



Filed by:

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

December 15, 2020

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

RE: Notice of Exempt Modification
30 Old Country Road, Stafford Springs, CT 06076
Latitude: 41.940033
Longitude: -72.237461
T-Mobile Site #: CTHA526A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 167-foot level of the existing 180-foot Monopole Tower at 30 Old Country Rd., Stafford Springs, CT. The 180-foot tower is owned by SBA Towers, LLC. The property is owned by Lisa J. Harrison / L&M Property Holdings, LLC. T-Mobile now intends to remove three (3) L1900 MHz antennas and replace with three (3) new L2100 MHz antennas and install six (6) new L600/700/1900 MHz antennas for a total of nine (9) antennas. The new antennas support 5G services and would be installed at the 167-foot level of the tower.

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

Planned Modifications:

TOWER

Remove:

- Antenna Chain Mount (T-Arms)

Remove and Replace:

- (3) RFS ATMAA1412D-1A20 antenna (remove) – (3) RFS APXVAALL24-43-U-NA20 antenna (replace)

Install New:

- (3) Ericsson AIR6449 B41 antenna
- (3) 1-5/8" fiber
- Low Profile Platform with HRK (SitePro RMQ-4096-HRK)
- (3) Ericsson 4449 B71 + B85 – RRU
- (3) Ericsson 4424 B25 – RRU
- (3) Ericsson Radio 4415 B66A - RRU

Existing Equipment to Remain:

- (3) RFS APX16DWV-16DWVS-E-A20 antenna
- (3) 1-5/8" Coax

Entitlements:

- (9) 1-5/8" Coax

GROUND

Install New:

- Ericsson 6160 Equipment Cabinet
- Ericsson B160 Battery Cabinet
- Concrete Pad extension
- Equipment within existing RBS3201 cabinet

This facility was approved by the Town of Stafford's Planning and Zoning Commission on August 9, 2000. Approval was given for a 180' monopole with a 70'x70' fenced compound. The only condition was that the property owner grant a fall zone easement in favor of SBA, Inc. No post construction stipulations were set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Stafford's First Selectman, Mary Mitta, and Zoning Enforcement Officer, David Perkins, 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,

Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3804 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbsite.com

Attachments

- cc: Mary Mitta, First Selectman / with attachments
Town of Stafford, Warren Memorial Town Hall, 1 Main Street, Stafford Springs, CT 06076
David Perkins, Zoning Enforcement Officer / with attachments
Town of Stafford, Warren Memorial Town Hall, 1 Main Street, Stafford Springs, CT 06076
Lisa J. Harrison / L&M Property Holdings, LLC / with attachments
7 Doratzak Road, Willington CT 06279 (SBA overnight address on file)

Exhibit List

Exhibit 1	Check Copy	To be invoiced at a later per Covid guidelines
Exhibit 2	Notification Receipts	X
Exhibit 3	Property Card	X
Exhibit 4	Property Map	X
Exhibit 5	Original Zoning Approval	Town of Stafford P&Z 8/8/2000
Exhibit 6	Construction Drawings	Chappell Engineering 12/11/20
Exhibit 7	Structural Analysis	TES 11/17/20
Exhibit 8	Mount Analysis	TES 11/16/20
Exhibit 9	EME Report	Transcom Engineering 6/17/19

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

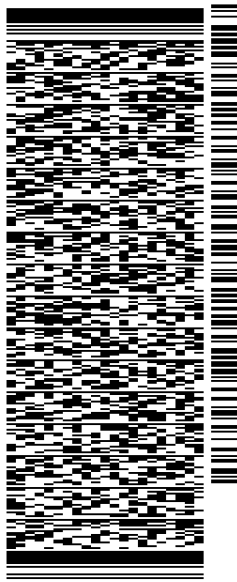
SHIP DATE: 15DEC20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

BILL SENDER

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

NEW BRITAIN CT 06051

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



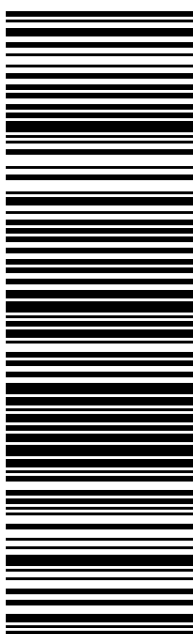
56B.J2/9196/B766

TRK# 7723 7732 3382
0201

WED - 16 DEC 10:30A
PRIORITY OVERNIGHT

EB BDLA

06051
CT-US BDL



After printing this label:

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

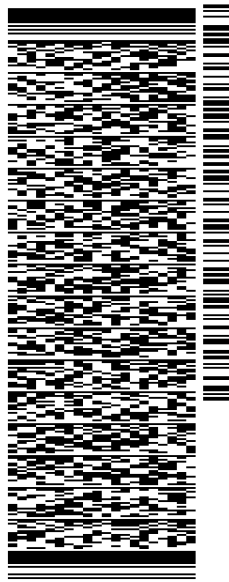
Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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

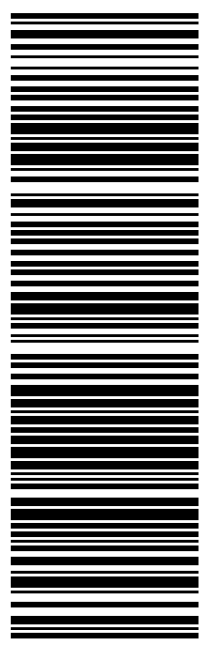
ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15DEC20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280
BILL SENDER

TO MARY MITTA
TOWN OF STAFFORD
FIRST SELECTMAN
1 MAIN ST
WEST STAFFORD CT 06076
REF: 10-56-92009-6089
DEPT:



TRK# 0201 7723 7743 9112
WED - 16 DEC 10:30A
PRIORITY OVERNIGHT

EB QCWA 06076
CT:US BDL


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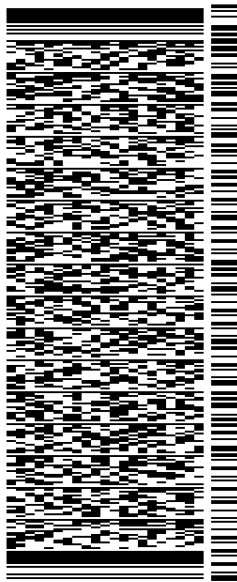
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ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15DEC20
ACTWGT: 1.00 LB
CAD: 105843304/NET14280
BILL SENDER

TO **DAVID PERKINS**
TOWN OF STAFFORD
ZONING ENFORCEMENT OFFICER
1 MAIN ST
WEST STAFFORD CT 06076
(508) 251-3720 X 3807 REF: 105692009-6089
INV# DEPT:
PO:

56B.I2/9196/B766

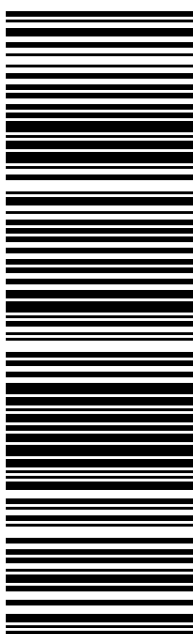


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0201

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PRIORITY OVERNIGHT

EB QCWA

06076
CT:US BDL



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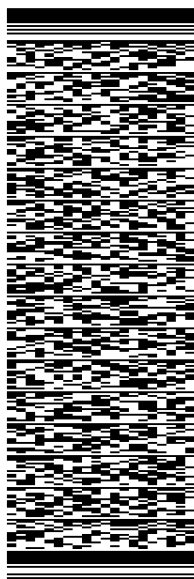
ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15DEC20
ACTWGT: 1.00 LB
CAD: 105843304/NET4280
BILL SENDER

TO LISA J. HARRISON
L&M PROPERTY HOLDINGS, LLC
7 DORATZAK RD

WILLINGTON CT 06279
(508) 251-0720 X 3807 REF: 105692009-6089
INV# PO: DEPT:

56B.J2/9196/B766

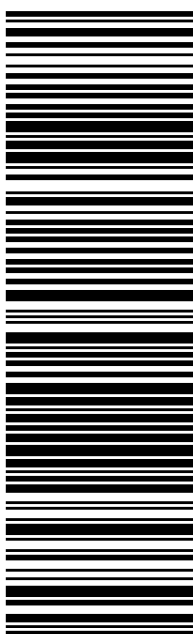


TRK# 7723 7752 9434
0201

WED - 16 DEC 12:00P
PRIORITY OVERNIGHT

EB GONA

06279
CT:US BDL



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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EXHIBIT 3

30 OLD COUNTY RD

Location 30 OLD COUNTY RD

Mblu 76 / / 6 / /

Acct# 00502500

Owner L+M PROPERTY HOLDINGS
LLC

Assessment \$181,510

Appraisal \$259,300

PID 5640

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$6,300	\$253,000	\$259,300

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$4,410	\$177,100	\$181,510

Owner of Record

Owner L+M PROPERTY HOLDINGS LLC

Sale Price \$0

Co-Owner

Certificate

Address 7 DORATZAK RD
WILLINGTON, CT 06279

Book & Page 664/ 591

Sale Date 10/02/2018

Instrument 01

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
L+M PROPERTY HOLDINGS LLC	\$0		664/ 591	01	10/02/2018
HARRISON LISA J	\$0		652/ 355	02	07/17/2017
KENDERDINE LISA H	\$0	1	468/ 635		06/16/2004
MIHALIAK JOSEPH EST	\$0	2	392/ 556		03/16/2001
MIHALIAK JOSEPH	\$0	3	127/ 639		07/08/1968

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

Building Percent**Good:****Replacement Cost****Less Depreciation:** \$0

Building Attributes	
Field	Description
Style	Vacant Ind
Model	
Grade:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplaces	
Extra Openings	
Prefab Fpl(s)	
Attic Type	
Bsmt Type	
Bsmt Garage(s)	
Fin Bsmnt	
Fn. Bmt. Qual.	
Unfin Area	

Building Photo

(<http://images.vgsi.com/photos2/StaffordCTPhotos//\00\01\25\8>)

Building Layout

(<http://images.vgsi.com/photos2/StaffordCTPhotos//Sketches/56>)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code 300
Description Ind Land
Zone AAA
Neighborhood 502
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 7.5
Frontage
Depth
Assessed Value \$177,100
Appraised Value \$253,000

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN3	FENCE-6' CHAIN			300 L.F.	\$1,400	1
PAV2	Paving Concrete			160 S.F.	\$200	1
SHD1	Shed	MS	Masonry	360 S.F.	\$2,900	1
SHD3	Metal Shed			360 S.F.	\$1,800	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$6,300	\$253,000	\$259,300
2016	\$6,300	\$253,000	\$259,300
2014	\$6,300	\$253,000	\$259,300

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$4,410	\$177,100	\$181,510
2016	\$4,410	\$177,100	\$181,510
2014	\$4,410	\$177,100	\$181,510

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EXHIBIT 4

Google Maps 30 Old County Rd



Map data ©2019 200 ft



30 Old County Rd

Stafford Springs, CT 06076



Directions



Save



Nearby



Send to your phone



Share



WQR6+G3 Stafford, Connecticut

Photos



EXHIBIT 5

cover First-Class postage, certified mail services (See front).
If the certified mail number and your name are postmarked, stick the gummed stub to the letter (no extra charge).
If the certified mail number and your name are not postmarked, stick the gummed stub to the letter, and present the article at a post office.
Otherwise, affix to back of article. Endorse front of article with the number.
If adjacent to the number.
If adjacent to the addressee, or to an authorized agent, check the applicable blocks in Item 1 of the instructions on the back of the article.
If adjacent to the addressee, or to an authorized agent, check the applicable blocks in Item 1 of the instructions on the back of the article.
If adjacent to the addressee, or to an authorized agent, check the applicable blocks in Item 1 of the instructions on the back of the article.



Town of Stafford

The Stafford Planning & Zoning Commission

Warren Memorial Town Hall
1 Main Street • Stafford Springs, CT 06076

(860) 684-7444
FAX 684-9845

August 9, 2000

CERTIFIED MAIL

Attorney Wendell G. Davis, Jr.
Cranmore, Fitzgerald & Meaney
Attorneys At Law
49 Wethersfield Avenue
Hartford, CT 06114-1104

Dear Attorney Davis:

At a regular meeting of the Planning & Zoning Commission August 8, 2000, the Board unanimously approved the Special Use Permit application of SBA, Inc. for a wireless telecommunications tower to be located at 30 Old County Road, with the condition that the property owner grant a fall zone easement in favor of SBA, Inc., as depicted on the site plan dated December 21, 1999.

Very truly yours,

A handwritten signature in black ink, appearing to read "Wendell Avery".

Wendell Avery
Zoning Enforcement Officer

WA/mjl

THE STAFFORD PLANNING & ZONING COMMISSION

Warren Memorial Town Hall

Stafford Springs, CT

Special Use Permit Application

Please Print

SUP No. 10-8-8

1. APPLICANT: SBA, Inc. Phone 860-659-9101
Address 80 Eastern Blvd. Glastonbury, CT 06033
2. PROPERTY ADDRESS: 30 Old County Road, Stafford Springs
3. PROPERTY OWNER: Joseph Mihaliak Phone 860-684-3383
Address 145 Mihaliak Road, Willington, CT 06279
4. ENGINEER: Gesick & Associates Phone 860-669-7799
Address 19 Cedar Island Ave., Clinton, CT 06413
5. ZONE: Residential AAA
6. SPECIAL USE PERMIT for: _____
Brief Explanation Construction of a wireless telecommunications tower facility, 180 foot monopole on 70 ft X 70 ft fenced compound.

7. Names and Address of Abutting Property Owners: _____
A. Elaine Lunt, Box 794, Southwest Harbor, Maine 04679
B. Bruce & Barbara Posocco, Box 348, Stafford Springs, CT
C. William Mihaliak, 154 Mihaliak Road, Willington, CT 06279
D. Joseph Mihaliak, owner of 30 Old County Road, address same as in line 3
8. I have provided a Site Plan and copies as required in Sec. 6.11 of the Stafford Planning & Zoning Regulations Yes No _____
9. I have examined and familiarized myself with all Planning and Zoning Regulations. Yes No _____
10. The approximate cost of the entire project is \$235,000
11. I have paid fee \$110 as required in Sec. 6.70. Yes No _____

Signature of Applicant: [Signature] Steven L. Levine
Date: 6-20-2000 on behalf of applicant
Signature Owner: Joseph Mihaliak
Date: 6-20-2000

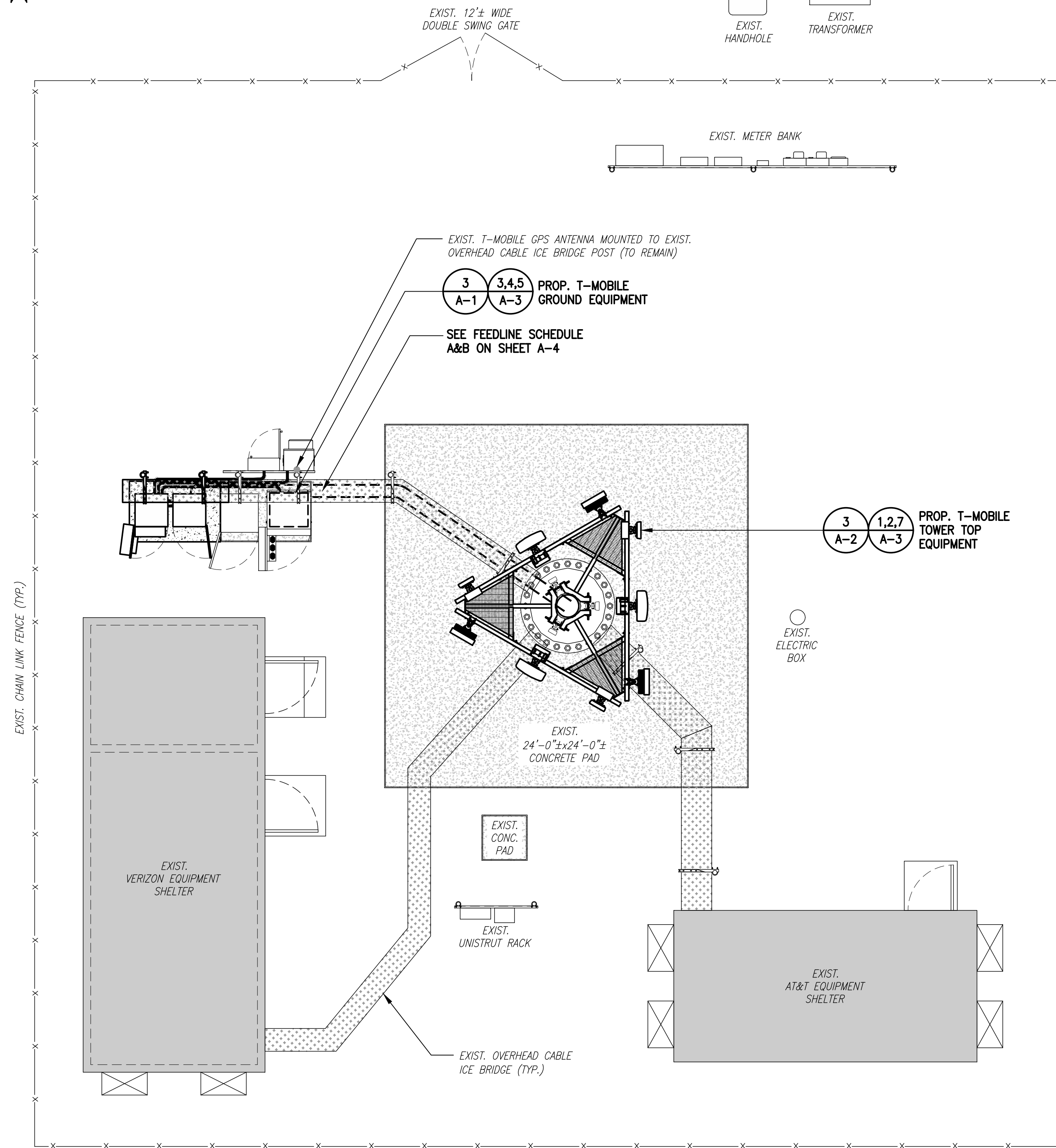
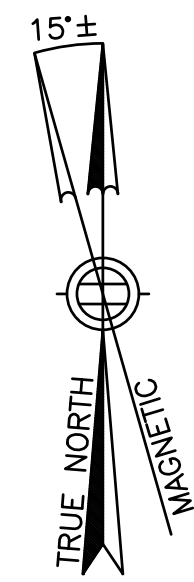
12. Date of Public Hearing: ~~July 25, 2000~~ August 8, 2000
13. Commission has received letter of APPROVAL from the Town Sanitarian. Yes _____ No N/A
14. Commission has received letter of APPROVAL from the Inland Wetlands Commission. Yes OK No Not Done
15. Additional Requirements or Comments: _____

16. This SPECIAL USE PERMIT is APPROVED DISAPPROVED _____ DATE 8-8-00

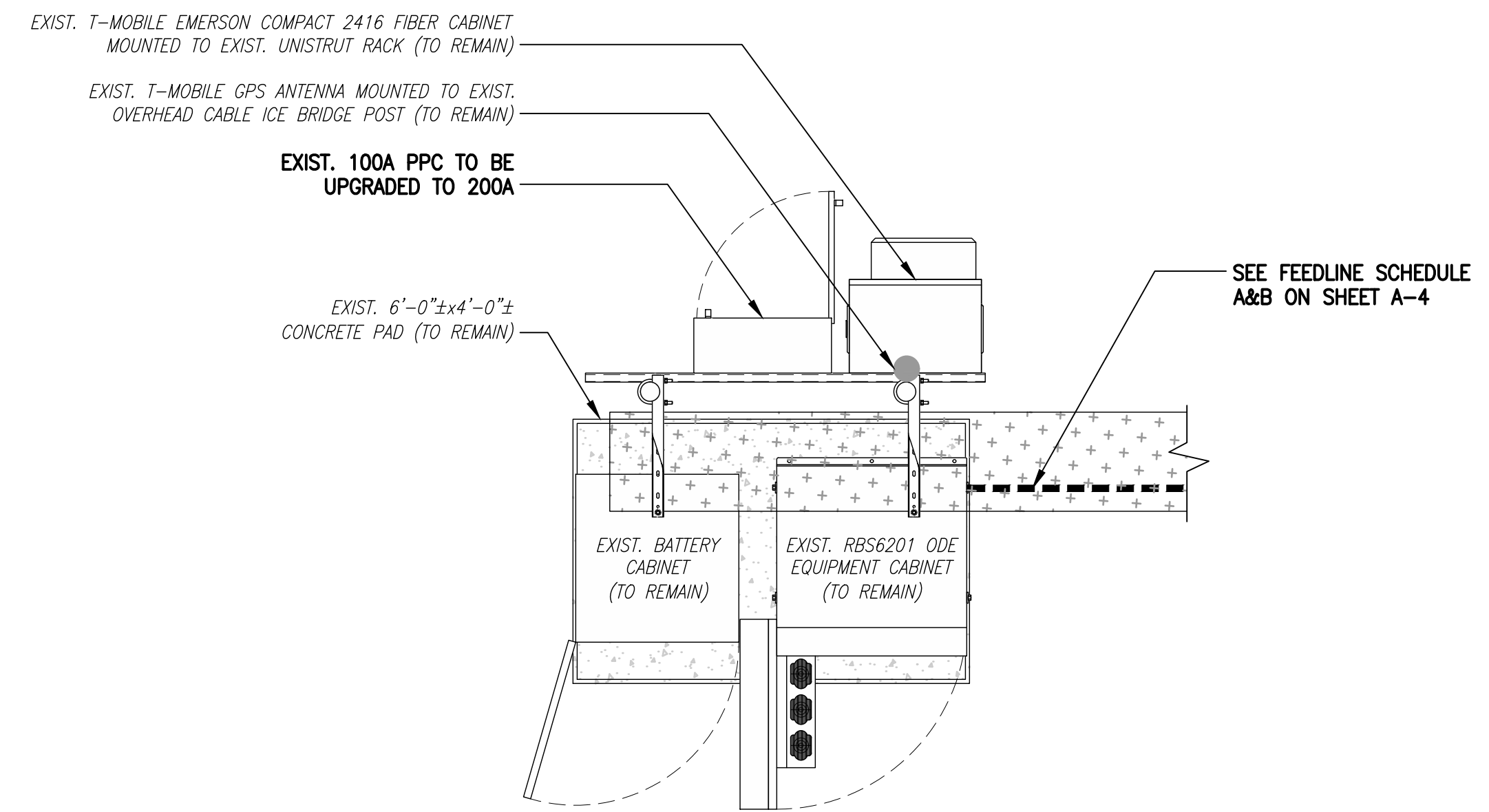
Signature of Commissioners:
[Signature]

EXHIBIT 6

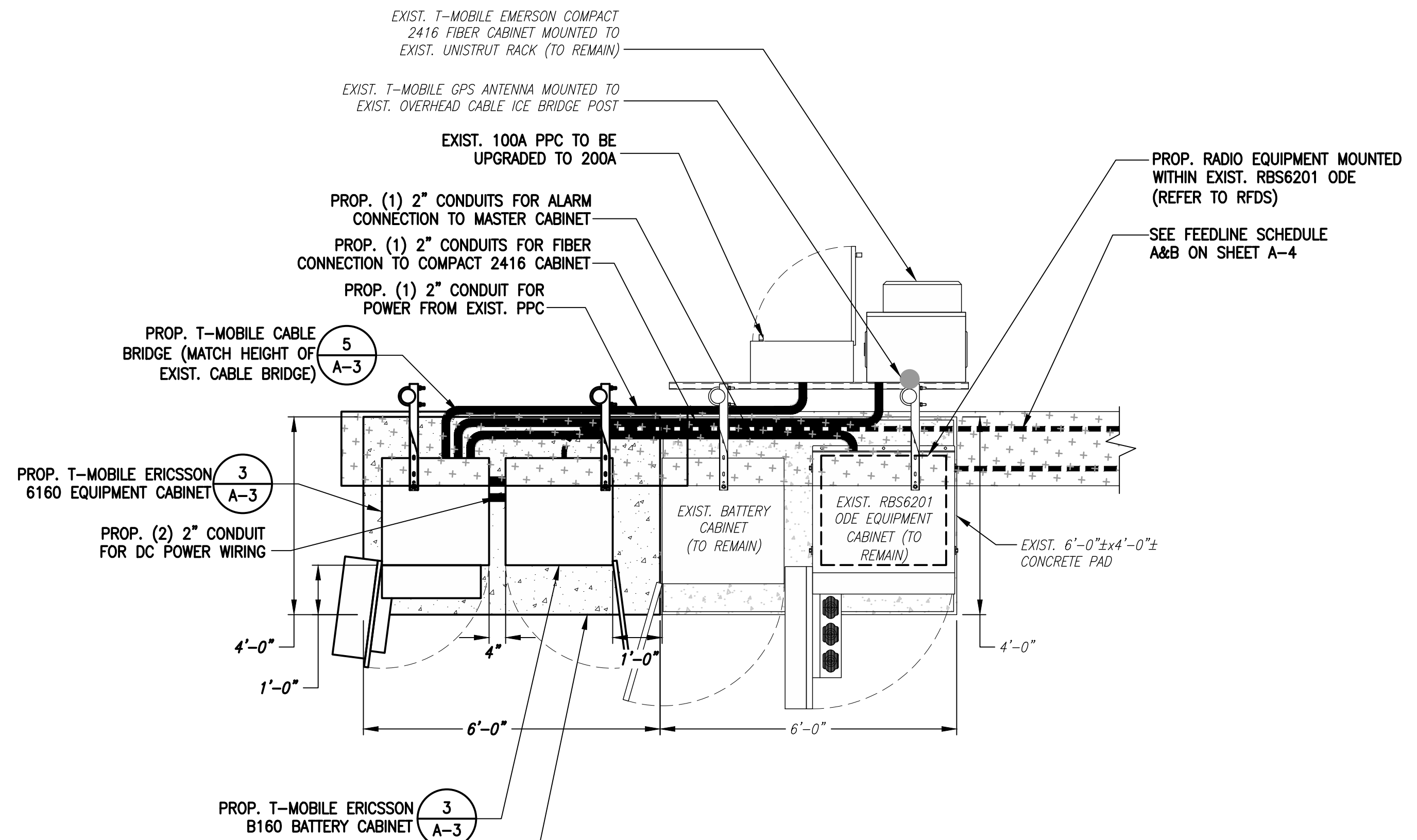
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



COMPOUND PLAN 1 A-1
 SCALE: 1" = 5'-0"
 0 5'-0" 10'-0" 15'-0"



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



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

**T-MOBILE
 NORTHEAST LLC**

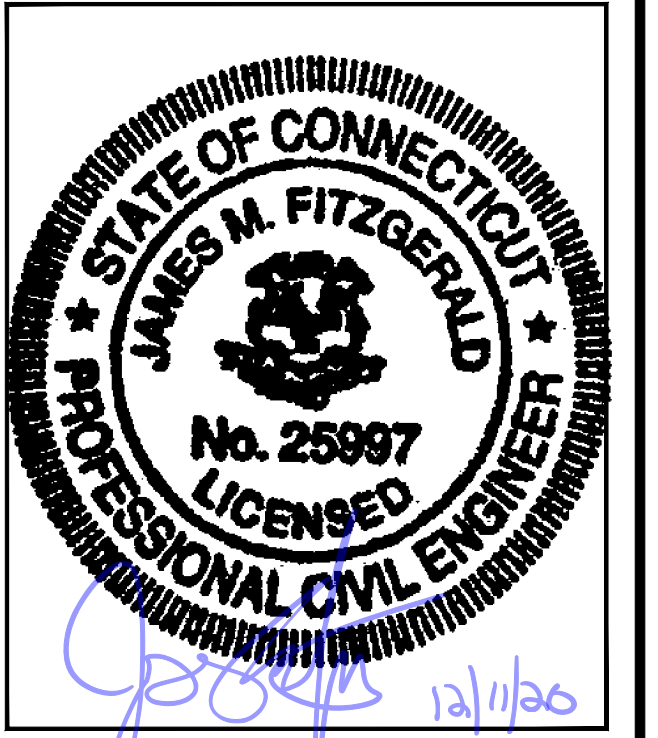
15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 (508) 286-2700



