



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

January 8, 2021

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

Notice of Exempt Modification
151 Sand Hill Road, South Windsor, CT 06074
Latitude : 41.836000
Longitude : -72.552000
T-Mobile #: CT11497A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 160-foot level of the existing 187-foot Monopole Tower at 151 Sand Hill Road. The tower is owned by SBA Properties, Inc. The property is owned by the Town of South Windsor. T-Mobile plans to remove three (3) existing antennas and replace with three (3) new L2500 MHz antennas.

The new antennas support 5G services and would be installed at the 160-foot level of the tower.

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

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) Ericsson - AIR 21 B2A B4P – Panel (Remove) / (3) Ericsson AIR6449 B41 Panel L2500 MHz (Replace)

Install New:

- (3) Ericsson Radio 4415 RRUs
- (3) Commscope SDX1926Q-43 Quadplexers
- Kicker Kit w/Collar Mount
- (1) 1-5/8" fiber

Existing Equipment to Remain:

- (3) RFS APXVAARR24_43-U-NA20 600/700 MHz Panel
- (3) Ericsson AIR32 KRD901146-1_B66A_B2A L1900/2100 MHz Panel
- (3) Ericsson KRY 112 144/1 TMAs
- (3) Ericsson Radio 4449 B71+B85 RRUs
- Low Profile Platform w/Hand Rail
- (6) 1-5/8" coax
- (1) ½" Coax for GPS (on ground)

Entitlements:

- (3) 1-5/8" coax
- (3) 1-5/8" fiber

GROUND

Install New:

- Equipment inside existing 6131 cabinet
- Battery Cabinet on existing concrete pad

Remove and Replace:

- Existing Nortel S12000 equipment cabinet (remove) / Ericsson 6160 Equip. Cabinet on existing concrete pad (replace)

This facility was approved on October 3, 2000, by the Town of South Windsor's Planning and Zoning Commission under Application #00-30P for Site Plan and Special Exception. Prior approval for Variance from the Zoning Board of Appeals was given on February 3, 2000. The P&Z approved a 199.9' tower to accommodate at least two additional users, as well as to serve the police and fire departments. All utilities were to be installed underground. There were no further post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of South Windsor's Mayor, Andrew Paterna, and Zoning Enforcement Officer, Pamela Zarambo. (Separate notice is not being sent to a property owner as it belongs to the Town, or to the 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: Andrew Paterna, Mayor of the Town of South Windsor / with attachments
Town of South Windsor, Town Hall, 1540 Sullivan Ave, South Windsor, CT 06074
 Pamela Zarambo, Zoning Enforcement Officer / with attachments
Town of South Windsor, Town Hall, 1540 Sullivan Avenue, South Windsor, CT 06074

EXHIBIT LIST

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines.
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of South Windsor P&Z Commission 10/3/2000
Exhibit 6	Construction Drawings	Chappell Engineering dated 12/20/20
Exhibit 7	Structural Analysis	TES dated 11/10/20
Exhibit 8	Post-Mod Mount Analysis	TES dated 12/2/20
Exhibit 9	MMCD	TES dated 12/1/20
Exhibit 10	EME Report	Transcom dated 12/2/20

EXHIBIT 1

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

EXHIBIT 2

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

SHIP DATE: 08JAN21
ACTWGT: 1.00 LB
CAD: 105843304/NET4280

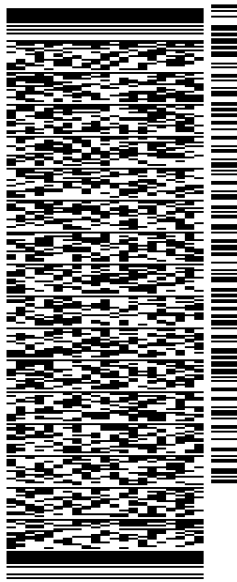
BILL SENDER

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.J1/1136/B766

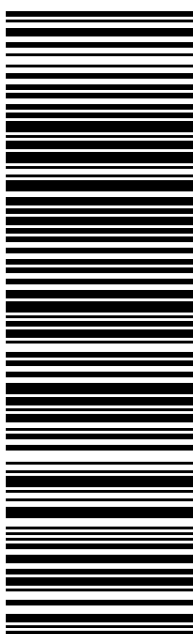


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PRIORITY OVERNIGHT

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

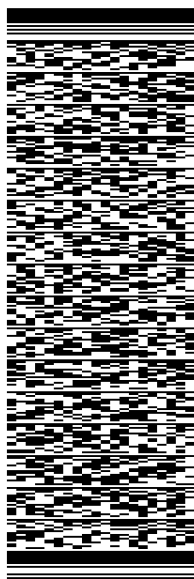
ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 08JAN21
ACTWGT: 1.00 LB
CAD: 105843304/NET4280
BILL SENDER

TO ANDREW PATERNA
TOWN OF SOUTH WINDSOR
1540 SULLIVAN AVE.

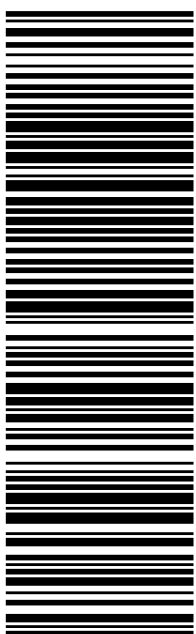
SOUTH WINDSOR CT 06074

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



TRK# 7725 7589 9659
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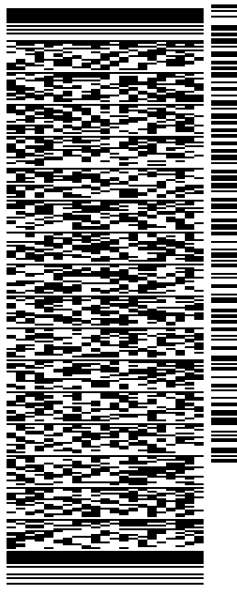
ORIGIN ID:BBFA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 08JAN21
ACTWGT: 1.00 LB
CAD: 105843304/NET4280
BILL SENDER

TO
PAMELA ZARAMBO, ZONE ENF. OFFICER
TOWN OF SOUTH WINDSOR
1540 SULLIVAN AVE.

SOUTH WINDSOR CT 06074

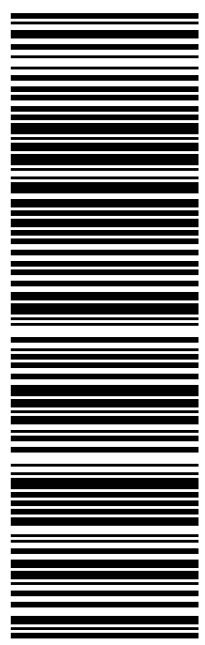
(508) 251-0720 X 3807 REF: 105692009-6089
INV# PO: DEPT:



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EXHIBIT 3



Property Information

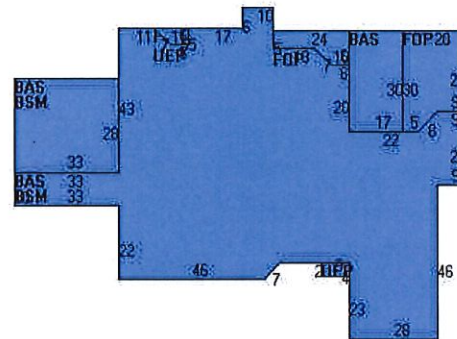
Property Location	151 SAND HILL ROAD
Owner	SOUTH WINDSOR TOWN OF 56
Co-Owner	
Mailing Address	
Land Use	920 Exempt Comm
Land Class	E
Zoning Code	RR
Census Tract	4871

Neighborhood	C400
Acreage	5.31
Utilities	
Lot Setting/Desc	
Water Information	CONNECTICUT WATER 860.623.3355
Trash Day	THURSDAY

Photo



Sketch



Primary Construction Details

Year Built	1984
Stories	1.00
Building Style	Jail
Building Use	Comm/Ind
Building Condition	B
Floors	Quarry Tile
Total Rooms	0

Bedrooms	
Full Bathrooms	58
Half Bathrooms	
Bath Style	n/a
Kitchen Style	n/a
Roof Style	Flat
Roof Cover	Tar & Gravel

Exterior Walls	Brick Veneer
Interior Walls	Minimum
Heating Type	Forced Hot Air
Heating Fuel	Oil
AC Type	
Gross Bldg Area	19300
Total Living Area	10142



Town of South Windsor, CT

Property Listing Report

Map Block Lot 76-8

Account

79800151

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

Item	Appraised	Assessed
Buildings	2613100	1829200
Extras	44000	30800
Improvements	2695500	1886900
Outbuildings	38400	26900
Land	316600	221600
Total	3012100	2108500

Outbuilding and Extra Items

Type	Description
Paving	42000.00 S.F.
Sprinklers-Wet	9632.00 S.F.
Lights	10.00 UNITS
Elevator Pass	2.00 STOPS

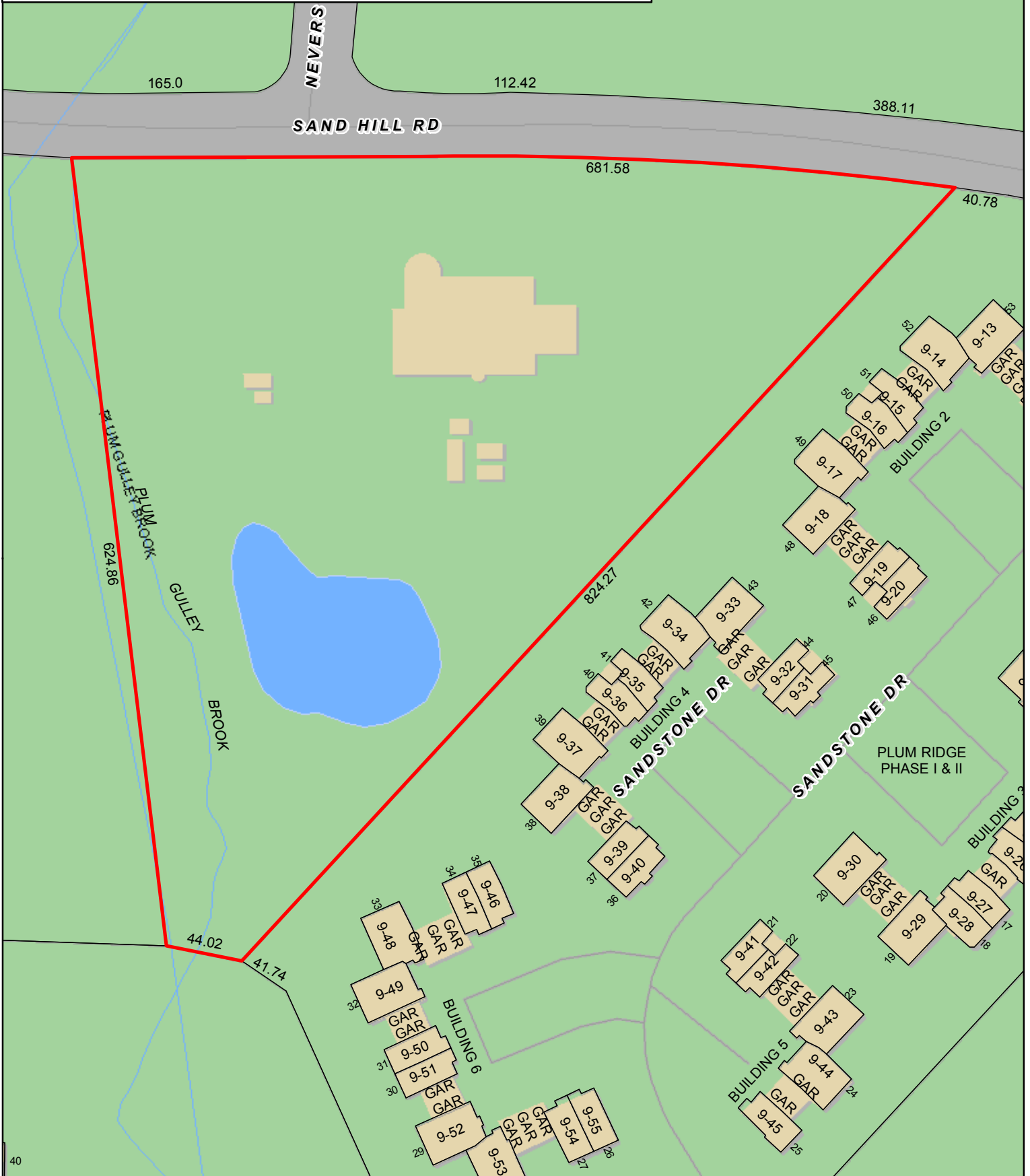
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	19300	10142

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
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EXHIBIT 4



Approximate Scale:
1 inch = 100 feet



Map Produced:
July 2012

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



EXHIBIT 5



Town of South Windsor

1540 SULLIVAN AVENUE • SOUTH WINDSOR, CONN. 06074
AREA CODE 860 / 644-2511

HAND DELIVERED

October 16, 2000

Town of South Windsor
c/o Matthew Galligan, Town Manager
1540 Sullivan Avenue
South Windsor, CT 06074

Dear Mr. Galligan:

Re: Appl #00-30P, Town of South Windsor Site Plan and Special Exception

We are pleased to advise you that the Planning & Zoning Commission voted on October 3, 2000, to approve the above referenced application for a Site Plan of Development and Special Exception to Section 16.0-16.8.

This approval is for the construction of a telecommunications tower on property located 151 Sand Hill Rd., RR zone as shown on plans prepared by Design Professionals, Inc., Job No. 1297, dated 5/10/00, as revised. This approval is subject to the following modifications:

1. Prior to commencement of any site work, a meeting must be held with Town Staff.
1. No building permit will be issued until the final mylars have been filed in the Town Clerk's office.
2. An as-built plan is required prior to issuance of a Certificate of Occupancy per Section 8.1.10 of the Zoning Regulations.
3. All plans used in the field by the developer must bear the stamp and authorized signature of the Town of South Windsor.
4. This approval will expire in 5 years on October 3, 2005. Permit renewals can be granted upon submittal of a request by the owner; renewal does not require a new application or public hearing.

Black and white transparent mylars of Sheet #2 with the above modifications, together with three blueprint copies of the entire set of plans must be submitted to this Commission within 30 days to be stamped and signed. The letters of approval of this Commission as well as the Inland Wetlands Agency/Conservation Commission must be reproduced on the mylars.

After the mylars have been signed by the Commission, they will be returned to you for filing in the Office of the Town Clerk. After filing these plans, a copy of the receipt must be submitted to the Planning Department.

The attached Special Exception form must be completed and filed in the Town Clerk's office. The special exception will take effect upon filing.

Sincerely,

Walter J. Mealy

Walter J. Mealy, Chairman
Planning and Zoning Commission

cc: Town Engineer
Chief Building Official
Assessor
Superintendent of Pollution Control
Fire Marshal
Design Professionals, Inc.

Town of South Windsor Telecommunications Tower PH 9/12/00

1. Request for site plan modification and Special Exception for additional parking and to construct monopole telecommunications facility (replacing the existing tower) at the South Windsor Police facility at 151 Sand Hill Road, RR zone.
2. The site improvements include the expansion of on-site parking with a gain of 23 spaces along the southerly boundary of the site. They are also proposing the addition of a canopy to cover 10 spaces directly behind the building and a dumpster enclosure area. Proposed impervious coverage is 29.9%; 50% allowed.
3. There are some regulated wetlands on site, however all the construction activities are located out of the wetland buffer area.
4. Proposed tower height is 199.9 feet; 175 feet allowed. The applicant received a variance from the ZBA on February 3, 2000, for the following: variances to section 16.3 a, c, d & e to allow a commercial wireless telecommunication tower: The sections refer to (a) application for this facility by the Town rather than by a licensed carrier; (c) to allow a tower up to 199.00'; (d) to allow such a site within 1,000' of a playground or school; and (e) to allow a site within 500' of residences

is there
(b)?

The Zoning Board of appeals concluded the hardship to be as follows:

1. The existing telecommunications system and tower are inadequate and must be replaced to ensure quality town-wide emergency communications.
 2. The proposed replacement facility must be located at the subject site, and there are no reasonable alternatives.
 3. Characteristics of the coverage area, including topographic features of the Town, necessitate erecting a tower to the proposed height.
5. The Architectural and Design Review Committee reviewed this plan. They concurred with additional evergreen plantings along the northerly boundary (facing Plum Ridge Condo) to address gaps that currently exist in the buffer.
 6. Special Exception criteria to consider for the construction of a tower include:
 - ◆ There will be minimal adverse effects on uses in the area;
 - ◆ Surrounding property values will be conserved and the character of the neighborhood will not be unduly disrupted;

- ◆ The land is physically suited for such use and minimal adverse environmental and aesthetic impacts are created, including but not limited to whether alternate sites were exhausted; what lies within the fall zone of the tower; existence of endangered species; whether other development is being proposed or considered at or near the site; effect on bird habitats; and length of access road; and,
- ◆ Public health and safety will not be adversely affected.

7. Location preferences in the TCC regulation are (1) on existing structures such as buildings, water towers and utility poles, or existing/previously-approved towers; (2) on new towers with visual mitigation in commercial and industrial districts; and (3) on new towers located in commercial or industrial zones. There are three lower-priority categories also, including residential zones.
8. This tower will serve the police department, fire department as well as spots for co-locators.
9. General site requirements include:
 - Towers must be painted non-contrasting blue, gray or black;
 - Towers shall be designed to collapse upon themselves;
 - Any pole over 150 feet must accommodate at least two additional users; and
 - All utilities must be installed underground;
10. ????????Submittal requirements include a report from a licensed engineer indicating that the proposed wireless site will comply with the emission standards of the FCC for non-ionizing electromagnetic emissions; this report was submitted with the application.
11. A Special Exception for a telecommunications facility is granted for an initial five-year period. (Permit renewals can be granted upon submittal of a request by the owner; renewal does not require a new application or public hearing.) The regulations require that tower construction commence within one year from the date of approval. There is also an abandonment clause in the zoning regulations that requires removal of the facility within 90 days from the date of abandonment and restoration of the area to its previous appearance.

If this application is approved, the Planning Dept. has no additional modifications.

I, Walter J. Mealy, Chairman of the South Windsor Planning & Zoning Commission, hereby certify that on October 3, 2000, the Planning and Zoning Commission granted to The Town of South Windsor a Special Exception to Article 16.0-16.8 of the Zoning Regulations and Resubdivision to install a telecommunications tower on property located at 151 Sand Hill Rd. as shown on plans prepared by Design Professionals, Inc., Project No.1297.

Assessor's Map and Parcel Number: Map # 76 Parcel # 8
More particularly bounded and described as follows: See Attached

All that certain piece or parcel of land, situated on the southerly side of Sand Hill Road, in the Town of South Windsor, County of Hartford and State of Connecticut, containing 5.31 acres, bounded and described as follows:

Beginning at a point in the southerly line of Sand Hill Road, which point represents the northwesterly corner of the herein described premises and the northeasterly corner of land now or formerly of the Missionary Society of the Diocese of Connecticut; thence running S 6° 54' 21" E, 624.86 feet, along the easterly line of said land now or formerly of the Missionary Society of the Diocese of Connecticut, to a point marked by an iron pipe; thence running S 81° 27' 34" E, 44.02 feet, along land now or formerly of Norman P. Priest, to a point which represents the southeasterly corner of the herein described premises; thence running N 42° 56' 12" E, 824.29 feet, along the westerly line of other land of Allerton Construction Corporation, to a point in the southerly line of Sand Hill Road, which point represents the northeasterly corner of the herein described premises and the northwesterly corner of said other land of Allerton Construction Corporation; thence running in a generally westerly direction, along the southerly line of Sand Hill Road, a total distance of 681.58 feet to the point or place of beginning.

OWNER OF RECORD: Town of South Windsor

Dated at South Windsor, Connecticut this 16th day of October.

In accordance with CGS Section 8-3d

Walter J. Mealy
Walter J. Mealy, Chairman
Planning & Zoning Commission

Received for record this _____ day of _____, 19____, at

South Windsor, Connecticut ATTEST:

Received for record this _____ day of _____, 19____, at

South Windsor, Connecticut ATTEST:

EXHIBIT 6

CT497/SBA SOUTH WINDSOR

151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074
HARTFORD COUNTY

SITE NO.: CT11497A

SITE TYPE: 187'± MONOPOLE

RF DESIGN GUIDELINE: 67D5A997DB OUTDOOR

T-MOBILE NORTHEAST LLC

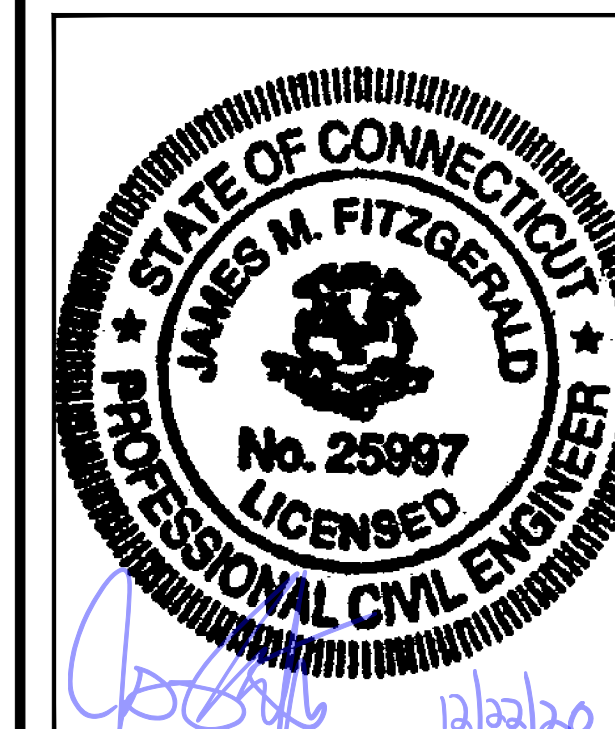
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700



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



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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

SITE NOTES

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

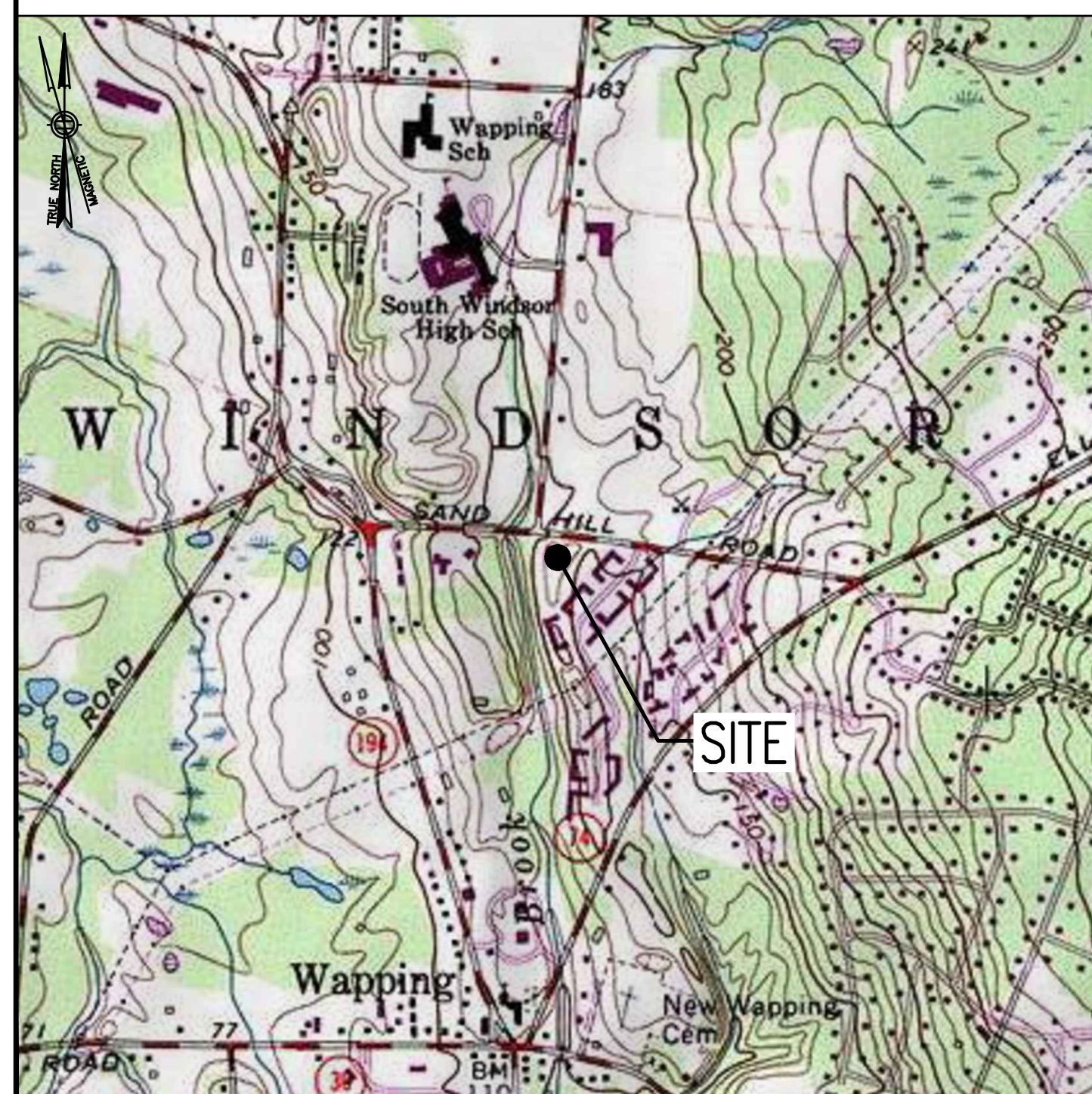
GENERAL NOTES

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

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



VICINITY MAP SCALE: 1" = 1000'-0"



DO NOT SCALE DRAWINGS

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

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	TOWER ELEVATION & ANTENNA PLANS	1
A-3	SITE DETAILS	1
A-4	ANTENNA & FEEDLINE CHARTS	1
E-1	ELECTRIC & GROUNDING DETAILS	1

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

PROJECT SUMMARY

SITE NUMBER:	CT11497A
SBA SITE NUMBER:	CT07824-S
SBA SITE NAME:	SOUTH WINDSOR
SITE ADDRESS:	151 SAND HILL ROAD SOUTH WINDSOR, CT 06074
PROPERTY OWNER:	TOWN OF SOUTH WINDSOR 56 C/O POLICE FACILITY 1540 SULLIVAN AVENUE SOUTH WINDSOR, 06074
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	HARTFORD
ZONING DISTRICT:	RURAL RESIDENTIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	187'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SROth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.835900° N41°50'09.24" LONGITUDE: -72.552100° W72°33'07.56"

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	12/22/20	ISSUED FOR CONSTRUCTION	CMC
0	11/19/20	ISSUED FOR REVIEW	CMC

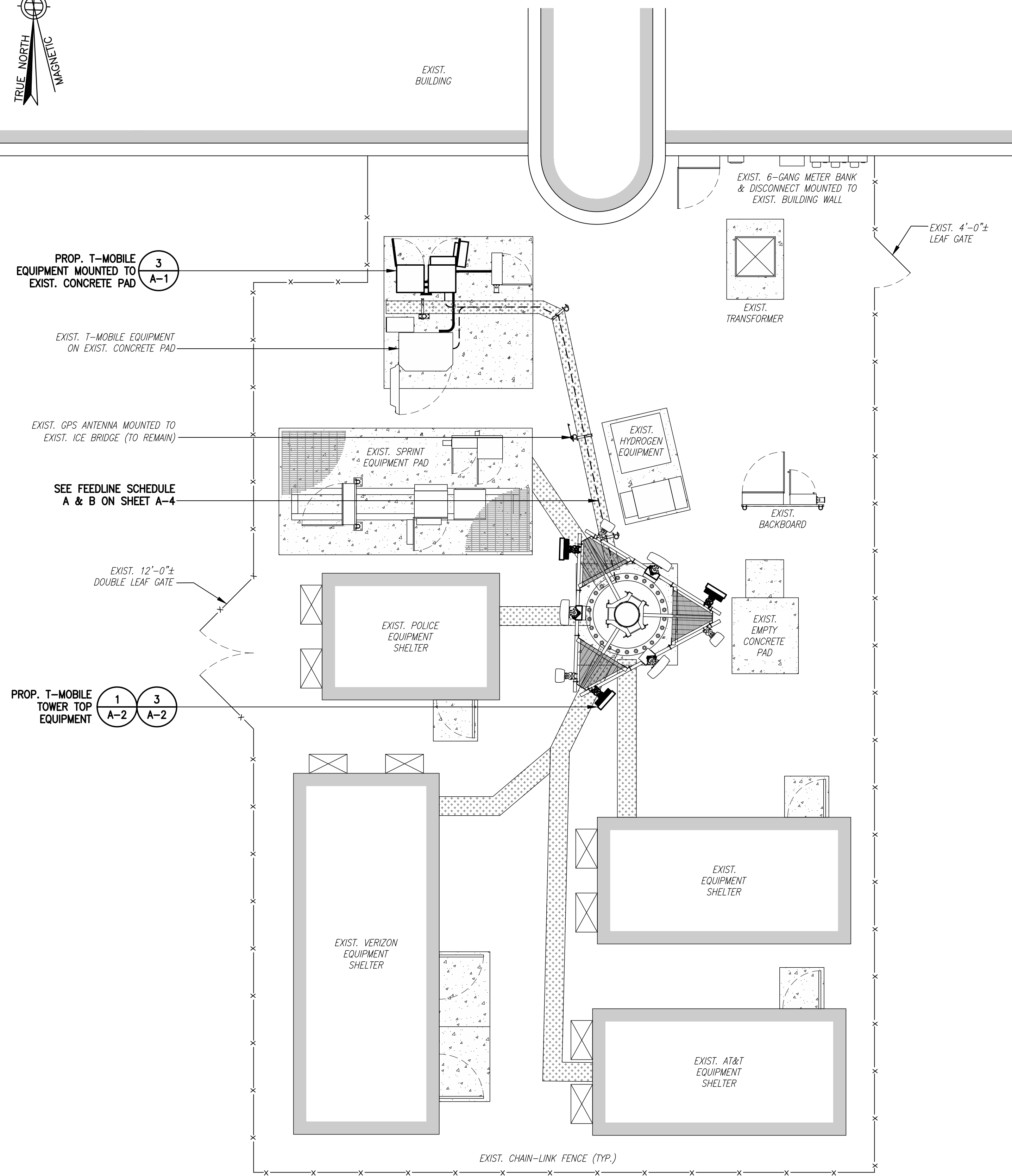
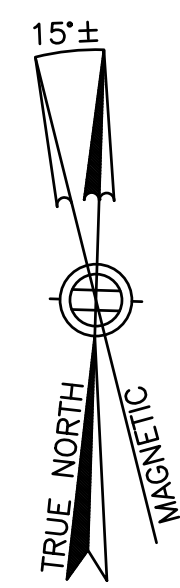
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SOUTH WINDSOR, CT 06074

