER

B+T GRP
1717 S. BOULDER SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-Mobile

T-MOBILE NORTHEAST, LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

CTNH003A

CTNH003/NEXTEK
MILFORD

160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO: 101029.004.01

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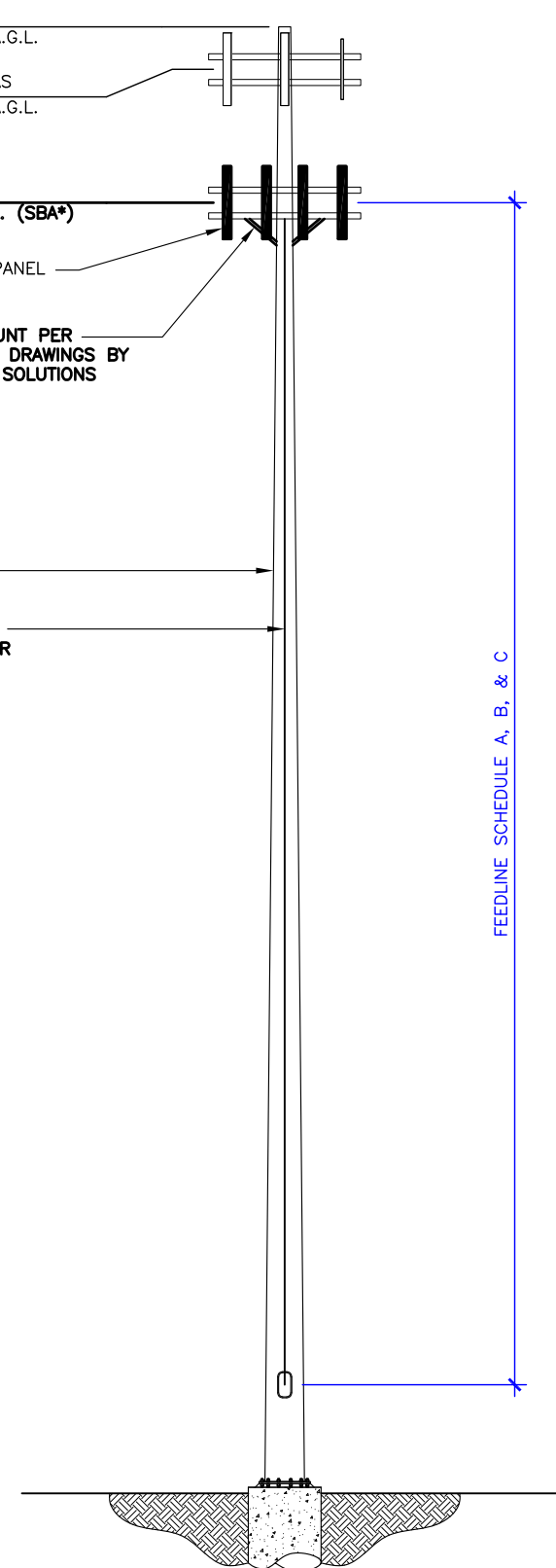
9/2/20

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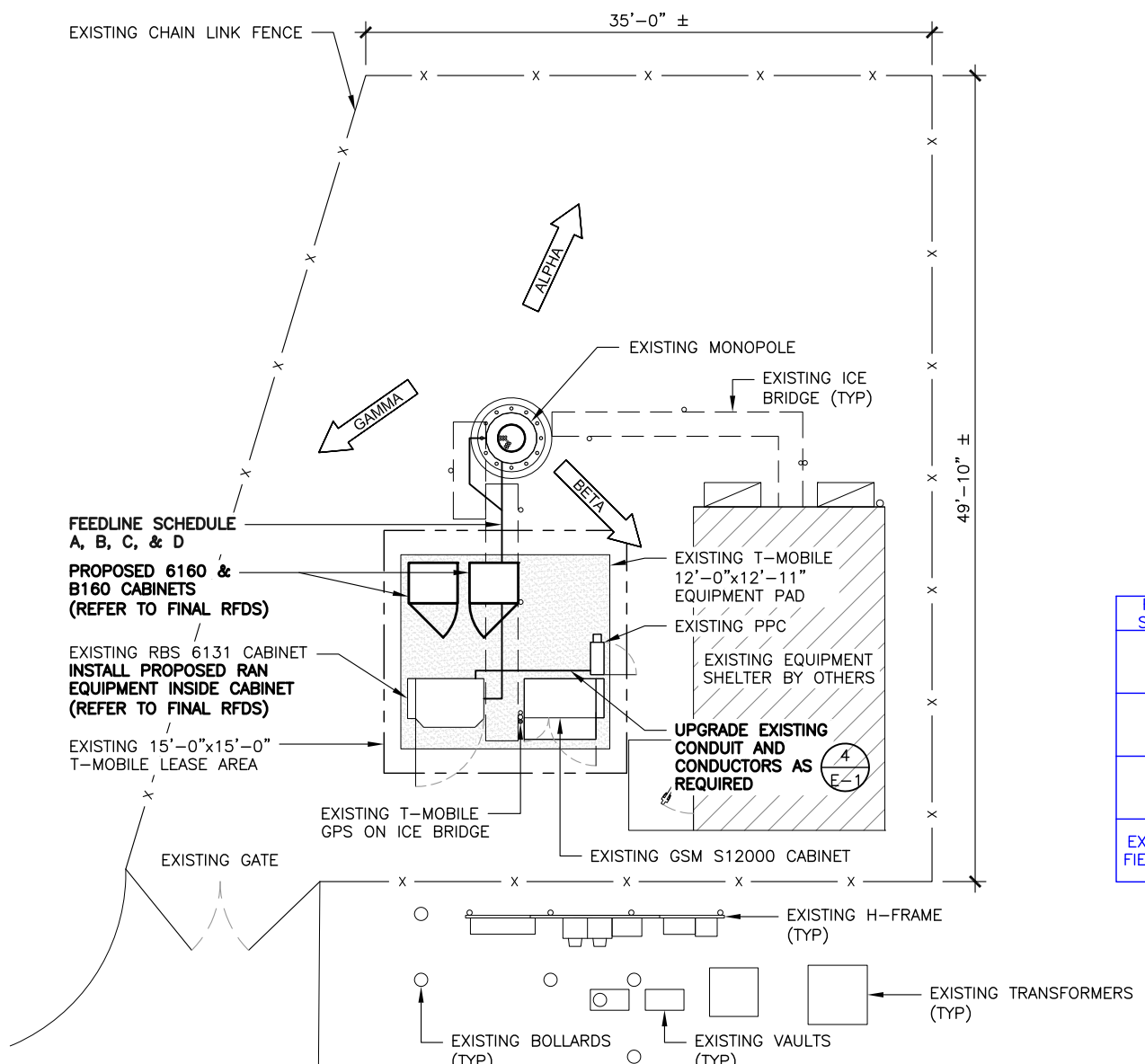
C-1 3

2 ELEVATION PHOTO DETAIL
SCALE: N.T.S.



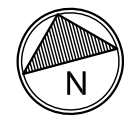
FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO REMAIN: (6) 1 5/8" COAX & (1) 9x18 HYBRID FIBER TO T-MOBILE RAD @ 105'	INSIDE POLE
B	EXISTING TO BE REMOVED: (6) 1 5/8" COAX	INSIDE POLE
C	PROPOSED: (3) 6x12 HYBRID FIBER TO T-MOBILE RAD @ 105'	INSIDE POLE

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

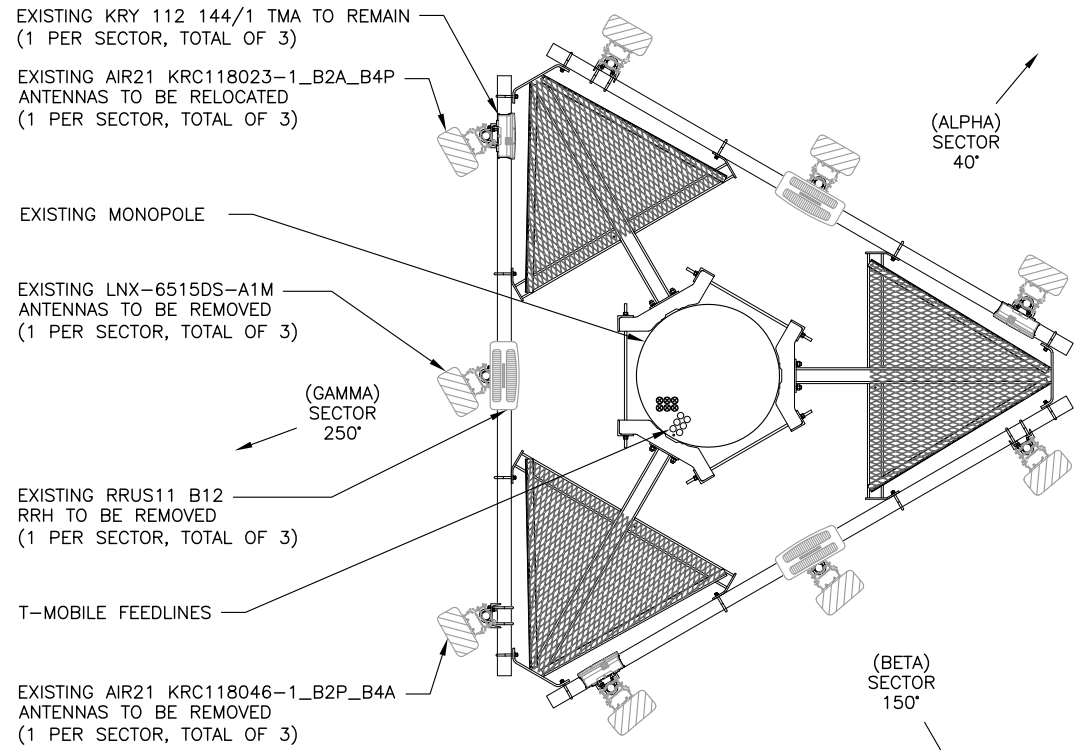


1 OVERALL SITE PLAN

SCALE: 11x17 SCALE: 3/32"=1'-0" 22x34 SCALE: 3/16"=1'-0"



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1 EXISTING ANTENNA PLAN

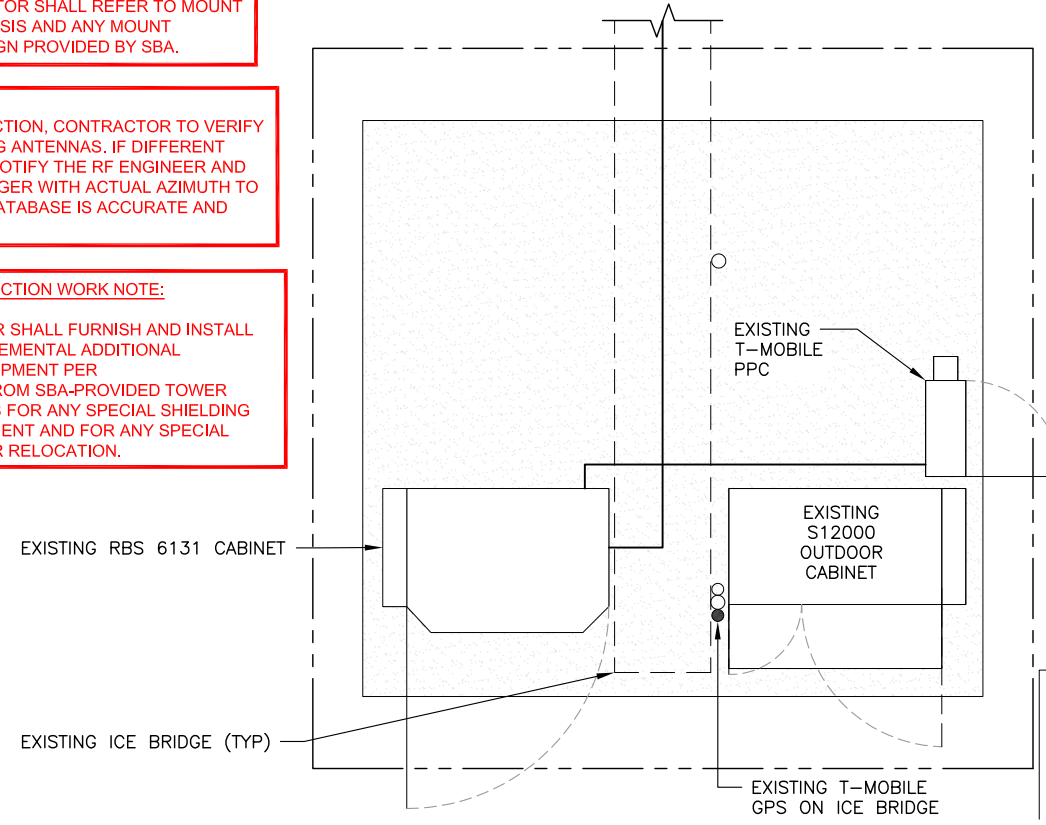
SCALE: 11x17 SCALE: 1/4"=1'-0"
22x34 SCALE: 1/2"=1'-0"



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

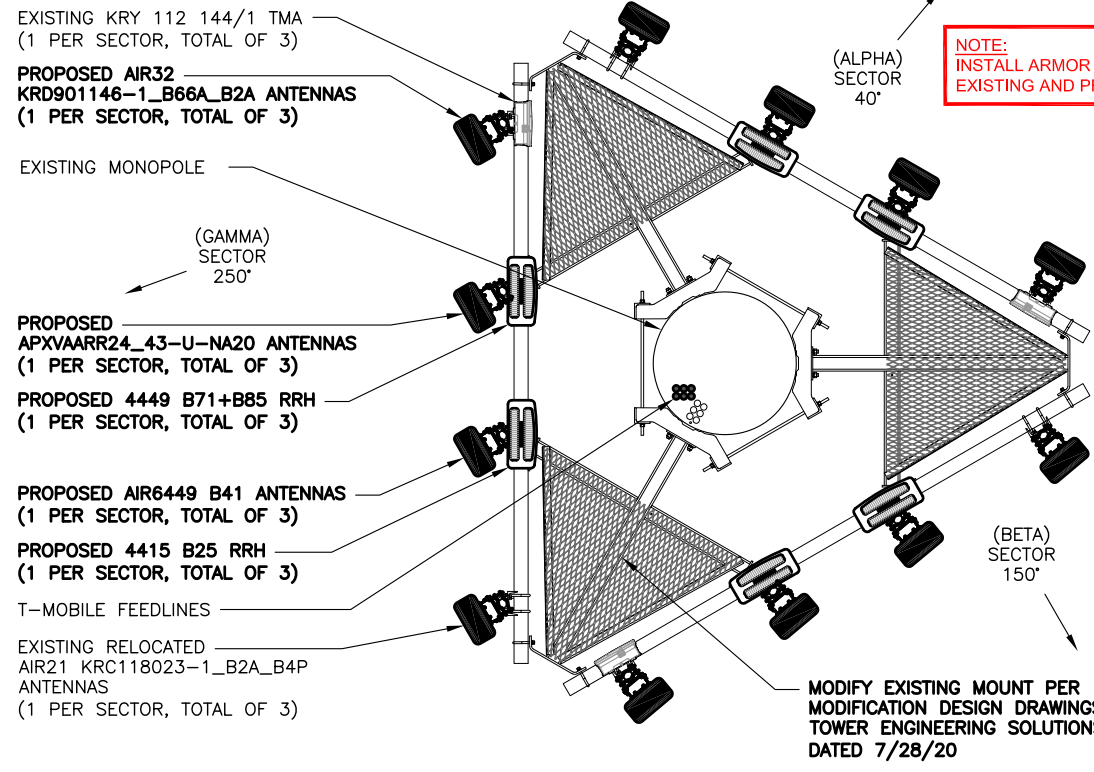
NOTE:
AT TIME OF CONSTRUCTION, CONTRACTOR TO VERIFY AZIMUTHS OF EXISTING ANTENNAS. IF DIFFERENT FROM RFDS, PLEASE NOTIFY THE RF ENGINEER AND CONSTRUCTION MANAGER WITH ACTUAL AZIMUTH TO ENSURE T-MOBILE'S DATABASE IS ACCURATE AND UP-TO-DATE.

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



3 EXISTING EQUIPMENT LAYOUT

SCALE: 11x17 SCALE: 1/4"=1'-0"
22x34 SCALE: 1/2"=1'-0"

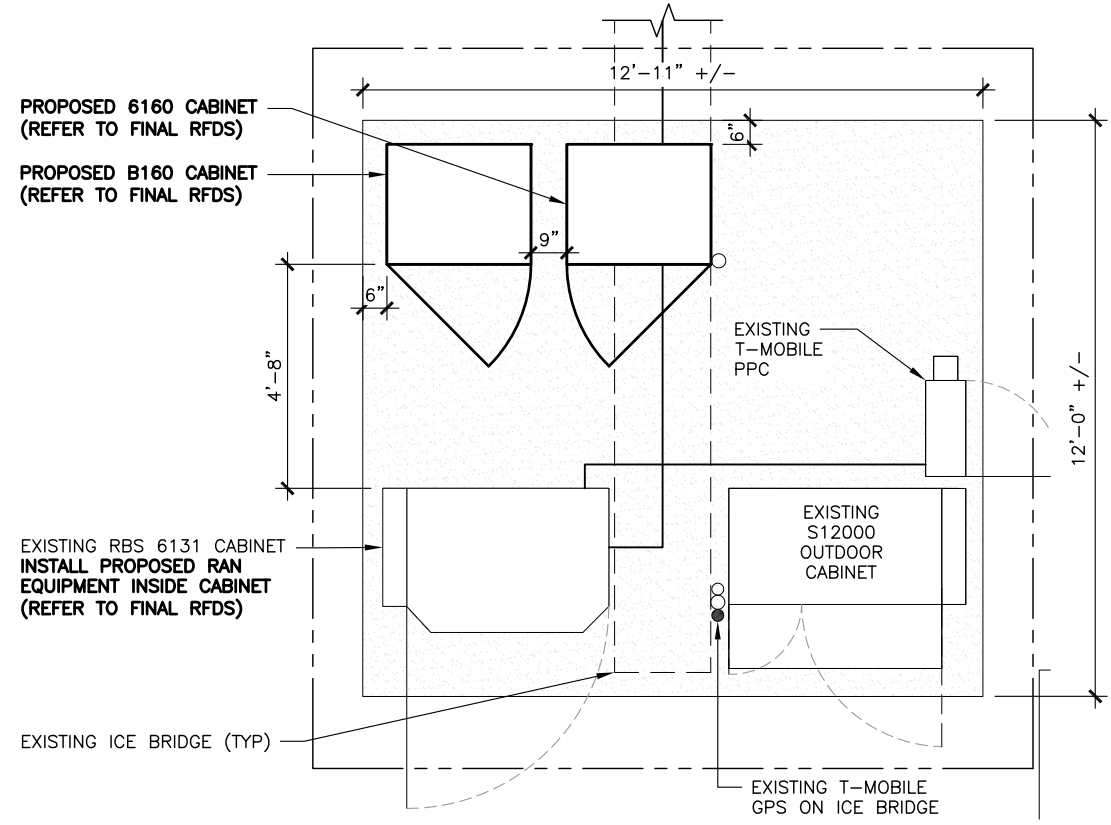


2 PROPOSED ANTENNA PLAN

SCALE: 11x17 SCALE: 1/4"=1'-0"
22x34 SCALE: 1/2"=1'-0"



NOTE:
INSTALL ARMOR JUMPERS ON ALL EXISTING AND PROPOSED EQUIPMENT.



4 PROPOSED EQUIPMENT LAYOUT

SCALE: 11x17 SCALE: 1/4"=1'-0"
22x34 SCALE: 1/2"=1'-0"

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-Mobile
T-MOBILE NORTHEAST, LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

CTNH003A
CTNH003/NEXTEK
MILFORD
160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO: 101029.004.01
CHECKED BY: GEH

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	6/26/20	GEH	ISSUED FOR REVIEW
1	8/14/20	JJD	ISSUED FOR REVIEW
2	8/19/20	JJD	ISSUED FOR REVIEW
3	9/2/20	JJD	CONSTRUCTION

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SHEET NUMBER: **C-2** REVISION: **3**

101029_C146128-A_Milford-West_CTNH003A_CD.dwg - SheetC-2 - User: ghayes - Sep 02, 2020 - 8:23am

ANTENNA MOUNT STRUCTURAL DESIGN NOTE:

ENGINEER-OF-RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS, AND RECOMMENDS THAT EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT. SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.

SPECIAL PRE-CONSTRUCTION WORK NOTE:

GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.



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CTNH003A

CTNH003/NEXTEK
MILFORD

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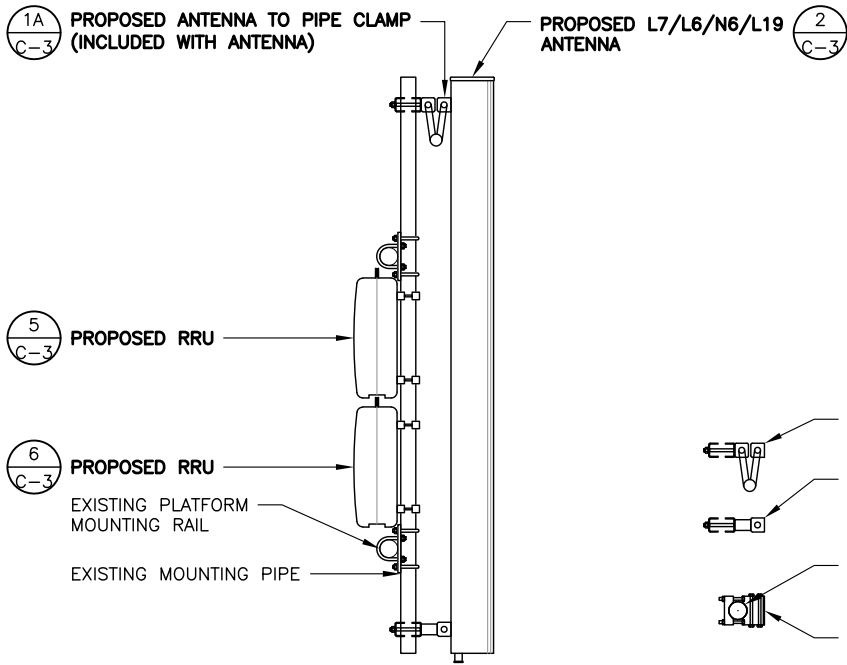
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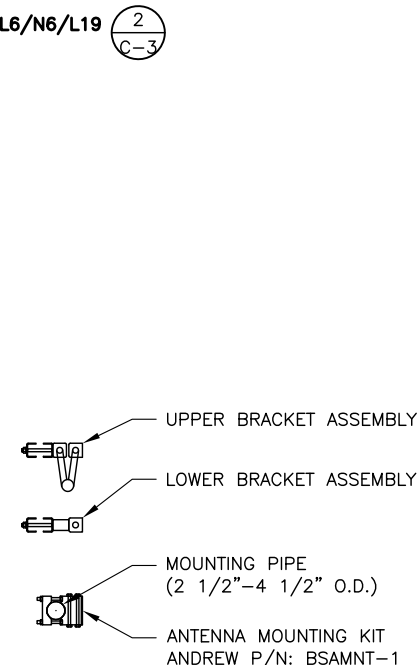


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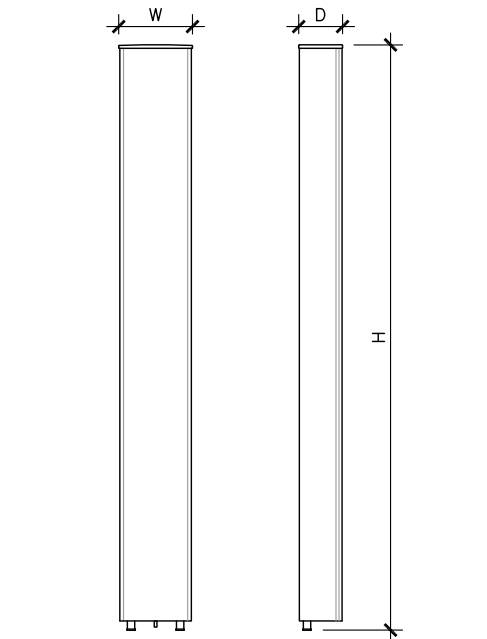
SHEET NUMBER: **C-3** REVISION: **3**



1 PROPOSED L7/L6/N6/L19 ANTENNA & RRU MOUNTING DETAIL
SCALE: N.T.S.



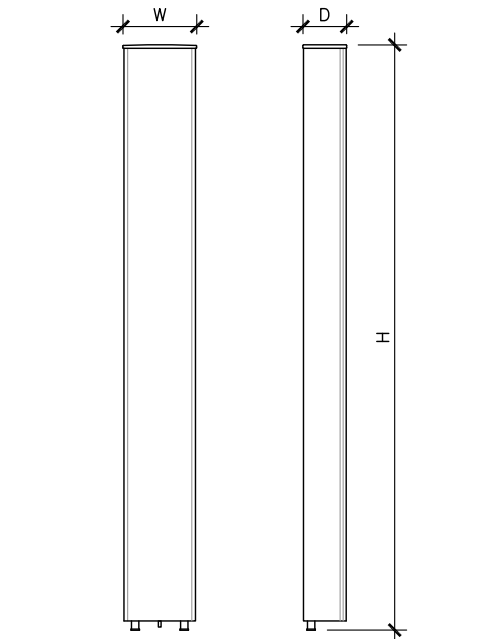
1A L7/L6/N6/N19 ANTENNA MOUNTING BRACKET
SCALE: N.T.S.



L700 ANTENNA SPECS

MANUFACTURER	RFS
MODEL #	APXVAARR24_43-U-NA20
WIDTH	24"
DEPTH	8.7"
HEIGHT	95.9"
WEIGHT	128 LBS

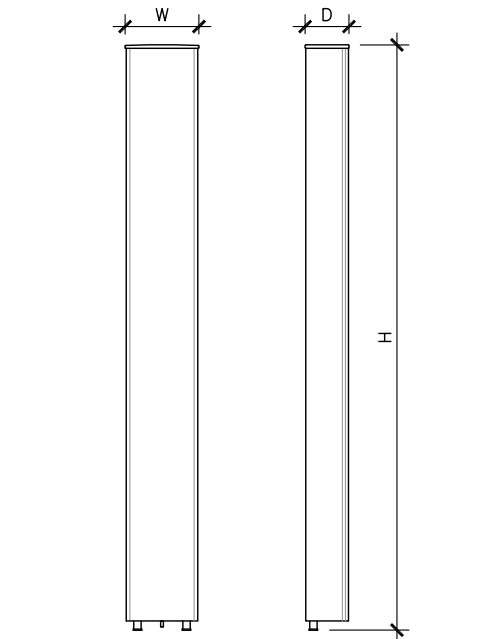
2 L7/L6/N6/L19 ANTENNA DETAIL
SCALE: N.T.S.



L700 ANTENNA SPECS

MANUFACTURER	ERICSSON
MODEL #	AIR32 KRD901146-1
WIDTH	12"
DEPTH	7.9"
HEIGHT	55"
WEIGHT	83 LBS

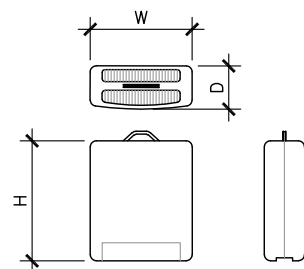
3 L21/L19 ANTENNA DETAIL
SCALE: N.T.S.



L700 ANTENNA SPECS

MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.6"
DEPTH	8.3"
HEIGHT	33.1"
WEIGHT	104 LBS

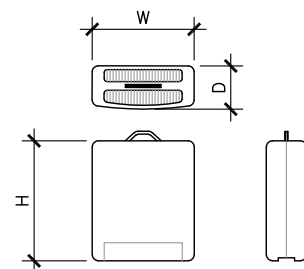
4 L2.5/N2.5 ANTENNA DETAIL
SCALE: N.T.S.



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	4449 B71+B12
WIDTH	13.18"
DEPTH	9.25"
HEIGHT	15"
WEIGHT	74 LBS

5 REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



RRU SPECIFICATIONS

MANUFACTURER	ERICSSON
MODEL #	4415 B25
WIDTH	13.4"
DEPTH	5.9"
HEIGHT	16.5"
WEIGHT	46 LBS

6 REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.

FINAL ANTENNA SCHEDULE

SECTOR	TECH	ANTENNA MODEL	AZIMUTH	RAD CENTER	M-TILT	E-TILT	RADIOS/TMAS	CABLE TYPE	CABLE LENGTH
ALPHA	U19/G19/U21	AIR21 KRC118023-1_B2A_B4P	40°	105'	0	6°/6'	-	(1) 6x12 HCS FIBER	147'
	L2.5/N2.5	AIR6449 B41	40°	105'	0	0°/0'	(1) 4415 B25	(1) 6x12 HCS FIBER	147'
	L7/L6/N6/L19	APXVAARR24_43-U-NA20	40°	105'	0	2°/2'	(1) 4449 B71+B85	(1) 6x12 HCS FIBER	147'
BETA	U19/G19/U21	AIR21 KRC118023-1_B2A_B4P	150°	105'	0	6°/6'	-	(1) 6x12 HCS FIBER (SHARED)	147'
	L2.5/N2.5	AIR6449 B41	150°	105'	0	0°/0'	(1) 4415 B25	(1) 6x12 HCS FIBER (SHARED)	147'
	L7/L6/N6/L19	APXVAARR24_43-U-NA20	150°	105'	0	2°/2'	(1) 4449 B71+B85	(1) 6x12 HCS FIBER (SHARED)	147'
GAMMA	U19/G19/U21	AIR21 KRC118023-1_B2A_B4P	250°	105'	0	6°/6'	-	(1) 6x12 HCS FIBER (SHARED)	147'
	L2.5/N2.5	AIR6449 B41	250°	105'	0	0°/0'	(1) 4415 B25	(1) 6x12 HCS FIBER (SHARED)	147'
	L7/L6/N6/L19	APXVAARR24_43-U-NA20	250°	105'	0	2°/2'	(1) 4449 B71+B85	(1) 6x12 HCS FIBER (SHARED)	147'
		L21/L19	AIR32 KRD901146-1_B66A_B2A	250°	105'	0	6°/6'	KRY 112 144/1 (2) 1 5/8" COAX	147'

7 FINAL ANTENNA SCHEDULE
SCALE: N.T.S.

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 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581

CTNH003A
**CTNH003/NEXTEK
 MILFORD**
 160 WAMPUS LANE
 MILFORD, CT 06460

PROJECT NO: 101029.004.01
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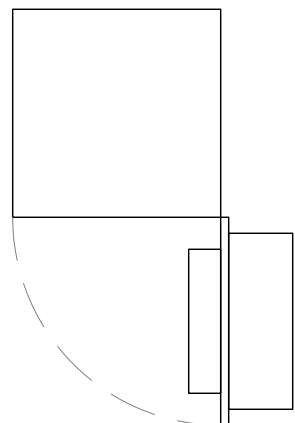
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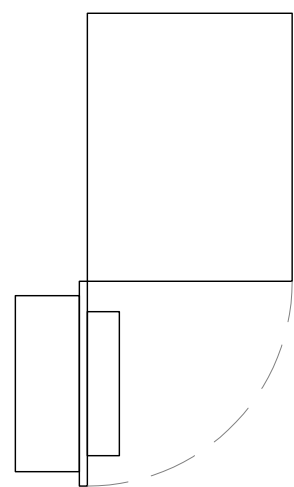
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SHEET NUMBER: **C-4** REVISION: **3**



CABINET SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	B160
WIDTH	26"
DEPTH	26"
HEIGHT	63"
WEIGHT	134 KG

1 ERICSSON B160 BATTERY CABINET
 SCALE: N.T.S.



CABINET SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	6160
WIDTH	25.6"
DEPTH	33.5"
HEIGHT	63"
WEIGHT	60 LBS

2 ERICSSON 6160 SSC
 SCALE: N.T.S.

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
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Existing RAN Equipment
 Template: 7020u Outdoor

Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DULW30 (x 2) L2100 L700	BB 6630 L2100 L700
Hybrid Cable System	Ericsson 9x18 HCS "Select Length"	
Radio	RU22 (x 6) L2100	RRUS11 B12 (x 3) L700

Proposed RAN Equipment
 Template: 67D5A992DB Outdoor

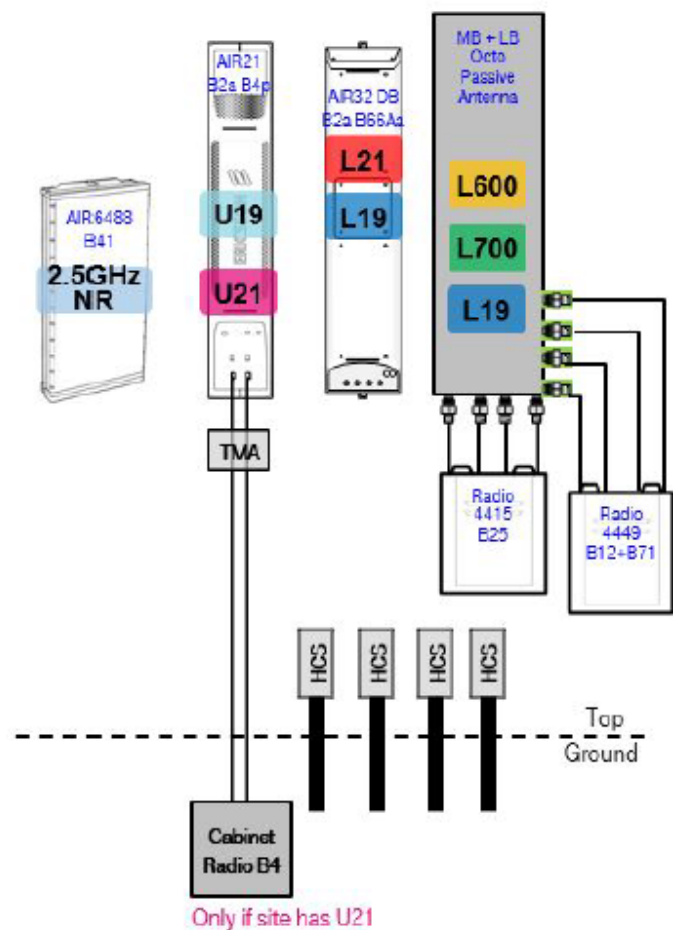
Enclosure	1	2	3	4
Enclosure Type	RBS 6131	S12000 Outdoor	Enclosure 6160	E160
Baseband	DULW30 (U2100) L1900 L700 L600	DUG20 (Q1900) BB 6630 N600	BB 6630 (x 3) L2600 N2800	BB 6649 N2800
Hybrid Cable System	Ericsson 9x18 HCS "Select Length"		Ericsson 6x12 HCS "Select AWG & Length" (x 3)	
Radio	RU22 (x 6) L2100			

RF DESIGN GENERAL NOTE:

- RF DESIGN BASED ON RFDS DATED 5/8/19. GENERAL CONTRACTOR/TOWER CREW SHALL VERIFY THAT THE LATEST RFDS AND RAN WIRING DIAGRAM IS USED FOR EQUIPMENT INSTALLATION.
- PRIOR TO INSTALLATION OF TOWER TOP EQUIPMENT, GENERAL CONTRACTOR/TOWER CREW SHALL VERIFY AZIMUTHS OF EXISTING ANTENNAS. DISCREPANCIES AND ACTUAL AZIMUTHS SHALL BE REPORTED IMMEDIATELY TO RF ENGINEER AND T-MOBILE CONSTRUCTION MANAGER.

RFDS FOOTNOTES:

- INFORMATION IN BOLD RED TEXT IS PROVIDED BY A&E AND HIGHLIGHTS IMPORTANT DISCREPANCIES BETWEEN RFDS AND ACTUAL FIELD MEASUREMENTS OR SBA-PROVIDED RECORD INFORMATION.
- SBA-PROVIDED ANTENNA RAD AGL BASED ON COLOCATION APPLICATION AND STRUCTURAL ANALYSIS AND SHALL SUPERCEDE ANY CONFLICTING RFDS ANTENNA RAD AGL.
- HYBRID TRUNK FEEDLINE LENGTHS AS PROVIDED BY A&E BASED ON SCALED DIMENSIONS FROM RBS TO ANTENNA/RRU CONNECTIONS PLUS 20' FOR (2) 10' COILS EACH AT TOP AND BOTTOM TERMINATIONS. T-MOBILE CONSTRUCTION MANAGER SHALL CONFIRM ALL EQUIPMENT SCHEDULES, PART NUMBERS AND FEEDLINE/JUMPER LENGTHS BEFORE PREPARING A BILL OF MATERIALS.