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



R.K. EXECUTIVE CENTRE
 201 BOSTON POST ROAD WEST, SUITE 101
 MARLBOROUGH, MA 01752
 (508) 481-7400
 www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	12/11/20	ISSUED FOR CONSTRUCTION	CMC
0	10/30/20	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTHA526A

SITE ADDRESS:
 30 OLD COUNTRY ROAD
 TOLLAND, CT 06076-4502

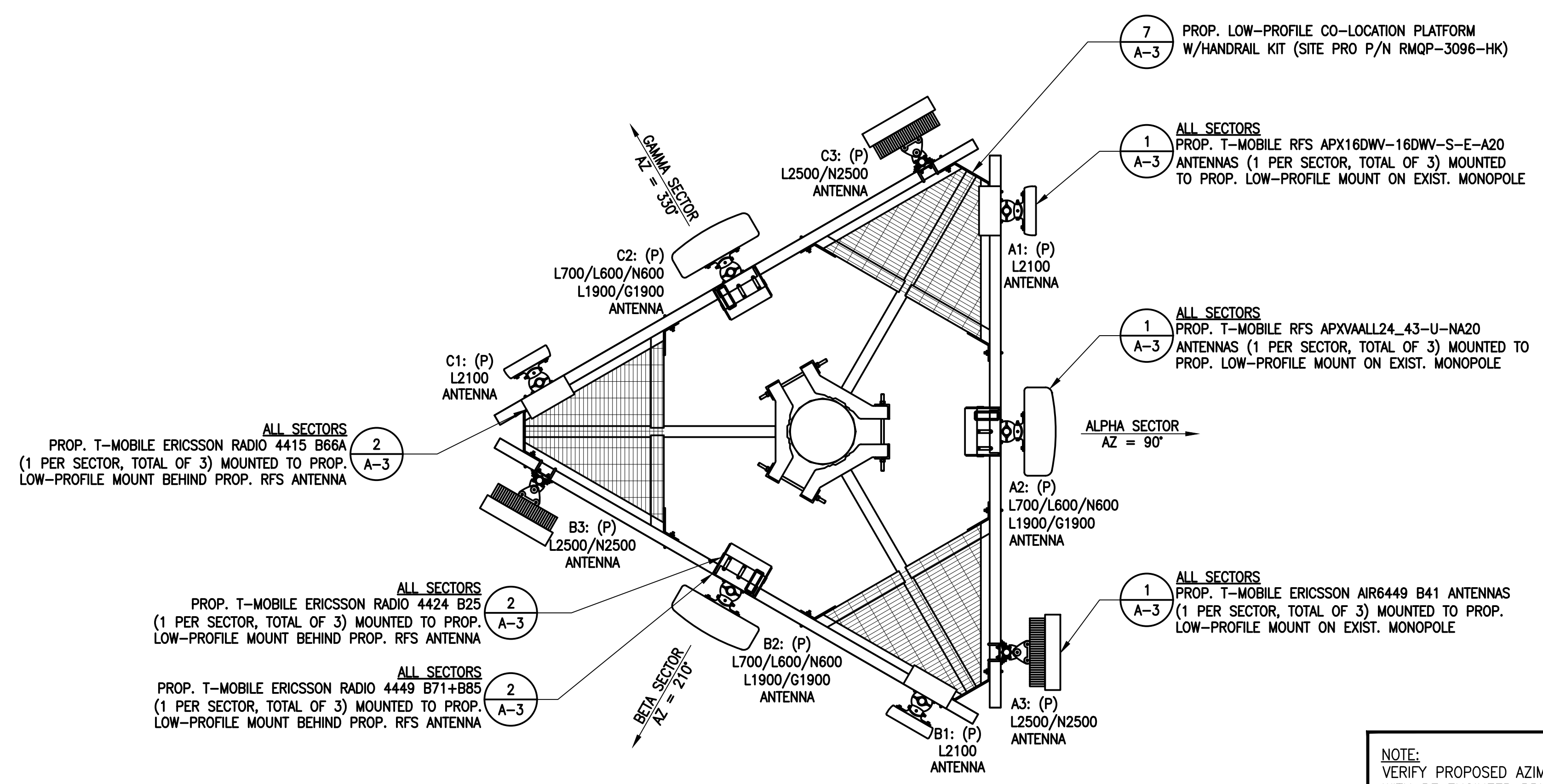
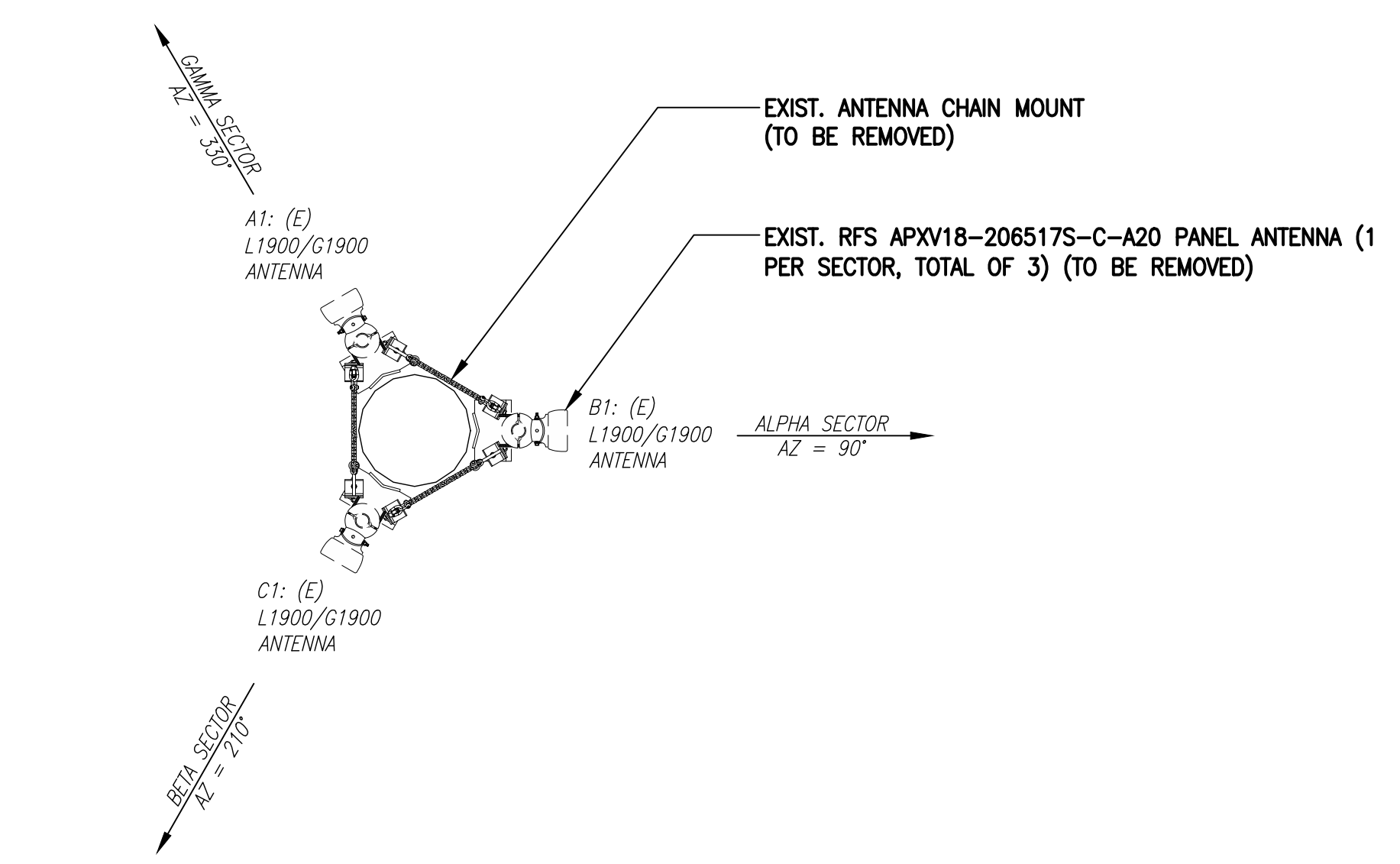
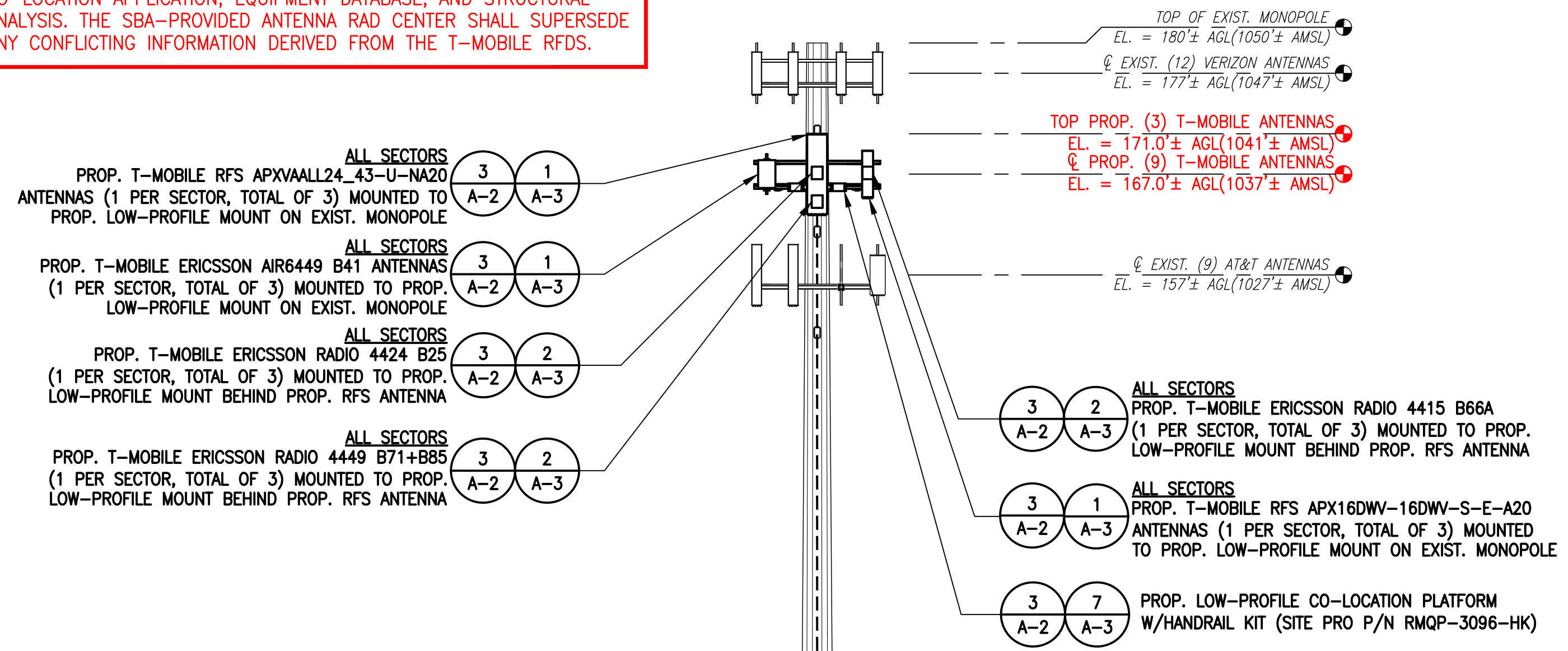
SHEET TITLE
**COMPOUND &
 EQUIPMENT PLAN**

SHEET NUMBER
A-1

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

SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
 GENERAL CONTRACTOR SHALL ORIENT PROPOSED PLATFORM REINFORCEMENT KIT RING-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING OR PROPOSED RING-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

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

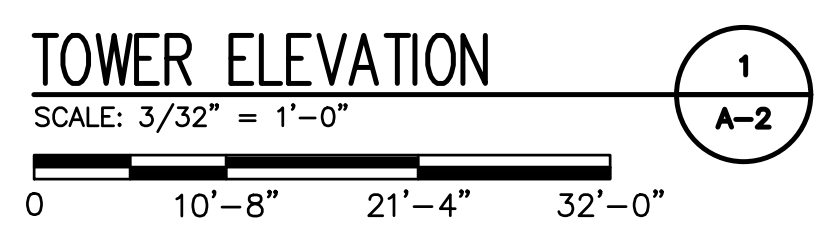


SEE FEEDLINE SCHEDULE A&B ON SHEET A-4

NOTE: GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

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

ANTENNA STATUS LEGEND:
 EMPTY - EMPTY PIPE
 (E) - EXISTING
 (P) - INSTALL
 (F) - FUTURE

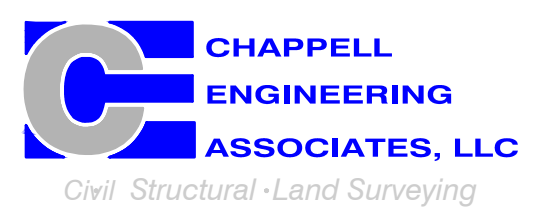


T-MOBILE NORTHEAST LLC

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 MARLBOROUGH, MA 01752
 (508) 481-7400
 www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	12/11/20	ISSUED FOR CONSTRUCTION	JMT
0	10/30/20	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTHA526A

SITE ADDRESS:
 30 OLD COUNTRY ROAD
 TOLLAND, CT 06076-4502

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

**T-MOBILE
NORTHEAST LLC**

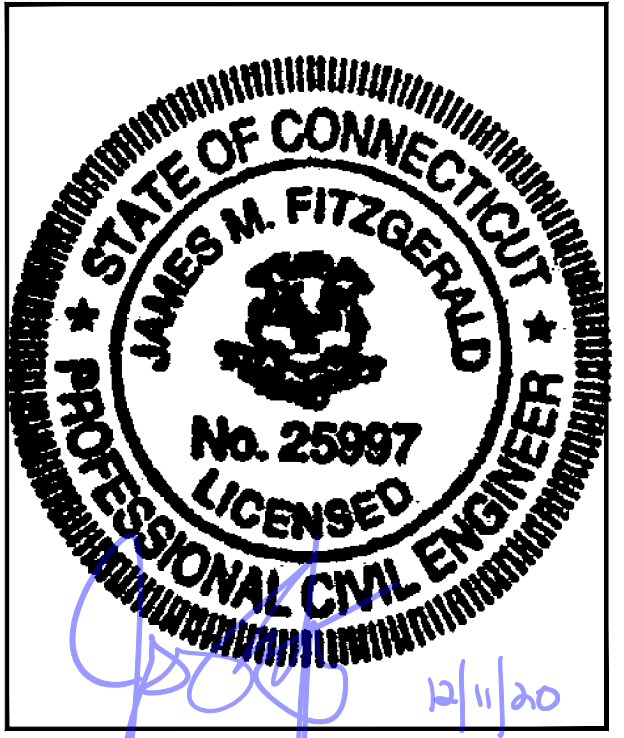
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0	10/30/20	ISSUED FOR REVIEW	JRV

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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

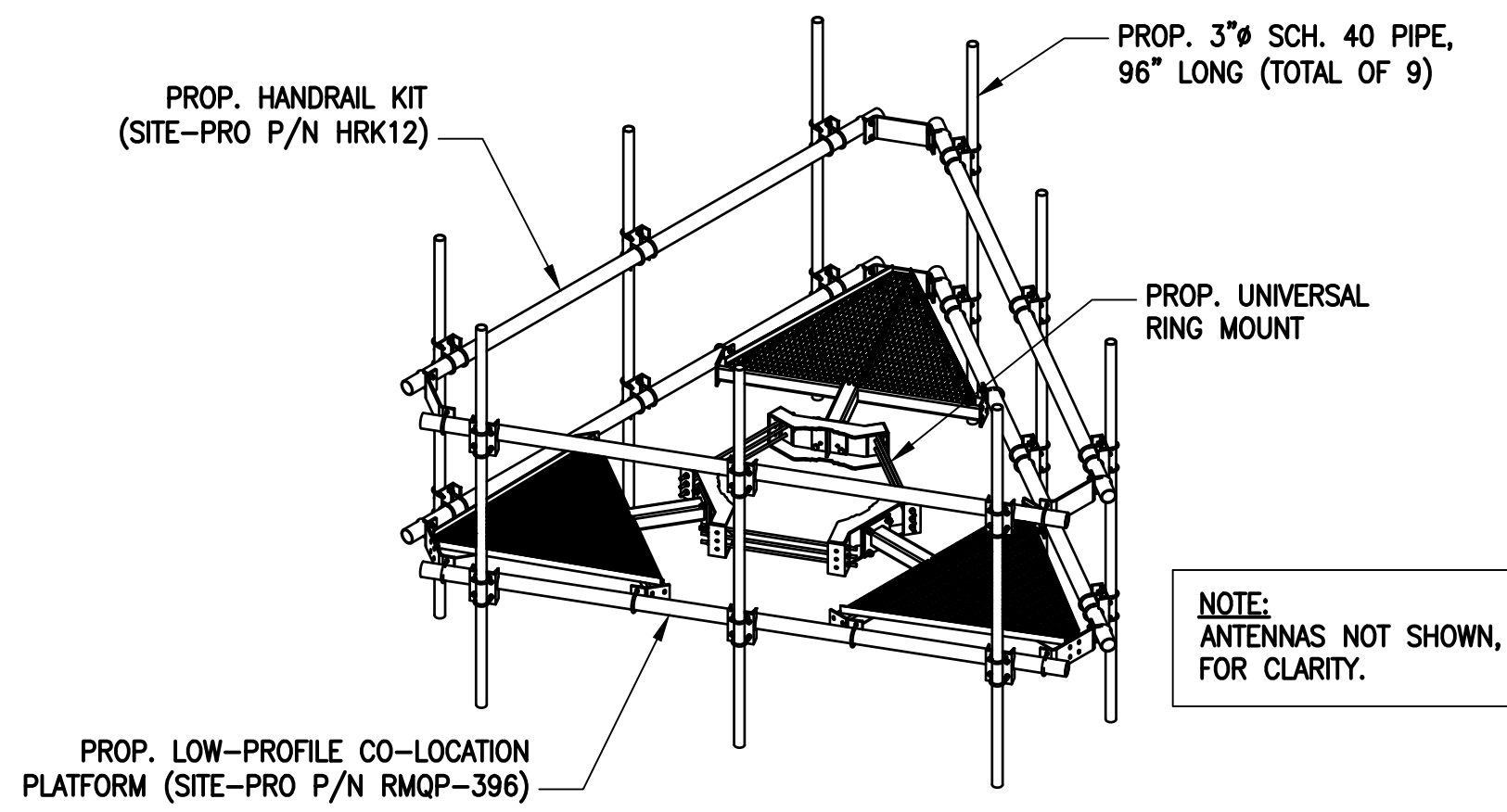
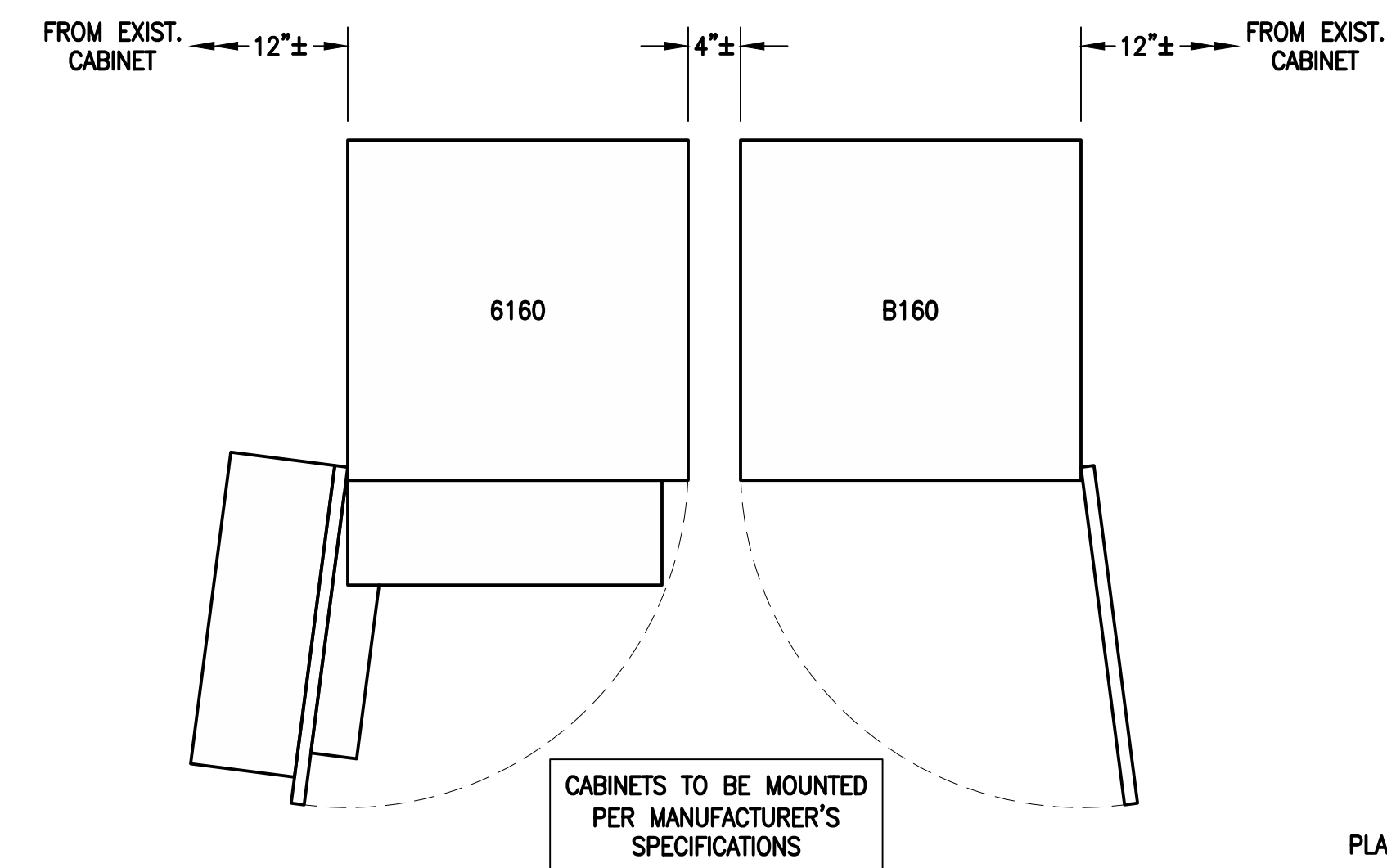


ERICSSON RADIO 4415 B66A
DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4449 B71+B85
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

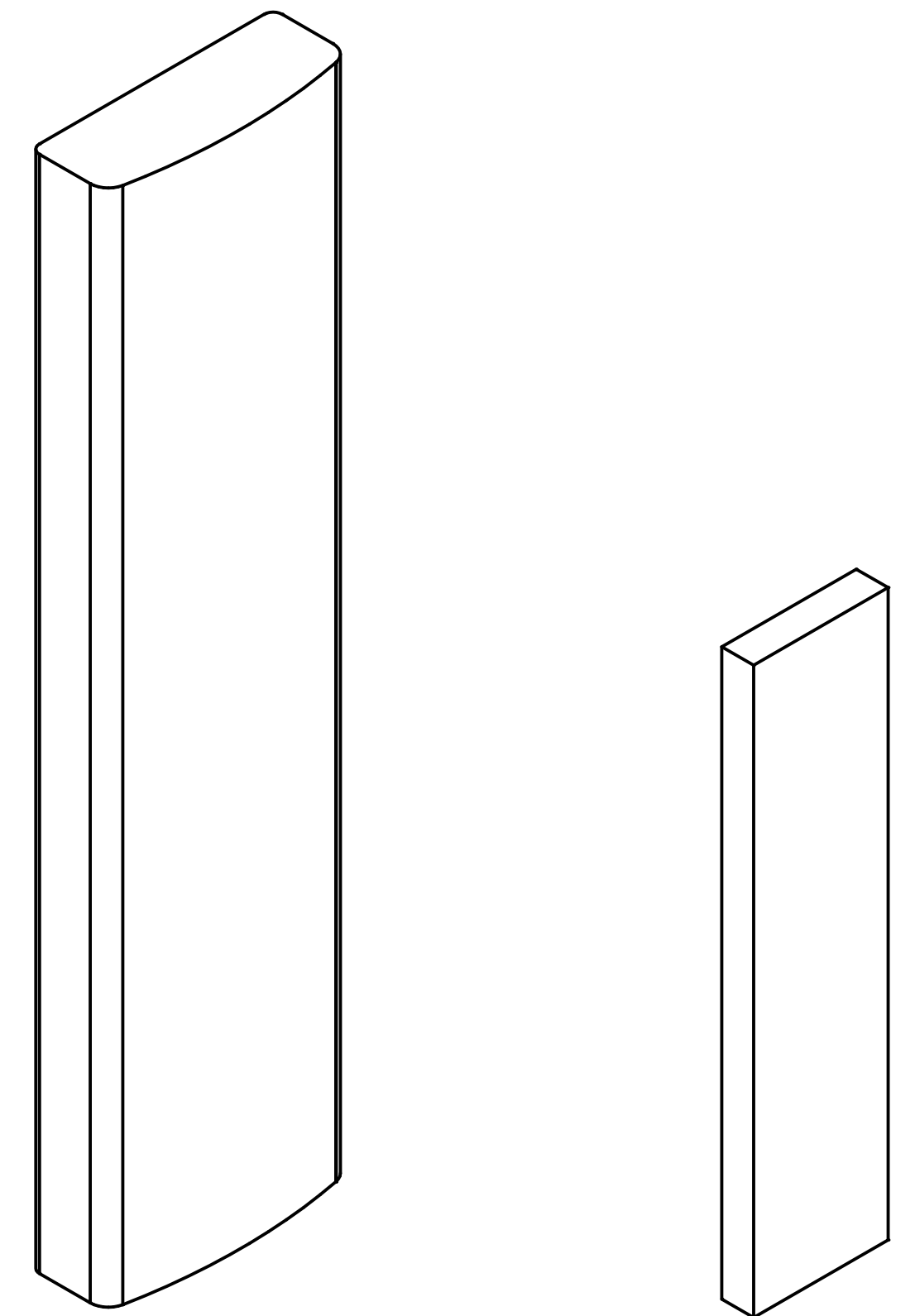
ERICSSON RADIO 4424 B25
DIMENSIONS: 16.5"H x 13.5"W x 9.6"D
WEIGHT: 88.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

RADIO DETAILS
SCALE: N.T.S.



SITE-PRO 1 12'-6" LOW PROFILE CO-LOCATION PLATFORM W/HANDRAIL KIT
PART NUMBERS: RMPQ-396 & HRK12
QUANTITY: TOTAL OF 1

TYPICAL SITE PRO 1 12'-6" PLATFORM MOUNT
SCALE: N.T.S.