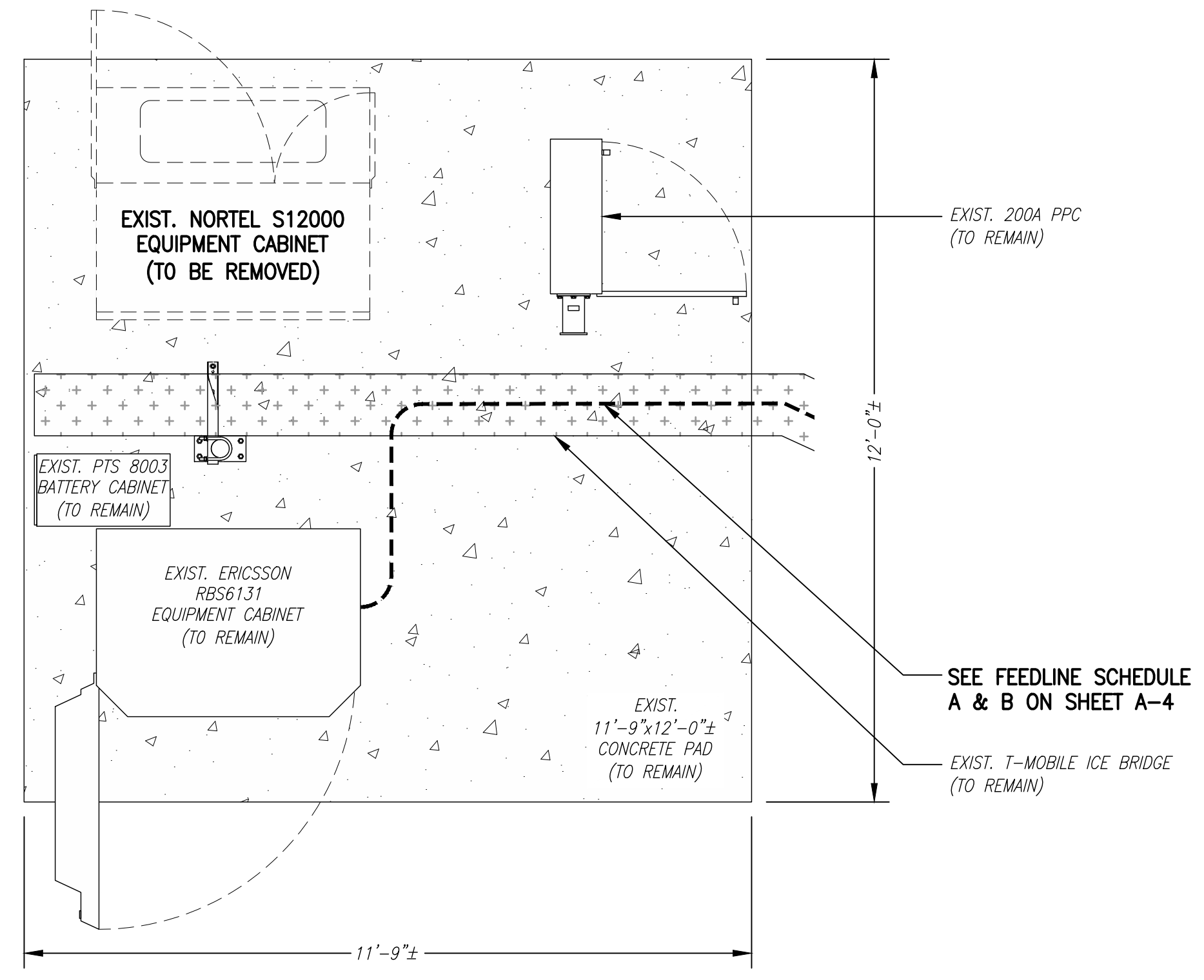
SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

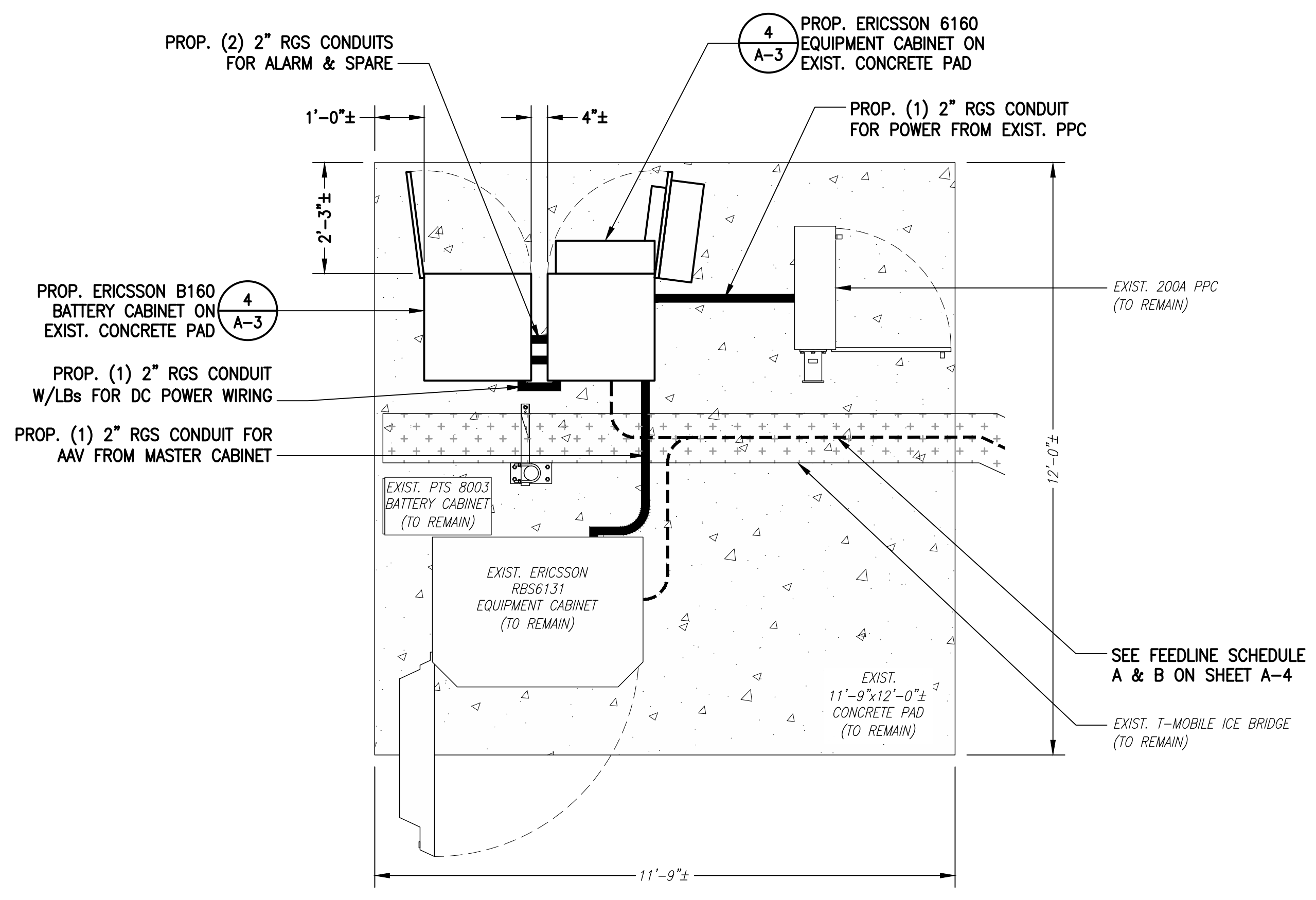
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



COMPOUND PLAN (1/A-1)
 SCALE: 3/16" = 1'-0"
 0 5'-4" 10'-8" 16'-0"



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



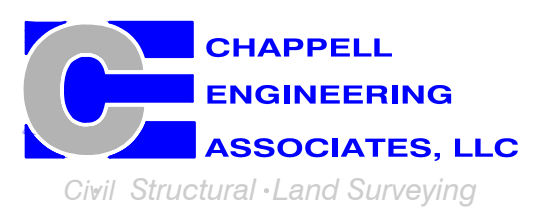
PROPOSED EQUIPMENT PLAN (3/A-1)
 SCALE: 1/2" = 1'-0"
 0 2' 4' 6'

**T-MOBILE
 NORTHEAST LLC**

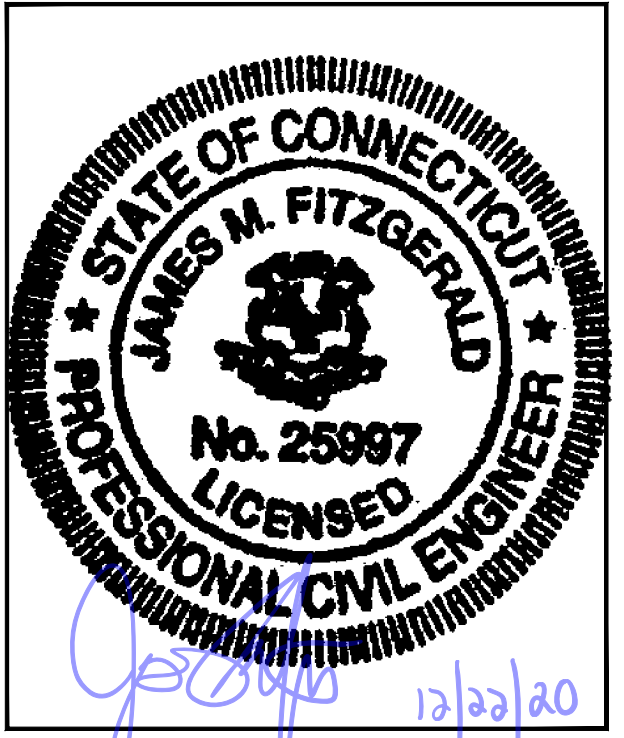
15 COMMERCE WAY, SUITE B
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 SOUTH WINDSOR, CT 06074

SHEET TITLE
**COMPOUND &
 EQUIPMENT PLANS**

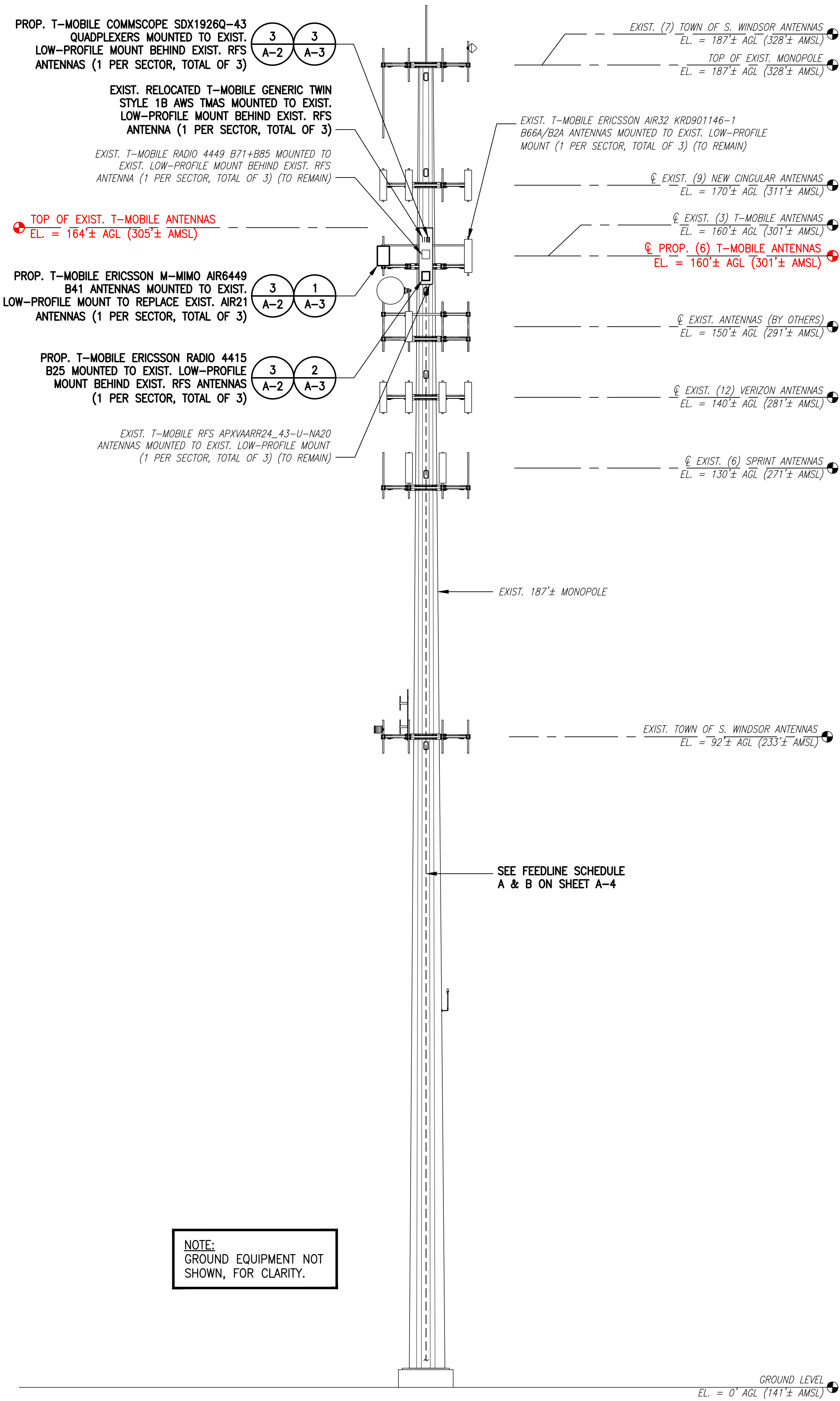
SHEET NUMBER
A-1

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.

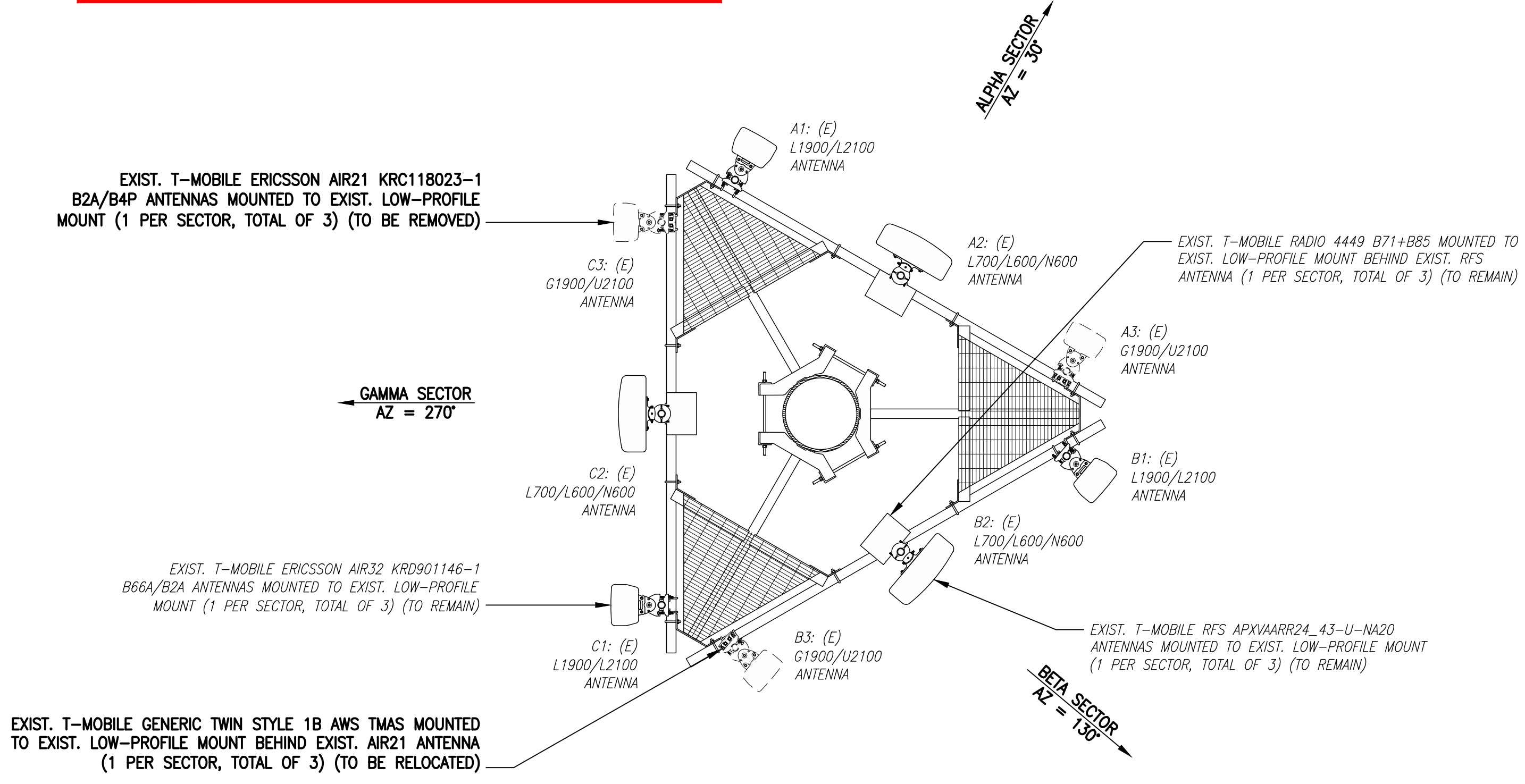
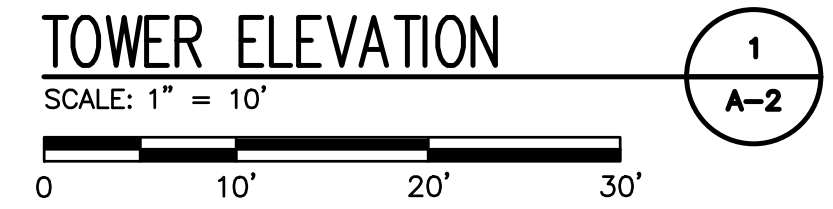
SPECIAL CONSTRUCTION NOTE (SBA-PROVIDED ANTENNA MOUNT STRUCTURAL MOD SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE T-MOBILE RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

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.

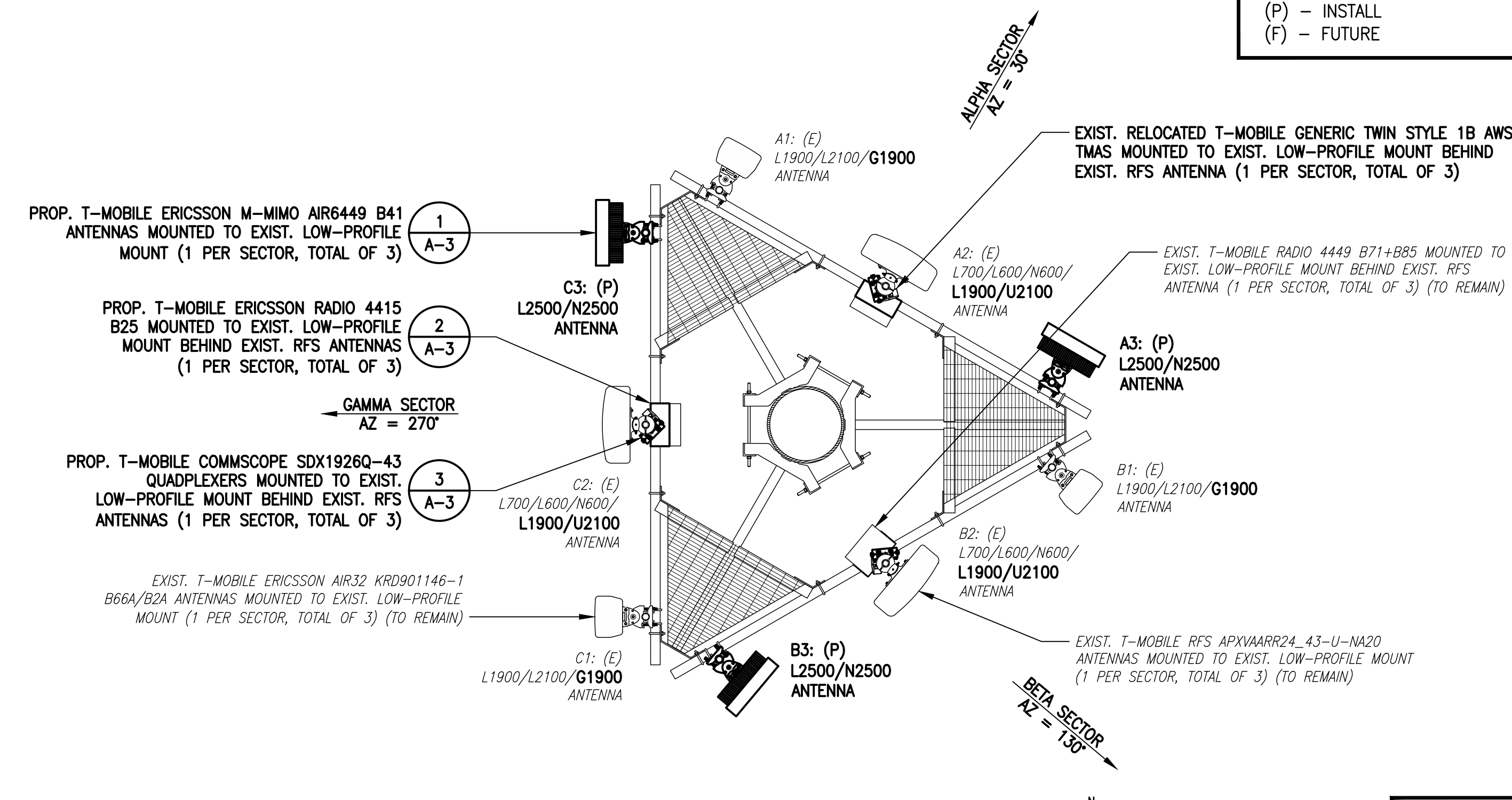


NOTE:
 GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.



EXISTING ANTENNA PLAN
 SCALE: N.T.S.

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



PROPOSED ANTENNA PLAN
 SCALE: N.T.S.

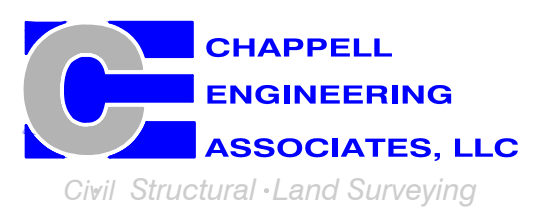
NOTE:
 VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

**T-MOBILE
 NORTHEAST LLC**

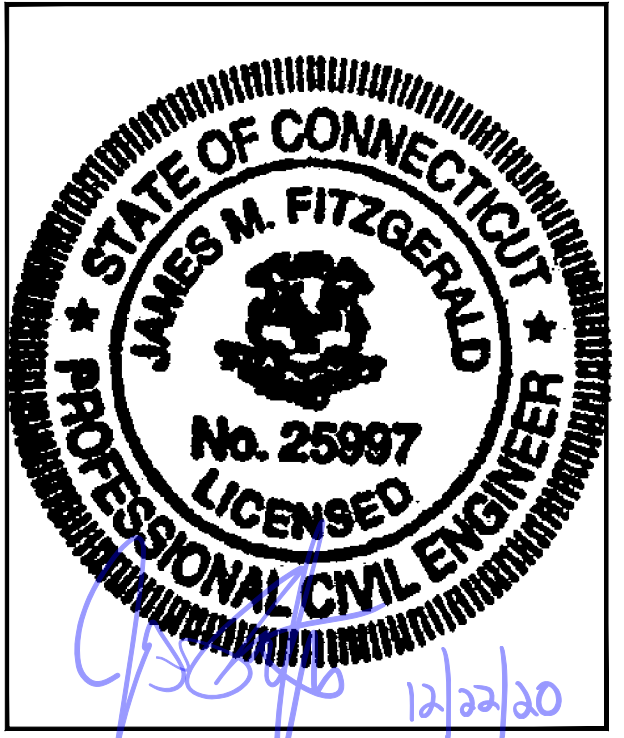
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CT11497A

SITE ADDRESS:
 151 SAND HILL ROAD
 SOUTH WINDSOR, CT 06074

SHEET TITLE
**TOWER ELEVATION &
 ANTENNA PLANS**

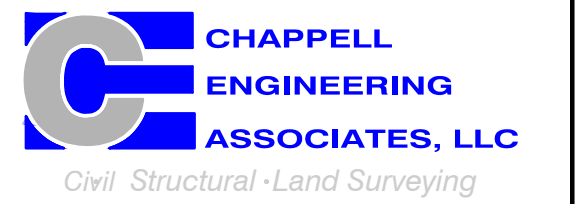
SHEET NUMBER
A-2

**T-MOBILE
NORTHEAST LLC**

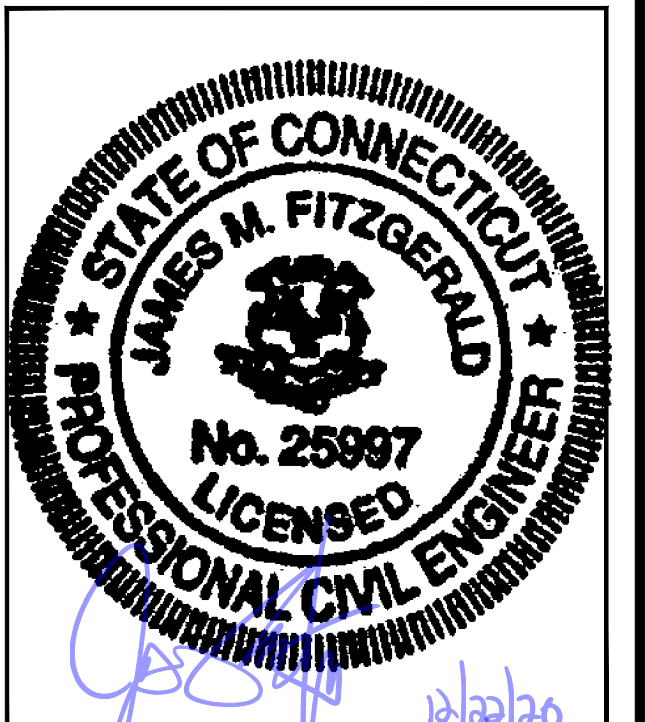
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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-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 DETAIL (1) (A-3)
SCALE: N.T.S.



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

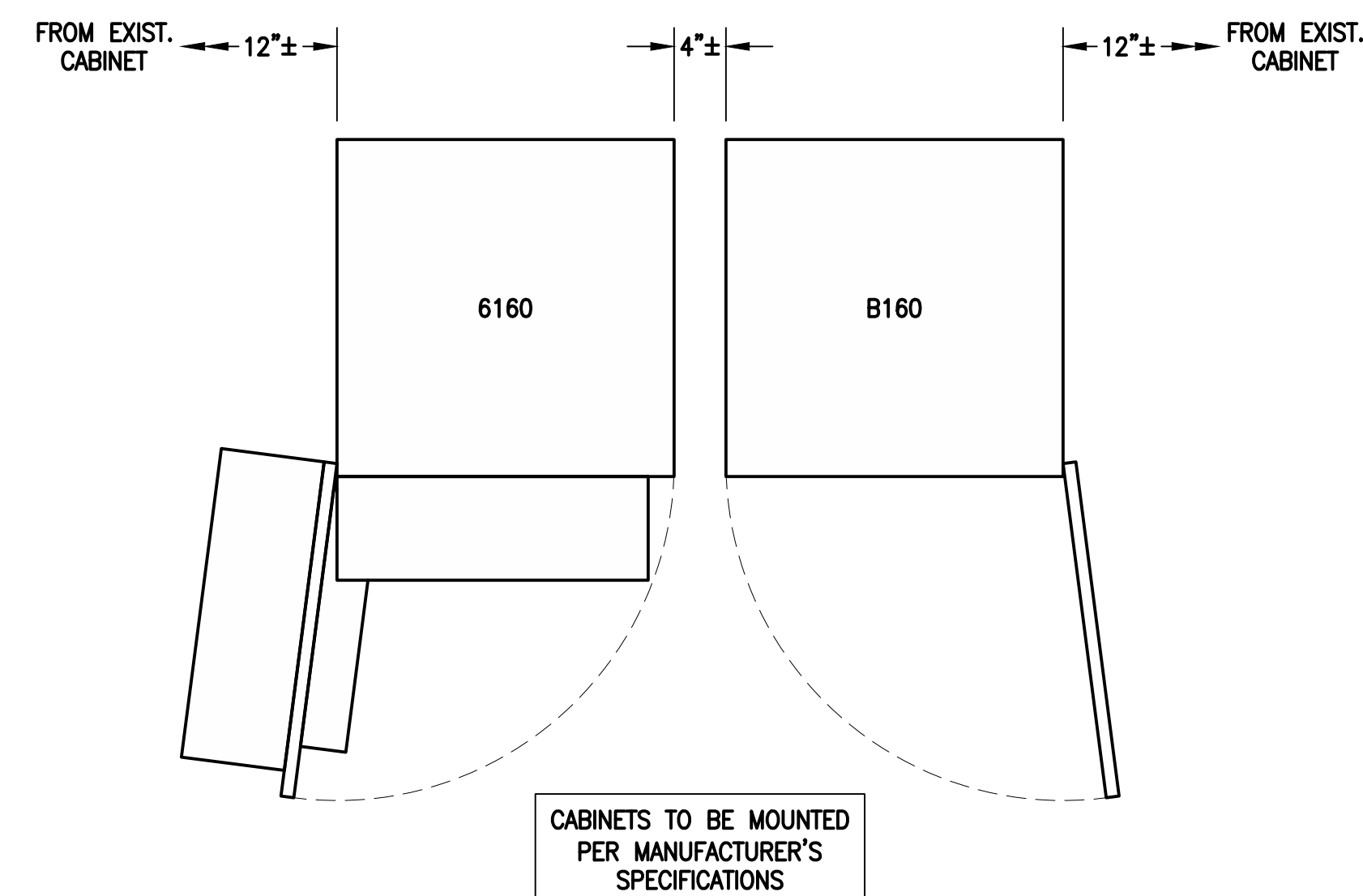
RADIO DETAIL (2) (A-3)
SCALE: N.T.S.