Sector (Proposed) view from behind

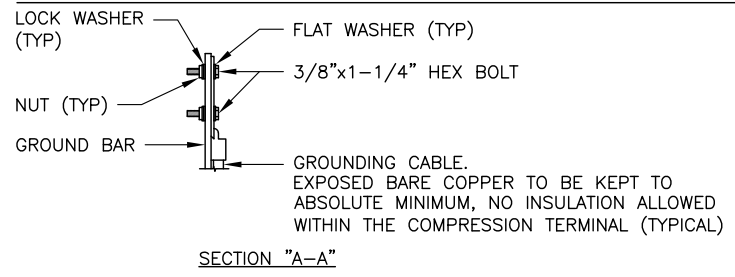
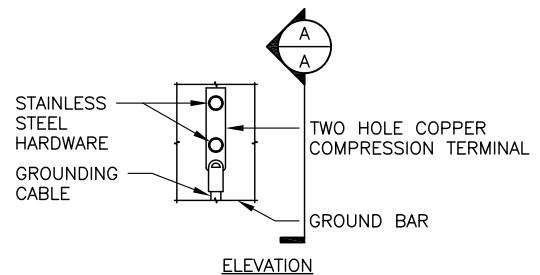
Coverage Type	A - Outdoor Macro			
Antenna	1	2	3	4
Antenna Model	Ericsson - AIR32 KR0901145-L_BMA_B2A (Octo)	RFS - APXUARR24_43-U-NR25 (Octo)	Ericsson - AIR649 B41 (Active Antenna - Massive MIMO)	Ericsson - AIR21 KR118023-L_B2A_B4P (Quad)
Azimuth	40	40	40	40
M. Tilt	0	0	0	0
Height	125	125	125	125
Ports	P1, P2, P3, P4, P5, P6, P7, P8	P5, P6, P7, P8	P9, P10	P11, P12
Active Tech.	L210, L190, L700, L600, N600	L190, L700, L600, N600	L2500, N2500, U1900, G1900	U2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	0	0	0	0
Cables	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 147 ft. (x2), 1-5/8" Coax - 147 ft. (x2)
TMUs				Generic Twin Coax 18 - AWG (A/Antenna)
Diplexers / Combiners				
Radio	Rad1: 4449 B71, 4415 B25, 4449 B71, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)
Sector Equipment				
Unconnected Equipment:				
Scope of Work:	Replace AIR21 B2P/B4A for L2100 in Position 1 with (1) AIR32 B66A/B2A DB for L2100 and L1900 1st Carrier. Replace Low-Band Dual with (1) Low-Band/Mid-Band Octo in Position 2. Replace RRUS11 B12 with (1) Radio 4449 B71+B85 for L600, L700, and N600 to Position 2 at antenna, and connect its ports to the Low-Band Ports of the octo antenna. Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band Ports of the antenna. Add (1) AIR649 B41 for L2500 and N2500 as new Position 3. Ensure RET control is enabled for all technology layers according to the Design Documents.			

Sector (Proposed) view from behind

Coverage Type	A - Outdoor Macro			
Antenna	1	2	3	4
Antenna Model	Ericsson - AIR32 KR0901145-L_BMA_B2A (Octo)	RFS - APXUARR24_43-U-NR25 (Octo)	Ericsson - AIR649 B41 (Active Antenna - Massive MIMO)	Ericsson - AIR21 KR118023-L_B2A_B4P (Quad)
Azimuth	150	150	150	150
M. Tilt	0	0	0	0
Height	125	125	125	125
Ports	P1, P2, P3, P4, P5, P6, P7, P8	P5, P6, P7, P8	P9, P10	P11, P12
Active Tech.	L210, L190, L700, L600, N600	L190, L700, L600, N600	L2500, N2500, U1900, G1900	U2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	0	0	0	0
Cables	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft. (x2), 1-5/8" Coax - 147 ft. (x2)
TMUs				Generic Twin Coax 18 - AWG (A/Antenna)
Diplexers / Combiners				
Radio	Rad1: 4449 B71, 4415 B25, 4449 B71, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)
Sector Equipment				
Unconnected Equipment:				
Scope of Work:	Replace AIR21 B2P/B4A for L2100 in Position 1 with (1) AIR32 B66A/B2A DB for L2100 and L1900 1st Carrier. Replace Low-Band Dual with (1) Low-Band/Mid-Band Octo in Position 2. Replace RRUS11 B12 with (1) Radio 4449 B71+B85 for L600, L700, and N600 to Position 2 at antenna, and connect its ports to the Low-Band Ports of the octo antenna. Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band Ports of the antenna. Add (1) AIR649 B41 for L2500 and N2500 as new Position 3. Ensure RET control is enabled for all technology layers according to the Design Documents.			

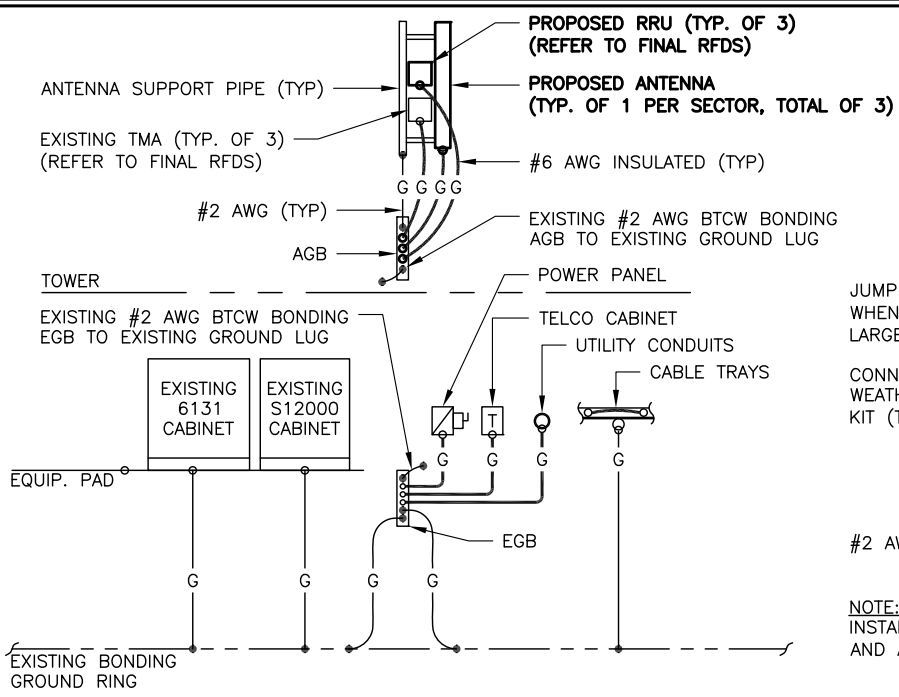
Sector (Proposed) view from behind

Coverage Type	A - Outdoor Macro			
Antenna	1	2	3	4
Antenna Model	Ericsson - AIR32 KR0901145-L_BMA_B2A (Octo)	RFS - APXUARR24_43-U-NR25 (Octo)	Ericsson - AIR649 B41 (Active Antenna - Massive MIMO)	Ericsson - AIR21 KR118023-L_B2A_B4P (Quad)
Azimuth	280	280	280	280
M. Tilt	0	0	0	0
Height	125	125	125	125
Ports	P1, P2, P3, P4, P5, P6, P7, P8	P5, P6, P7, P8	P9, P10	P11, P12
Active Tech.	L210, L190, L700, L600, N600	L190, L700, L600, N600	L2500, N2500, U1900, G1900	U2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	0	0	0	0
Cables	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft.	Fiber Jumper - 15 ft. (x2), 1-5/8" Coax - 147 ft. (x2)
TMUs				Generic Twin Coax 18 - AWG (A/Antenna)
Diplexers / Combiners				
Radio	Rad1: 4449 B71, 4415 B25, 4449 B71, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)	Rad1: 4415 B25, 4415 B25, S1A1 Antenna (NR25)
Sector Equipment				
Unconnected Equipment:				
Scope of Work:	Replace AIR21 B2P/B4A for L2100 in Position 1 with (1) AIR32 B66A/B2A DB for L2100 and L1900 1st Carrier. Replace Low-Band Dual with (1) Low-Band/Mid-Band Octo in Position 2. Replace RRUS11 B12 with (1) Radio 4449 B71+B85 for L600, L700, and N600 to Position 3 at antenna, and connect its ports to the Low-Band Ports of the octo antenna. Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band Ports of the antenna. Add (1) AIR649 B41 for L2500 and N2500 as new Position 3. Ensure RET control is enabled for all technology layers according to the Design Documents.			

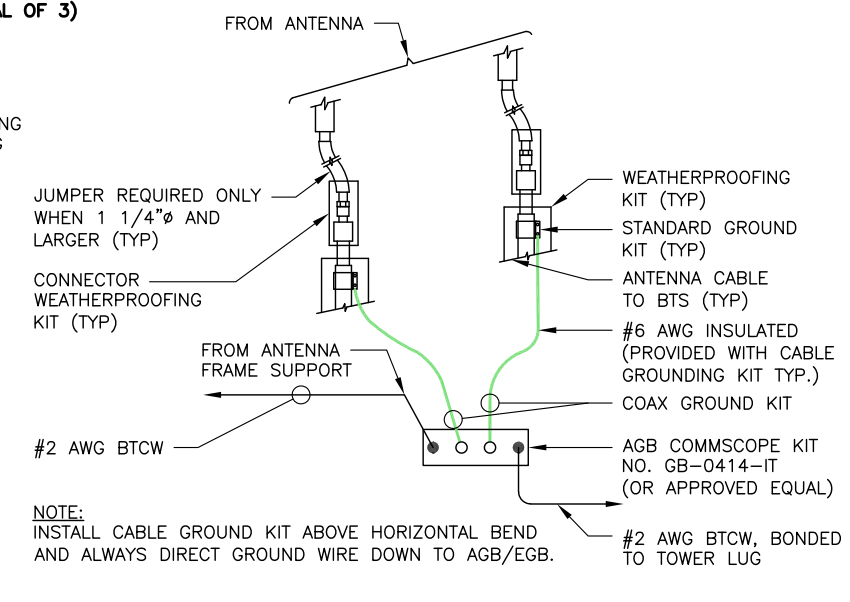


NOTE:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

1 TYPICAL GROUND BAR CONNECTION DETAIL
 SCALE: N.T.S.

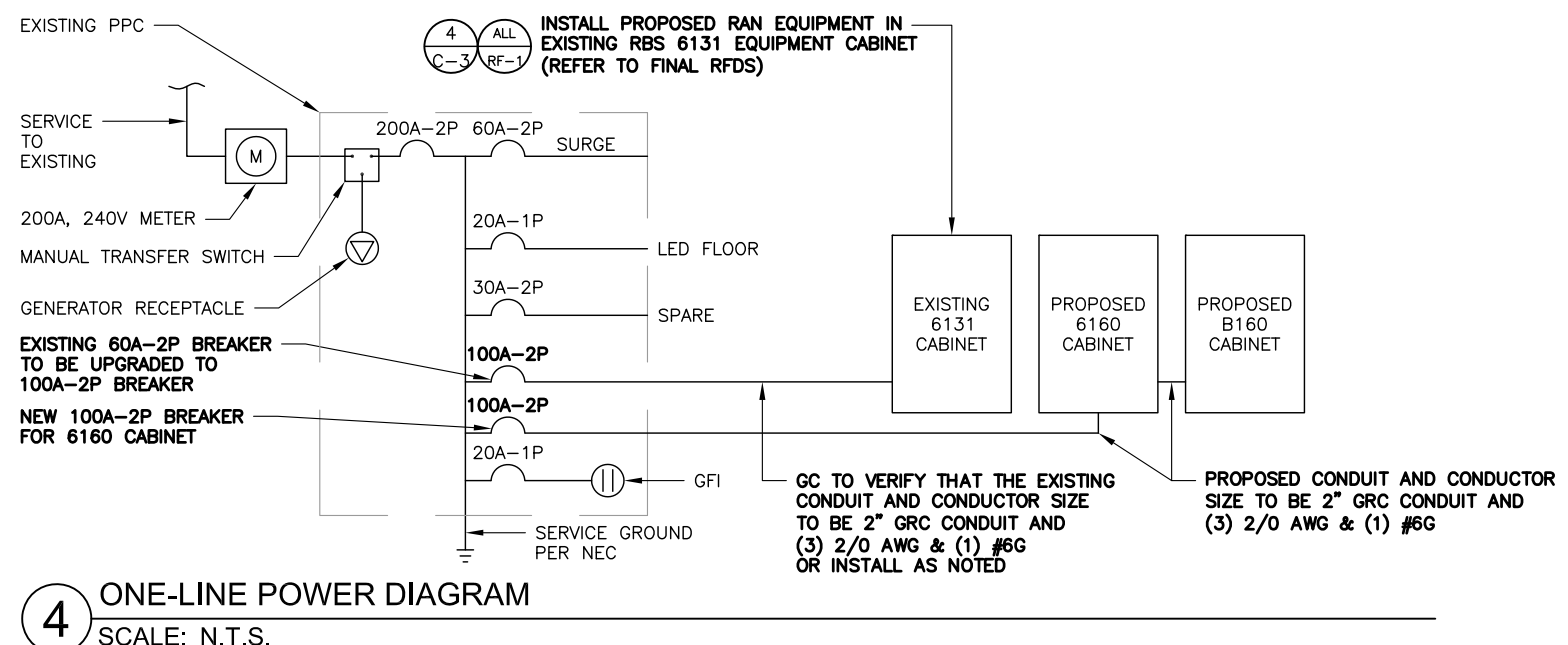


2 TYPICAL EXISTING GROUNDING RISER DIAGRAM
 SCALE: N.T.S.



NOTE:
 INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

3 TOWER TOP CABLE GROUNDING DETAIL
 SCALE: N.T.S.



4 ONE-LINE POWER DIAGRAM
 SCALE: N.T.S.

ELECTRICAL LEGEND	
A	AMPERE
BTCW	BARE TINNED (SOLID) COPPER WIRE
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
KWH	KILOWATT - HOUR
PPC	POWER PROTECTION CABINET
V	VOLT
⊕	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD GROUND
⊕	EXOTHERMIC CONNECTION (CAD WELD)
⊕	MECHANICAL CONNECTION
AGB/EGB	ANTENNA GROUND BAR/EQUIPMENT GROUND BAR
MGB	MASTER GROUND BAR
G	GROUND COPPER WIRE, SIZED AS NOTED
—	EXPOSED WIRING, SIZE AS NOTED
—	INSULATED WIRING, SIZE AS NOTED
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

- ELECTRICAL & GROUNDING NOTES**
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
 - ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
 - THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
 - GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
 - ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
 - RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
 - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
 - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
 - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT.
 - PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
 - ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
 - GROUNDING SHALL COMPLY WITH NEC ART. 250.
 - GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
- BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

5 TOWER BOTTOM CABLE GROUNDING DETAIL
 SCALE: N.T.S.

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

B+T GRP
 1717 S. BOULDER SUITE 300
 TULSA, OK 74119
 PH: (918) 587-4630
 www.btgrp.com

T-Mobile
 T-MOBILE NORTHEAST, LLC
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766

SBA
 SBA COMMUNICATIONS CORP.
 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581

CTNH003A
CTNH003/NEXTEK MILFORD
 160 WAMPUS LANE
 MILFORD, CT 06460

PROJECT NO: 101029.004.01
 CHECKED BY: GEH

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
0	6/26/20	GEH	ISSUED FOR REVIEW
1	8/14/20	JJD	ISSUED FOR REVIEW
2	8/19/20	JJD	ISSUED FOR REVIEW
3	9/2/20	JJD	CONSTRUCTION

B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/21

STATE OF CONNECTICUT
 31627
 LICENSED PROFESSIONAL ENGINEER
 9/2/20

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

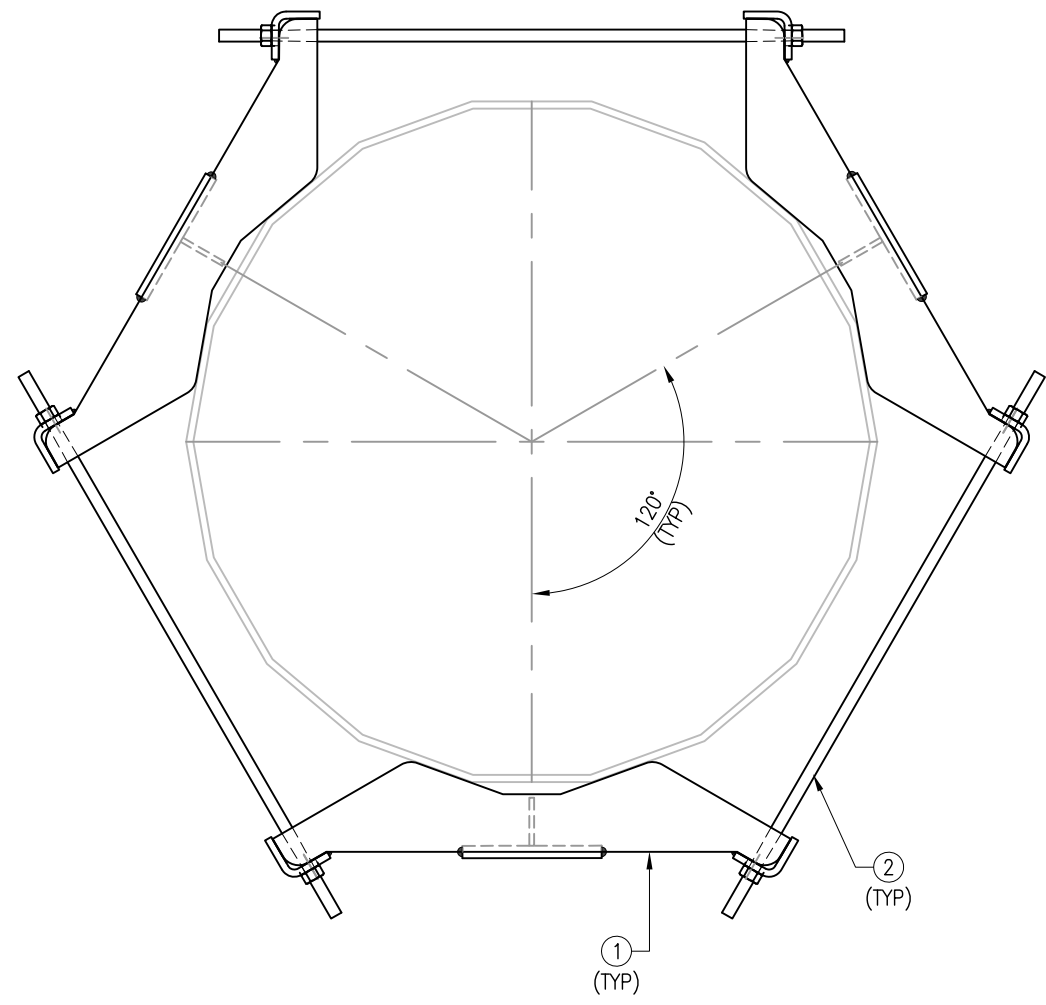
SHEET NUMBER:	REVISION:
E-1	3

101029_CT46128-A_Milford-West_CTNH003A_CD.dwg - SheetE-1 - User: ghoyes - Sep 02, 2020 - 8:23am

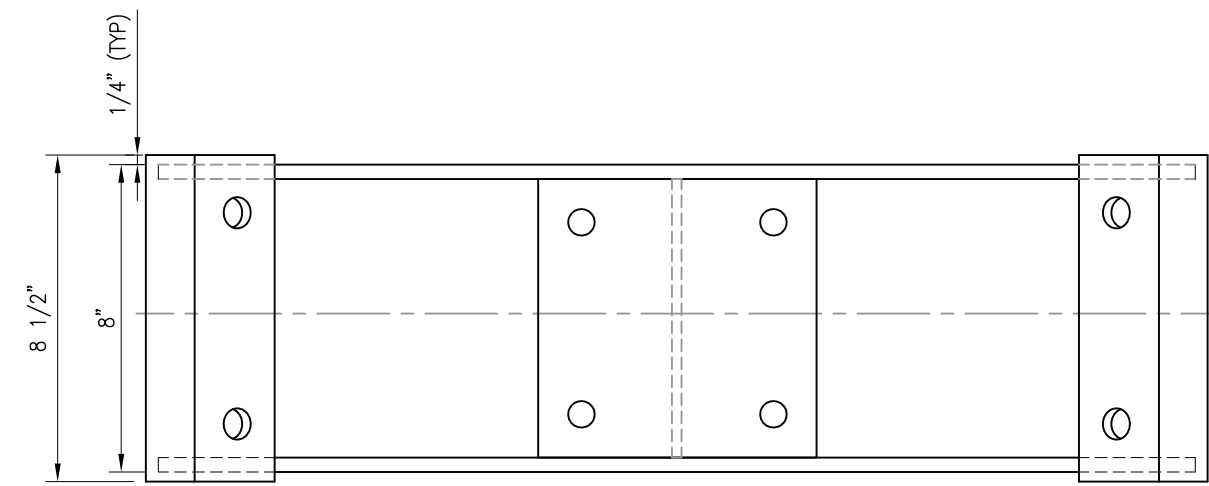
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 2'-4 3/4" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 136.7 LBS

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



TOP VIEW

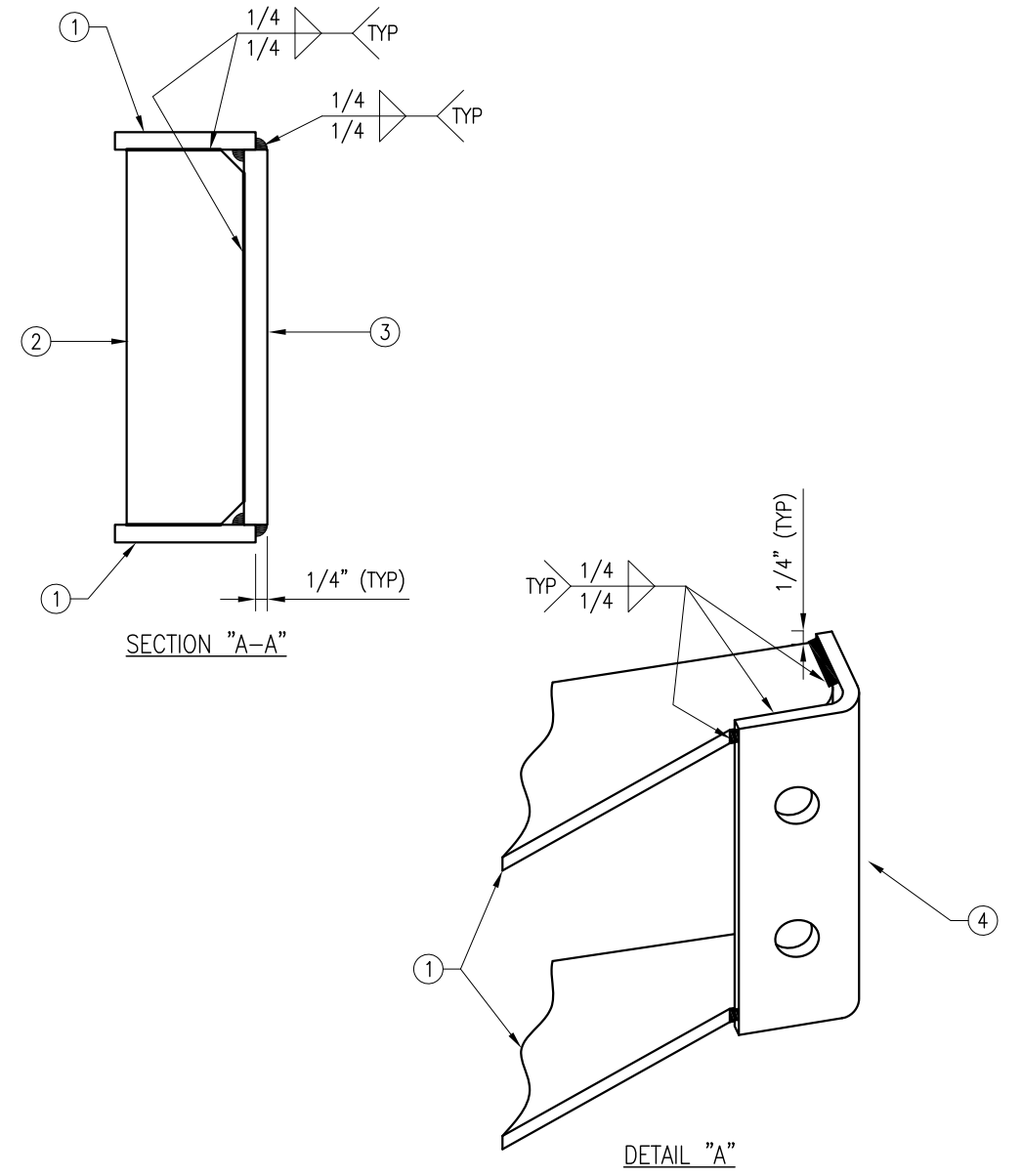
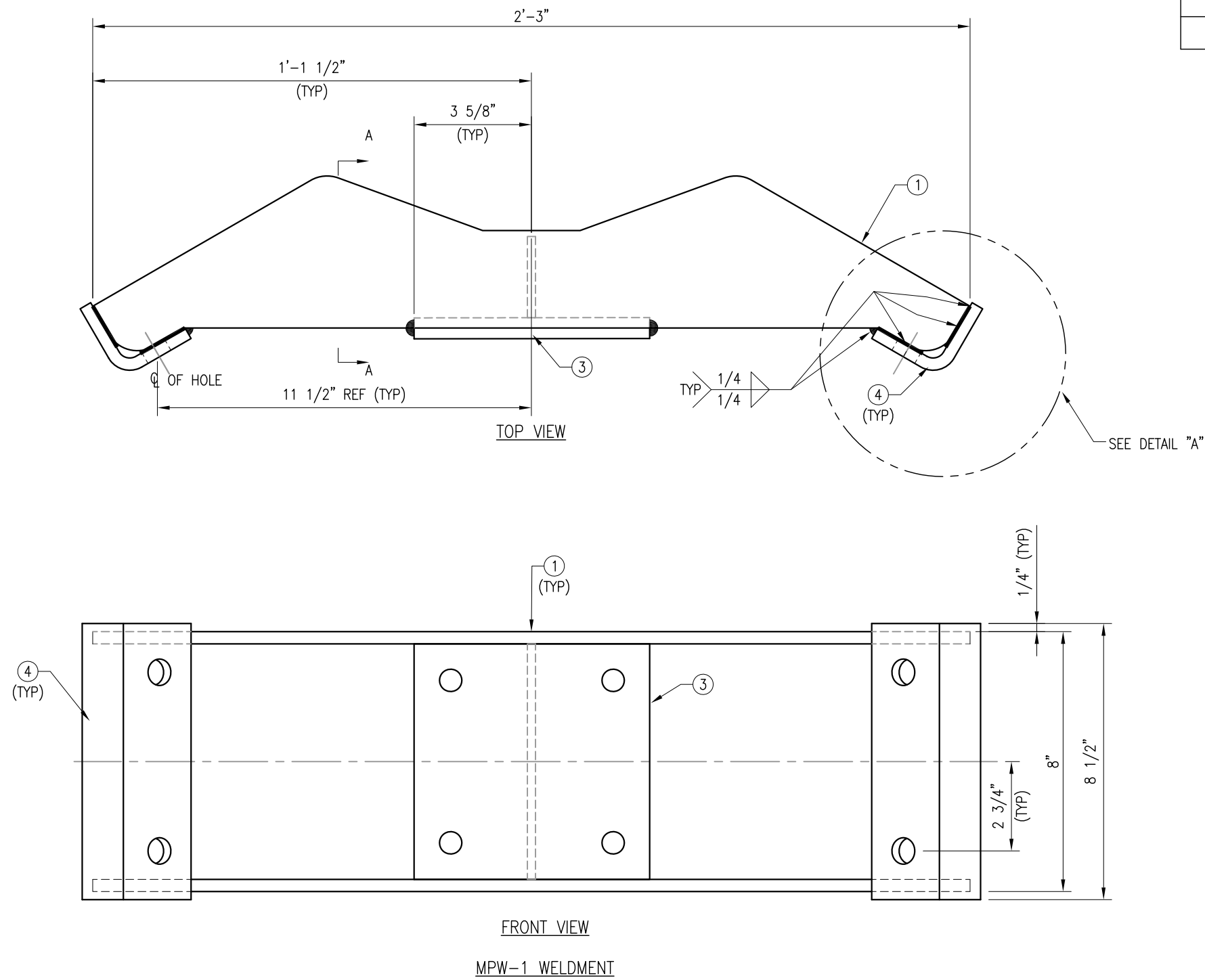


FRONT VIEW

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH		THIRD ANGLE PROJECTION 				METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
STANDARD SHEET TOLERANCES		CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC		TITLE HEAVY COLLAR MOUNT PLATE ASSEMBLY DETAIL MS-H1436			
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 MS-H1436	SCALE -	REV 1	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

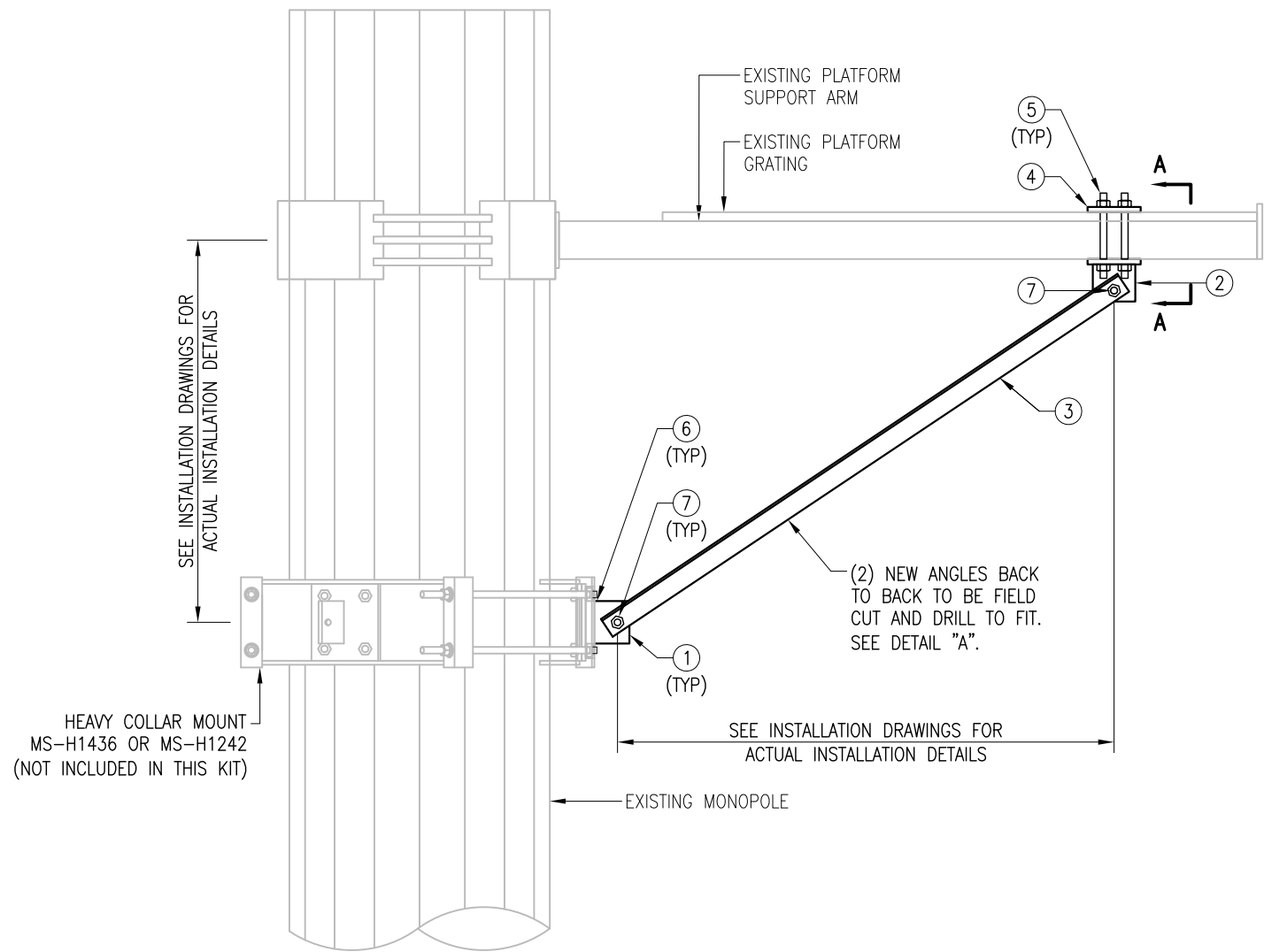


THIRD ANGLE PROJECTION						METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH				CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC			
STANDARD SHEET TOLERANCES DECIMALS .X ± 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 HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL	
				SIZE/DWG NO B MPHW-1		REV 0	
				SCALE -		SHEET 1 OF 1	

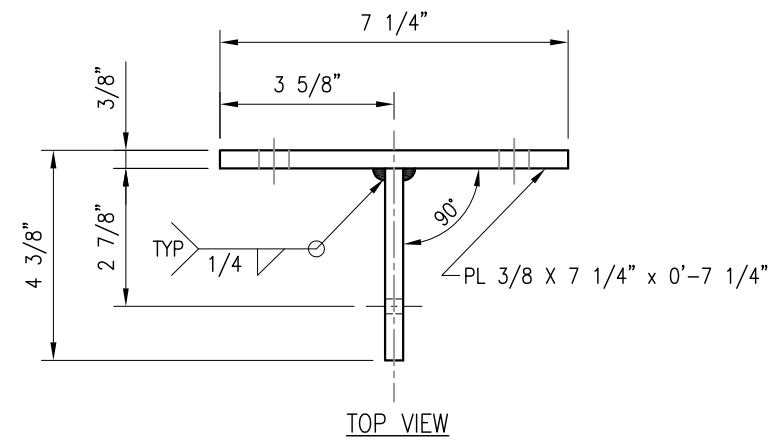
NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.