RFS APXVAALL24 43-U-NA20 ANTENNA
DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

RFS APX16DWV-16DWV-S-E-A20
DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
WEIGHT: 40.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

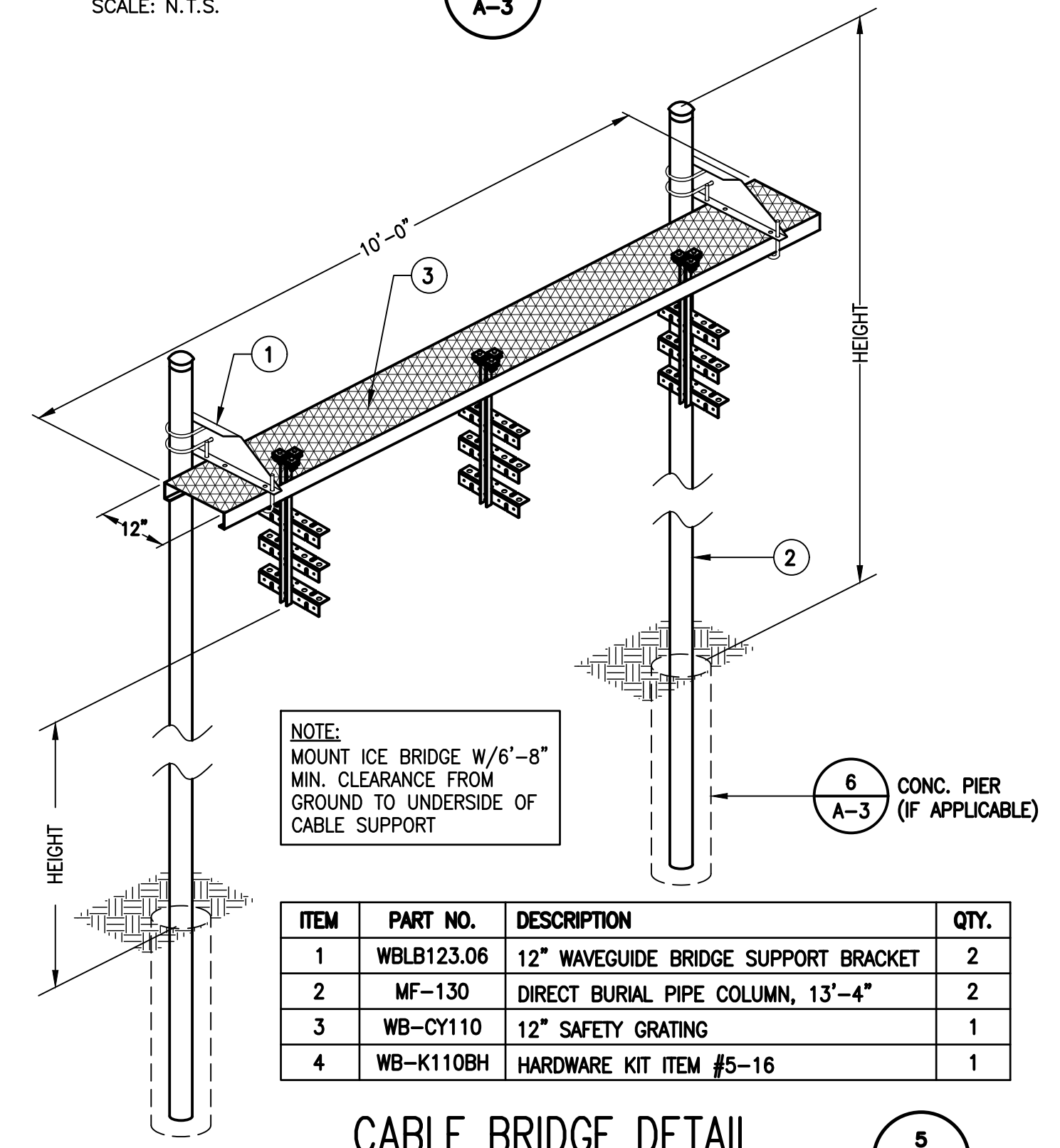
ERICSSON M-MIMO AIR6449 B41 ANTENNA
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS
SCALE: N.T.S.

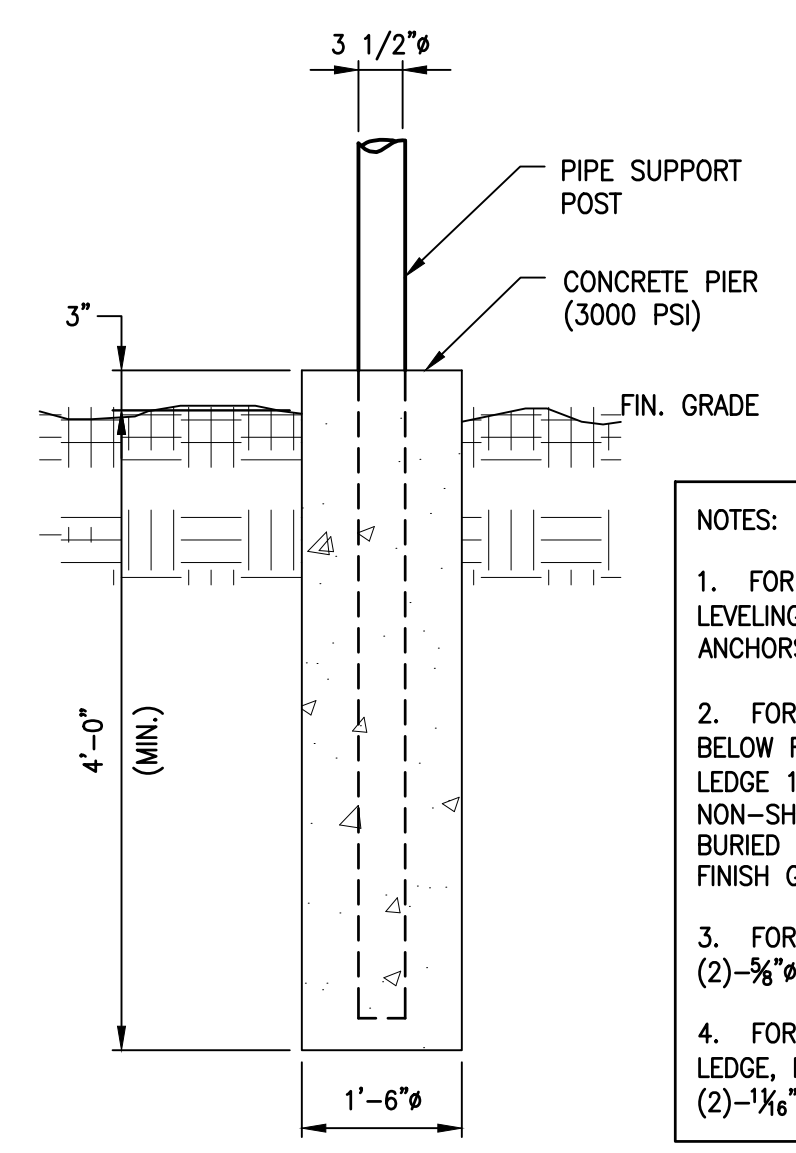
ERICSSON 6160 SITE SUPPORT CABINET
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
WEIGHT: 680.0 lbs
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL
SCALE: N.T.S.

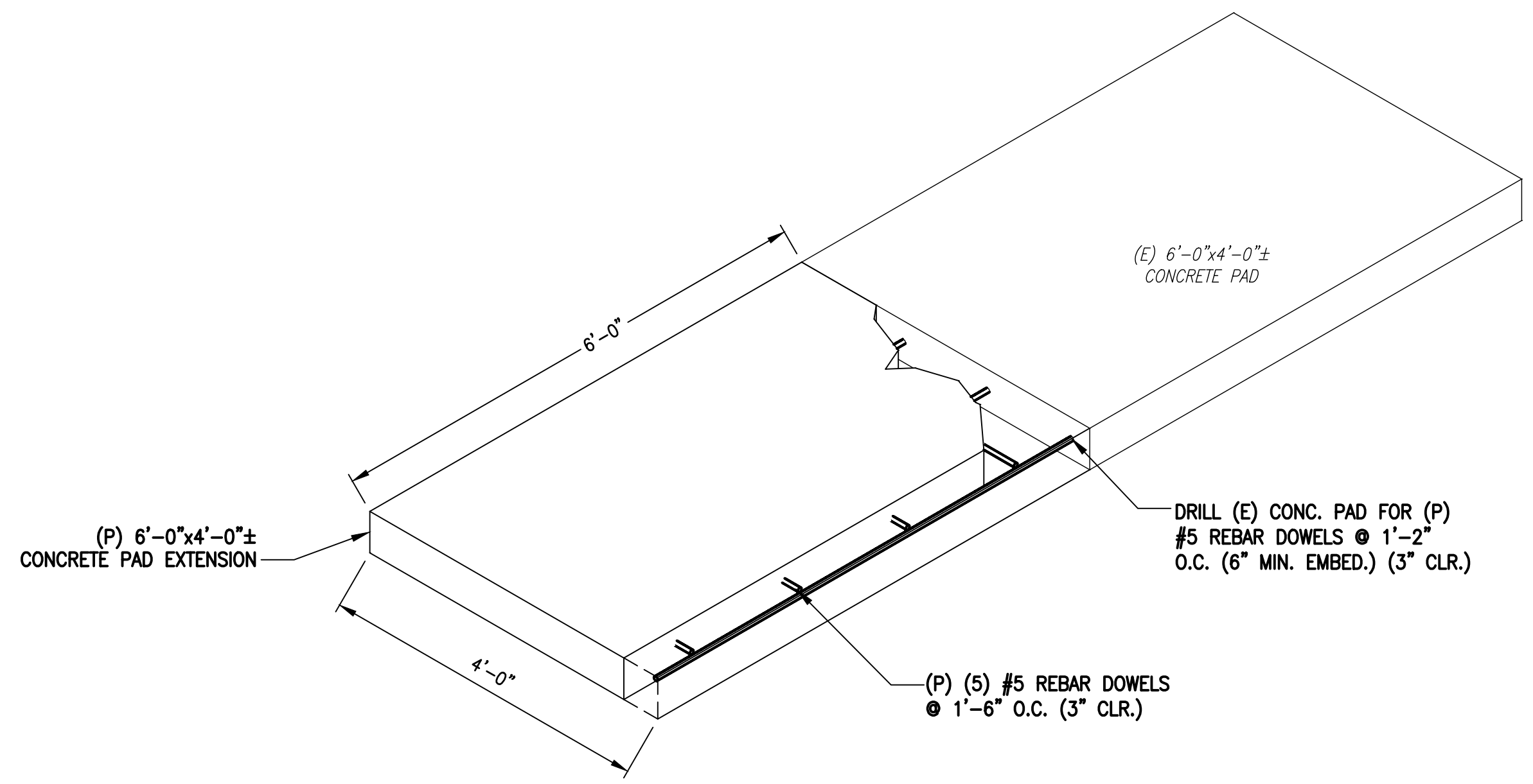


CABLE BRIDGE DETAIL
SCALE: N.T.S.



- NOTES:
- FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-3/8" EXPANSION ANCHORS, (6" LONG).
 - FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8" HOLE INTO LEDGE 18" DEEP. FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE.
 - FOR CONCRETE, FASTEN BASEPLATE WITH (2)-3/8" EXPANSION ANCHORS, (6" LONG).
 - FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x3/8" BASE PLATE WITH (2)-1/8" HOLES @ 6" O.C.

CABLE BRIDGE PIER
SCALE: N.T.S.



CONCRETE PAD EXTENSION
SCALE: N.T.S.

FINAL ANTENNA CONFIGURATION								
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 RFS APX16DW-16DW-S-E-A20	167' ± AGL	90°	0°	2'	L2100	RADIO 4415 B66A	(3) 1-5/8" (6x12) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	167' ± AGL	90°	0°	2'	L700/L600/N600	RADIO 4449 B71+B85	
	A3 ERICSSON M-MIMO AIR6449 B41	167' ± AGL	90°	0°	2'	L1900/G1900	RADIO 4424 B25	
BETA	B1 RFS APX16DW-16DW-S-E-A20	167' ± AGL	210°	0°	2'	L2100	RADIO 4415 B66A	
	B2 RFS APXVAALL24_43-U-NA20	167' ± AGL	210°	0°	2'	L700/L600/N600	RADIO 4449 B71+B85	
	B3 ERICSSON M-MIMO AIR6449 B41	167' ± AGL	210°	0°	2'	L1900/G1900	RADIO 4424 B25	
GAMMA	C1 RFS APX16DW-16DW-S-E-A20	167' ± AGL	330°	0°	2'	L2100	RADIO 4415 B66A	
	C2 RFS APXVAALL24_43-U-NA20	167' ± AGL	330°	0°	2'	L700/L600/N600	RADIO 4449 B71+B85	
	C3 ERICSSON M-MIMO AIR6449 B41	167' ± AGL	330°	0°	2'	L1900/G1900	RADIO 4424 B25	

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

NOTE: RFDS REV4 - 09/23/20

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: NONE EXISTING TO BE REMOVED: (6) 1-5/8" COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 1-5/8" (6x12) HCS FIBER CABLES	

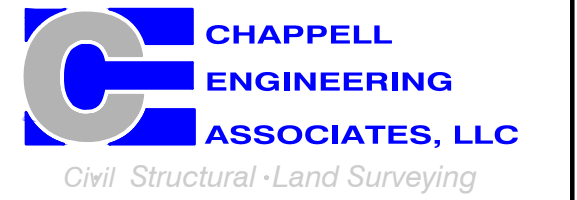
NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

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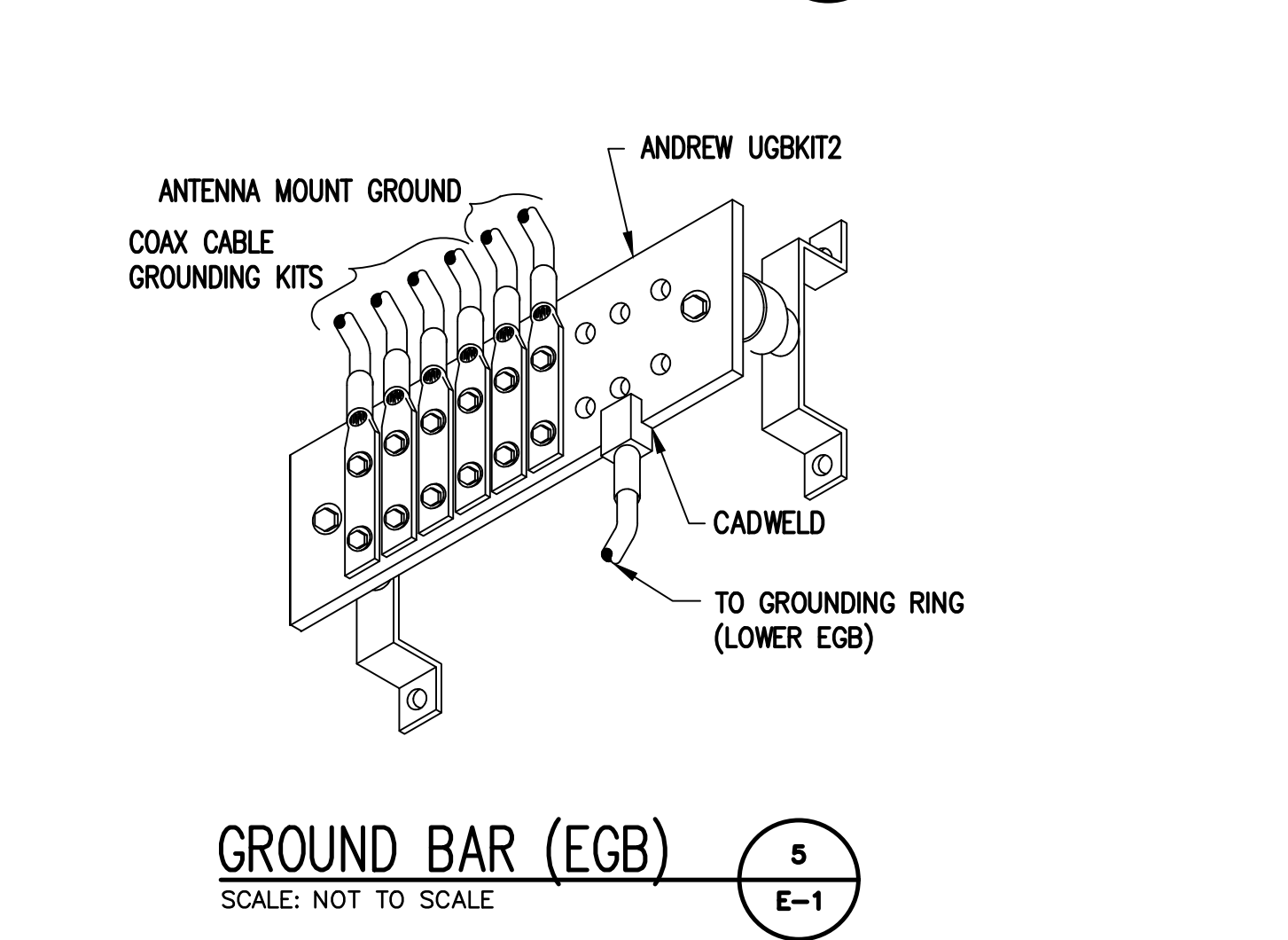
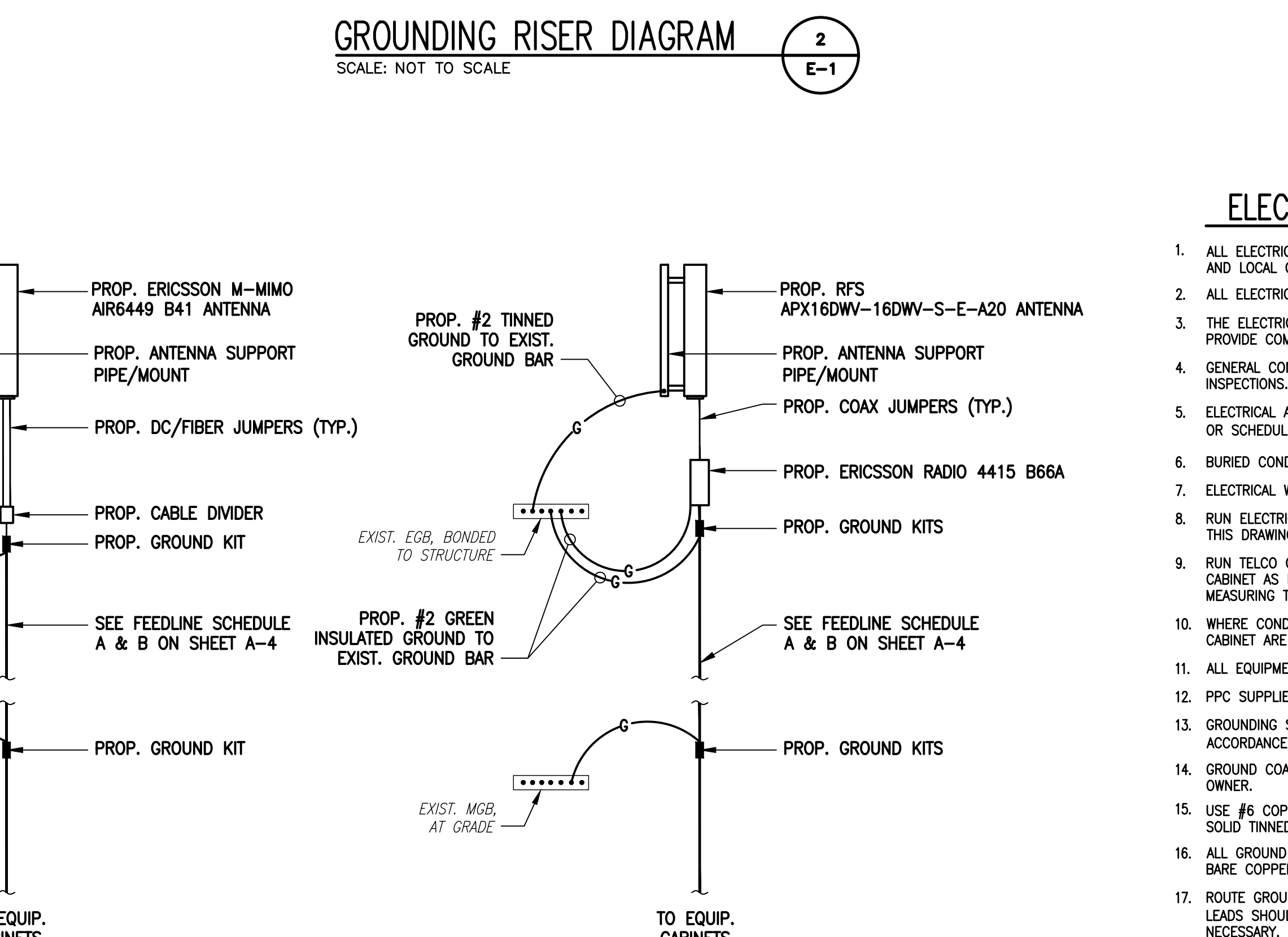
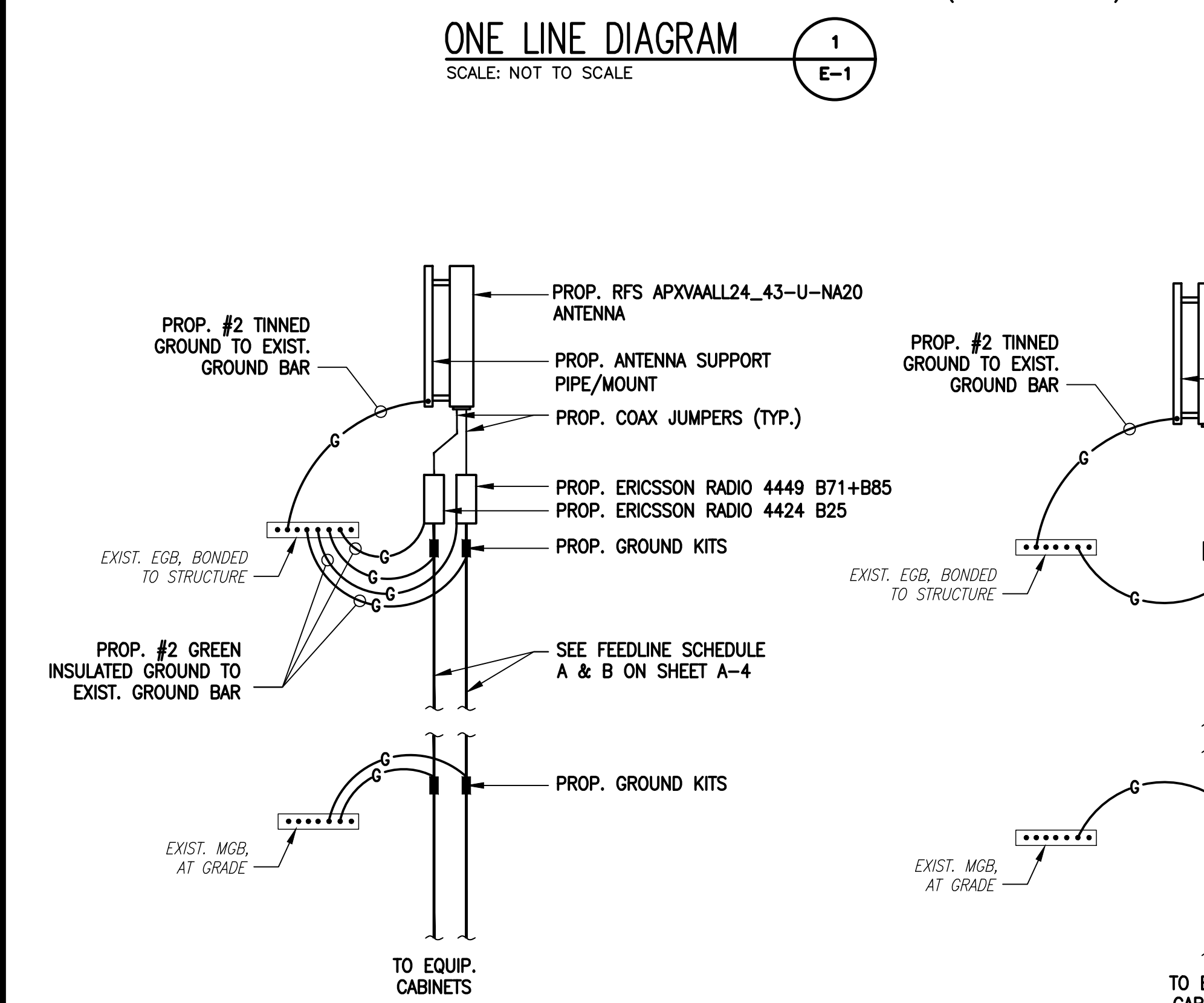
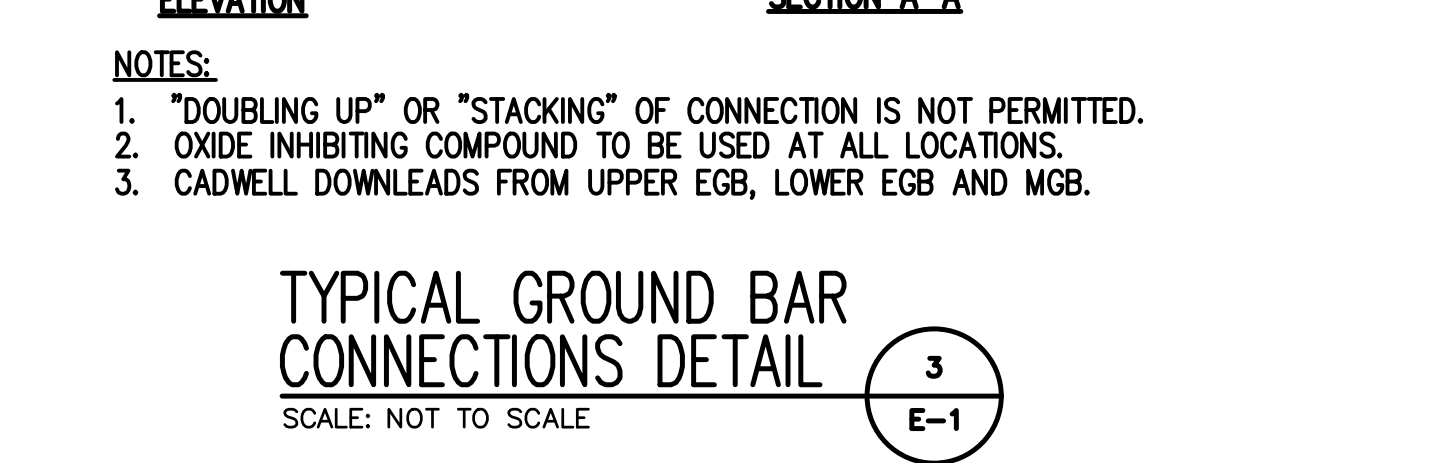
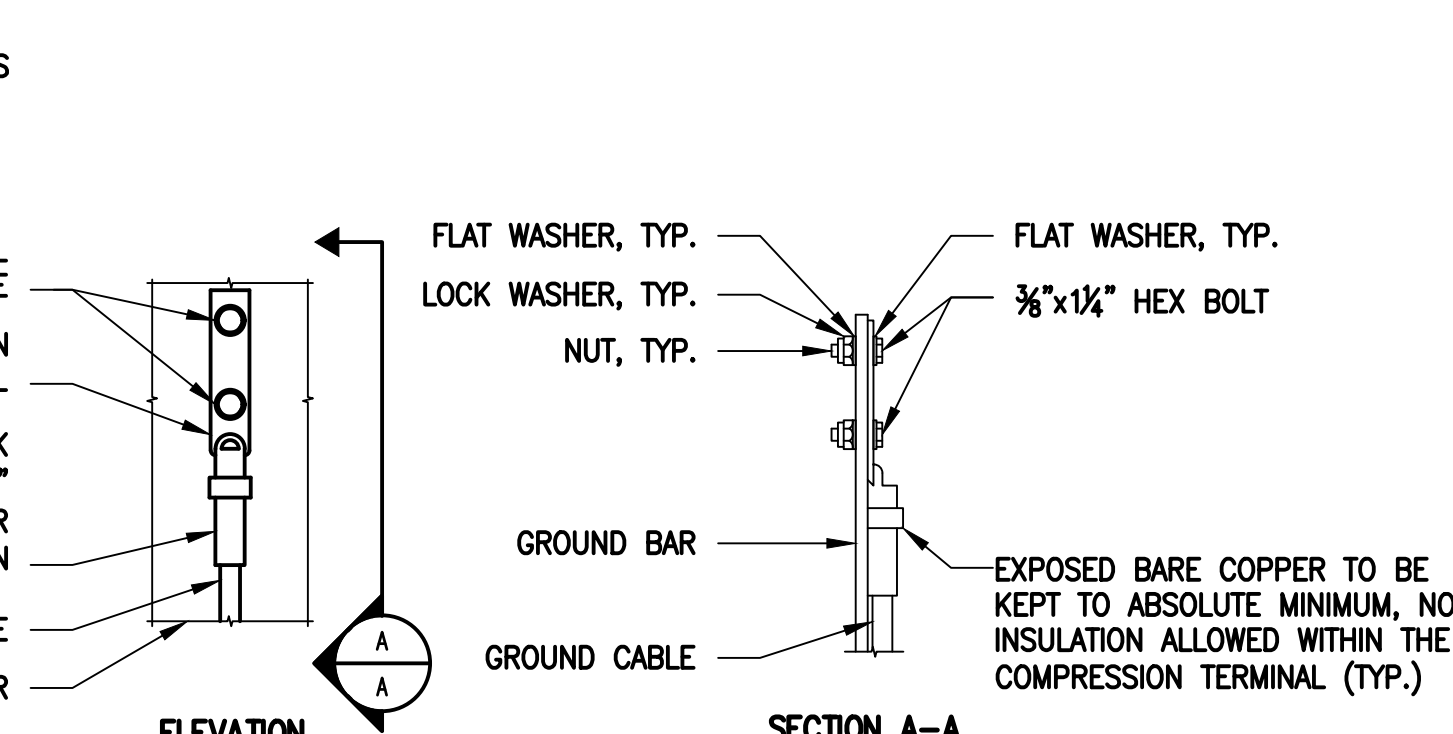
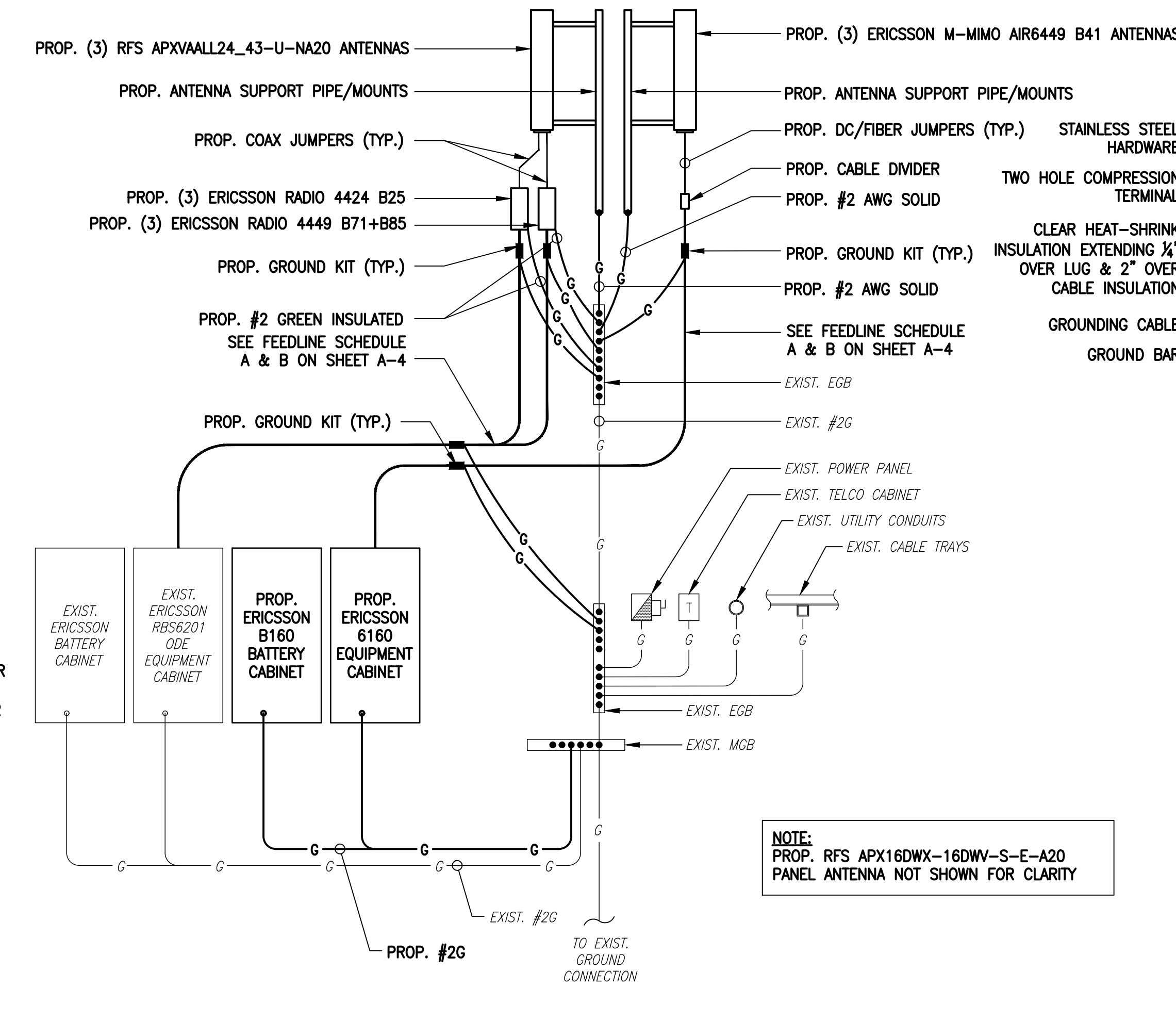
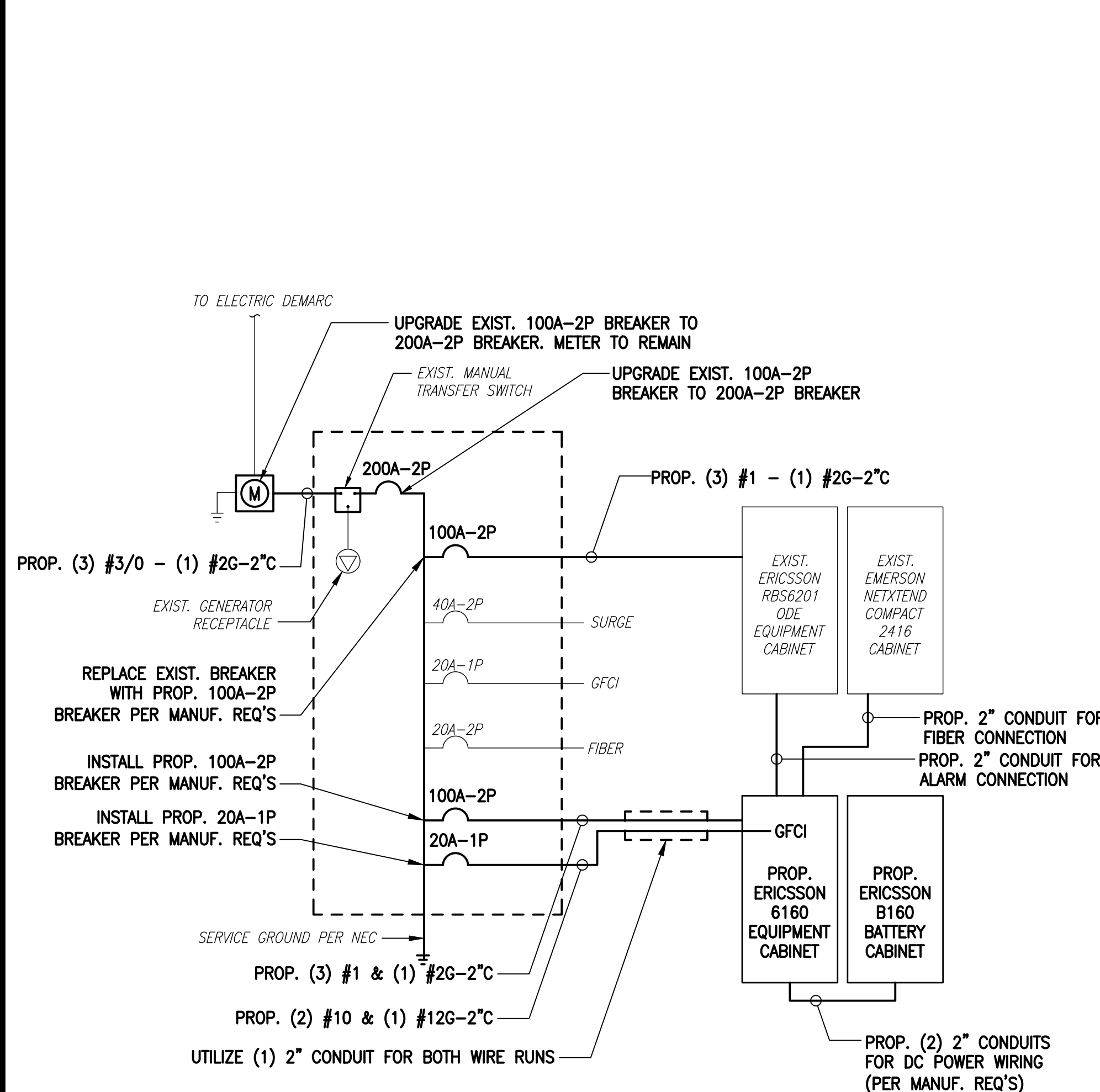
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TOLLAND, CT 06076-4502