COMMSCOPE SDX1926Q-43 QUADPLEXER

DIMENSIONS: 4.2"H x 6.9"W x 2.9"D
WEIGHT: 6.2 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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



ERICSSON 6160 SITE SUPPORT CABINET

DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET

DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
QUANTITY: TOTAL OF 1

EQUIPMENT DETAILS (4) (A-3)
SCALE: N.T.S.

FINAL ANTENNA CONFIGURATION								
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 ERICSSON AIR32 KRD901146-1 B66A/B2A	160'± AGL	30°	0°	2°	L2100	-	EXIST. (6) 1-5/8" COAX CABLES EXIST. (3) 1-5/8" (6x12) HCS FIBER CABLES PROP. (1) 1-5/8" (6x12) HCS FIBER CABLE
	A2 RFS APXVAARR24_43-U-NA20	160'± AGL	30°	0°	2°	L1900/N600	-	
	A3 ERICSSON M-MIMO AIR6449 B41	160'± AGL	30°	0°	2°	L2500/N2500	-	
BETA	B1 ERICSSON AIR32 KRD901146-1 B66A/B2A	160'± AGL	130°	0°	2°	L2100	-	
	B2 RFS APXVAARR24_43-U-NA20	160'± AGL	130°	0°	2°	L1900/N600	-	
	B3 ERICSSON M-MIMO AIR6449 B41	160'± AGL	130°	0°	2°	L2500/N2500	-	
GAMMA	C1 ERICSSON AIR32 KRD901146-1 B66A/B2A	160'± AGL	270°	0°	2°	L2100	-	
	C2 RFS APXVAARR24_43-U-NA20	160'± AGL	270°	0°	2°	L1900/N600	-	
	C3 ERICSSON M-MIMO AIR6449 B41	160'± AGL	270°	0°	2°	L2500/N2500	-	

CABLE NOTE: EXISTING (6) 1-5/8" COAX CABLES & (1) 1-5/8" (9x18) HCS FIBER CABLE TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV8 - 09/23/20

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	<p>EXISTING TO REMAIN: (6) 1-5/8" COAX CABLES (3) 1-5/8" HCS FIBER CABLES (1) 1/2" COAX FOR GPS ANTENNA</p> <p>EXISTING TO BE REMOVED: (6) 1-5/8" COAX CABLES (1) 1-5/8" (9x18) HCS FIBER CABLE</p>	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 1-5/8" (6x12) HCS FIBER CABLE	

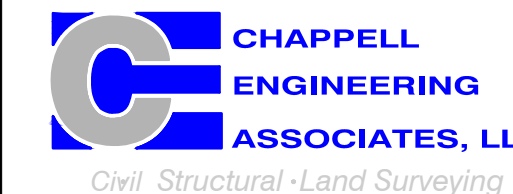
NOTE: EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

T-MOBILE NORTHEAST LLC

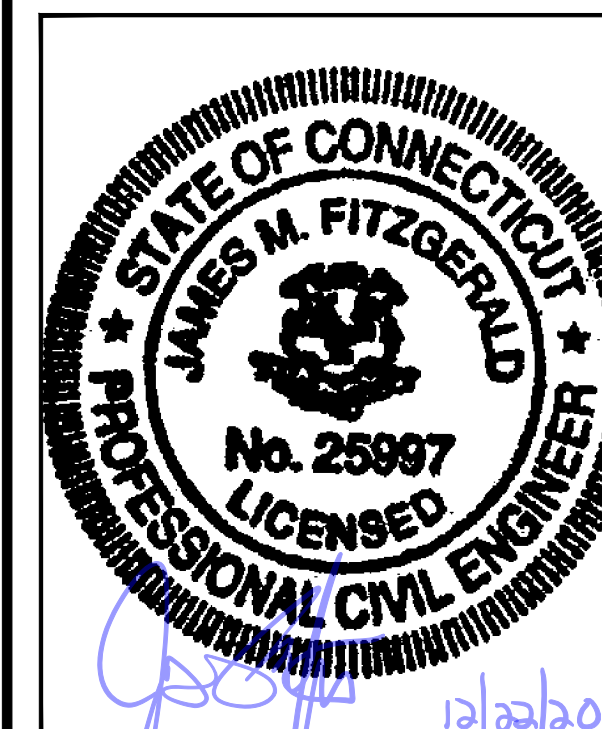
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SHEET TITLE
**ANTENNA &
FEEDLINE CHARTS**

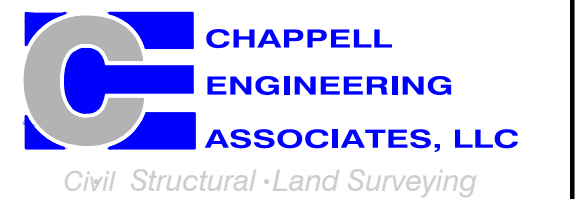
SHEET NUMBER
A-4

T-MOBILE
NORTHEAST LLC

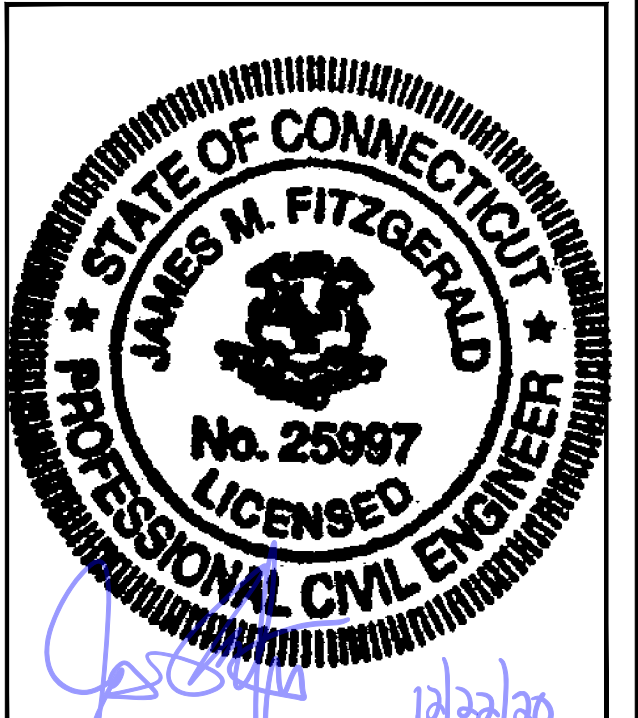
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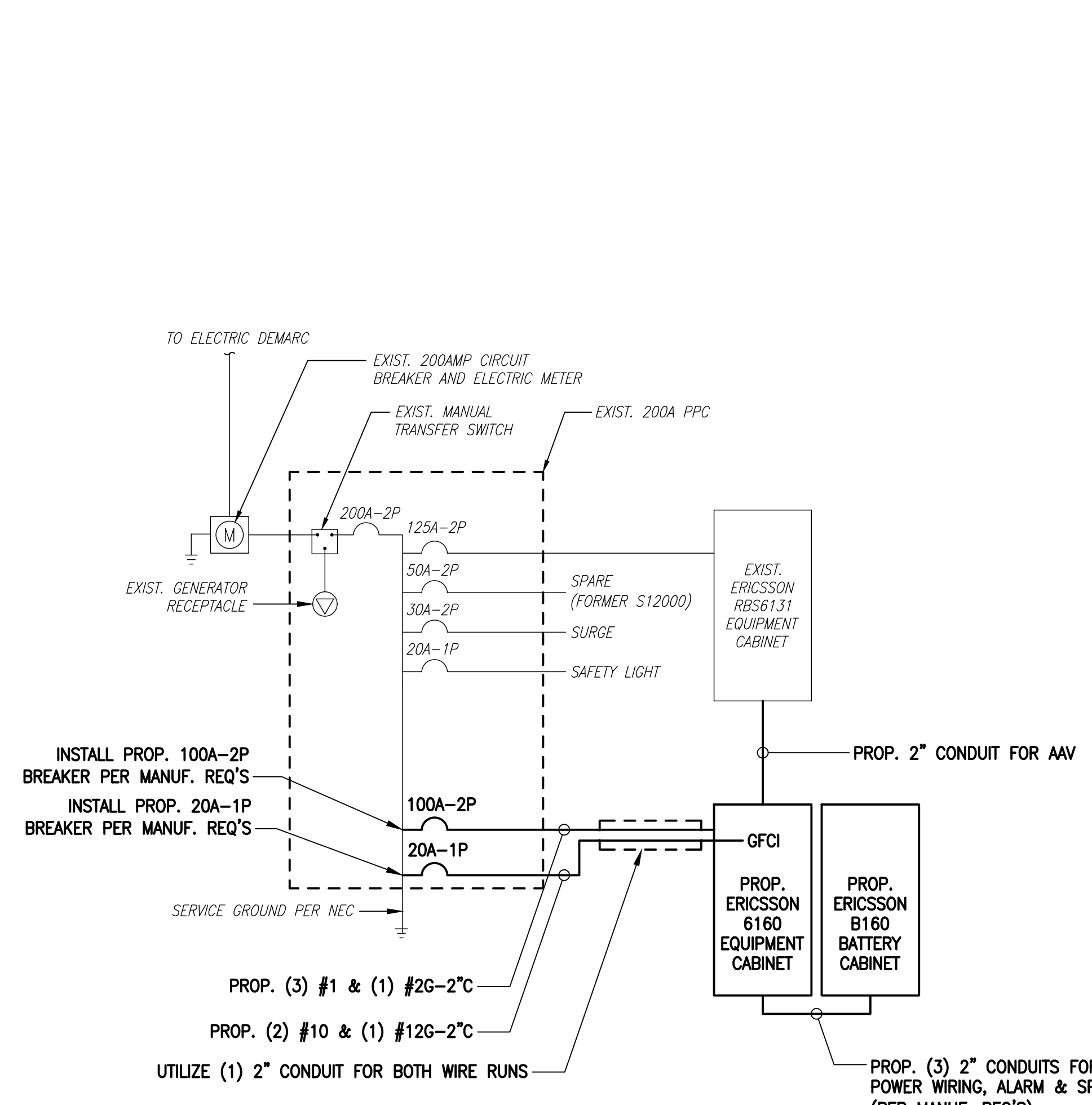
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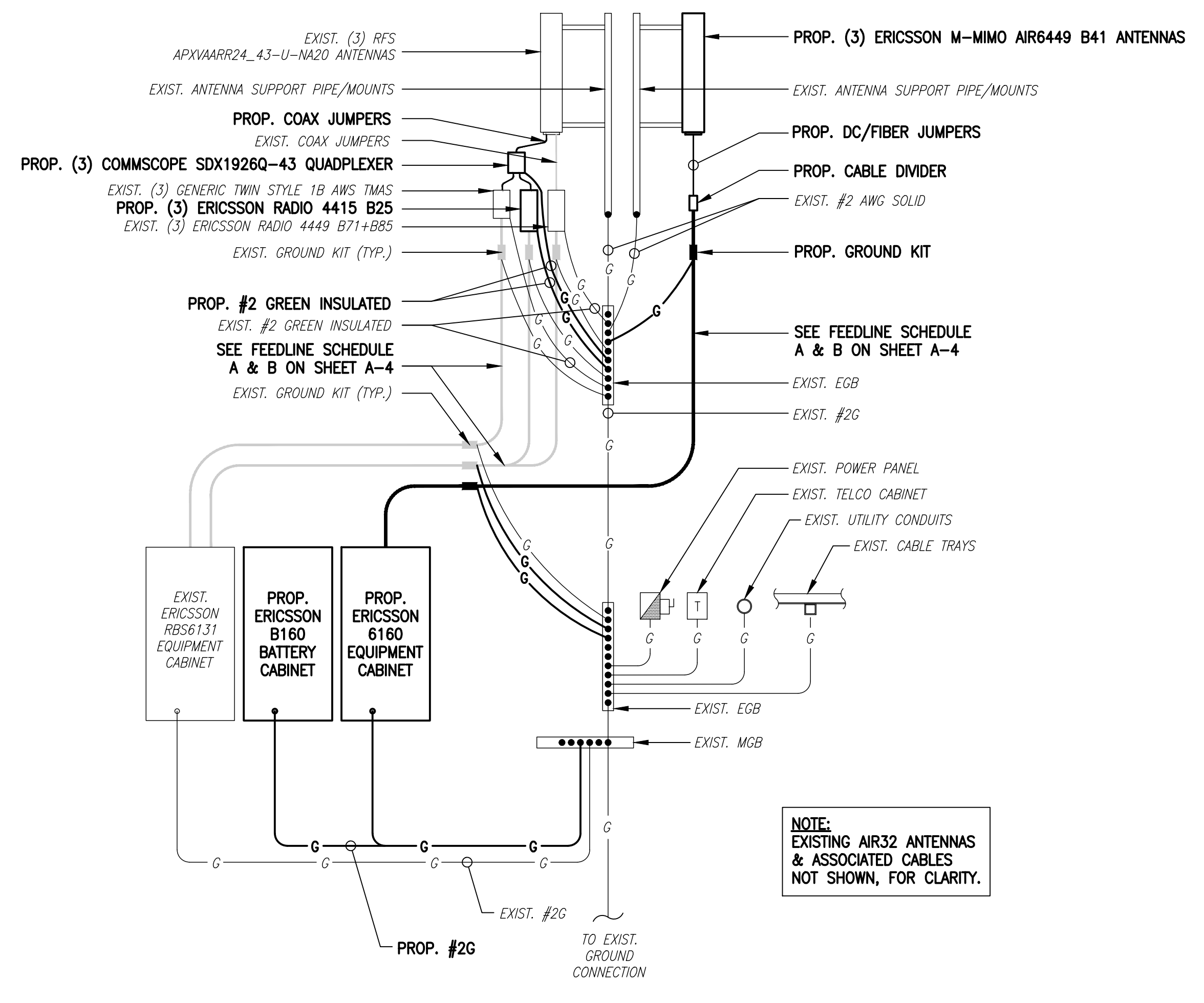
SITE ADDRESS:
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SHEET TITLE
**ELECTRIC & GROUNDING
DETAILS**

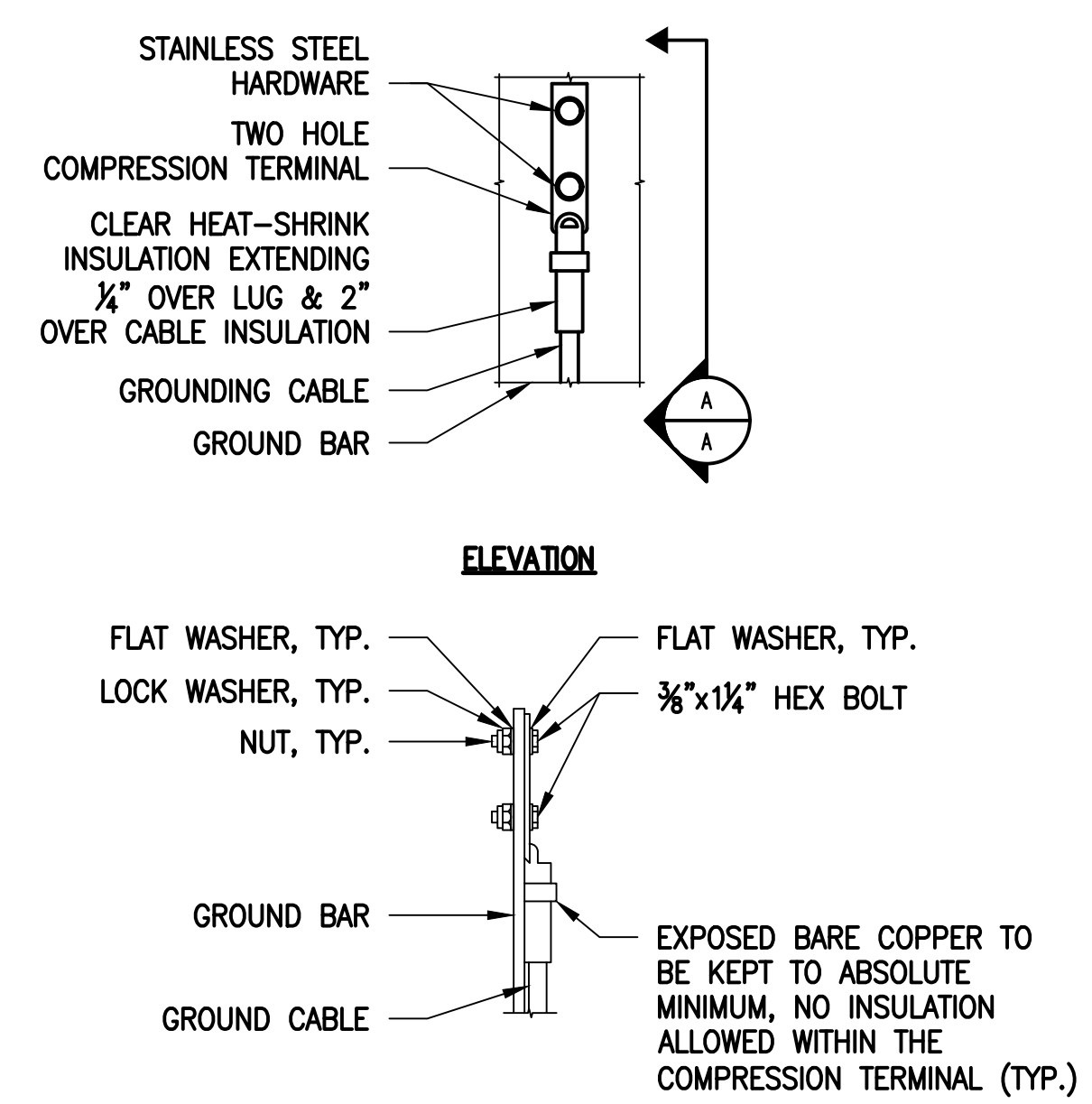
SHEET NUMBER
E-1



ONE LINE DIAGRAM
SCALE: NOT TO SCALE
1
E-1

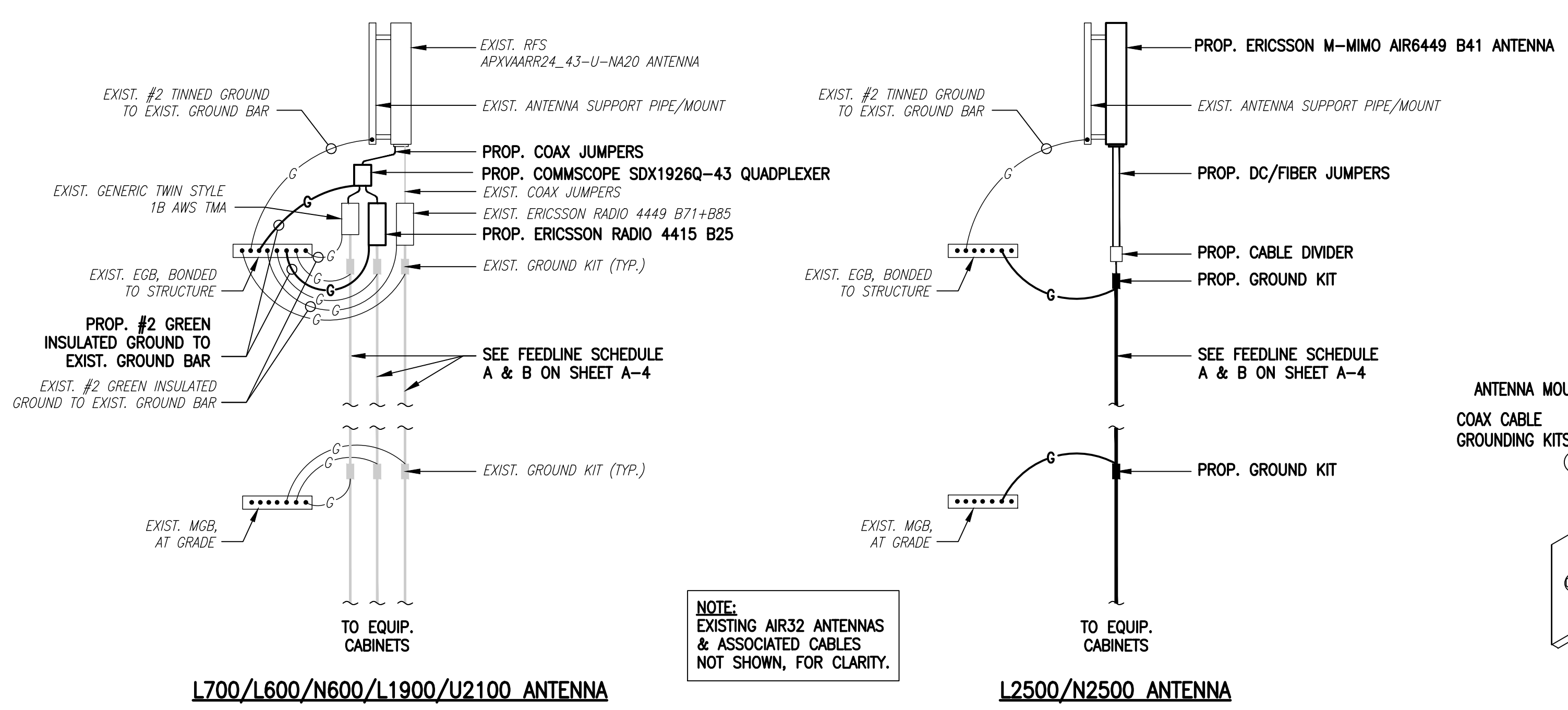


GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE
2
E-1

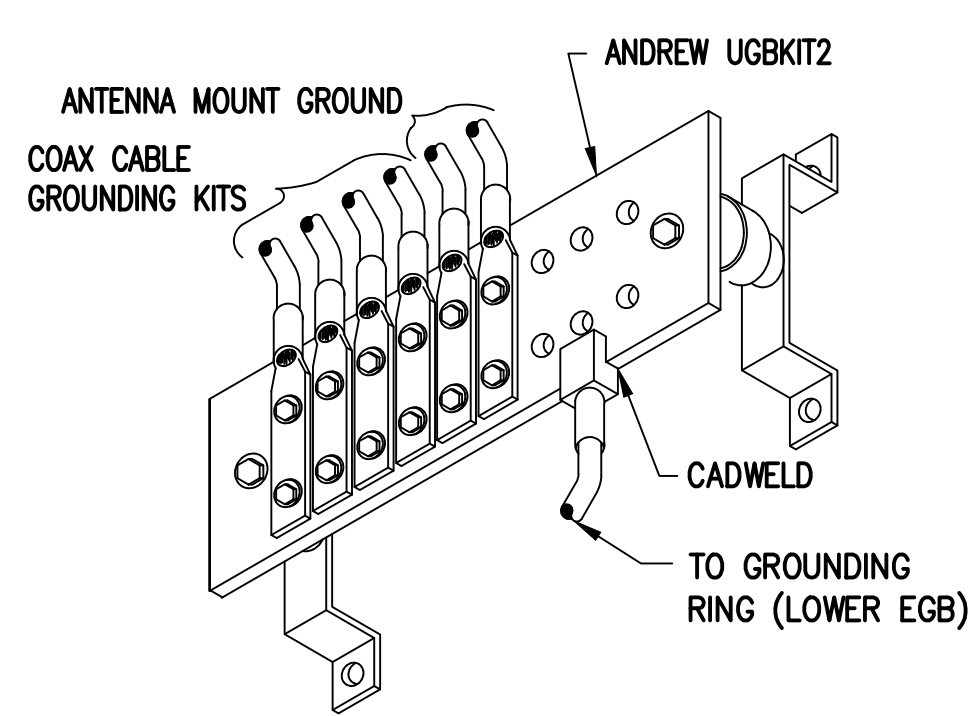


- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL
SCALE: NOT TO SCALE
3
E-1



COAX CABLE CONNECTION AND GROUNDING DETAIL
SCALE: NOT TO SCALE
4
E-1



GROUND BAR (EGB)
SCALE: NOT TO SCALE
5
E-1

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 BTS 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 BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- 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 BTS 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.

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 187 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT07824-S

Customer Site Name: South Windsor

Carrier Name: T-Mobile (App#: 141546, V1)

Carrier Site ID / Name: CT11497A / South Windsor

Site Location: 151 Sand Hill Road

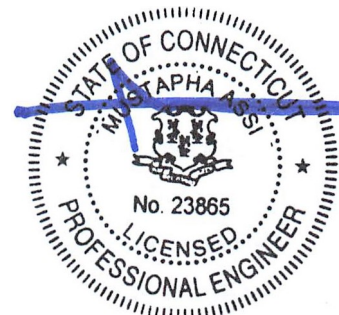
South Windsor, Connecticut

Hartford County

Latitude: 41.836000

Longitude: -72.552000

Exp.01/31/2021



Analysis Result:

Max Structural Usage: 66.4% [Pass]

Max Foundation Usage: 80.0% [Pass]

Additional Usage Caused by Mount Modification: +0.7%

11/10/2020

Report Prepared By : Dipika Dhungana

Introduction

The purpose of this report is to summarize the analysis results on the 187 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing prepared by Sabre, Job #02-10062 dated 11/1/01
Foundation Drawing	Foundation Drawing prepared by Sabre, Job #02-10062 dated 10/11/01
Geotechnical Report	Geotechnical Report prepared by Dr. Clarence Welti, dated 9/29/00
Modification Drawings	N/A
Mount Analysis	MA by TES, Job# 99270, dated 11/09/2020

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.178, S_1 = 0.064$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	187.0	1	Telewave - ANT450F6 - Whip	Low Profile Platform	(4) 1/2" (3) 7/8"	Town of South Windsor
2		2	Telewave - ANT900D6-9 - Whip			
3		2	Decibel - DB201 - Whip			
4		2	Scala - MF-900B - Dish			
5	170.0	3	Powerwave - 7770 - Panel	Low Profile Platform w/ HRK12	(12) 1 5/8" Coax (4) 3/4" DC Power (2) 1/2" Fiber (2) 3" Conduit	AT&T
6		3	Cci - HPA-65R-BUU-H6 - Panel			
7		3	Quintel - QS66512-2 - Panel			
8		1	Nokia - CS72188.01 LMU - Omni			
9		3	Cci - DTMABP7819VG12A TMA			
10		6	Kaelus - DBC0061F1V51-2 - Diplexer			
11		3	Ericsson - RRUS-11			
12		3	Ericsson - RRUS-32 B2			
13		3	Ericsson - RRUS-32			
14		3	Css - DBC-750 - Combiner			
15		2	Raycap - DC6-48-60-18-8F - DC SS			
16		3	Commscope - ABT-DFDM-ADBH -BIAS-T			
-	160.0	3	Ericsson Air 21 B2A/B4P	Low profile Platform w/ Hand Rail	(9) 1-5/8" Coax (4) 1-5/8" Fiber	T-Mobile
-		3	Ericsson Air32 KRD901146-1_B66A_B2A			
-		3	RFS APXVAARR24_43-U-NA20			
-		3	Ericsson KRY 112 144/1			
-		3	Ericsson Radio 4449 B71+B12			
24	150.0	3	Comba ODI2-065R18K-GQ Panel	(3) Commscope P-200 Stand-off	(1) 1.25" HFC	Dish Network
25		2	Ericsson 4415 RRU			
26		3	Ericsson 0208 RRU			
27	140.0	1	RFS - DB-T1-6Z-8AB-OZ - Surge Suppressor	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid (1) 1/2"	Verizon
28		6	RFS - FD9R6004/2C-3L - Diplexer			
29		6	Commscope - HBXX-6517DS-A2M - Panel			
30		6	Alcatel Lucent - KS24019 - GPS			
31		3	Commscope - LNX-6514DS-A1M - Panel			
32		3	Commscope - LNX-6514DS-VTM - Panel			
33		3	Alcatel Lucent - RRH2x40-07-U - RRU			
34		3	Alcatel Lucent - RRH2x60-1900 - RRU			
35	130.0	3	Alcatel Lucent - 1900MHz - RRH	Low Profile Platform	(1) 0.7" Fiber (3) 1-1/4"	Sprint
36		3	Alcatel Lucent - 800 MHz - RRH			
37		3	Alcatel Lucent - 800MHz - Filter			
38		4	RFS - ACU-A20-N - RET			
39		3	RFS - APXVSP18-C-A20 - Panel			
40		3	RFS - APXVTM14-C-120 - Panel			
41		3	RF Filters			
42		3	Alcatel Lucent - TD-RRH8x20-25 - RRU			

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
43	92.0	1	Telewave - ANT150D3 - Whip	Low Profile Platform	(6) 1/2"	Town of South Windsor
44		1	Telewave - ANT4506-9 - Whip			
45		1	Telewave - ANT450Y10-WR - Yagi			
46		1	Decibel - DB205 - Whip			
47		2	Scala - MF-900B - Dish			

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
17	160.0	3	RFS APXVAARR24_43-U-NA20	Platform w/ Hand Rail + Kicker kit w/ Collar mount	(9) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
18		3	Ericsson Air32 KRD901146-1_B66A_B2A			
19		3	Ericsson AIR6449 B41			
20		3	Ericsson KRY 112 144/1			
21		3	Commscope SDX1926Q-43			
22		3	Ericsson 4449 B71+B85			
23		3	Ericsson 4415 B25			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	66.4%	63.0%	60.1%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	6057.6	47.3

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

Operational Condition (Rigidity):

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

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
187.0	MF-900B - Dish	Town of South Windso	0.002	1.336
92.0	MF-900B - Dish	Town of South Windso	0.000	0.779

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

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the 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 65.70% at 0.0ft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