MS-HK122-5

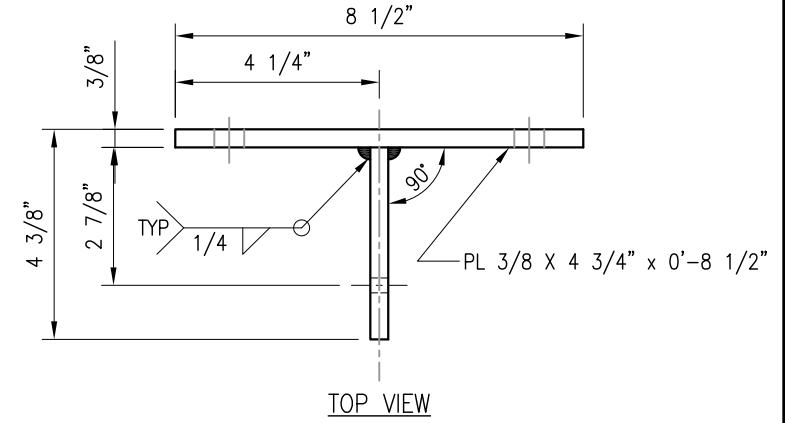
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	BRKW-HK	BRACKET WELDMENT	---	BRKW-HK	23.4
2	3	BRKW-5S	BRACKET WELDMENT	---	BRKW-5S	18.9
3	6	L2225-5	L 2" X 2" X 1/4" X 5'-0"	A36	HKF-8	97.8
4	3	PL5S-375	PL 3/8" X 4 3/4" X 8 1/2"	A36	HKF-8	12.9
5	12	---	ALL THREADED ROD 5/8" DIA. X 1'-0" HDG W/ (2) HHN & LKW EA.	A36	---	---
6	12	---	BOLT 5/8" X 2" W/ HHN & LKW	A325	---	---
7	9	---	BOLT 5/8" X 2 1/4" W/ HHN & LKW	A325	---	---
GALVANIZED WT						153



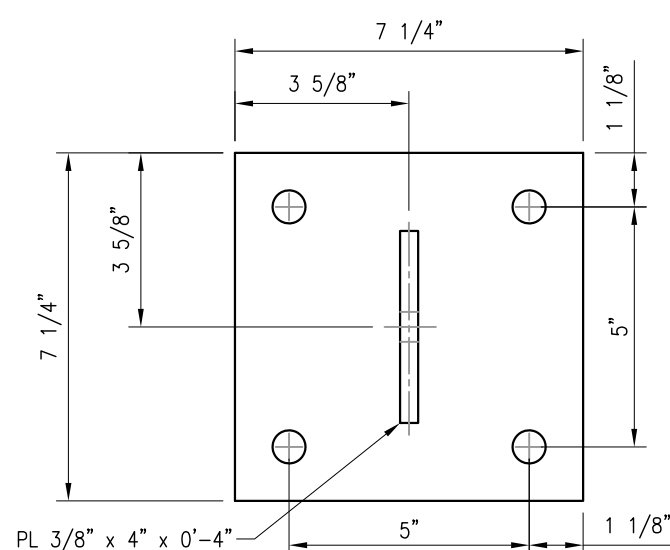
ELEVATION



TOP VIEW

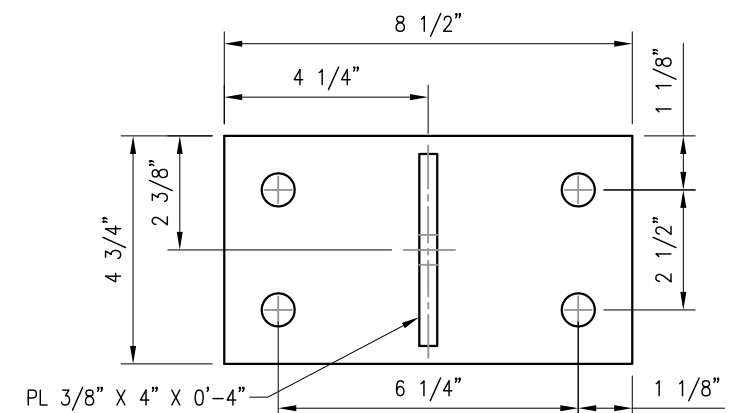


TOP VIEW



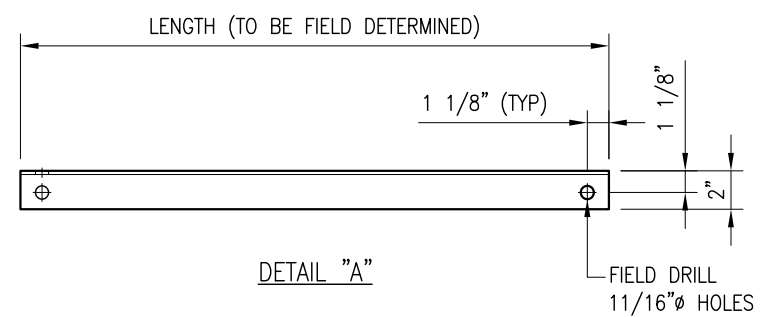
FRONT VIEW

BRKW-HK WELDMENT

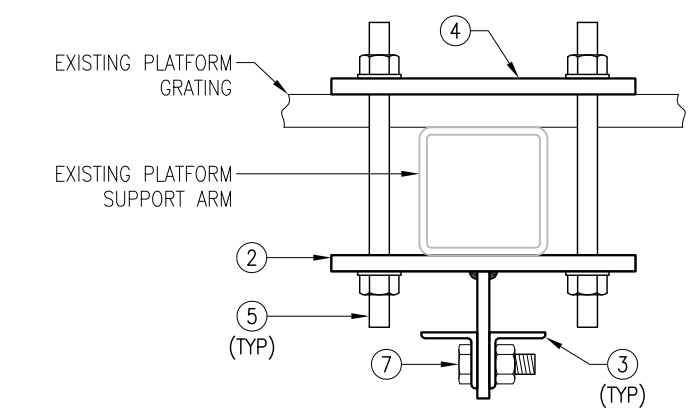


FRONT VIEW

BRKW-5S WELDMENT



DETAIL "A"



SECTION "A-A"

- NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
 2. HOT-DIPPED GALVANIZED PER ASTM A123.
 3. FIT UP TO 5" X 5" SQ. TUBING OR 4 1/2" O.D. PIPE

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		TITLE HEAVY KICKER SUPPORT KIT	
STANDARD SHEET TOLERANCES DECIMALS .X ± 0.1 .XX ± 0.02 .XXX ± 0.005		APPROVAL / SIGNATURES DRAWN BY XXX REVIEWED XXX APPROVED XXX		DATE 06/21/18 - -	
ANGLES ± 1° FRACTIONS ± 1/32		SIZE/DWG NO B MS-HK122-5		REV 0	
		SCALE -		SHEET 1 OF 1	

EXHIBIT 7



Tower Engineering Solutions

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

Structural Analysis Report

Existing 120 ft. Rohn Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46128-A
Customer Site Name: Milford - West
Carrier Name: T-Mobile (App#: 116913 V2)
Carrier Site ID / Name: CTNH003A / Milford
Site Location: 160 Wampus Lane
Milford, Connecticut
New Haven County
Latitude: 41.225166
Longitude: -73.042361

Analysis Result:

Max Structural Usage: 87.6% [Pass]

Max Foundation Usage: 69.0% [Pass]

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

Report Prepared By : Billy Davis



8/3/20

Introduction

The purpose of this report is to summarize the analysis results on the 120 ft Rohn Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Project #51361AE, dated April 3, 2002
Foundation Drawing	Rohn Project #51361AE, dated April 3, 2002
Geotechnical Report	Clarence Welti Associates Inc. Site #CT-0638, dated June 19 ,2001
Modification Drawings	TES Project #18033, dated November 4, 2015

Analysis Criteria

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

Wind Speed Used in the Analysis:	120.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$S_5 = 0.201$, $S_1 = 0.053$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	116.5	3	A-ANT-23G-2-C - Dish	Low Profile Platform	(3) 1/2"	Clearwire
2		3	APXVSP18-C-A20 - Panel		(4) 1-1/4" Hybrid Cable	Sprint
3		3	APXV9TM-14-ALU-I20 - Panel			
4		3	1900MHz RRH			
5		3	800 MHz RRH - TMA/TTA			
6		3	800 MHz RRH w/ Notch Filter			
7		3	TD-RRH8x20-25			
8		4	ACU-A20-N			
-	105.0	3	Ericsson AIR B2A/ B4P - Panel	Platform w/ Hand Rail w/ MS-KI22-5 Kicker Support Kit & MS-1436 Collar Mount Plate Assy.		
-		3	Ericsson AIR B4A / B2P - Panel			
-		3	Commscope - LNX-6515DS-A1M - Panel			
-		3	Ericsson KRY 112 144/1-TMA			
-		3	Ericsson S11B12-RRU			
16	78.0	2	GPS - Whip	(2) Side Arm		Unknown

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
9	105.0	3	Ericsson AIR 21 B2A/ B4P - Panel	Platform w/ Hand Rail w/ MS-KI22-5 Kicker Support Kit & MS-1436 Collar Mount Plate Assy.	(9) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR32 KRD901146-1_B66A_B2A - Panel			
11		3	RFS APXVAARR24_43-U-NA20 - Panel			
12		3	Ericsson AIR6449 B41 - Panel			
13		3	Ericsson KRY 112 144/1 TTA			
14		3	Ericsson Radio 4449 B71 + B85 RRU			
15		3	Ericsson Radio 4415 B25 RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	87.6%	53.1%	74.1%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	1446.0	17.0	30.0
Analysis Reactions	1707.3	19.0	32.3
Factored Reactions*	1952.1	23.0	40.5

* Per section 15.6.2 of the TIA-222-H standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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.

Service Load Condition (Rigidity):

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

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
116.5	A-ANT-23G-2-C - Dish	Clearwire	0.000	1.582
105.0	Various	T-Mobile	0.000	1.555

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

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-H 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 87.57% at 70.0ft

Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

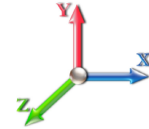
7/30/2020



Page: 1

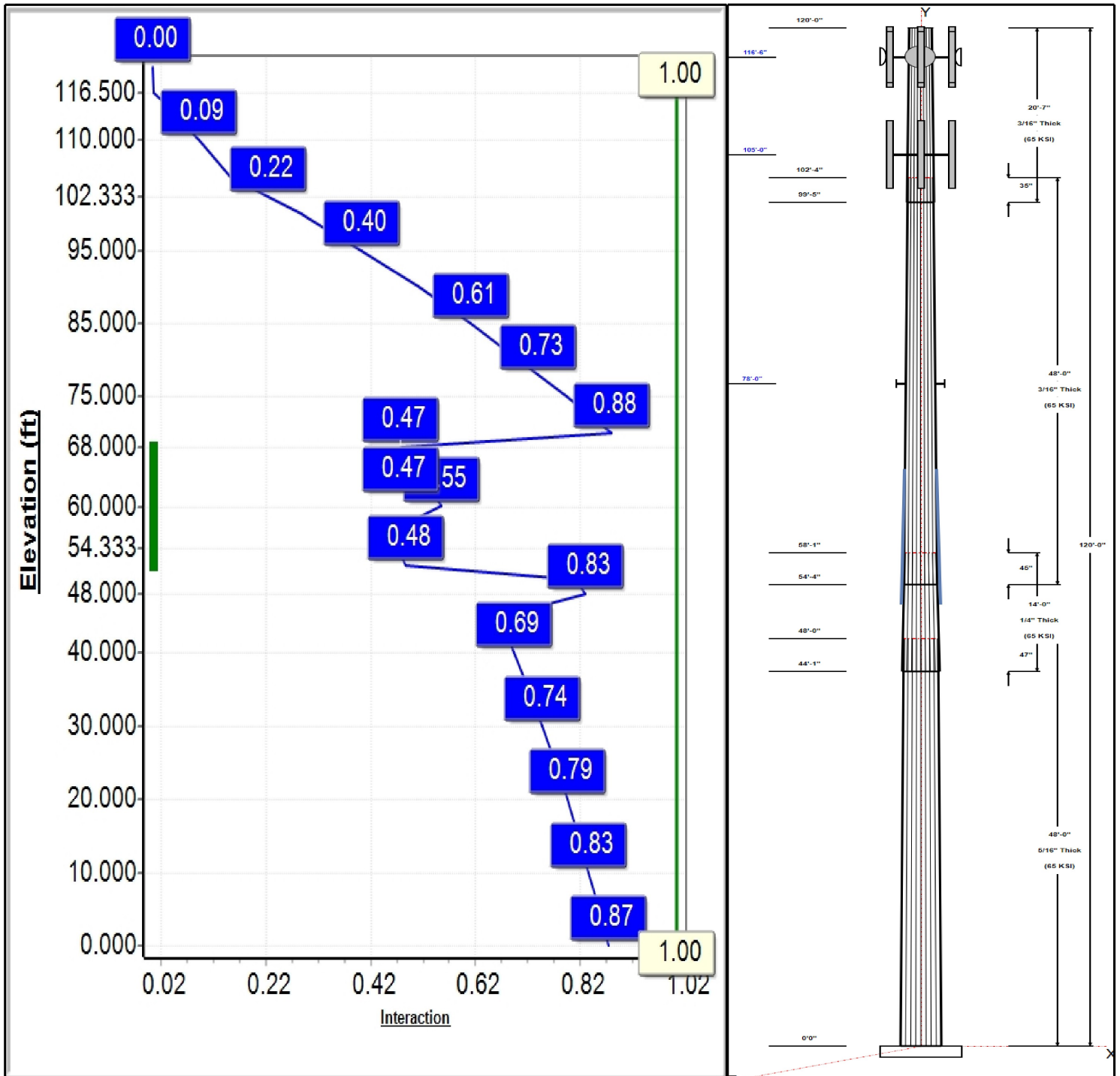
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 120 mph Wind



Iterations: 26

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Structure: CT46128-A-SBA

Type: Tapered
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.15625

7/30/2020



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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	30.00	37.50	0.313		0.15625	65
2	14.00	28.92	31.11	0.250	Slip	0.15625	65
3	48.00	22.39	29.89	0.188	Slip	0.15625	65
4	20.58	20.00	23.22	0.188	Slip	0.15625	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
116.50	116.50	1	Low Profile	Sprint
116.50	116.50	3	A-ANT-23G-2-C	Clearwire
116.50	116.50	3	APXVSP18-C-A20	Sprint
116.50	116.50	3	APXV9TM-14-ALU-I20	Sprint
116.50	116.50	3	TD-RRH8x20-25	Sprint
116.50	116.50	3	1900MHz RRH	Sprint
116.50	116.50	3	800 MHz RRH w/ Notch	Sprint
116.50	116.50	4	ACU-A20-N	Sprint
116.50	116.50	3	800 MHz RRH	Sprint
105.00	105.00	3	4449 B71 + B95	T-Mobile
105.00	105.00	3	AIR32	T-Mobile
105.00	105.00	3	AIR6449 B41	T-Mobile
105.00	105.00	3	APXVAARR24_43-U-NA20	T-Mobile
105.00	105.00	3	RRUS 4415 B25	T-Mobile
105.00	105.00	1	MS-1436 (Collar Mount)	T-Mobile
105.00	105.00	1	MS-KI22-5 (Kickers w/o	T-Mobile
105.00	105.00	1	Platform w/ Hand Rail	T-Mobile
105.00	105.00	3	AIR B2A/ B4P	T-Mobile
105.00	105.00	3	KRY 112 144/1	T-Mobile
78.00	78.00	2	Side Arm (L. Heavy)	Unknown
78.00	78.00	2	GPS	Unknown

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	116.50	Inside	1-1/4" Hybrid Cable	Sprint
0.00	116.50	Inside	1/2" Coax	Clearwire
0.00	105.00	Inside	1 5/8" Coax	T-Mobile
0.00	105.00	Inside	1 5/8" fiber	T-Mobile
0.00	100.00	Inside	1/2" Fiber	AT&T
0.00	100.00	Inside	3/4" DC Power	AT&T
0.00	100.00	Inside	3/8" Fiber	AT&T
0.00	88.00	Inside	1 5/8" Coax	Metro PCS
0.00	75.00	Outside	1" Reinforcing plate	

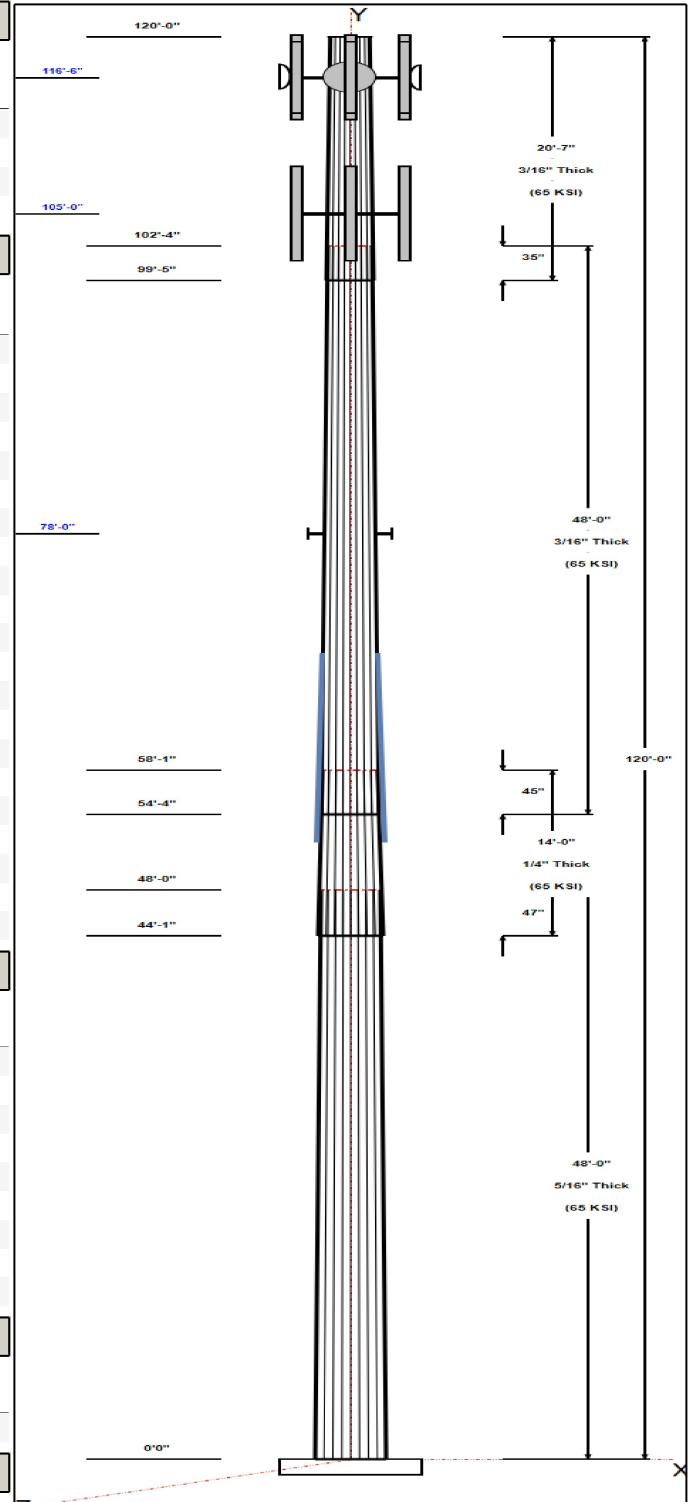
Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	49.5	60.0	Round

Reactions



Structure: CT46128-A-SBA

Type: Tapered
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.15625

7/30/2020

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Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 120 mph Wind	1707.3	19.0	23.0
0.9D + 1.0W 120 mph Wind	1683.7	18.9	17.3
1.2D + 1.0Di + 1.0Wi 50 mph Wind	446.1	5.0	32.3
1.2D + 1.0Ev + 1.0Eh	36.1	0.3	23.9
0.9D + 1.0Ev + 1.0Eh	35.6	0.3	18.1
1.0D + 1.0W 60 mph Wind	379.2	4.2	19.2

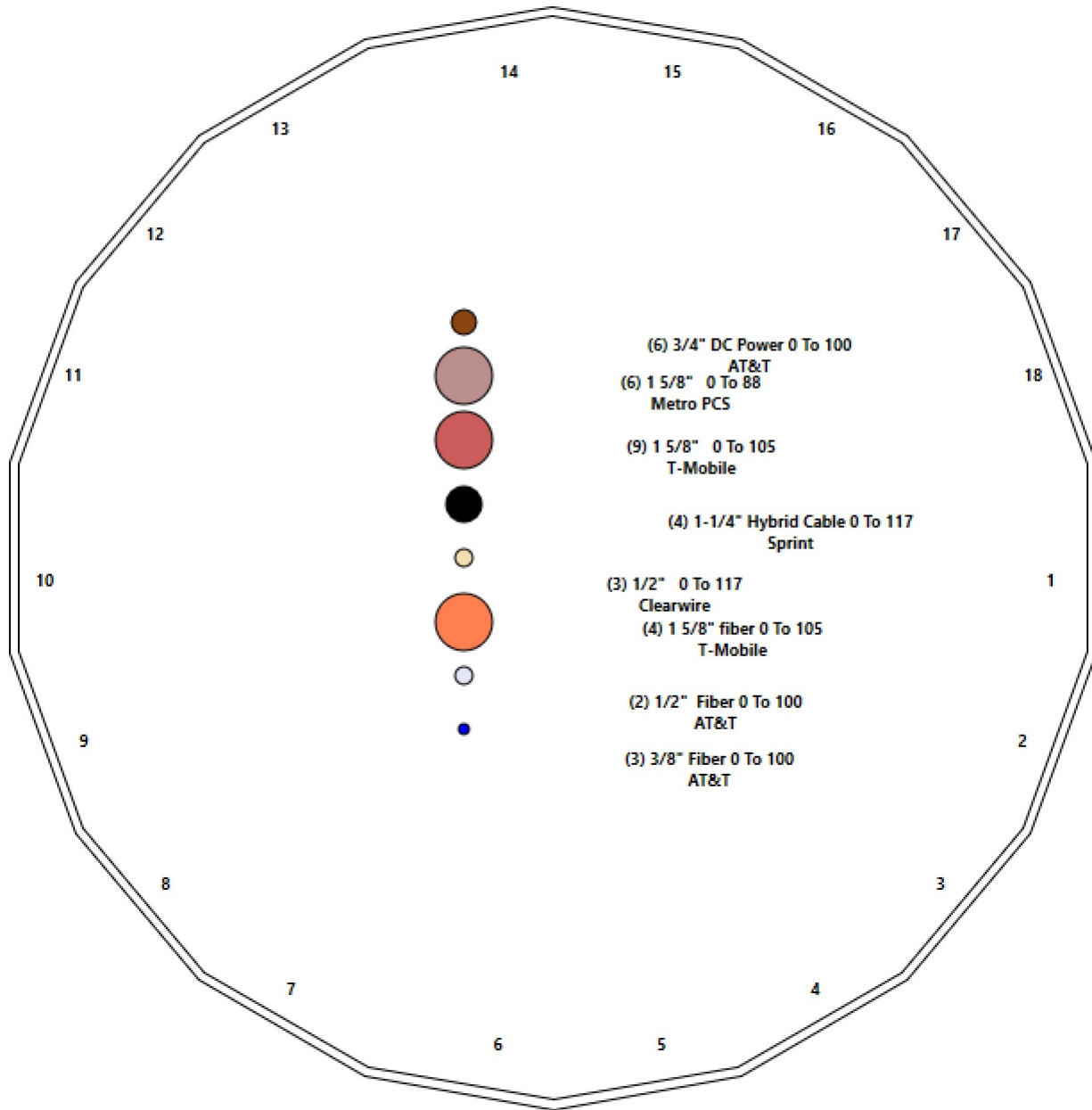
Structure: CT46128-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Milford - West
Height: 120.00 (ft)

7/30/2020



Page: 4



Shaft Properties

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	5,417
2	18	14.000	0.2500	65	Slip	47.00	1,125
3	18	48.000	0.1875	65	Slip	45.00	2,522
4	18	20.583	0.1875	65	Slip	35.00	893
Total Shaft Weight:							9,957

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	37.50	0.00	36.88	6444.44	19.75	120.00	30.00	48.00	29.45	3278.80	15.52	96.00	0.156250
2	31.11	44.08	24.49	2946.83	20.53	124.45	28.92	58.08	22.75	2363.58	18.99	115.7	0.156250
3	29.89	54.33	17.67	1969.35	26.69	159.39	22.39	102.33	13.21	822.40	19.64	119.3	0.156250
4	23.22	99.42	13.70	918.23	20.42	123.82	20.00	120.00	11.79	584.74	17.40	106.6	0.156250

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors			Termination Connectors		
							Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty	
52.00	68.00	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Holo Bolt	24.00	5/8" Holo Bolt	3.00	8	8

Load Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: 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	116.50	Low Profile Platform-Round	1	1500.00	22.00	1.00	2350.83	33.480	1.00	0.00	0.00
2	116.50	A-ANT-23G-2-C	3	27.10	4.69	0.75	90.66	5.520	0.75	0.00	0.00
3	116.50	APXVSP18-C-A20	3	57.00	8.02	0.83	169.36	9.836	0.83	0.00	0.00
4	116.50	APXV9TM-14-ALU-I20	3	63.90	9.93	0.77	191.74	11.962	0.77	0.00	0.00
5	116.50	TD-RRH8x20-25	3	70.00	4.05	0.50	136.67	4.564	0.50	0.00	0.00
6	116.50	1900MHz RRH	3	44.00	3.80	0.50	114.96	4.704	0.50	0.00	0.00
7	116.50	800 MHz RRH w/ Notch Filter	3	61.80	2.91	0.50	120.78	3.701	0.50	0.00	0.00
8	116.50	ACU-A20-N	4	1.00	0.14	0.50	3.79	0.333	0.50	0.00	0.00
9	116.50	800 MHz RRH	3	53.00	2.49	0.50	101.08	3.233	0.50	0.00	0.00
10	105.00	4449 B71 + B95	3	74.00	1.65	0.50	113.59	1.970	0.50	0.00	0.00
11	105.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	242.47	7.214	0.87	0.00	0.00
12	105.00	AIR6449 B41	3	103.00	5.65	0.71	191.21	6.261	0.71	0.00	0.00
13	105.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	384.77	21.446	0.70	0.00	0.00
14	105.00	RRUS 4415 B25	3	46.00	1.64	0.50	72.44	1.971	0.50	0.00	0.00
15	105.00	MS-1436 (Collar Mount)	1	150.60	2.50	1.00	285.86	4.184	1.00	0.00	0.00
16	105.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	277.13	8.920	1.00	0.00	0.00
17	105.00	Platform w/ Hand Rail (round)	1	1400.00	32.00	1.00	2581.99	49.963	1.00	0.00	0.00
18	105.00	AIR B2A/ B4P	3	91.50	6.09	0.86	192.74	6.779	0.86	0.00	0.00
19	105.00	KRY 112 144/1	3	11.00	0.41	0.50	17.94	0.716	0.50	0.00	0.00
20	78.00	Side Arm (L. Heavy)	2	120.00	4.50	1.00	185.39	7.776	1.00	0.00	0.00
21	78.00	GPS	2	10.00	1.00	1.00	28.31	1.445	1.00	0.00	0.00
Totals:			54	6,348.10			12,359.60				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	116.50	(4) 1-1/4" Hybrid Cable	0.00	Inside
0.00	116.50	(3) 1/2" Coax	0.00	Inside
0.00	105.00	(9) 1 5/8" Coax	0.00	Inside
0.00	105.00	(4) 1 5/8" fiber	0.00	Inside
0.00	100.00	(2) 1/2" Fiber	0.00	Inside
0.00	100.00	(6) 3/4" DC Power	0.00	Inside
0.00	100.00	(3) 3/8" Fiber	0.00	Inside
0.00	88.00	(6) 1 5/8" Coax	0.00	Inside
0.00	75.00	(3) 1" Reinforcing plate	0.00	Outside

Shaft Section Properties

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: 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		0.3125	37.500	36.884	6444.4	19.75	120.00	65	78	0.0				
5.00		0.3125	36.719	36.109	6046.8	19.31	117.50	65	79	620.9				
10.00		0.3125	35.938	35.334	5665.8	18.87	115.00	65	79	607.8				
15.00		0.3125	35.156	34.559	5301.1	18.43	112.50	65	80	594.6				
20.00		0.3125	34.375	33.785	4952.5	17.99	110.00	65	80	581.4				
25.00		0.3125	33.594	33.010	4619.5	17.54	107.50	65	81	568.2				
30.00		0.3125	32.813	32.235	4301.7	17.10	105.00	65	81	555.0				
35.00		0.3125	32.031	31.460	3998.9	16.66	102.50	65	82	541.8				
40.00		0.3125	31.250	30.685	3710.7	16.22	100.00	65	82	528.7				
44.08	Bot - Section 2	0.3125	30.612	30.052	3485.8	15.86	97.96	65	83	422.0				
45.00		0.3125	30.469	29.910	3436.6	15.78	97.50	65	83	169.7				
48.00	Top - Section 1	0.2500	30.500	24.003	2775.0	20.10	122.00	65	78	549.9				
50.00		0.2500	30.188	23.755	2689.9	19.88	120.75	65	78	162.5				
52.00	RB1	0.2500	29.875	23.507	2606.5	19.66	119.50	65	78	160.8	18.00	2641.8	1664.3	122.5
54.33	Bot - Section 3	0.2500	29.510	23.217	2511.5	19.40	118.04	65	79	185.5	18.00	2580.4	1625.8	142.9
55.00		0.2500	29.406	23.135	2484.7	19.33	117.63	65	79	92.6	18.00	2625.9	1654.2	40.8
58.08	Top - Section 2	0.1875	29.299	17.325	1855.1	26.14	156.26	65	71	424.0	18.00	2545.0	1603.6	188.9
60.00		0.1875	29.000	17.146	1798.4	25.86	154.67	65	71	112.4	18.00	2493.6	1570.5	117.4
65.00		0.1875	28.219	16.681	1656.0	25.13	150.50	65	72	287.8	18.00	2366.7	1491.1	306.2
68.00	RT1	0.1875	27.750	16.403	1574.4	24.69	148.00	65	72	168.9	18.00	2292.1	1444.4	183.7
70.00		0.1875	27.438	16.217	1521.4	24.39	146.33	65	73	111.0				
75.00		0.1875	26.656	15.752	1394.3	23.66	142.17	65	74	272.0				
78.00		0.1875	26.188	15.473	1321.5	23.22	139.67	65	74	159.4				
80.00		0.1875	25.875	15.287	1274.4	22.92	138.00	65	74	104.7				
85.00		0.1875	25.094	14.822	1161.6	22.19	133.83	65	75	256.1				
90.00		0.1875	24.313	14.357	1055.7	21.45	129.67	65	76	248.2				
95.00		0.1875	23.531	13.892	956.4	20.72	125.50	65	77	240.3				
99.42	Bot - Section 4	0.1875	22.841	13.481	874.1	20.07	121.82	65	78	205.7				
100.00		0.1875	22.750	13.427	863.6	19.98	121.33	65	78	53.9				
102.33	Top - Section 3	0.1875	22.760	13.433	864.8	19.99	121.39	65	78	213.3				
105.00		0.1875	22.344	13.185	817.8	19.60	119.17	65	78	120.8				
110.00		0.1875	21.563	12.720	734.3	18.87	115.00	65	79	220.4				
115.00		0.1875	20.781	12.255	656.7	18.13	110.83	65	80	212.5				
116.50		0.1875	20.547	12.116	634.5	17.91	109.58	65	80	62.2				
120.00		0.1875	20.000	11.790	584.7	17.40	106.67	65	81	142.4				
Total Weight										9957.1				
											1102.5			

Wind Loading - Shaft

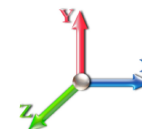
Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.755	32.73	350.99	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.755	32.73	343.68	0.730	0.000	5.00	15.701	11.46	375.1	0.0	745.1
10.00		1.00	0.85	29.755	32.73	336.37	0.730	0.000	5.00	15.370	11.22	367.2	0.0	729.3
15.00		1.00	0.85	29.755	32.73	329.05	0.730	0.000	5.00	15.040	10.98	359.3	0.0	713.5
20.00		1.00	0.90	31.571	34.73	331.42	0.730	0.000	5.00	14.709	10.74	372.9	0.0	697.7
25.00		1.00	0.95	33.090	36.40	331.58	0.730	0.000	5.00	14.379	10.50	382.1	0.0	681.9
30.00		1.00	0.98	34.384	37.82	330.15	0.730	0.000	5.00	14.048	10.26	387.9	0.0	666.0
35.00		1.00	1.01	35.519	39.07	327.56	0.730	0.000	5.00	13.718	10.01	391.2	0.0	650.2
40.00		1.00	1.04	36.531	40.18	324.09	0.730	0.000	5.00	13.387	9.77	392.7	0.0	634.4
44.08	Bot - Section 2	1.00	1.07	37.287	41.02	320.74	0.730	0.000	4.08	10.687	7.80	320.0	0.0	506.4
45.00		1.00	1.07	37.449	41.19	319.93	0.730	0.000	0.92	2.408	1.76	72.4	0.0	203.7
48.00	Top - Section 1	1.00	1.08	37.961	41.76	317.16	0.730	0.000	3.00	7.802	5.70	237.8	0.0	659.9
50.00		1.00	1.09	38.288	42.12	320.51	0.730	0.000	2.00	5.135	3.75	157.9	0.0	195.0
52.00	RB1	1.00	1.10	38.606	42.47	318.51	0.730	0.000	2.00	5.082	3.71	157.6	0.0	193.0
54.33	Bot - Section 3	1.00	1.11	38.964	42.86	316.08	0.730	0.000	2.33	5.863	4.28	183.4	0.0	222.6
55.00		1.00	1.12	39.064	42.97	315.37	0.730	0.000	0.67	1.683	1.23	52.8	0.0	111.1
58.08	Top - Section 2	1.00	1.13	39.516	43.47	311.99	0.730	0.000	3.08	7.707	5.63	244.6	0.0	508.8
60.00		1.00	1.14	39.787	43.77	313.87	0.730	0.000	1.92	4.728	3.45	151.0	0.0	134.9
65.00		1.00	1.16	40.463	44.51	308.00	0.730	0.000	5.00	12.104	8.84	393.3	0.0	345.3
68.00	RT1	1.00	1.17	40.849	44.93	304.33	0.730	0.000	3.00	7.104	5.19	233.0	0.0	202.6
70.00		1.00	1.17	41.099	45.21	301.82	0.730	0.000	2.00	4.670	3.41	154.1	0.0	133.2
75.00		1.00	1.19	41.700	45.87	295.36	0.730	0.000	5.00	11.443	8.35	383.2	0.0	326.3
78.00	Appurtenance(s)	1.00	1.20	42.046	46.25	291.37	0.730	0.000	3.00	6.707	4.90	226.5	0.0	191.2
80.00		1.00	1.21	42.271	46.50	288.66	0.730	0.000	2.00	4.405	3.22	149.5	0.0	125.6
85.00		1.00	1.22	42.814	47.10	281.74	0.730	0.000	5.00	10.782	7.87	370.7	0.0	307.4
90.00		1.00	1.24	43.332	47.67	274.61	0.730	0.000	5.00	10.452	7.63	363.7	0.0	297.9
95.00		1.00	1.25	43.828	48.21	267.30	0.730	0.000	5.00	10.121	7.39	356.2	0.0	288.4
99.42	Bot - Section 4	1.00	1.26	44.249	48.67	260.71	0.730	0.000	4.42	8.665	6.33	307.9	0.0	246.8
100.00		1.00	1.27	44.304	48.73	259.83	0.730	0.000	0.58	1.144	0.83	40.7	0.0	64.6
102.33	Top - Section 3	1.00	1.27	44.520	48.97	256.29	0.730	0.000	2.33	4.530	3.31	161.9	0.0	255.9
105.00	Appurtenance(s)	1.00	1.28	44.761	49.24	256.50	0.730	0.000	2.67	5.089	3.71	182.9	0.0	144.9
110.00		1.00	1.29	45.202	49.72	248.75	0.730	0.000	5.00	9.288	6.78	337.1	0.0	264.5
115.00		1.00	1.30	45.627	50.19	240.86	0.730	0.000	5.00	8.958	6.54	328.2	0.0	255.0
116.50	Appurtenance(s)	1.00	1.31	45.752	50.33	238.47	0.730	0.000	1.50	2.623	1.91	96.4	0.0	74.6
120.00		1.00	1.32	46.038	50.64	232.85	0.730	0.000	3.50	6.004	4.38	222.0	0.0	170.8
Totals:									120.00			8,913.3		11,948.5

Discrete Appurtenance Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor	x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	116.50	800 MHz RRH	3	45.752	50.327	0.40	0.80	2.99	190.80	190.80	0.000	0.000	150.38	0.00	0.00
2	116.50	ACU-A20-N	4	45.752	50.327	0.40	0.80	0.22	4.80	4.80	0.000	0.000	11.27	0.00	0.00
3	116.50	800 MHz RRH w/ Notch	3	45.752	50.327	0.40	0.80	3.49	222.48	222.48	0.000	0.000	175.74	0.00	0.00
4	116.50	1900MHz RRH	3	45.752	50.327	0.40	0.80	4.56	158.40	158.40	0.000	0.000	229.49	0.00	0.00
5	116.50	TD-RRH8x20-25	3	45.752	50.327	0.40	0.80	4.86	252.00	252.00	0.000	0.000	244.59	0.00	0.00
6	116.50	APXV9TM-14-ALU-I20	3	45.752	50.327	0.62	0.80	18.35	230.04	230.04	0.000	0.000	923.53	0.00	0.00
7	116.50	APXVSP18-C-A20	3	45.752	50.327	0.66	0.80	15.98	205.20	205.20	0.000	0.000	804.01	0.00	0.00
8	116.50	A-ANT-23G-2-C	3	45.752	50.327	0.60	0.80	8.44	97.56	97.56	0.000	0.000	424.86	0.00	0.00
9	116.50	Low Profile	1	45.752	50.327	1.00	1.00	22.00	1800.00	1800.00	0.000	0.000	1107.19	0.00	0.00
10	105.00	MS-KI22-5 (Kickers w/o	1	44.761	49.237	1.00	1.00	5.33	175.20	175.20	0.000	0.000	262.44	0.00	0.00
11	105.00	MS-1436 (Collar Mount)	1	44.761	49.237	1.00	1.00	2.50	180.72	180.72	0.000	0.000	123.09	0.00	0.00
12	105.00	RRUS 4415 B25	3	44.761	49.237	0.38	0.75	1.84	165.60	165.60	0.000	0.000	90.84	0.00	0.00
13	105.00	APXVAARR24_43-U-NA2	3	44.761	49.237	0.52	0.75	31.88	460.80	460.80	0.000	0.000	1569.59	0.00	0.00
14	105.00	AIR6449 B41	3	44.761	49.237	0.53	0.75	9.03	370.80	370.80	0.000	0.000	444.41	0.00	0.00
15	105.00	AIR32	3	44.761	49.237	0.65	0.75	12.74	475.92	475.92	0.000	0.000	627.45	0.00	0.00
16	105.00	4449 B71 + B95	3	44.761	49.237	0.38	0.75	1.86	266.40	266.40	0.000	0.000	91.40	0.00	0.00
17	105.00	KRY 112 144/1	3	44.761	49.237	0.38	0.75	0.46	39.60	39.60	0.000	0.000	22.71	0.00	0.00
18	105.00	AIR B2A/ B4P	3	44.761	49.237	0.65	0.75	11.78	329.40	329.40	0.000	0.000	580.22	0.00	0.00
19	105.00	Platform w/ Hand Rail	1	44.761	49.237	1.00	1.00	32.00	1680.00	1680.00	0.000	0.000	1575.60	0.00	0.00
20	78.00	GPS	2	42.046	46.251	1.00	1.00	2.00	24.00	24.00	0.000	0.000	92.50	0.00	0.00
21	78.00	Side Arm (L. Heavy)	2	42.046	46.251	1.00	1.00	9.00	288.00	288.00	0.000	0.000	416.26	0.00	0.00
Totals:									7,617.72				9,967.56		

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		375.14	917.31	0.00	0.00
10.00		367.24	901.49	0.00	0.00
15.00		359.35	885.67	0.00	0.00
20.00		372.90	869.85	0.00	0.00
25.00		382.05	854.03	0.00	0.00
30.00		387.88	838.21	0.00	0.00
35.00		391.24	822.39	0.00	0.00
40.00		392.70	806.57	0.00	0.00
44.08		320.00	646.96	0.00	0.00
45.00		72.40	235.23	0.00	0.00
48.00		237.83	763.17	0.00	0.00
50.00		157.89	263.88	0.00	0.00
52.00		157.56	261.85	0.00	0.00
54.33		183.43	302.94	0.00	0.00
55.00		52.79	134.07	0.00	0.00
58.08		244.56	614.97	0.00	0.00
60.00		151.04	200.89	0.00	0.00
65.00		393.29	517.50	0.00	0.00
68.00		233.02	305.95	0.00	0.00
70.00		154.12	202.07	0.00	0.00
75.00		383.19	498.52	0.00	0.00
78.00	(4) attachments	735.22	606.55	0.00	0.00
80.00		149.54	194.47	0.00	0.00
85.00		370.69	479.53	0.00	0.00
90.00		363.68	455.07	0.00	0.00
95.00		356.21	423.11	0.00	0.00
99.42		307.90	365.85	0.00	0.00
100.00		40.69	80.34	0.00	0.00
102.33		161.94	306.48	0.00	0.00
105.00	(24) attachments	5570.67	4347.14	0.00	0.00
110.00		337.14	290.23	0.00	0.00
115.00		328.20	280.74	0.00	0.00
116.50	(26) attachments	4167.41	3243.65	0.00	0.00
120.00		221.97	170.83	0.00	0.00
Totals:		18,880.87	23,087.54	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
10.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
15.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
20.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.571	0.00	0.00
25.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.090	0.00	0.00
30.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.384	0.00	0.00
35.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.519	0.00	0.00
40.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	36.531	0.00	0.00
44.08	1" Reinforcing plate	Yes	4.08	0.000	0.00	0.00	0.00	0.000	0.000	37.287	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.92	0.000	0.00	0.00	0.00	0.000	0.000	37.449	0.00	0.00
48.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	37.961	0.00	0.00
50.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	38.288	0.00	0.00
52.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	38.606	0.00	0.00
54.33	1" Reinforcing plate	Yes	2.33	0.000	0.00	0.00	0.00	0.000	0.000	38.964	0.00	0.00
55.00	1" Reinforcing plate	Yes	0.67	0.000	0.00	0.00	0.00	0.000	0.000	39.064	0.00	0.00
58.08	1" Reinforcing plate	Yes	3.08	0.000	0.00	0.00	0.00	0.000	0.000	39.516	0.00	0.00
60.00	1" Reinforcing plate	Yes	1.92	0.000	0.00	0.00	0.00	0.000	0.000	39.787	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	40.463	0.00	0.00
68.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	40.849	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	41.099	0.00	0.00
75.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	41.700	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Iterations 26