SHEET TITLE
ANTENNA &
FEEDLINE CHARTS

SHEET NUMBER
A-4



- ELECTRICAL AND 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 SPECIFICATION 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.
 - BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
 - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
 - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
 - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BITS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
 - WHERE CONDUIT BETWEEN BITS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BITS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
 - ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
 - PPC SUPPLIED BY PROJECT OWNER.
 - GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BITS SITE GROUNDING STANDARDS".
 - 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 HYGROUND 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 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
 - 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.
 - CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
 - CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
 - CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE-OUT.

**T-MOBILE
NORTHEAST LLC**

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**CHAPPELL
ENGINEERING
ASSOCIATES, LLC**
Civil Structural-Land Surveying

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SUBMITTALS

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TOLLAND, CT 06076-4502

SHEET TITLE
**ELECTRIC & GROUNDING
DETAILS**

SHEET NUMBER
E-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 180 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT03111-S

Customer Site Name: Stafford Springs

Carrier Name: T-Mobile (App#: 117039, V2)

Carrier Site ID / Name: CTHA526A / Stafford SBA/30 Old Country Road

Site Location: 30 Old Country Road

Stafford Springs, Connecticut

Tolland County

Latitude: 41.940033

Longitude: -72.237461

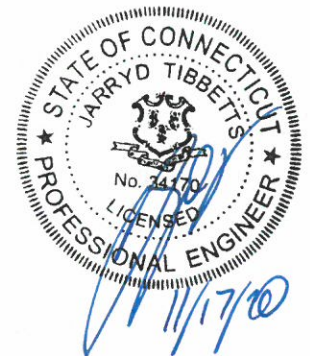
Analysis Result:

Max Structural Usage: 75.6% [Pass]

Max Foundation Usage: 74.0% [Pass]

Additional Usage Caused by New Mount: +8.0%

Report Prepared By: Sital Shrestha



Introduction

The purpose of this report is to summarize the analysis results on the 180 ft 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	Valmont Microflex (Order No. 12303-00) Communication Pole Design Calculations dated August 16, 2000.
Foundation Drawing	Valmont Microflex (Order No. 12303-00) Communication Pole Design Calculations dated August 16, 2000.
Geotechnical Report	Valmont Microflex (Drawing No. 3304-F) foundation design dated August 29, 2000.
Modification Drawings	N/A
Mount Analysis	MA by TES, Project No. # 99616, dated November 16, 2020.

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:	125.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1"1/2 radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2018 IBC
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.178, S_1 = 0.055$

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	177.0	6	LNx-6514DS-A1M - Panel	Platform w/ Hand Rail	(12) 1 5/8" (2) 1 5/8" Fiber	Verizon
2		6	HBXX-6517DS-A2M - Panel			
3		3	Alcatel Lucent RRH2x60-AWS			
4		3	Alcatel Lucent RRH2x60-PCS			
5		1	RFS DB-B1-6C-8AB-OZ			
-	167.0	3	RFS APX16DWV-16DWVS-C	(3) T-Arms	(12) 1 5/8"	T-Mobile
-		3	RFS ATMAA1412D-1A20			
-		3	Double TMA 17/21			
12	157.0	9	P65-17-XLH - Panel	Low Profile Platform	(12) 1 5/8"	AT&T
13		3	AM-X-CW-16-6500T - Panel			
14		3	ADC Cleargain TMAs			
15		3	CCI DTMA BP 7819VG12A			
16		6	Kathrein 860 10025			
17		6	Ericsson RRUS-11			
18		3	Powerwave LGP13519			
19		3	CSS DBC-750			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
6	167.0	3	RFS APX16DWV-16DWVS-E-A20	(1) Low profile platform with HRK (Sitepro RMQP-4096-HRK)	(3) 1 5/8" Coax (3) 1 5/8" Fiber	T-Mobile
7		3	RFS APXVAALL24-43-U-NA20			
8		3	Ericsson AIR6449 B41			
9		3	Ericsson 4449 B71 + B85			
10		3	Ericsson 4424 B25			
11		3	Ericsson 4415 B66A			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	75.6%	63.2%	45.8%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5418.2	42.3	91.9

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):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.3133 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

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

Usage Diagram - Max Ratio 75.63% at 98.0ft

Structure: CT03111-S-SBA
Site Name: Stafford Springs
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

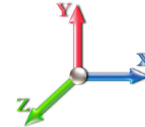
11/17/2020

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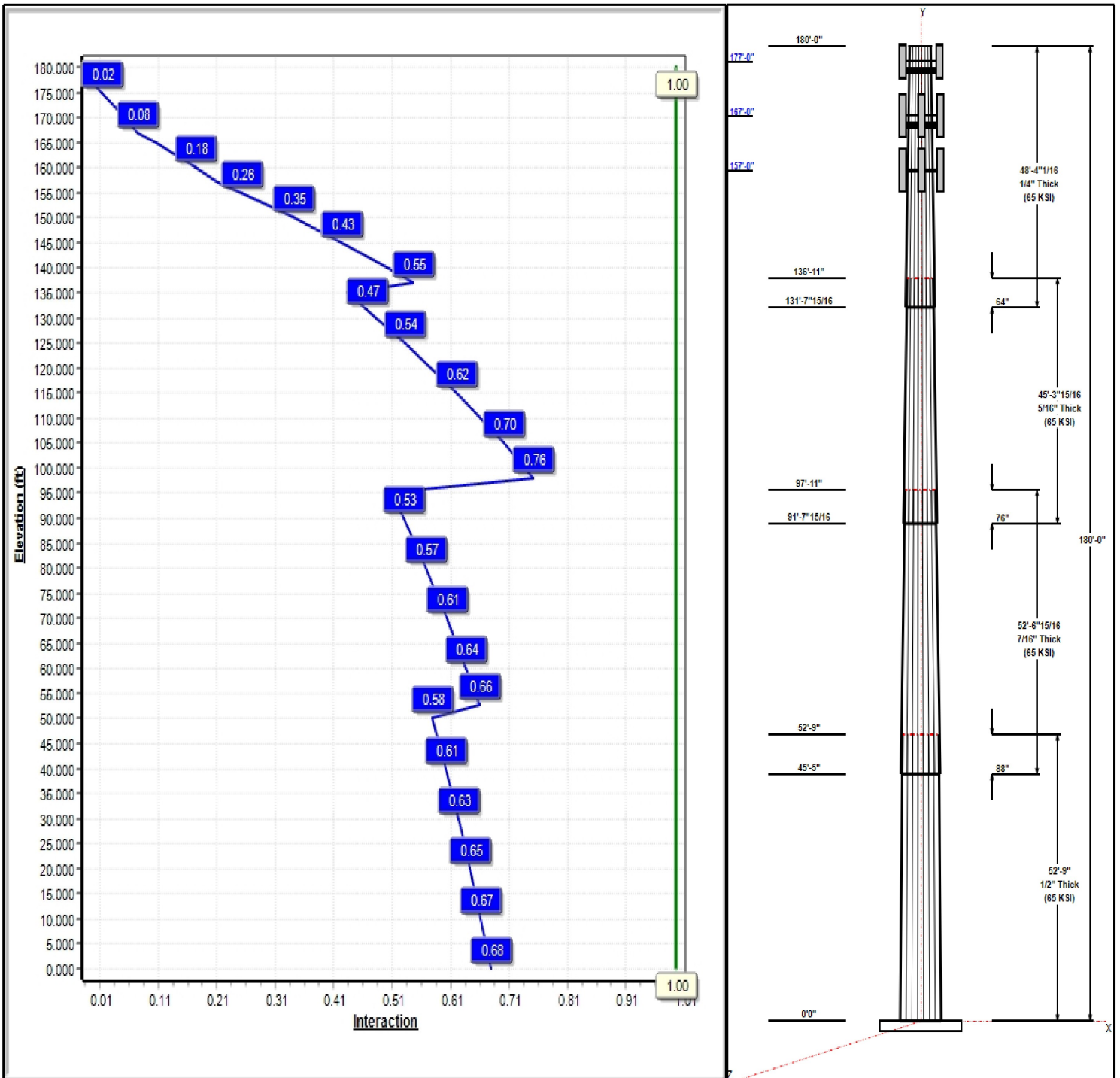
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 125 mph Wind



Iterations: 25

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Structure: CT03111-S-SBA

Type: Tapered
Site Name: Stafford Springs
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.19500

11/17/2020



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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.75	49.71	60.00	0.500		0.19500	65
2	52.58	41.77	52.02	0.438	Slip	0.19500	65
3	45.33	34.79	43.63	0.313	Slip	0.19500	65
4	48.34	26.90	36.33	0.250	Slip	0.19500	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
177.00	177.00	6	LNX-6514DS-A1M	Verizon
177.00	177.00	6	HBXX-6517DS-A2M	Verizon
177.00	177.00	3	Alcatel Lucent	Verizon
177.00	177.00	3	Alcatel Lucent	Verizon
177.00	177.00	1	RFS DB-B1-6C-8AB-0Z	Verizon
177.00	177.00	1	Platform w/ Hand Rail	Verizon
167.00	167.00	3	APXVAALL24-43-U-NA20	T-Mobile
167.00	167.00	3	Ericsson Radio 4449	T-Mobile
167.00	167.00	1	RMQP-4096-HK	T-Mobile
167.00	167.00	3	APX16DWV-16DWVS-C-A	T-Mobile
167.00	167.00	3	AIR6449 B41	T-Mobile
167.00	167.00	3	RRUS 4424 B25	T-Mobile
167.00	167.00	3	4415 B66A	T-Mobile
157.00	157.00	1	Low Profile Platform	AT&T
157.00	157.00	9	P65-17-XLH	AT&T
157.00	157.00	3	AM-X-CW-16-6500T	AT&T
157.00	157.00	3	ADC Cleargain TMAs	AT&T
157.00	157.00	3	CCI DTMABP 7819VG12A	AT&T
157.00	157.00	6	Kathrein 860 10025	AT&T
157.00	157.00	6	Ericsson RRUS-11	AT&T
157.00	157.00	3	Powerwave LGP13519	AT&T
157.00	157.00	3	CSS DBC-750	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1 5/8" Coax	Verizon
0.00	177.00	Inside	1 5/8" Fiber	Verizon
0.00	167.00	Inside	1 5/8" Coax	T-Mobile
0.00	167.00	Inside	1 5/8" Fiber	T-Mobile
0.00	167.00	Outside	Safety Cable	
0.00	167.00	Outside	Step bolts (ladder)	
0.00	157.00	Inside	1 5/8" Coax	AT&T

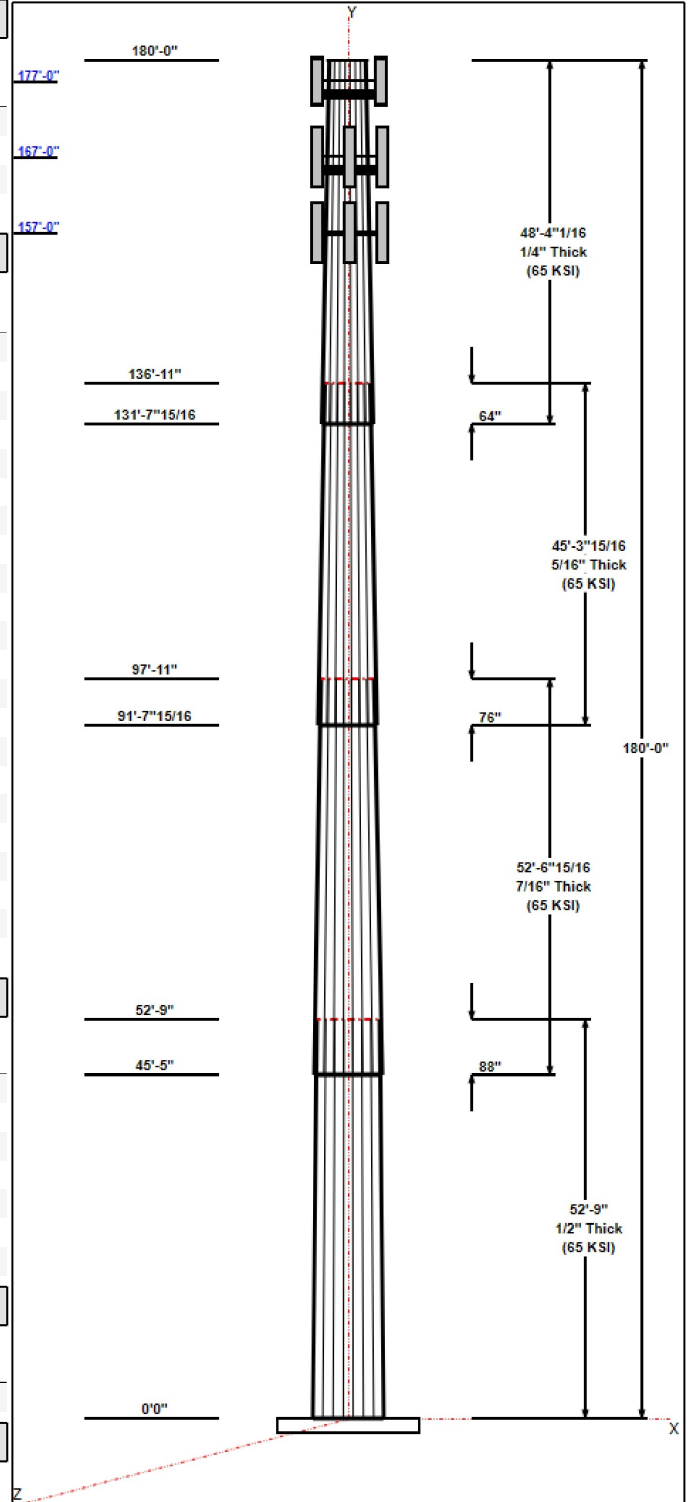
Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	74.6	60.0	Round

Reactions



Structure: CT03111-S-SBA

Type: Tapered
Site Name: Stafford Springs
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.19500

11/17/2020

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Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 125 mph Wind	5418.2	42.3	62.7
0.9D + 1.0W 125 mph Wind	5357.7	42.3	47.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1413.7	10.9	91.9
1.2D + 1.0Ev + 1.0Eh	141.3	0.9	64.8
0.9D + 1.0Ev + 1.0Eh	140.3	0.9	49.1
1.0D + 1.0W 60 mph Wind	1110.4	8.7	52.3

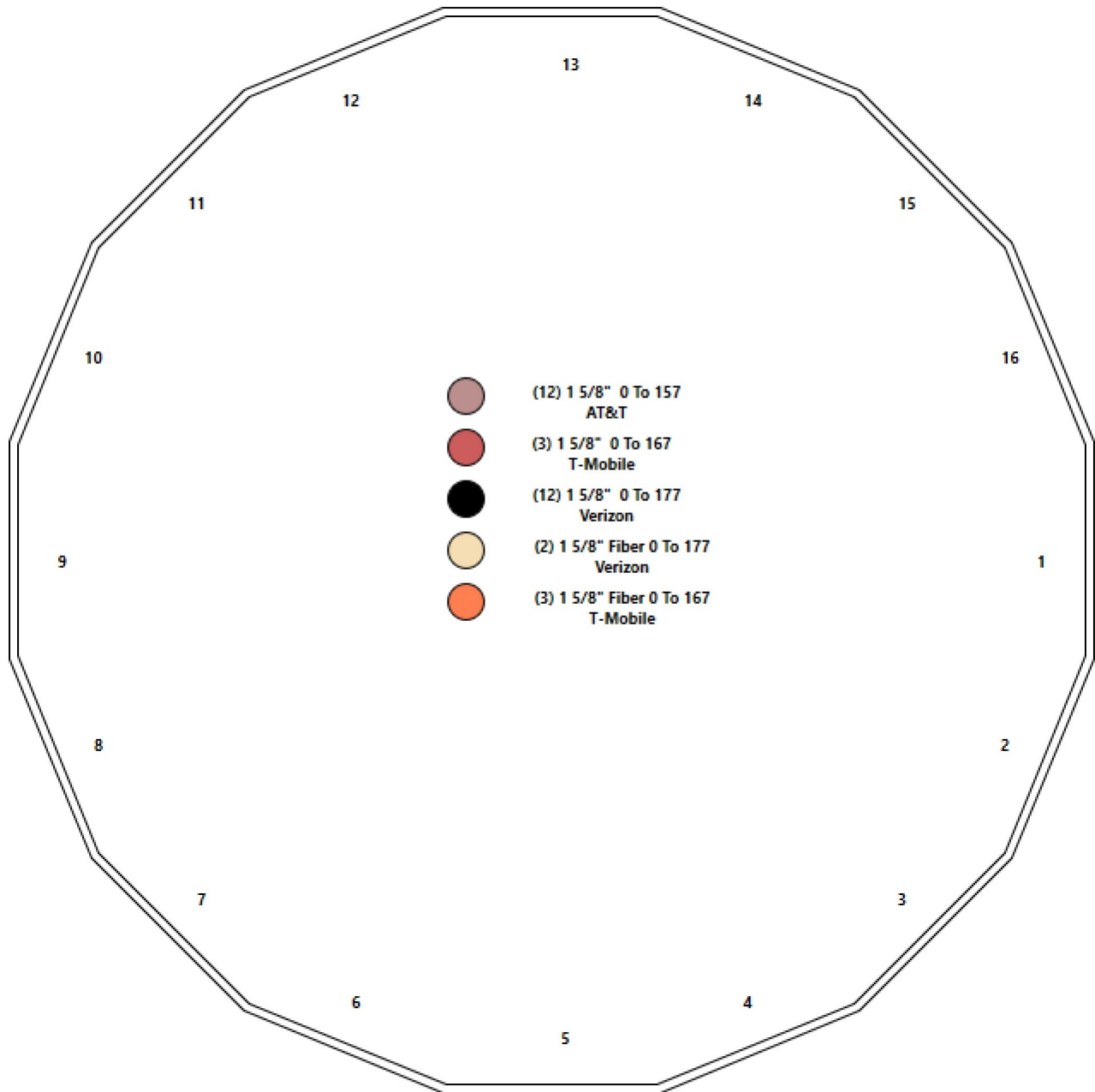
Structure: CT03111-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Stafford Springs
Height: 180.00 (ft)