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

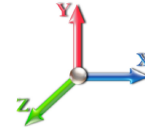
11/10/2020

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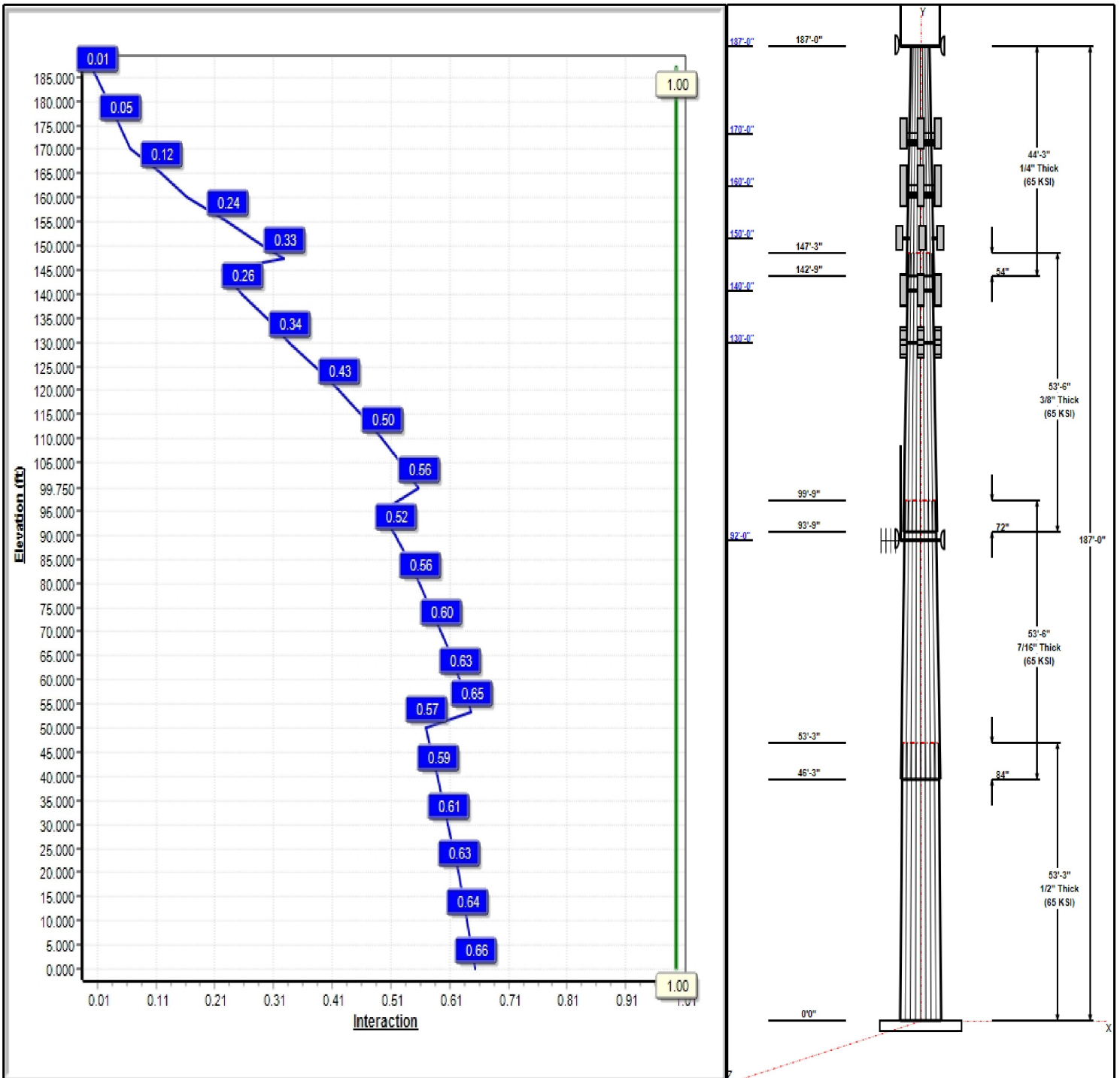
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 97 mph Wind



Iterations: 25

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Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

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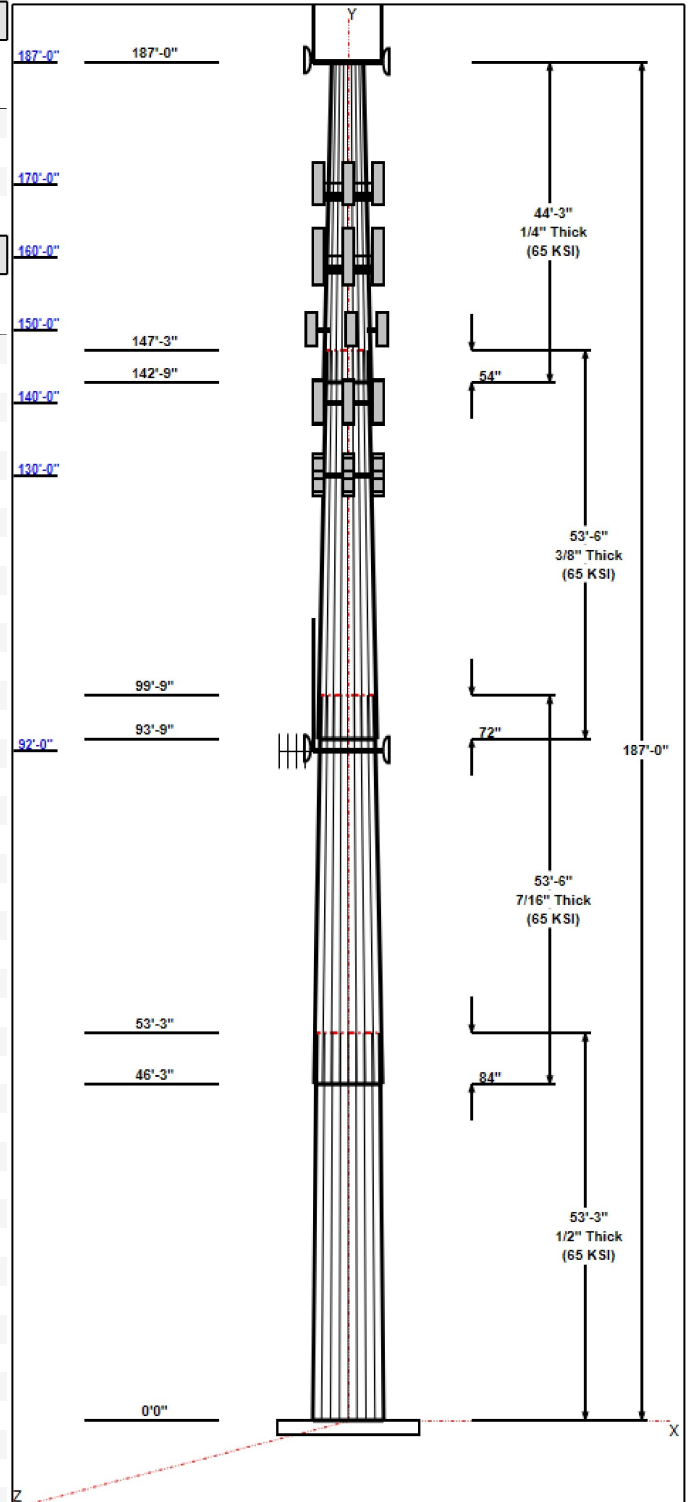


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	52.63	64.88	0.500		0.22997	65
2	53.50	42.82	55.12	0.438	Slip	0.22997	65
3	53.50	32.64	44.95	0.375	Slip	0.22997	65
4	44.25	24.00	34.18	0.250	Slip	0.22997	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
187.00	187.00	2	MF-900B	Town of South
187.00	189.04	2	ANT900D6-9	Town of South
187.00	190.92	1	ANT450F6	Town of South
187.00	191.75	2	DB201	Town of South
187.00	187.00	1	Low Profile Platform	Town of South
187.00	187.00	1	6' Lightning rod	
170.00	170.00	3	Ericsson - RRUS-32 B2	AT&T
170.00	170.00	1	Low Profile Platform w/	AT&T
170.00	170.00	3	Powerwave - 7770	AT&T
170.00	170.00	3	Cci - DTMABP7819VG12A	AT&T
170.00	170.00	3	Ericsson - RRUS-11	AT&T
170.00	170.00	3	Css - DBC-750 - Combiner	AT&T
170.00	170.00	2	Raycap - DC6-48-60-18-8F	AT&T
170.00	170.00	3	Commscope -	AT&T
170.00	170.00	3	Quintel - QS66512-2	AT&T
170.00	170.00	6	Kaelus - DBC0061F1V51-2	AT&T
170.00	170.00	3	Ericsson - RRUS-32	AT&T
170.00	170.00	3	Cci - HPA-65R-BUU-H6	AT&T
170.00	170.00	1	Nokia - CS72188.01 LMU -	AT&T
160.00	160.00	3	RRUS 4415 B25	T-Mobile
160.00	160.00	3	4449 B71+B12	T-Mobile
160.00	160.00	1	MS-KI22-5 (Kickers)	T-Mobile
160.00	160.00	1	MS-1436 (Light Collar)	T-Mobile
160.00	160.00	3	SDX1926Q-43	T-Mobile
160.00	160.00	1	Platform w/ Hand Rail	T-Mobile
160.00	160.00	3	AIR6449 B41	T-Mobile
160.00	160.00	3	Air32	T-Mobile
160.00	160.00	3	APXVAARR24_43-U-NA20	T-Mobile
160.00	160.00	3	KRY 112 144/1	T-Mobile
150.00	150.00	3	ODI2-065R18K-GQ	Dish Network
150.00	150.00	3	P-200 Stand-off	Dish Network
150.00	150.00	2	4415	Dish Network
150.00	150.00	3	0208	Dish Network
140.00	140.00	1	DB-T1-6Z-8AB-0Z	Verizon
140.00	140.00	6	KS-24019	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
140.00	140.00	6	HBXX-6517DS-A2M	Verizon
140.00	140.00	3	LNx-6514DS-A1M	Verizon
140.00	140.00	3	RRH2x40-07-U	Verizon
140.00	140.00	3	RRH2x60-1900	Verizon
140.00	140.00	3	LNx-6514DS-VTM	Verizon
140.00	140.00	6	FD9R6004/2C-3L	Verizon
130.00	130.00	3	TD-RRH8x20-25	Sprint
130.00	130.00	3	1900MHz RRH	Sprint
130.00	130.00	3	800 MHz RRH	Sprint



Structure: CT07824-S-SBA

Type: Tapered	Base Shape: 18 Sided	11/10/2020
Site Name: South Windsor	Taper: 0.22997	
Height: 187.00 (ft)		
Base Elev: 1.00 (ft)		Page: 3



130.00	130.00	3	800MHz Filter	Sprint
130.00	130.00	3	RF Filters	Sprint
130.00	130.00	4	ACU-A20-N	Sprint
130.00	130.00	1	Low Profile Platform	Sprint
130.00	130.00	3	APXVSP18-C-A20	Sprint
130.00	130.00	3	APXVTM14-C-120	Sprint
92.00	92.00	2	MF-900B	Town of South
92.00	95.00	1	ANT4506-9	Town of South
92.00	97.00	1	ANT150D3	Town of South
92.00	92.00	1	ANT450Y10-WR	Town of South
92.00	101.00	1	DB205	Town of South
92.00	92.00	1	Low Profile Platform	Town of South

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	187.00	Inside	1/2" Coax	Town of South
0.00	187.00	Inside	7/8" Coax	Town of South
0.00	170.00	Inside	1 5/8" Coax	AT&T
0.00	170.00	Inside	1/2" Fiber	AT&T
0.00	170.00	Inside	3" Conduit	AT&T
0.00	170.00	Inside	3/4" DC Power	AT&T
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Fiber	T-Mobile
0.00	150.00	Inside	1.25" HFC	Dish Network
0.00	140.00	Inside	1 5/8" Coax	Verizon
0.00	140.00	Inside	1 5/8" Hybrid	Verizon
0.00	140.00	Inside	1/2" Coax	Verizon
0.00	130.00	Inside	0.7" Fiber	Sprint
0.00	130.00	Inside	1-1/4" Hybrid	Sprint
0.00	92.00	Inside	1/2" Coax	Town of South

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
26	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	78.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	5991.1	46.9	76.7
0.9D + 1.6W 97 mph Wind	5923.5	46.9	57.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	2132.9	15.8	125.1
1.2D + 1.0E	272.1	2.2	76.7
0.9D + 1.0E	268.8	2.1	57.5
1.0D + 1.0W 60 mph Wind	1423.5	11.2	63.9

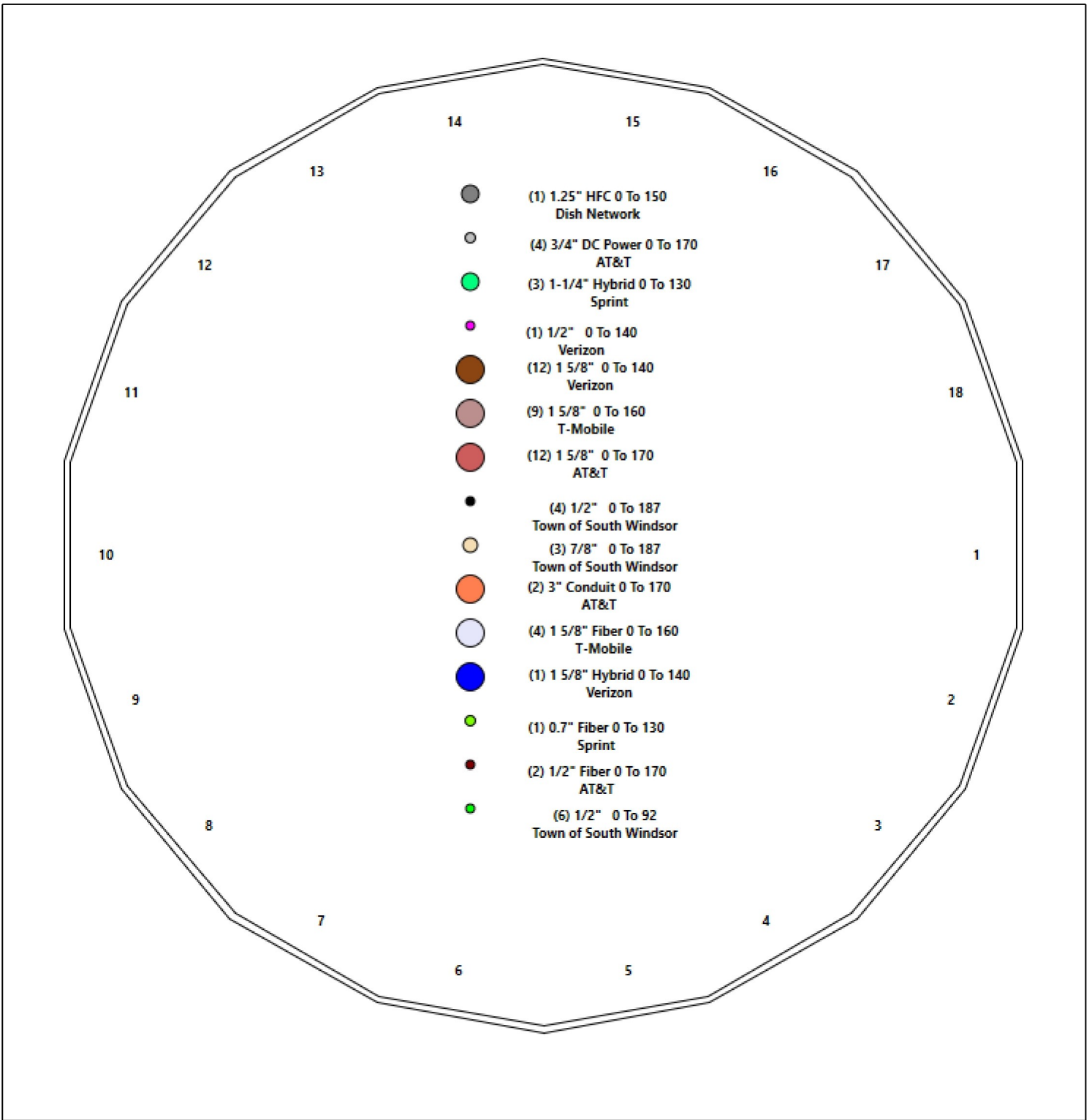
Structure: CT07824-S-SBA - Coax Line Placement

Type: Monopole
Site Name: South Windsor
Height: 187.00 (ft)

11/10/2020



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Shaft Properties

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (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	18	53.250	0.5000	65		0.00	16,752
2	18	53.500	0.4375	65	Slip	84.00	12,268
3	18	53.500	0.3750	65	Slip	72.00	8,324
4	18	44.250	0.2500	65	Slip	54.00	3,445
Total Shaft Weight:							40,789

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	64.88	0.00	102.1	53501.66	21.47	129.76	52.63	53.25	82.73	28410.2	17.15	105.2	0.229973
2	55.12	46.25	75.93	28683.85	20.80	125.99	42.82	99.75	58.84	13351.6	15.85	97.86	0.229973
3	44.95	93.75	53.05	13313.85	19.72	119.85	32.64	147.25	38.40	5051.60	13.94	87.04	0.229973
4	34.18	142.7	26.92	3914.66	22.69	136.71	24.00	187.00	18.84	1343.00	15.52	96.00	0.229973

Load Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (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	187.00	MF-900B	2	13.00	3.45	1.00	166.21	36.699	1.00	1.00	0.00
2	187.00	ANT900D6-9	2	11.00	0.98	1.00	62.89	4.260	1.00	0.00	2.04
3	187.00	ANT450F6	1	21.00	1.86	1.00	87.88	5.722	1.00	0.00	3.92
4	187.00	DB201	2	25.00	3.54	1.00	174.30	18.389	1.00	0.00	4.75
5	187.00	Low Profile Platform	1	1500.00	22.00	1.00	3285.07	46.087	1.00	0.00	0.00
6	187.00	6' Lightning rod	1	6.50	0.38	1.00	56.01	1.863	1.00	0.00	0.00
7	170.00	Ericsson - RRUS-32 B2	3	60.00	3.01	0.81	213.50	4.051	0.83	0.00	0.00
8	170.00	Low Profile Platform w/ HRK12	1	1700.00	27.70	1.00	3704.00	57.741	1.00	0.00	0.00
9	170.00	Powerwave - 7770	3	35.00	5.50	0.73	232.43	6.972	0.75	0.00	0.00
10	170.00	Cci - DTMABP7819VG12A - TMA	3	19.18	1.14	0.67	53.62	2.180	0.67	0.00	0.00
11	170.00	Ericsson - RRUS-11	3	55.00	2.52	0.76	185.27	3.427	0.75	0.00	0.00
12	170.00	Css - DBC-750 - Combiner	3	4.88	0.51	0.67	18.16	1.225	0.67	0.00	0.00
13	170.00	Raycap - DC6-48-60-18-8F - DC SS	2	32.80	1.47	1.00	118.95	2.416	1.00	0.00	0.00
14	170.00	Commscope - ABT-DFDM-ADBH -	3	1.14	0.05	0.98	4.26	0.310	0.98	0.00	0.00
15	170.00	Quintel - QS66512-2	3	111.00	8.13	0.92	437.09	9.926	0.92	0.00	0.00
16	170.00	Kaelus - DBC0061F1V51-2 -	6	25.40	0.43	0.67	45.04	0.815	0.67	0.00	0.00
17	170.00	Ericsson - RRUS-32	3	53.00	2.74	0.67	182.09	3.752	0.67	0.00	0.00
18	170.00	Cci - HPA-65R-BUU-H6	3	51.00	9.66	0.85	405.64	11.544	0.85	0.00	0.00
19	170.00	Nokia - CS72188.01 LMU - Omni	1	0.32	0.12	1.00	2.86	0.393	1.00	0.00	0.00
20	160.00	RRUS 4415 B25	3	46.00	1.64	0.67	101.19	2.332	0.67	0.00	0.00
21	160.00	4449 B71+B12	3	70.00	1.65	0.67	169.94	2.399	0.67	0.00	0.00
22	160.00	MS-KI22-5 (Kickers)	1	146.00	5.33	1.00	419.72	12.824	1.00	0.00	0.00
23	160.00	MS-1436 (Light Collar Mount)	1	65.60	1.50	1.00	188.59	3.609	1.00	0.00	0.00
24	160.00	SDX1926Q-43	3	4.30	0.52	0.67	19.50	1.234	0.67	0.00	0.00
25	160.00	Platform w/ Hand Rail	1	1600.00	32.00	1.00	4419.67	69.496	1.00	0.00	0.00
26	160.00	AIR6449 B41	3	103.00	5.65	0.71	287.12	6.926	0.71	0.00	0.00
27	160.00	Air32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	395.55	8.110	0.87	0.00	0.00
28	160.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	713.90	22.824	0.70	0.00	0.00
29	160.00	KRY 112 144/1	3	11.00	0.41	0.67	25.48	1.048	0.67	0.00	0.00
30	150.00	ODI2-065R18K-GQ	3	25.10	4.85	0.70	167.24	6.160	1.00	0.00	0.00
31	150.00	P-200 Stand-off	3	242.00	8.19	0.75	516.76	21.882	0.75	0.00	0.00
32	150.00	4415	2	44.10	1.86	0.75	107.40	2.624	0.75	0.00	0.00
33	150.00	0208	3	19.80	1.37	0.67	66.42	2.035	0.67	0.00	0.00
34	140.00	DB-T1-6Z-8AB-OZ	1	21.40	4.10	1.00	178.58	5.162	1.00	0.00	0.00
35	140.00	KS-24019	6	0.50	0.12	1.00	9.31	0.392	1.00	0.00	0.00
36	140.00	Low Profile Platform	1	1500.00	22.00	1.00	3234.45	45.404	1.00	0.00	0.00
37	140.00	HBXX-6517DS-A2M	6	40.80	8.55	0.77	274.35	12.418	0.79	0.00	0.00
38	140.00	LNx-6514DS-A1M	3	38.40	8.17	0.83	271.99	11.911	0.85	0.00	0.00
39	140.00	RRH2x40-07-U	3	50.70	2.23	0.78	128.60	3.637	0.80	0.00	0.00
40	140.00	RRH2x60-1900	3	19.50	1.51	0.90	106.39	2.266	0.91	0.00	0.00
41	140.00	LNx-6514DS-VTM	3	33.10	8.09	0.80	264.61	11.794	0.82	0.00	0.00
42	140.00	FD9R6004/2C-3L	6	3.10	0.36	0.75	13.74	0.947	0.77	0.00	0.00
43	130.00	TD-RRH8x20-25	3	70.00	4.05	0.69	225.04	5.146	0.71	0.00	0.00
44	130.00	1900MHz RRH	3	44.00	3.80	0.88	187.59	5.628	0.89	0.00	0.00
45	130.00	800 MHz RRH	3	53.00	2.49	0.92	150.29	3.995	0.93	0.00	0.00
46	130.00	800MHz Filter	3	8.80	0.78	0.69	32.01	1.631	0.71	0.00	0.00
47	130.00	RF Filters	3	15.50	0.93	0.67	61.42	1.512	0.69	0.00	0.00
48	130.00	ACU-A20-N	4	1.00	0.14	0.79	6.65	0.530	0.81	0.00	0.00
49	130.00	Low Profile Platform	1	1500.00	22.00	1.00	3221.74	45.232	1.00	0.00	0.00
50	130.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	284.37	11.695	0.85	0.00	0.00

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		
51	130.00	APXVTM14-C-120	3	56.00	6.34	0.79	280.65	7.834	0.81	0.00	0.00
52	92.00	MF-900B	2	13.00	3.45	1.00	155.80	34.440	1.00	1.00	0.00
53	92.00	ANT4506-9	1	18.00	2.77	1.00	122.90	6.622	1.00	0.00	3.00
54	92.00	ANT150D3	1	18.00	2.18	1.00	110.97	12.978	1.00	0.00	5.00
55	92.00	ANT450Y10-WR	1	5.00	0.49	1.00	30.77	1.927	1.00	0.00	0.00
56	92.00	DB205	1	38.00	1.80	1.00	111.64	9.860	1.00	0.00	9.00
57	92.00	Low Profile Platform	1	1500.00	22.00	1.00	3163.75	44.450	1.00	0.00	0.00
Totals:			146	15,193.22			44,555.28				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	187.00	(4) 1/2" Coax	0.00	Inside
0.00	187.00	(3) 7/8" Coax	0.00	Inside
0.00	170.00	(12) 1 5/8" Coax	0.00	Inside
0.00	170.00	(2) 1/2" Fiber	0.00	Inside
0.00	170.00	(2) 3" Conduit	0.00	Inside
0.00	170.00	(4) 3/4" DC Power	0.00	Inside
0.00	160.00	(9) 1 5/8" Coax	0.00	Inside
0.00	160.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	150.00	(1) 1.25" HFC	0.00	Inside
0.00	140.00	(12) 1 5/8" Coax	0.00	Inside
0.00	140.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	140.00	(1) 1/2" Coax	0.00	Inside
0.00	130.00	(1) 0.7" Fiber	0.00	Inside
0.00	130.00	(3) 1-1/4" Hybrid	0.00	Inside
0.00	92.00	(6) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (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	64.880	102.167	53501.7	21.47	129.76	76.1	1624.	0.0
5.00		0.5000	63.730	100.343	50685.8	21.06	127.46	76.6	1566.	1722.7
10.00		0.5000	62.580	98.518	47970.6	20.66	125.16	77.1	1509.	1691.7
15.00		0.5000	61.430	96.693	45354.1	20.25	122.86	77.6	1454.	1660.6
20.00		0.5000	60.281	94.868	42834.5	19.85	120.56	78.1	1399.	1629.6
25.00		0.5000	59.131	93.044	40410.0	19.44	118.26	78.5	1346.	1598.6
30.00		0.5000	57.981	91.219	38078.8	19.04	115.96	79.0	1293.	1567.5
35.00		0.5000	56.831	89.394	35839.0	18.63	113.66	79.5	1242.	1536.5
40.00		0.5000	55.681	87.569	33688.7	18.23	111.36	80.0	1191.	1505.4
45.00		0.5000	54.531	85.744	31626.3	17.82	109.06	80.4	1142.	1474.4
46.25	Bot - Section 2	0.5000	54.244	85.288	31124.2	17.72	108.49	80.6	1130.	363.7
50.00		0.5000	53.381	83.920	29649.8	17.41	106.76	80.9	1094.	2040.8
53.25	Top - Section 1	0.4375	53.509	73.694	26224.3	20.16	122.31	0.0	0.0	1742.2
55.00		0.4375	53.106	73.135	25632.3	19.99	121.39	77.9	950.7	437.2
60.00		0.4375	51.957	71.538	23989.8	19.53	118.76	78.4	909.4	1230.7
65.00		0.4375	50.807	69.941	22419.1	19.07	116.13	79.0	869.1	1203.6
70.00		0.4375	49.657	68.345	20918.5	18.60	113.50	79.5	829.7	1176.4
75.00		0.4375	48.507	66.748	19486.4	18.14	110.87	80.1	791.2	1149.2
80.00		0.4375	47.357	65.151	18121.2	17.68	108.24	80.6	753.7	1122.1
85.00		0.4375	46.207	63.555	16821.3	17.21	105.62	81.2	717.0	1094.9
90.00		0.4375	45.057	61.958	15585.1	16.75	102.99	81.7	681.3	1067.7
92.00		0.4375	44.597	61.319	15108.1	16.56	101.94	81.9	667.2	419.5
93.75	Bot - Section 3	0.4375	44.195	60.761	14698.7	16.40	101.02	82.1	655.1	363.5
95.00		0.4375	43.908	60.361	14410.9	16.29	100.36	82.2	646.4	482.5
99.75	Top - Section 2	0.3750	43.565	51.405	12115.2	19.07	116.17	0.0	0.0	1804.8
100.00		0.3750	43.508	51.337	12066.9	19.05	116.02	79.0	546.3	43.7
105.00		0.3750	42.358	49.968	11127.3	18.51	112.95	79.6	517.4	861.8
110.00		0.3750	41.208	48.600	10237.8	17.97	109.89	80.3	489.3	838.5
115.00		0.3750	40.058	47.231	9397.1	17.42	106.82	80.9	462.0	815.2
120.00		0.3750	38.908	45.862	8603.6	16.88	103.76	81.5	435.5	791.9
125.00		0.3750	37.758	44.494	7856.2	16.34	100.69	82.2	409.8	768.7
130.00		0.3750	36.608	43.125	7153.3	15.80	97.62	82.6	384.9	745.4
135.00		0.3750	35.459	41.757	6493.6	15.26	94.56	82.6	360.7	722.1
140.00		0.3750	34.309	40.388	5875.9	14.72	91.49	82.6	337.3	698.8
142.75	Bot - Section 4	0.3750	33.676	39.635	5553.4	14.42	89.80	82.6	324.8	374.4
145.00		0.3750	33.159	39.020	5298.5	14.18	88.42	82.6	314.7	505.6
147.25	Top - Section 3	0.2500	33.141	26.098	3567.2	21.96	132.57	0.0	0.0	497.8
150.00		0.2500	32.509	25.597	3365.4	21.52	130.04	76.1	203.9	241.9
155.00		0.2500	31.359	24.684	3018.2	20.71	125.44	77.0	189.6	427.7
160.00		0.2500	30.209	23.772	2695.7	19.90	120.84	78.0	175.8	412.2
165.00		0.2500	29.059	22.859	2397.1	19.09	116.24	79.0	162.5	396.7
170.00		0.2500	27.910	21.947	2121.4	18.27	111.64	79.9	149.7	381.2
175.00		0.2500	26.760	21.035	1867.7	17.46	107.04	80.9	137.5	365.6
180.00		0.2500	25.610	20.122	1635.0	16.65	102.44	81.8	125.7	350.1
185.00		0.2500	24.460	19.210	1422.5	15.84	97.84	82.6	114.5	334.6
187.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.6	110.2	129.5