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.03	-18.96	0.00	-1707.2	0.00	1707.28	2594.99	647.31	1997.22	1984.50	0.00	0.000	0.000	0.870
5.00	-21.99	-18.72	0.00	-1612.5	0.00	1612.50	2557.32	633.72	1914.19	1914.27	0.20	-0.366	0.000	0.852
10.00	-20.97	-18.48	0.00	-1518.9	0.00	1518.91	2518.93	620.12	1832.92	1844.73	0.78	-0.735	0.000	0.833
15.00	-19.98	-18.23	0.00	-1426.5	0.00	1426.52	2479.82	606.52	1753.41	1775.91	1.74	-1.104	0.000	0.812
20.00	-19.00	-17.97	0.00	-1335.3	0.00	1335.35	2439.98	592.92	1675.66	1707.85	3.10	-1.475	0.000	0.791
25.00	-18.04	-17.68	0.00	-1245.5	0.00	1245.52	2399.42	579.32	1599.68	1640.59	4.84	-1.846	0.000	0.768
30.00	-17.11	-17.37	0.00	-1157.1	0.00	1157.15	2358.14	565.72	1525.46	1574.17	6.97	-2.216	0.000	0.743
35.00	-16.19	-17.05	0.00	-1070.3	0.00	1070.30	2316.13	552.12	1453.00	1508.60	9.49	-2.584	0.000	0.717
40.00	-15.31	-16.71	0.00	-985.07	0.00	985.07	2273.40	538.52	1382.30	1443.94	12.39	-2.950	0.000	0.690
44.08	-14.63	-16.40	0.00	-916.86	0.00	916.86	2232.73	527.42	1325.88	1388.57	15.04	-3.247	0.000	0.668
45.00	-14.36	-16.35	0.00	-901.83	0.00	901.83	2222.17	524.92	1313.37	1375.41	15.67	-3.315	0.000	0.663
48.00	-13.56	-16.11	0.00	-852.79	0.00	852.79	1679.75	421.24	1057.24	1045.08	17.82	-3.533	0.000	0.826
50.00	-13.26	-15.97	0.00	-820.57	0.00	820.57	1667.94	416.89	1035.51	1026.92	19.33	-3.678	0.000	0.808
52.00	-12.97	-15.83	0.00	-788.63	0.00	788.63	1656.01	412.54	1014.00	1008.85	20.91	-3.849	0.000	0.482
54.33	-12.66	-15.64	0.00	-751.70	0.00	751.70	1641.95	407.46	989.20	987.87	22.82	-3.968	0.000	0.467
55.00	-12.51	-15.60	0.00	-741.28	0.00	741.28	1637.90	406.01	982.17	981.90	23.38	-4.002	0.000	0.458
58.08	-11.88	-15.34	0.00	-693.18	0.00	693.18	1101.62	304.05	734.39	660.80	26.01	-4.154	0.000	0.497
60.00	-11.64	-15.21	0.00	-663.78	0.00	663.78	1095.40	300.92	719.36	650.26	27.69	-4.247	0.000	0.552
65.00	-11.10	-14.82	0.00	-587.74	0.00	587.74	1078.67	292.76	680.88	622.86	32.28	-4.511	0.000	0.503
68.00	-10.78	-14.58	0.00	-543.29	0.00	543.29	1068.29	287.86	658.30	606.48	35.16	-4.664	0.000	0.474
68.00	-10.78	-14.58	0.00	-543.29	0.00	543.29	1068.29	287.86	658.30	606.48	35.16	-4.664	0.000	0.474
70.00	-10.52	-14.47	0.00	-514.12	0.00	514.12	1061.22	284.60	643.45	595.59	37.13	-4.763	0.000	0.876
75.00	-9.97	-14.10	0.00	-441.80	0.00	441.80	1043.04	276.44	607.09	568.49	42.36	-5.210	0.000	0.789
78.00	-9.39	-13.35	0.00	-399.49	0.00	399.49	1031.79	271.55	585.78	552.33	45.71	-5.468	0.000	0.735
80.00	-9.15	-13.22	0.00	-372.80	0.00	372.80	1024.15	268.28	571.78	541.60	48.04	-5.634	0.000	0.700
85.00	-8.63	-12.86	0.00	-306.68	0.00	306.68	1004.52	260.12	537.53	514.95	54.13	-6.013	0.000	0.607
90.00	-8.15	-12.49	0.00	-242.38	0.00	242.38	984.18	251.96	504.33	488.58	60.60	-6.349	0.000	0.507
95.00	-7.71	-12.13	0.00	-179.90	0.00	179.90	963.11	243.80	472.20	462.52	67.40	-6.634	0.000	0.399
99.42	-7.37	-11.79	0.00	-126.35	0.00	126.35	943.90	236.60	444.69	439.78	73.62	-6.835	0.000	0.298
100.00	-7.28	-11.75	0.00	-119.47	0.00	119.47	941.32	235.64	441.12	436.80	74.46	-6.858	0.000	0.284
102.33	-6.98	-11.56	0.00	-92.06	0.00	92.06	941.62	235.75	441.53	437.14	77.82	-6.940	0.000	0.220
105.00	-3.33	-5.51	0.00	-61.24	0.00	61.24	929.71	231.40	425.38	423.58	81.71	-7.010	0.000	0.149
110.00	-3.08	-5.14	0.00	-33.71	0.00	33.71	906.82	223.24	395.91	398.46	89.08	-7.093	0.000	0.089
115.00	-2.84	-4.78	0.00	-8.01	0.00	8.01	883.20	215.08	367.50	373.78	96.52	-7.133	0.000	0.025
116.50	-0.14	-0.24	0.00	-0.85	0.00	0.85	875.98	212.63	359.18	366.46	98.75	-7.136	0.000	0.002
120.00	0.00	-0.22	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	103.97	-7.137	0.000	0.000

Wind Loading - Shaft

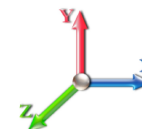
Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.755	32.73	350.99	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.755	32.73	343.68	0.730	0.000	5.00	15.701	11.46	375.1	0.0	558.9
10.00		1.00	0.85	29.755	32.73	336.37	0.730	0.000	5.00	15.370	11.22	367.2	0.0	547.0
15.00		1.00	0.85	29.755	32.73	329.05	0.730	0.000	5.00	15.040	10.98	359.3	0.0	535.1
20.00		1.00	0.90	31.571	34.73	331.42	0.730	0.000	5.00	14.709	10.74	372.9	0.0	523.3
25.00		1.00	0.95	33.090	36.40	331.58	0.730	0.000	5.00	14.379	10.50	382.1	0.0	511.4
30.00		1.00	0.98	34.384	37.82	330.15	0.730	0.000	5.00	14.048	10.26	387.9	0.0	499.5
35.00		1.00	1.01	35.519	39.07	327.56	0.730	0.000	5.00	13.718	10.01	391.2	0.0	487.7
40.00		1.00	1.04	36.531	40.18	324.09	0.730	0.000	5.00	13.387	9.77	392.7	0.0	475.8
44.08	Bot - Section 2	1.00	1.07	37.287	41.02	320.74	0.730	0.000	4.08	10.687	7.80	320.0	0.0	379.8
45.00		1.00	1.07	37.449	41.19	319.93	0.730	0.000	0.92	2.408	1.76	72.4	0.0	152.8
48.00	Top - Section 1	1.00	1.08	37.961	41.76	317.16	0.730	0.000	3.00	7.802	5.70	237.8	0.0	494.9
50.00		1.00	1.09	38.288	42.12	320.51	0.730	0.000	2.00	5.135	3.75	157.9	0.0	146.3
52.00	RB1	1.00	1.10	38.606	42.47	318.51	0.730	0.000	2.00	5.082	3.71	157.6	0.0	144.7
54.33	Bot - Section 3	1.00	1.11	38.964	42.86	316.08	0.730	0.000	2.33	5.863	4.28	183.4	0.0	166.9
55.00		1.00	1.12	39.064	42.97	315.37	0.730	0.000	0.67	1.683	1.23	52.8	0.0	83.3
58.08	Top - Section 2	1.00	1.13	39.516	43.47	311.99	0.730	0.000	3.08	7.707	5.63	244.6	0.0	381.6
60.00		1.00	1.14	39.787	43.77	313.87	0.730	0.000	1.92	4.728	3.45	151.0	0.0	101.2
65.00		1.00	1.16	40.463	44.51	308.00	0.730	0.000	5.00	12.104	8.84	393.3	0.0	259.0
68.00	RT1	1.00	1.17	40.849	44.93	304.33	0.730	0.000	3.00	7.104	5.19	233.0	0.0	152.0
70.00		1.00	1.17	41.099	45.21	301.82	0.730	0.000	2.00	4.670	3.41	154.1	0.0	99.9
75.00		1.00	1.19	41.700	45.87	295.36	0.730	0.000	5.00	11.443	8.35	383.2	0.0	244.8
78.00	Appurtenance(s)	1.00	1.20	42.046	46.25	291.37	0.730	0.000	3.00	6.707	4.90	226.5	0.0	143.4
80.00		1.00	1.21	42.271	46.50	288.66	0.730	0.000	2.00	4.405	3.22	149.5	0.0	94.2
85.00		1.00	1.22	42.814	47.10	281.74	0.730	0.000	5.00	10.782	7.87	370.7	0.0	230.5
90.00		1.00	1.24	43.332	47.67	274.61	0.730	0.000	5.00	10.452	7.63	363.7	0.0	223.4
95.00		1.00	1.25	43.828	48.21	267.30	0.730	0.000	5.00	10.121	7.39	356.2	0.0	216.3
99.42	Bot - Section 4	1.00	1.26	44.249	48.67	260.71	0.730	0.000	4.42	8.665	6.33	307.9	0.0	185.1
100.00		1.00	1.27	44.304	48.73	259.83	0.730	0.000	0.58	1.144	0.83	40.7	0.0	48.5
102.33	Top - Section 3	1.00	1.27	44.520	48.97	256.29	0.730	0.000	2.33	4.530	3.31	161.9	0.0	191.9
105.00	Appurtenance(s)	1.00	1.28	44.761	49.24	256.50	0.730	0.000	2.67	5.089	3.71	182.9	0.0	108.7
110.00		1.00	1.29	45.202	49.72	248.75	0.730	0.000	5.00	9.288	6.78	337.1	0.0	198.3
115.00		1.00	1.30	45.627	50.19	240.86	0.730	0.000	5.00	8.958	6.54	328.2	0.0	191.2
116.50	Appurtenance(s)	1.00	1.31	45.752	50.33	238.47	0.730	0.000	1.50	2.623	1.91	96.4	0.0	56.0
120.00		1.00	1.32	46.038	50.64	232.85	0.730	0.000	3.50	6.004	4.38	222.0	0.0	128.1
Totals:									120.00			8,913.3		8,961.4

Discrete Appurtenance Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

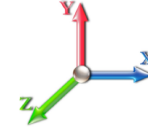


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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor	x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	116.50	800 MHz RRH	3	45.752	50.327	0.40	0.80	2.99	143.10	0.000	0.000	150.38	0.00	0.00		
2	116.50	ACU-A20-N	4	45.752	50.327	0.40	0.80	0.22	3.60	0.000	0.000	11.27	0.00	0.00		
3	116.50	800 MHz RRH w/ Notch	3	45.752	50.327	0.40	0.80	3.49	166.86	0.000	0.000	175.74	0.00	0.00		
4	116.50	1900MHz RRH	3	45.752	50.327	0.40	0.80	4.56	118.80	0.000	0.000	229.49	0.00	0.00		
5	116.50	TD-RRH8x20-25	3	45.752	50.327	0.40	0.80	4.86	189.00	0.000	0.000	244.59	0.00	0.00		
6	116.50	APXV9TM-14-ALU-I20	3	45.752	50.327	0.62	0.80	18.35	172.53	0.000	0.000	923.53	0.00	0.00		
7	116.50	APXVSP18-C-A20	3	45.752	50.327	0.66	0.80	15.98	153.90	0.000	0.000	804.01	0.00	0.00		
8	116.50	A-ANT-23G-2-C	3	45.752	50.327	0.60	0.80	8.44	73.17	0.000	0.000	424.86	0.00	0.00		
9	116.50	Low Profile	1	45.752	50.327	1.00	1.00	22.00	1350.00	0.000	0.000	1107.19	0.00	0.00		
10	105.00	MS-KI22-5 (Kickers w/o	1	44.761	49.237	1.00	1.00	5.33	131.40	0.000	0.000	262.44	0.00	0.00		
11	105.00	MS-1436 (Collar Mount)	1	44.761	49.237	1.00	1.00	2.50	135.54	0.000	0.000	123.09	0.00	0.00		
12	105.00	RRUS 4415 B25	3	44.761	49.237	0.38	0.75	1.84	124.20	0.000	0.000	90.84	0.00	0.00		
13	105.00	APXVAARR24_43-U-NA2	3	44.761	49.237	0.52	0.75	31.88	345.60	0.000	0.000	1569.59	0.00	0.00		
14	105.00	AIR6449 B41	3	44.761	49.237	0.53	0.75	9.03	278.10	0.000	0.000	444.41	0.00	0.00		
15	105.00	AIR32	3	44.761	49.237	0.65	0.75	12.74	356.94	0.000	0.000	627.45	0.00	0.00		
16	105.00	4449 B71 + B95	3	44.761	49.237	0.38	0.75	1.86	199.80	0.000	0.000	91.40	0.00	0.00		
17	105.00	KRY 112 144/1	3	44.761	49.237	0.38	0.75	0.46	29.70	0.000	0.000	22.71	0.00	0.00		
18	105.00	AIR B2A/ B4P	3	44.761	49.237	0.65	0.75	11.78	247.05	0.000	0.000	580.22	0.00	0.00		
19	105.00	Platform w/ Hand Rail	1	44.761	49.237	1.00	1.00	32.00	1260.00	0.000	0.000	1575.60	0.00	0.00		
20	78.00	GPS	2	42.046	46.251	1.00	1.00	2.00	18.00	0.000	0.000	92.50	0.00	0.00		
21	78.00	Side Arm (L. Heavy)	2	42.046	46.251	1.00	1.00	9.00	216.00	0.000	0.000	416.26	0.00	0.00		
Totals:									5,713.29							9,967.56

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		375.14	687.99	0.00	0.00
10.00		367.24	676.12	0.00	0.00
15.00		359.35	664.26	0.00	0.00
20.00		372.90	652.39	0.00	0.00
25.00		382.05	640.52	0.00	0.00
30.00		387.88	628.66	0.00	0.00
35.00		391.24	616.79	0.00	0.00
40.00		392.70	604.93	0.00	0.00
44.08		320.00	485.22	0.00	0.00
45.00		72.40	176.43	0.00	0.00
48.00		237.83	572.37	0.00	0.00
50.00		157.89	197.91	0.00	0.00
52.00		157.56	196.39	0.00	0.00
54.33		183.43	227.20	0.00	0.00
55.00		52.79	100.56	0.00	0.00
58.08		244.56	461.23	0.00	0.00
60.00		151.04	150.67	0.00	0.00
65.00		393.29	388.13	0.00	0.00
68.00		233.02	229.46	0.00	0.00
70.00		154.12	151.55	0.00	0.00
75.00		383.19	373.89	0.00	0.00
78.00	(4) attachments	735.22	454.92	0.00	0.00
80.00		149.54	145.85	0.00	0.00
85.00		370.69	359.65	0.00	0.00
90.00		363.68	341.30	0.00	0.00
95.00		356.21	317.33	0.00	0.00
99.42		307.90	274.39	0.00	0.00
100.00		40.69	60.26	0.00	0.00
102.33		161.94	229.86	0.00	0.00
105.00	(24) attachments	5570.67	3260.36	0.00	0.00
110.00		337.14	217.67	0.00	0.00
115.00		328.20	210.55	0.00	0.00
116.50	(26) attachments	4167.41	2432.74	0.00	0.00
120.00		221.97	128.12	0.00	0.00
Totals:		18,880.87	17,315.66	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
10.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
15.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.755	0.00	0.00
20.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.571	0.00	0.00
25.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.090	0.00	0.00
30.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.384	0.00	0.00
35.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.519	0.00	0.00
40.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	36.531	0.00	0.00
44.08	1" Reinforcing plate	Yes	4.08	0.000	0.00	0.00	0.00	0.000	0.000	37.287	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.92	0.000	0.00	0.00	0.00	0.000	0.000	37.449	0.00	0.00
48.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	37.961	0.00	0.00
50.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	38.288	0.00	0.00
52.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	38.606	0.00	0.00
54.33	1" Reinforcing plate	Yes	2.33	0.000	0.00	0.00	0.00	0.000	0.000	38.964	0.00	0.00
55.00	1" Reinforcing plate	Yes	0.67	0.000	0.00	0.00	0.00	0.000	0.000	39.064	0.00	0.00
58.08	1" Reinforcing plate	Yes	3.08	0.000	0.00	0.00	0.00	0.000	0.000	39.516	0.00	0.00
60.00	1" Reinforcing plate	Yes	1.92	0.000	0.00	0.00	0.00	0.000	0.000	39.787	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	40.463	0.00	0.00
68.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	40.849	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	41.099	0.00	0.00
75.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	41.700	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

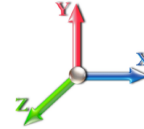


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Load Case: 0.9D + 1.0W 120 mph Wind

Iterations 26

Dead Load Factor 0.90
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	-17.25	-18.94	0.00	-1683.7	0.00	1683.75	2594.99	647.31	1997.22	1984.50	0.00	0.000	0.000	0.856
5.00	-16.45	-18.66	0.00	-1589.0	0.00	1589.07	2557.32	633.72	1914.19	1914.27	0.19	-0.361	0.000	0.837
10.00	-15.66	-18.39	0.00	-1495.7	0.00	1495.76	2518.93	620.12	1832.92	1844.73	0.77	-0.724	0.000	0.818
15.00	-14.89	-18.11	0.00	-1403.8	0.00	1403.81	2479.82	606.52	1753.41	1775.91	1.72	-1.088	0.000	0.797
20.00	-14.13	-17.82	0.00	-1313.2	0.00	1313.24	2439.98	592.92	1675.66	1707.85	3.05	-1.453	0.000	0.776
25.00	-13.39	-17.50	0.00	-1224.1	0.00	1224.16	2399.42	579.32	1599.68	1640.59	4.77	-1.817	0.000	0.753
30.00	-12.67	-17.17	0.00	-1136.6	0.00	1136.64	2358.14	565.72	1525.46	1574.17	6.87	-2.181	0.000	0.728
35.00	-11.96	-16.83	0.00	-1050.7	0.00	1050.78	2316.13	552.12	1453.00	1508.60	9.34	-2.542	0.000	0.703
40.00	-11.28	-16.48	0.00	-966.62	0.00	966.62	2273.40	538.52	1382.30	1443.94	12.20	-2.901	0.000	0.675
44.08	-10.77	-16.16	0.00	-899.34	0.00	899.34	2232.73	527.42	1325.88	1388.57	14.80	-3.193	0.000	0.653
45.00	-10.55	-16.11	0.00	-884.52	0.00	884.52	2222.17	524.92	1313.37	1375.41	15.42	-3.260	0.000	0.649
48.00	-9.95	-15.87	0.00	-836.20	0.00	836.20	1679.75	421.24	1057.24	1045.08	17.54	-3.474	0.000	0.807
50.00	-9.72	-15.72	0.00	-804.47	0.00	804.47	1667.94	416.89	1035.51	1026.92	19.03	-3.616	0.000	0.791
52.00	-9.49	-15.58	0.00	-773.02	0.00	773.02	1656.01	412.54	1014.00	1008.85	20.57	-3.783	0.000	0.472
54.33	-9.26	-15.39	0.00	-736.67	0.00	736.67	1641.95	407.46	989.20	987.87	22.45	-3.900	0.000	0.457
55.00	-9.14	-15.35	0.00	-726.41	0.00	726.41	1637.90	406.01	982.17	981.90	23.00	-3.933	0.000	0.448
58.08	-8.66	-15.09	0.00	-679.09	0.00	679.09	1101.62	304.05	734.39	660.80	25.59	-4.082	0.000	0.486
60.00	-8.48	-14.95	0.00	-650.17	0.00	650.17	1095.40	300.92	719.36	650.26	27.24	-4.173	0.000	0.539
65.00	-8.07	-14.56	0.00	-575.40	0.00	575.40	1078.67	292.76	680.88	622.86	31.75	-4.431	0.000	0.491
68.00	-7.83	-14.33	0.00	-531.72	0.00	531.72	1068.29	287.86	658.30	606.48	34.58	-4.581	0.000	0.462
68.00	-7.83	-14.33	0.00	-531.72	0.00	531.72	1068.29	287.86	658.30	606.48	34.58	-4.581	0.000	0.462
70.00	-7.62	-14.20	0.00	-503.07	0.00	503.07	1061.22	284.60	643.45	595.59	36.52	-4.679	0.000	0.854
75.00	-7.20	-13.83	0.00	-432.08	0.00	432.08	1043.04	276.44	607.09	568.49	41.65	-5.116	0.000	0.769
78.00	-6.77	-13.08	0.00	-390.60	0.00	390.60	1031.79	271.55	585.78	552.33	44.94	-5.368	0.000	0.716
80.00	-6.57	-12.95	0.00	-364.44	0.00	364.44	1024.15	268.28	571.78	541.60	47.22	-5.530	0.000	0.682
85.00	-6.18	-12.58	0.00	-299.71	0.00	299.71	1004.52	260.12	537.53	514.95	53.20	-5.901	0.000	0.591
90.00	-5.81	-12.21	0.00	-236.81	0.00	236.81	984.18	251.96	504.33	488.58	59.55	-6.229	0.000	0.493
95.00	-5.49	-11.85	0.00	-175.75	0.00	175.75	963.11	243.80	472.20	462.52	66.22	-6.507	0.000	0.388
99.42	-5.23	-11.52	0.00	-123.43	0.00	123.43	943.90	236.60	444.69	439.78	72.33	-6.704	0.000	0.289
100.00	-5.16	-11.48	0.00	-116.71	0.00	116.71	941.32	235.64	441.12	436.80	73.14	-6.727	0.000	0.275
102.33	-4.94	-11.29	0.00	-89.93	0.00	89.93	941.62	235.75	441.53	437.14	76.45	-6.806	0.000	0.213
105.00	-2.36	-5.38	0.00	-59.81	0.00	59.81	929.71	231.40	425.38	423.58	80.26	-6.875	0.000	0.144
110.00	-2.18	-5.02	0.00	-32.93	0.00	32.93	906.82	223.24	395.91	398.46	87.49	-6.956	0.000	0.086
115.00	-2.01	-4.67	0.00	-7.83	0.00	7.83	883.20	215.08	367.50	373.78	94.78	-6.995	0.000	0.024
116.50	-0.10	-0.24	0.00	-0.83	0.00	0.83	875.98	212.63	359.18	366.46	96.98	-6.998	0.000	0.002
120.00	0.00	-0.22	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	102.09	-6.999	0.000	0.000

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

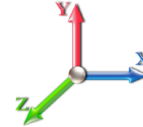


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.166	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	5.166	5.68	0.00	1.200	0.828	5.00	16.391	19.67	111.8	194.8	939.9
10.00		1.00	0.85	5.166	5.68	0.00	1.200	0.887	5.00	16.110	19.33	109.8	204.7	934.0
15.00		1.00	0.85	5.166	5.68	0.00	1.200	0.924	5.00	15.810	18.97	107.8	208.9	922.4
20.00		1.00	0.90	5.481	6.03	0.00	1.200	0.951	5.00	15.502	18.60	112.2	210.5	908.2
25.00		1.00	0.95	5.745	6.32	0.00	1.200	0.973	5.00	15.189	18.23	115.2	210.6	892.5
30.00		1.00	0.98	5.970	6.57	0.00	1.200	0.991	5.00	14.873	17.85	117.2	209.7	875.8
35.00		1.00	1.01	6.166	6.78	0.00	1.200	1.006	5.00	14.556	17.47	118.5	208.2	858.4
40.00		1.00	1.04	6.342	6.98	0.00	1.200	1.019	5.00	14.236	17.08	119.2	206.1	840.4
44.08	Bot - Section 2	1.00	1.07	6.473	7.12	0.00	1.200	1.029	4.08	11.388	13.67	97.3	166.6	673.0
45.00		1.00	1.07	6.501	7.15	0.00	1.200	1.032	0.92	2.565	3.08	22.0	37.9	241.6
48.00	Top - Section 1	1.00	1.08	6.590	7.25	0.00	1.200	1.038	3.00	8.321	9.99	72.4	123.0	782.9
50.00		1.00	1.09	6.647	7.31	0.00	1.200	1.042	2.00	5.483	6.58	48.1	81.6	276.6
52.00	RB1	1.00	1.10	6.702	7.37	0.00	1.200	1.047	2.00	5.431	6.52	48.1	81.1	274.1
54.33	Bot - Section 3	1.00	1.11	6.765	7.44	0.00	1.200	1.051	2.33	6.271	7.53	56.0	93.9	316.5
55.00		1.00	1.12	6.782	7.46	0.00	1.200	1.052	0.67	1.800	2.16	16.1	27.1	138.2
58.08	Top - Section 2	1.00	1.13	6.860	7.55	0.00	1.200	1.058	3.08	8.251	9.90	74.7	124.1	632.9
60.00		1.00	1.14	6.907	7.60	0.00	1.200	1.062	1.92	5.067	6.08	46.2	76.6	211.5
65.00		1.00	1.16	7.025	7.73	0.00	1.200	1.070	5.00	12.996	15.60	120.5	196.3	541.6
68.00	RT1	1.00	1.17	7.092	7.80	0.00	1.200	1.075	3.00	7.642	9.17	71.5	116.4	319.1
70.00		1.00	1.17	7.135	7.85	0.00	1.200	1.078	2.00	5.029	6.04	47.4	77.0	210.2
75.00		1.00	1.19	7.240	7.96	0.00	1.200	1.086	5.00	12.348	14.82	118.0	188.6	515.0
78.00	Appurtenance(s)	1.00	1.20	7.300	8.03	0.00	1.200	1.090	3.00	7.252	8.70	69.9	111.7	303.0
80.00		1.00	1.21	7.339	8.07	0.00	1.200	1.093	2.00	4.770	5.72	46.2	73.8	199.4
85.00		1.00	1.22	7.433	8.18	0.00	1.200	1.099	5.00	11.698	14.04	114.8	180.3	487.7
90.00		1.00	1.24	7.523	8.28	0.00	1.200	1.106	5.00	11.373	13.65	112.9	176.0	473.8
95.00		1.00	1.25	7.609	8.37	0.00	1.200	1.112	5.00	11.047	13.26	111.0	171.5	459.9
99.42	Bot - Section 4	1.00	1.26	7.682	8.45	0.00	1.200	1.117	4.42	9.487	11.38	96.2	148.0	394.8
100.00		1.00	1.27	7.692	8.46	0.00	1.200	1.117	0.58	1.252	1.50	12.7	19.8	84.4
102.33	Top - Section 3	1.00	1.27	7.729	8.50	0.00	1.200	1.120	2.33	4.965	5.96	50.7	78.1	334.1
105.00	Appurtenance(s)	1.00	1.28	7.771	8.55	0.00	1.200	1.123	2.67	5.588	6.71	57.3	88.0	232.9
110.00		1.00	1.29	7.848	8.63	0.00	1.200	1.128	5.00	10.228	12.27	106.0	160.3	424.7
115.00		1.00	1.30	7.921	8.71	0.00	1.200	1.133	5.00	9.902	11.88	103.5	155.5	410.4
116.50	Appurtenance(s)	1.00	1.31	7.943	8.74	0.00	1.200	1.134	1.50	2.906	3.49	30.5	46.2	120.8
120.00		1.00	1.32	7.993	8.79	0.00	1.200	1.138	3.50	6.668	8.00	70.3	105.4	276.2
Totals:									120.00			2,731.9	16,506.8	

Discrete Appurtenance Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	116.50	800 MHz RRH	3	7.943	8.737	0.40	0.80	3.88	271.73	0.000	0.000	33.90	0.00	0.00	
2	116.50	ACU-A20-N	4	7.943	8.737	0.40	0.80	0.53	10.77	0.000	0.000	4.65	0.00	0.00	
3	116.50	800 MHz RRH w/ Notch	3	7.943	8.737	0.40	0.80	4.44	321.41	0.000	0.000	38.80	0.00	0.00	
4	116.50	1900MHz RRH	3	7.943	8.737	0.40	0.80	5.64	277.68	0.000	0.000	49.32	0.00	0.00	
5	116.50	TD-RRH8x20-25	3	7.943	8.737	0.40	0.80	5.48	452.01	0.000	0.000	47.85	0.00	0.00	
6	116.50	APXV9TM-14-ALU-I20	3	7.943	8.737	0.62	0.80	22.11	444.37	0.000	0.000	193.15	0.00	0.00	
7	116.50	APXVSP18-C-A20	3	7.943	8.737	0.66	0.80	19.59	393.78	0.000	0.000	171.19	0.00	0.00	
8	116.50	A-ANT-23G-2-C	3	7.943	8.737	0.60	0.80	9.94	204.25	0.000	0.000	86.81	0.00	0.00	
9	116.50	Low Profile	1	7.943	8.737	1.00	1.00	33.48	2350.83	0.000	0.000	292.53	0.00	0.00	
10	105.00	MS-KI22-5 (Kickers w/o	1	7.771	8.548	1.00	1.00	8.92	242.33	0.000	0.000	76.25	0.00	0.00	
11	105.00	MS-1436 (Collar Mount)	1	7.771	8.548	1.00	1.00	4.18	249.68	0.000	0.000	35.77	0.00	0.00	
12	105.00	RRUS 4415 B25	3	7.771	8.548	0.38	0.75	2.22	216.73	0.000	0.000	18.96	0.00	0.00	
13	105.00	APXVAARR24_43-U-NA2	3	7.771	8.548	0.52	0.75	33.78	1231.11	0.000	0.000	288.74	0.00	0.00	
14	105.00	AIR6449 B41	3	7.771	8.548	0.53	0.75	10.00	540.33	0.000	0.000	85.51	0.00	0.00	
15	105.00	AIR32	3	7.771	8.548	0.65	0.75	14.12	806.74	0.000	0.000	120.72	0.00	0.00	
16	105.00	4449 B71 + B95	3	7.771	8.548	0.38	0.75	2.22	385.16	0.000	0.000	18.95	0.00	0.00	
17	105.00	KRY 112 144/1	3	7.771	8.548	0.38	0.75	0.81	51.11	0.000	0.000	6.88	0.00	0.00	
18	105.00	AIR B2A/ B4P	3	7.771	8.548	0.65	0.75	13.12	633.12	0.000	0.000	112.13	0.00	0.00	
19	105.00	Platform w/ Hand Rail	1	7.771	8.548	1.00	1.00	49.96	2461.99	0.000	0.000	427.10	0.00	0.00	
20	78.00	GPS	2	7.300	8.030	1.00	1.00	2.89	44.62	0.000	0.000	23.20	0.00	0.00	
21	78.00	Side Arm (L. Heavy)	2	7.300	8.030	1.00	1.00	15.55	358.78	0.000	0.000	124.88	0.00	0.00	
Totals:									11,948.52						2,257.27

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		111.77	1127.18	0.00	0.00
10.00		109.85	1122.63	0.00	0.00
15.00		107.80	1111.80	0.00	0.00
20.00		112.16	1098.21	0.00	0.00
25.00		115.18	1083.00	0.00	0.00
30.00		117.20	1066.74	0.00	0.00
35.00		118.48	1049.72	0.00	0.00
40.00		119.18	1032.12	0.00	0.00
44.08		97.31	829.69	0.00	0.00
45.00		22.02	276.77	0.00	0.00
48.00		72.39	898.18	0.00	0.00
50.00		48.11	353.46	0.00	0.00
52.00		48.05	350.99	0.00	0.00
54.33		56.00	406.29	0.00	0.00
55.00		16.11	163.88	0.00	0.00
58.08		74.72	751.64	0.00	0.00
60.00		46.20	285.38	0.00	0.00
65.00		120.51	734.54	0.00	0.00
68.00		71.53	434.90	0.00	0.00
70.00		47.37	287.45	0.00	0.00
75.00		118.00	708.24	0.00	0.00
78.00	(4) attachments	217.96	809.66	0.00	0.00
80.00		46.20	268.28	0.00	0.00
85.00		114.78	659.85	0.00	0.00
90.00		112.94	631.05	0.00	0.00
95.00		110.96	594.64	0.00	0.00
99.42		96.21	513.83	0.00	0.00
100.00		12.72	100.13	0.00	0.00
102.33		50.66	384.62	0.00	0.00
105.00	(24) attachments	1248.31	7108.99	0.00	0.00
110.00		105.95	450.49	0.00	0.00
115.00		103.54	436.20	0.00	0.00
116.50	(26) attachments	948.68	4855.40	0.00	0.00
120.00		70.35	276.25	0.00	0.00
Totals:		4,989.18	32,262.23	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.166	0.00	15.10
10.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.166	0.00	16.42
15.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.166	0.00	17.25
20.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.481	0.00	17.88
25.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.745	0.00	18.38
30.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.970	0.00	18.80
35.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.166	0.00	19.17
40.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.342	0.00	19.49
44.08	1" Reinforcing plate	Yes	4.08	0.000	0.00	0.00	0.00	0.000	0.000	6.473	0.00	16.12
45.00	1" Reinforcing plate	Yes	0.92	0.000	0.00	0.00	0.00	0.000	0.000	6.501	0.00	3.63
48.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	6.590	0.00	11.97
50.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.647	0.00	8.02
52.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.702	0.00	8.06
54.33	1" Reinforcing plate	Yes	2.33	0.000	0.00	0.00	0.00	0.000	0.000	6.765	0.00	9.46
55.00	1" Reinforcing plate	Yes	0.67	0.000	0.00	0.00	0.00	0.000	0.000	6.782	0.00	2.71
58.08	1" Reinforcing plate	Yes	3.08	0.000	0.00	0.00	0.00	0.000	0.000	6.860	0.00	12.60
60.00	1" Reinforcing plate	Yes	1.92	0.000	0.00	0.00	0.00	0.000	0.000	6.907	0.00	7.87
65.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.025	0.00	20.73
68.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.092	0.00	12.51
70.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.135	0.00	8.37
75.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.240	0.00	21.12
Totals:											0.0	285.6