11/17/2020



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Shaft Properties

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	52.750	0.5000	65		0.00	15,562
2	16	52.580	0.4375	65	Slip	88.00	11,600
3	16	45.330	0.3125	65	Slip	76.00	5,980
4	16	48.340	0.2500	65	Slip	64.00	4,114
Total Shaft Weight:							37,257

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	60.00	0.00	94.90	42444.94	22.28	120.00	49.71	52.75	78.50	24017.8	18.19	99.43	0.195000
2	52.02	45.42	71.99	24196.84	22.06	118.90	41.77	98.00	57.68	12445.7	17.40	95.46	0.195000
3	43.63	91.66	43.18	10233.27	26.18	139.60	34.79	136.99	34.37	5159.68	20.55	111.3	0.195000
4	36.33	131.6	28.77	4730.54	27.31	145.31	26.90	180.00	21.25	1906.94	19.81	107.6	0.195000

Load Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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	177.00	LNX-6514DS-A1M	6	38.40	8.17	0.83	217.62	11.040	0.83	0.00	0.00
2	177.00	HBXX-6517DS-A2M	6	40.80	8.55	0.77	219.99	11.517	0.77	0.00	0.00
3	177.00	Alcatel Lucent RRH2x60-AWS	3	55.00	3.50	0.67	136.35	4.302	0.67	0.00	0.00
4	177.00	Alcatel Lucent RRH2x60-PCS	3	55.00	2.20	0.67	141.28	2.848	0.67	0.00	0.00
5	177.00	RFS DB-B1-6C-8AB-0Z	1	21.40	4.10	1.00	142.00	4.915	1.00	0.00	0.00
6	177.00	Platform w/ Hand Rail	1	1600.00	32.00	1.00	3734.89	60.390	1.00	0.00	0.00
7	167.00	APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	545.82	22.161	0.70	0.00	0.00
8	167.00	Ericsson Radio 4449 B71+B85	3	75.00	1.65	0.67	144.18	2.194	0.67	0.00	0.00
9	167.00	RMQP-4096-HK	1	2645.00	51.70	1.00	5444.55	90.369	1.00	0.00	0.00
10	167.00	APX16DWV-16DWVS-C-A20	3	40.70	6.46	0.62	156.95	8.653	0.62	0.00	0.00
11	167.00	AIR6449 B41	3	103.00	5.65	0.71	241.60	6.611	0.71	0.00	0.00
12	167.00	RRUS 4424 B25	3	88.00	1.64	0.67	167.48	2.161	0.67	0.00	0.00
13	167.00	4415 B66A	3	46.20	1.64	0.67	87.93	2.161	0.67	0.00	0.00
14	157.00	Low Profile Platform	1	1500.00	22.00	1.00	2814.90	39.742	1.00	0.00	0.00
15	157.00	P65-17-XLH	9	59.00	11.44	0.75	276.59	14.689	0.75	0.00	0.00
16	157.00	AM-X-CW-16-6500T	3	41.80	8.02	0.75	204.84	10.826	0.75	0.00	0.00
17	157.00	ADC Cleargain TMAs	3	12.10	1.28	0.62	37.30	2.095	0.62	0.00	0.00
18	157.00	CCI DTMAPB 7819VG12A	3	19.20	1.14	0.67	44.84	1.913	0.67	0.00	0.00
19	157.00	Kathrein 860 10025	6	1.20	0.18	0.92	7.22	0.561	0.92	0.00	0.00
20	157.00	Ericsson RRUS-11	6	51.00	2.52	0.67	123.60	3.156	0.67	0.00	0.00
21	157.00	Powerwave LGP13519	3	5.30	0.34	1.00	14.84	0.796	1.00	0.00	0.00
22	157.00	CSS DBC-750	3	4.80	0.51	1.00	14.51	1.042	1.00	0.00	0.00
Totals:			76	9,092.50			23,850.04				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(12) 1 5/8" Coax	0.00	Inside
0.00	177.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	167.00	(3) 1 5/8" Coax	0.00	Inside
0.00	167.00	(3) 1 5/8" Fiber	0.00	Inside
0.00	167.00	(1) Safety Cable	0.38	Outside
0.00	167.00	(2) Step bolts (ladder)	0.63	Outside
0.00	157.00	(12) 1 5/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.5000	60.000	94.903	42444.9	22.28	120.00	77.4	1387.	0.0
5.00		0.5000	59.025	93.347	40392.4	21.89	118.05	77.8	1342.	1601.4
10.00		0.5000	58.050	91.792	38407.1	21.50	116.10	78.2	1297.	1575.0
15.00		0.5000	57.075	90.237	36487.9	21.11	114.15	78.7	1254.	1548.5
20.00		0.5000	56.100	88.682	34633.7	20.73	112.20	79.1	1211.	1522.1
25.00		0.5000	55.125	87.127	32843.5	20.34	110.25	79.6	1168.	1495.6
30.00		0.5000	54.150	85.572	31116.0	19.95	108.30	80.0	1127.	1469.1
35.00		0.5000	53.175	84.017	29450.2	19.56	106.35	80.4	1086.	1442.7
40.00		0.5000	52.200	82.462	27845.0	19.18	104.40	80.9	1046.	1416.2
45.00		0.5000	51.225	80.906	26299.1	18.79	102.45	81.3	1007.	1389.8
45.42	Bot - Section 2	0.5000	51.144	80.777	26172.9	18.75	102.29	81.3	1003.	114.6
50.00		0.5000	50.250	79.351	24811.6	18.40	100.50	81.8	968.6	2361.7
52.75	Top - Section 1	0.4375	50.589	69.992	22239.7	21.41	115.63	0.0	0.0	1397.0
55.00		0.4375	50.150	69.380	21661.1	21.21	114.63	78.6	847.3	533.5
60.00		0.4375	49.175	68.019	20411.4	20.77	112.40	79.1	814.2	1168.8
65.00		0.4375	48.200	66.659	19210.7	20.32	110.17	79.6	781.8	1145.7
70.00		0.4375	47.225	65.298	18058.1	19.88	107.94	80.1	750.1	1122.5
75.00		0.4375	46.250	63.937	16952.6	19.44	105.71	80.6	719.0	1099.4
80.00		0.4375	45.275	62.576	15893.1	18.99	103.49	81.1	688.6	1076.2
85.00		0.4375	44.300	61.216	14878.6	18.55	101.26	81.6	658.8	1053.1
90.00		0.4375	43.325	59.855	13908.3	18.11	99.03	82.1	629.7	1029.9
91.66	Bot - Section 3	0.4375	43.001	59.402	13595.2	17.96	98.29	82.3	620.2	337.5
95.00		0.4375	42.350	58.494	12981.2	17.66	96.80	82.6	601.3	1155.8
98.00	Top - Section 2	0.3125	42.391	41.947	9382.6	25.39	135.65	0.0	0.0	1023.0
100.00		0.3125	42.000	41.557	9123.7	25.14	134.40	74.1	426.1	284.6
105.00		0.3125	41.025	40.585	8498.4	24.52	131.28	74.8	406.3	698.8
110.00		0.3125	40.050	39.613	7902.4	23.90	128.16	75.5	387.0	682.2
115.00		0.3125	39.075	38.641	7334.8	23.28	125.04	76.2	368.2	665.7
120.00		0.3125	38.100	37.669	6795.2	22.66	121.92	76.9	349.8	649.2
125.00		0.3125	37.125	36.697	6282.6	22.04	118.80	77.6	332.0	632.6
130.00		0.3125	36.150	35.726	5796.5	21.42	115.68	78.3	314.5	616.1
131.66	Bot - Section 4	0.3125	35.826	35.403	5640.9	21.21	114.64	78.6	308.9	200.9
135.00		0.3125	35.175	34.754	5336.2	20.80	112.56	79.0	297.6	722.7
136.99	Top - Section 3	0.2500	35.286	27.941	4333.1	26.48	141.15	0.0	0.0	425.0
140.00		0.2500	34.700	27.474	4119.2	26.02	138.80	73.1	232.9	283.5
145.00		0.2500	33.725	26.696	3779.3	25.24	134.90	74.0	219.8	460.8
150.00		0.2500	32.750	25.919	3458.6	24.47	131.00	74.9	207.2	447.6
155.00		0.2500	31.775	25.141	3156.5	23.69	127.10	75.8	194.9	434.4
157.00		0.2500	31.385	24.830	3040.8	23.38	125.54	76.1	190.1	170.0
160.00		0.2500	30.800	24.364	2872.6	22.91	123.20	76.6	182.9	251.1
165.00		0.2500	29.825	23.586	2606.3	22.14	119.30	77.5	171.4	407.9
167.00		0.2500	29.435	23.275	2504.5	21.83	117.74	77.9	166.9	159.5
170.00		0.2500	28.850	22.809	2356.9	21.36	115.40	78.4	160.3	235.2
175.00		0.2500	27.875	22.031	2124.0	20.59	111.50	79.3	149.5	381.4
177.00		0.2500	27.485	21.720	2035.3	20.28	109.94	79.6	145.3	148.9
180.00		0.2500	26.900	21.253	1906.9	19.81	107.60	80.2	139.1	219.3

37256.8

Wind Loading - Shaft

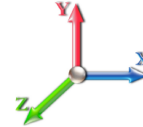
Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0W 125 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	31.313	34.44	578.47	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	31.313	34.44	569.07	0.750	0.000	5.00	25.283	18.96	653.1	0.0	1921.7
10.00		1.00	0.85	31.313	34.44	559.67	0.750	0.000	5.00	24.868	18.65	642.4	0.0	1890.0
15.00		1.00	0.85	31.313	34.44	550.27	0.750	0.000	5.00	24.454	18.34	631.7	0.0	1858.2
20.00		1.00	0.90	33.224	36.55	557.13	0.750	0.000	5.00	24.040	18.03	658.9	0.0	1826.5
25.00		1.00	0.95	34.823	38.30	560.46	0.750	0.000	5.00	23.626	17.72	678.7	0.0	1794.7
30.00		1.00	0.98	36.185	39.80	561.21	0.750	0.000	5.00	23.212	17.41	692.9	0.0	1763.0
35.00		1.00	1.01	37.379	41.12	560.12	0.750	0.000	5.00	22.797	17.10	703.0	0.0	1731.2
40.00		1.00	1.04	38.444	42.29	557.64	0.750	0.000	5.00	22.383	16.79	709.9	0.0	1699.5
45.00		1.00	1.07	39.410	43.35	554.05	0.750	0.000	5.00	21.969	16.48	714.3	0.0	1667.7
45.42 Bot - Section 2		1.00	1.07	39.486	43.43	553.70	0.750	0.000	0.42	1.812	1.36	59.0	0.0	137.5
50.00		1.00	1.09	40.294	44.32	549.56	0.750	0.000	4.58	20.083	15.06	667.6	0.0	2834.0
52.75 Top - Section 1		1.00	1.11	40.750	44.83	546.77	0.750	0.000	2.75	11.883	8.91	399.5	0.0	1676.4
55.00		1.00	1.12	41.110	45.22	554.00	0.750	0.000	2.25	9.629	7.22	326.6	0.0	640.2
60.00		1.00	1.14	41.870	46.06	548.23	0.750	0.000	5.00	21.098	15.82	728.8	0.0	1402.6
65.00		1.00	1.16	42.582	46.84	541.90	0.750	0.000	5.00	20.684	15.51	726.6	0.0	1374.8
70.00		1.00	1.17	43.251	47.58	535.10	0.750	0.000	5.00	20.270	15.20	723.3	0.0	1347.1
75.00		1.00	1.19	43.884	48.27	527.87	0.750	0.000	5.00	19.855	14.89	718.9	0.0	1319.3
80.00		1.00	1.21	44.484	48.93	520.27	0.750	0.000	5.00	19.441	14.58	713.5	0.0	1291.5
85.00		1.00	1.22	45.056	49.56	512.32	0.750	0.000	5.00	19.027	14.27	707.3	0.0	1263.7
90.00		1.00	1.24	45.601	50.16	504.07	0.750	0.000	5.00	18.613	13.96	700.2	0.0	1235.9
91.66 Bot - Section 3		1.00	1.24	45.777	50.36	501.26	0.750	0.000	1.66	6.100	4.58	230.4	0.0	405.0
95.00		1.00	1.25	46.123	50.74	495.54	0.750	0.000	3.34	12.276	9.21	467.1	0.0	1387.0
98.00 Top - Section 2		1.00	1.26	46.426	51.07	490.30	0.750	0.000	3.00	10.868	8.15	416.2	0.0	1227.6
100.00		1.00	1.27	46.624	51.29	494.10	0.750	0.000	2.00	7.182	5.39	276.3	0.0	341.5
105.00		1.00	1.28	47.105	51.82	485.12	0.750	0.000	5.00	17.636	13.23	685.4	0.0	838.5
110.00		1.00	1.29	47.569	52.33	475.91	0.750	0.000	5.00	17.222	12.92	675.8	0.0	818.7
115.00		1.00	1.30	48.016	52.82	466.50	0.750	0.000	5.00	16.807	12.61	665.8	0.0	798.8
120.00		1.00	1.32	48.448	53.29	456.91	0.750	0.000	5.00	16.393	12.29	655.2	0.0	779.0
125.00		1.00	1.33	48.867	53.75	447.13	0.750	0.000	5.00	15.979	11.98	644.2	0.0	759.2
130.00		1.00	1.34	49.272	54.20	437.19	0.750	0.000	5.00	15.565	11.67	632.7	0.0	739.3
131.66 Bot - Section 4		1.00	1.34	49.404	54.34	433.85	0.750	0.000	1.66	5.076	3.81	206.9	0.0	241.1
135.00		1.00	1.35	49.665	54.63	427.09	0.750	0.000	3.34	10.216	7.66	418.6	0.0	867.3
136.99 Top - Section 3		1.00	1.35	49.818	54.80	423.02	0.750	0.000	1.99	6.009	4.51	247.0	0.0	510.0
140.00		1.00	1.36	50.046	55.05	422.94	0.750	0.000	3.01	8.939	6.70	369.1	0.0	340.2
145.00		1.00	1.37	50.418	55.46	412.58	0.750	0.000	5.00	14.534	10.90	604.6	0.0	553.0
150.00		1.00	1.38	50.779	55.86	402.08	0.750	0.000	5.00	14.120	10.59	591.5	0.0	537.1
155.00		1.00	1.39	51.130	56.24	391.46	0.750	0.000	5.00	13.706	10.28	578.2	0.0	521.2
157.00 Appurtenance(s)		1.00	1.39	51.269	56.40	387.18	0.750	0.000	2.00	5.366	4.02	227.0	0.0	204.0
160.00		1.00	1.40	51.473	56.62	380.72	0.750	0.000	3.00	7.925	5.94	336.6	0.0	301.3
165.00		1.00	1.41	51.808	56.99	369.86	0.750	0.000	5.00	12.878	9.66	550.4	0.0	489.5
167.00 Appurtenance(s)		1.00	1.41	51.939	57.13	365.49	0.750	0.000	2.00	5.035	3.78	215.8	0.0	191.3
170.00		1.00	1.42	52.135	57.35	358.90	0.750	0.000	3.00	7.428	5.57	319.5	0.0	282.3
175.00		1.00	1.42	52.454	57.70	347.83	0.750	0.000	5.00	12.049	9.04	521.4	0.0	457.7
177.00 Appurtenance(s)		1.00	1.43	52.579	57.84	343.37	0.750	0.000	2.00	4.704	3.53	204.0	0.0	178.6
180.00		1.00	1.43	52.766	58.04	336.66	0.750	0.000	3.00	6.931	5.20	301.7	0.0	263.2

Wind Loading - Shaft

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	180.00	23,597.7	44,708.2
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Discrete Appurtenance Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

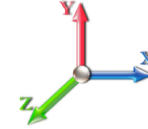


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Load Case: 1.2D + 1.0W 125 mph Wind

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	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	177.00	Alcatel Lucent	3	52.579	57.837	0.50	0.75	5.28	198.00	0.000	0.000	305.16	0.00	0.00	
2	177.00	LNx-6514DS-A1M	6	52.579	57.837	0.62	0.75	30.51	276.48	0.000	0.000	1764.90	0.00	0.00	
3	177.00	HBXX-6517DS-A2M	6	52.579	57.837	0.58	0.75	29.63	293.76	0.000	0.000	1713.47	0.00	0.00	
4	177.00	Platform w/ Hand Rail	1	52.579	57.837	1.00	1.00	32.00	1920.00	0.000	0.000	1850.79	0.00	0.00	
5	177.00	Alcatel Lucent	3	52.579	57.837	0.50	0.75	3.32	198.00	0.000	0.000	191.82	0.00	0.00	
6	177.00	RFS DB-B1-6C-8AB-0Z	1	52.579	57.837	0.75	0.75	3.08	25.68	0.000	0.000	177.85	0.00	0.00	
7	167.00	4415 B66A	3	51.939	57.133	0.50	0.75	2.47	166.32	0.000	0.000	141.25	0.00	0.00	
8	167.00	RRUS 4424 B25	3	51.939	57.133	0.50	0.75	2.47	316.80	0.000	0.000	141.25	0.00	0.00	
9	167.00	AIR6449 B41	3	51.939	57.133	0.53	0.75	9.03	370.80	0.000	0.000	515.68	0.00	0.00	
10	167.00	APX16DWV-16DWVS-C-	3	51.939	57.133	0.47	0.75	9.01	146.52	0.000	0.000	514.87	0.00	0.00	
11	167.00	RMQP-4096-HK	1	51.939	57.133	1.00	1.00	51.70	3174.00	0.000	0.000	2953.80	0.00	0.00	
12	167.00	Ericsson Radio 4449	3	51.939	57.133	0.50	0.75	2.49	270.00	0.000	0.000	142.11	0.00	0.00	
13	167.00	APXVAALL24-43-U-NA20	3	51.939	57.133	0.52	0.75	31.88	442.08	0.000	0.000	1821.30	0.00	0.00	
14	157.00	CSS DBC-750	3	51.269	56.396	0.80	0.80	1.22	17.28	0.000	0.000	69.03	0.00	0.00	
15	157.00	Powerwave LGP13519	3	51.269	56.396	0.80	0.80	0.82	19.08	0.000	0.000	46.02	0.00	0.00	
16	157.00	Ericsson RRUS-11	6	51.269	56.396	0.54	0.80	8.10	367.20	0.000	0.000	457.05	0.00	0.00	
17	157.00	Kathrein 860 10025	6	51.269	56.396	0.74	0.80	0.79	8.64	0.000	0.000	44.83	0.00	0.00	
18	157.00	CCI DTMABP 7819VG12A	3	51.269	56.396	0.54	0.80	1.83	69.12	0.000	0.000	103.38	0.00	0.00	
19	157.00	ADC Cleargain TMAs	3	51.269	56.396	0.50	0.80	1.90	43.56	0.000	0.000	107.41	0.00	0.00	
20	157.00	AM-X-CW-16-6500T	3	51.269	56.396	0.60	0.80	14.44	150.48	0.000	0.000	814.13	0.00	0.00	
21	157.00	P65-17-XLH	9	51.269	56.396	0.60	0.80	61.78	637.20	0.000	0.000	3483.89	0.00	0.00	
22	157.00	Low Profile Platform	1	51.269	56.396	1.00	1.00	22.00	1800.00	0.000	0.000	1240.70	0.00	0.00	
Totals:									10,911.00						18,600.68

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 125 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		653.13	2135.52	0.00	0.00
10.00		642.43	2103.77	0.00	0.00
15.00		631.73	2072.01	0.00	0.00
20.00		658.94	2040.26	0.00	0.00
25.00		678.74	2008.51	0.00	0.00
30.00		692.93	1976.76	0.00	0.00
35.00		703.01	1945.01	0.00	0.00
40.00		709.92	1913.26	0.00	0.00
45.00		714.28	1881.51	0.00	0.00
45.42		59.03	155.36	0.00	0.00
50.00		667.62	3030.01	0.00	0.00
52.75		399.50	1793.99	0.00	0.00
55.00		326.59	736.45	0.00	0.00
60.00		728.79	1616.42	0.00	0.00
65.00		726.62	1588.63	0.00	0.00
70.00		723.27	1560.85	0.00	0.00
75.00		718.85	1533.07	0.00	0.00
80.00		713.49	1505.29	0.00	0.00
85.00		707.26	1477.51	0.00	0.00
90.00		700.23	1449.73	0.00	0.00
91.66		230.38	476.12	0.00	0.00
95.00		467.11	1529.69	0.00	0.00
98.00		416.25	1355.74	0.00	0.00
100.00		276.27	427.20	0.00	0.00
105.00		685.36	1052.34	0.00	0.00
110.00		675.85	1032.49	0.00	0.00
115.00		665.80	1012.65	0.00	0.00
120.00		655.23	992.80	0.00	0.00
125.00		644.19	972.96	0.00	0.00
130.00		632.69	953.12	0.00	0.00
131.66		206.88	312.05	0.00	0.00
135.00		418.60	1010.07	0.00	0.00
136.99		246.98	595.22	0.00	0.00
140.00		369.10	468.74	0.00	0.00
145.00		604.55	766.79	0.00	0.00
150.00		591.53	750.91	0.00	0.00
155.00		578.16	735.03	0.00	0.00
157.00	(37) attachments	6593.41	3402.13	0.00	0.00
160.00		336.56	384.66	0.00	0.00
165.00		550.41	628.40	0.00	0.00
167.00	(19) attachments	6446.01	5133.44	0.00	0.00
170.00		319.50	334.68	0.00	0.00
175.00		521.42	545.10	0.00	0.00
177.00	(20) attachments	6208.03	3125.51	0.00	0.00
180.00		301.73	263.21	0.00	0.00

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	42,198.37	62,784.98	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



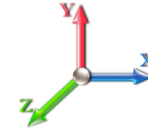
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Load Case: 1.2D + 1.0W 125 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.64
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	12.48
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.64
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	12.48
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.64
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	12.48
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	33.224	0.00	1.64
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	33.224	0.00	12.48
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	34.823	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	34.823	0.00	12.48
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	36.185	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	36.185	0.00	12.48
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	37.379	0.00	1.64
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	37.379	0.00	12.48
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	38.444	0.00	1.64
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	38.444	0.00	12.48
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	39.410	0.00	1.64
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	39.410	0.00	12.48
45.42	Safety Cable	Yes	0.42	0.000	0.38	0.01	0.00	0.019	0.000	39.486	0.00	0.14
45.42	Step bolts (ladder)	Yes	0.42	0.000	0.63	0.02	0.00	0.019	0.000	39.486	0.00	1.04
50.00	Safety Cable	Yes	4.58	0.000	0.38	0.15	0.00	0.020	0.000	40.294	0.00	1.50
50.00	Step bolts (ladder)	Yes	4.58	0.000	0.63	0.24	0.00	0.020	0.000	40.294	0.00	11.44
52.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.020	0.000	40.750	0.00	0.90
52.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	0.14	0.00	0.020	0.000	40.750	0.00	6.86
55.00	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.020	0.000	41.110	0.00	0.74
55.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.12	0.00	0.020	0.000	41.110	0.00	5.62
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	41.870	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	41.870	0.00	12.48
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	42.582	0.00	1.64
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	42.582	0.00	12.48
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	43.251	0.00	1.64
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	43.251	0.00	12.48
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	43.884	0.00	1.64
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	43.884	0.00	12.48
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	44.484	0.00	1.64
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	44.484	0.00	12.48
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	45.056	0.00	1.64
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	45.056	0.00	12.48
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	45.601	0.00	1.64
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	45.601	0.00	12.48
91.66	Safety Cable	Yes	1.66	0.000	0.38	0.05	0.00	0.023	0.000	45.777	0.00	0.54
91.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.09	0.00	0.023	0.000	45.777	0.00	4.15
95.00	Safety Cable	Yes	3.34	0.000	0.38	0.11	0.00	0.023	0.000	46.123	0.00	1.09
95.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	0.18	0.00	0.023	0.000	46.123	0.00	8.33
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.09	0.00	0.024	0.000	46.426	0.00	0.98
98.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.024	0.000	46.426	0.00	7.48
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	46.624	0.00	0.66

Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 125 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)
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.023	0.000	46.624	0.00	5.00
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	47.105	0.00	1.64
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	47.105	0.00	12.48
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	47.569	0.00	1.64
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	47.569	0.00	12.48
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	48.016	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	48.016	0.00	12.48
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	48.448	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	48.448	0.00	12.48
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	48.867	0.00	1.64
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	48.867	0.00	12.48
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	49.272	0.00	1.64
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	49.272	0.00	12.48
131.66	Safety Cable	Yes	1.66	0.000	0.38	0.05	0.00	0.028	0.000	49.404	0.00	0.54
131.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.09	0.00	0.028	0.000	49.404	0.00	4.14
135.00	Safety Cable	Yes	3.34	0.000	0.38	0.11	0.00	0.028	0.000	49.665	0.00	1.09
135.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	0.18	0.00	0.028	0.000	49.665	0.00	8.34
136.99	Safety Cable	Yes	1.99	0.000	0.38	0.06	0.00	0.028	0.000	49.818	0.00	0.65
136.99	Step bolts (ladder)	Yes	1.99	0.000	0.63	0.10	0.00	0.028	0.000	49.818	0.00	4.98
140.00	Safety Cable	Yes	3.01	0.000	0.38	0.10	0.00	0.028	0.000	50.046	0.00	0.98
140.00	Step bolts (ladder)	Yes	3.01	0.000	0.63	0.16	0.00	0.028	0.000	50.046	0.00	7.50
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	50.418	0.00	1.64
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	50.418	0.00	12.48
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	50.779	0.00	1.64
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	50.779	0.00	12.48
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	51.130	0.00	1.64
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	51.130	0.00	12.48
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	51.269	0.00	0.66
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.031	0.000	51.269	0.00	4.99
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	51.473	0.00	0.98
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	51.473	0.00	7.49
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	51.808	0.00	1.64
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	51.808	0.00	12.48
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	51.939	0.00	0.66
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.033	0.000	51.939	0.00	4.99
Totals:											0.0	471.5

Calculated Forces

Structure: CT03111-S-SBA **Code:** EIA/TIA-222-H 11/17/2020
Site Name: Stafford Springs **Exposure:** C
Height: 180.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 15