40789.2

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

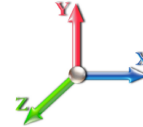


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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	490.97	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	482.27	0.650	0.000	5.00	27.207	17.68	605.4	0.0	2067.3
10.00		1.00	0.85	19.450	21.40	473.57	0.650	0.000	5.00	26.721	17.37	594.6	0.0	2030.0
15.00		1.00	0.86	19.690	21.66	467.73	0.650	0.000	5.00	26.234	17.05	590.9	0.0	1992.8
20.00		1.00	0.91	20.851	22.94	472.30	0.650	0.000	5.00	25.748	16.74	614.2	0.0	1955.5
25.00		1.00	0.95	21.810	23.99	473.83	0.650	0.000	5.00	25.261	16.42	630.3	0.0	1918.3
30.00		1.00	0.99	22.632	24.90	473.30	0.650	0.000	5.00	24.775	16.10	641.4	0.0	1881.0
35.00		1.00	1.02	23.356	25.69	471.27	0.650	0.000	5.00	24.288	15.79	649.0	0.0	1843.8
40.00		1.00	1.05	24.004	26.40	468.10	0.650	0.000	5.00	23.802	15.47	653.6	0.0	1806.5
45.00		1.00	1.07	24.593	27.05	464.02	0.650	0.000	5.00	23.315	15.15	656.0	0.0	1769.2
46.25	Bot - Section 2	1.00	1.08	24.732	27.21	462.88	0.650	0.000	1.25	5.753	3.74	162.8	0.0	436.5
50.00		1.00	1.10	25.133	27.65	459.20	0.650	0.000	3.75	17.353	11.28	499.0	0.0	2449.0
53.25	Top - Section 1	1.00	1.11	25.462	28.01	455.72	0.650	0.000	3.25	14.818	9.63	431.6	0.0	2090.7
55.00		1.00	1.12	25.633	28.20	461.35	0.650	0.000	1.75	7.894	5.13	231.5	0.0	524.6
60.00		1.00	1.14	26.099	28.71	455.44	0.650	0.000	5.00	22.226	14.45	663.6	0.0	1476.9
65.00		1.00	1.16	26.535	29.19	449.07	0.650	0.000	5.00	21.739	14.13	659.9	0.0	1444.3
70.00		1.00	1.18	26.946	29.64	442.30	0.650	0.000	5.00	21.253	13.81	655.1	0.0	1411.7
75.00		1.00	1.19	27.335	30.07	435.16	0.650	0.000	5.00	20.766	13.50	649.4	0.0	1379.1
80.00		1.00	1.21	27.704	30.47	427.70	0.650	0.000	5.00	20.280	13.18	642.7	0.0	1346.5
85.00		1.00	1.23	28.056	30.86	419.96	0.650	0.000	5.00	19.793	12.87	635.3	0.0	1313.9
90.00		1.00	1.24	28.391	31.23	411.95	0.650	0.000	5.00	19.307	12.55	627.1	0.0	1281.3
92.00	Appurtenance(s)	1.00	1.25	28.522	31.37	408.68	0.650	0.000	2.00	7.586	4.93	247.5	0.0	503.4
93.75	Bot - Section 3	1.00	1.25	28.634	31.50	405.79	0.650	0.000	1.75	6.574	4.27	215.4	0.0	436.2
95.00		1.00	1.25	28.713	31.58	403.70	0.650	0.000	1.25	4.739	3.08	155.7	0.0	579.0
99.75	Top - Section 2	1.00	1.27	29.006	31.91	395.67	0.650	0.000	4.75	17.730	11.52	588.3	0.0	2165.7
100.00		1.00	1.27	29.021	31.92	402.17	0.650	0.000	0.25	0.921	0.60	30.6	0.0	52.4
105.00		1.00	1.28	29.318	32.25	393.54	0.650	0.000	5.00	18.165	11.81	609.2	0.0	1034.2
110.00		1.00	1.29	29.604	32.56	384.72	0.650	0.000	5.00	17.678	11.49	598.7	0.0	1006.2
115.00		1.00	1.31	29.880	32.87	375.72	0.650	0.000	5.00	17.192	11.17	587.7	0.0	978.3
120.00		1.00	1.32	30.147	33.16	366.56	0.650	0.000	5.00	16.705	10.86	576.1	0.0	950.3
125.00		1.00	1.33	30.405	33.45	357.25	0.650	0.000	5.00	16.219	10.54	564.1	0.0	922.4
130.00	Appurtenance(s)	1.00	1.34	30.655	33.72	347.79	0.650	0.000	5.00	15.732	10.23	551.7	0.0	894.4
135.00		1.00	1.35	30.898	33.99	338.20	0.650	0.000	5.00	15.246	9.91	538.9	0.0	866.5
140.00	Appurtenance(s)	1.00	1.36	31.133	34.25	328.48	0.650	0.000	5.00	14.759	9.59	525.7	0.0	838.6
142.75	Bot - Section 4	1.00	1.37	31.260	34.39	323.08	0.650	0.000	2.75	7.910	5.14	282.9	0.0	449.3
145.00		1.00	1.37	31.362	34.50	318.63	0.650	0.000	2.25	6.458	4.20	231.7	0.0	606.8
147.25	Top - Section 3	1.00	1.37	31.464	34.61	314.17	0.650	0.000	2.25	6.359	4.13	228.9	0.0	597.3
150.00	Appurtenance(s)	1.00	1.38	31.586	34.74	313.50	0.650	0.000	2.75	7.638	4.97	276.0	0.0	290.2
155.00		1.00	1.39	31.803	34.98	303.45	0.650	0.000	5.00	13.511	8.78	491.6	0.0	513.3
160.00	Appurtenance(s)	1.00	1.40	32.015	35.22	293.29	0.650	0.000	5.00	13.025	8.47	477.0	0.0	494.7
165.00		1.00	1.41	32.222	35.44	283.04	0.650	0.000	5.00	12.538	8.15	462.2	0.0	476.0
170.00	Appurtenance(s)	1.00	1.42	32.424	35.67	272.69	0.650	0.000	5.00	12.052	7.83	447.0	0.0	457.4
175.00		1.00	1.43	32.621	35.88	262.25	0.650	0.000	5.00	11.565	7.52	431.6	0.0	438.8
180.00		1.00	1.43	32.814	36.10	251.72	0.650	0.000	5.00	11.079	7.20	415.9	0.0	420.1
185.00		1.00	1.44	33.003	36.30	241.11	0.650	0.000	5.00	10.592	6.88	399.9	0.0	401.5
187.00	Appurtenance(s)	1.00	1.45	33.077	36.38	236.84	0.650	0.000	2.00	4.101	2.67	155.2	0.0	155.4

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	187.00	21,582.7	48,947.1
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Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT450F6	1	33.221	36.543	1.00	1.00	1.86	25.20	0.000	3.917	108.75	0.00	425.95
2	187.00	MF-900B	2	33.077	36.385	1.00	1.00	6.90	31.20	2.015	0.000	401.69	505.98	0.00
3	187.00	ANT900D6-9	2	33.152	36.468	1.00	1.00	1.96	26.40	0.000	2.042	114.36	0.00	233.49
4	187.00	6' Lightning rod	1	33.077	36.385	1.00	1.00	0.38	7.80	0.000	0.000	22.12	0.00	0.00
5	187.00	DB201	2	33.251	36.576	1.00	1.00	7.08	60.00	0.000	4.750	414.34	0.00	1968.11
6	187.00	Low Profile Platform	1	33.077	36.385	1.00	1.00	22.00	1800.00	0.000	0.000	1280.75	0.00	0.00
7	170.00	Powerwave - 7770	3	32.424	35.666	0.55	0.75	9.03	126.00	0.000	0.000	515.52	0.00	0.00
8	170.00	Cci - DTMABP7819VG12A	3	32.424	35.666	0.50	0.75	1.72	69.05	0.000	0.000	98.07	0.00	0.00
9	170.00	Ericsson - RRUS-11	3	32.424	35.666	0.57	0.75	4.31	198.00	0.000	0.000	245.91	0.00	0.00
10	170.00	Css - DBC-750 - Combiner	3	32.424	35.666	0.50	0.75	0.77	17.57	0.000	0.000	43.87	0.00	0.00
11	170.00	Raycap -	2	32.424	35.666	1.00	1.00	2.94	78.72	0.000	0.000	167.77	0.00	0.00
12	170.00	Quintel - QS66512-2	3	32.424	35.666	0.69	0.75	16.83	399.60	0.000	0.000	960.36	0.00	0.00
13	170.00	Commscope -	3	32.424	35.666	0.74	0.75	0.11	4.10	0.000	0.000	6.29	0.00	0.00
14	170.00	Ericsson - RRUS-32	3	32.424	35.666	0.50	0.75	4.13	190.80	0.000	0.000	235.71	0.00	0.00
15	170.00	Ericsson - RRUS-32 B2	3	32.424	35.666	0.61	0.75	5.49	216.00	0.000	0.000	313.05	0.00	0.00
16	170.00	Low Profile Platform w/	1	32.424	35.666	1.00	1.00	27.70	2040.00	0.000	0.000	1580.72	0.00	0.00
17	170.00	Cci - HPA-65R-BUU-H6	3	32.424	35.666	0.64	0.75	18.47	183.60	0.000	0.000	1054.27	0.00	0.00
18	170.00	Nokia - CS72188.01 LMU	1	32.424	35.666	1.00	1.00	0.12	0.38	0.000	0.000	6.85	0.00	0.00
19	170.00	Kaelus -	6	32.424	35.666	0.50	0.75	1.30	182.88	0.000	0.000	73.98	0.00	0.00
20	160.00	Platform w/ Hand Rail	1	32.015	35.216	1.00	1.00	32.00	1920.00	0.000	0.000	1803.08	0.00	0.00
21	160.00	RRUS 4415 B25	3	32.015	35.216	0.50	0.75	2.47	165.60	0.000	0.000	139.30	0.00	0.00
22	160.00	4449 B71+B12	3	32.015	35.216	0.50	0.75	2.49	252.00	0.000	0.000	140.15	0.00	0.00
23	160.00	SDX1926Q-43	3	32.015	35.216	0.50	0.75	0.78	15.48	0.000	0.000	44.17	0.00	0.00
24	160.00	AIR6449 B41	3	32.015	35.216	0.53	0.75	9.03	370.80	0.000	0.000	508.57	0.00	0.00
25	160.00	Air32	3	32.015	35.216	0.65	0.75	12.74	475.92	0.000	0.000	718.04	0.00	0.00
26	160.00	APXVAARR24_43-U-NA2	3	32.015	35.216	0.52	0.75	31.88	460.80	0.000	0.000	1796.21	0.00	0.00
27	160.00	KRY 112 144/1	3	32.015	35.216	0.50	0.75	0.62	39.60	0.000	0.000	34.83	0.00	0.00
28	150.00	0208	3	31.586	34.744	0.54	0.80	2.20	71.28	0.000	0.000	122.46	0.00	0.00
29	150.00	P-200 Stand-off	3	31.586	34.744	0.56	0.75	13.82	871.20	0.000	0.000	768.30	0.00	0.00
30	150.00	ODI2-065R18K-GQ	3	31.586	34.744	0.56	0.80	8.15	90.36	0.000	0.000	452.95	0.00	0.00
31	150.00	4415	2	31.586	34.744	0.68	0.90	2.51	105.84	0.000	0.000	139.59	0.00	0.00
32	140.00	KS-24019	6	31.133	34.247	0.75	0.75	0.54	3.60	0.000	0.000	29.59	0.00	0.00
33	140.00	LNx-6514DS-VTM	3	31.133	34.247	0.60	0.75	14.56	119.16	0.000	0.000	797.92	0.00	0.00
34	140.00	FD9R6004/2C-3L	6	31.133	34.247	0.56	0.75	1.22	22.32	0.000	0.000	66.58	0.00	0.00
35	140.00	DB-T1-6Z-8AB-OZ	1	31.133	34.247	0.75	0.75	3.08	25.68	0.000	0.000	168.49	0.00	0.00
36	140.00	HBXX-6517DS-A2M	6	31.133	34.247	0.62	0.80	31.60	293.76	0.000	0.000	1731.55	0.00	0.00
37	140.00	Low Profile Platform	1	31.133	34.247	1.00	1.00	22.00	1800.00	0.000	0.000	1205.48	0.00	0.00
38	140.00	LNx-6514DS-A1M	3	31.133	34.247	0.66	0.80	16.27	138.24	0.000	0.000	891.76	0.00	0.00
39	140.00	RRH2x40-07-U	3	31.133	34.247	0.62	0.80	4.17	182.52	0.000	0.000	228.74	0.00	0.00
40	140.00	RRH2x60-1900	3	31.133	34.247	0.72	0.80	3.26	70.20	0.000	0.000	178.72	0.00	0.00
41	130.00	TD-RRH8x20-25	3	30.655	33.720	0.55	0.80	6.71	252.00	0.000	0.000	361.85	0.00	0.00
42	130.00	APXVTM14-C-120	3	30.655	33.720	0.63	0.80	12.02	201.60	0.000	0.000	648.54	0.00	0.00
43	130.00	1900MHz RRH	3	30.655	33.720	0.70	0.80	8.03	158.40	0.000	0.000	433.00	0.00	0.00
44	130.00	APXVSP18-C-A20	3	30.655	33.720	0.66	0.80	15.98	205.20	0.000	0.000	861.94	0.00	0.00
45	130.00	ACU-A20-N	4	30.655	33.720	0.63	0.80	0.35	4.80	0.000	0.000	19.09	0.00	0.00
46	130.00	800 MHz RRH	3	30.655	33.720	0.74	0.80	5.50	190.80	0.000	0.000	296.63	0.00	0.00
47	130.00	800MHz Filter	3	30.655	33.720	0.55	0.80	1.29	31.68	0.000	0.000	69.69	0.00	0.00

Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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48	130.00	RF Filters	3	30.655	33.720	0.54	0.80	1.50	55.80	0.000	0.000	80.68	0.00	0.00
49	130.00	Low Profile Platform	1	30.655	33.720	1.00	1.00	22.00	1800.00	0.000	0.000	1186.95	0.00	0.00
50	92.00	Low Profile Platform	1	28.522	31.374	1.00	1.00	22.00	1800.00	0.000	0.000	1104.36	0.00	0.00
51	92.00	DB205	1	29.082	31.990	0.80	0.80	1.44	45.60	0.000	9.000	73.70	0.00	663.34
52	92.00	ANT450Y10-WR	1	28.522	31.374	0.80	0.80	0.39	6.00	0.000	0.000	19.68	0.00	0.00
53	92.00	ANT150D3	1	28.838	31.722	0.80	0.80	1.74	21.60	0.000	5.000	88.52	0.00	442.58
54	92.00	ANT4506-9	1	28.713	31.584	0.80	0.80	2.22	21.60	0.000	3.000	111.99	0.00	335.96
55	92.00	MF-900B	2	28.522	31.374	0.80	0.80	5.52	31.20	2.887	0.000	277.09	499.96	0.00

Totals: 17,977.94

25,244.58

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 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		605.39	2381.34	0.00	0.00
10.00		594.56	2344.09	0.00	0.00
15.00		590.95	2306.83	0.00	0.00
20.00		614.16	2269.57	0.00	0.00
25.00		630.27	2232.32	0.00	0.00
30.00		641.45	2195.06	0.00	0.00
35.00		648.96	2157.81	0.00	0.00
40.00		653.62	2120.55	0.00	0.00
45.00		655.96	2083.30	0.00	0.00
46.25		162.77	515.00	0.00	0.00
50.00		498.95	2684.53	0.00	0.00
53.25		431.64	2294.81	0.00	0.00
55.00		231.48	634.52	0.00	0.00
60.00		663.59	1790.92	0.00	0.00
65.00		659.92	1758.32	0.00	0.00
70.00		655.15	1725.72	0.00	0.00
75.00		649.39	1693.13	0.00	0.00
80.00		642.74	1660.53	0.00	0.00
85.00		635.28	1627.93	0.00	0.00
90.00		627.08	1595.33	0.00	0.00
92.00	(7) attachments	1922.87	2555.00	499.96	1441.88
93.75		215.36	544.08	0.00	0.00
95.00		155.66	656.08	0.00	0.00
99.75		588.34	2458.58	0.00	0.00
100.00		30.58	67.86	0.00	0.00
105.00		609.24	1342.45	0.00	0.00
110.00		598.71	1314.51	0.00	0.00
115.00		587.65	1286.56	0.00	0.00
120.00		576.12	1258.62	0.00	0.00
125.00		564.13	1230.68	0.00	0.00
130.00	(26) attachments	4510.09	4103.02	0.00	0.00
135.00		538.88	1155.22	0.00	0.00
140.00	(32) attachments	5824.49	3782.76	0.00	0.00
142.75		282.88	562.75	0.00	0.00
145.00		231.69	699.59	0.00	0.00
147.25		228.89	690.15	0.00	0.00
150.00	(11) attachments	1759.31	1542.38	0.00	0.00
155.00		491.57	714.76	0.00	0.00
160.00	(22) attachments	5661.38	4396.34	0.00	0.00
165.00		462.18	594.95	0.00	0.00
170.00	(37) attachments	5749.40	4283.02	0.00	0.00
175.00		431.59	451.97	0.00	0.00
180.00		415.88	433.34	0.00	0.00
185.00		399.91	414.72	0.00	0.00
187.00	(9) attachments	2497.18	2111.27	505.98	2627.55

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	46,827.27	76,722.29	1,005.95	4,069.43
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Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-76.66	-46.93	-0.99	-5991.0	-0.01	5991.07	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.657
5.00	-74.15	-46.53	-0.99	-5756.4	-0.01	5756.40	6919.93	3459.96	17978.0	9002.40	0.08	-0.156	0.000	0.650
10.00	-71.68	-46.12	-0.99	-5523.7	-0.01	5523.76	6836.37	3418.19	17435.4	8730.69	0.33	-0.314	0.000	0.643
15.00	-69.25	-45.71	-0.99	-5293.1	-0.01	5293.14	6751.25	3375.63	16896.9	8461.01	0.75	-0.475	0.000	0.636
20.00	-66.86	-45.27	-0.99	-5064.5	-0.02	5064.58	6664.57	3332.28	16362.6	8193.47	1.33	-0.637	0.000	0.628
25.00	-64.50	-44.80	-0.99	-4838.2	-0.02	4838.24	6576.31	3288.16	15832.7	7928.16	2.09	-0.802	0.000	0.620
30.00	-62.19	-44.30	-0.99	-4614.2	-0.02	4614.27	6486.49	3243.25	15307.6	7665.22	3.02	-0.968	0.000	0.612
35.00	-59.91	-43.79	-0.99	-4392.7	-0.02	4392.76	6395.11	3197.55	14787.5	7404.75	4.12	-1.136	0.000	0.603
40.00	-57.68	-43.26	-0.99	-4173.8	-0.02	4173.81	6302.15	3151.08	14272.4	7146.85	5.41	-1.306	0.000	0.593
45.00	-55.53	-42.66	-0.99	-3957.4	-0.02	3957.49	6207.63	3103.82	13762.8	6891.65	6.87	-1.478	0.000	0.583
46.25	-54.96	-42.57	-0.99	-3904.1	-0.02	3904.17	6183.76	3091.88	13636.3	6828.29	7.26	-1.522	0.000	0.581
50.00	-52.20	-42.11	-0.99	-3744.5	-0.02	3744.53	6111.55	3055.77	13258.8	6639.26	8.51	-1.653	0.000	0.573
53.25	-49.85	-41.69	-0.99	-3607.6	-0.02	3607.68	5153.03	2576.51	11233.0	5624.85	9.67	-1.768	0.000	0.651
55.00	-49.13	-41.54	-0.99	-3534.7	-0.02	3534.73	5126.51	2563.25	11089.7	5553.12	10.33	-1.831	0.000	0.646
60.00	-47.23	-40.98	-0.99	-3327.0	-0.02	3327.01	5049.68	2524.84	10683.1	5349.50	12.35	-2.021	0.000	0.632
65.00	-45.36	-40.41	-0.99	-3122.1	-0.02	3122.13	4971.29	2485.64	10280.5	5147.92	14.57	-2.212	-0.001	0.616
70.00	-43.53	-39.83	-1.00	-2920.1	-0.03	2920.10	4891.33	2445.66	9882.29	4948.49	16.99	-2.404	-0.001	0.599
75.00	-41.74	-39.24	-1.00	-2720.9	-0.03	2720.97	4809.80	2404.90	9488.55	4751.33	19.61	-2.596	-0.001	0.582
80.00	-39.98	-38.66	-1.00	-2524.7	-0.03	2524.75	4726.70	2363.35	9099.56	4556.54	22.43	-2.787	-0.001	0.563
85.00	-38.26	-38.07	-1.00	-2331.4	-0.03	2331.47	4642.04	2321.02	8715.55	4364.25	25.45	-2.978	-0.001	0.543
90.00	-36.61	-37.44	-1.00	-2141.1	-0.03	2141.13	4555.82	2277.91	8336.73	4174.56	28.67	-3.167	-0.001	0.521
92.00	-34.13	-35.42	-0.50	-2064.8	-0.01	2064.80	4520.89	2260.44	8186.70	4099.44	30.02	-3.244	-0.001	0.511
93.75	-33.56	-35.21	-0.50	-2002.8	-0.01	2002.82	4490.12	2245.06	8056.16	4034.07	31.22	-3.311	-0.001	0.504
95.00	-32.84	-35.08	-0.50	-1958.8	-0.01	1958.81	4468.02	2234.01	7963.33	3987.58	32.09	-3.359	-0.001	0.499
99.75	-30.37	-34.39	-0.50	-1792.1	-0.01	1792.18	3653.35	1826.67	6478.28	3243.96	35.52	-3.534	-0.001	0.561
100.00	-30.24	-34.42	-0.50	-1783.5	-0.01	1783.58	3649.96	1824.98	6463.57	3236.59	35.71	-3.544	-0.001	0.560
105.00	-28.82	-33.82	-0.50	-1611.5	-0.01	1611.51	3581.25	1790.63	6171.38	3090.28	39.52	-3.744	-0.001	0.530
110.00	-27.44	-33.23	-0.50	-1442.4	-0.02	1442.41	3510.98	1755.49	5883.11	2945.93	43.55	-3.939	-0.001	0.498
115.00	-26.09	-32.64	-0.50	-1276.2	-0.02	1276.27	3439.14	1719.57	5598.97	2803.65	47.77	-4.128	-0.001	0.463
120.00	-24.78	-32.04	-0.50	-1113.1	-0.02	1113.10	3365.73	1682.87	5319.21	2663.56	52.19	-4.309	-0.001	0.426
125.00	-23.51	-31.46	-0.50	-952.88	-0.02	952.88	3290.76	1645.38	5044.03	2525.77	56.80	-4.480	-0.001	0.385
130.00	-19.71	-26.69	-0.50	-795.60	-0.03	795.60	3204.00	1602.00	4758.48	2382.78	61.57	-4.638	-0.001	0.340
135.00	-18.54	-26.10	-0.50	-662.18	-0.03	662.18	3102.32	1551.16	4459.76	2233.19	66.50	-4.783	-0.002	0.303
140.00	-15.23	-20.00	-0.50	-531.69	-0.03	531.69	3000.64	1500.32	4170.72	2088.46	71.58	-4.914	-0.002	0.260
142.75	-14.67	-19.69	-0.50	-476.69	-0.03	476.69	2944.72	1472.36	4015.87	2010.92	74.43	-4.981	-0.002	0.242
145.00	-13.98	-19.41	-0.50	-432.40	-0.04	432.40	2898.96	1449.48	3891.36	1948.57	76.78	-5.033	-0.002	0.227
147.25	-13.29	-19.13	-0.50	-388.74	-0.04	388.74	1774.96	887.48	2399.50	1201.53	79.17	-5.083	-0.002	0.331
150.00	-11.88	-17.26	-0.50	-336.13	-0.04	336.13	1752.91	876.46	2323.79	1163.62	82.11	-5.139	-0.002	0.296
155.00	-11.18	-16.73	-0.50	-249.84	-0.04	249.84	1711.62	855.81	2187.55	1095.40	87.55	-5.263	-0.002	0.235
160.00	-7.32	-10.69	-0.50	-166.21	-0.04	166.21	1668.76	834.38	2053.31	1028.18	93.11	-5.361	-0.002	0.166
165.00	-6.76	-10.18	-0.50	-112.75	-0.04	112.75	1624.34	812.17	1921.31	962.08	98.76	-5.435	-0.003	0.122
170.00	-3.04	-4.05	-0.50	-61.83	-0.05	61.83	1578.35	789.17	1791.75	897.21	104.47	-5.486	-0.003	0.071
175.00	-2.63	-3.58	-0.50	-41.56	-0.05	41.56	1530.79	765.40	1664.88	833.68	110.23	-5.521	-0.003	0.052
180.00	-2.23	-3.13	-0.50	-23.65	-0.05	23.65	1481.67	740.83	1540.90	771.60	116.02	-5.546	-0.004	0.032
185.00	-1.86	-2.69	-0.50	-8.01	-0.05	8.01	1427.20	713.60	1416.30	709.20	121.83	-5.560	-0.004	0.013
187.00	0.00	-2.50	-0.51	-2.63	0.00	2.63	1400.09	700.04	1362.73	682.38	124.15	-5.562	-0.004	0.004

Wind Loading - Shaft

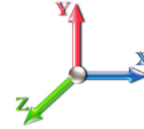
Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 0.90
Wind Load Factor 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	490.97	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	482.27	0.650	0.000	5.00	27.207	17.68	605.4	0.0	1550.5
10.00		1.00	0.85	19.450	21.40	473.57	0.650	0.000	5.00	26.721	17.37	594.6	0.0	1522.5
15.00		1.00	0.86	19.690	21.66	467.73	0.650	0.000	5.00	26.234	17.05	590.9	0.0	1494.6
20.00		1.00	0.91	20.851	22.94	472.30	0.650	0.000	5.00	25.748	16.74	614.2	0.0	1466.6
25.00		1.00	0.95	21.810	23.99	473.83	0.650	0.000	5.00	25.261	16.42	630.3	0.0	1438.7
30.00		1.00	0.99	22.632	24.90	473.30	0.650	0.000	5.00	24.775	16.10	641.4	0.0	1410.8
35.00		1.00	1.02	23.356	25.69	471.27	0.650	0.000	5.00	24.288	15.79	649.0	0.0	1382.8
40.00		1.00	1.05	24.004	26.40	468.10	0.650	0.000	5.00	23.802	15.47	653.6	0.0	1354.9
45.00		1.00	1.07	24.593	27.05	464.02	0.650	0.000	5.00	23.315	15.15	656.0	0.0	1326.9
46.25	Bot - Section 2	1.00	1.08	24.732	27.21	462.88	0.650	0.000	1.25	5.753	3.74	162.8	0.0	327.4
50.00		1.00	1.10	25.133	27.65	459.20	0.650	0.000	3.75	17.353	11.28	499.0	0.0	1836.7
53.25	Top - Section 1	1.00	1.11	25.462	28.01	455.72	0.650	0.000	3.25	14.818	9.63	431.6	0.0	1568.0
55.00		1.00	1.12	25.633	28.20	461.35	0.650	0.000	1.75	7.894	5.13	231.5	0.0	393.5
60.00		1.00	1.14	26.099	28.71	455.44	0.650	0.000	5.00	22.226	14.45	663.6	0.0	1107.7
65.00		1.00	1.16	26.535	29.19	449.07	0.650	0.000	5.00	21.739	14.13	659.9	0.0	1083.2
70.00		1.00	1.18	26.946	29.64	442.30	0.650	0.000	5.00	21.253	13.81	655.1	0.0	1058.8
75.00		1.00	1.19	27.335	30.07	435.16	0.650	0.000	5.00	20.766	13.50	649.4	0.0	1034.3
80.00		1.00	1.21	27.704	30.47	427.70	0.650	0.000	5.00	20.280	13.18	642.7	0.0	1009.9
85.00		1.00	1.23	28.056	30.86	419.96	0.650	0.000	5.00	19.793	12.87	635.3	0.0	985.4
90.00		1.00	1.24	28.391	31.23	411.95	0.650	0.000	5.00	19.307	12.55	627.1	0.0	961.0
92.00	Appurtenance(s)	1.00	1.25	28.522	31.37	408.68	0.650	0.000	2.00	7.586	4.93	247.5	0.0	377.5
93.75	Bot - Section 3	1.00	1.25	28.634	31.50	405.79	0.650	0.000	1.75	6.574	4.27	215.4	0.0	327.1
95.00		1.00	1.25	28.713	31.58	403.70	0.650	0.000	1.25	4.739	3.08	155.7	0.0	434.3
99.75	Top - Section 2	1.00	1.27	29.006	31.91	395.67	0.650	0.000	4.75	17.730	11.52	588.3	0.0	1624.3
100.00		1.00	1.27	29.021	31.92	402.17	0.650	0.000	0.25	0.921	0.60	30.6	0.0	39.3
105.00		1.00	1.28	29.318	32.25	393.54	0.650	0.000	5.00	18.165	11.81	609.2	0.0	775.6
110.00		1.00	1.29	29.604	32.56	384.72	0.650	0.000	5.00	17.678	11.49	598.7	0.0	754.7
115.00		1.00	1.31	29.880	32.87	375.72	0.650	0.000	5.00	17.192	11.17	587.7	0.0	733.7
120.00		1.00	1.32	30.147	33.16	366.56	0.650	0.000	5.00	16.705	10.86	576.1	0.0	712.7
125.00		1.00	1.33	30.405	33.45	357.25	0.650	0.000	5.00	16.219	10.54	564.1	0.0	691.8
130.00	Appurtenance(s)	1.00	1.34	30.655	33.72	347.79	0.650	0.000	5.00	15.732	10.23	551.7	0.0	670.8
135.00		1.00	1.35	30.898	33.99	338.20	0.650	0.000	5.00	15.246	9.91	538.9	0.0	649.9
140.00	Appurtenance(s)	1.00	1.36	31.133	34.25	328.48	0.650	0.000	5.00	14.759	9.59	525.7	0.0	628.9
142.75	Bot - Section 4	1.00	1.37	31.260	34.39	323.08	0.650	0.000	2.75	7.910	5.14	282.9	0.0	337.0
145.00		1.00	1.37	31.362	34.50	318.63	0.650	0.000	2.25	6.458	4.20	231.7	0.0	455.1
147.25	Top - Section 3	1.00	1.37	31.464	34.61	314.17	0.650	0.000	2.25	6.359	4.13	228.9	0.0	448.0
150.00	Appurtenance(s)	1.00	1.38	31.586	34.74	313.50	0.650	0.000	2.75	7.638	4.97	276.0	0.0	217.7
155.00		1.00	1.39	31.803	34.98	303.45	0.650	0.000	5.00	13.511	8.78	491.6	0.0	385.0
160.00	Appurtenance(s)	1.00	1.40	32.015	35.22	293.29	0.650	0.000	5.00	13.025	8.47	477.0	0.0	371.0
165.00		1.00	1.41	32.222	35.44	283.04	0.650	0.000	5.00	12.538	8.15	462.2	0.0	357.0
170.00	Appurtenance(s)	1.00	1.42	32.424	35.67	272.69	0.650	0.000	5.00	12.052	7.83	447.0	0.0	343.0
175.00		1.00	1.43	32.621	35.88	262.25	0.650	0.000	5.00	11.565	7.52	431.6	0.0	329.1
180.00		1.00	1.43	32.814	36.10	251.72	0.650	0.000	5.00	11.079	7.20	415.9	0.0	315.1
185.00		1.00	1.44	33.003	36.30	241.11	0.650	0.000	5.00	10.592	6.88	399.9	0.0	301.1
187.00	Appurtenance(s)	1.00	1.45	33.077	36.38	236.84	0.650	0.000	2.00	4.101	2.67	155.2	0.0	116.5