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Iterations 25

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	-32.26	-5.02	0.00	-446.05	0.00	446.05	2594.99	647.31	1997.22	1984.50	0.00	0.000	0.000	0.237
5.00	-31.12	-4.96	0.00	-420.97	0.00	420.97	2557.32	633.72	1914.19	1914.27	0.05	-0.096	0.000	0.232
10.00	-29.99	-4.89	0.00	-396.20	0.00	396.20	2518.93	620.12	1832.92	1844.73	0.20	-0.192	0.000	0.227
15.00	-28.87	-4.83	0.00	-371.73	0.00	371.73	2479.82	606.52	1753.41	1775.91	0.46	-0.288	0.000	0.221
20.00	-27.77	-4.76	0.00	-347.58	0.00	347.58	2439.98	592.92	1675.66	1707.85	0.81	-0.385	0.000	0.215
25.00	-26.68	-4.68	0.00	-323.80	0.00	323.80	2399.42	579.32	1599.68	1640.59	1.26	-0.481	0.000	0.209
30.00	-25.60	-4.59	0.00	-300.40	0.00	300.40	2358.14	565.72	1525.46	1574.17	1.82	-0.577	0.000	0.202
35.00	-24.55	-4.51	0.00	-277.43	0.00	277.43	2316.13	552.12	1453.00	1508.60	2.47	-0.673	0.000	0.195
40.00	-23.51	-4.41	0.00	-254.90	0.00	254.90	2273.40	538.52	1382.30	1443.94	3.23	-0.767	0.000	0.187
44.08	-22.68	-4.32	0.00	-236.90	0.00	236.90	2232.73	527.42	1325.88	1388.57	3.92	-0.844	0.000	0.181
45.00	-22.40	-4.31	0.00	-232.94	0.00	232.94	2222.17	524.92	1313.37	1375.41	4.08	-0.862	0.000	0.180
48.00	-21.50	-4.24	0.00	-220.02	0.00	220.02	1679.75	421.24	1057.24	1045.08	4.64	-0.918	0.000	0.223
50.00	-21.14	-4.20	0.00	-211.54	0.00	211.54	1667.94	416.89	1035.51	1026.92	5.04	-0.956	0.000	0.219
52.00	-20.79	-4.16	0.00	-203.15	0.00	203.15	1656.01	412.54	1014.00	1008.85	5.45	-1.000	0.000	0.130
54.33	-20.38	-4.10	0.00	-193.44	0.00	193.44	1641.95	407.46	989.20	987.87	5.94	-1.030	0.000	0.126
55.00	-20.22	-4.09	0.00	-190.71	0.00	190.71	1637.90	406.01	982.17	981.90	6.09	-1.039	0.000	0.123
58.08	-19.47	-4.01	0.00	-178.09	0.00	178.09	1101.62	304.05	734.39	660.80	6.77	-1.078	0.000	0.133
60.00	-19.18	-3.98	0.00	-170.40	0.00	170.40	1095.40	300.92	719.36	650.26	7.21	-1.102	0.000	0.148
65.00	-18.44	-3.86	0.00	-150.51	0.00	150.51	1078.67	292.76	680.88	622.86	8.40	-1.170	0.000	0.135
68.00	-18.01	-3.79	0.00	-138.93	0.00	138.93	1068.29	287.86	658.30	606.48	9.15	-1.209	0.000	0.127
68.00	-18.01	-3.79	0.00	-138.93	0.00	138.93	1068.29	287.86	658.30	606.48	9.15	-1.209	0.000	0.127
70.00	-17.72	-3.76	0.00	-131.35	0.00	131.35	1061.22	284.60	643.45	595.59	9.66	-1.234	0.000	0.237
75.00	-17.01	-3.65	0.00	-112.57	0.00	112.57	1043.04	276.44	607.09	568.49	11.01	-1.348	0.000	0.214
78.00	-16.20	-3.43	0.00	-101.61	0.00	101.61	1031.79	271.55	585.78	552.33	11.88	-1.414	0.000	0.200
80.00	-15.93	-3.39	0.00	-94.76	0.00	94.76	1024.15	268.28	571.78	541.60	12.48	-1.456	0.000	0.191
85.00	-15.27	-3.29	0.00	-77.79	0.00	77.79	1004.52	260.12	537.53	514.95	14.06	-1.552	0.000	0.166
90.00	-14.63	-3.18	0.00	-61.35	0.00	61.35	984.18	251.96	504.33	488.58	15.73	-1.638	0.000	0.141
95.00	-14.04	-3.06	0.00	-45.47	0.00	45.47	963.11	243.80	472.20	462.52	17.49	-1.710	0.000	0.113
99.42	-13.53	-2.96	0.00	-31.94	0.00	31.94	943.90	236.60	444.69	439.78	19.10	-1.760	0.000	0.087
100.00	-13.43	-2.95	0.00	-30.21	0.00	30.21	941.32	235.64	441.12	436.80	19.31	-1.766	0.000	0.084
102.33	-13.04	-2.89	0.00	-23.34	0.00	23.34	941.62	235.75	441.53	437.14	20.18	-1.787	0.000	0.067
105.00	-5.98	-1.42	0.00	-15.64	0.00	15.64	929.71	231.40	425.38	423.58	21.18	-1.805	0.000	0.043
110.00	-5.53	-1.30	0.00	-8.55	0.00	8.55	906.82	223.24	395.91	398.46	23.09	-1.826	0.000	0.028
115.00	-5.10	-1.18	0.00	-2.05	0.00	2.05	883.20	215.08	367.50	373.78	25.00	-1.836	0.000	0.011
116.50	-0.27	-0.08	0.00	-0.28	0.00	0.28	875.98	212.63	359.18	366.46	25.58	-1.837	0.000	0.001
120.00	0.00	-0.07	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	26.93	-1.837	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh					Iterations 22
Gust Response Factor	1.10	Sds	0.21		Ss 0.20
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.08
Wind Load Factor	0.00	Structure Frequency (f1)	0.34	SA	0.03
				Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		793.12	2.50	34.01	0.00	
10.00		779.94	7.50	33.44	0.04	
15.00		766.76	12.50	32.88	0.11	
20.00		753.57	17.50	32.31	0.21	
25.00		740.39	22.50	31.75	0.34	
30.00		727.21	27.50	31.18	0.49	
35.00		714.02	32.50	30.62	0.66	
40.00		700.84	37.50	30.05	0.85	
44.08	Bot - Section 2	562.57	42.04	24.12	0.69	
45.00		201.29	44.54	8.63	0.10	
48.00	Top - Section 1	653.19	46.50	28.01	1.14	
50.00		231.38	49.00	9.92	0.16	
52.00	RB1	229.69	51.00	9.85	0.17	
54.33	Bot - Section 3	265.84	53.17	11.40	0.25	
55.00		115.55	54.67	4.95	0.05	
58.08	Top - Section 2	530.17	56.54	22.73	1.11	
60.00		178.41	59.04	7.65	0.14	
65.00		459.95	62.50	19.72	1.02	
68.00	RT1	272.17	66.50	11.67	0.40	
70.00		179.87	69.00	7.71	0.19	
75.00		444.13	72.50	19.04	1.28	
78.00	Appurtenance(s)	522.68	76.50	22.41	1.97	
80.00		173.54	79.00	7.44	0.23	
85.00		428.31	82.50	18.37	1.54	
90.00		405.42	87.50	17.38	1.55	
95.00		375.05	92.50	16.08	1.49	
99.42	Bot - Section 4	324.71	97.21	13.92	1.23	
100.00		69.57	99.71	2.98	0.06	
102.33	Top - Section 3	263.82	101.17	11.31	0.88	
105.00	Appurtenance(s)	3632.2	103.67	155.75	175.00	
110.00		246.15	107.50	10.56	0.86	
115.00		238.24	112.50	10.22	0.89	
116.50	Appurtenance(s)	2704.3	115.75	115.96	120.94	
120.00		142.36	118.25	6.10	0.35	
Totals:		19,826.5		850.2	316.4	
					Total Wind:	18,880.9

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

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Iterations 22

Gust Response Factor 1.10

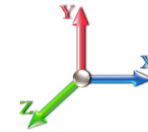
Sds 0.21

Ss 0.20

Dead Load Factor 1.20 **Seismic Load Factor** 1.00 **Sd1** 0.08

S1 0.05

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.34 **SA** 0.03 **Seismic Importance Factor** 1.00



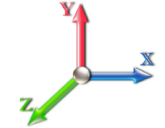
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.94	-0.32	0.00	-36.06	0.00	36.06	2594.99	647.31	1997.22	1984.50	0.00	0.00	0.00	0.027
5.00	-22.99	-0.32	0.00	-34.47	0.00	34.47	2557.32	633.72	1914.19	1914.27	0.00	-0.01	0.027	
10.00	-22.05	-0.32	0.00	-32.87	0.00	32.87	2518.93	620.12	1832.92	1844.73	0.02	-0.02	0.027	
15.00	-21.13	-0.33	0.00	-31.25	0.00	31.25	2479.82	606.52	1753.41	1775.91	0.04	-0.02	0.026	
20.00	-20.23	-0.33	0.00	-29.63	0.00	29.63	2439.98	592.92	1675.66	1707.85	0.07	-0.03	0.026	
25.00	-19.34	-0.33	0.00	-27.99	0.00	27.99	2399.42	579.32	1599.68	1640.59	0.10	-0.04	0.025	
30.00	-18.48	-0.33	0.00	-26.34	0.00	26.34	2358.14	565.72	1525.46	1574.17	0.15	-0.05	0.025	
35.00	-17.62	-0.33	0.00	-24.68	0.00	24.68	2316.13	552.12	1453.00	1508.60	0.21	-0.06	0.024	
40.00	-16.79	-0.33	0.00	-23.02	0.00	23.02	2273.40	538.52	1382.30	1443.94	0.27	-0.07	0.023	
44.08	-16.11	-0.33	0.00	-21.66	0.00	21.66	2232.73	527.42	1325.88	1388.57	0.33	-0.07	0.023	
45.00	-15.87	-0.33	0.00	-21.35	0.00	21.35	2222.17	524.92	1313.37	1375.41	0.34	-0.07	0.023	
48.00	-15.08	-0.33	0.00	-20.35	0.00	20.35	1679.75	421.24	1057.24	1045.08	0.39	-0.08	0.028	
50.00	-14.81	-0.33	0.00	-19.69	0.00	19.69	1667.94	416.89	1035.51	1026.92	0.43	-0.08	0.028	
52.00	-14.53	-0.33	0.00	-19.02	0.00	19.02	1656.01	412.54	1014.00	1008.85	0.46	-0.09	0.016	
54.33	-14.22	-0.33	0.00	-18.24	0.00	18.24	1641.95	407.46	989.20	987.87	0.50	-0.09	0.016	
55.00	-14.08	-0.33	0.00	-18.02	0.00	18.02	1637.90	406.01	982.17	981.90	0.52	-0.09	0.016	
58.08	-13.44	-0.33	0.00	-16.99	0.00	16.99	1101.62	304.05	734.39	660.80	0.58	-0.09	0.017	
60.00	-13.23	-0.33	0.00	-16.36	0.00	16.36	1095.40	300.92	719.36	650.26	0.62	-0.10	0.019	
65.00	-12.70	-0.33	0.00	-14.70	0.00	14.70	1078.67	292.76	680.88	622.86	0.72	-0.10	0.018	
68.00	-12.38	-0.33	0.00	-13.70	0.00	13.70	1068.29	287.86	658.30	606.48	0.79	-0.11	0.017	
68.00	-12.38	-0.33	0.00	-13.70	0.00	13.70	1068.29	287.86	658.30	606.48	0.79	-0.11	0.017	
70.00	-12.17	-0.33	0.00	-13.04	0.00	13.04	1061.22	284.60	643.45	595.59	0.83	-0.11	0.033	
75.00	-11.65	-0.33	0.00	-11.38	0.00	11.38	1043.04	276.44	607.09	568.49	0.95	-0.12	0.031	
78.00	-11.02	-0.33	0.00	-10.39	0.00	10.39	1031.79	271.55	585.78	552.33	1.03	-0.13	0.029	
80.00	-10.82	-0.33	0.00	-9.73	0.00	9.73	1024.15	268.28	571.78	541.60	1.08	-0.13	0.029	
85.00	-10.32	-0.33	0.00	-8.08	0.00	8.08	1004.52	260.12	537.53	514.95	1.23	-0.14	0.026	
90.00	-9.85	-0.33	0.00	-6.43	0.00	6.43	984.18	251.96	504.33	488.58	1.38	-0.15	0.023	
95.00	-9.41	-0.33	0.00	-4.79	0.00	4.79	963.11	243.80	472.20	462.52	1.54	-0.16	0.020	
99.42	-9.03	-0.32	0.00	-3.35	0.00	3.35	943.90	236.60	444.69	439.78	1.69	-0.16	0.017	
100.00	-8.95	-0.32	0.00	-3.16	0.00	3.16	941.32	235.64	441.12	436.80	1.71	-0.16	0.017	
102.33	-8.63	-0.32	0.00	-2.40	0.00	2.40	941.62	235.75	441.53	437.14	1.79	-0.17	0.015	
105.00	-4.13	-0.14	0.00	-1.54	0.00	1.54	929.71	231.40	425.38	423.58	1.89	-0.17	0.008	
110.00	-3.83	-0.13	0.00	-0.87	0.00	0.87	906.82	223.24	395.91	398.46	2.06	-0.17	0.006	
115.00	-3.54	-0.13	0.00	-0.20	0.00	0.20	883.20	215.08	367.50	373.78	2.24	-0.17	0.005	
116.50	-0.18	0.00	0.00	0.00	0.00	0.00	875.98	212.63	359.18	366.46	2.30	-0.17	0.000	
120.00	0.00	0.00	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	2.42	-0.17	0.000	

Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0Ev + 1.0Eh					Iterations 22
Gust Response Factor	1.10	Sds	0.21	Ss	0.20
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.08
Wind Load Factor	0.00	Structure Frequency (f1)	0.34	SA	0.03
				Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		750.08	2.50	32.16	0.00	
10.00		736.90	7.50	31.60	0.04	
15.00		723.71	12.50	31.03	0.10	
20.00		710.53	17.50	30.47	0.19	
25.00		697.35	22.50	29.90	0.31	
30.00		684.16	27.50	29.34	0.44	
35.00		670.98	32.50	28.77	0.59	
40.00		657.80	37.50	28.21	0.76	
44.08	Bot - Section 2	527.42	42.04	22.62	0.62	
45.00		193.40	44.54	8.29	0.09	
48.00	Top - Section 1	627.36	46.50	26.90	1.06	
50.00		214.16	49.00	9.18	0.14	
52.00	RB1	212.47	51.00	9.11	0.15	
54.33	Bot - Section 3	245.75	53.17	10.54	0.21	
55.00		109.81	54.67	4.71	0.05	
58.08	Top - Section 2	503.62	56.54	21.60	1.01	
60.00		161.91	59.04	6.94	0.11	
65.00		416.90	62.50	17.88	0.85	
68.00	RT1	246.35	66.50	10.56	0.34	
70.00		162.65	69.00	6.97	0.16	
75.00		401.08	72.50	17.20	1.06	
78.00	Appurtenance(s)	496.85	76.50	21.31	1.81	
80.00		156.32	79.00	6.70	0.19	
85.00		385.26	82.50	16.52	1.26	
90.00		366.12	87.50	15.70	1.28	
95.00		341.36	92.50	14.64	1.25	
99.42	Bot - Section 4	294.96	97.21	12.65	1.03	
100.00		65.64	99.71	2.81	0.05	
102.33	Top - Section 3	251.18	101.17	10.77	0.81	
105.00	Appurtenance(s)	3617.8	103.67	155.13	175.98	
110.00		239.71	107.50	10.28	0.83	
115.00		231.80	112.50	9.94	0.85	
116.50	Appurtenance(s)	2702.4	115.75	115.88	122.42	
120.00		142.36	118.25	6.10	0.35	
Totals:		18,946.2		812.4	316.4	
					Total Wind:	18,880.9

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

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0Ev + 1.0Eh										Iterations 22
Gust Response Factor 1.10					Sds 0.21					Ss 0.20
Dead Load Factor 0.90			Seismic Load Factor 1.00			Sd1 0.08				S1 0.05
Wind Load Factor 0.00		Structure Frequency (f1) 0.34		SA 0.03		Seismic Importance Factor 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-18.13	-0.32	0.00	-35.61	0.00	35.61	2594.99	647.31	1997.22	1984.50	0.00	0.00	0.00	0.025
5.00	-17.41	-0.32	0.00	-34.03	0.00	34.03	2557.32	633.72	1914.19	1914.27	0.00	-0.01	0.00	0.025
10.00	-16.70	-0.32	0.00	-32.43	0.00	32.43	2518.93	620.12	1832.92	1844.73	0.02	-0.02	0.00	0.024
15.00	-16.00	-0.32	0.00	-30.83	0.00	30.83	2479.82	606.52	1753.41	1775.91	0.04	-0.02	0.00	0.024
20.00	-15.32	-0.32	0.00	-29.21	0.00	29.21	2439.98	592.92	1675.66	1707.85	0.07	-0.03	0.00	0.023
25.00	-14.65	-0.33	0.00	-27.59	0.00	27.59	2399.42	579.32	1599.68	1640.59	0.10	-0.04	0.00	0.023
30.00	-13.99	-0.33	0.00	-25.96	0.00	25.96	2358.14	565.72	1525.46	1574.17	0.15	-0.05	0.00	0.022
35.00	-13.35	-0.33	0.00	-24.32	0.00	24.32	2316.13	552.12	1453.00	1508.60	0.20	-0.06	0.00	0.022
40.00	-12.71	-0.33	0.00	-22.68	0.00	22.68	2273.40	538.52	1382.30	1443.94	0.27	-0.06	0.00	0.021
44.08	-12.21	-0.33	0.00	-21.34	0.00	21.34	2232.73	527.42	1325.88	1388.57	0.33	-0.07	0.00	0.021
45.00	-12.02	-0.33	0.00	-21.04	0.00	21.04	2222.17	524.92	1313.37	1375.41	0.34	-0.07	0.00	0.021
48.00	-11.42	-0.33	0.00	-20.05	0.00	20.05	1679.75	421.24	1057.24	1045.08	0.39	-0.08	0.00	0.026
50.00	-11.22	-0.33	0.00	-19.40	0.00	19.40	1667.94	416.89	1035.51	1026.92	0.42	-0.08	0.00	0.026
52.00	-11.01	-0.33	0.00	-18.74	0.00	18.74	1656.01	412.54	1014.00	1008.85	0.45	-0.09	0.00	0.015
54.33	-10.77	-0.33	0.00	-17.98	0.00	17.98	1641.95	407.46	989.20	987.87	0.50	-0.09	0.00	0.015
55.00	-10.67	-0.33	0.00	-17.76	0.00	17.76	1637.90	406.01	982.17	981.90	0.51	-0.09	0.00	0.015
58.08	-10.18	-0.33	0.00	-16.75	0.00	16.75	1101.62	304.05	734.39	660.80	0.57	-0.09	0.00	0.016
60.00	-10.03	-0.33	0.00	-16.12	0.00	16.12	1095.40	300.92	719.36	650.26	0.61	-0.10	0.00	0.018
65.00	-9.62	-0.33	0.00	-14.49	0.00	14.49	1078.67	292.76	680.88	622.86	0.71	-0.10	0.00	0.017
68.00	-9.38	-0.33	0.00	-13.51	0.00	13.51	1068.29	287.86	658.30	606.48	0.77	-0.11	0.00	0.016
68.00	-9.38	-0.33	0.00	-13.51	0.00	13.51	1068.29	287.86	658.30	606.48	0.77	-0.11	0.00	0.016
70.00	-9.22	-0.33	0.00	-12.85	0.00	12.85	1061.22	284.60	643.45	595.59	0.82	-0.11	0.00	0.030
75.00	-8.83	-0.33	0.00	-11.22	0.00	11.22	1043.04	276.44	607.09	568.49	0.94	-0.12	0.00	0.028
78.00	-8.35	-0.32	0.00	-10.24	0.00	10.24	1031.79	271.55	585.78	552.33	1.02	-0.13	0.00	0.027
80.00	-8.20	-0.32	0.00	-9.59	0.00	9.59	1024.15	268.28	571.78	541.60	1.07	-0.13	0.00	0.026
85.00	-7.83	-0.32	0.00	-7.97	0.00	7.97	1004.52	260.12	537.53	514.95	1.21	-0.14	0.00	0.023
90.00	-7.47	-0.32	0.00	-6.35	0.00	6.35	984.18	251.96	504.33	488.58	1.36	-0.15	0.00	0.021
95.00	-7.14	-0.32	0.00	-4.73	0.00	4.73	963.11	243.80	472.20	462.52	1.52	-0.16	0.00	0.018
99.42	-6.85	-0.32	0.00	-3.31	0.00	3.31	943.90	236.60	444.69	439.78	1.67	-0.16	0.00	0.015
100.00	-6.79	-0.32	0.00	-3.12	0.00	3.12	941.32	235.64	441.12	436.80	1.69	-0.16	0.00	0.014
102.33	-6.55	-0.32	0.00	-2.38	0.00	2.38	941.62	235.75	441.53	437.14	1.77	-0.16	0.00	0.012
105.00	-3.13	-0.13	0.00	-1.52	0.00	1.52	929.71	231.40	425.38	423.58	1.86	-0.17	0.00	0.007
110.00	-2.90	-0.13	0.00	-0.86	0.00	0.86	906.82	223.24	395.91	398.46	2.04	-0.17	0.00	0.005
115.00	-2.68	-0.13	0.00	-0.20	0.00	0.20	883.20	215.08	367.50	373.78	2.21	-0.17	0.00	0.004
116.50	-0.13	0.00	0.00	0.00	0.00	0.00	875.98	212.63	359.18	366.46	2.26	-0.17	0.00	0.000
120.00	0.00	0.00	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	2.39	-0.17	0.00	0.000

Wind Loading - Shaft

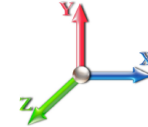
Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	6.656	7.32	175.50	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.656	7.32	171.84	0.730	0.000	5.00	15.701	11.46	83.9	0.0	620.9
10.00		1.00	0.85	6.656	7.32	168.18	0.730	0.000	5.00	15.370	11.22	82.1	0.0	607.8
15.00		1.00	0.85	6.656	7.32	164.53	0.730	0.000	5.00	15.040	10.98	80.4	0.0	594.6
20.00		1.00	0.90	7.062	7.77	165.71	0.730	0.000	5.00	14.709	10.74	83.4	0.0	581.4
25.00		1.00	0.95	7.402	8.14	165.79	0.730	0.000	5.00	14.379	10.50	85.5	0.0	568.2
30.00		1.00	0.98	7.691	8.46	165.07	0.730	0.000	5.00	14.048	10.26	86.8	0.0	555.0
35.00		1.00	1.01	7.945	8.74	163.78	0.730	0.000	5.00	13.718	10.01	87.5	0.0	541.8
40.00		1.00	1.04	8.171	8.99	162.05	0.730	0.000	5.00	13.387	9.77	87.8	0.0	528.7
44.08	Bot - Section 2	1.00	1.07	8.340	9.17	160.37	0.730	0.000	4.08	10.687	7.80	71.6	0.0	422.0
45.00		1.00	1.07	8.377	9.21	159.97	0.730	0.000	0.92	2.408	1.76	16.2	0.0	169.7
48.00	Top - Section 1	1.00	1.08	8.491	9.34	158.58	0.730	0.000	3.00	7.802	5.70	53.2	0.0	549.9
50.00		1.00	1.09	8.565	9.42	160.26	0.730	0.000	2.00	5.135	3.75	35.3	0.0	162.5
52.00	RB1	1.00	1.10	8.636	9.50	159.25	0.730	0.000	2.00	5.082	3.71	35.2	0.0	160.8
54.33	Bot - Section 3	1.00	1.11	8.716	9.59	158.04	0.730	0.000	2.33	5.863	4.28	41.0	0.0	185.5
55.00		1.00	1.12	8.738	9.61	157.68	0.730	0.000	0.67	1.683	1.23	11.8	0.0	92.6
58.08	Top - Section 2	1.00	1.13	8.839	9.72	155.99	0.730	0.000	3.08	7.707	5.63	54.7	0.0	424.0
60.00		1.00	1.14	8.900	9.79	156.94	0.730	0.000	1.92	4.728	3.45	33.8	0.0	112.4
65.00		1.00	1.16	9.051	9.96	154.00	0.730	0.000	5.00	12.104	8.84	88.0	0.0	287.8
68.00	RT1	1.00	1.17	9.137	10.05	152.16	0.730	0.000	3.00	7.104	5.19	52.1	0.0	168.9
70.00		1.00	1.17	9.193	10.11	150.91	0.730	0.000	2.00	4.670	3.41	34.5	0.0	111.0
75.00		1.00	1.19	9.328	10.26	147.68	0.730	0.000	5.00	11.443	8.35	85.7	0.0	272.0
78.00	Appurtenance(s)	1.00	1.20	9.405	10.35	145.68	0.730	0.000	3.00	6.707	4.90	50.7	0.0	159.4
80.00		1.00	1.21	9.455	10.40	144.33	0.730	0.000	2.00	4.405	3.22	33.4	0.0	104.7
85.00		1.00	1.22	9.577	10.53	140.87	0.730	0.000	5.00	10.782	7.87	82.9	0.0	256.1
90.00		1.00	1.24	9.693	10.66	137.31	0.730	0.000	5.00	10.452	7.63	81.3	0.0	248.2
95.00		1.00	1.25	9.804	10.78	133.65	0.730	0.000	5.00	10.121	7.39	79.7	0.0	240.3
99.42	Bot - Section 4	1.00	1.26	9.898	10.89	130.35	0.730	0.000	4.42	8.665	6.33	68.9	0.0	205.7
100.00		1.00	1.27	9.910	10.90	129.91	0.730	0.000	0.58	1.144	0.83	9.1	0.0	53.9
102.33	Top - Section 3	1.00	1.27	9.958	10.95	128.14	0.730	0.000	2.33	4.530	3.31	36.2	0.0	213.3
105.00	Appurtenance(s)	1.00	1.28	10.012	11.01	128.25	0.730	0.000	2.67	5.089	3.71	40.9	0.0	120.8
110.00		1.00	1.29	10.111	11.12	124.37	0.730	0.000	5.00	9.288	6.78	75.4	0.0	220.4
115.00		1.00	1.30	10.206	11.23	120.43	0.730	0.000	5.00	8.958	6.54	73.4	0.0	212.5
116.50	Appurtenance(s)	1.00	1.31	10.234	11.26	119.24	0.730	0.000	1.50	2.623	1.91	21.6	0.0	62.2
120.00		1.00	1.32	10.298	11.33	116.42	0.730	0.000	3.50	6.004	4.38	49.7	0.0	142.4
Totals:									120.00			1,993.8		9,957.1

Discrete Appurtenance Forces

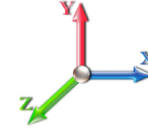
Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	116.50	800 MHz RRH	3	10.234	11.257	0.40	0.80	2.99	159.00	0.000	0.000	33.64	0.00	0.00
2	116.50	ACU-A20-N	4	10.234	11.257	0.40	0.80	0.22	4.00	0.000	0.000	2.52	0.00	0.00
3	116.50	800 MHz RRH w/ Notch	3	10.234	11.257	0.40	0.80	3.49	185.40	0.000	0.000	39.31	0.00	0.00
4	116.50	1900MHz RRH	3	10.234	11.257	0.40	0.80	4.56	132.00	0.000	0.000	51.33	0.00	0.00
5	116.50	TD-RRH8x20-25	3	10.234	11.257	0.40	0.80	4.86	210.00	0.000	0.000	54.71	0.00	0.00
6	116.50	APXV9TM-14-ALU-I20	3	10.234	11.257	0.62	0.80	18.35	191.70	0.000	0.000	206.58	0.00	0.00
7	116.50	APXVSP18-C-A20	3	10.234	11.257	0.66	0.80	15.98	171.00	0.000	0.000	179.84	0.00	0.00
8	116.50	A-ANT-23G-2-C	3	10.234	11.257	0.60	0.80	8.44	81.30	0.000	0.000	95.03	0.00	0.00
9	116.50	Low Profile	1	10.234	11.257	1.00	1.00	22.00	1500.00	0.000	0.000	247.66	0.00	0.00
10	105.00	MS-KI22-5 (Kickers w/o	1	10.012	11.014	1.00	1.00	5.33	146.00	0.000	0.000	58.70	0.00	0.00
11	105.00	MS-1436 (Collar Mount)	1	10.012	11.014	1.00	1.00	2.50	150.60	0.000	0.000	27.53	0.00	0.00
12	105.00	RRUS 4415 B25	3	10.012	11.014	0.38	0.75	1.84	138.00	0.000	0.000	20.32	0.00	0.00
13	105.00	APXVAARR24_43-U-NA2	3	10.012	11.014	0.52	0.75	31.88	384.00	0.000	0.000	351.09	0.00	0.00
14	105.00	AIR6449 B41	3	10.012	11.014	0.53	0.75	9.03	309.00	0.000	0.000	99.41	0.00	0.00
15	105.00	AIR32	3	10.012	11.014	0.65	0.75	12.74	396.60	0.000	0.000	140.35	0.00	0.00
16	105.00	4449 B71 + B95	3	10.012	11.014	0.38	0.75	1.86	222.00	0.000	0.000	20.44	0.00	0.00
17	105.00	KRY 112 144/1	3	10.012	11.014	0.38	0.75	0.46	33.00	0.000	0.000	5.08	0.00	0.00
18	105.00	AIR B2A/ B4P	3	10.012	11.014	0.65	0.75	11.78	274.50	0.000	0.000	129.79	0.00	0.00
19	105.00	Platform w/ Hand Rail	1	10.012	11.014	1.00	1.00	32.00	1400.00	0.000	0.000	352.44	0.00	0.00
20	78.00	GPS	2	9.405	10.346	1.00	1.00	2.00	20.00	0.000	0.000	20.69	0.00	0.00
21	78.00	Side Arm (L. Heavy)	2	9.405	10.346	1.00	1.00	9.00	240.00	0.000	0.000	93.11	0.00	0.00
Totals:									6,348.10			2,229.59		

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		83.91	764.43	0.00	0.00
10.00		82.15	751.25	0.00	0.00
15.00		80.38	738.06	0.00	0.00
20.00		83.41	724.88	0.00	0.00
25.00		85.46	711.69	0.00	0.00
30.00		86.76	698.51	0.00	0.00
35.00		87.52	685.33	0.00	0.00
40.00		87.84	672.14	0.00	0.00
44.08		71.58	539.14	0.00	0.00
45.00		16.20	196.03	0.00	0.00
48.00		53.20	635.97	0.00	0.00
50.00		35.32	219.90	0.00	0.00
52.00		35.24	218.21	0.00	0.00
54.33		41.03	252.45	0.00	0.00
55.00		11.81	111.73	0.00	0.00
58.08		54.70	512.47	0.00	0.00
60.00		33.79	167.41	0.00	0.00
65.00		87.97	431.25	0.00	0.00
68.00		52.12	254.95	0.00	0.00
70.00		34.47	168.39	0.00	0.00
75.00		85.71	415.43	0.00	0.00
78.00	(4) attachments	164.46	505.46	0.00	0.00
80.00		33.45	162.06	0.00	0.00
85.00		82.92	399.61	0.00	0.00
90.00		81.35	379.22	0.00	0.00
95.00		79.68	352.59	0.00	0.00
99.42		68.87	304.88	0.00	0.00
100.00		9.10	66.95	0.00	0.00
102.33		36.22	255.40	0.00	0.00
105.00	(24) attachments	1246.07	3622.62	0.00	0.00
110.00		75.41	241.86	0.00	0.00
115.00		73.41	233.95	0.00	0.00
116.50	(26) attachments	932.18	2703.04	0.00	0.00
120.00		49.65	142.36	0.00	0.00
Totals:		4,223.35	19,239.62	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.656	0.00	0.00
10.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.656	0.00	0.00
15.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.656	0.00	0.00
20.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.062	0.00	0.00
25.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.402	0.00	0.00
30.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.691	0.00	0.00
35.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.945	0.00	0.00
40.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.171	0.00	0.00
44.08	1" Reinforcing plate	Yes	4.08	0.000	0.00	0.00	0.00	0.000	0.000	8.340	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.92	0.000	0.00	0.00	0.00	0.000	0.000	8.377	0.00	0.00
48.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.491	0.00	0.00
50.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.565	0.00	0.00
52.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.636	0.00	0.00
54.33	1" Reinforcing plate	Yes	2.33	0.000	0.00	0.00	0.00	0.000	0.000	8.716	0.00	0.00
55.00	1" Reinforcing plate	Yes	0.67	0.000	0.00	0.00	0.00	0.000	0.000	8.738	0.00	0.00
58.08	1" Reinforcing plate	Yes	3.08	0.000	0.00	0.00	0.00	0.000	0.000	8.839	0.00	0.00
60.00	1" Reinforcing plate	Yes	1.92	0.000	0.00	0.00	0.00	0.000	0.000	8.900	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.051	0.00	0.00
68.00	1" Reinforcing plate	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.193	0.00	0.00
75.00	1" Reinforcing plate	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.328	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

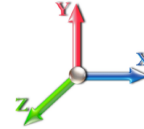


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 24

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	-19.24	-4.24	0.00	-379.22	0.00	379.22	2594.99	647.31	1997.22	1984.50	0.00	0.000	0.000	0.199
5.00	-18.47	-4.18	0.00	-358.04	0.00	358.04	2557.32	633.72	1914.19	1914.27	0.04	-0.081	0.000	0.194
10.00	-17.71	-4.12	0.00	-337.15	0.00	337.15	2518.93	620.12	1832.92	1844.73	0.17	-0.163	0.000	0.190
15.00	-16.97	-4.06	0.00	-316.55	0.00	316.55	2479.82	606.52	1753.41	1775.91	0.39	-0.245	0.000	0.185
20.00	-16.24	-4.00	0.00	-296.24	0.00	296.24	2439.98	592.92	1675.66	1707.85	0.69	-0.327	0.000	0.180
25.00	-15.52	-3.93	0.00	-276.26	0.00	276.26	2399.42	579.32	1599.68	1640.59	1.07	-0.410	0.000	0.175
30.00	-14.82	-3.86	0.00	-256.61	0.00	256.61	2358.14	565.72	1525.46	1574.17	1.55	-0.492	0.000	0.169
35.00	-14.13	-3.78	0.00	-237.32	0.00	237.32	2316.13	552.12	1453.00	1508.60	2.11	-0.573	0.000	0.163
40.00	-13.45	-3.71	0.00	-218.39	0.00	218.39	2273.40	538.52	1382.30	1443.94	2.75	-0.654	0.000	0.157
44.08	-12.91	-3.64	0.00	-203.26	0.00	203.26	2232.73	527.42	1325.88	1388.57	3.34	-0.720	0.000	0.152
45.00	-12.71	-3.63	0.00	-199.92	0.00	199.92	2222.17	524.92	1313.37	1375.41	3.48	-0.735	0.000	0.151
48.00	-12.07	-3.57	0.00	-189.04	0.00	189.04	1679.75	421.24	1057.24	1045.08	3.96	-0.784	0.000	0.188
50.00	-11.85	-3.54	0.00	-181.90	0.00	181.90	1667.94	416.89	1035.51	1026.92	4.29	-0.816	0.000	0.184
52.00	-11.63	-3.51	0.00	-174.81	0.00	174.81	1656.01	412.54	1014.00	1008.85	4.64	-0.854	0.000	0.110
54.33	-11.38	-3.47	0.00	-166.62	0.00	166.62	1641.95	407.46	989.20	987.87	5.07	-0.880	0.000	0.106
55.00	-11.27	-3.46	0.00	-164.31	0.00	164.31	1637.90	406.01	982.17	981.90	5.19	-0.888	0.000	0.104
58.08	-10.75	-3.40	0.00	-153.65	0.00	153.65	1101.62	304.05	734.39	660.80	5.77	-0.921	0.000	0.113
60.00	-10.58	-3.37	0.00	-147.13	0.00	147.13	1095.40	300.92	719.36	650.26	6.15	-0.942	0.000	0.125
65.00	-10.15	-3.29	0.00	-130.27	0.00	130.27	1078.67	292.76	680.88	622.86	7.17	-1.000	0.000	0.114
68.00	-9.90	-3.23	0.00	-120.41	0.00	120.41	1068.29	287.86	658.30	606.48	7.81	-1.034	0.000	0.108
68.00	-9.90	-3.23	0.00	-120.41	0.00	120.41	1068.29	287.86	658.30	606.48	7.81	-1.034	0.000	0.108
70.00	-9.73	-3.21	0.00	-113.94	0.00	113.94	1061.22	284.60	643.45	595.59	8.24	-1.056	0.000	0.201
75.00	-9.31	-3.13	0.00	-97.91	0.00	97.91	1043.04	276.44	607.09	568.49	9.40	-1.155	0.000	0.181
78.00	-8.80	-2.96	0.00	-88.54	0.00	88.54	1031.79	271.55	585.78	552.33	10.15	-1.213	0.000	0.169
80.00	-8.64	-2.93	0.00	-82.62	0.00	82.62	1024.15	268.28	571.78	541.60	10.66	-1.249	0.000	0.161
85.00	-8.24	-2.85	0.00	-67.97	0.00	67.97	1004.52	260.12	537.53	514.95	12.02	-1.333	0.000	0.140
90.00	-7.86	-2.77	0.00	-53.72	0.00	53.72	984.18	251.96	504.33	488.58	13.46	-1.408	0.000	0.118
95.00	-7.50	-2.69	0.00	-39.88	0.00	39.88	963.11	243.80	472.20	462.52	14.97	-1.471	0.000	0.094
99.42	-7.20	-2.61	0.00	-28.01	0.00	28.01	943.90	236.60	444.69	439.78	16.35	-1.516	0.000	0.071
100.00	-7.13	-2.60	0.00	-26.49	0.00	26.49	941.32	235.64	441.12	436.80	16.53	-1.521	0.000	0.068
102.33	-6.88	-2.56	0.00	-20.41	0.00	20.41	941.62	235.75	441.53	437.14	17.28	-1.539	0.000	0.054
105.00	-3.29	-1.22	0.00	-13.58	0.00	13.58	929.71	231.40	425.38	423.58	18.15	-1.555	0.000	0.036
110.00	-3.05	-1.14	0.00	-7.47	0.00	7.47	906.82	223.24	395.91	398.46	19.79	-1.573	0.000	0.022
115.00	-2.82	-1.06	0.00	-1.78	0.00	1.78	883.20	215.08	367.50	373.78	21.44	-1.582	0.000	0.008
116.50	-0.14	-0.05	0.00	-0.19	0.00	0.19	875.98	212.63	359.18	366.46	21.94	-1.582	0.000	0.001
120.00	0.00	-0.05	0.00	0.00	0.00	0.00	858.87	206.92	340.14	349.57	23.10	-1.583	0.000	0.000

Final Analysis Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 32

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 + 1.0W 120 mph Wind	19.0	0.00	23.03	0.00	0.00	1707.28
0.9D + 1.0W 120 mph Wind	18.9	0.00	17.25	0.00	0.00	1683.75
1.2D + 1.0Di + 1.0Wi 50 mph Wind	5.0	0.00	32.26	0.00	0.00	446.05
1.2D + 1.0Ev + 1.0Eh	0.3	0.00	23.94	0.00	0.00	36.06
0.9D + 1.0Ev + 1.0Eh	0.3	0.00	18.13	0.00	0.00	35.61
1.0D + 1.0W 60 mph Wind	4.2	0.00	19.24	0.00	0.00	379.22

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 + 1.0W 120 mph Wind	-10.52	-14.47	0.00	-514.12	0.00	-514.12	1061.22	284.60	643.45	595.59	70.00	0.876
0.9D + 1.0W 120 mph Wind	-17.25	-18.94	0.00	-1683.7	0.00	-1683.7	2594.99	647.31	1997.22	1984.50	0.00	0.856
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-17.72	-3.76	0.00	-131.35	0.00	-131.35	1061.22	284.60	643.45	595.59	70.00	0.237
1.2D + 1.0Ev + 1.0Eh	-12.17	-0.33	0.00	-13.04	0.00	-13.04	1061.22	284.60	643.45	595.59	70.00	0.033
0.9D + 1.0Ev + 1.0Eh	-9.22	-0.33	0.00	-12.85	0.00	-12.85	1061.22	284.60	643.45	595.59	70.00	0.030
1.0D + 1.0W 60 mph Wind	-9.73	-3.21	0.00	-113.94	0.00	-113.94	1061.22	284.60	643.45	595.59	70.00	0.201