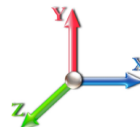


Load Case: 1.2D + 1.0W 125 mph Wind

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	-62.72	-42.30	0.00	-5418.2	0.00	5418.22	6607.78	1665.54	8232.41	8051.48	0.00	0.000	0.000	0.683
5.00	-60.45	-41.83	0.00	-5206.7	0.00	5206.74	6536.38	1638.25	7964.82	7832.87	0.10	-0.178	0.000	0.675
10.00	-58.22	-41.36	0.00	-4997.5	0.00	4997.59	6463.74	1610.95	7701.65	7615.69	0.38	-0.358	0.000	0.666
15.00	-56.03	-40.89	0.00	-4790.7	0.00	4790.79	6389.87	1583.66	7442.90	7400.01	0.85	-0.539	0.000	0.657
20.00	-53.86	-40.38	0.00	-4586.3	0.00	4586.33	6314.78	1556.37	7188.57	7185.91	1.51	-0.722	0.000	0.647
25.00	-51.74	-39.84	0.00	-4384.4	0.00	4384.42	6238.46	1529.08	6938.66	6973.46	2.37	-0.906	0.000	0.638
30.00	-49.64	-39.28	0.00	-4185.2	0.00	4185.21	6160.91	1501.78	6693.18	6762.74	3.42	-1.092	0.000	0.628
35.00	-47.59	-38.69	0.00	-3988.8	0.00	3988.83	6082.13	1474.49	6452.11	6553.81	4.66	-1.278	0.000	0.617
40.00	-45.57	-38.08	0.00	-3795.3	0.00	3795.39	6002.12	1447.20	6215.47	6346.76	6.10	-1.466	0.000	0.606
45.00	-43.64	-37.40	0.00	-3604.9	0.00	3604.97	5920.88	1419.91	5983.25	6141.66	7.74	-1.655	0.000	0.595
45.42	-43.42	-37.41	0.00	-3589.3	0.00	3589.39	5914.06	1417.63	5964.10	6124.66	7.88	-1.672	0.000	0.594
50.00	-40.33	-36.74	0.00	-3417.9	0.00	3417.95	5838.42	1392.61	5755.45	5938.57	9.57	-1.846	0.000	0.583
52.75	-38.49	-36.35	0.00	-3316.9	0.00	3316.90	4935.30	1228.37	5117.58	5067.10	10.67	-1.952	0.000	0.663
55.00	-37.67	-36.10	0.00	-3235.1	0.00	3235.12	4906.21	1217.62	5028.43	4992.79	11.61	-2.040	0.000	0.657
60.00	-35.95	-35.44	0.00	-3054.6	0.00	3054.64	4840.69	1193.74	4833.12	4828.66	13.86	-2.246	0.000	0.641
65.00	-34.27	-34.77	0.00	-2877.4	0.00	2877.46	4773.94	1169.86	4641.68	4665.96	16.32	-2.453	0.000	0.625
70.00	-32.62	-34.09	0.00	-2703.6	0.00	2703.62	4705.97	1145.98	4454.11	4504.78	19.00	-2.660	0.000	0.608
75.00	-31.00	-33.41	0.00	-2533.1	0.00	2533.15	4636.76	1122.10	4270.40	4345.18	21.89	-2.866	0.000	0.591
80.00	-29.42	-32.73	0.00	-2366.0	0.00	2366.08	4566.33	1098.21	4090.57	4187.24	25.00	-3.071	0.000	0.572
85.00	-27.87	-32.04	0.00	-2202.4	0.00	2202.43	4494.66	1074.33	3914.60	4031.04	28.33	-3.276	0.000	0.553
90.00	-26.39	-31.32	0.00	-2042.2	0.00	2042.23	4421.77	1050.45	3742.51	3876.65	31.87	-3.479	0.000	0.534
91.66	-25.87	-31.11	0.00	-1990.1	0.00	1990.14	4397.25	1042.51	3686.11	3825.70	33.09	-3.547	0.000	0.527
95.00	-24.31	-30.60	0.00	-1886.3	0.00	1886.35	4347.65	1026.57	3574.28	3724.14	35.62	-3.683	0.000	0.513
98.00	-22.93	-30.13	0.00	-1794.6	0.00	1794.66	2787.65	736.16	2573.28	2404.47	37.97	-3.804	0.000	0.756
100.00	-22.43	-29.90	0.00	-1734.2	0.00	1734.29	2772.30	729.33	2525.72	2368.86	39.58	-3.884	0.000	0.742
105.00	-21.30	-29.23	0.00	-1584.8	0.00	1584.81	2733.11	712.27	2408.95	2280.34	43.78	-4.143	0.000	0.704
110.00	-20.20	-28.57	0.00	-1438.6	0.00	1438.64	2692.69	695.21	2294.95	2192.41	48.26	-4.396	0.000	0.665
115.00	-19.12	-27.91	0.00	-1295.7	0.00	1295.78	2651.04	678.16	2183.72	2105.12	52.99	-4.642	0.000	0.624
120.00	-18.08	-27.25	0.00	-1156.2	0.00	1156.24	2608.16	661.10	2075.24	2018.57	57.98	-4.880	0.000	0.581
125.00	-17.06	-26.59	0.00	-1020.0	0.00	1020.00	2564.06	644.04	1969.53	1932.81	63.20	-5.108	0.000	0.536
130.00	-16.11	-25.91	0.00	-887.06	0.00	887.06	2518.72	626.98	1866.59	1847.93	68.66	-5.324	0.000	0.488
131.66	-15.77	-25.70	0.00	-844.05	0.00	844.05	2503.40	621.32	1833.02	1819.95	70.52	-5.394	0.000	0.472
135.00	-14.76	-25.22	0.00	-758.20	0.00	758.20	2472.16	609.92	1766.40	1763.99	74.34	-5.529	0.000	0.437
136.99	-14.15	-24.94	0.00	-707.93	0.00	707.93	1825.81	490.37	1427.25	1311.66	76.66	-5.607	0.000	0.550
140.00	-13.65	-24.56	0.00	-632.95	0.00	632.95	1808.31	482.17	1379.88	1277.20	80.23	-5.718	0.000	0.506
145.00	-12.87	-23.92	0.00	-510.14	0.00	510.14	1778.22	468.52	1302.88	1220.14	86.32	-5.916	0.000	0.428
150.00	-12.12	-23.29	0.00	-390.52	0.00	390.52	1746.90	454.87	1228.09	1163.48	92.60	-6.085	0.000	0.345
155.00	-11.42	-22.65	0.00	-274.07	0.00	274.07	1714.35	441.23	1155.51	1107.29	99.03	-6.222	0.000	0.257
157.00	-8.74	-15.74	0.00	-228.76	0.00	228.76	1700.99	435.77	1127.10	1084.96	101.65	-6.267	0.000	0.217
160.00	-8.38	-15.37	0.00	-181.55	0.00	181.55	1680.58	427.58	1085.14	1051.64	105.60	-6.325	0.000	0.179
165.00	-7.80	-14.76	0.00	-104.69	0.00	104.69	1645.57	413.94	1016.98	996.61	112.25	-6.396	0.000	0.111
167.00	-3.42	-7.78	0.00	-75.18	0.00	75.18	1631.23	408.48	990.34	974.78	114.93	-6.415	0.000	0.080
170.00	-3.12	-7.43	0.00	-51.83	0.00	51.83	1609.34	400.29	951.03	942.26	118.96	-6.437	0.000	0.057
175.00	-2.63	-6.85	0.00	-14.69	0.00	14.69	1571.88	386.64	887.29	888.68	125.70	-6.457	0.000	0.019
177.00	-0.23	-0.33	0.00	-0.99	0.00	0.99	1556.55	381.18	862.42	867.48	128.40	-6.459	0.000	0.001
180.00	0.00	-0.30	0.00	0.00	0.00	0.00	1533.19	373.00	825.77	835.94	132.45	-6.459	0.000	0.000

Wind Loading - Shaft

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	180.00	23,597.7	33,531.1
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Discrete Appurtenance Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

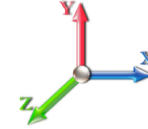


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Load Case: 0.9D + 1.0W 125 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	Alcatel Lucent	3	52.579	57.837	0.50	0.75	5.28	148.50	0.000	0.000	305.16	0.00	0.00
2	177.00	LNx-6514DS-A1M	6	52.579	57.837	0.62	0.75	30.51	207.36	0.000	0.000	1764.90	0.00	0.00
3	177.00	HBXX-6517DS-A2M	6	52.579	57.837	0.58	0.75	29.63	220.32	0.000	0.000	1713.47	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	52.579	57.837	1.00	1.00	32.00	1440.00	0.000	0.000	1850.79	0.00	0.00
5	177.00	Alcatel Lucent	3	52.579	57.837	0.50	0.75	3.32	148.50	0.000	0.000	191.82	0.00	0.00
6	177.00	RFS DB-B1-6C-8AB-0Z	1	52.579	57.837	0.75	0.75	3.08	19.26	0.000	0.000	177.85	0.00	0.00
7	167.00	4415 B66A	3	51.939	57.133	0.50	0.75	2.47	124.74	0.000	0.000	141.25	0.00	0.00
8	167.00	RRUS 4424 B25	3	51.939	57.133	0.50	0.75	2.47	237.60	0.000	0.000	141.25	0.00	0.00
9	167.00	AIR6449 B41	3	51.939	57.133	0.53	0.75	9.03	278.10	0.000	0.000	515.68	0.00	0.00
10	167.00	APX16DWV-16DWVS-C-	3	51.939	57.133	0.47	0.75	9.01	109.89	0.000	0.000	514.87	0.00	0.00
11	167.00	RMQP-4096-HK	1	51.939	57.133	1.00	1.00	51.70	2380.50	0.000	0.000	2953.80	0.00	0.00
12	167.00	Ericsson Radio 4449	3	51.939	57.133	0.50	0.75	2.49	202.50	0.000	0.000	142.11	0.00	0.00
13	167.00	APXVAALL24-43-U-NA20	3	51.939	57.133	0.52	0.75	31.88	331.56	0.000	0.000	1821.30	0.00	0.00
14	157.00	CSS DBC-750	3	51.269	56.396	0.80	0.80	1.22	12.96	0.000	0.000	69.03	0.00	0.00
15	157.00	Powerwave LGP13519	3	51.269	56.396	0.80	0.80	0.82	14.31	0.000	0.000	46.02	0.00	0.00
16	157.00	Ericsson RRUS-11	6	51.269	56.396	0.54	0.80	8.10	275.40	0.000	0.000	457.05	0.00	0.00
17	157.00	Kathrein 860 10025	6	51.269	56.396	0.74	0.80	0.79	6.48	0.000	0.000	44.83	0.00	0.00
18	157.00	CCI DTMABP 7819VG12A	3	51.269	56.396	0.54	0.80	1.83	51.84	0.000	0.000	103.38	0.00	0.00
19	157.00	ADC Cleargain TMAs	3	51.269	56.396	0.50	0.80	1.90	32.67	0.000	0.000	107.41	0.00	0.00
20	157.00	AM-X-CW-16-6500T	3	51.269	56.396	0.60	0.80	14.44	112.86	0.000	0.000	814.13	0.00	0.00
21	157.00	P65-17-XLH	9	51.269	56.396	0.60	0.80	61.78	477.90	0.000	0.000	3483.89	0.00	0.00
22	157.00	Low Profile Platform	1	51.269	56.396	1.00	1.00	22.00	1350.00	0.000	0.000	1240.70	0.00	0.00
Totals:									8,183.25			18,600.68		

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 125 mph Wind

Dead Load Factor 0.90
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		653.13	1601.64	0.00	0.00
10.00		642.43	1577.82	0.00	0.00
15.00		631.73	1554.01	0.00	0.00
20.00		658.94	1530.20	0.00	0.00
25.00		678.74	1506.39	0.00	0.00
30.00		692.93	1482.57	0.00	0.00
35.00		703.01	1458.76	0.00	0.00
40.00		709.92	1434.95	0.00	0.00
45.00		714.28	1411.13	0.00	0.00
45.42		59.03	116.52	0.00	0.00
50.00		667.62	2272.50	0.00	0.00
52.75		399.50	1345.49	0.00	0.00
55.00		326.59	552.34	0.00	0.00
60.00		728.79	1212.31	0.00	0.00
65.00		726.62	1191.48	0.00	0.00
70.00		723.27	1170.64	0.00	0.00
75.00		718.85	1149.80	0.00	0.00
80.00		713.49	1128.97	0.00	0.00
85.00		707.26	1108.13	0.00	0.00
90.00		700.23	1087.29	0.00	0.00
91.66		230.38	357.09	0.00	0.00
95.00		467.11	1147.27	0.00	0.00
98.00		416.25	1016.81	0.00	0.00
100.00		276.27	320.40	0.00	0.00
105.00		685.36	789.25	0.00	0.00
110.00		675.85	774.37	0.00	0.00
115.00		665.80	759.49	0.00	0.00
120.00		655.23	744.60	0.00	0.00
125.00		644.19	729.72	0.00	0.00
130.00		632.69	714.84	0.00	0.00
131.66		206.88	234.04	0.00	0.00
135.00		418.60	757.55	0.00	0.00
136.99		246.98	446.42	0.00	0.00
140.00		369.10	351.55	0.00	0.00
145.00		604.55	575.09	0.00	0.00
150.00		591.53	563.18	0.00	0.00
155.00		578.16	551.28	0.00	0.00
157.00	(37) attachments	6593.41	2551.60	0.00	0.00
160.00		336.56	288.50	0.00	0.00
165.00		550.41	471.30	0.00	0.00
167.00	(19) attachments	6446.01	3850.08	0.00	0.00
170.00		319.50	251.01	0.00	0.00
175.00		521.42	408.82	0.00	0.00
177.00	(20) attachments	6208.03	2344.13	0.00	0.00
180.00		301.73	197.41	0.00	0.00

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	42,198.37	47,088.73	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

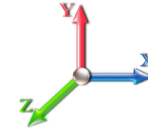


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Load Case: 0.9D + 1.0W 125 mph Wind

Dead Load Factor 0.90

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	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.23
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	9.36
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.23
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	9.36
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	31.313	0.00	1.23
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	31.313	0.00	9.36
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	33.224	0.00	1.23
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	33.224	0.00	9.36
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	34.823	0.00	1.23
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	34.823	0.00	9.36
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	36.185	0.00	1.23
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	36.185	0.00	9.36
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	37.379	0.00	1.23
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	37.379	0.00	9.36
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	38.444	0.00	1.23
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	38.444	0.00	9.36
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	39.410	0.00	1.23
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	39.410	0.00	9.36
45.42	Safety Cable	Yes	0.42	0.000	0.38	0.01	0.00	0.019	0.000	39.486	0.00	0.10
45.42	Step bolts (ladder)	Yes	0.42	0.000	0.63	0.02	0.00	0.019	0.000	39.486	0.00	0.78
50.00	Safety Cable	Yes	4.58	0.000	0.38	0.15	0.00	0.020	0.000	40.294	0.00	1.13
50.00	Step bolts (ladder)	Yes	4.58	0.000	0.63	0.24	0.00	0.020	0.000	40.294	0.00	8.58
52.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.020	0.000	40.750	0.00	0.68
52.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	0.14	0.00	0.020	0.000	40.750	0.00	5.15
55.00	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.020	0.000	41.110	0.00	0.55
55.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.12	0.00	0.020	0.000	41.110	0.00	4.21
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	41.870	0.00	1.23
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	41.870	0.00	9.36
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	42.582	0.00	1.23
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	42.582	0.00	9.36
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	43.251	0.00	1.23
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	43.251	0.00	9.36
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	43.884	0.00	1.23
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	43.884	0.00	9.36
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	44.484	0.00	1.23
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	44.484	0.00	9.36
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	45.056	0.00	1.23
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	45.056	0.00	9.36
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	45.601	0.00	1.23
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	45.601	0.00	9.36
91.66	Safety Cable	Yes	1.66	0.000	0.38	0.05	0.00	0.023	0.000	45.777	0.00	0.41
91.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.09	0.00	0.023	0.000	45.777	0.00	3.11
95.00	Safety Cable	Yes	3.34	0.000	0.38	0.11	0.00	0.023	0.000	46.123	0.00	0.82
95.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	0.18	0.00	0.023	0.000	46.123	0.00	6.25
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.09	0.00	0.024	0.000	46.426	0.00	0.74
98.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.024	0.000	46.426	0.00	5.61
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	46.624	0.00	0.49

Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 125 mph Wind

Dead Load Factor 0.90
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)
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.023	0.000	46.624	0.00	3.75
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	47.105	0.00	1.23
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	47.105	0.00	9.36
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	47.569	0.00	1.23
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	47.569	0.00	9.36
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	48.016	0.00	1.23
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	48.016	0.00	9.36
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	48.448	0.00	1.23
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	48.448	0.00	9.36
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	48.867	0.00	1.23
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	48.867	0.00	9.36
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	49.272	0.00	1.23
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	49.272	0.00	9.36
131.66	Safety Cable	Yes	1.66	0.000	0.38	0.05	0.00	0.028	0.000	49.404	0.00	0.41
131.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.09	0.00	0.028	0.000	49.404	0.00	3.11
135.00	Safety Cable	Yes	3.34	0.000	0.38	0.11	0.00	0.028	0.000	49.665	0.00	0.82
135.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	0.18	0.00	0.028	0.000	49.665	0.00	6.25
136.99	Safety Cable	Yes	1.99	0.000	0.38	0.06	0.00	0.028	0.000	49.818	0.00	0.49
136.99	Step bolts (ladder)	Yes	1.99	0.000	0.63	0.10	0.00	0.028	0.000	49.818	0.00	3.73
140.00	Safety Cable	Yes	3.01	0.000	0.38	0.10	0.00	0.028	0.000	50.046	0.00	0.74
140.00	Step bolts (ladder)	Yes	3.01	0.000	0.63	0.16	0.00	0.028	0.000	50.046	0.00	5.63
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	50.418	0.00	1.23
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	50.418	0.00	9.36
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	50.779	0.00	1.23
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	50.779	0.00	9.36
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	51.130	0.00	1.23
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	51.130	0.00	9.36
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	51.269	0.00	0.49
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.031	0.000	51.269	0.00	3.74
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	51.473	0.00	0.74
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	51.473	0.00	5.62
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	51.808	0.00	1.23
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	51.808	0.00	9.36
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	51.939	0.00	0.49
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.033	0.000	51.939	0.00	3.74
Totals:											0.0	353.7

Wind Loading - Shaft

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 25



Totals:	180.00	6,502.8	60,996.3
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Discrete Appurtenance Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 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	177.00	Alcatel Lucent	3	8.413	9.254	0.50	0.75	6.49	381.75	0.000	0.000	60.02	0.00	0.00	
2	177.00	LNx-6514DS-A1M	6	8.413	9.254	0.62	0.75	41.24	1048.81	0.000	0.000	381.59	0.00	0.00	
3	177.00	HBXX-6517DS-A2M	6	8.413	9.254	0.58	0.75	39.91	1066.48	0.000	0.000	369.30	0.00	0.00	
4	177.00	Platform w/ Hand Rail	1	8.413	9.254	1.00	1.00	60.39	3454.89	0.000	0.000	558.84	0.00	0.00	
5	177.00	Alcatel Lucent	3	8.413	9.254	0.50	0.75	4.29	456.83	0.000	0.000	39.73	0.00	0.00	
6	177.00	RFS DB-B1-6C-8AB-0Z	1	8.413	9.254	0.75	0.75	3.69	116.58	0.000	0.000	34.11	0.00	0.00	
7	167.00	4415 B66A	3	8.310	9.141	0.50	0.75	3.26	263.90	0.000	0.000	29.78	0.00	0.00	
8	167.00	RRUS 4424 B25	3	8.310	9.141	0.50	0.75	3.26	653.04	0.000	0.000	29.78	0.00	0.00	
9	167.00	AIR6449 B41	3	8.310	9.141	0.53	0.75	10.56	691.50	0.000	0.000	96.54	0.00	0.00	
10	167.00	APX16DWV-16DWVS-C-	3	8.310	9.141	0.47	0.75	12.07	396.58	0.000	0.000	110.34	0.00	0.00	
11	167.00	RMQP-4096-HK	1	8.310	9.141	1.00	1.00	90.37	5218.55	0.000	0.000	826.10	0.00	0.00	
12	167.00	Ericsson Radio 4449	3	8.310	9.141	0.50	0.75	3.31	477.53	0.000	0.000	30.24	0.00	0.00	
13	167.00	APXVAALL24-43-U-NA20	3	8.310	9.141	0.52	0.75	34.90	1711.15	0.000	0.000	319.07	0.00	0.00	
14	157.00	CSS DBC-750	3	8.203	9.023	0.80	0.80	2.50	37.71	0.000	0.000	22.56	0.00	0.00	
15	157.00	Powerwave LGP13519	3	8.203	9.023	0.80	0.80	1.91	39.60	0.000	0.000	17.24	0.00	0.00	
16	157.00	Ericsson RRUS-11	6	8.203	9.023	0.54	0.80	10.15	706.82	0.000	0.000	91.59	0.00	0.00	
17	157.00	Kathrein 860 10025	6	8.203	9.023	0.74	0.80	2.48	35.18	0.000	0.000	22.34	0.00	0.00	
18	157.00	CCI DTMABP 7819VG12A	3	8.203	9.023	0.54	0.80	3.08	124.13	0.000	0.000	27.76	0.00	0.00	
19	157.00	ADC Cleargain TMAs	3	8.203	9.023	0.50	0.80	3.12	97.57	0.000	0.000	28.13	0.00	0.00	
20	157.00	AM-X-CW-16-6500T	3	8.203	9.023	0.60	0.80	19.49	500.10	0.000	0.000	175.84	0.00	0.00	
21	157.00	P65-17-XLH	9	8.203	9.023	0.60	0.80	79.32	2036.64	0.000	0.000	715.74	0.00	0.00	
22	157.00	Low Profile Platform	1	8.203	9.023	1.00	1.00	39.74	2814.90	0.000	0.000	358.61	0.00	0.00	
Totals:									22,330.24						4,345.24

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

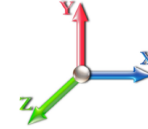


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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		174.05	2635.81	0.00	0.00
10.00		171.80	2633.92	0.00	0.00
15.00		169.36	2616.95	0.00	0.00
20.00		177.03	2593.36	0.00	0.00
25.00		182.70	2565.95	0.00	0.00
30.00		186.85	2536.02	0.00	0.00
35.00		189.90	2504.29	0.00	0.00
40.00		192.09	2471.19	0.00	0.00
45.00		193.59	2437.02	0.00	0.00
45.42		16.01	201.63	0.00	0.00
50.00		181.08	3544.14	0.00	0.00
52.75		108.47	2101.33	0.00	0.00
55.00		88.75	987.08	0.00	0.00
60.00		198.30	2168.81	0.00	0.00
65.00		198.05	2135.94	0.00	0.00
70.00		197.47	2102.61	0.00	0.00
75.00		196.60	2068.87	0.00	0.00
80.00		195.48	2034.77	0.00	0.00
85.00		194.13	2000.34	0.00	0.00
90.00		192.57	1965.62	0.00	0.00
91.66		63.43	646.95	0.00	0.00
95.00		128.61	1873.55	0.00	0.00
98.00		114.75	1661.92	0.00	0.00
100.00		76.23	630.68	0.00	0.00
105.00		189.41	1552.54	0.00	0.00
110.00		187.18	1524.84	0.00	0.00
115.00		184.81	1496.94	0.00	0.00
120.00		182.29	1468.87	0.00	0.00
125.00		179.65	1440.62	0.00	0.00
130.00		176.89	1412.22	0.00	0.00
131.66		57.93	463.52	0.00	0.00
135.00		117.25	1314.58	0.00	0.00
136.99		69.27	775.56	0.00	0.00
140.00		103.67	737.55	0.00	0.00
145.00		170.20	1204.86	0.00	0.00
150.00		167.03	1179.90	0.00	0.00
155.00		163.77	1154.82	0.00	0.00
157.00	(37) attachments	1524.24	6848.65	0.00	0.00
160.00		95.71	630.94	0.00	0.00
165.00		156.97	1029.45	0.00	0.00
167.00	(19) attachments	1503.52	9818.06	0.00	0.00
170.00		91.52	539.76	0.00	0.00
175.00		149.85	877.02	0.00	0.00
177.00	(20) attachments	1502.40	6870.11	0.00	0.00
180.00		87.15	456.39	0.00	0.00

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	10,848.00	91,915.95	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA Code: EIA/TIA-222-H 11/17/2020
Site Name: Stafford Springs Exposure: C
Height: 180.00 (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: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00

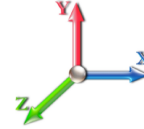


Table with 13 columns: Top Elev (ft), Description, Wind Exposed, Length (ft), Ca, Exposed Width (in), Area (sqft), CaAa (sqft), Ra, Cf Adjust Factor, qz (psf), F X (lb), Dead Load (lb). Rows list safety cables and step bolts at various elevations from 5.00 to 100.00 ft.