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 17



Totals:	187.00	21,582.7	36,710.3
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Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT450F6	1	33.221	36.543	1.00	1.00	1.86	18.90	0.000	3.917	108.75	0.00	425.95
2	187.00	MF-900B	2	33.077	36.385	1.00	1.00	6.90	23.40	2.015	0.000	401.69	505.98	0.00
3	187.00	ANT900D6-9	2	33.152	36.468	1.00	1.00	1.96	19.80	0.000	2.042	114.36	0.00	233.49
4	187.00	6' Lightning rod	1	33.077	36.385	1.00	1.00	0.38	5.85	0.000	0.000	22.12	0.00	0.00
5	187.00	DB201	2	33.251	36.576	1.00	1.00	7.08	45.00	0.000	4.750	414.34	0.00	1968.11
6	187.00	Low Profile Platform	1	33.077	36.385	1.00	1.00	22.00	1350.00	0.000	0.000	1280.75	0.00	0.00
7	170.00	Powerwave - 7770	3	32.424	35.666	0.55	0.75	9.03	94.50	0.000	0.000	515.52	0.00	0.00
8	170.00	Cci - DTMABP7819VG12A	3	32.424	35.666	0.50	0.75	1.72	51.79	0.000	0.000	98.07	0.00	0.00
9	170.00	Ericsson - RRUS-11	3	32.424	35.666	0.57	0.75	4.31	148.50	0.000	0.000	245.91	0.00	0.00
10	170.00	Css - DBC-750 - Combiner	3	32.424	35.666	0.50	0.75	0.77	13.18	0.000	0.000	43.87	0.00	0.00
11	170.00	Raycap -	2	32.424	35.666	1.00	1.00	2.94	59.04	0.000	0.000	167.77	0.00	0.00
12	170.00	Quintel - QS66512-2	3	32.424	35.666	0.69	0.75	16.83	299.70	0.000	0.000	960.36	0.00	0.00
13	170.00	Commscope -	3	32.424	35.666	0.74	0.75	0.11	3.08	0.000	0.000	6.29	0.00	0.00
14	170.00	Ericsson - RRUS-32	3	32.424	35.666	0.50	0.75	4.13	143.10	0.000	0.000	235.71	0.00	0.00
15	170.00	Ericsson - RRUS-32 B2	3	32.424	35.666	0.61	0.75	5.49	162.00	0.000	0.000	313.05	0.00	0.00
16	170.00	Low Profile Platform w/	1	32.424	35.666	1.00	1.00	27.70	1530.00	0.000	0.000	1580.72	0.00	0.00
17	170.00	Cci - HPA-65R-BUU-H6	3	32.424	35.666	0.64	0.75	18.47	137.70	0.000	0.000	1054.27	0.00	0.00
18	170.00	Nokia - CS72188.01 LMU	1	32.424	35.666	1.00	1.00	0.12	0.29	0.000	0.000	6.85	0.00	0.00
19	170.00	Kaelus -	6	32.424	35.666	0.50	0.75	1.30	137.16	0.000	0.000	73.98	0.00	0.00
20	160.00	Platform w/ Hand Rail	1	32.015	35.216	1.00	1.00	32.00	1440.00	0.000	0.000	1803.08	0.00	0.00
21	160.00	RRUS 4415 B25	3	32.015	35.216	0.50	0.75	2.47	124.20	0.000	0.000	139.30	0.00	0.00
22	160.00	4449 B71+B12	3	32.015	35.216	0.50	0.75	2.49	189.00	0.000	0.000	140.15	0.00	0.00
23	160.00	SDX1926Q-43	3	32.015	35.216	0.50	0.75	0.78	11.61	0.000	0.000	44.17	0.00	0.00
24	160.00	AIR6449 B41	3	32.015	35.216	0.53	0.75	9.03	278.10	0.000	0.000	508.57	0.00	0.00
25	160.00	Air32	3	32.015	35.216	0.65	0.75	12.74	356.94	0.000	0.000	718.04	0.00	0.00
26	160.00	APXVAARR24_43-U-NA2	3	32.015	35.216	0.52	0.75	31.88	345.60	0.000	0.000	1796.21	0.00	0.00
27	160.00	KRY 112 144/1	3	32.015	35.216	0.50	0.75	0.62	29.70	0.000	0.000	34.83	0.00	0.00
28	150.00	0208	3	31.586	34.744	0.54	0.80	2.20	53.46	0.000	0.000	122.46	0.00	0.00
29	150.00	P-200 Stand-off	3	31.586	34.744	0.56	0.75	13.82	653.40	0.000	0.000	768.30	0.00	0.00
30	150.00	ODI2-065R18K-GQ	3	31.586	34.744	0.56	0.80	8.15	67.77	0.000	0.000	452.95	0.00	0.00
31	150.00	4415	2	31.586	34.744	0.68	0.90	2.51	79.38	0.000	0.000	139.59	0.00	0.00
32	140.00	KS-24019	6	31.133	34.247	0.75	0.75	0.54	2.70	0.000	0.000	29.59	0.00	0.00
33	140.00	LNx-6514DS-VTM	3	31.133	34.247	0.60	0.75	14.56	89.37	0.000	0.000	797.92	0.00	0.00
34	140.00	FD9R6004/2C-3L	6	31.133	34.247	0.56	0.75	1.22	16.74	0.000	0.000	66.58	0.00	0.00
35	140.00	DB-T1-6Z-8AB-OZ	1	31.133	34.247	0.75	0.75	3.08	19.26	0.000	0.000	168.49	0.00	0.00
36	140.00	HBXX-6517DS-A2M	6	31.133	34.247	0.62	0.80	31.60	220.32	0.000	0.000	1731.55	0.00	0.00
37	140.00	Low Profile Platform	1	31.133	34.247	1.00	1.00	22.00	1350.00	0.000	0.000	1205.48	0.00	0.00
38	140.00	LNx-6514DS-A1M	3	31.133	34.247	0.66	0.80	16.27	103.68	0.000	0.000	891.76	0.00	0.00
39	140.00	RRH2x40-07-U	3	31.133	34.247	0.62	0.80	4.17	136.89	0.000	0.000	228.74	0.00	0.00
40	140.00	RRH2x60-1900	3	31.133	34.247	0.72	0.80	3.26	52.65	0.000	0.000	178.72	0.00	0.00
41	130.00	TD-RRH8x20-25	3	30.655	33.720	0.55	0.80	6.71	189.00	0.000	0.000	361.85	0.00	0.00
42	130.00	APXVTM14-C-120	3	30.655	33.720	0.63	0.80	12.02	151.20	0.000	0.000	648.54	0.00	0.00
43	130.00	1900MHz RRH	3	30.655	33.720	0.70	0.80	8.03	118.80	0.000	0.000	433.00	0.00	0.00
44	130.00	APXVSP18-C-A20	3	30.655	33.720	0.66	0.80	15.98	153.90	0.000	0.000	861.94	0.00	0.00
45	130.00	ACU-A20-N	4	30.655	33.720	0.63	0.80	0.35	3.60	0.000	0.000	19.09	0.00	0.00
46	130.00	800 MHz RRH	3	30.655	33.720	0.74	0.80	5.50	143.10	0.000	0.000	296.63	0.00	0.00
47	130.00	800MHz Filter	3	30.655	33.720	0.55	0.80	1.29	23.76	0.000	0.000	69.69	0.00	0.00

Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 19



48	130.00	RF Filters	3	30.655	33.720	0.54	0.80	1.50	41.85	0.000	0.000	80.68	0.00	0.00
49	130.00	Low Profile Platform	1	30.655	33.720	1.00	1.00	22.00	1350.00	0.000	0.000	1186.95	0.00	0.00
50	92.00	Low Profile Platform	1	28.522	31.374	1.00	1.00	22.00	1350.00	0.000	0.000	1104.36	0.00	0.00
51	92.00	DB205	1	29.082	31.990	0.80	0.80	1.44	34.20	0.000	9.000	73.70	0.00	663.34
52	92.00	ANT450Y10-WR	1	28.522	31.374	0.80	0.80	0.39	4.50	0.000	0.000	19.68	0.00	0.00
53	92.00	ANT150D3	1	28.838	31.722	0.80	0.80	1.74	16.20	0.000	5.000	88.52	0.00	442.58
54	92.00	ANT4506-9	1	28.713	31.584	0.80	0.80	2.22	16.20	0.000	3.000	111.99	0.00	335.96
55	92.00	MF-900B	2	28.522	31.374	0.80	0.80	5.52	23.40	2.887	0.000	277.09	499.96	0.00
Totals:												13,483.46		25,244.58

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

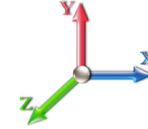


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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 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		605.39	1786.01	0.00	0.00
10.00		594.56	1758.06	0.00	0.00
15.00		590.95	1730.12	0.00	0.00
20.00		614.16	1702.18	0.00	0.00
25.00		630.27	1674.24	0.00	0.00
30.00		641.45	1646.30	0.00	0.00
35.00		648.96	1618.36	0.00	0.00
40.00		653.62	1590.41	0.00	0.00
45.00		655.96	1562.47	0.00	0.00
46.25		162.77	386.25	0.00	0.00
50.00		498.95	2013.40	0.00	0.00
53.25		431.64	1721.11	0.00	0.00
55.00		231.48	475.89	0.00	0.00
60.00		663.59	1343.19	0.00	0.00
65.00		659.92	1318.74	0.00	0.00
70.00		655.15	1294.29	0.00	0.00
75.00		649.39	1269.84	0.00	0.00
80.00		642.74	1245.39	0.00	0.00
85.00		635.28	1220.95	0.00	0.00
90.00		627.08	1196.50	0.00	0.00
92.00	(7) attachments	1922.87	1916.25	499.96	1441.88
93.75		215.36	408.06	0.00	0.00
95.00		155.66	492.06	0.00	0.00
99.75		588.34	1843.94	0.00	0.00
100.00		30.58	50.89	0.00	0.00
105.00		609.24	1006.84	0.00	0.00
110.00		598.71	985.88	0.00	0.00
115.00		587.65	964.92	0.00	0.00
120.00		576.12	943.97	0.00	0.00
125.00		564.13	923.01	0.00	0.00
130.00	(26) attachments	4510.09	3077.26	0.00	0.00
135.00		538.88	866.42	0.00	0.00
140.00	(32) attachments	5824.49	2837.07	0.00	0.00
142.75		282.88	422.07	0.00	0.00
145.00		231.69	524.69	0.00	0.00
147.25		228.89	517.62	0.00	0.00
150.00	(11) attachments	1759.31	1156.78	0.00	0.00
155.00		491.57	536.07	0.00	0.00
160.00	(22) attachments	5661.38	3297.25	0.00	0.00
165.00		462.18	446.21	0.00	0.00
170.00	(37) attachments	5749.40	3212.27	0.00	0.00
175.00		431.59	338.98	0.00	0.00
180.00		415.88	325.01	0.00	0.00
185.00		399.91	311.04	0.00	0.00
187.00	(9) attachments	2497.18	1583.45	505.98	2627.55

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	46,827.27	57,541.72	1,005.95	4,069.43
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Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



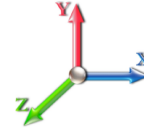
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Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-57.48	-46.91	-0.99	-5923.4	-0.01	5923.47	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.647
5.00	-55.57	-46.45	-0.99	-5688.9	-0.01	5688.94	6919.93	3459.96	17978.0	9002.40	0.08	-0.154	0.000	0.640
10.00	-53.68	-46.00	-0.99	-5456.7	-0.01	5456.70	6836.37	3418.19	17435.4	8730.69	0.33	-0.311	0.000	0.633
15.00	-51.83	-45.54	-0.99	-5226.7	-0.01	5226.72	6751.25	3375.63	16896.9	8461.01	0.74	-0.469	0.000	0.626
20.00	-50.01	-45.05	-0.99	-4999.0	-0.01	4999.04	6664.57	3332.28	16362.6	8193.47	1.32	-0.630	0.000	0.618
25.00	-48.22	-44.53	-0.99	-4773.8	-0.01	4773.80	6576.31	3288.16	15832.7	7928.16	2.06	-0.792	0.000	0.610
30.00	-46.45	-44.00	-0.99	-4551.1	-0.01	4551.13	6486.49	3243.25	15307.6	7665.22	2.98	-0.956	0.000	0.601
35.00	-44.72	-43.45	-0.99	-4331.1	-0.01	4331.13	6395.11	3197.55	14787.5	7404.75	4.07	-1.122	0.000	0.592
40.00	-43.02	-42.89	-0.99	-4113.8	-0.01	4113.86	6302.15	3151.08	14272.4	7146.85	5.34	-1.289	0.000	0.583
45.00	-41.39	-42.28	-0.99	-3899.4	-0.01	3899.40	6207.63	3103.82	13762.8	6891.65	6.78	-1.459	0.000	0.573
46.25	-40.95	-42.17	-0.99	-3846.5	-0.02	3846.55	6183.76	3091.88	13636.3	6828.29	7.17	-1.502	0.000	0.570
50.00	-38.86	-41.69	-0.99	-3688.4	-0.02	3688.43	6111.55	3055.77	13258.8	6639.26	8.40	-1.631	0.000	0.562
53.25	-37.09	-41.27	-0.99	-3552.9	-0.02	3552.93	5153.03	2576.51	11233.0	5624.85	9.55	-1.744	0.000	0.639
55.00	-36.53	-41.10	-0.99	-3480.7	-0.02	3480.71	5126.51	2563.25	11089.7	5553.12	10.20	-1.806	0.000	0.634
60.00	-35.08	-40.51	-0.99	-3275.2	-0.02	3275.20	5049.68	2524.84	10683.1	5349.50	12.19	-1.993	0.000	0.619
65.00	-33.65	-39.91	-0.99	-3072.6	-0.02	3072.65	4971.29	2485.64	10280.5	5147.92	14.38	-2.182	-0.001	0.604
70.00	-32.26	-39.31	-1.00	-2873.0	-0.02	2873.09	4891.33	2445.66	9882.29	4948.49	16.77	-2.370	-0.001	0.587
75.00	-30.89	-38.71	-1.00	-2676.5	-0.02	2676.52	4809.80	2404.90	9488.55	4751.33	19.35	-2.559	-0.001	0.570
80.00	-29.55	-38.11	-1.00	-2482.9	-0.03	2482.97	4726.70	2363.35	9099.56	4556.54	22.13	-2.747	-0.001	0.551
85.00	-28.24	-37.51	-1.00	-2292.4	-0.03	2292.42	4642.04	2321.02	8715.55	4364.25	25.11	-2.935	-0.001	0.532
90.00	-27.00	-36.88	-1.00	-2104.8	-0.03	2104.89	4555.82	2277.91	8336.73	4174.56	28.28	-3.121	-0.001	0.510
92.00	-25.15	-34.88	-0.50	-2029.6	0.00	2029.69	4520.89	2260.44	8186.70	4099.44	29.61	-3.196	-0.001	0.501
93.75	-24.72	-34.67	-0.50	-1968.6	0.00	1968.65	4490.12	2245.06	8056.16	4034.07	30.79	-3.262	-0.001	0.494
95.00	-24.17	-34.53	-0.50	-1925.3	0.00	1925.31	4468.02	2234.01	7963.33	3987.58	31.65	-3.309	-0.001	0.488
99.75	-22.31	-33.87	-0.50	-1761.2	-0.01	1761.28	3653.35	1826.67	6478.28	3243.96	35.03	-3.482	-0.001	0.549
100.00	-22.20	-33.88	-0.50	-1752.8	-0.01	1752.81	3649.96	1824.98	6463.57	3236.59	35.21	-3.491	-0.001	0.548
105.00	-21.12	-33.28	-0.50	-1583.4	-0.01	1583.42	3581.25	1790.63	6171.38	3090.28	38.97	-3.688	-0.001	0.519
110.00	-20.07	-32.68	-0.50	-1417.0	-0.01	1417.02	3510.98	1755.49	5883.11	2945.93	42.94	-3.880	-0.001	0.487
115.00	-19.04	-32.09	-0.50	-1253.6	-0.02	1253.61	3439.14	1719.57	5598.97	2803.65	47.10	-4.065	-0.001	0.453
120.00	-18.05	-31.50	-0.50	-1093.1	-0.02	1093.15	3365.73	1682.87	5319.21	2663.56	51.45	-4.243	-0.001	0.416
125.00	-17.08	-30.92	-0.50	-935.64	-0.02	935.64	3290.76	1645.38	5044.03	2525.77	55.98	-4.411	-0.001	0.376
130.00	-14.30	-26.22	-0.50	-781.05	-0.03	781.05	3204.00	1602.00	4758.48	2382.78	60.68	-4.566	-0.001	0.333
135.00	-13.42	-25.64	-0.50	-649.96	-0.03	649.96	3102.32	1551.16	4459.76	2233.19	65.54	-4.708	-0.002	0.296
140.00	-11.04	-19.62	-0.50	-521.75	-0.03	521.75	3000.64	1500.32	4170.72	2088.46	70.53	-4.837	-0.002	0.254
142.75	-10.63	-19.31	-0.50	-467.79	-0.03	467.79	2944.72	1472.36	4015.87	2010.92	73.34	-4.903	-0.002	0.236
145.00	-10.11	-19.05	-0.50	-424.34	-0.03	424.34	2898.96	1449.48	3891.36	1948.57	75.66	-4.954	-0.002	0.221
147.25	-9.60	-18.78	-0.50	-381.48	-0.03	381.48	1774.96	887.48	2399.50	1201.53	78.00	-5.003	-0.002	0.323
150.00	-8.57	-16.94	-0.50	-329.83	-0.04	329.83	1752.91	876.46	2323.79	1163.62	80.90	-5.058	-0.002	0.289
155.00	-8.05	-16.42	-0.50	-245.12	-0.04	245.12	1711.62	855.81	2187.55	1095.40	86.26	-5.179	-0.002	0.229
160.00	-5.27	-10.49	-0.50	-163.02	-0.04	163.02	1668.76	834.38	2053.31	1028.18	91.73	-5.275	-0.002	0.162
165.00	-4.86	-9.99	-0.50	-110.58	-0.04	110.58	1624.34	812.17	1921.31	962.08	97.29	-5.348	-0.003	0.118
170.00	-2.19	-3.97	-0.50	-60.61	-0.05	60.61	1578.35	789.17	1791.75	897.21	102.91	-5.398	-0.003	0.069
175.00	-1.90	-3.51	-0.50	-40.77	-0.05	40.77	1530.79	765.40	1664.88	833.68	108.57	-5.432	-0.003	0.050
180.00	-1.61	-3.06	-0.50	-23.22	-0.05	23.22	1481.67	740.83	1540.90	771.60	114.27	-5.457	-0.004	0.031
185.00	-1.34	-2.64	-0.50	-7.90	-0.05	7.90	1427.20	713.60	1416.30	709.20	119.98	-5.470	-0.004	0.012
187.00	0.00	-2.50	-0.51	-2.63	0.00	2.63	1400.09	700.04	1362.73	682.38	122.27	-5.472	-0.004	0.004

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	1.410	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.687	5.00	28.613	34.34	195.2	691.1	2758.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.792	5.00	28.214	33.86	192.5	722.5	2752.6
15.00		1.00	0.86	5.232	5.76	0.00	1.200	1.860	5.00	27.784	33.34	191.9	737.5	2730.3
20.00		1.00	0.91	5.540	6.09	0.00	1.200	1.912	5.00	27.341	32.81	199.9	744.7	2700.2
25.00		1.00	0.95	5.795	6.37	0.00	1.200	1.953	5.00	26.889	32.27	205.7	747.2	2665.4
30.00		1.00	0.99	6.013	6.61	0.00	1.200	1.988	5.00	26.431	31.72	209.8	746.5	2627.6
35.00		1.00	1.02	6.206	6.83	0.00	1.200	2.017	5.00	25.969	31.16	212.7	743.6	2587.4
40.00		1.00	1.05	6.378	7.02	0.00	1.200	2.044	5.00	25.505	30.61	214.7	739.0	2545.5
45.00		1.00	1.07	6.534	7.19	0.00	1.200	2.068	5.00	25.038	30.05	216.0	732.9	2502.2
46.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	2.073	1.25	6.185	7.42	53.6	182.8	619.3
50.00		1.00	1.10	6.678	7.35	0.00	1.200	2.089	3.75	18.659	22.39	164.5	552.9	3001.9
53.25	Top - Section 1	1.00	1.11	6.765	7.44	0.00	1.200	2.102	3.25	15.957	19.15	142.5	475.9	2566.5
55.00		1.00	1.12	6.811	7.49	0.00	1.200	2.109	1.75	8.509	10.21	76.5	255.2	779.8
60.00		1.00	1.14	6.934	7.63	0.00	1.200	2.127	5.00	23.998	28.80	219.7	720.4	2197.2
65.00		1.00	1.16	7.050	7.76	0.00	1.200	2.144	5.00	23.526	28.23	218.9	710.8	2155.1
70.00		1.00	1.18	7.160	7.88	0.00	1.200	2.159	5.00	23.052	27.66	217.9	700.7	2112.4
75.00		1.00	1.19	7.263	7.99	0.00	1.200	2.174	5.00	22.578	27.09	216.5	690.0	2069.1
80.00		1.00	1.21	7.361	8.10	0.00	1.200	2.188	5.00	22.103	26.52	214.8	678.8	2025.3
85.00		1.00	1.23	7.454	8.20	0.00	1.200	2.201	5.00	21.627	25.95	212.8	667.2	1981.1
90.00		1.00	1.24	7.544	8.30	0.00	1.200	2.214	5.00	21.151	25.38	210.6	655.2	1936.5
92.00	Appurtenance(s)	1.00	1.25	7.578	8.34	0.00	1.200	2.218	2.00	8.326	9.99	83.3	260.1	763.5
93.75	Bot - Section 3	1.00	1.25	7.608	8.37	0.00	1.200	2.222	1.75	7.223	8.67	72.5	226.1	662.3
95.00		1.00	1.25	7.629	8.39	0.00	1.200	2.225	1.25	5.202	6.24	52.4	163.3	742.3
99.75	Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	2.236	4.75	19.500	23.40	198.4	609.3	2775.0
100.00		1.00	1.27	7.711	8.48	0.00	1.200	2.237	0.25	1.014	1.22	10.3	32.0	84.5
105.00		1.00	1.28	7.790	8.57	0.00	1.200	2.248	5.00	20.038	24.05	206.0	627.8	1661.9
110.00		1.00	1.29	7.866	8.65	0.00	1.200	2.258	5.00	19.560	23.47	203.1	614.5	1620.8
115.00		1.00	1.31	7.939	8.73	0.00	1.200	2.268	5.00	19.082	22.90	200.0	601.1	1579.3
120.00		1.00	1.32	8.010	8.81	0.00	1.200	2.277	5.00	18.603	22.32	196.7	587.3	1537.6
125.00		1.00	1.33	8.079	8.89	0.00	1.200	2.287	5.00	18.124	21.75	193.3	573.4	1495.7
130.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	2.296	5.00	17.645	21.17	189.7	559.2	1453.6
135.00		1.00	1.35	8.210	9.03	0.00	1.200	2.304	5.00	17.166	20.60	186.0	544.8	1411.3
140.00	Appurtenance(s)	1.00	1.36	8.272	9.10	0.00	1.200	2.313	5.00	16.686	20.02	182.2	530.2	1368.8
142.75	Bot - Section 4	1.00	1.37	8.306	9.14	0.00	1.200	2.317	2.75	8.972	10.77	98.4	287.2	736.5
145.00		1.00	1.37	8.333	9.17	0.00	1.200	2.321	2.25	7.328	8.79	80.6	235.2	842.0
147.25	Top - Section 3	1.00	1.37	8.360	9.20	0.00	1.200	2.324	2.25	7.231	8.68	79.8	232.2	829.5
150.00	Appurtenance(s)	1.00	1.38	8.392	9.23	0.00	1.200	2.329	2.75	8.706	10.45	96.4	279.3	569.6
155.00		1.00	1.39	8.450	9.30	0.00	1.200	2.336	5.00	15.458	18.55	172.4	492.8	1006.0
160.00	Appurtenance(s)	1.00	1.40	8.506	9.36	0.00	1.200	2.343	5.00	14.978	17.97	168.2	477.5	972.2
165.00		1.00	1.41	8.561	9.42	0.00	1.200	2.351	5.00	14.497	17.40	163.8	462.2	938.2
170.00	Appurtenance(s)	1.00	1.42	8.615	9.48	0.00	1.200	2.358	5.00	14.016	16.82	159.4	446.7	904.1
175.00		1.00	1.43	8.667	9.53	0.00	1.200	2.364	5.00	13.535	16.24	154.9	431.0	869.8
180.00		1.00	1.43	8.719	9.59	0.00	1.200	2.371	5.00	13.055	15.67	150.2	415.2	835.4
185.00		1.00	1.44	8.769	9.65	0.00	1.200	2.378	5.00	12.573	15.09	145.5	399.3	800.8
187.00	Appurtenance(s)	1.00	1.45	8.789	9.67	0.00	1.200	2.380	2.00	4.894	5.87	56.8	157.2	312.6

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Totals:	187.00	7,287.0	72,087.1
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Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT450F6	1	8.827	9.710	1.00	1.00	5.72	78.08	0.000	3.917	55.56	0.00	217.61
2	187.00	MF-900B	2	8.789	9.668	1.00	1.00	73.40	273.22	2.015	0.000	709.59	1430.1	0.00
3	187.00	ANT900D6-9	2	8.809	9.690	1.00	1.00	8.52	108.38	0.000	2.042	82.55	0.00	168.53
4	187.00	6' Lightning rod	1	8.789	9.668	1.00	1.00	1.86	52.01	0.000	0.000	18.01	0.00	0.00
5	187.00	DB201	2	8.835	9.718	1.00	1.00	36.78	295.81	0.000	4.750	357.43	0.00	1697.79
6	187.00	Low Profile Platform	1	8.789	9.668	1.00	1.00	46.09	3285.07	0.000	0.000	445.54	0.00	0.00
7	170.00	Powerwave - 7770	3	8.615	9.477	0.56	0.75	11.77	718.30	0.000	0.000	111.50	0.00	0.00
8	170.00	Cci - DTMABP7819VG12A	3	8.615	9.477	0.50	0.75	3.29	149.63	0.000	0.000	31.14	0.00	0.00
9	170.00	Ericsson - RRUS-11	3	8.615	9.477	0.56	0.75	5.78	588.80	0.000	0.000	54.81	0.00	0.00
10	170.00	Css - DBC-750 - Combiner	3	8.615	9.477	0.50	0.75	1.85	50.80	0.000	0.000	17.50	0.00	0.00
11	170.00	Raycap -	2	8.615	9.477	1.00	1.00	4.83	203.89	0.000	0.000	45.78	0.00	0.00
12	170.00	Quintel - QS66512-2	3	8.615	9.477	0.69	0.75	20.55	1377.88	0.000	0.000	194.71	0.00	0.00
13	170.00	Commscope -	3	8.615	9.477	0.74	0.75	0.69	12.21	0.000	0.000	6.50	0.00	0.00
14	170.00	Ericsson - RRUS-32	3	8.615	9.477	0.50	0.75	5.66	578.07	0.000	0.000	53.59	0.00	0.00
15	170.00	Ericsson - RRUS-32 B2	3	8.615	9.477	0.62	0.75	7.57	676.50	0.000	0.000	71.69	0.00	0.00
16	170.00	Low Profile Platform w/	1	8.615	9.477	1.00	1.00	57.74	3944.00	0.000	0.000	547.19	0.00	0.00
17	170.00	Cci - HPA-65R-BUU-H6	3	8.615	9.477	0.64	0.75	22.08	1247.51	0.000	0.000	209.22	0.00	0.00
18	170.00	Nokia - CS72188.01 LMU	1	8.615	9.477	1.00	1.00	0.39	1.50	0.000	0.000	3.72	0.00	0.00
19	170.00	Kaelus -	6	8.615	9.477	0.50	0.75	2.46	279.73	0.000	0.000	23.29	0.00	0.00
20	160.00	Platform w/ Hand Rail	1	8.506	9.357	1.00	1.00	69.50	4139.67	0.000	0.000	650.28	0.00	0.00
21	160.00	RRUS 4415 B25	3	8.506	9.357	0.50	0.75	3.52	302.98	0.000	0.000	32.89	0.00	0.00
22	160.00	4449 B71+B12	3	8.506	9.357	0.50	0.75	3.62	551.83	0.000	0.000	33.84	0.00	0.00
23	160.00	SDX1926Q-43	3	8.506	9.357	0.50	0.75	1.86	51.49	0.000	0.000	17.40	0.00	0.00
24	160.00	AIR6449 B41	3	8.506	9.357	0.53	0.75	11.06	828.07	0.000	0.000	103.54	0.00	0.00
25	160.00	Air32	3	8.506	9.357	0.65	0.75	15.88	1265.97	0.000	0.000	148.55	0.00	0.00
26	160.00	APXVAARR24_43-U-NA2	3	8.506	9.357	0.52	0.75	35.95	2218.49	0.000	0.000	336.37	0.00	0.00
27	160.00	KRY 112 144/1	3	8.506	9.357	0.50	0.75	1.58	73.73	0.000	0.000	14.78	0.00	0.00
28	150.00	0208	3	8.392	9.232	0.54	0.80	3.27	189.24	0.000	0.000	30.21	0.00	0.00
29	150.00	P-200 Stand-off	3	8.392	9.232	0.56	0.75	36.93	1518.49	0.000	0.000	340.88	0.00	0.00
30	150.00	ODI2-065R18K-GQ	3	8.392	9.232	0.80	0.80	14.78	450.78	0.000	0.000	136.48	0.00	0.00
31	150.00	4415	2	8.392	9.232	0.68	0.90	3.54	212.03	0.000	0.000	32.70	0.00	0.00
32	140.00	KS-24019	6	8.272	9.099	0.75	0.75	1.77	45.67	0.000	0.000	16.07	0.00	0.00
33	140.00	LNx-6514DS-VTM	3	8.272	9.099	0.62	0.75	21.76	663.69	0.000	0.000	198.01	0.00	0.00
34	140.00	FD9R6004/2C-3L	6	8.272	9.099	0.58	0.75	3.28	72.34	0.000	0.000	29.87	0.00	0.00
35	140.00	DB-T1-6Z-8AB-OZ	1	8.272	9.099	0.75	0.75	3.87	153.16	0.000	0.000	35.23	0.00	0.00
36	140.00	HBXX-6517DS-A2M	6	8.272	9.099	0.63	0.80	47.09	1392.63	0.000	0.000	428.47	0.00	0.00
37	140.00	Low Profile Platform	1	8.272	9.099	1.00	1.00	45.40	3234.45	0.000	0.000	413.15	0.00	0.00
38	140.00	LNx-6514DS-A1M	3	8.272	9.099	0.68	0.80	24.30	687.51	0.000	0.000	221.10	0.00	0.00
39	140.00	RRH2x40-07-U	3	8.272	9.099	0.64	0.80	6.98	365.82	0.000	0.000	63.54	0.00	0.00
40	140.00	RRH2x60-1900	3	8.272	9.099	0.73	0.80	4.95	330.88	0.000	0.000	45.03	0.00	0.00
41	130.00	TD-RRH8x20-25	3	8.145	8.960	0.57	0.80	8.77	717.13	0.000	0.000	78.56	0.00	0.00
42	130.00	APXVTM14-C-120	3	8.145	8.960	0.65	0.80	15.23	875.54	0.000	0.000	136.45	0.00	0.00
43	130.00	1900MHz RRH	3	8.145	8.960	0.71	0.80	12.02	495.58	0.000	0.000	107.72	0.00	0.00
44	130.00	APXVSP18-C-A20	3	8.145	8.960	0.68	0.80	23.86	738.81	0.000	0.000	213.75	0.00	0.00
45	130.00	ACU-A20-N	4	8.145	8.960	0.65	0.80	1.37	22.20	0.000	0.000	12.32	0.00	0.00
46	130.00	800 MHz RRH	3	8.145	8.960	0.74	0.80	8.92	419.36	0.000	0.000	79.88	0.00	0.00
47	130.00	800MHz Filter	3	8.145	8.960	0.57	0.80	2.78	86.30	0.000	0.000	24.90	0.00	0.00

Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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48	130.00	RF Filters	3	8.145	8.960	0.55	0.80	2.50	193.57	0.000	0.000	22.43	0.00	0.00
49	130.00	Low Profile Platform	1	8.145	8.960	1.00	1.00	45.23	3221.74	0.000	0.000	405.26	0.00	0.00
50	92.00	Low Profile Platform	1	7.578	8.336	1.00	1.00	44.45	3163.75	0.000	0.000	370.54	0.00	0.00
51	92.00	DB205	1	7.727	8.500	0.80	0.80	7.89	102.64	0.000	9.000	67.04	0.00	603.39
52	92.00	ANT450Y10-WR	1	7.578	8.336	0.80	0.80	1.54	25.97	0.000	0.000	12.85	0.00	0.00
53	92.00	ANT150D3	1	7.662	8.429	0.80	0.80	10.38	93.67	0.000	5.000	87.51	0.00	437.53
54	92.00	ANT4506-9	1	7.629	8.392	0.80	0.80	5.30	102.90	0.000	3.000	44.45	0.00	133.36
55	92.00	MF-900B	2	7.578	8.336	0.80	0.80	55.10	252.39	2.887	0.000	459.35	1326.0	0.00

Totals: 43,181.86

8,490.70

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		195.19	3072.45	0.00	0.00
10.00		192.47	3066.64	0.00	0.00
15.00		191.88	3044.35	0.00	0.00
20.00		199.94	3014.25	0.00	0.00
25.00		205.68	2979.50	0.00	0.00
30.00		209.80	2941.60	0.00	0.00
35.00		212.73	2901.43	0.00	0.00
40.00		214.73	2859.51	0.00	0.00
45.00		215.96	2816.21	0.00	0.00
46.25		53.65	697.81	0.00	0.00
50.00		164.48	3237.43	0.00	0.00
53.25		142.50	2770.67	0.00	0.00
55.00		76.50	889.74	0.00	0.00
60.00		219.67	2511.28	0.00	0.00
65.00		218.94	2469.16	0.00	0.00
70.00		217.86	2426.42	0.00	0.00
75.00		216.46	2383.14	0.00	0.00
80.00		214.77	2339.37	0.00	0.00
85.00		212.81	2295.17	0.00	0.00
90.00		210.62	2250.57	0.00	0.00
92.00	(7) attachments	1125.02	4630.47	1326.09	1174.28
93.75		72.53	770.19	0.00	0.00
95.00		52.39	819.41	0.00	0.00
99.75		198.38	3067.86	0.00	0.00
100.00		10.32	99.89	0.00	0.00
105.00		206.04	1970.22	0.00	0.00
110.00		203.09	1929.05	0.00	0.00
115.00		199.97	1887.62	0.00	0.00
120.00		196.69	1845.94	0.00	0.00
125.00		193.27	1804.03	0.00	0.00
130.00	(26) attachments	1270.98	8532.15	0.00	0.00
135.00		186.02	1700.02	0.00	0.00
140.00	(32) attachments	1632.66	8603.64	0.00	0.00
142.75		98.37	849.92	0.00	0.00
145.00		80.60	934.81	0.00	0.00
147.25		79.79	922.38	0.00	0.00
150.00	(11) attachments	636.71	3053.55	0.00	0.00
155.00		172.42	1207.53	0.00	0.00
160.00	(22) attachments	1505.82	10605.91	0.00	0.00
165.00		163.83	1057.12	0.00	0.00
170.00	(37) attachments	1530.03	10851.79	0.00	0.00
175.00		154.86	882.98	0.00	0.00
180.00		150.24	848.57	0.00	0.00
185.00		145.54	814.04	0.00	0.00
187.00	(9) attachments	1725.45	4410.40	1430.12	2083.93

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	15,777.67	125,066.18	2,756.20	3,258.21
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Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

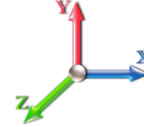


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-125.0	-15.84	-2.75	-2132.8	-0.03	2132.87	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.248
5.00	-121.9	-15.76	-2.75	-2053.6	-0.03	2053.67	6919.93	3459.96	17978.0	9002.40	0.03	-0.056	0.000	0.246
10.00	-118.8	-15.68	-2.75	-1974.8	-0.03	1974.86	6836.37	3418.19	17435.4	8730.69	0.12	-0.112	0.000	0.244
15.00	-115.8	-15.60	-2.75	-1896.4	-0.03	1896.44	6751.25	3375.63	16896.9	8461.01	0.27	-0.170	0.000	0.241
20.00	-112.8	-15.51	-2.75	-1818.4	-0.03	1818.44	6664.57	3332.28	16362.6	8193.47	0.48	-0.228	0.000	0.239
25.00	-109.8	-15.40	-2.75	-1740.9	-0.03	1740.91	6576.31	3288.16	15832.7	7928.16	0.75	-0.287	0.000	0.236
30.00	-106.8	-15.29	-2.75	-1663.9	-0.03	1663.91	6486.49	3243.25	15307.6	7665.22	1.08	-0.347	-0.001	0.234
35.00	-103.9	-15.17	-2.75	-1587.4	-0.03	1587.47	6395.11	3197.55	14787.5	7404.75	1.48	-0.408	-0.001	0.231
40.00	-101.0	-15.04	-2.75	-1511.6	-0.03	1511.64	6302.15	3151.08	14272.4	7146.85	1.94	-0.469	-0.001	0.228
45.00	-98.23	-14.87	-2.75	-1436.4	-0.03	1436.44	6207.63	3103.82	13762.8	6891.65	2.46	-0.531	-0.001	0.224
46.25	-97.53	-14.86	-2.75	-1417.8	-0.04	1417.86	6183.76	3091.88	13636.3	6828.29	2.60	-0.547	-0.001	0.223
50.00	-94.28	-14.74	-2.75	-1362.1	-0.04	1362.14	6111.55	3055.77	13258.8	6639.26	3.05	-0.595	-0.001	0.221
53.25	-91.50	-14.62	-2.75	-1314.2	-0.04	1314.24	5153.03	2576.51	11233.0	5624.85	3.47	-0.637	-0.001	0.251
55.00	-90.60	-14.60	-2.75	-1288.6	-0.04	1288.67	5126.51	2563.25	11089.7	5553.12	3.71	-0.660	-0.001	0.250
60.00	-88.08	-14.46	-2.75	-1215.6	-0.04	1215.66	5049.68	2524.84	10683.1	5349.50	4.44	-0.729	-0.001	0.245
65.00	-85.59	-14.31	-2.75	-1143.3	-0.04	1143.36	4971.29	2485.64	10280.5	5147.92	5.24	-0.799	-0.001	0.239
70.00	-83.15	-14.16	-2.75	-1071.8	-0.04	1071.80	4891.33	2445.66	9882.29	4948.49	6.11	-0.869	-0.002	0.234
75.00	-80.76	-14.01	-2.75	-1000.9	-0.04	1000.99	4809.80	2404.90	9488.55	4751.33	7.06	-0.940	-0.002	0.228
80.00	-78.41	-13.85	-2.75	-930.96	-0.04	930.96	4726.70	2363.35	9099.56	4556.54	8.08	-1.010	-0.002	0.221
85.00	-76.10	-13.69	-2.75	-861.72	-0.05	861.72	4642.04	2321.02	8715.55	4364.25	9.18	-1.081	-0.002	0.214
90.00	-73.84	-13.50	-2.75	-793.28	-0.05	793.28	4555.82	2277.91	8336.73	4174.56	10.35	-1.151	-0.002	0.206
92.00	-69.23	-12.31	-1.43	-765.12	-0.02	765.12	4520.89	2260.44	8186.70	4099.44	10.84	-1.179	-0.003	0.202
93.75	-68.45	-12.25	-1.43	-743.58	-0.02	743.58	4490.12	2245.06	8056.16	4034.07	11.27	-1.204	-0.003	0.200
95.00	-67.63	-12.23	-1.43	-728.27	-0.02	728.27	4468.02	2234.01	7963.33	3987.58	11.59	-1.222	-0.003	0.198
99.75	-64.56	-12.00	-1.43	-670.20	-0.02	670.20	3653.35	1826.67	6478.28	3243.96	12.84	-1.287	-0.003	0.224
100.00	-64.45	-12.03	-1.43	-667.20	-0.02	667.20	3649.96	1824.98	6463.57	3236.59	12.91	-1.291	-0.003	0.224
105.00	-62.47	-11.86	-1.43	-607.04	-0.03	607.04	3581.25	1790.63	6171.38	3090.28	14.30	-1.366	-0.003	0.214
110.00	-60.53	-11.69	-1.43	-547.74	-0.03	547.74	3510.98	1755.49	5883.11	2945.93	15.77	-1.440	-0.003	0.203
115.00	-58.64	-11.51	-1.43	-489.30	-0.03	489.30	3439.14	1719.57	5598.97	2803.65	17.32	-1.512	-0.003	0.192
120.00	-56.78	-11.33	-1.43	-431.75	-0.03	431.75	3365.73	1682.87	5319.21	2663.56	18.94	-1.582	-0.004	0.179
125.00	-54.97	-11.15	-1.43	-375.09	-0.03	375.09	3290.76	1645.38	5044.03	2525.77	20.63	-1.648	-0.004	0.165
130.00	-46.47	-9.68	-1.43	-319.33	-0.04	319.33	3204.00	1602.00	4758.48	2382.78	22.39	-1.711	-0.004	0.149
135.00	-44.77	-9.49	-1.43	-270.94	-0.04	270.94	3102.32	1551.16	4459.76	2233.19	24.22	-1.770	-0.004	0.136
140.00	-36.21	-7.61	-1.43	-223.51	-0.04	223.51	3000.64	1500.32	4170.72	2088.46	26.10	-1.824	-0.005	0.119
142.75	-35.36	-7.50	-1.43	-202.58	-0.04	202.58	2944.72	1472.36	4015.87	2010.92	27.16	-1.852	-0.005	0.113
145.00	-34.43	-7.40	-1.43	-185.71	-0.04	185.71	2898.96	1449.48	3891.36	1948.57	28.04	-1.875	-0.005	0.107
147.25	-33.51	-7.31	-1.43	-169.05	-0.04	169.05	1774.96	887.48	2399.50	1201.53	28.93	-1.896	-0.005	0.160
150.00	-30.47	-6.59	-1.43	-148.96	-0.04	148.96	1752.91	876.46	2323.79	1163.62	30.03	-1.921	-0.005	0.145
155.00	-29.26	-6.40	-1.43	-116.02	-0.05	116.02	1711.62	855.81	2187.55	1095.40	32.07	-1.977	-0.006	0.123
160.00	-18.71	-4.54	-1.43	-84.01	-0.05	84.01	1668.76	834.38	2053.31	1028.18	34.17	-2.024	-0.007	0.093
165.00	-17.66	-4.35	-1.43	-61.31	-0.05	61.31	1624.34	812.17	1921.31	962.08	36.31	-2.062	-0.007	0.075
170.00	-6.87	-2.43	-1.43	-39.56	-0.05	39.56	1578.35	789.17	1791.75	897.21	38.48	-2.092	-0.008	0.048
175.00	-5.99	-2.24	-1.43	-27.41	-0.05	27.41	1530.79	765.40	1664.88	833.68	40.69	-2.115	-0.009	0.037
180.00	-5.15	-2.06	-1.43	-16.18	-0.05	16.18	1481.67	740.83	1540.90	771.60	42.91	-2.131	-0.010	0.024
185.00	-4.34	-1.89	-1.43	-5.86	-0.05	5.86	1427.20	713.60	1416.30	709.20	45.15	-2.141	-0.012	0.011
187.00	0.00	-1.73	-1.43	-2.08	0.00	2.08	1400.09	700.04	1362.73	682.38	46.04	-2.142	-0.012	0.003

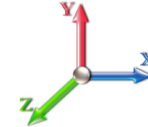
Seismic Segment Forces (Factored)

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.19	Ss 0.18
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.30	SA 0.03
	Seismic Importance Factor 1.00	



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1722.7	0.00	0.03	0.02	33.20	
10.00		1691.6	0.01	0.05	0.03	45.13	
15.00		1660.6	0.01	0.06	0.03	51.09	
20.00		1629.6	0.02	0.07	0.04	53.94	
25.00		1598.5	0.04	0.07	0.04	55.12	
30.00		1567.5	0.05	0.07	0.04	55.49	
35.00		1536.4	0.07	0.07	0.04	55.52	
40.00		1505.4	0.09	0.07	0.04	55.46	
45.00		1474.3	0.11	0.07	0.04	55.37	
46.25	Bot - Section 2	363.74	0.12	0.07	0.03	13.73	
50.00		2040.8	0.14	0.07	0.03	78.05	
53.25	Top - Section 1	1742.2	0.16	0.07	0.03	67.28	
55.00		437.17	0.17	0.07	0.03	16.95	
60.00		1230.7	0.20	0.06	0.02	47.91	
65.00		1203.5	0.23	0.06	0.02	46.22	
70.00		1176.3	0.27	0.05	0.02	43.28	
75.00		1149.2	0.31	0.04	0.01	38.65	
80.00		1122.0	0.35	0.03	0.01	31.91	
85.00		1094.9	0.40	0.02	0.01	22.86	
90.00		1067.7	0.44	0.00	0.01	11.72	
92.00	Appurtenance(s)	2024.4	0.46	0.00	0.01	13.10	
93.75	Bot - Section 3	363.48	0.48	-0.01	0.01	0.85	
95.00		482.50	0.49	-0.01	0.01	-0.32	
99.75	Top - Section 2	1804.7	0.54	-0.03	0.01	-22.02	
100.00		43.70	0.55	-0.03	0.01	-0.56	
105.00		861.80	0.60	-0.05	0.01	-20.62	
110.00		838.51	0.66	-0.07	0.02	-27.50	
115.00		815.23	0.72	-0.09	0.03	-31.46	
120.00		791.94	0.78	-0.11	0.05	-32.49	
125.00		768.66	0.85	-0.12	0.07	-30.80	
130.00	Appurtenance(s)	3162.2	0.92	-0.12	0.09	-113.26	
135.00		722.09	0.99	-0.11	0.13	-20.47	
140.00	Appurtenance(s)	2911.7	1.06	-0.09	0.16	-51.67	
142.75	Bot - Section 4	374.42	1.10	-0.07	0.19	-3.97	
145.00		505.63	1.14	-0.04	0.21	-2.04	
147.25	Top - Section 3	497.77	1.18	-0.02	0.24	1.56	
150.00	Appurtenance(s)	1190.7	1.22	0.02	0.27	15.21	
155.00		427.74	1.30	0.12	0.34	13.99	
160.00	Appurtenance(s)	3495.7	1.39	0.26	0.42	195.08	
165.00		396.69	1.47	0.44	0.51	32.58	
170.00	Appurtenance(s)	3470.0	1.56	0.67	0.62	387.72	
175.00		365.64	1.66	0.96	0.75	52.90	
180.00		350.12	1.75	1.33	0.90	63.39	
185.00		334.60	1.85	1.78	1.07	73.91	
187.00	Appurtenance(s)	1754.9	1.89	1.98	1.14	417.35	

Seismic Segment Forces (Factored)

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	55,770.9	1,789.3	Total Wind:	46,827.3
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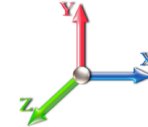
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.19	Ss 0.18
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.30	SA 0.03
	Seismic Importance Factor 1.00	



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-76.72	-2.15	0.00	-272.08	0.00	272.08	7001.91	3500.96	18524.4	9276.01	0.00	0.00	0.00	0.040
5.00	-74.34	-2.13	0.00	-261.32	0.00	261.32	6919.93	3459.96	17978.0	9002.40	0.00	-0.01	0.040	
10.00	-72.00	-2.09	0.00	-250.69	0.00	250.69	6836.37	3418.19	17435.4	8730.69	0.02	-0.01	0.039	
15.00	-69.69	-2.05	0.00	-240.24	0.00	240.24	6751.25	3375.63	16896.9	8461.01	0.03	-0.02	0.039	
20.00	-67.42	-2.00	0.00	-230.00	0.00	230.00	6664.57	3332.28	16362.6	8193.47	0.06	-0.03	0.038	
25.00	-65.19	-1.95	0.00	-219.99	0.00	219.99	6576.31	3288.16	15832.7	7928.16	0.09	-0.04	0.038	
30.00	-62.99	-1.90	0.00	-210.23	0.00	210.23	6486.49	3243.25	15307.6	7665.22	0.14	-0.04	0.037	
35.00	-60.83	-1.86	0.00	-200.70	0.00	200.70	6395.11	3197.55	14787.5	7404.75	0.19	-0.05	0.037	
40.00	-58.71	-1.81	0.00	-191.43	0.00	191.43	6302.15	3151.08	14272.4	7146.85	0.25	-0.06	0.036	
45.00	-56.63	-1.75	0.00	-182.40	0.00	182.40	6207.63	3103.82	13762.8	6891.65	0.31	-0.07	0.036	
46.25	-56.11	-1.74	0.00	-180.20	0.00	180.20	6183.76	3091.88	13636.3	6828.29	0.33	-0.07	0.035	
50.00	-53.43	-1.67	0.00	-173.67	0.00	173.67	6111.55	3055.77	13258.8	6639.26	0.39	-0.08	0.035	
53.25	-51.13	-1.60	0.00	-168.25	0.00	168.25	5153.03	2576.51	11233.0	5624.85	0.44	-0.08	0.040	
55.00	-50.50	-1.59	0.00	-165.45	0.00	165.45	5126.51	2563.25	11089.7	5553.12	0.47	-0.08	0.040	
60.00	-48.71	-1.54	0.00	-157.51	0.00	157.51	5049.68	2524.84	10683.1	5349.50	0.56	-0.09	0.039	
65.00	-46.95	-1.50	0.00	-149.79	0.00	149.79	4971.29	2485.64	10280.5	5147.92	0.66	-0.10	0.039	
70.00	-45.22	-1.46	0.00	-142.28	0.00	142.28	4891.33	2445.66	9882.29	4948.49	0.78	-0.11	0.038	
75.00	-43.53	-1.43	0.00	-134.96	0.00	134.96	4809.80	2404.90	9488.55	4751.33	0.90	-0.12	0.037	
80.00	-41.87	-1.40	0.00	-127.82	0.00	127.82	4726.70	2363.35	9099.56	4556.54	1.03	-0.13	0.037	
85.00	-40.24	-1.38	0.00	-120.81	0.00	120.81	4642.04	2321.02	8715.55	4364.25	1.17	-0.14	0.036	
90.00	-38.65	-1.37	0.00	-113.91	0.00	113.91	4555.82	2277.91	8336.73	4174.56	1.32	-0.15	0.036	
92.00	-36.09	-1.35	0.00	-111.17	0.00	111.17	4520.89	2260.44	8186.70	4099.44	1.39	-0.15	0.035	
93.75	-35.55	-1.35	0.00	-108.81	0.00	108.81	4490.12	2245.06	8056.16	4034.07	1.44	-0.16	0.035	
95.00	-34.89	-1.35	0.00	-107.12	0.00	107.12	4468.02	2234.01	7963.33	3987.58	1.48	-0.16	0.035	
99.75	-32.43	-1.35	0.00	-100.69	0.00	100.69	3653.35	1826.67	6478.28	3243.96	1.65	-0.17	0.040	
100.00	-32.37	-1.35	0.00	-100.35	0.00	100.35	3649.96	1824.98	6463.57	3236.59	1.66	-0.17	0.040	
105.00	-31.02	-1.35	0.00	-93.58	0.00	93.58	3581.25	1790.63	6171.38	3090.28	1.84	-0.18	0.039	
110.00	-29.71	-1.36	0.00	-86.81	0.00	86.81	3510.98	1755.49	5883.11	2945.93	2.04	-0.19	0.038	
115.00	-28.42	-1.36	0.00	-80.03	0.00	80.03	3439.14	1719.57	5598.97	2803.65	2.25	-0.20	0.037	
120.00	-27.16	-1.36	0.00	-73.24	0.00	73.24	3365.73	1682.87	5319.21	2663.56	2.47	-0.22	0.036	
125.00	-25.93	-1.36	0.00	-66.44	0.00	66.44	3290.76	1645.38	5044.03	2525.77	2.70	-0.23	0.034	
130.00	-21.83	-1.35	0.00	-59.65	0.00	59.65	3204.00	1602.00	4758.48	2382.78	2.95	-0.24	0.032	
135.00	-20.67	-1.35	0.00	-52.91	0.00	52.91	3102.32	1551.16	4459.76	2233.19	3.20	-0.25	0.030	
140.00	-16.89	-1.33	0.00	-46.18	0.00	46.18	3000.64	1500.32	4170.72	2088.46	3.47	-0.26	0.028	
142.75	-16.33	-1.33	0.00	-42.52	0.00	42.52	2944.72	1472.36	4015.87	2010.92	3.62	-0.27	0.027	
145.00	-15.63	-1.33	0.00	-39.53	0.00	39.53	2898.96	1449.48	3891.36	1948.57	3.75	-0.27	0.026	
147.25	-14.94	-1.32	0.00	-36.54	0.00	36.54	1774.96	887.48	2399.50	1201.53	3.88	-0.28	0.039	
150.00	-13.39	-1.30	0.00	-32.90	0.00	32.90	1752.91	876.46	2323.79	1163.62	4.04	-0.28	0.036	
155.00	-12.68	-1.29	0.00	-26.38	0.00	26.38	1711.62	855.81	2187.55	1095.40	4.34	-0.29	0.031	
160.00	-8.28	-1.07	0.00	-19.93	0.00	19.93	1668.76	834.38	2053.31	1028.18	4.66	-0.31	0.024	
165.00	-7.69	-1.04	0.00	-14.57	0.00	14.57	1624.34	812.17	1921.31	962.08	4.98	-0.31	0.020	
170.00	-3.41	-0.63	0.00	-9.38	0.00	9.38	1578.35	789.17	1791.75	897.21	5.32	-0.32	0.013	
175.00	-2.96	-0.57	0.00	-6.25	0.00	6.25	1530.79	765.40	1664.88	833.68	5.66	-0.33	0.009	
180.00	-2.52	-0.51	0.00	-3.39	0.00	3.39	1481.67	740.83	1540.90	771.60	6.00	-0.33	0.006	
185.00	-2.11	-0.43	0.00	-0.86	0.00	0.86	1427.20	713.60	1416.30	709.20	6.35	-0.33	0.003	
187.00	0.00	-0.42	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	6.49	-0.33	0.000	

Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

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Seismic Segment Forces (Factored)

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.19	Ss 0.18
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.30	SA 0.03
	Seismic Importance Factor 1.00	



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1722.7	0.00	0.03	0.02	33.20	
10.00		1691.6	0.01	0.05	0.03	45.13	
15.00		1660.6	0.01	0.06	0.03	51.09	
20.00		1629.6	0.02	0.07	0.04	53.94	
25.00		1598.5	0.04	0.07	0.04	55.12	
30.00		1567.5	0.05	0.07	0.04	55.49	
35.00		1536.4	0.07	0.07	0.04	55.52	
40.00		1505.4	0.09	0.07	0.04	55.46	
45.00		1474.3	0.11	0.07	0.04	55.37	
46.25	Bot - Section 2	363.74	0.12	0.07	0.03	13.73	
50.00		2040.8	0.14	0.07	0.03	78.05	
53.25	Top - Section 1	1742.2	0.16	0.07	0.03	67.28	
55.00		437.17	0.17	0.07	0.03	16.95	
60.00		1230.7	0.20	0.06	0.02	47.91	
65.00		1203.5	0.23	0.06	0.02	46.22	
70.00		1176.3	0.27	0.05	0.02	43.28	
75.00		1149.2	0.31	0.04	0.01	38.65	
80.00		1122.0	0.35	0.03	0.01	31.91	
85.00		1094.9	0.40	0.02	0.01	22.86	
90.00		1067.7	0.44	0.00	0.01	11.72	
92.00	Appurtenance(s)	2024.4	0.46	0.00	0.01	13.10	
93.75	Bot - Section 3	363.48	0.48	-0.01	0.01	0.85	
95.00		482.50	0.49	-0.01	0.01	-0.32	
99.75	Top - Section 2	1804.7	0.54	-0.03	0.01	-22.02	
100.00		43.70	0.55	-0.03	0.01	-0.56	
105.00		861.80	0.60	-0.05	0.01	-20.62	
110.00		838.51	0.66	-0.07	0.02	-27.50	
115.00		815.23	0.72	-0.09	0.03	-31.46	
120.00		791.94	0.78	-0.11	0.05	-32.49	
125.00		768.66	0.85	-0.12	0.07	-30.80	
130.00	Appurtenance(s)	3162.2	0.92	-0.12	0.09	-113.26	
135.00		722.09	0.99	-0.11	0.13	-20.47	
140.00	Appurtenance(s)	2911.7	1.06	-0.09	0.16	-51.67	
142.75	Bot - Section 4	374.42	1.10	-0.07	0.19	-3.97	
145.00		505.63	1.14	-0.04	0.21	-2.04	
147.25	Top - Section 3	497.77	1.18	-0.02	0.24	1.56	
150.00	Appurtenance(s)	1190.7	1.22	0.02	0.27	15.21	
155.00		427.74	1.30	0.12	0.34	13.99	
160.00	Appurtenance(s)	3495.7	1.39	0.26	0.42	195.08	
165.00		396.69	1.47	0.44	0.51	32.58	
170.00	Appurtenance(s)	3470.0	1.56	0.67	0.62	387.72	
175.00		365.64	1.66	0.96	0.75	52.90	
180.00		350.12	1.75	1.33	0.90	63.39	
185.00		334.60	1.85	1.78	1.07	73.91	
187.00	Appurtenance(s)	1754.9	1.89	1.98	1.14	417.35	

Seismic Segment Forces (Factored)