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
52.0	68.0	(3) LNP-LP6X100-G-20TT	-380.6	-9.14	22.7	190.1	22.7	9	8	170.2	22.7	8	8	194.71	297.8	288.75	0.674

Base Plate Summary

Structure: CT46128-A-SB	Code: EIA/TIA-222-H	7/30/2020
Site Name: Milford - West	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 33



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 43.50
Moment (kip-ft): 1446.00	Width (in): 49.50	Number Bolts: 8.00
Axial (kip): 30.00	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 17.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 1707.28	Effective Len (in): 17.95	Ultimate (ksi): 100.00
Axial (kip): 23.03	Moment (kip-in): 718.56	Arrangement: Radial
Shear (kip): 18.96	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 59.94	Start Angle (deg): 0.00
	Stress Ratio: 0.74	Compression
		Force (kip): 137.35
		Allowable (kip): 268.39
		Ratio: 0.51
		Tension
		Force (kip): 129.29
		Allowable (kip): 243.75
		Ratio: 0.53



Pier Foundation Design For Monopole

Date
7/30/2020

Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-H
Site Name:	Mikford-West	Structure Height (Ft.):	120
Site Number:	CT46128-A-SBA	Engineer Name:	B. Davis
Engr. Number:	94593	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations Acceptable overstress (5.0%

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Factored):

Axial Load (Kips):	23.0	Shear Force (Kips):	19.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1707.3

Foundation Geometries:

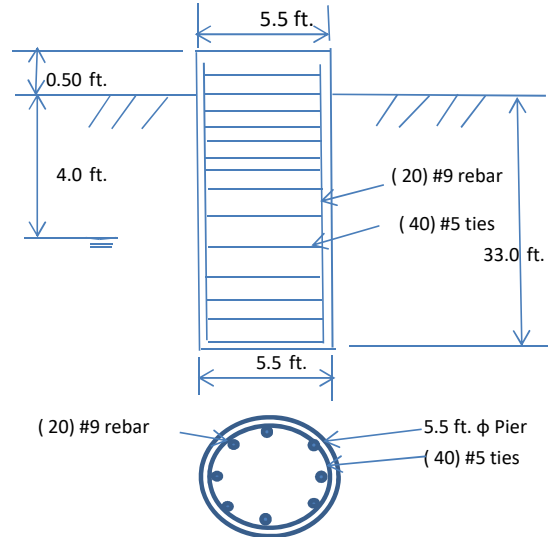
Diameter of Pier (ft.):	5.5	Depth of Base B. G. S. :	33.0 ft.
Pier Height A. G. (ft.):	0.50		

Material Properties and Rebar Info:

Concrete Strength (psi):	5000	Steel Elastic Modulus:	29000 ksi
Vertical bar yield (ksi):	60	Tie steel yield strength:	60 ksi
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5
Qty. of Vertical Rebars:	20	Tie Spacing:	12.0 in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0 pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	4.0	Unit weight of water:	62.4 psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30 (°)
Skin Frictions are to be obtained from:	Soil Report		



Monopole Pier Foundation

Depth of Layers (ft)		γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types				
Top	Bottom										
0.0	15.0	120	0	0	200	0	Sand				
15.0	34.0	120	30	0	500	16000	Sand				
34.0	39.0	120	33	0	500	16000	Sand				

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	5256	Dry Soil Weight from Conical Failure:	631 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	12708	Buoyant Soil Weight from Conical Failure (Kips):	961 Kips
Total Dry Concrete Volume (cu. Ft.):	107	Total Dry Concrete Weight:	16.0 Kips
Total Buoyant Concrete Volume (cu. Ft.):	689.0	Total Buoyant Concrete Weight:	60.36 Kips
Total Effective Concrete Weight (Kips):	76.4	Total Effective Soil Weight:	1591.5 Kips
Total Effective Vertical Load on Base (Kips):	35.9		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	5762.9	>	Design Factored Moment (kips-ft):	2167	Usage	0.38	OK!
Factor of Safety of Passive Soil Resistance against Moment:	2.66	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			
Reinforcing Concrete Pier:					Usage		
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.31			
Calculated Moment Capacity (Mn,Kips-Ft):	2636.2	>	Design Factored Moment (Mu, K-Ft):	1820.4	Usage	0.69	OK!
Calculated Shear Capacity (Kips):	648.3	>	Design Factored Shear (Kips):	169.0		0.26	OK!
Calculated Tension Capacity (Tn, Kips):	1080.0	>	Design Factored Tension (Tu Kips):	0.0		0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7517	>	Design Factored Axial Load (Pu Kips):	23.0		0.00	OK!
Moment & Axial Strength Combination:	0.69	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00		in.	
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI				

EXHIBIT 8



Tower Engineering Solutions

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

Post-Mod Antenna Mount Analysis Report

Existing 120-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT46128-A-SBA / Milford - West

Customer Site Name: Milford - West

Carrier Name: T-Mobile (App#: 116913, V2)

Carrier Site ID / Name: CTNH003A / Milford

Site Location: 160 Wampus Lane

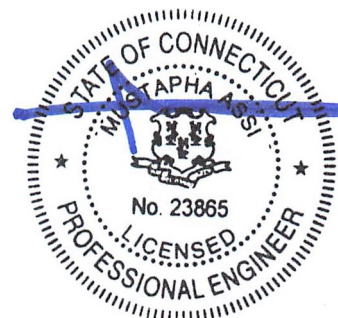
Milford, Connecticut

New Haven County

Latitude: 41.225166

Longitude: -73.042361

Exp.01/31/2021



Analysis Result:

Max Structural Usage: 72.3% [Pass]

07/23/2020

Report Prepared By : Kiran Sharma Paudel

Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Hand Rail at 105.00' 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 C & J Services
Antenna Loading	Provided by SBA Application #: 116913, v2
Existing Modification	N/A
Proposed Modification	TES Project No. 95875

Analysis Criteria

Wind Speed Used in the Analysis: 120 mph (3-Sec. Gust) (Ultimate Wind Speed)

Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent

Service Load Wind Speed: 60 mph +0" Radial ice

Standard/Codes: ANSI/TIA/EIA 222-H/ 2015 IBC/ 2018 CSBC

Exposure Category: C

Risk Category: II

Topographic Category: 1

Crest Height (Ft): 0

Ground Elevation Factor: 1.000

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/ Hand Rail at 105.00' elevation

Proposed Modification

(1) Metrosite Kicker Support Kit: MS-KI22-5

(1) Metrosite Heavy Collar Mount Assembly: MS-H1436

Final Antenna Configuration

3	Ericsson Air 21 B2A/B4P
3	Ericsson AIR32 KRD901146-1_B66A_B2A
3	RFS APXVAARR24_43-U-NA20
3	Ericsson AIR6449 B41
3	Ericsson KRY 112 144/1
3	Ericsson Radio 4449 B71+B85
3	Ericsson Radio 4415 B25

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 72.3%, which occurs in the support rail. 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**

7/23/2020

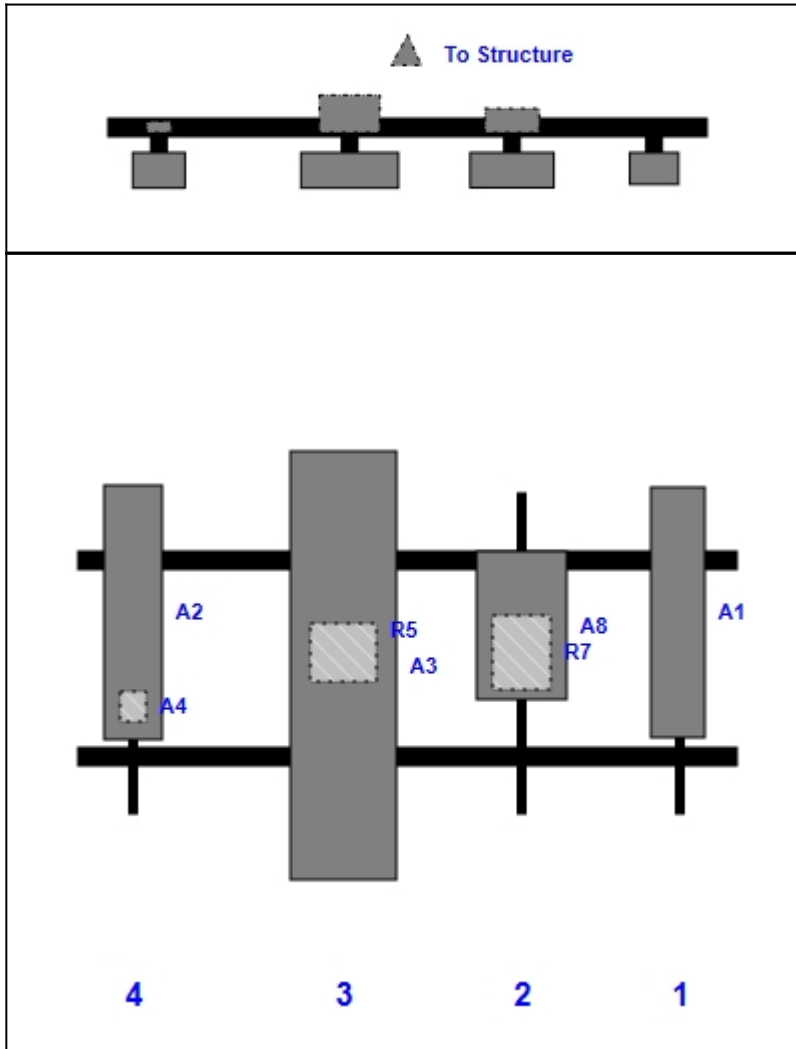


Structure Type: Monopole

Page: 1

Mount Elev: 105.00

Plan View



Front View
Looking Toward Structure

Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	135.00	1	a	Front	27.00			
A8	AIR6449 B41	33.10	20.60	100.00	2	a	Front	30.00			
R7	Radio 4415 B25	16.50	13.40	100.00	2	a	Behind	36.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	60.00	3	a	Front	39.00			
R5	Radio 4449 B71+B85	13.10	14.90	60.00	3	a	Behind	36.00			
A2	AIR32 KRD901146-1_B66A_B2A	56.60	12.90	13.00	4	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	13.00	4	a	Behind	48.00			

Structure: CT46128-A-SBA - Milford - West

Sector: B

7/23/2020

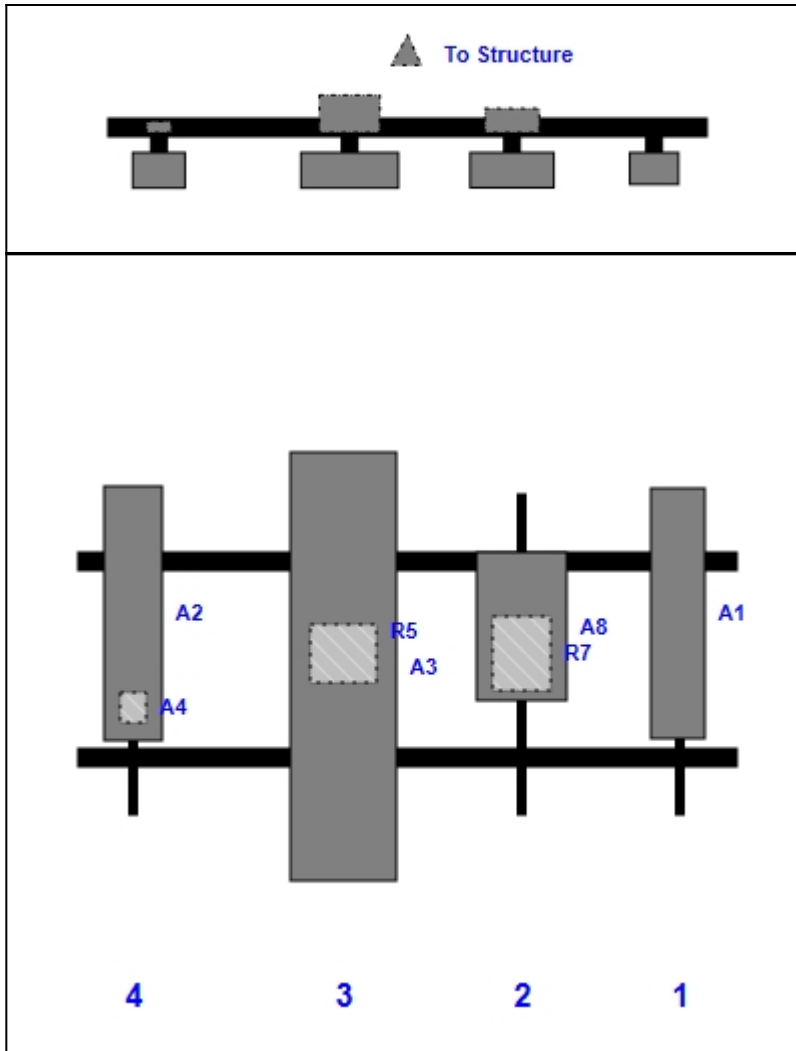
Structure Type: Monopole



Mount Elev: 105.00

Page: 2

Plan View



Front View

Looking Toward Structure

Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	135.00	1	a	Front	27.00			
A8	AIR6449 B41	33.10	20.60	100.00	2	a	Front	30.00			
R7	Radio 4415 B25	16.50	13.40	100.00	2	a	Behind	36.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	60.00	3	a	Front	39.00			
R5	Radio 4449 B71+B85	13.10	14.90	60.00	3	a	Behind	36.00			
A2	AIR32 KRD901146-1_B66A_B2A	56.60	12.90	13.00	4	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	13.00	4	a	Behind	48.00			

Structure: CT46128-A-SBA - Milford - West

Sector: C

7/23/2020

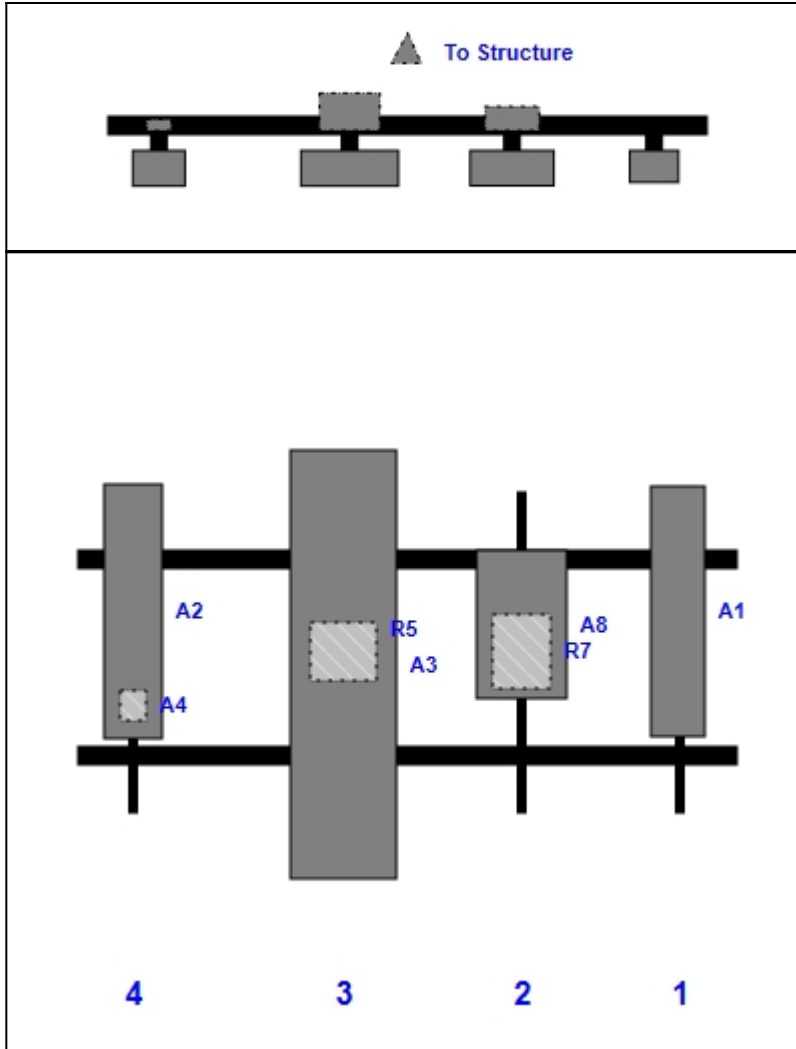


Structure Type: Monopole

Page: 3

Mount Elev: 105.00

Plan View



Front View
Looking Toward Structure

Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	55.90	12.00	135.00	1	a	Front	27.00			
A8	AIR6449 B41	33.10	20.60	100.00	2	a	Front	30.00			
R7	Radio 4415 B25	16.50	13.40	100.00	2	a	Behind	36.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	60.00	3	a	Front	39.00			
R5	Radio 4449 B71+B85	13.10	14.90	60.00	3	a	Behind	36.00			
A2	AIR32 KRD901146-1_B66A_B2A	56.60	12.90	13.00	4	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	13.00	4	a	Behind	48.00			

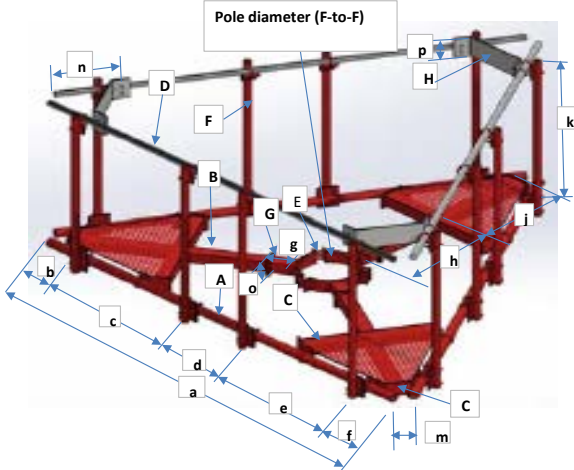


Antenna Mount Type "MT-X" Mapping Form (PATENT PENDING)

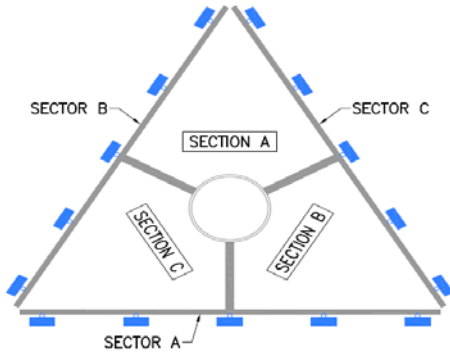
FCC #
N/A

Tower Owner:	SBA	Mapping Date:	6/5/19
Site Name:	Milford-West	Structure Type:	Monopole
Site Number or ID:	CT46128	Structure Height (Ft.):	120
Mapping Contractor:	C&J SERVICES	Mount Height (Ft.):	108

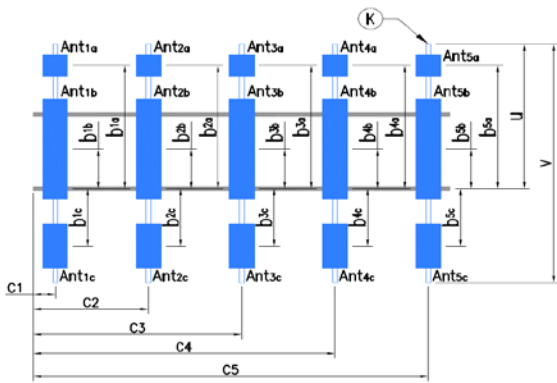
This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is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



Geometries (Unit: inches)									
a	148	e	58	j	48	o		s	
b	14	f	14.5	k	44	p	5	t	22.5
c	32	g	6	m	8	q		u*	59
d	29.5	h	15	n	2.5	r		v*	72
Members/Bolts (Unit: inches) * - See Ant. Layout for "u", "v" and member "k" (pipe)									
Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	F	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
B	Tubing 4x4x1/4	4	4	0.25	G				
C	L4x4x1/4	4	4	0.25	H	1/4" Thick. Plate	0	0	0.25
D	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	J				
E	5/8" Bolt				K* (pipe)	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
Please enter the information below if members can't be found from the drop down lists									
There is no (g) or (G) to this Mount									
Corner is .5 thick plate									



Ants. Items	Enter antenna model. If not labeled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.					Mounting Locations (Unit: inches)			Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ,..." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C ₁ , C ₂ , C ₃ , C ₄ , C ₅ " (in.)	Photo Numbers
Sector A									
Ant _{1a}	Ericsson Air Antenna	11.5	9	55		39	5	135	18,38,39,4
Ant _{1b}									
Ant _{1c}									
Ant _{2a}							102		34
Ant _{2b}									
Ant _{2c}									
Ant _{3a}	Ericsson Radio	16.5	7	16.5		30.5	2	74	48,49,50,5
Ant _{3b}	Cosmope Antenna	12	7.5	96		37	3.5	74	35,43,44,4
Ant _{3c}									
Ant _{4a}							46		36
Ant _{4b}									
Ant _{4c}									
Ant _{5a}	Ericsson Air Antenna	11.5	9	55		39	5.5	13	37,53,54,5
Ant _{5b}	Ericsson TMA	6	3	7		22	0		58,59,60,6
Ant _{5c}									
Are Ant same as sector A?		Yes		Antennas on Sector B are the same as Sector A					

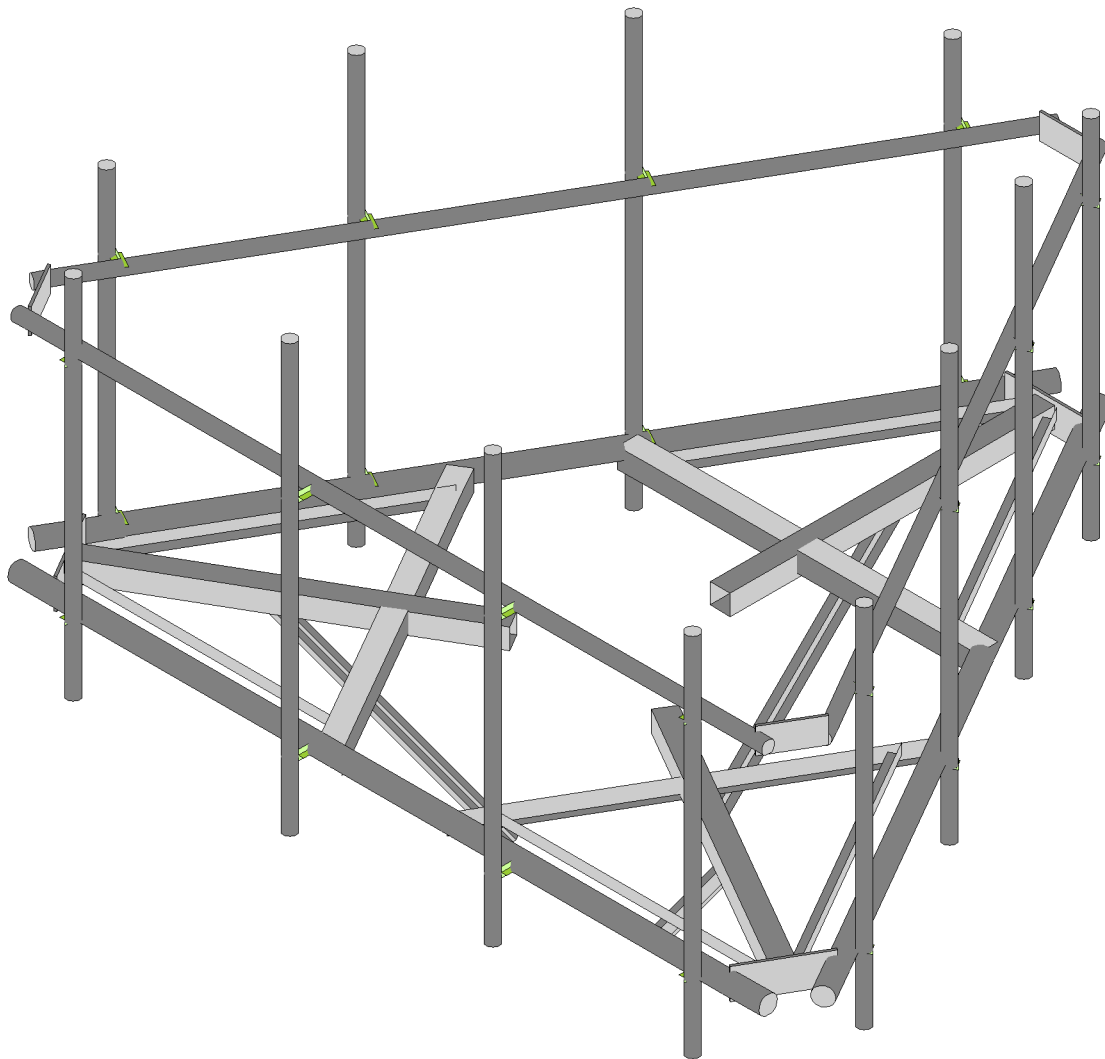
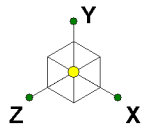


Antenna Layout

Azimuth (Degree) of Each Sector and Climbing Information

Sector A:		Deg	
Sector B:	↗	Deg	
Sector C:		Deg	
Climbing		Deg	
Climbing Facility	Corrosion Type:		
	Access:		
	Condition:		

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



Envelope Only Solution

Tower Engineering Solutio...

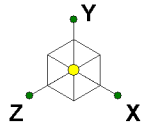
CT46128-A-SBA_MT-X_Loads Only_H

SK - 7

July 23, 2020 at 9:40 AM

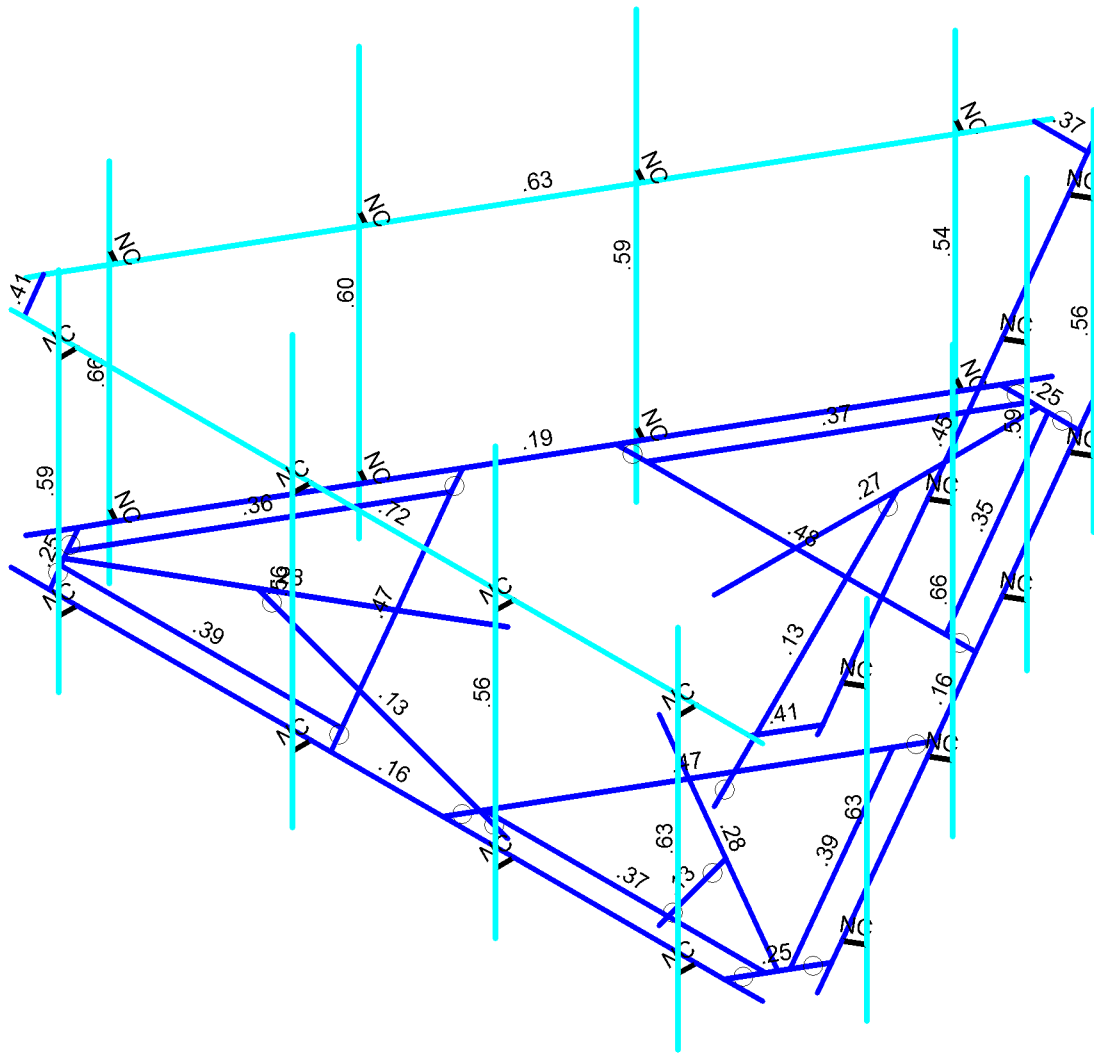
TES Project No. 95875

CT46128-A-SBA_95875_H_RISA_L...



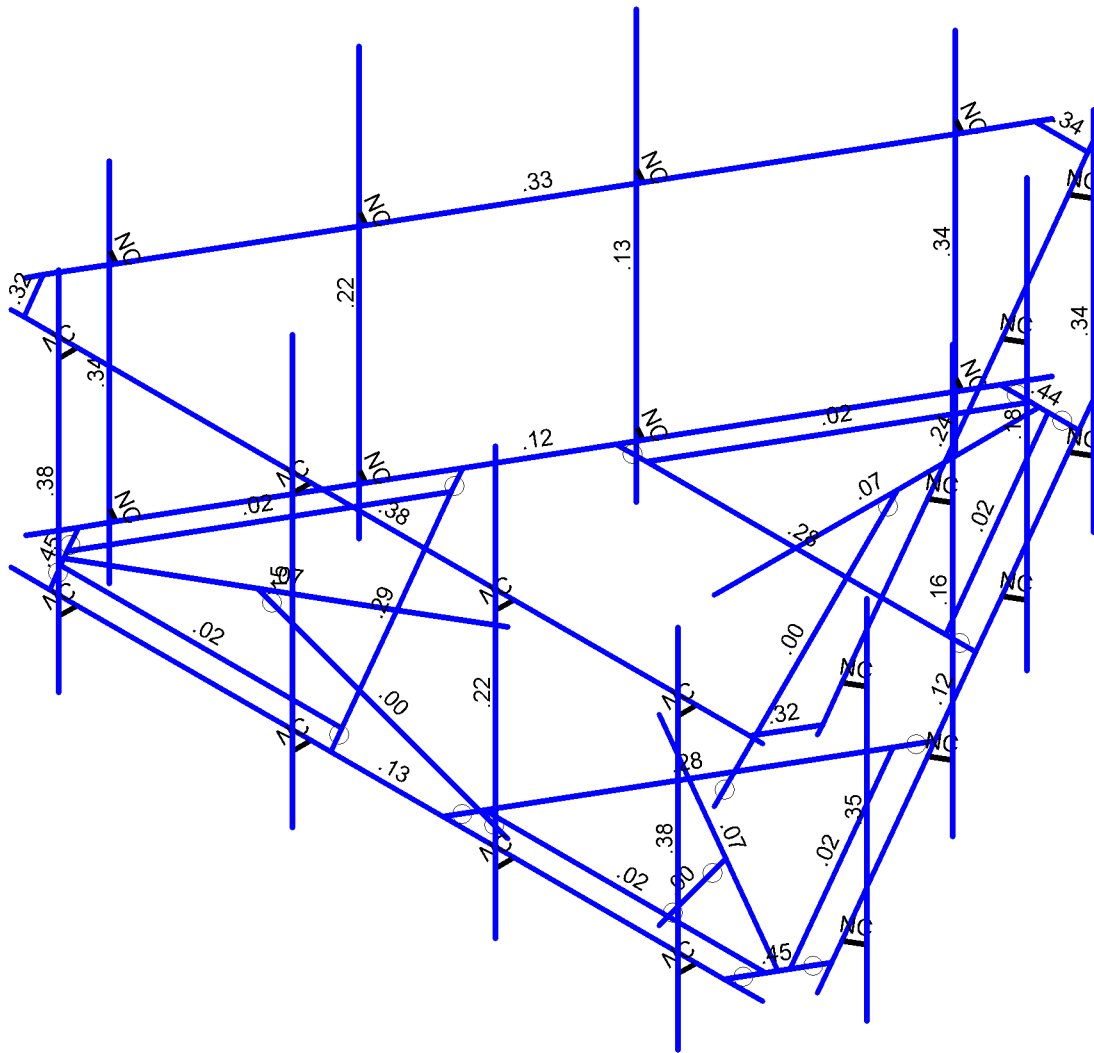
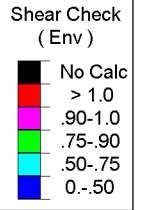
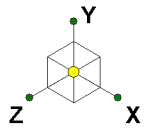
Code Check (Env)

Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...	CT46128-A-SBA_MT-X_Loads Only_H	SK - 5
		July 23, 2020 at 9:40 AM
TES Project No. 95875		CT46128-A-SBA_95875_H_RISA_L...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...

CT46128-A-SBA_MT-X_Loads Only_H

SK - 6

July 23, 2020 at 9:40 AM

TES Project No. 95875

CT46128-A-SBA_95875_H_RISA_L...