Linear Appurtenance Segment Forces (Factored)

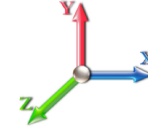
Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 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)
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.023	0.000	7.460	0.00	15.27
105.00	Safety Cable	Yes	5.00	0.000	0.38	1.56	0.00	0.024	0.000	7.537	0.00	21.48
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.67	0.00	0.024	0.000	7.537	0.00	38.32
110.00	Safety Cable	Yes	5.00	0.000	0.38	1.57	0.00	0.024	0.000	7.611	0.00	21.65
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.67	0.00	0.024	0.000	7.611	0.00	38.52
115.00	Safety Cable	Yes	5.00	0.000	0.38	1.57	0.00	0.025	0.000	7.683	0.00	21.82
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.68	0.00	0.025	0.000	7.683	0.00	38.71
120.00	Safety Cable	Yes	5.00	0.000	0.38	1.58	0.00	0.026	0.000	7.752	0.00	21.98
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.68	0.00	0.026	0.000	7.752	0.00	38.90
125.00	Safety Cable	Yes	5.00	0.000	0.38	1.59	0.00	0.026	0.000	7.819	0.00	22.14
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.69	0.00	0.026	0.000	7.819	0.00	39.08
130.00	Safety Cable	Yes	5.00	0.000	0.38	1.59	0.00	0.027	0.000	7.883	0.00	22.29
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.70	0.00	0.027	0.000	7.883	0.00	39.25
131.66	Safety Cable	Yes	1.66	0.000	0.38	0.53	0.00	0.028	0.000	7.905	0.00	7.42
131.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.56	0.00	0.028	0.000	7.905	0.00	13.05
135.00	Safety Cable	Yes	3.34	0.000	0.38	1.07	0.00	0.028	0.000	7.946	0.00	14.99
135.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	1.14	0.00	0.028	0.000	7.946	0.00	26.33
136.99	Safety Cable	Yes	1.99	0.000	0.38	0.64	0.00	0.028	0.000	7.971	0.00	8.97
136.99	Step bolts (ladder)	Yes	1.99	0.000	0.63	0.68	0.00	0.028	0.000	7.971	0.00	15.74
140.00	Safety Cable	Yes	3.01	0.000	0.38	0.96	0.00	0.028	0.000	8.007	0.00	13.58
140.00	Step bolts (ladder)	Yes	3.01	0.000	0.63	1.03	0.00	0.028	0.000	8.007	0.00	23.80
145.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.029	0.000	8.067	0.00	22.71
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.71	0.00	0.029	0.000	8.067	0.00	39.74
150.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.030	0.000	8.125	0.00	22.85
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.72	0.00	0.030	0.000	8.125	0.00	39.90
155.00	Safety Cable	Yes	5.00	0.000	0.38	1.62	0.00	0.031	0.000	8.181	0.00	22.98
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.72	0.00	0.031	0.000	8.181	0.00	40.05
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.65	0.00	0.031	0.000	8.203	0.00	9.21
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.69	0.00	0.031	0.000	8.203	0.00	16.04
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.97	0.00	0.032	0.000	8.236	0.00	13.86
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.04	0.00	0.032	0.000	8.236	0.00	24.12
165.00	Safety Cable	Yes	5.00	0.000	0.38	1.63	0.00	0.033	0.000	8.289	0.00	23.23
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.73	0.00	0.033	0.000	8.289	0.00	40.33
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.65	0.00	0.033	0.000	8.310	0.00	9.31
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.69	0.00	0.033	0.000	8.310	0.00	16.16
Totals:											0.0	1,895.2

Seismic Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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	0.19			Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.09	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	SA	0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	
0.00		0.00	0.00	0.00	0.00	
5.00		1815.2	2.50	68.93	0.02	
10.00		1788.7	7.50	67.93	0.13	
15.00		1762.3	12.50	66.92	0.36	
20.00		1735.8	17.50	65.92	0.69	
25.00		1709.3	22.50	64.91	1.10	
30.00		1682.9	27.50	63.91	1.60	
35.00		1656.4	32.50	62.90	2.16	
40.00		1630.0	37.50	61.90	2.79	
45.00		1603.5	42.50	60.89	3.46	
45.42	Bot - Section 2	132.44	45.21	5.03	0.03	
50.00		2557.6	47.71	97.12	11.11	
52.75	Top - Section 1	1514.5	51.38	57.51	4.52	
55.00		629.74	53.88	23.91	0.86	
60.00		1382.6	57.50	52.50	4.71	
65.00		1359.4	62.50	51.62	5.39	
70.00		1336.3	67.50	50.75	6.07	
75.00		1313.1	72.50	49.87	6.76	
80.00		1290.0	77.50	48.99	7.46	
85.00		1266.8	82.50	48.11	8.15	
90.00		1243.7	87.50	47.23	8.83	
91.66	Bot - Section 3	408.62	90.83	15.52	1.03	
95.00		1298.5	93.33	49.31	10.96	
98.00	Top - Section 2	1151.1	96.50	43.71	9.20	
100.00		370.28	99.00	14.06	1.00	
105.00		912.58	102.50	34.65	6.53	
110.00		896.04	107.50	34.03	6.92	
115.00		879.51	112.50	33.40	7.30	
120.00		862.97	117.50	32.77	7.67	
125.00		846.43	122.50	32.14	8.02	
130.00		829.90	127.50	31.51	8.35	
131.66	Bot - Section 4	271.87	130.83	10.32	0.94	
135.00		865.53	133.33	32.87	9.93	
136.99	Top - Section 3	510.22	136.00	19.37	3.59	
140.00		412.04	138.50	15.65	2.43	
145.00		674.62	142.50	25.62	6.89	
150.00		661.39	147.50	25.12	7.10	
155.00		648.16	152.50	24.61	7.29	
157.00	Appurtenance(s)	2849.3	156.00	108.20	147.39	
160.00		334.44	158.50	12.70	2.10	
165.00		546.82	162.50	20.76	5.89	
167.00	Appurtenance(s)	4287.1	166.00	162.80	377.81	
170.00		287.63	168.50	10.92	1.75	
175.00		468.81	172.50	17.80	4.88	
177.00	Appurtenance(s)	2610.4	176.00	99.13	157.46	
180.00		219.34	178.50	8.33	1.14	

R: 1.50

Seismic Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	53,515.1	2,032.1	879.8	Total Wind:	42,198.4
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Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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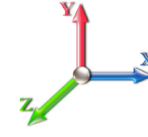


Seismic Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	SA 0.03
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	
0.00		0.00	0.00	0.00	0.00	
5.00		1761.7	2.50	66.90	0.01	
10.00		1735.3	7.50	65.90	0.13	
15.00		1708.8	12.50	64.89	0.35	
20.00		1682.4	17.50	63.89	0.66	
25.00		1655.9	22.50	62.88	1.06	
30.00		1629.4	27.50	61.88	1.54	
35.00		1603.0	32.50	60.87	2.08	
40.00		1576.5	37.50	59.87	2.68	
45.00		1550.1	42.50	58.86	3.33	
45.42	Bot - Section 2	127.98	45.21	4.86	0.03	
50.00		2508.6	47.71	95.26	10.99	
52.75	Top - Section 1	1485.1	51.38	56.40	4.47	
55.00		605.69	53.88	23.00	0.82	
60.00		1329.2	57.50	50.47	4.48	
65.00		1306.0	62.50	49.59	5.11	
70.00		1282.8	67.50	48.72	5.75	
75.00		1259.7	72.50	47.84	6.40	
80.00		1236.5	77.50	46.96	7.04	
85.00		1213.4	82.50	46.08	7.69	
90.00		1190.2	87.50	45.20	8.32	
91.66	Bot - Section 3	390.84	90.83	14.84	0.97	
95.00		1262.8	93.33	47.95	10.65	
98.00	Top - Section 2	1119.1	96.50	42.50	8.94	
100.00		348.87	99.00	13.25	0.91	
105.00		859.13	102.50	32.62	5.95	
110.00		842.59	107.50	32.00	6.29	
115.00		826.06	112.50	31.37	6.62	
120.00		809.52	117.50	30.74	6.94	
125.00		792.98	122.50	30.11	7.24	
130.00		776.45	127.50	29.48	7.52	
131.66	Bot - Section 4	254.12	130.83	9.65	0.85	
135.00		829.82	133.33	31.51	9.39	
136.99	Top - Section 3	488.91	136.00	18.57	3.39	
140.00		379.90	138.50	14.43	2.12	
145.00		621.17	142.50	23.59	6.01	
150.00		607.94	147.50	23.09	6.17	
155.00		594.71	152.50	22.58	6.31	
157.00	Appurtenance(s)	2827.9	156.00	107.39	149.27	
160.00		313.61	158.50	11.91	1.89	
165.00		512.09	162.50	19.45	5.31	
167.00	Appurtenance(s)	4273.2	166.00	162.27	385.92	
170.00		274.53	168.50	10.42	1.64	
175.00		446.97	172.50	16.97	4.56	
177.00	Appurtenance(s)	2601.6	176.00	98.79	160.80	
180.00		219.34	178.50	8.33	1.18	

R: 1.50

Seismic Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	51,723.7	1,964.1	879.8	Total Wind:	42,198.4
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Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Wind Loading - Shaft

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 41



Totals:	180.00	4,864.6	37,256.8
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Discrete Appurtenance Forces

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.00	Alcatel Lucent	3	10.839	11.923	0.50	0.75	5.28	165.00	0.000	0.000	62.91	0.00	0.00
2	177.00	LNx-6514DS-A1M	6	10.839	11.923	0.62	0.75	30.51	230.40	0.000	0.000	363.83	0.00	0.00
3	177.00	HBXX-6517DS-A2M	6	10.839	11.923	0.58	0.75	29.63	244.80	0.000	0.000	353.23	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	10.839	11.923	1.00	1.00	32.00	1600.00	0.000	0.000	381.54	0.00	0.00
5	177.00	Alcatel Lucent	3	10.839	11.923	0.50	0.75	3.32	165.00	0.000	0.000	39.54	0.00	0.00
6	177.00	RFS DB-B1-6C-8AB-0Z	1	10.839	11.923	0.75	0.75	3.08	21.40	0.000	0.000	36.66	0.00	0.00
7	167.00	4415 B66A	3	10.707	11.778	0.50	0.75	2.47	138.60	0.000	0.000	29.12	0.00	0.00
8	167.00	RRUS 4424 B25	3	10.707	11.778	0.50	0.75	2.47	264.00	0.000	0.000	29.12	0.00	0.00
9	167.00	AIR6449 B41	3	10.707	11.778	0.53	0.75	9.03	309.00	0.000	0.000	106.31	0.00	0.00
10	167.00	APX16DWV-16DWVS-C-	3	10.707	11.778	0.47	0.75	9.01	122.10	0.000	0.000	106.14	0.00	0.00
11	167.00	RMQP-4096-HK	1	10.707	11.778	1.00	1.00	51.70	2645.00	0.000	0.000	608.92	0.00	0.00
12	167.00	Ericsson Radio 4449	3	10.707	11.778	0.50	0.75	2.49	225.00	0.000	0.000	29.30	0.00	0.00
13	167.00	APXVAALL24-43-U-NA20	3	10.707	11.778	0.52	0.75	31.88	368.40	0.000	0.000	375.46	0.00	0.00
14	157.00	CSS DBC-750	3	10.569	11.626	0.80	0.80	1.22	14.40	0.000	0.000	14.23	0.00	0.00
15	157.00	Powerwave LGP13519	3	10.569	11.626	0.80	0.80	0.82	15.90	0.000	0.000	9.49	0.00	0.00
16	157.00	Ericsson RRUS-11	6	10.569	11.626	0.54	0.80	8.10	306.00	0.000	0.000	94.22	0.00	0.00
17	157.00	Kathrein 860 10025	6	10.569	11.626	0.74	0.80	0.79	7.20	0.000	0.000	9.24	0.00	0.00
18	157.00	CCI DTMABP 7819VG12A	3	10.569	11.626	0.54	0.80	1.83	57.60	0.000	0.000	21.31	0.00	0.00
19	157.00	ADC Cleargain TMAs	3	10.569	11.626	0.50	0.80	1.90	36.30	0.000	0.000	22.14	0.00	0.00
20	157.00	AM-X-CW-16-6500T	3	10.569	11.626	0.60	0.80	14.44	125.40	0.000	0.000	167.83	0.00	0.00
21	157.00	P65-17-XLH	9	10.569	11.626	0.60	0.80	61.78	531.00	0.000	0.000	718.19	0.00	0.00
22	157.00	Low Profile Platform	1	10.569	11.626	1.00	1.00	22.00	1500.00	0.000	0.000	255.77	0.00	0.00
Totals:									9,092.50			3,834.48		

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		134.64	1779.60	0.00	0.00
10.00		132.44	1753.14	0.00	0.00
15.00		130.23	1726.68	0.00	0.00
20.00		135.84	1700.22	0.00	0.00
25.00		139.92	1673.76	0.00	0.00
30.00		142.85	1647.30	0.00	0.00
35.00		144.92	1620.84	0.00	0.00
40.00		146.35	1594.39	0.00	0.00
45.00		147.25	1567.93	0.00	0.00
45.42		12.17	129.47	0.00	0.00
50.00		137.63	2525.01	0.00	0.00
52.75		82.35	1494.99	0.00	0.00
55.00		67.32	613.71	0.00	0.00
60.00		150.24	1347.01	0.00	0.00
65.00		149.79	1323.86	0.00	0.00
70.00		149.10	1300.71	0.00	0.00
75.00		148.19	1277.56	0.00	0.00
80.00		147.08	1254.41	0.00	0.00
85.00		145.80	1231.26	0.00	0.00
90.00		144.35	1208.10	0.00	0.00
91.66		47.49	396.76	0.00	0.00
95.00		96.29	1274.74	0.00	0.00
98.00		85.81	1129.79	0.00	0.00
100.00		56.95	356.00	0.00	0.00
105.00		141.29	876.95	0.00	0.00
110.00		139.32	860.41	0.00	0.00
115.00		137.25	843.87	0.00	0.00
120.00		135.07	827.34	0.00	0.00
125.00		132.80	810.80	0.00	0.00
130.00		130.43	794.26	0.00	0.00
131.66		42.65	260.04	0.00	0.00
135.00		86.29	841.72	0.00	0.00
136.99		50.91	496.02	0.00	0.00
140.00		76.09	390.61	0.00	0.00
145.00		124.63	638.99	0.00	0.00
150.00		121.94	625.76	0.00	0.00
155.00		119.19	612.53	0.00	0.00
157.00	(37) attachments	1359.21	2835.11	0.00	0.00
160.00		69.38	320.55	0.00	0.00
165.00		113.47	523.67	0.00	0.00
167.00	(19) attachments	1328.83	4277.86	0.00	0.00
170.00		65.86	278.90	0.00	0.00
175.00		107.49	454.25	0.00	0.00
177.00	(20) attachments	1279.77	2604.59	0.00	0.00
180.00		62.20	219.34	0.00	0.00

Total Applied Force Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Totals:	8,699.08	52,320.81	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.023	0.000	9.611	0.00	4.17
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	9.711	0.00	1.37
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	9.711	0.00	10.40
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	9.806	0.00	1.37
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	9.806	0.00	10.40
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	9.898	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	9.898	0.00	10.40
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	9.988	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	9.988	0.00	10.40
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	10.074	0.00	1.37
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	10.074	0.00	10.40
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	10.157	0.00	1.37
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	10.157	0.00	10.40
131.66	Safety Cable	Yes	1.66	0.000	0.38	0.05	0.00	0.028	0.000	10.184	0.00	0.45
131.66	Step bolts (ladder)	Yes	1.66	0.000	0.63	0.09	0.00	0.028	0.000	10.184	0.00	3.45
135.00	Safety Cable	Yes	3.34	0.000	0.38	0.11	0.00	0.028	0.000	10.238	0.00	0.91
135.00	Step bolts (ladder)	Yes	3.34	0.000	0.63	0.18	0.00	0.028	0.000	10.238	0.00	6.95
136.99	Safety Cable	Yes	1.99	0.000	0.38	0.06	0.00	0.028	0.000	10.270	0.00	0.54
136.99	Step bolts (ladder)	Yes	1.99	0.000	0.63	0.10	0.00	0.028	0.000	10.270	0.00	4.15
140.00	Safety Cable	Yes	3.01	0.000	0.38	0.10	0.00	0.028	0.000	10.317	0.00	0.82
140.00	Step bolts (ladder)	Yes	3.01	0.000	0.63	0.16	0.00	0.028	0.000	10.317	0.00	6.25
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	10.393	0.00	1.37
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	10.393	0.00	10.40
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	10.468	0.00	1.37
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	10.468	0.00	10.40
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	10.540	0.00	1.37
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	10.540	0.00	10.40
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	10.569	0.00	0.55
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.031	0.000	10.569	0.00	4.16
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	10.611	0.00	0.82
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	10.611	0.00	6.24
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	10.680	0.00	1.37
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	10.680	0.00	10.40
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	10.707	0.00	0.55
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.11	0.00	0.033	0.000	10.707	0.00	4.16
Totals:											0.0	393.0

Final Analysis Summary

Structure: CT03111-S-SBA	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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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 125 mph Wind	42.3	0.00	62.72	0.00	0.00	5418.22
0.9D + 1.0W 125 mph Wind	42.3	0.00	47.02	0.00	0.00	5357.69
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.9	0.00	91.91	0.00	0.00	1413.74
1.2D + 1.0Ev + 1.0Eh	0.9	0.00	64.82	0.00	0.00	141.32
0.9D + 1.0Ev + 1.0Eh	0.9	0.00	49.05	0.00	0.00	140.31
1.0D + 1.0W 60 mph Wind	8.7	0.00	52.32	0.00	0.00	1110.35

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 125 mph Wind	-22.93	-30.13	0.00	-1794.6	0.00	-1794.6	2787.65	736.16	2573.28	2404.47	98.00	0.756
0.9D + 1.0W 125 mph Wind	-16.75	-29.70	0.00	-1764.7	0.00	-1764.7	2787.65	736.16	2573.28	2404.47	98.00	0.742
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-43.30	-7.90	0.00	-470.90	0.00	-470.90	2787.65	736.16	2573.28	2404.47	98.00	0.211
1.2D + 1.0Ev + 1.0Eh	-25.70	-0.83	0.00	-54.42	0.00	-54.42	2787.65	736.16	2573.28	2404.47	98.00	0.032
0.9D + 1.0Ev + 1.0Eh	-19.45	-0.82	0.00	-54.14	0.00	-54.14	2787.65	736.16	2573.28	2404.47	98.00	0.029
1.0D + 1.0W 60 mph Wind	-20.67	-6.16	0.00	-367.25	0.00	-367.25	2787.65	736.16	2573.28	2404.47	98.00	0.160

Base Plate Summary

Structure: CT03111-S-SB	Code: EIA/TIA-222-H	11/17/2020
Site Name: Stafford Springs	Exposure: C	
Height: 180.00 (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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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 68.62
Moment (kip-ft): 5785.00	Width (in): 74.62	Number Bolts: 24.00
Axial (kip): 0.00	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 45.20	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): 5418.22	Effective Len (in): 12.53	Ultimate (ksi): 100.00
Axial (kip): 62.72	Moment (kip-in): 697.14	Arrangement: Radial
Shear (kip): 42.30	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 37.26	Start Angle (deg): 0.00
	Stress Ratio: 0.46	Compression
		Force (kip): 161.75
		Allowable (kip): 268.39
		Ratio: 0.60
		Tension
		Force (kip): 154.09
		Allowable (kip): 243.75
		Ratio: 0.63



Monopole Mat Foundation Design

Date
7/22/2019

Customer Name:	SBA Communcations Corp	EIA/TIA Standard:	EIA-222-H
Site Name:	CT03111-S-SBA	Structure Height (Ft.):	180
Site Number:	99617	Engineer Name:	T. Alajaj
Engr. Number:		Manager Login Req'd:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

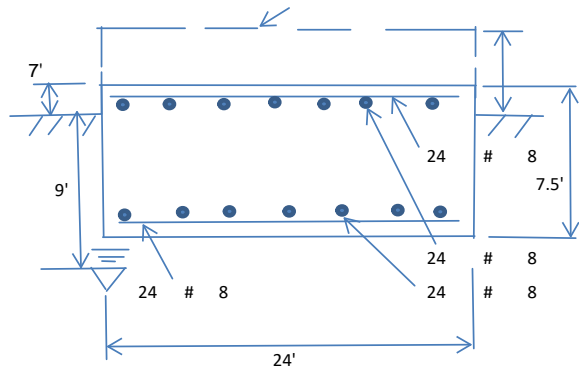
Axial Load (Kips):	62.7	Shear Force (Kips):	42.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5418.2

Allowable overstress %: 5.0%

Foundation Geometries:

Anchor Bolt Circle (ft.):	5.72	Depth of Base BG (ft.):	0.50
Thickness of Pad (ft.):	7.50	Width of Pad (ft.):	24
Length of Pad (ft.):	24	Width of Pad (ft.):	24

Final Length of pad (ft) 24.0 Final width of pad (ft): 24.0



Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0	
Pad Steel Rebar Size (#):	8			
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

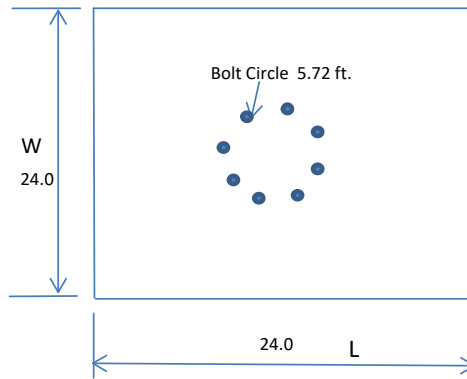
Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24
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Rebar at the top of the concrete pad:

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



Soil Design Parameters:

Water Table B.G.S. (ft):	9.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	16000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4320.00	Total Dry Concrete Weight (Kips):	648.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	648.00	Total Vertical Load on Base (Kips):	710.72

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	5438	<	Allowable Factored Soil Bearing (psf):	12000	0.45	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7751.0	>	Design Factored Momnt (kips-ft):	5738	0.74	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.35					OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	2046.7	>	One-Way Factored Shear (L-D. Kips):	150.0	0.07	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	2046.7	>	One-Way Factored Shear (W-D., Kips)	150.0	0.07	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	2364.1	>	One-Way Factored Shear (C-C, Kips):	966.6	0.41	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0008	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0008		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	7314.1	>	Moment at Bottom (L-Direct. K-Ft):	126.1	0.02	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	7314.1	>	Moment at Bottom (W-Direct. K-Ft):	126.1	0.02	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	10322.7	>	Moment at Bottom (C-C Dir. K-Ft):	178.4	0.02	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0008	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0008		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	7314.1	>	Moment at the top (L-Dir Kips-Ft):	483.6	0.07	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	7314.1	>	Moment at the top (W-Dir Kips-Ft):	483.6	0.07	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	10322.7	>	Moment at the top (C-C Direc. K-Ft):	739.3	0.07	OK!

EXHIBIT 8



Tower Engineering Solutions

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

Antenna Mount Analysis Report

Existing 180-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT03111-S

Customer Site Name: Stafford Springs

Carrier Name: T-Mobile (App#: 117039, V2)

Carrier Site ID / Name: CTHA526A / Stafford SBA/30 Old Country Road

Site Location: 30 Old Country Road

Stafford Springs, Connecticut

Tolland County

Latitude: 41.940033

Longitude: -72.237461

Exp.01/31/2021



Analysis Result:

Max Structural Usage: 80.1% [Pass]

11/16/2020

Report Prepared By: Manoj Kandel

NOTE: The proposed mount (1) Site Pro RMQP-4096-HK is not currently installed on the monopole. The proposed mount was assumed to be installed per the manufacturer's instructions, and it was assumed that the proposed mount can be installed properly on the existing monopole. TES cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) Site Pro RMQP-4096-HK at 167.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info is as per Site Pro 1, RMQP-4096-HK dated 03/24/2014
Antenna Loading	Application #: 117039, v2, dated 11/16/2020
Modification Drawings	N/A

Analysis Criteria

Wind Speed Used in the Analysis: 118 mph (3-Sec. Gust) (Ultimate Wind Speed)
Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1.5" radial ice concurrent
Service Load Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-H / 2015 IBC/ 2018 Connecticut State Building Code
Exposure Category: C
Risk Category: II
Topographic Category: 1
Crest Height (Ft): 0
Ground Elevation Factor: 0.969

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) Proposed Site Pro RMQP-4096-HK at 167.00' elevation

Final Antenna Configuration

- 3 RFS APX16DWV-16DWVS-E-A20
- 3 RFS APXVAALL24-43-U-NA20
- 3 Ericsson AIR6449 B41
- 3 Ericsson 4449 B71 + B85
- 3 Ericsson 4424 B25
- 3 Ericsson 4415 B66A

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

Analysis Results

Our calculations have determined that under design wind load the proposed mount will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 80.1%, which occurs in the end connection. 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.

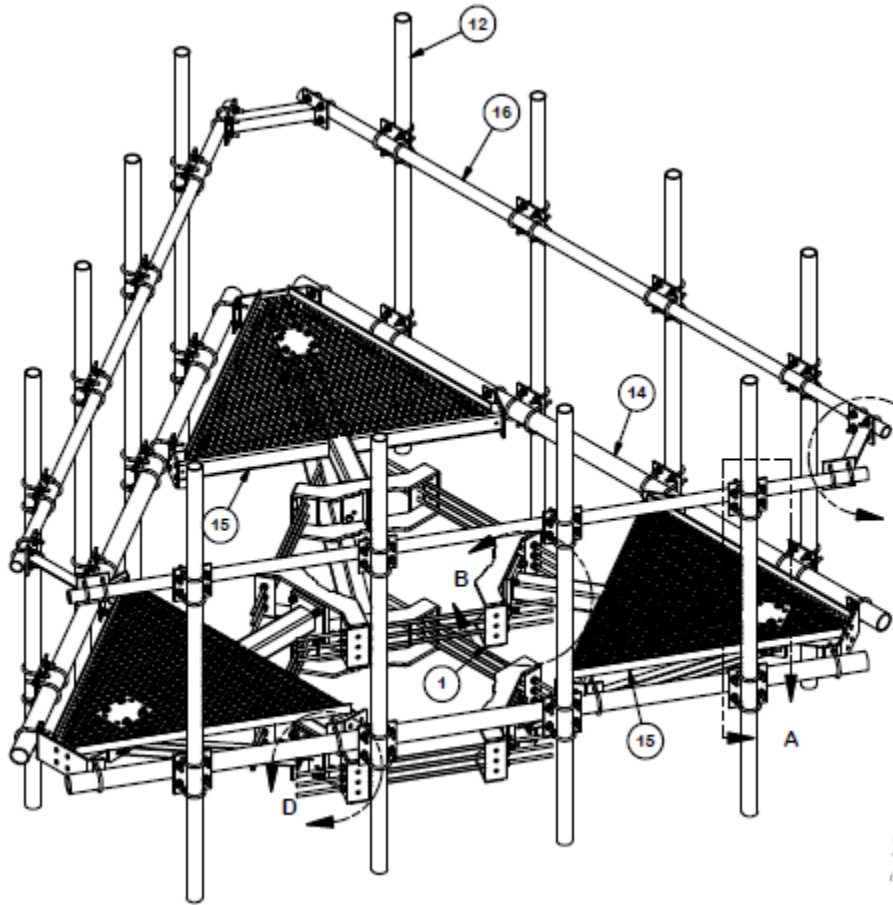
NOTE: The proposed mount (1) Site Pro RMQP-4096-HK is not currently installed on the monopole. The proposed mount was assumed to be installed per the manufacturer's instructions, and it was assumed that the proposed mount can be installed properly on the existing monopole. TES cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. 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.