Ô[{]æ^ K V[, ^\À) *ã^iã *Á[[rã } •ÉÉŠÓ
 Ô•ã) ^\ K
 R àÁ { a^! K VÒÙÁ[[b&á [Éáí íí
 T [á\Aæ ^ K ÔVÍ FG ÉÉÚÓÉ T VÉY' Š áã•Á[] P

R [ÁG-ÉGEÉ
 JKÉI ÁÉÉ
 Ô@&^áÁÓ'K''''

>c]bh7ccfX]bUHyg'UbX'HYa dYUhi fYg'f c]b]bi YXL

	Šaa^]	Y'Áca	Y'Áca	Z'Áca	V^ [Áca	Ô'ca&á [[Áca] ÉÉ
I €	PUFE	É ÉÉ HHH	ÉÉÉ HHH	I ÉI Í GÉ	€	
I F	PUFF	É ÉFI FIF	I ÉFÍ ÍÍ	GÉ JÍ IG	€	
I G	PUFG	É ÉFI FIF	ÉÉÉ HHH	GÉ JÍ IG	€	
I H	PUFJ	ÉÉH Í É	I ÉFÍ ÍÍ	É ÉG JÉ	€	
I I	PUGE	ÉÉH Í É	ÉÉÉ HHH	É ÉG JÉ	€	
I Í	PUGF	FÉH Í É	I ÉFÍ ÍÍ	É ÉG JÉ	€	
I Î	PUGG	FÉH Í É	ÉÉÉ HHH	É ÉG JÉ	€	
I Ï	PUG	I ÉFI ÍÍ	I ÉFÍ ÍÍ	ÉÉÉ ÉÉ F	€	
I Ì	PUG	I ÉFI ÍÍ	ÉÉÉ HHH	ÉÉÉ ÉÉ G	€	
I J	PUGJ	Í ÉFI FIF	I ÉFÍ ÍÍ	GÉ JÍ IG	€	
Í €	PÚHE	Í ÉFI FIF	ÉÉÉ HHH	GÉ JÍ IG	€	
Í F	PÍÍ	Í ÉÉ HHH	€	HÉI Í GÉ	€	
Í G	PÍÍ	É ÉÉ HHH	€	HÉI Í GÉ	€	
Í H	PÍÍ	€ÉÍ	€	É ÉÍ I JÉ	€	
Í I	PÍJ	I ÉÉ FÍ ÍÍ	€	ÉÉÉ JÉÉ G	€	
Í Í	PÍÉ	Í ÉÍ HHH	€	GÉ GÍ IG	€	
Í Î	PÍF	É ÉÍ HHH	€	GÉ GÍ IG	€	
Í Ï	PÍH	€ÉÍ	€	É ÉÍ I JÉ	€	
Í J	PÍÍ	ÉÉÚJÍ FG	€	FÉÍ Í Í	€	
Í €	PÍÍ	GÉÚJÍ FG	€	FÉÍ Í Í	€	
Í F	PÍÍ	É^ÉI	€	ÉÉÍ ÉÍ H	€	
Í G	PÍJ	Í ÉÉ HHH	HÉÍ ÍÍÍ	HÉI Í GÉ	€	
Í H	PÍÉ	É ÉÉ HHH	HÉÍ ÍÍÍ	HÉI Í GÉ	€	
Í I	PÍF	€ÉÍ	HÉÍ ÍÍÍ	É ÉÍ I JÉ	€	
Í Í	PÍG	I ÉÉ FÍ ÍÍ	HÉÍ ÍÍÍ	ÉÉÉ JÉÉ G	€	
Í Î	PÍG	Í ÉÍ HHH	HÉÍ ÍÍÍ	GÉ GÍ IG	€	
Í Ï	PÍH	É ÉÍ HHH	HÉÍ ÍÍÍ	GÉ GÍ IG	€	
Í J	PÍÍ	€ÉÍ	HÉÍ ÍÍÍ	É ÉÍ I JÉ	€	
Í €	PÍÍ	ÉÉÉ Í I FH	€	É ÉÉ ÉÍ H	€	
Í F	PÍÍ	ÉÉÉ Í I F	€	ÉÉÉ ÉÍ H	€	
Í G	PÍI	€ÉÍ Í I FH	€	É ÉÉ ÉÍ H	€	
Í H	PÍJ	GÉÍ Í I F	€	ÉÉÉ ÉÍ H	€	
Í I	PÍÉ	É ÉJÉ É	€	HÉ FGGI	€	
Í J	PÍF	ÉÉÉ FÍ É	€	HÉ FGGI	€	
Í K	PÍG	É ÉH JG	€	HÉ I Í FJ	€	
Í L	PÍH	ÉÉÉ G Í FJ	€	ÉÉÉ I FH F	€	
Í M	PÍI	I ÉH JG	€	HÉ I Í FJ	€	
Í N	PÍÍ	HÉ G Í FJ	€	ÉÉÉ I FH F	€	
Í O	PÍÍ	Í ÉJÉ É	€	HÉ FGGI	€	
Í P	PÍÍ	FÉÍ FÍ É	€	HÉ FGGI	€	
Í Q	PÍI	Í ÉÉ HHH	€	I ÉI Í GÉ	€	
Í R	PJÉ	É ÉÉ HHH	€	I ÉI Í GÉ	€	
Í S	PJF	Í ÉÉ HHH	HÉÍ ÍÍÍ	I ÉI Í GÉ	€	
Í T	PJH	É ÉÉ HHH	HÉÍ ÍÍÍ	I ÉI Í GÉ	€	
Í U	PFÉÉ	FÉH Í É	€	É ÉG JÉ	€	
Í V	PFÉF	I ÉFI ÍÍ	€	ÉÉÉ ÉÉ G	€	
Í W	PFÉG	Í ÉFI FIF	€	GÉ JÍ IG	€	
Í X	PFÉH	FÉH Í É	HÉÍ ÍÍÍ	É ÉG JÉ	€	
Í Y	PFÉI	I ÉFI ÍÍ	HÉÍ ÍÍÍ	ÉÉÉ ÉÉ G	€	
Í Z	PFÉJ	Í ÉFI FIF	HÉÍ ÍÍÍ	GÉ JÍ IG	€	
J €	PFFG	É ÉFI FIF	€	GÉ JÍ IG	€	
J F	PFFI	ÉÉÉ H Í É	€	É ÉG JÉ	€	



Ö[]æ^ K V[, ^/Ä) * ä^ä * ÄU[]æ } • ÆŠÖ
 Ö• ä) ^ K
 R ä/ { ^! K VÖÜÄU[]æ & ä []æ i i i
 T[]æ/ ä^ ^ K ÖVI ÎFG ÆÜÖCE T VÉY' Š æ• ÄU[]æ P

R r ÄHÄGE
 JKHI ÄE
 Ö @ & ^ ä Ö K ' ' ' ' '

A Ya Vyf Dfja Ufm8 UUf7 cbfjbi YXL

Šæ^	Ö[]æ	R ä/ { ^!	SÄ äc	Ü[]æ G^* D Ü^ & ä []æ	V[]æ	Ö• ä) Ä äc	T æ/ ä	Ö• ä) Ä U[]æ	
FI	TFI	PH	PH		USFÖYI	Öæ	ÜÖÖV	ÖEJG	ÖÜF
FJ	TUFÖE	PUF	PUG		ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
GE	TUI ÖE	PÜJ	PÜFE		ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
GF	TUFÓ	PUFF	PÜFG	HEE	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
GG	TUI Ó	PÜFJ	PÜGE	HEE	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
GH	TUFÖ	PÜGF	PÜGG	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
G	TUHÖ	PÜG	PÜG	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
Gí	TUI Ó	PÜGJ	PÜHE	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
Ġ	TĠ	Pİİ	Pİİ		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
G̈	TG̈	PİJ	PİJ		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
G̋	THE	PİF	PİE		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
GJ	THF	PİG	PİH		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
H€	THG	PİÍ	PİI		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
HF	THH	PİÎ	PİÎ		ŠG:G:H	Öæ	Üä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
HG	THI	PİJ	PJH		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
HH	THÍ	PİJ	PJF		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
HI	THĪ	PİJ	PJE		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
HÍ	THJ	PİÍ	PİI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
Ḣ	TI €	PİG	PFEI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
Ḧ	TIF	PİF	PFEI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
H̋	TIG	PİE	PFEH		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
HJ	TIH	PİE	PFEH		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
I €	TII	PİJ	PFEF		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IF	TIÍ	PİJ	PFE€		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IG	TIÎ	PİÍ	PFFI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IH	TIÌ	PİH	PFFI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IĪ	TIJ	PİH	PFFI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IÍ	TIF	PİF	PFFG		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
İ	TUGÖ	PFEI	PFEI	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
Ï	TIH	PFEJ	PFFF		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
I̋	TII	PFEI	PFFE		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IJ	TUHÓ	PFFGÖE	PFFHÖE	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
I€	TII	PFFI ÖE	PFFI ÖE		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IF	TIÎ	PFFI ÖE	PFFI ÖE		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IG	TUGÓ	PFFI	PFFJ	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
IH	TIJ	PFGF	PFGH		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IĪ	Tİ €	PFGÖ	PFGG		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
IÍ	TUHÖE	PFG	PFG	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
İ	TIG	PFG	PFGJ		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
Ï	TIH	PFG	PFG		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
I̋	TUGÖE	PFHÖE	PFHÖE	I €	ÜQJÖ GEE	Öæ	Üä ^	ÖE HÖI:EO	ÖÜF
IJ	TII	PFH	PFH		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
I€	TII	PFHG	PFHI		ÜÖÖ	Öæ	P[] ^	ÜÖÖ	ÖÜF
İF	TIF	PFGI ÖE	PFGI ÖE		\æ^!	Öæ	Ö[] æ/ ä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
ÏG	TIGÖE	PFGI ÖE	PFGI ÖE		\æ^!	Öæ	Ö[] æ/ ä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ
I̋H	TIHÖE	PFGI ÖE	PFGI ÖE		\æ^!	Öæ	Ö[] æ/ ä * ^ ÄE * ^	ÖE HÖI:EH	V[]æ



Ô{ }]æ^ K V[, ^!Á) *ã^!ã *ÁU[]çã } •ÉŠŠÓ
 Ô•ã } ^! K
 R a^ ^ { a^! K VÒÙÁU! [b&ã } ÉÁi iíí
 T [a^/ãæ ^ K ÔVI ÍFG ÉÉÚÓÉ T VÉY' Š æã•ÁU }]' P

R] ÁG-ÉGEGE
 JKHI ÁÉ
 Ô@&^áÁÓ'K''''

A Ya Vyf'Dc]bhi@UXg'f6 @ '% : '5 bhYbbUK a : fcbH:f7 cb]bi YXL

	T ^{ a^!Áæ^! }	Öá^&çã }	T æ } æ á^ ŽaÉ Éeá }	Š } &çã } ŽeÁ á }
Ì	T ÚI ÓE	Z	ÉGÈI G	I
J	T ÚI Ó	Z	ÉG ÈJH	É
F€	T ÚI Ó	Z	ÉG ÈJH	I
FF	T ÚI Ó	Z	ÉG ÈJH	É
FG	T ÚI Ó	Z	ÉG ÈJH	I
FH	T ÚHÓE	Z	ÉÉÉGG	É
FI	T ÚHÓE	Z	ÉÉÉGG	Í
FÍ	T ÚHÓ	Z	ÉÍÉÉ	É
FĪ	T ÚHÓ	Z	ÉÍÉÉ	Í
Fİ	T ÚHÓ	Z	ÉÍÉÉ	É
FÌ	T ÚHÓ	Z	ÉÍÉÉ	Í
FJ	T ÚI ÓE	Z	ÉÉÉI	I
G€	T ÚI Ó	Z	ÉÉÉ	I
GF	T ÚI Ó	Z	ÉÉÉ	I
GG	T ÚHÓE	Z	ÉÉÉ	H
GH	T ÚHÓ	Z	ÉÉÍ	H
G	T ÚHÓ	Z	ÉÉÍ	H
G	T ÚGÓE	Z	ÉÉÍ	H
G	T ÚGÓ	Z	ÉÉÍ	H
G	T ÚGÓ	Z	ÉÉÍ	H
G	T ÚGÓE	Z	ÉGÈIH	F
GJ	T ÚGÓE	Z	ÉGÈIH	I
H€	T ÚGÓ	Z	ÉÍÉÍ	F
HF	T ÚGÓ	Z	ÉÍÉÍ	I
HG	T ÚGÓ	Z	ÉÍÉÍ	F
HH	T ÚGÓ	Z	ÉÍÉÍ	I

A Ya Vyf'Dc]bhi@UXg'f6 @ '% : '5 bhYbbUK a 'GJXYL

	T ^{ a^!Áæ^! }	Öá^&çã }	T æ } æ á^ ŽaÉ Éeá }	Š } &çã } ŽeÁ á }
F	T ÚFÓE	Y	GÉÉ	É
G	T ÚFÓE	Y	GÉÉ	I
H	T ÚFÓ	Y	GÉÉ	É
I	T ÚFÓ	Y	GÉÉ	I
Í	T ÚFÓ	Y	GÉÉ	É
Ī	T ÚFÓ	Y	GÉÉ	I
I	T ÚI ÓE	Y	GÉH	É
Ì	T ÚI ÓE	Y	GÉH	I
J	T ÚI Ó	Y	HÉFJ	É
F€	T ÚI Ó	Y	HÉFJ	I
FF	T ÚI Ó	Y	HÉFJ	É
FG	T ÚI Ó	Y	HÉFJ	I
FH	T ÚHÓE	Y	I FÉH	É
FI	T ÚHÓE	Y	I FÉH	Í
FÍ	T ÚHÓ	Y	Í ÉÍ F	É
FĪ	T ÚHÓ	Y	Í ÉÍ F	Í
Fİ	T ÚHÓ	Y	Í ÉÍ F	É
FÌ	T ÚHÓ	Y	Í ÉÍ F	Í
FJ	T ÚI ÓE	Y	FÉÍ	I
G€	T ÚI Ó	Y	HÉI J	I
GF	T ÚI Ó	Y	HÉI J	I
GG	T ÚHÓE	Y	FFÉ	H



Ô[{]æ^ K V[, ^/À) * ä^iä * Á[[r ç] • ÆSSÓ
 Ó^ ä } ^ K
 R à Á { a^ K VÒÙÁ[[b & a] Éúí íí
 T [a^/A æ ^ K ÔVI ÍFG ÉÉÚÓE T VÉY' Š æá Á } [r P

R [Á É GE GE
 JKÉ ÁE
 Ô @ & ^ á Á ' K ' ' '

A Ya Vyf'8]g]f]Vi hYX' @ UXg'f6 @ '% : 'Gfi Wñ fy'K 'G]Xyl'f' cb]bi YXL

	T ^ (a^/A æ ^)	Öä^&ç]	ÚcáoÁ æ } æ á^ ŽaD(ÉÉ) áÁ æ } æ á^ ŽaD(ÉÉ) ÚcáoÁ &æ] ŽeĀ á	Ó) áÁ &æ] ŽeĀ á		
I	TI	ÚY	FI È HÍ	FI È HÍ	€	Å FEE
Í	TÍ	ÚY	FI È HÍ	FI È HÍ	€	Å FEE
Î	TÎ	ÚY	FI È HÍ	FI È HÍ	€	Å FEE
ï	Tï	ÚY	GĤ Ė	GĤ Ė	€	Å FEE
ì	Tì	ÚY	GĤ Ė	GĤ Ė	€	Å FEE
J	TJ	ÚY	GĤ Ė	GĤ Ė	€	Å FEE
F€	TF€	ÚY	G Ę Ì	G Ę Ì	€	Å FEE
FF	TFF	ÚY	G Ę Ì	G Ę Ì	€	Å FEE
FG	TFG	ÚY	G Ę Ì	G Ę Ì	€	Å FEE
FH	TFH	ÚY	JĚ Î	JĚ Î	€	Å FEE
FI	TFI	ÚY	JĚ Î	JĚ Î	€	Å FEE
FÍ	T F Í	ÚY	JĚ Î	JĚ Î	€	Å FEE
FÎ	T F Î	ÚY	GĚ Ĥ H	GĚ Ĥ H	€	Å FEE
FÏ	T F Ï	ÚY	GĚ Ĥ H	GĚ Ĥ H	€	Å FEE
FÌ	T F Ì	ÚY	GĚ Ĥ H	GĚ Ĥ H	€	Å FEE
FJ	T F J	ÚY	JĚ Î	JĚ Î	€	Å FEE
G€	T U I €	ÚY	JĚ Î	JĚ Î	€	Å FEE
Gf	T U F Ó	ÚY	JĚ Î	JĚ Î	€	Å FEE
Gg	T U I Ó	ÚY	JĚ Î	JĚ Î	€	Å FEE
Gh	T U F Ô	ÚY	JĚ Î	JĚ Î	€	Å FEE
G	T U H Ô	ÚY	JĚ Î	JĚ Î	€	Å FEE
G	T U I Ô	ÚY	JĚ Î	JĚ Î	€	Å FEE
G	T G	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
G	T G	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
G	T H	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
GJ	T H J	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
H€	T H G	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
Hf	T H H	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
Hg	T U G Ó	ÚY	JĚ Î	JĚ Î	€	Å FEE
Hh	T U H Ó	ÚY	JĚ Î	JĚ Î	€	Å FEE
Hi	T U G Ó	ÚY	JĚ Î	JĚ Î	€	Å FEE
Hí	T U H €	ÚY	JĚ Î	JĚ Î	€	Å FEE
HÎ	T U €	ÚY	JĚ Î	JĚ Î	€	Å FEE
Hï	T Í F	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
Hì	T Í €	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE
HJ	T Í H €	ÚY	FĤ Ğ	FĤ Ğ	€	Å FEE

A Ya Vyf'8]g]f]Vi hYX' @ UXg'f6 @ '% : 'Gfi Wñ fy'K]G]Xyl

	T ^ (a^/A æ ^)	Öä^&ç]	ÚcáoÁ æ } æ á^ ŽaD(ÉÉ) áÁ æ } æ á^ ŽaD(ÉÉ) ÚcáoÁ &æ] ŽeĀ á	Ó) áÁ &æ] ŽeĀ á		
F	TF	ÚY	I Ě F	I Ě F	€	Å FEE
G	TG	ÚY	I Ě F	I Ě F	€	Å FEE
H	TH	ÚY	I Ě F	I Ě F	€	Å FEE
I	TI	ÚY	HĚ I	HĚ I	€	Å FEE
Í	TÍ	ÚY	HĚ I	HĚ I	€	Å FEE
Î	TÎ	ÚY	HĚ I	HĚ I	€	Å FEE
ï	Tï	ÚY	HĚ I	HĚ I	€	Å FEE
ì	Tì	ÚY	HĚ I	HĚ I	€	Å FEE
J	TJ	ÚY	HĚ I	HĚ I	€	Å FEE
F€	TF€	ÚY	HĚ I H	HĚ I H	€	Å FEE
FF	TFF	ÚY	HĚ I H	HĚ I H	€	Å FEE
FG	TFG	ÚY	HĚ I H	HĚ I H	€	Å FEE



Ó{ }æ^ K V[, ^/Á) *ã^iã *ÁU[r'ç) •ÆŠÓ
 Ó^ã}^ K
 Ñ á^ { ^: K VÒÙÁU[ð&á [Æí ií
 T[á^/áæ ^ K ÓVI ÍFG ÆUÓCE T VÉY' Š æ^ ÁU} r' P

R r' ÁG-ÉGE
 JKÉ ÁE
 Ó@&^áÁÓ'K''''

A Ya Vyf'8]gfh]Vi hYX' @ UXg'f6 @ ' & : ' 6 @ '% \$ HF Ubg]Ybhi5 f YU @ UXg'Lf7 c b]bi YXL

	T^ { á^/áæ^}	Óá^&ç)	ÚçéÁ æ) á á^ZaD(Æ) áÁ æ) á á^ZaD(Æ) ÚçéÁ Š &æ)	Zá á	Ó) áÁ Š &æ)	Zá á
HÍ	THF	Y	È È Ç	È È J	HÈ JI	I È FJ
HÍ	TG	Y	È È F	È È JH	Í È IÍ	I È
HÍ	TG	Y	È È JH	È È É	I È	I È HH
HÍ	TG	Y	È È É	È È Í	I È HH	J È IÍ
HJ	TG	Y	È È Í	È È II	J È IÍ	FFÈ
I €	TG	Y	È È II	È È H	FFÈ	FGÈ HH
IF	TH	Y	È È G	È È Í	€	FÈ GH
IG	TH	Y	È È Í	È È G	FÈ GH	GÈ IÍ
IH	TH	Y	È È G	È È Ç	GÈ IÍ	HÈ
II	TH	Y	È È Ç	È È JG	HÈ	I È HH
IÍ	TH	Y	È È JG	È È F	I È HH	Í È IÍ
IÍ	TÍ	Y	È È IÍ	È È Í	FÈ IÍ	FÈ G
IÍ	TÍ	Y	È È Í	È È II	FÈ G	GÈ IH
IÍ	TÍ	Y	È È II	È È J	GÈ IH	HÈ G
IJ	TÍ	Y	È È J	È È J	HÈ G	I È I
I €	TÍ	Y	È È J	È È I	I È I	Í È HH
IF	TJ	Y	È È H	È È Ç	€	FÈ I G
IG	TJ	Y	È È Ç	È È É	FÈ I G	GÈ I
IH	TJ	Y	È È É	È È Ç	GÈ I	HÈ IÍ
IÍ	TJ	Y	È È Ç	È È Ç	HÈ IÍ	I È GJ
IÍ	TJ	Y	È È Ç	È È H	I È GJ	Í È FG
IÍ	TFG	Y	È È JG	È È G	€	È J
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EXHIBIT 9

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT46128-A

CARRIER SITE #/NAME: CTNH003A / MILFORD

COORDINATES (LATITUDE: 41.225166°, LONGITUDE: -73.042361°)

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

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
SAF-1	SAFETY CABLE GUIDE DETAILS	0
MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	
MPHW-1	METROSITE HEAVY COLLAR MOUNT PLATE WELDMENT	
MS-HK22-5	METROSITE HEAVY KICKER SUPPORT KIT	

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE TES PROJECT NO. 94592, DATED 06/24/2020.

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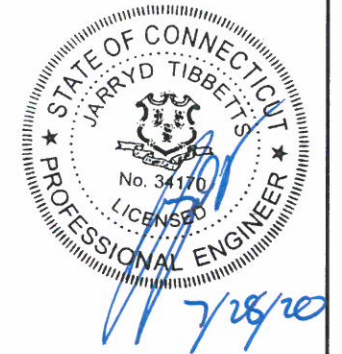
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(800)-487-SITE

TES JOB NO:
95875

CUSTOMER SITE NO:
CT46128-A-SBA
CUSTOMER SITE NAME:
MILFORD - WEST
160 WAMPUS LANE
MILFORD, CT 06460



DRAWN BY: MG CHECKED BY: KSP/BT

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	MG	07/28/20

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TITLE SHEET

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SHEET NUMBER: T-1 REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
MATERIAL & HARDWARE							
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	A-1, MS-H1436	136.7	136.7	Galvanized
1	1	MS-HK122-5	METROSITE HEAVY KICKER SUPPORT KIT	A-1, MS-HK122-5	153.0	153.0	Galvanized
FOLLOWING ITEMS ARE "CUSTOM" PARTS							
1	1	TMP-2	PL 1/4" X 2" X 7" A36	SAF-1	1.01	1.0	GALVANIZED
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)	SAF-1	0.00	0.0	GALVANIZED
2	3	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5	SAF-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
1	2	---	BOLT 5/8" X 2" A325	SAF-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
<p align="center">ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.</p> <p align="center">180 IND PARK BLVD COMMERCE, GA 30529</p> <p align="center">OFFICE: (706) 335-7045</p> <p align="center">FAX: (706) 335-7056</p>							
NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.							
					TOTAL WEIGHT (LBS) =	290.7	



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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

FABRICATION

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

WELDING

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

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

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

VERIFICATION AND INSPECTION

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

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

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

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

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

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

^d BEVELED WASHER NOT USED.

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

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

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

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

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



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SHEET NUMBER:

GN-1

REV #:

0

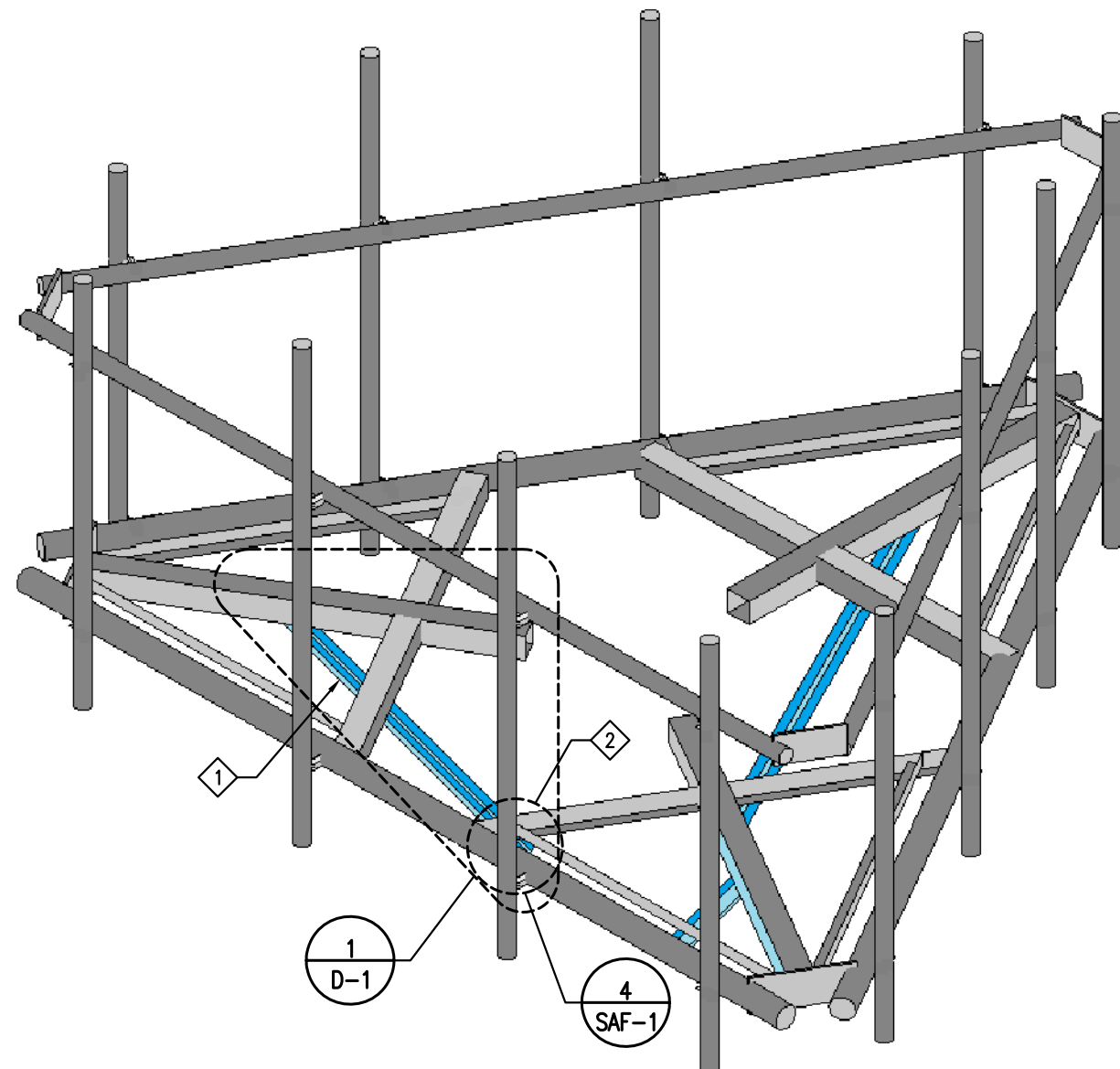
SCOPE OF WORK

- 1. INSTALL NEW HEAVY COLLAR MOUNT (NOT SHOWN FOR CLARITY) & HEAVY KICKER SUPPORT KIT. SEE SHEETS D-1, MS-H1436 & MS-HKI22-5 FOR DETAILS.
- 2. INSTALL NEW SAFETY CLIMB GUIDE TO PREVENT EXISTING CLIMB FROM RUBBING AGAINST THE NEW COLLAR MOUNT. SEE SHEET SAF1 FOR DETAILS.
- 3. 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
@ 105' ELEV



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 105' ELEV.

CONTRACTOR NOTE:

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

NOTES:

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



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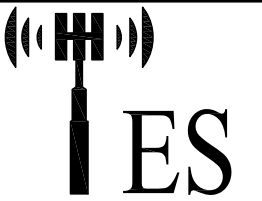
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SHEET TITLE:
**ANTENNA MOUNT
MODIFICATION DETAILS**

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SHEET NUMBER: A-1 | REV #: 0

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY
2	1	MS-HKI22-5	METROSITE HEAVY KICKER SUPPORT KIT



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1	FIRST ISSUE	MG	07/28/20

SHEET TITLE:

ANTENNA MOUNT
 PHOTOS

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SHEET NUMBER: REV #:

A-2 0



PHOTO 1



PHOTO 2

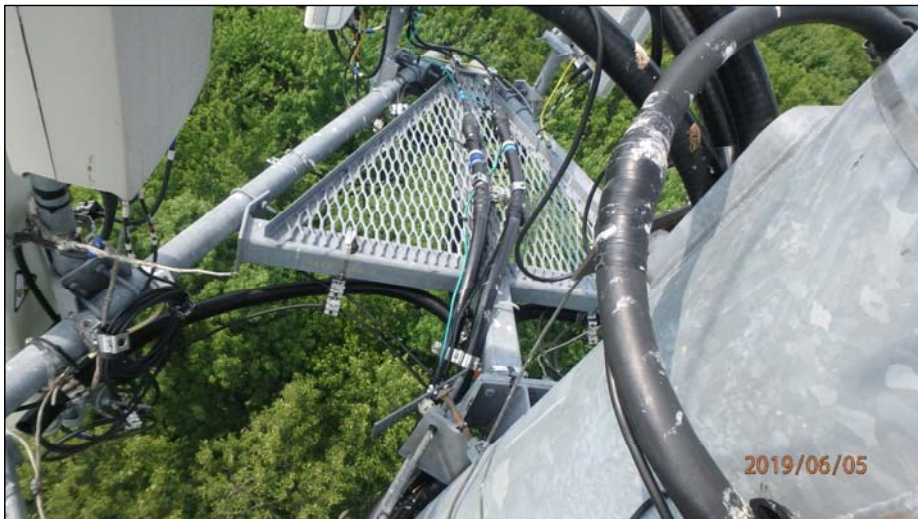
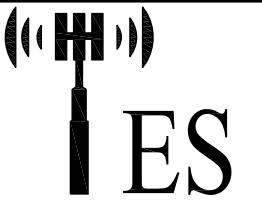


PHOTO 3



PHOTO 4

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



Tower Engineering Solutions

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



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

TES JOB NO:
95875

CUSTOMER SITE NO:
CT46128-A-SBA
CUSTOMER SITE NAME:
MILFORD - WEST
160 WAMPUS LANE
MILFORD, CT 06460

DRAWN BY: MG | CHECKED BY: KSP/BT

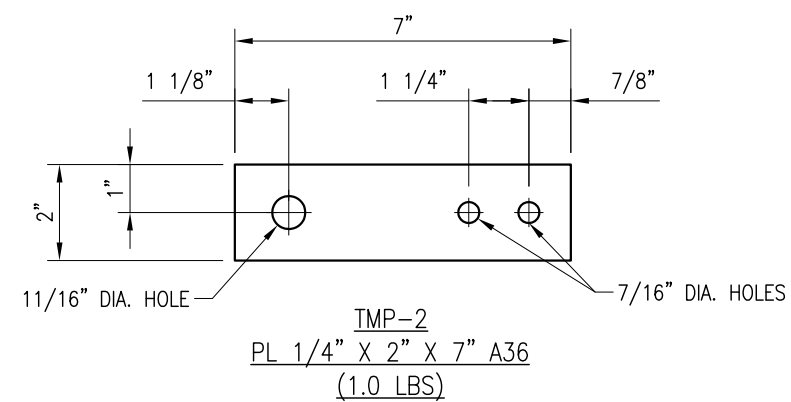
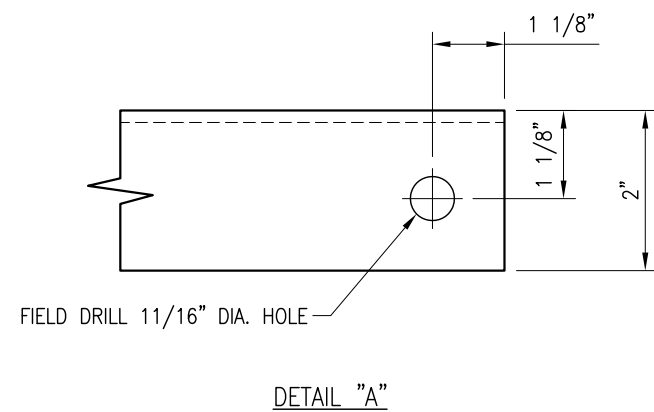
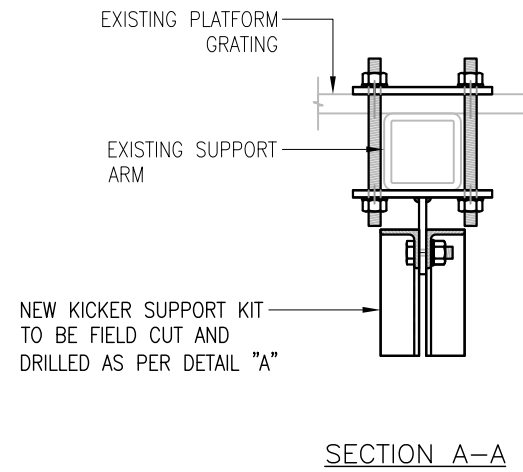
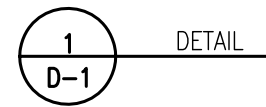
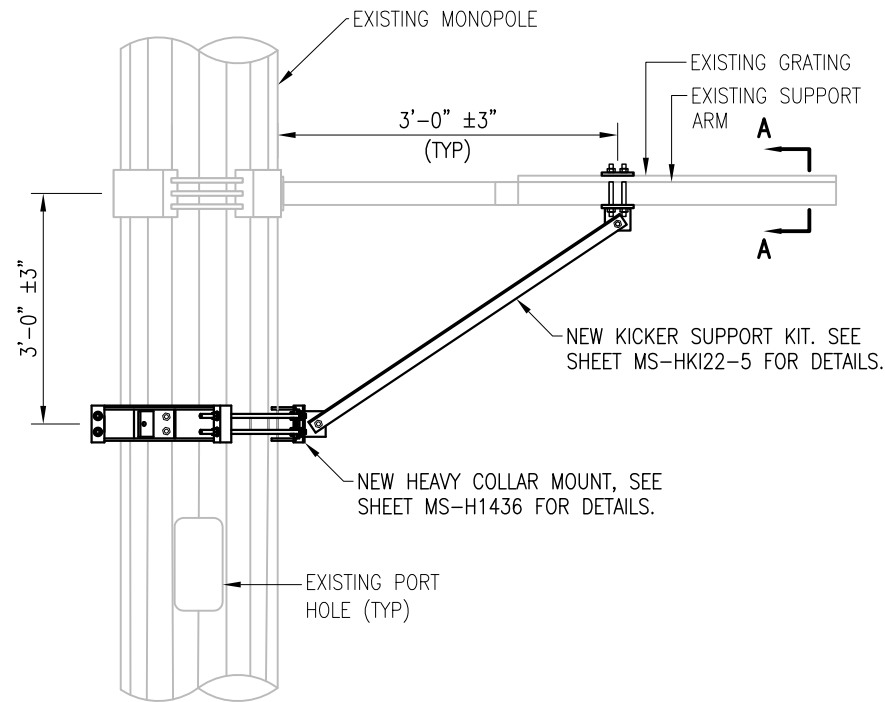
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	MG	07/28/20

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STANDARD DETAILS

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SHEET NUMBER: D-1 | REV #: 0



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



Tower Engineering Solutions

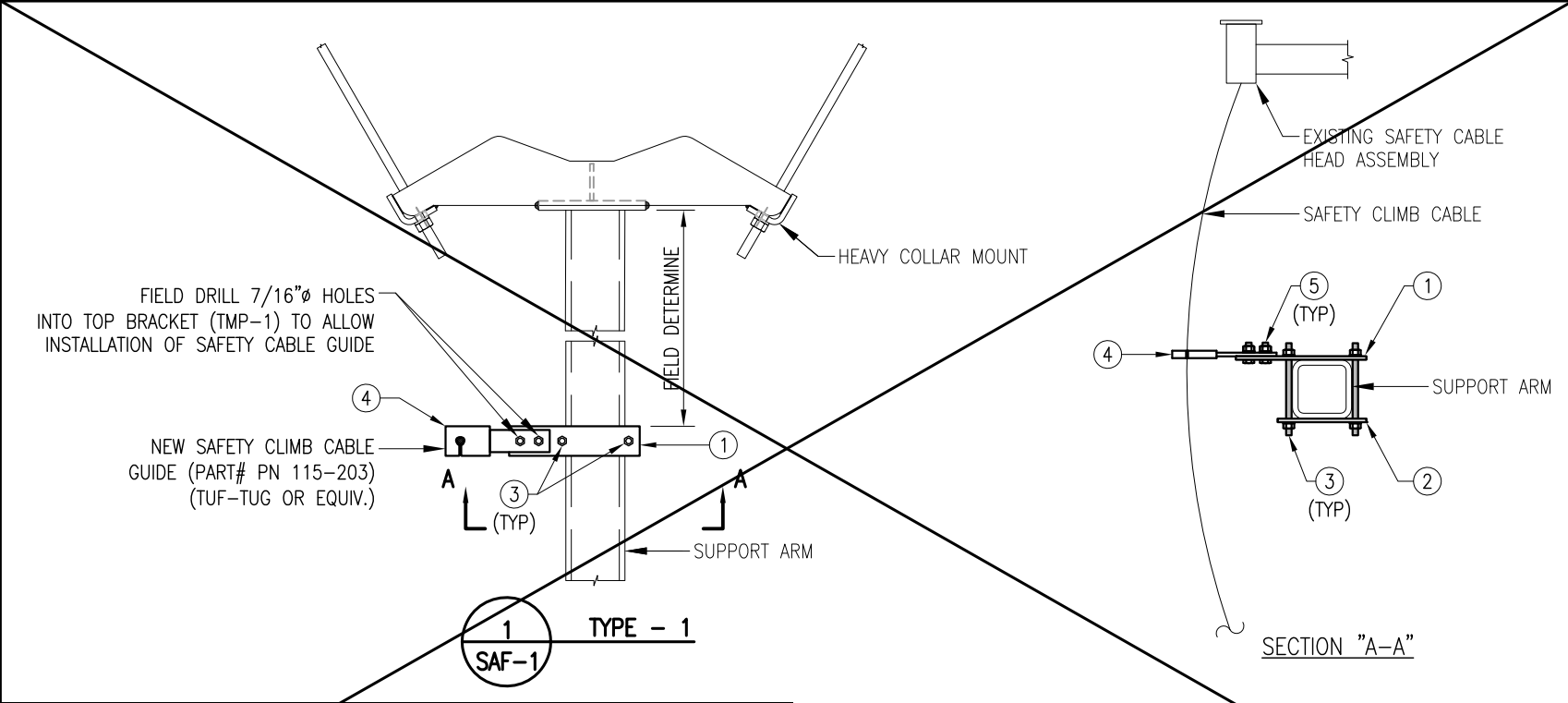
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
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5900 BROKEN SOUND PARKWAY, NW
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(800)-487-SITE

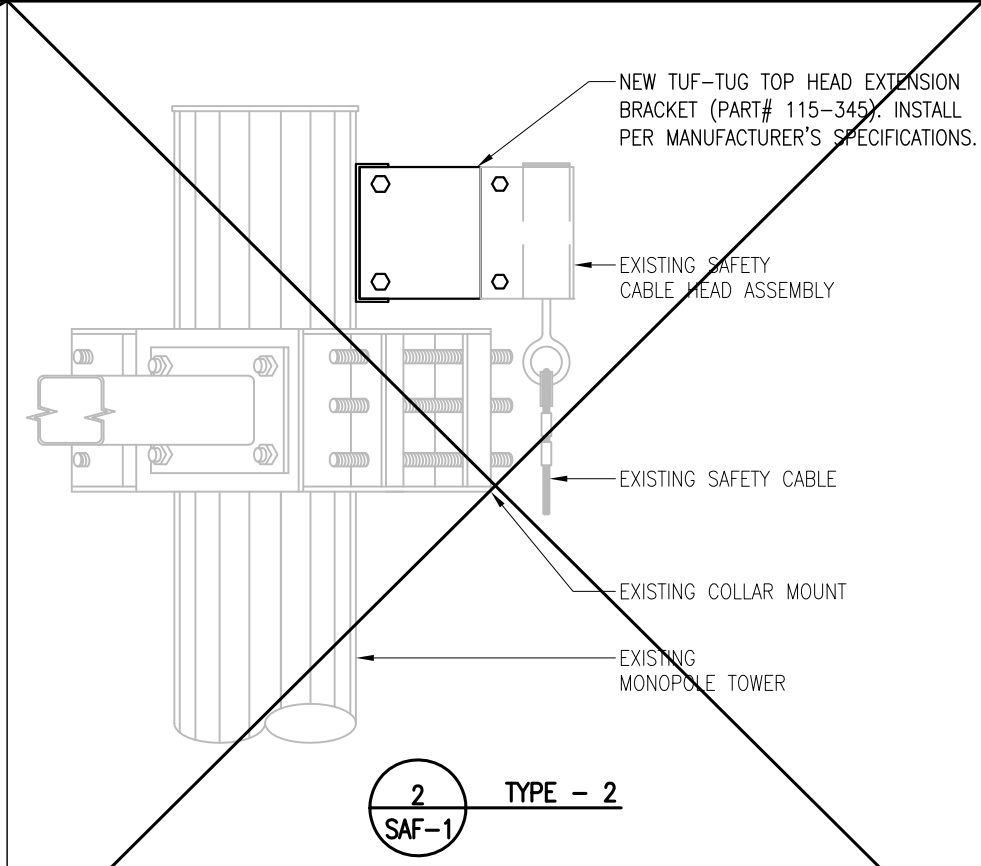
TES JOB NO:
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CUSTOMER SITE NO:
CT46128-A-SBA
CUSTOMER SITE NAME:
MILFORD - WEST
160 WAMPUS LANE
MILFORD, CT 06460