Dwg: RMQP-4096-HK

Structure: CT03111-S-SBA - Stafford Springs

Sector: A

11/16/2020

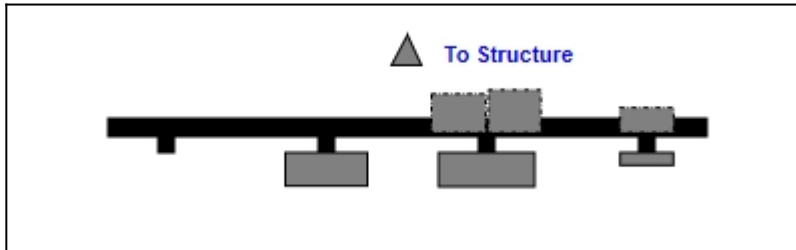


Structure Type: Monopole

Page: 1

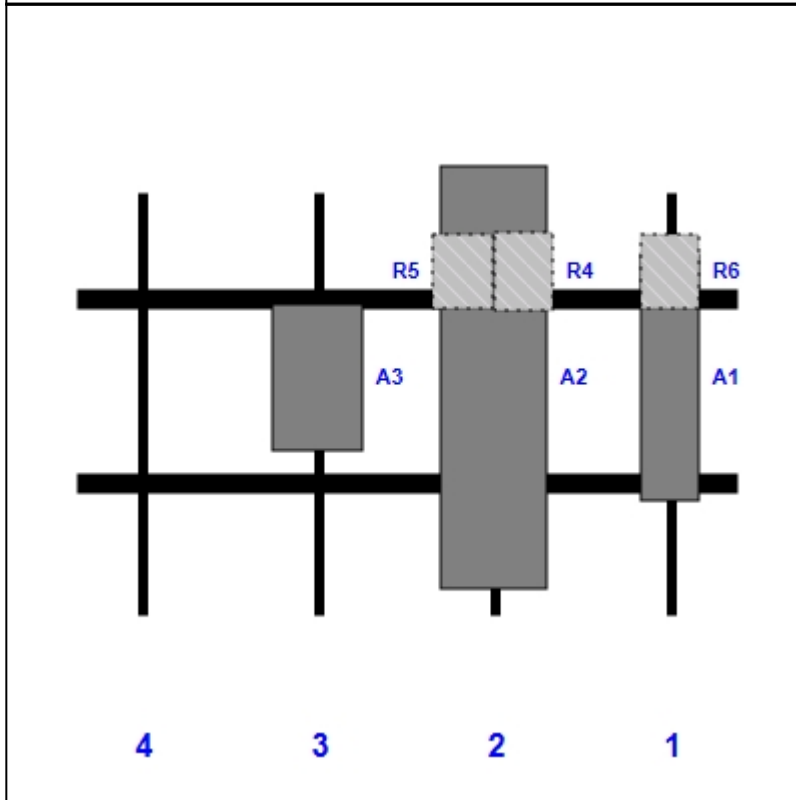
Mount Elev: 167.00

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	APX16DWV-16DWVS-E-A20	55.90	13.30	135.00	1	a	Front	42.00			
R6	4415 B66A	16.50	13.40	135.00	1	a	Behind	18.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	95.00	2	a	Front	42.00			
R4	4449 B71 + B85	17.90	13.10	95.00	2	a	Behind	18.00	7.00		
R5	4424 B25	16.50	13.50	95.00	2	a	Behind	18.00	-7.00		
A3	AIR6449 B41	33.10	20.50	55.00	3	a	Front	42.00			

Structure: CT03111-S-SBA - Stafford Springs

Sector: **B**

11/16/2020

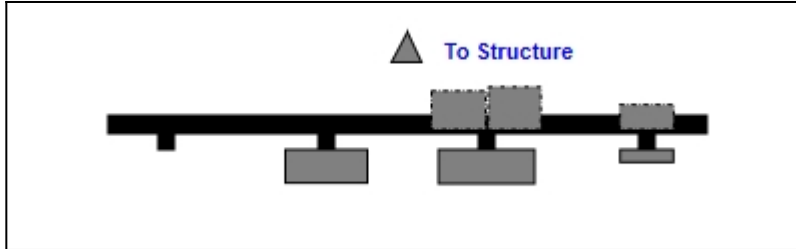


Structure Type: Monopole

Page: 2

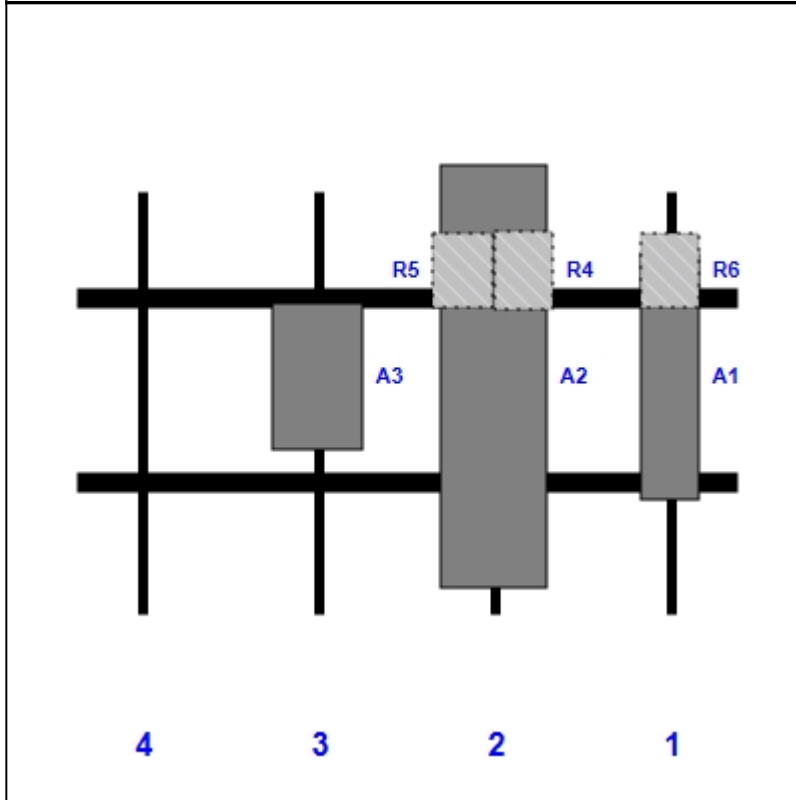
Mount Elev: 167.00

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	APX16DWV-16DWVS-E-A20	55.90	13.30	135.00	1	a	Front	42.00			
R6	4415 B66A	16.50	13.40	135.00	1	a	Behind	18.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	95.00	2	a	Front	42.00			
R4	4449 B71 + B85	17.90	13.10	95.00	2	a	Behind	18.00	7.00		
R5	4424 B25	16.50	13.50	95.00	2	a	Behind	18.00	-7.00		
A3	AIR6449 B41	33.10	20.50	55.00	3	a	Front	42.00			

Sector: **C**

11/16/2020

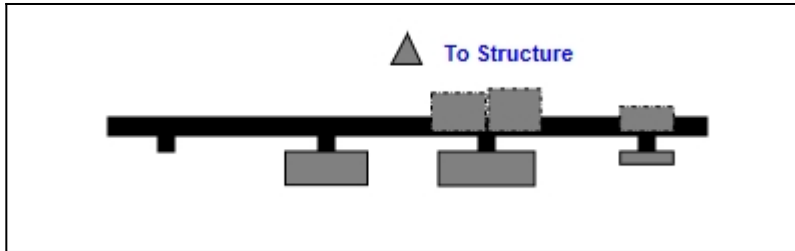
Structure Type: Monopole

Mount Elev: 167.00

Page: 3

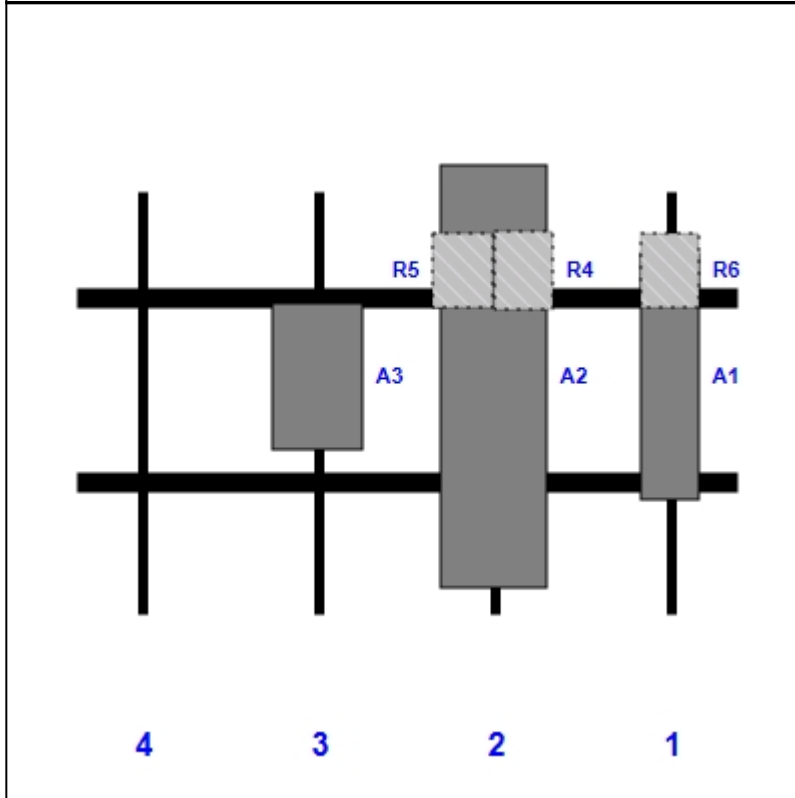


Plan View

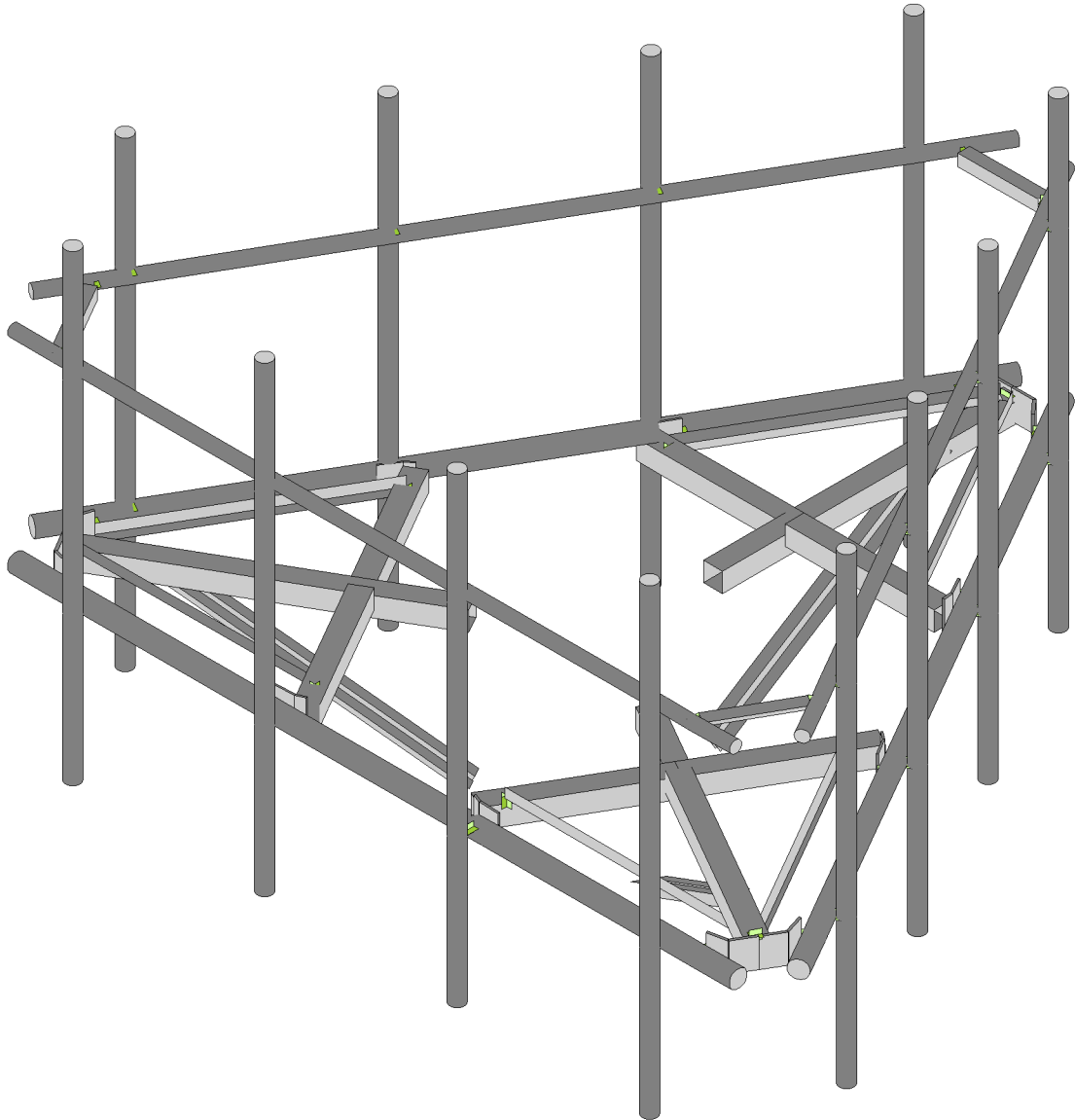
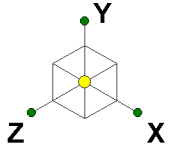


Front View

Looking Toward Structure



Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.30	135.00	1	a	Front	42.00			
R6	4415 B66A	16.50	13.40	135.00	1	a	Behind	18.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	95.00	2	a	Front	42.00			
R4	4449 B71 + B85	17.90	13.10	95.00	2	a	Behind	18.00	7.00		
R5	4424 B25	16.50	13.50	95.00	2	a	Behind	18.00	-7.00		
A3	AIR6449 B41	33.10	20.50	55.00	3	a	Front	42.00			



Tower Engineering Solutio...

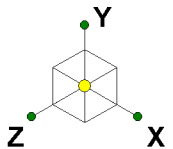
TES Project No. 99616

CT03111-S-SBA_MT_LO_Loads Only_H

SK - 1

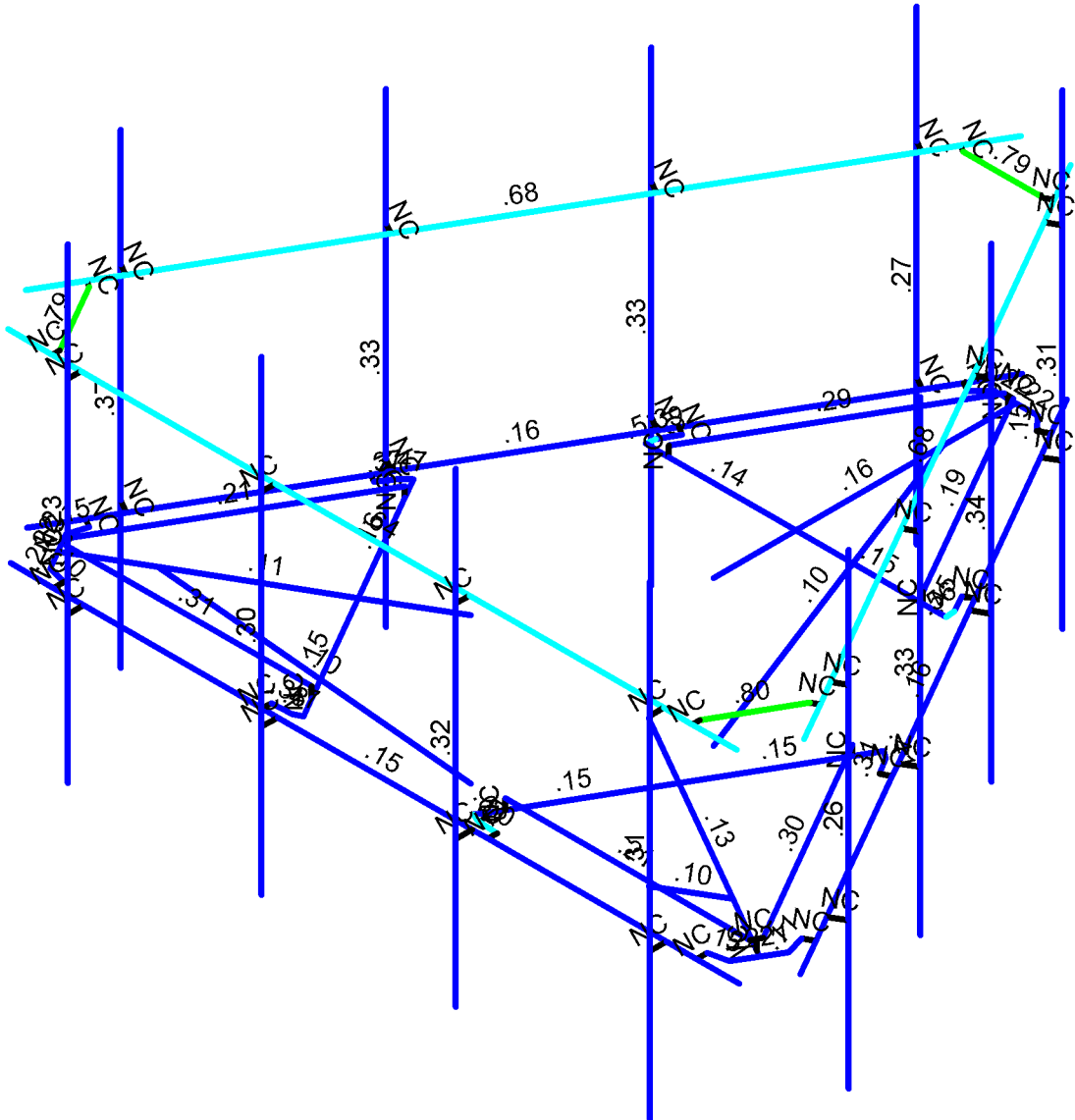
Nov 16, 2020 at 11:15 AM

CT03111-S-SBA_99616_H_RISA_L...



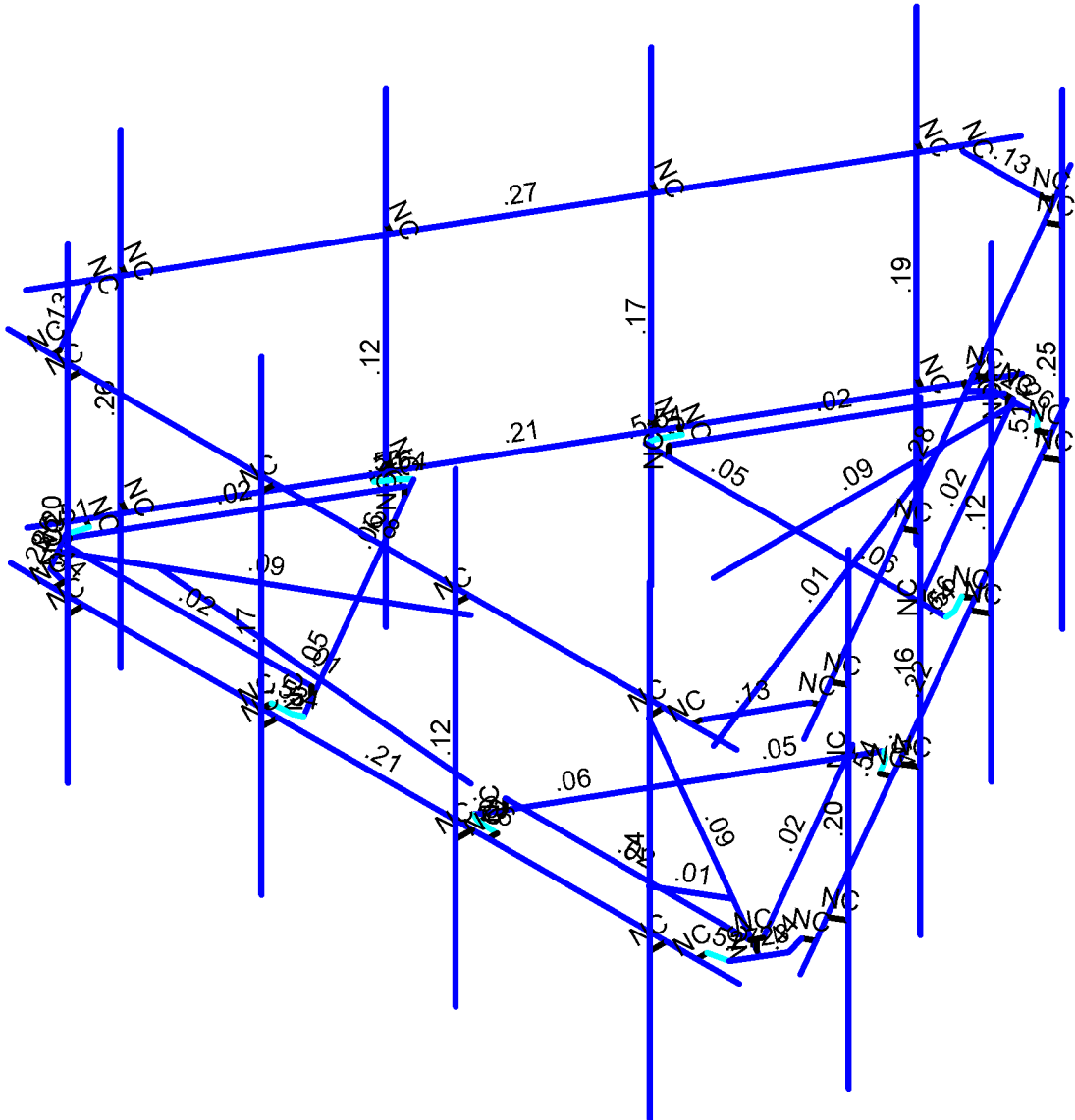
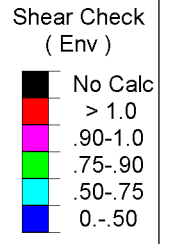
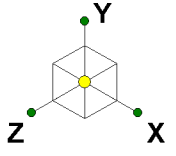
Code Check
(Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0W (0 Deg)

Tower Engineering Solutio...	CT03111-S-SBA_MT_LO_Loads Only_H	SK - 2
TES Project No. 99616		Nov 16, 2020 at 11:16 AM
		CT03111-S-SBA_99616_H_RISA_L...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0W (0 Deg)

Tower Engineering Solutio...		SK - 3
	CT03111-S-SBA_MT_LO_Loads Only_H	Nov 16, 2020 at 11:16 AM
TES Project No. 99616		CT03111-S-SBA_99616_H_RISA_L...



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FG€	p FG€	É É É H H I	H É	É É É € H H	€	
FGF	p FGF	Í É J F Í Í J	H É	H É Í Í G Í	€	
FGG	p FGG	É É Í J Í Í	H É	H É Í Í G Í	€	
FGH	p FGH	É É € H Í	H É	É É € Í Í	€	
FGI	p FGI	Í É Ú H J Í Í	H É	G É € J Í	€	
FGJ	p FGJ	É É J € Í Í	H É	É É H U Í J	€	
FGK	p FGK	Í É Í F H J	H É	G É Í J J Í F	€	
FGL	p FGL	É É Ú J J G	H É	G É € Í G	€	
FGM	p FGM	É É É € I F	H É	É É € H G G	€	
FGN	p FGN	É É É G H I	H É	G É Í F Í G	€	
FHE	p FHE	É É É J F Í G J	H É	É É H G G	€	
FHF	p FHF	Í É F Í € G	€	H É Í G G Í	€	
FHG	p FHG	É É É F Í F Í	€	H É Í G G Í	€	
FHH	p FHH	€ É J I Í Í	€	É É F Í Í J	€	
FHI	p FHI	Í É F F Í H F	€	G É I € J F	€	
FHJ	p FHJ	É É F G Í Í	€	G É I G G	€	
FHK	p FHK	É É É J Í F H	€	É É F H G G	€	
FHL	p FHL	F É H Í J H	€	H É J G G Í	€	
FHM	p FHM	É É É H G Í Í	€	H É J G G Í	€	
FHN	p FHN	G É € H Í Í	€	É É É G Í G F	€	
FI€	p FI€	I É H F I	€	É É G G G Í	€	
FI F	p FI F	É É É H F H J	€	É É G € I H	€	
FI G	p FI G	É É € I	€	É É É F J J Í	€	
FI H	p FI H	G É Í F I G	€	É É É G J I Í	€	
FI I	p FI I	É É É Í F I G	€	É É É G J I Í	€	
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FI J	p FI J	€ É H Í	€ É Í Í Í	É É € G H Í Í	€	
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FÍ G	p FÍ G	É É É Í Í F G	€	H É Í H €	€	
FÍ H	p FÍ H	É É € € Í	€	H É Í J I H	€	
FÍ I	p FÍ I	É É É H € Í	€	H É J I J H	€	
FÍ Í	p FÍ Í	É É É H G F	€	É É É Í Í Í Í	€	
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FÍ Ï	p FÍ Ï	É É É Í G F G	€	É É É Í H G J	€	
FÍ ð	p FÍ ð	É É É € H Í	€	H É Í G G Í	€	
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Í Ï	T FEI	Ú[æ^ÁÓ:æ&á ÉÉ ÉHH			Šá^^	ÉÉ	ÉÉ	Šæ^A)æ
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Í G	T FFG	Ú[æ^ÁÓ:æ&á * GÉÍ J			Šá^^	F	F	Šæ^A)æ
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Šæ^A)	Ú@^	Š`)*c@zá	Šá^^Zá	Šá::Zá	Š&[] Á[]ZáŠ&[] Á[]čzáŠÉ[]^Š S^^	S::	Òá	Ü	æzá Ø`)&ç
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Í	T ÚFÓ	ÿ	ÉÉÉÍ	F
Î	T ÚFÓ	ÿ	ÉÉÉÍ	Í
Ï	T ÚGCE	ÿ	É Í	ÉÉ
Ì	T ÚGCE	ÿ	É Í	ÍÉÉ
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F€	T ÚGÓ	ÿ	É Í	ÍÉÉ
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GF	T ÚGÓ	ÿ	ÉÉ HÉ	FÉÉ
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A Ya Vyf'Dc]bh@UXg f6 @ ' : 5 bhYbbUK : fcbtÉf c bhji YXL

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FJ	T ÚGÉ	Z	É FÉHG	FÉ
GE	T ÚGÓ	Z	É É	FÉ
GF	T ÚGÓ	Z	É É	FÉ
GG	T ÚGÉ	Z	É É F	FÉ
GH	T ÚGÓ	Z	É É	FÉ
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İ́	T ÚGCE	Z	É É	Í É
J	T ÚGÓ	Z	É J	É
FE	T ÚGÓ	Z	É J	Í É
FF	T ÚGÓ	Z	É J	É
FG	T ÚGÓ	Z	É J	Í É
FH	T ÚHCE	Z	É É F	G
FI	T ÚHCE	Z	É É F	Í
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EXHIBIT 9

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CTHA526A

SBA Stafford Monopole
Mihaliak Rd
Willington, CT 06279

June 17, 2019

Transcom Engineering Project Number: 737001-0172

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	5.55 %

Transcom Engineering, Inc.

Wireless Network Design and Deployment

June 17, 2019

T-MOBILE

Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 6009

Emissions Analysis for Site: **CTHA526A – SBA Stafford Monopole**

Transcom Engineering, Inc (“Transcom”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **Mihaliak Rd, Willington, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population 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 & 700 MHz 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) and 2100 MHz (AWS) 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.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **Mihaliak Rd, Willington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Sectors Where Technology / Frequency Band deployed	Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
Sectors A, B & C	LTE	1900 MHz (PCS)	4	40
Sectors A, B & C	GSM	1900 MHz (PCS)	1	15
Sector A	LTE / 5G NR	600 MHz	2	40
Sector A	LTE	700 MHz	2	20
Sector A	LTE	2100 MHz (AWS)	2	60

Table 1: Channel Data Table

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Wireless Network Design and Deployment

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXV18-206517S-C-A20	167
A	2	RFS APXVAARR24_43-U-NA20	167
B	1	RFS APXV18-206517S-C-A20	167
C	1	RFS APXV18-206517S-C-A20	167

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

Cable losses were factored in the calculations for this site. Since all **1900 MHz (PCS) & 2100 MHz (AWS)** radios are ground mounted the following cable loss values were used. For each ground mounted **1900 MHz (PCS)** radio there was **1.96 dB** of cable loss calculated into the system gains / losses for this site for **Sector A** and **4.2 dB** of cable loss calculated into the system gains / losses for this site for **Sectors B & C**. For each ground mounted **2100 MHz (AWS)** radio there was **2.01** of cable loss calculated into the system gains / losses for this site for **Sector A** and **4.33 dB** of cable loss calculated into the system gains / losses for this site for **Sectors B & C**. These values were calculated based upon the manufacturers specifications for **190 feet** of **1-5/8"** coax for **Sector A** and **250 feet** of **7/8"** coax for **Sectors B & C**.

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Wireless Network Design and Deployment

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXV18-206517S-C-A20	1900 MHz (PCS)	16.65	6	190	5,594.40	0.77
Antenna A2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	6	240	5,702.75	1.26
Sector A Composite MPE%							2.03
Antenna B1	RFS APXV18-206517S-C-A20	1900 MHz (PCS)	16.65	6	190	3,340.05	0.46
Sector B Composite MPE%							0.46
Antenna C1	RFS APXV18-206517S-C-A20	1900 MHz (PCS)	16.65	6	190	3,340.05	0.46
Sector C Composite MPE%							0.46

Table 3: T-MOBILE Emissions Levels

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The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is **Sector A**. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
T-MOBILE – Max Sector Value (Sector A)	2.03 %
Verizon Wireless	1.74 %
AT&T	1.78 %
Site Total MPE %:	5.55 %

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.03 %
T-MOBILE Sector B Total:	0.46 %
T-MOBILE Sector C Total:	0.46 %
Site Total:	5.55 %

Table 5: Site MPE Summary

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Wireless Network Design and Deployment

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, the sector with the largest calculated MPE% is **Sector A**.

T-MOBILE _ Frequency Band / Technology Max Power Values (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 (PCS) LTE	4	1,177.77	167	6.53	1900 MHz (PCS)	1000	0.65%
T-Mobile 1900 MHz (PCS) GSM	2	441.66	167	1.23	1900 MHz (PCS)	1000	0.12%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	167	2.19	600 MHz	400	0.55%
T-Mobile 700 MHz LTE	2	432.54	167	1.20	700 MHz	467	0.26%
T-Mobile 2100 MHz (AWS) LTE	2	1,629.86	167	4.52	2100 MHz (AWS)	1000	0.45%
						Total:	2.03%

Table 6: T-MOBILE Maximum Sector MPE Power Values

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Wireless Network Design and Deployment

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:	2.03 %
Sector B:	0.46 %
Sector C:	0.46 %
T-MOBILE Maximum Total (per sector):	2.03 %
Site Total:	5.55 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **5.55 %** 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.



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