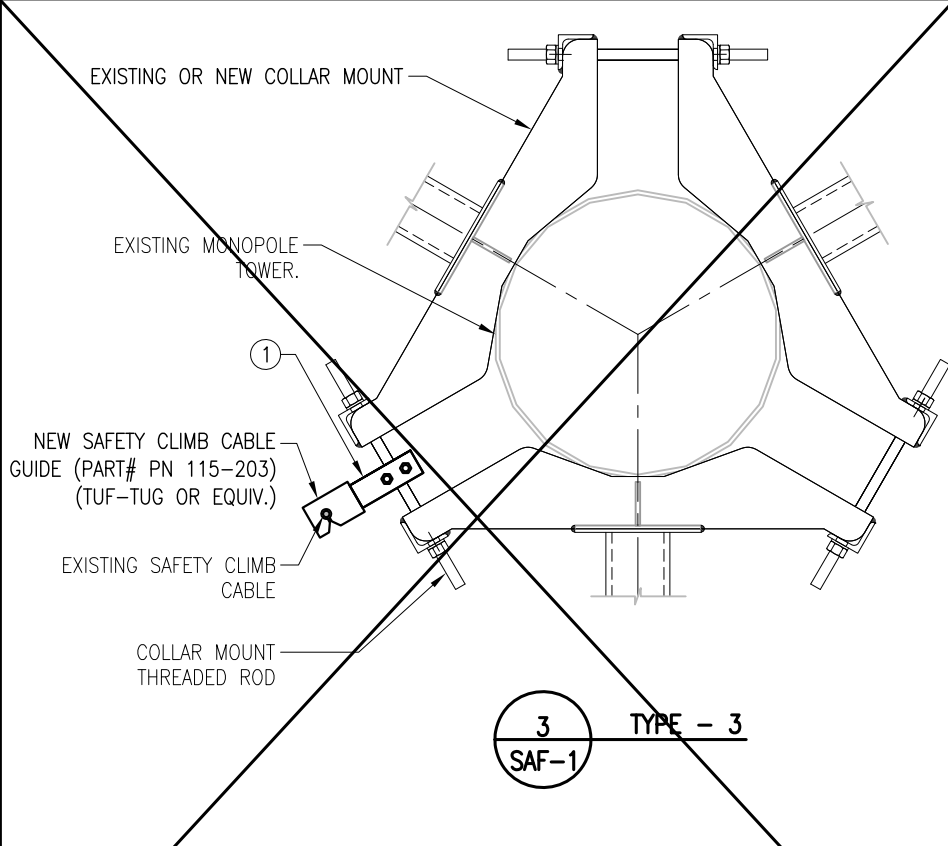


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	TMP-1	PL 1/4" X 2" X 9 1/2" A36
2	1	BMP-1	PL 1/4" X 2" X 6 1/2" A36
3	2	---	THREADED ROD 3/8" X 8" A36
4	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
5	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5

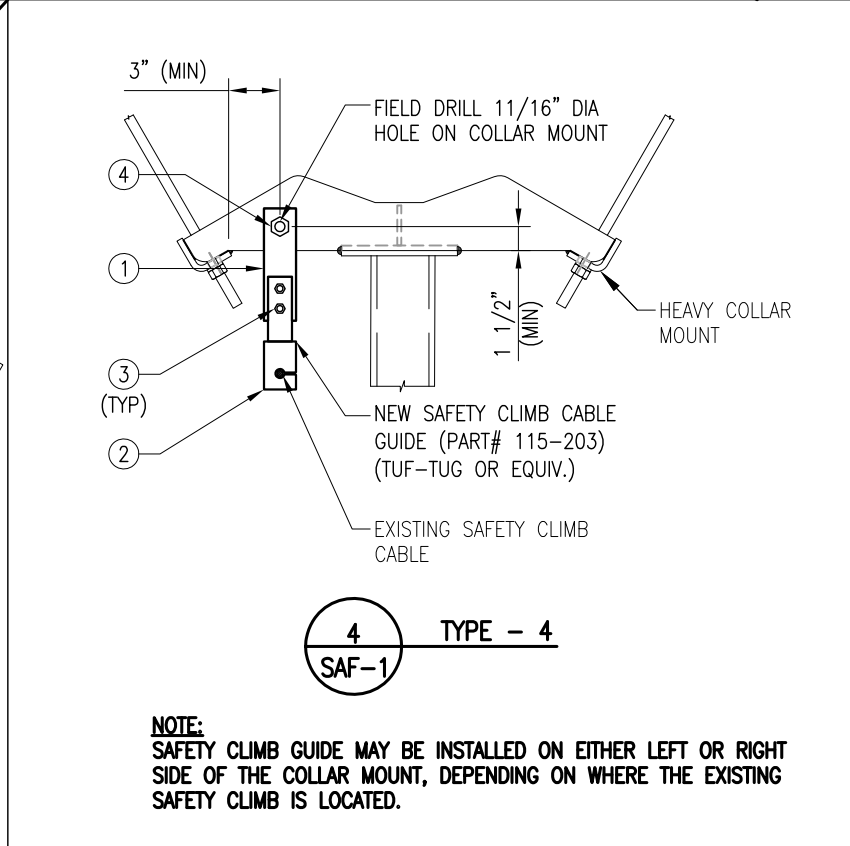
NOTE:
SAFETY CLIMB GUIDE MAY BE INSTALLED ON EITHER LEFT OR RIGHT SIDE OF THE SUPPORT ARM, DEPENDING ON WHERE THE EXISTING SAFETY CLIMB IS LOCATED.



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

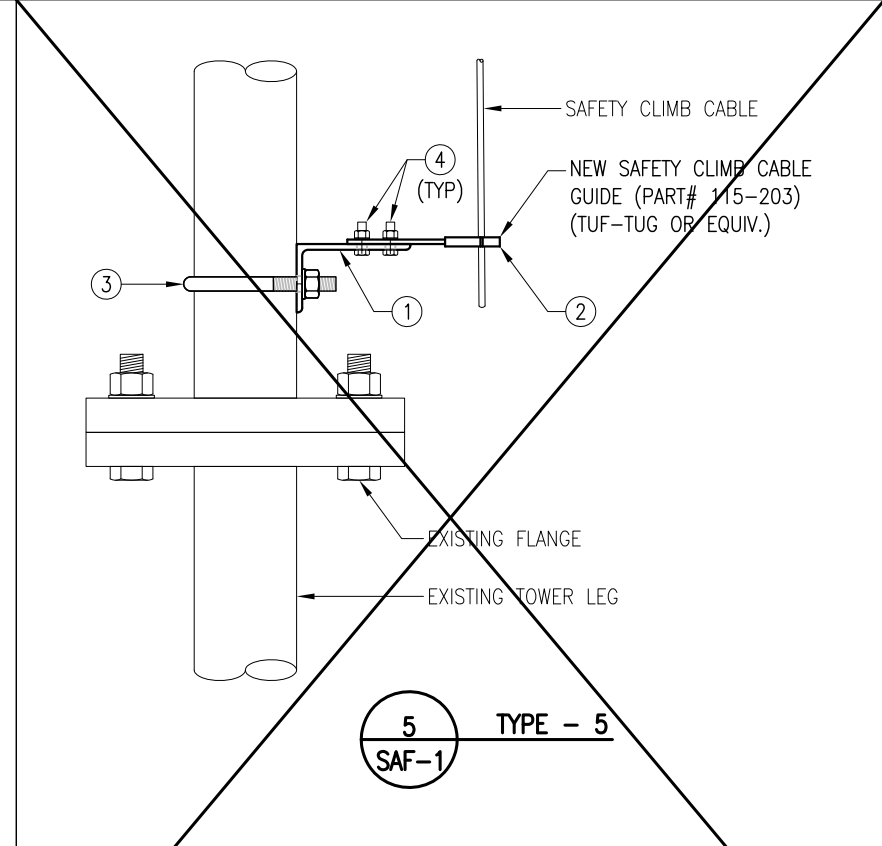


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)



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

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	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

DRAWN BY: MG CHECKED BY: KSP/BT

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	MG	07/28/20

SHEET TITLE:

SAFETY CABLE GUIDE DETAILS

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SHEET NUMBER: SAF-1 REV #: 0

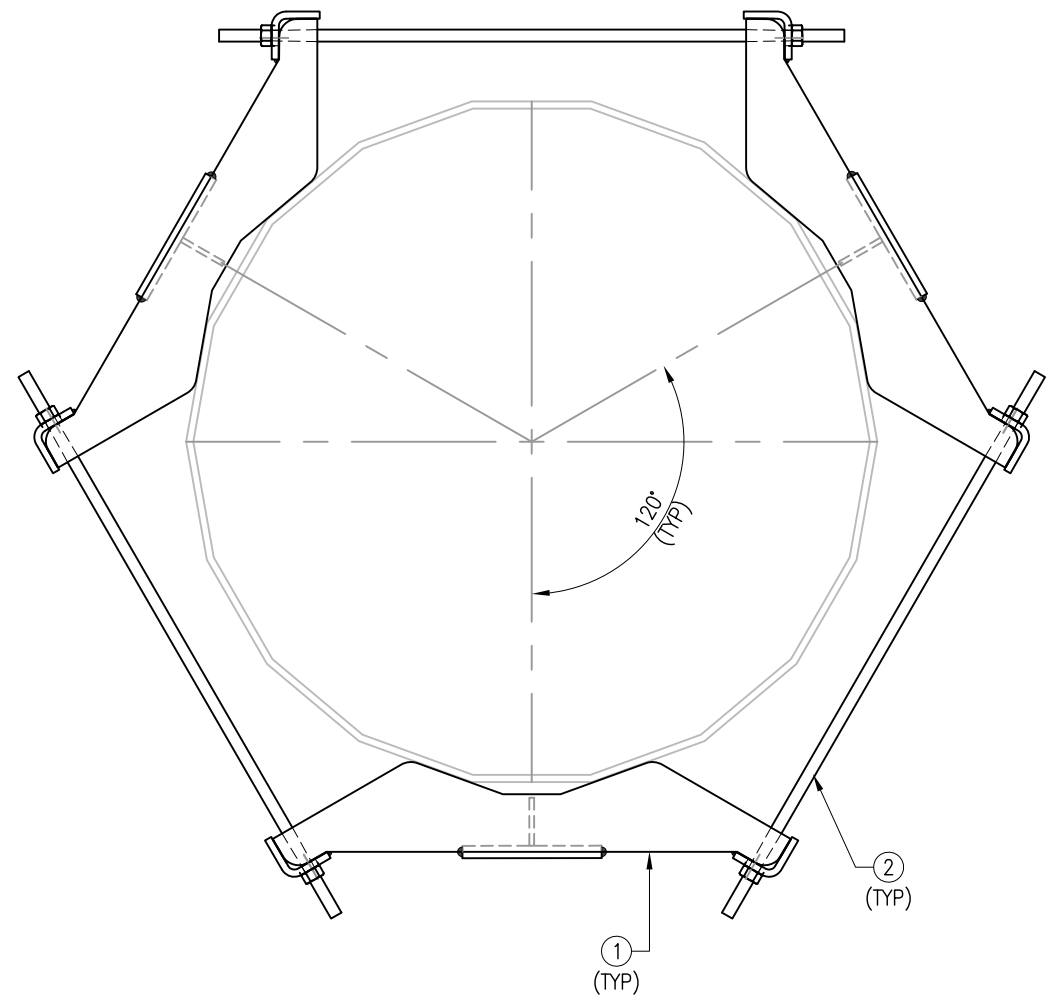
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THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

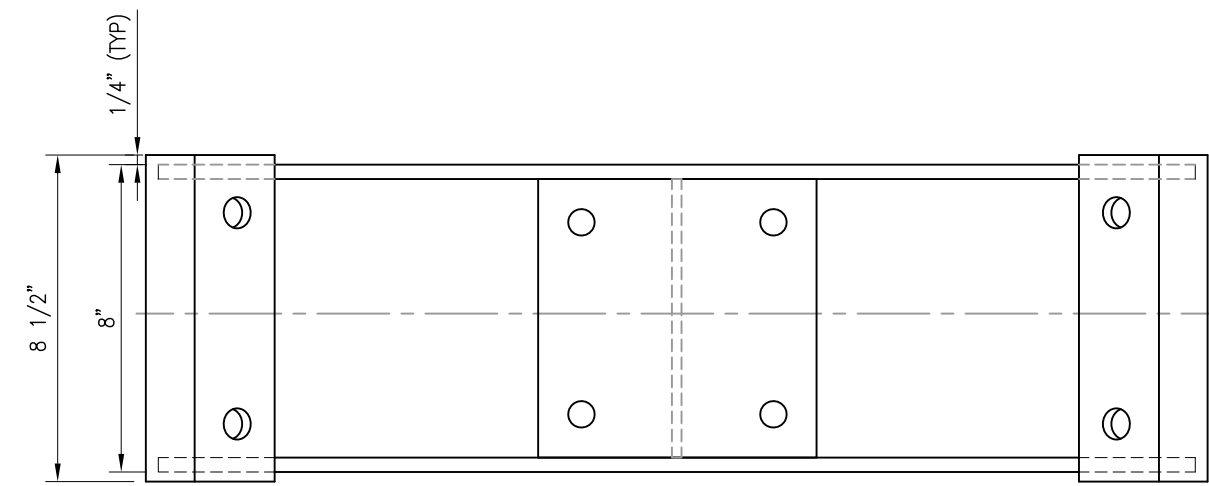
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 2'-4 3/4" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 136.7 LBS

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



TOP VIEW

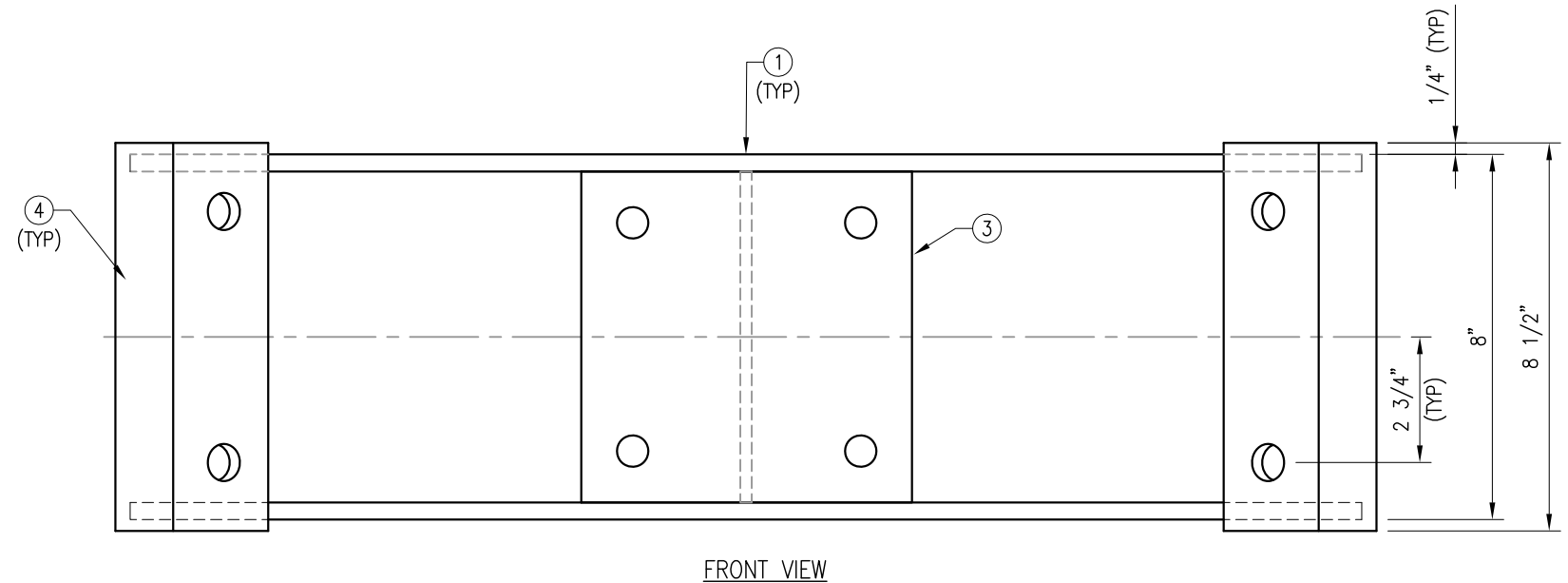
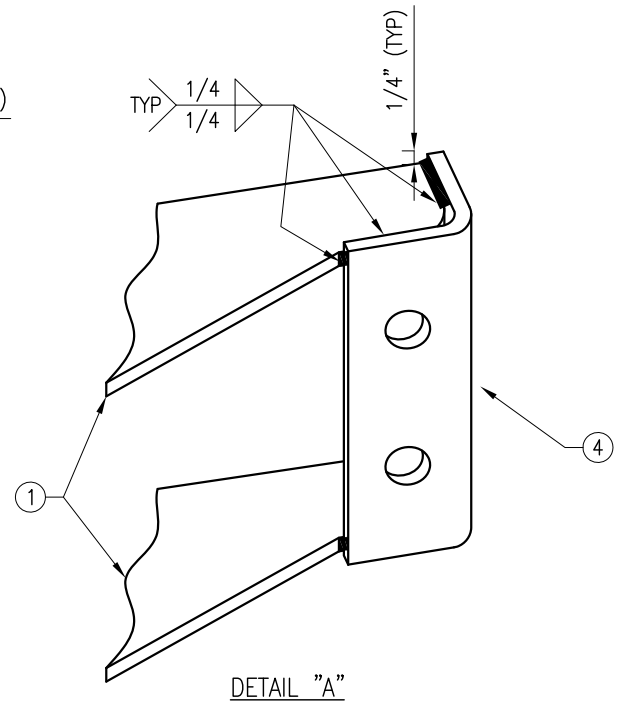
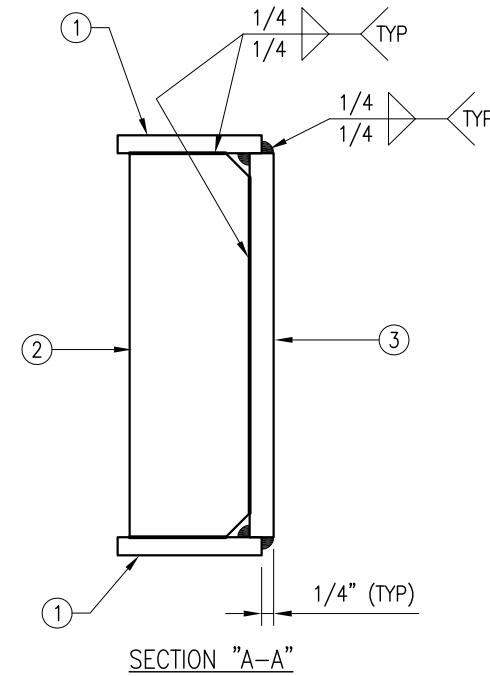
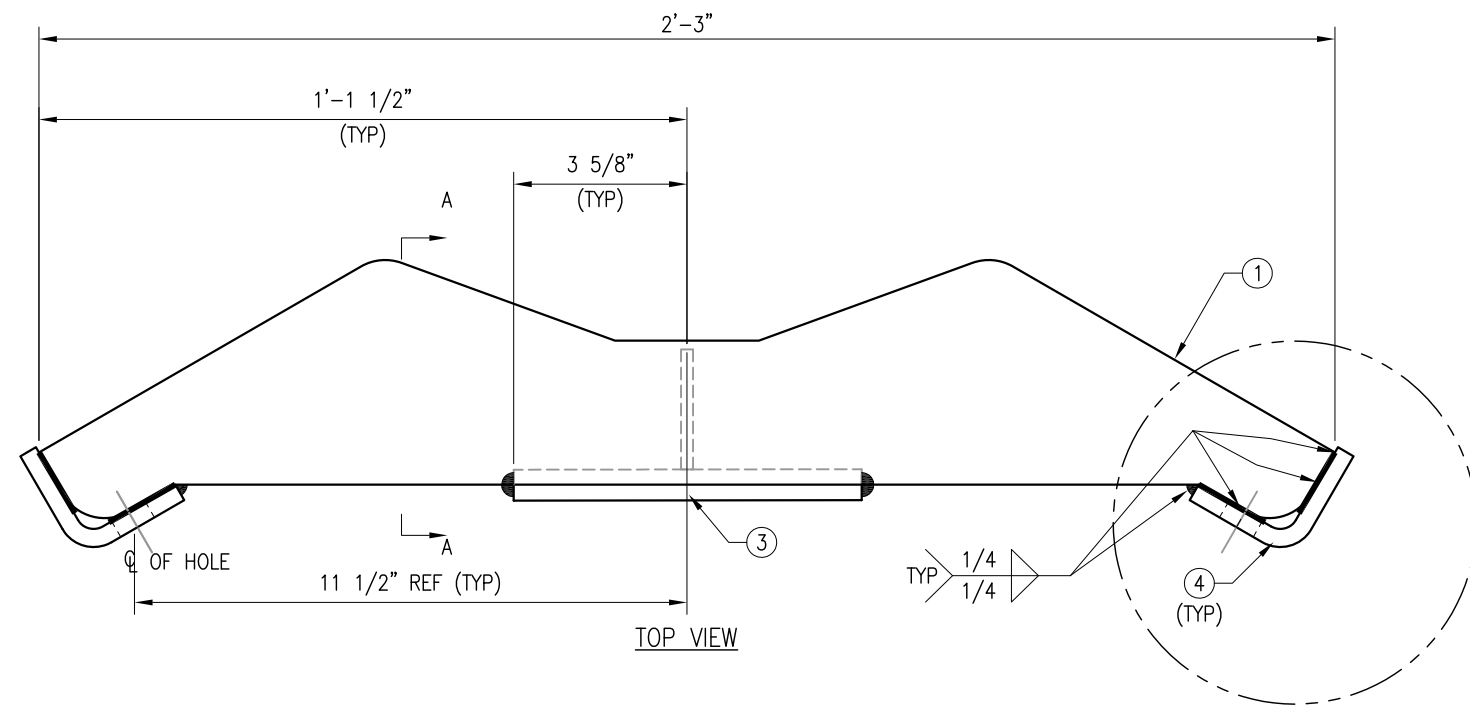


FRONT VIEW

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

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

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



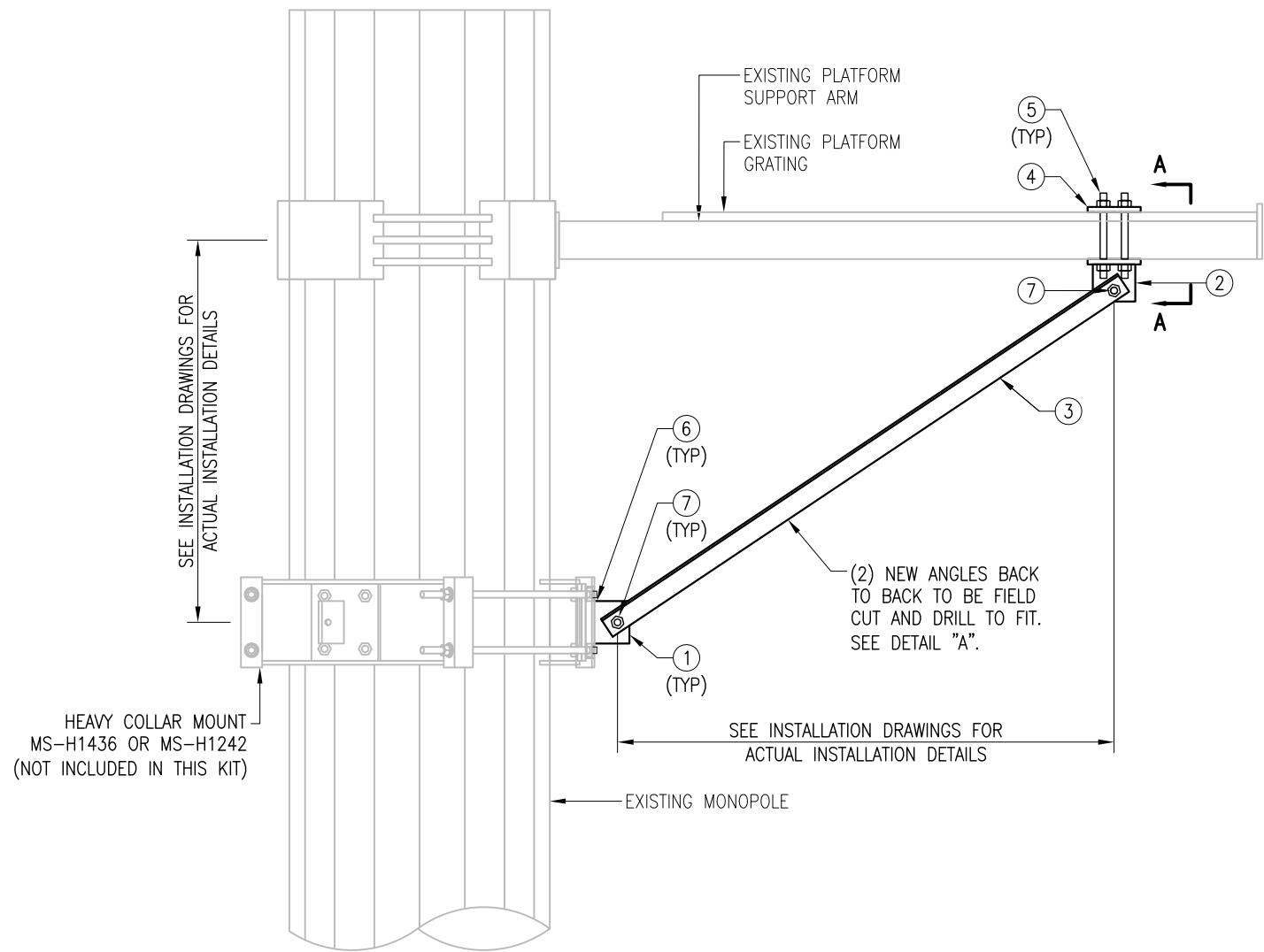
FRONT VIEW
 MPW-1 WELDMENT

THIRD ANGLE PROJECTION						METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH				CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC			
STANDARD SHEET TOLERANCES DECIMALS .X ± 0.1 .XX ± 0.02 .XXX ± 0.005				ANGLES ± 1° FRACTIONS ± 1/32		TITLE HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL	
APPROVAL / SIGNATURES		DATE		SIZE/DWG NO		REV	
DRAWN BY: XXX		05/12/17		B MPHW-1		0	
REVIEWED: XXX		-		SCALE		-	
APPROVED: XXX		-		SHEET 1 OF 1			

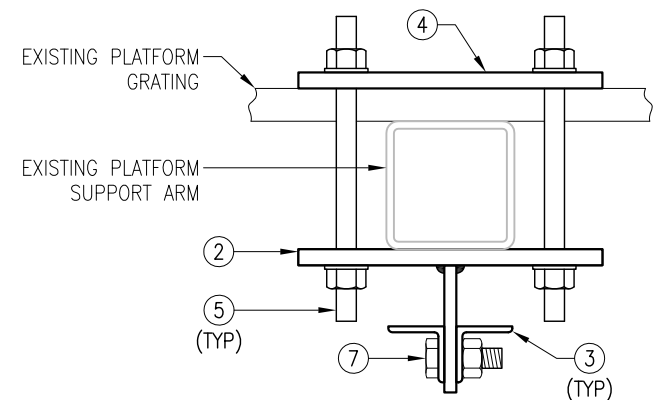
NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.

MS-HK122-5

ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	BRKW-HK	BRACKET WELDMENT	---	BRKW-HK	23.4
2	3	BRKW-5S	BRACKET WELDMENT	---	BRKW-5S	18.9
3	6	L2225-5	L 2" X 2" X 1/4" X 5'-0"	A36	HKF-8	97.8
4	3	PL5S-375	PL 3/8" X 4 3/4" X 8 1/2"	A36	HKF-8	12.9
5	12	---	ALL THREADED ROD 5/8" DIA. X 1'-0" HDG W/ (2) HHN & LKW EA.	A36	---	---
6	12	---	BOLT 5/8" X 2" W/ HHN & LKW	A325	---	---
7	9	---	BOLT 5/8" X 2 1/4" W/ HHN & LKW	A325	---	---
GALVANIZED WT						153

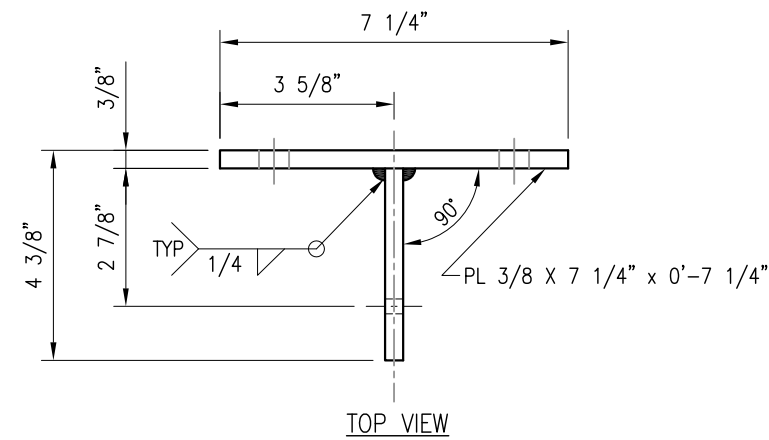


ELEVATION

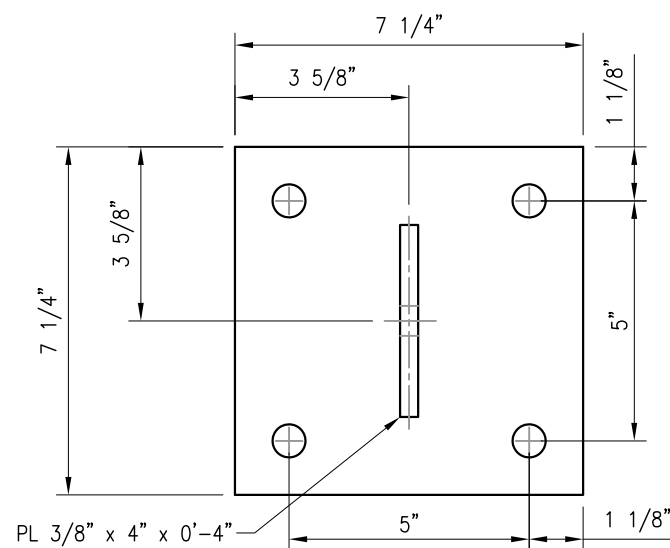


SECTION "A-A"

- NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
 2. HOT-DIPPED GALVANIZED PER ASTM A123.
 3. FIT UP TO 5" X 5" SQ. TUBING OR 4 1/2" O.D. PIPE

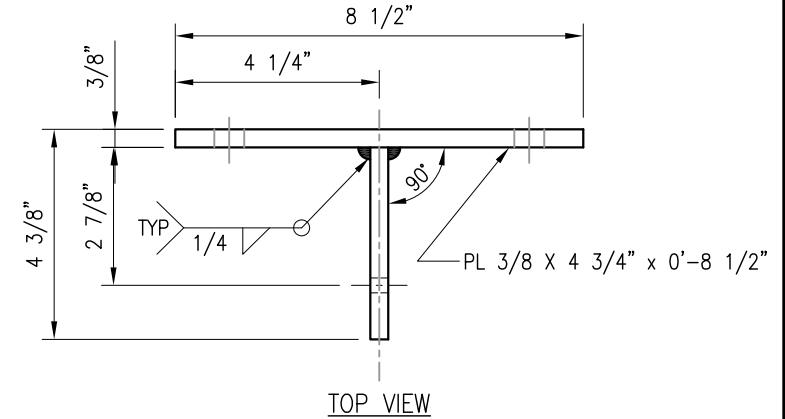


TOP VIEW

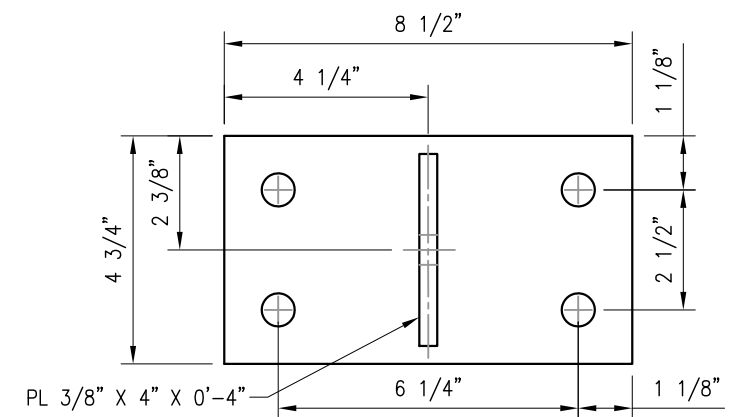


FRONT VIEW

BRKW-HK WELDMENT

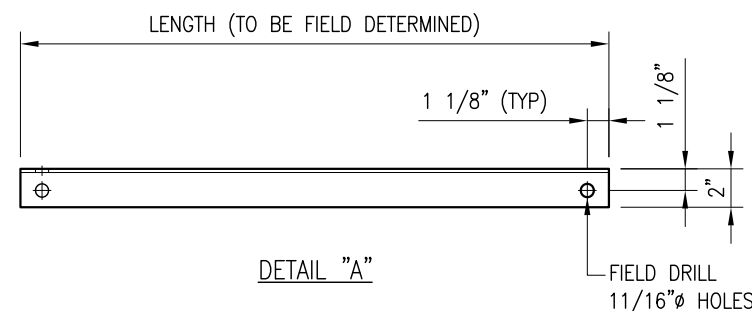


TOP VIEW



FRONT VIEW

BRKW-5S WELDMENT



DETAIL "A"

THIRD ANGLE PROJECTION				METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH				CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC	
STANDARD SHEET TOLERANCES		APPROVAL / SIGNATURES		DATE	
DECIMALS	ANGLES	DRAWN BY: XXX REVIEWED: XXX APPROVED: XXX		06/21/18 - -	
.X ± 0.1	± 1°				
.XX ± 0.02	FRACTIONS ± 1/32				
.XXX ± 0.005		TITLE HEAVY KICKER SUPPORT KIT		SIZE/DWG NO B MS-HK122-5	
				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: CTNH003A

CTNH003/NextelMilford
160 Wampus Lane
Milford, Connecticut 06460

September 15, 2020

EBI Project Number: 6220004793

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	19.65%

September 15, 2020

T-Mobile

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

Emissions Analysis for Site: CTNH003A - CTNH003/NextelMilford

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **160 Wampus Lane in Milford, 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 160 Wampus Lane in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

- 6) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 8) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 9) 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 / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 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 105 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 / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	2.85%	Antenna B1 MPE %:	2.85%	Antenna C1 MPE %:	2.85%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,466.41	ERP (W):	8,466.41	ERP (W):	8,466.41
Antenna A2 MPE %:	4.59%	Antenna B2 MPE %:	4.59%	Antenna C2 MPE %:	4.59%
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):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A3 MPE %:	8.36%	Antenna B3 MPE %:	8.36%	Antenna C3 MPE %:	8.36%
Antenna #:	4	Antenna #:	4	Antenna #:	4
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,226.43	ERP (W):	8,226.43	ERP (W):	8,226.43
Antenna A4 MPE %:	2.68%	Antenna B4 MPE %:	2.68%	Antenna C4 MPE %:	2.68%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	18.49%
Metro PCS	1.01%
Clearwire	0.15%
Sprint	0%
Site Total MPE % :	19.65%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	18.49%
T-Mobile Sector B Total:	18.49%
T-Mobile Sector C Total:	18.49%
Site Total MPE % :	19.65%

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 LTE	2	2056.61	105.0	13.41	1900 MHz LTE	1000	1.34%
T-Mobile 2100 MHz LTE	2	2307.55	105.0	15.05	2100 MHz LTE	1000	1.50%
T-Mobile 600 MHz LTE	2	591.73	105.0	3.86	600 MHz LTE	400	0.96%
T-Mobile 600 MHz NR	1	1577.94	105.0	5.15	600 MHz NR	400	1.29%
T-Mobile 700 MHz LTE	2	648.82	105.0	4.23	700 MHz LTE	467	0.91%
T-Mobile 1900 MHz LTE	2	2203.69	105.0	14.37	1900 MHz LTE	1000	1.44%
T-Mobile 2500 MHz LTE	2	6412.98	105.0	41.82	2500 MHz LTE	1000	4.18%
T-Mobile 2500 MHz NR	2	6412.98	105.0	41.82	2500 MHz NR	1000	4.18%
T-Mobile 1900 MHz GSM	4	1028.30	105.0	13.41	1900 MHz GSM	1000	1.34%
T-Mobile 1900 MHz UMTS	2	1028.30	105.0	6.71	1900 MHz UMTS	1000	0.67%
T-Mobile 2100 MHz UMTS	2	1028.30	105.0	6.71	2100 MHz UMTS	1000	0.67%
						Total:	18.49%

• 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:	18.49%
Sector B:	18.49%
Sector C:	18.49%
T-Mobile Maximum MPE % (Sector A):	18.49%
Site Total:	19.65%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **19.65%** 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.