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	55,770.9	1,789.3	Total Wind:	46,827.3
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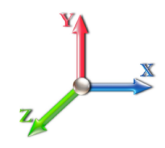
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E										Iterations 22
Gust Response Factor 1.10					Sds 0.19					Ss 0.18
Dead Load Factor 0.90			Seismic Load Factor 1.00			Sd1 0.10			S1 0.06	
Wind Load Factor 0.00		Structure Frequency (f1) 0.30		SA 0.03		Seismic Importance Factor 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-57.54	-2.15	0.00	-268.76	0.00	268.76	7001.91	3500.96	18524.4	9276.01	0.00	0.00	0.00	0.037
5.00	-55.76	-2.12	0.00	-258.01	0.00	258.01	6919.93	3459.96	17978.0	9002.40	0.00	-0.01	0.037	
10.00	-54.00	-2.08	0.00	-247.39	0.00	247.39	6836.37	3418.19	17435.4	8730.69	0.01	-0.01	0.036	
15.00	-52.27	-2.04	0.00	-236.97	0.00	236.97	6751.25	3375.63	16896.9	8461.01	0.03	-0.02	0.036	
20.00	-50.56	-1.99	0.00	-226.77	0.00	226.77	6664.57	3332.28	16362.6	8193.47	0.06	-0.03	0.035	
25.00	-48.89	-1.94	0.00	-216.82	0.00	216.82	6576.31	3288.16	15832.7	7928.16	0.09	-0.04	0.035	
30.00	-47.24	-1.89	0.00	-207.11	0.00	207.11	6486.49	3243.25	15307.6	7665.22	0.14	-0.04	0.034	
35.00	-45.62	-1.84	0.00	-197.65	0.00	197.65	6395.11	3197.55	14787.5	7404.75	0.18	-0.05	0.034	
40.00	-44.03	-1.79	0.00	-188.45	0.00	188.45	6302.15	3151.08	14272.4	7146.85	0.24	-0.06	0.033	
45.00	-42.47	-1.74	0.00	-179.51	0.00	179.51	6207.63	3103.82	13762.8	6891.65	0.31	-0.07	0.033	
46.25	-42.09	-1.72	0.00	-177.34	0.00	177.34	6183.76	3091.88	13636.3	6828.29	0.33	-0.07	0.033	
50.00	-40.07	-1.65	0.00	-170.87	0.00	170.87	6111.55	3055.77	13258.8	6639.26	0.38	-0.07	0.032	
53.25	-38.35	-1.58	0.00	-165.52	0.00	165.52	5153.03	2576.51	11233.0	5624.85	0.43	-0.08	0.037	
55.00	-37.87	-1.57	0.00	-162.75	0.00	162.75	5126.51	2563.25	11089.7	5553.12	0.46	-0.08	0.037	
60.00	-36.53	-1.52	0.00	-154.91	0.00	154.91	5049.68	2524.84	10683.1	5349.50	0.55	-0.09	0.036	
65.00	-35.21	-1.48	0.00	-147.30	0.00	147.30	4971.29	2485.64	10280.5	5147.92	0.66	-0.10	0.036	
70.00	-33.92	-1.44	0.00	-139.90	0.00	139.90	4891.33	2445.66	9882.29	4948.49	0.77	-0.11	0.035	
75.00	-32.65	-1.40	0.00	-132.70	0.00	132.70	4809.80	2404.90	9488.55	4751.33	0.88	-0.12	0.035	
80.00	-31.40	-1.37	0.00	-125.68	0.00	125.68	4726.70	2363.35	9099.56	4556.54	1.01	-0.13	0.034	
85.00	-30.18	-1.35	0.00	-118.81	0.00	118.81	4642.04	2321.02	8715.55	4364.25	1.15	-0.14	0.034	
90.00	-28.98	-1.34	0.00	-112.04	0.00	112.04	4555.82	2277.91	8336.73	4174.56	1.30	-0.15	0.033	
92.00	-27.07	-1.33	0.00	-109.35	0.00	109.35	4520.89	2260.44	8186.70	4099.44	1.37	-0.15	0.033	
93.75	-26.66	-1.33	0.00	-107.03	0.00	107.03	4490.12	2245.06	8056.16	4034.07	1.42	-0.16	0.032	
95.00	-26.17	-1.33	0.00	-105.37	0.00	105.37	4468.02	2234.01	7963.33	3987.58	1.46	-0.16	0.032	
99.75	-24.32	-1.32	0.00	-99.07	0.00	99.07	3653.35	1826.67	6478.28	3243.96	1.62	-0.17	0.037	
100.00	-24.27	-1.33	0.00	-98.74	0.00	98.74	3649.96	1824.98	6463.57	3236.59	1.63	-0.17	0.037	
105.00	-23.27	-1.33	0.00	-92.10	0.00	92.10	3581.25	1790.63	6171.38	3090.28	1.81	-0.18	0.036	
110.00	-22.28	-1.33	0.00	-85.46	0.00	85.46	3510.98	1755.49	5883.11	2945.93	2.01	-0.19	0.035	
115.00	-21.31	-1.33	0.00	-78.81	0.00	78.81	3439.14	1719.57	5598.97	2803.65	2.21	-0.20	0.034	
120.00	-20.37	-1.33	0.00	-72.16	0.00	72.16	3365.73	1682.87	5319.21	2663.56	2.43	-0.21	0.033	
125.00	-19.45	-1.33	0.00	-65.50	0.00	65.50	3290.76	1645.38	5044.03	2525.77	2.66	-0.22	0.032	
130.00	-16.37	-1.32	0.00	-58.85	0.00	58.85	3204.00	1602.00	4758.48	2382.78	2.90	-0.24	0.030	
135.00	-15.50	-1.32	0.00	-52.23	0.00	52.23	3102.32	1551.16	4459.76	2233.19	3.15	-0.25	0.028	
140.00	-12.67	-1.31	0.00	-45.63	0.00	45.63	3000.64	1500.32	4170.72	2088.46	3.42	-0.26	0.026	
142.75	-12.24	-1.31	0.00	-42.02	0.00	42.02	2944.72	1472.36	4015.87	2010.92	3.57	-0.26	0.025	
145.00	-11.72	-1.31	0.00	-39.07	0.00	39.07	2898.96	1449.48	3891.36	1948.57	3.69	-0.27	0.024	
147.25	-11.20	-1.31	0.00	-36.13	0.00	36.13	1774.96	887.48	2399.50	1201.53	3.82	-0.27	0.036	
150.00	-10.04	-1.29	0.00	-32.54	0.00	32.54	1752.91	876.46	2323.79	1163.62	3.98	-0.28	0.034	
155.00	-9.51	-1.27	0.00	-26.10	0.00	26.10	1711.62	855.81	2187.55	1095.40	4.28	-0.29	0.029	
160.00	-6.21	-1.06	0.00	-19.74	0.00	19.74	1668.76	834.38	2053.31	1028.18	4.59	-0.30	0.023	
165.00	-5.77	-1.03	0.00	-14.44	0.00	14.44	1624.34	812.17	1921.31	962.08	4.91	-0.31	0.019	
170.00	-2.56	-0.62	0.00	-9.31	0.00	9.31	1578.35	789.17	1791.75	897.21	5.24	-0.32	0.012	
175.00	-2.22	-0.57	0.00	-6.20	0.00	6.20	1530.79	765.40	1664.88	833.68	5.57	-0.32	0.009	
180.00	-1.89	-0.50	0.00	-3.36	0.00	3.36	1481.67	740.83	1540.90	771.60	5.91	-0.33	0.006	
185.00	-1.58	-0.43	0.00	-0.85	0.00	0.85	1427.20	713.60	1416.30	709.20	6.26	-0.33	0.002	
187.00	0.00	-0.42	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	6.39	-0.33	0.000	

Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

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Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

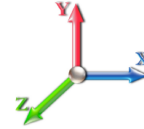


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	303.70	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	298.31	0.650	0.000	5.00	27.207	17.68	144.8	0.0	1722.7
10.00		1.00	0.85	7.442	8.19	292.93	0.650	0.000	5.00	26.721	17.37	142.2	0.0	1691.7
15.00		1.00	0.86	7.534	8.29	289.32	0.650	0.000	5.00	26.234	17.05	141.3	0.0	1660.6
20.00		1.00	0.91	7.978	8.78	292.15	0.650	0.000	5.00	25.748	16.74	146.9	0.0	1629.6
25.00		1.00	0.95	8.345	9.18	293.09	0.650	0.000	5.00	25.261	16.42	150.7	0.0	1598.6
30.00		1.00	0.99	8.659	9.53	292.76	0.650	0.000	5.00	24.775	16.10	153.4	0.0	1567.5
35.00		1.00	1.02	8.936	9.83	291.51	0.650	0.000	5.00	24.288	15.79	155.2	0.0	1536.5
40.00		1.00	1.05	9.184	10.10	289.55	0.650	0.000	5.00	23.802	15.47	156.3	0.0	1505.4
45.00		1.00	1.07	9.410	10.35	287.02	0.650	0.000	5.00	23.315	15.15	156.9	0.0	1474.4
46.25	Bot - Section 2	1.00	1.08	9.463	10.41	286.32	0.650	0.000	1.25	5.753	3.74	38.9	0.0	363.7
50.00		1.00	1.10	9.616	10.58	284.04	0.650	0.000	3.75	17.353	11.28	119.3	0.0	2040.8
53.25	Top - Section 1	1.00	1.11	9.742	10.72	281.89	0.650	0.000	3.25	14.818	9.63	103.2	0.0	1742.2
55.00		1.00	1.12	9.807	10.79	285.37	0.650	0.000	1.75	7.894	5.13	55.4	0.0	437.2
60.00		1.00	1.14	9.986	10.98	281.72	0.650	0.000	5.00	22.226	14.45	158.7	0.0	1230.7
65.00		1.00	1.16	10.153	11.17	277.78	0.650	0.000	5.00	21.739	14.13	157.8	0.0	1203.6
70.00		1.00	1.18	10.310	11.34	273.59	0.650	0.000	5.00	21.253	13.81	156.7	0.0	1176.4
75.00		1.00	1.19	10.459	11.50	269.17	0.650	0.000	5.00	20.766	13.50	155.3	0.0	1149.2
80.00		1.00	1.21	10.600	11.66	264.56	0.650	0.000	5.00	20.280	13.18	153.7	0.0	1122.1
85.00		1.00	1.23	10.734	11.81	259.77	0.650	0.000	5.00	19.793	12.87	151.9	0.0	1094.9
90.00		1.00	1.24	10.863	11.95	254.81	0.650	0.000	5.00	19.307	12.55	150.0	0.0	1067.7
92.00	Appurtenance(s)	1.00	1.25	10.913	12.00	252.79	0.650	0.000	2.00	7.586	4.93	59.2	0.0	419.5
93.75	Bot - Section 3	1.00	1.25	10.956	12.05	251.00	0.650	0.000	1.75	6.574	4.27	51.5	0.0	363.5
95.00		1.00	1.25	10.986	12.08	249.71	0.650	0.000	1.25	4.739	3.08	37.2	0.0	482.5
99.75	Top - Section 2	1.00	1.27	11.098	12.21	244.74	0.650	0.000	4.75	17.730	11.52	140.7	0.0	1804.8
100.00		1.00	1.27	11.104	12.21	248.77	0.650	0.000	0.25	0.921	0.60	7.3	0.0	43.7
105.00		1.00	1.28	11.218	12.34	243.43	0.650	0.000	5.00	18.165	11.81	145.7	0.0	861.8
110.00		1.00	1.29	11.327	12.46	237.97	0.650	0.000	5.00	17.678	11.49	143.2	0.0	838.5
115.00		1.00	1.31	11.432	12.58	232.40	0.650	0.000	5.00	17.192	11.17	140.5	0.0	815.2
120.00		1.00	1.32	11.534	12.69	226.74	0.650	0.000	5.00	16.705	10.86	137.8	0.0	791.9
125.00		1.00	1.33	11.633	12.80	220.98	0.650	0.000	5.00	16.219	10.54	134.9	0.0	768.7
130.00	Appurtenance(s)	1.00	1.34	11.729	12.90	215.13	0.650	0.000	5.00	15.732	10.23	131.9	0.0	745.4
135.00		1.00	1.35	11.822	13.00	209.19	0.650	0.000	5.00	15.246	9.91	128.9	0.0	722.1
140.00	Appurtenance(s)	1.00	1.36	11.912	13.10	203.18	0.650	0.000	5.00	14.759	9.59	125.7	0.0	698.8
142.75	Bot - Section 4	1.00	1.37	11.961	13.16	199.84	0.650	0.000	2.75	7.910	5.14	67.6	0.0	374.4
145.00		1.00	1.37	12.000	13.20	197.09	0.650	0.000	2.25	6.458	4.20	55.4	0.0	505.6
147.25	Top - Section 3	1.00	1.37	12.038	13.24	194.33	0.650	0.000	2.25	6.359	4.13	54.7	0.0	497.8
150.00	Appurtenance(s)	1.00	1.38	12.085	13.29	193.92	0.650	0.000	2.75	7.638	4.97	66.0	0.0	241.9
155.00		1.00	1.39	12.168	13.39	187.70	0.650	0.000	5.00	13.511	8.78	117.6	0.0	427.7
160.00	Appurtenance(s)	1.00	1.40	12.249	13.47	181.42	0.650	0.000	5.00	13.025	8.47	114.1	0.0	412.2
165.00		1.00	1.41	12.328	13.56	175.08	0.650	0.000	5.00	12.538	8.15	110.5	0.0	396.7
170.00	Appurtenance(s)	1.00	1.42	12.406	13.65	168.67	0.650	0.000	5.00	12.052	7.83	106.9	0.0	381.2
175.00		1.00	1.43	12.481	13.73	162.22	0.650	0.000	5.00	11.565	7.52	103.2	0.0	365.6
180.00		1.00	1.43	12.555	13.81	155.70	0.650	0.000	5.00	11.079	7.20	99.5	0.0	350.1
185.00		1.00	1.44	12.627	13.89	149.14	0.650	0.000	5.00	10.592	6.88	95.6	0.0	334.6
187.00	Appurtenance(s)	1.00	1.45	12.656	13.92	146.50	0.650	0.000	2.00	4.101	2.67	37.1	0.0	129.5

Wind Loading - Shaft

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	187.00	5,161.1	40,789.2
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Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (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	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	187.00	ANT450F6	1	12.711	13.982	1.00	1.00	1.86	21.00	0.000	3.917	26.01	0.00	101.86
2	187.00	MF-900B	2	12.656	13.921	1.00	1.00	6.90	26.00	2.015	0.000	96.06	193.60	0.00
3	187.00	ANT900D6-9	2	12.685	13.953	1.00	1.00	1.96	22.00	0.000	2.042	27.35	0.00	55.84
4	187.00	6' Lightning rod	1	12.656	13.921	1.00	1.00	0.38	6.50	0.000	0.000	5.29	0.00	0.00
5	187.00	DB201	2	12.722	13.995	1.00	1.00	7.08	50.00	0.000	4.750	99.08	0.00	470.64
6	187.00	Low Profile Platform	1	12.656	13.921	1.00	1.00	22.00	1500.00	0.000	0.000	306.27	0.00	0.00
7	170.00	Powerwave - 7770	3	12.406	13.646	0.55	0.75	9.03	105.00	0.000	0.000	123.28	0.00	0.00
8	170.00	Cci - DTMABP7819VG12A	3	12.406	13.646	0.50	0.75	1.72	57.54	0.000	0.000	23.45	0.00	0.00
9	170.00	Ericsson - RRUS-11	3	12.406	13.646	0.57	0.75	4.31	165.00	0.000	0.000	58.80	0.00	0.00
10	170.00	Css - DBC-750 - Combiner	3	12.406	13.646	0.50	0.75	0.77	14.64	0.000	0.000	10.49	0.00	0.00
11	170.00	Raycap -	2	12.406	13.646	1.00	1.00	2.94	65.60	0.000	0.000	40.12	0.00	0.00
12	170.00	Quintel - QS66512-2	3	12.406	13.646	0.69	0.75	16.83	333.00	0.000	0.000	229.65	0.00	0.00
13	170.00	Commscope -	3	12.406	13.646	0.74	0.75	0.11	3.42	0.000	0.000	1.50	0.00	0.00
14	170.00	Ericsson - RRUS-32	3	12.406	13.646	0.50	0.75	4.13	159.00	0.000	0.000	56.37	0.00	0.00
15	170.00	Ericsson - RRUS-32 B2	3	12.406	13.646	0.61	0.75	5.49	180.00	0.000	0.000	74.86	0.00	0.00
16	170.00	Low Profile Platform w/	1	12.406	13.646	1.00	1.00	27.70	1700.00	0.000	0.000	378.00	0.00	0.00
17	170.00	Cci - HPA-65R-BUU-H6	3	12.406	13.646	0.64	0.75	18.47	153.00	0.000	0.000	252.11	0.00	0.00
18	170.00	Nokia - CS72188.01 LMU	1	12.406	13.646	1.00	1.00	0.12	0.32	0.000	0.000	1.64	0.00	0.00
19	170.00	Kaelus -	6	12.406	13.646	0.50	0.75	1.30	152.40	0.000	0.000	17.69	0.00	0.00
20	160.00	Platform w/ Hand Rail	1	12.249	13.474	1.00	1.00	32.00	1600.00	0.000	0.000	431.18	0.00	0.00
21	160.00	RRUS 4415 B25	3	12.249	13.474	0.50	0.75	2.47	138.00	0.000	0.000	33.31	0.00	0.00
22	160.00	4449 B71+B12	3	12.249	13.474	0.50	0.75	2.49	210.00	0.000	0.000	33.52	0.00	0.00
23	160.00	SDX1926Q-43	3	12.249	13.474	0.50	0.75	0.78	12.90	0.000	0.000	10.56	0.00	0.00
24	160.00	AIR6449 B41	3	12.249	13.474	0.53	0.75	9.03	309.00	0.000	0.000	121.62	0.00	0.00
25	160.00	Air32	3	12.249	13.474	0.65	0.75	12.74	396.60	0.000	0.000	171.71	0.00	0.00
26	160.00	APXVAARR24_43-U-NA2	3	12.249	13.474	0.52	0.75	31.88	384.00	0.000	0.000	429.53	0.00	0.00
27	160.00	KRY 112 144/1	3	12.249	13.474	0.50	0.75	0.62	33.00	0.000	0.000	8.33	0.00	0.00
28	150.00	0208	3	12.085	13.294	0.54	0.80	2.20	59.40	0.000	0.000	29.29	0.00	0.00
29	150.00	P-200 Stand-off	3	12.085	13.294	0.56	0.75	13.82	726.00	0.000	0.000	183.73	0.00	0.00
30	150.00	ODI2-065R18K-GQ	3	12.085	13.294	0.56	0.80	8.15	75.30	0.000	0.000	108.32	0.00	0.00
31	150.00	4415	2	12.085	13.294	0.68	0.90	2.51	88.20	0.000	0.000	33.38	0.00	0.00
32	140.00	KS-24019	6	11.912	13.103	0.75	0.75	0.54	3.00	0.000	0.000	7.08	0.00	0.00
33	140.00	LNx-6514DS-VTM	3	11.912	13.103	0.60	0.75	14.56	99.30	0.000	0.000	190.81	0.00	0.00
34	140.00	FD9R6004/2C-3L	6	11.912	13.103	0.56	0.75	1.22	18.60	0.000	0.000	15.92	0.00	0.00
35	140.00	DB-T1-6Z-8AB-OZ	1	11.912	13.103	0.75	0.75	3.08	21.40	0.000	0.000	40.29	0.00	0.00
36	140.00	HBXX-6517DS-A2M	6	11.912	13.103	0.62	0.80	31.60	244.80	0.000	0.000	414.07	0.00	0.00
37	140.00	Low Profile Platform	1	11.912	13.103	1.00	1.00	22.00	1500.00	0.000	0.000	288.27	0.00	0.00
38	140.00	LNx-6514DS-A1M	3	11.912	13.103	0.66	0.80	16.27	115.20	0.000	0.000	213.25	0.00	0.00
39	140.00	RRH2x40-07-U	3	11.912	13.103	0.62	0.80	4.17	152.10	0.000	0.000	54.70	0.00	0.00
40	140.00	RRH2x60-1900	3	11.912	13.103	0.72	0.80	3.26	58.50	0.000	0.000	42.74	0.00	0.00
41	130.00	TD-RRH8x20-25	3	11.729	12.902	0.55	0.80	6.71	210.00	0.000	0.000	86.53	0.00	0.00
42	130.00	APXVTM14-C-120	3	11.729	12.902	0.63	0.80	12.02	168.00	0.000	0.000	155.09	0.00	0.00
43	130.00	1900MHz RRH	3	11.729	12.902	0.70	0.80	8.03	132.00	0.000	0.000	103.54	0.00	0.00
44	130.00	APXVSP18-C-A20	3	11.729	12.902	0.66	0.80	15.98	171.00	0.000	0.000	206.12	0.00	0.00
45	130.00	ACU-A20-N	4	11.729	12.902	0.63	0.80	0.35	4.00	0.000	0.000	4.57	0.00	0.00
46	130.00	800 MHz RRH	3	11.729	12.902	0.74	0.80	5.50	159.00	0.000	0.000	70.93	0.00	0.00
47	130.00	800MHz Filter	3	11.729	12.902	0.55	0.80	1.29	26.40	0.000	0.000	16.66	0.00	0.00

Discrete Appurtenance Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 41
	Struct Class: II	



48	130.00	RF Filters	3	11.729	12.902	0.54	0.80	1.50	46.50	0.000	0.000	19.29	0.00	0.00
49	130.00	Low Profile Platform	1	11.729	12.902	1.00	1.00	22.00	1500.00	0.000	0.000	283.84	0.00	0.00
50	92.00	Low Profile Platform	1	10.913	12.004	1.00	1.00	22.00	1500.00	0.000	0.000	264.09	0.00	0.00
51	92.00	DB205	1	11.127	12.240	0.80	0.80	1.44	38.00	0.000	9.000	17.63	0.00	158.63
52	92.00	ANT450Y10-WR	1	10.913	12.004	0.80	0.80	0.39	5.00	0.000	0.000	4.71	0.00	0.00
53	92.00	ANT150D3	1	11.034	12.137	0.80	0.80	1.74	18.00	0.000	5.000	21.17	0.00	105.84
54	92.00	ANT4506-9	1	10.986	12.085	0.80	0.80	2.22	18.00	0.000	3.000	26.78	0.00	80.34
55	92.00	MF-900B	2	10.913	12.004	0.80	0.80	5.52	26.00	2.887	0.000	66.26	191.29	0.00

Totals:	14,981.62	6,036.80
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Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (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		144.77	1984.45	0.00	0.00
10.00		142.18	1953.40	0.00	0.00
15.00		141.31	1922.36	0.00	0.00
20.00		146.87	1891.31	0.00	0.00
25.00		150.72	1860.27	0.00	0.00
30.00		153.39	1829.22	0.00	0.00
35.00		155.19	1798.17	0.00	0.00
40.00		156.30	1767.13	0.00	0.00
45.00		156.86	1736.08	0.00	0.00
46.25		38.92	429.17	0.00	0.00
50.00		119.32	2237.11	0.00	0.00
53.25		103.22	1912.34	0.00	0.00
55.00		55.36	528.77	0.00	0.00
60.00		158.69	1492.43	0.00	0.00
65.00		157.81	1465.27	0.00	0.00
70.00		156.67	1438.10	0.00	0.00
75.00		155.29	1410.94	0.00	0.00
80.00		153.70	1383.77	0.00	0.00
85.00		151.92	1356.61	0.00	0.00
90.00		149.96	1329.44	0.00	0.00
92.00	(7) attachments	459.82	2129.17	191.29	344.80
93.75		51.50	453.40	0.00	0.00
95.00		37.22	546.73	0.00	0.00
99.75		140.69	2048.82	0.00	0.00
100.00		7.31	56.55	0.00	0.00
105.00		145.69	1118.71	0.00	0.00
110.00		143.17	1095.42	0.00	0.00
115.00		140.53	1072.14	0.00	0.00
120.00		137.77	1048.85	0.00	0.00
125.00		134.90	1025.57	0.00	0.00
130.00	(26) attachments	1078.51	3419.18	0.00	0.00
135.00		128.86	962.69	0.00	0.00
140.00	(32) attachments	1392.83	3152.30	0.00	0.00
142.75		67.65	468.96	0.00	0.00
145.00		55.41	582.99	0.00	0.00
147.25		54.74	575.13	0.00	0.00
150.00	(11) attachments	420.71	1285.32	0.00	0.00
155.00		117.55	595.64	0.00	0.00
160.00	(22) attachments	1353.82	3663.61	0.00	0.00
165.00		110.52	495.79	0.00	0.00
170.00	(37) attachments	1374.87	3569.19	0.00	0.00
175.00		103.21	376.64	0.00	0.00
180.00		99.45	361.12	0.00	0.00
185.00		95.63	345.60	0.00	0.00
187.00	(9) attachments	597.16	1759.39	193.60	628.33

Total Applied Force Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	11,197.93	63,935.24	384.89	973.13
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Calculated Forces

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 23
Dead Load Factor 1.00	
Wind Load Factor 1.00	

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-63.93	-11.22	-0.38	-1423.5	0.00	1423.54	7001.91	3500.96	18524.4	9276.01	0.00	0.000	0.000	0.163
5.00	-61.94	-11.11	-0.38	-1367.4	0.00	1367.45	6919.93	3459.96	17978.0	9002.40	0.02	-0.037	0.000	0.161
10.00	-59.98	-11.01	-0.38	-1311.8	0.00	1311.88	6836.37	3418.19	17435.4	8730.69	0.08	-0.075	0.000	0.159
15.00	-58.05	-10.90	-0.38	-1256.8	0.00	1256.84	6751.25	3375.63	16896.9	8461.01	0.18	-0.113	0.000	0.157
20.00	-56.15	-10.79	-0.38	-1202.3	0.00	1202.32	6664.57	3332.28	16362.6	8193.47	0.32	-0.151	0.000	0.155
25.00	-54.28	-10.67	-0.38	-1148.3	0.00	1148.37	6576.31	3288.16	15832.7	7928.16	0.50	-0.190	0.000	0.153
30.00	-52.45	-10.55	-0.38	-1095.0	0.00	1095.02	6486.49	3243.25	15307.6	7665.22	0.72	-0.230	0.000	0.151
35.00	-50.64	-10.42	-0.38	-1042.2	0.00	1042.28	6395.11	3197.55	14787.5	7404.75	0.98	-0.270	0.000	0.149
40.00	-48.87	-10.29	-0.38	-990.18	0.00	990.18	6302.15	3151.08	14272.4	7146.85	1.28	-0.310	0.000	0.146
45.00	-47.13	-10.14	-0.38	-938.74	0.00	938.74	6207.63	3103.82	13762.8	6891.65	1.63	-0.351	0.000	0.144
46.25	-46.70	-10.12	-0.38	-926.06	0.00	926.06	6183.76	3091.88	13636.3	6828.29	1.72	-0.361	0.000	0.143
50.00	-44.46	-10.01	-0.38	-888.11	0.00	888.11	6111.55	3055.77	13258.8	6639.26	2.02	-0.392	0.000	0.141
53.25	-42.54	-9.91	-0.38	-855.59	0.00	855.59	5153.03	2576.51	11233.0	5624.85	2.30	-0.420	0.000	0.160
55.00	-42.01	-9.87	-0.38	-838.26	0.00	838.26	5126.51	2563.25	11089.7	5553.12	2.45	-0.434	0.000	0.159
60.00	-40.51	-9.73	-0.38	-788.91	0.00	788.91	5049.68	2524.84	10683.1	5349.50	2.93	-0.480	0.000	0.156
65.00	-39.04	-9.59	-0.38	-740.26	0.00	740.26	4971.29	2485.64	10280.5	5147.92	3.46	-0.525	0.000	0.152
70.00	-37.59	-9.45	-0.38	-692.31	0.00	692.31	4891.33	2445.66	9882.29	4948.49	4.03	-0.570	0.000	0.148
75.00	-36.18	-9.31	-0.38	-645.06	0.00	645.06	4809.80	2404.90	9488.55	4751.33	4.66	-0.616	0.000	0.143
80.00	-34.79	-9.17	-0.38	-598.52	0.00	598.52	4726.70	2363.35	9099.56	4556.54	5.33	-0.661	0.000	0.139
85.00	-33.43	-9.03	-0.38	-552.69	0.00	552.69	4642.04	2321.02	8715.55	4364.25	6.04	-0.706	0.000	0.134
90.00	-32.09	-8.88	-0.38	-507.56	0.00	507.56	4555.82	2277.91	8336.73	4174.56	6.81	-0.751	0.000	0.129
92.00	-29.97	-8.40	-0.19	-489.46	0.00	489.46	4520.89	2260.44	8186.70	4099.44	7.13	-0.769	0.000	0.126
93.75	-29.51	-8.35	-0.19	-474.77	0.00	474.77	4490.12	2245.06	8056.16	4034.07	7.41	-0.785	0.000	0.124
95.00	-28.96	-8.31	-0.19	-464.34	0.00	464.34	4468.02	2234.01	7963.33	3987.58	7.62	-0.797	0.000	0.123
99.75	-26.91	-8.16	-0.19	-424.84	0.00	424.84	3653.35	1826.67	6478.28	3243.96	8.43	-0.838	0.000	0.138
100.00	-26.85	-8.16	-0.19	-422.80	0.00	422.80	3649.96	1824.98	6463.57	3236.59	8.48	-0.841	0.000	0.138
105.00	-25.73	-8.02	-0.19	-382.01	0.00	382.01	3581.25	1790.63	6171.38	3090.28	9.38	-0.888	0.000	0.131
110.00	-24.63	-7.88	-0.19	-341.92	0.00	341.92	3510.98	1755.49	5883.11	2945.93	10.34	-0.934	0.000	0.123
115.00	-23.56	-7.74	-0.19	-302.54	0.00	302.54	3439.14	1719.57	5598.97	2803.65	11.34	-0.979	0.000	0.115
120.00	-22.50	-7.60	-0.19	-263.86	0.00	263.86	3365.73	1682.87	5319.21	2663.56	12.39	-1.022	0.000	0.106
125.00	-21.48	-7.46	-0.19	-225.88	0.00	225.88	3290.76	1645.38	5044.03	2525.77	13.48	-1.063	-0.001	0.096
130.00	-18.07	-6.33	-0.19	-188.59	0.00	188.59	3204.00	1602.00	4758.48	2382.78	14.62	-1.100	-0.001	0.085
135.00	-17.11	-6.19	-0.19	-156.96	0.00	156.96	3102.32	1551.16	4459.76	2233.19	15.79	-1.134	-0.001	0.076
140.00	-13.99	-4.74	-0.19	-126.02	0.00	126.02	3000.64	1500.32	4170.72	2088.46	16.99	-1.165	-0.001	0.065
142.75	-13.52	-4.66	-0.19	-113.00	0.00	113.00	2944.72	1472.36	4015.87	2010.92	17.67	-1.181	-0.001	0.061
145.00	-12.93	-4.60	-0.19	-102.50	0.00	102.50	2898.96	1449.48	3891.36	1948.57	18.23	-1.194	-0.001	0.057
147.25	-12.36	-4.54	-0.19	-92.15	0.00	92.15	1774.96	887.48	2399.50	1201.53	18.79	-1.205	-0.001	0.084
150.00	-11.08	-4.09	-0.19	-79.68	0.00	79.68	1752.91	876.46	2323.79	1163.62	19.49	-1.219	-0.001	0.075
155.00	-10.49	-3.97	-0.19	-59.22	0.00	59.22	1711.62	855.81	2187.55	1095.40	20.79	-1.248	-0.001	0.060
160.00	-6.85	-2.53	-0.19	-39.39	0.00	39.39	1668.76	834.38	2053.31	1028.18	22.11	-1.271	-0.001	0.042
165.00	-6.36	-2.41	-0.19	-26.72	0.00	26.72	1624.34	812.17	1921.31	962.08	23.45	-1.289	-0.001	0.032
170.00	-2.82	-0.96	-0.19	-14.65	0.00	14.65	1578.35	789.17	1791.75	897.21	24.80	-1.301	-0.001	0.018
175.00	-2.45	-0.85	-0.19	-9.85	0.00	9.85	1530.79	765.40	1664.88	833.68	26.17	-1.309	-0.001	0.013
180.00	-2.09	-0.74	-0.19	-5.61	0.00	5.61	1481.67	740.83	1540.90	771.60	27.55	-1.315	-0.001	0.009
185.00	-1.75	-0.64	-0.19	-1.90	0.00	1.90	1427.20	713.60	1416.30	709.20	28.93	-1.318	-0.002	0.004
187.00	0.00	-0.60	-0.19	-0.63	0.00	0.63	1400.09	700.04	1362.73	682.38	29.48	-1.319	-0.002	0.001

Final Analysis Summary

Structure: CT07824-S-SBA	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 45

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	46.9	0.00	76.66	0.01	0.99	5991.07
0.9D + 1.6W 97 mph Wind	46.9	0.00	57.48	0.01	0.99	5923.47
1.2D + 1.0Di + 1.0Wi 50 mph Wind	15.8	0.00	125.06	0.03	2.75	2132.87
1.2D + 1.0E	2.2	0.00	76.72	0.00	0.00	272.08
0.9D + 1.0E	2.1	0.00	57.54	0.00	0.00	268.76
1.0D + 1.0W 60 mph Wind	11.2	0.00	63.93	0.00	0.38	1423.54

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-76.66	-46.93	-0.99	-5991.0	-0.01	-5991.0	7001.91	3500.9	18524.4	9276.01	0.00	0.657
0.9D + 1.6W 97 mph Wind	-57.48	-46.91	-0.99	-5923.4	-0.01	-5923.4	7001.91	3500.9	18524.4	9276.01	0.00	0.647
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-91.50	-14.62	-2.75	-1314.2	-0.04	-1314.2	5153.03	2576.5	11233.0	5624.85	53.25	0.251
1.2D + 1.0E	-76.72	-2.15	0.00	-272.08	0.00	-272.08	7001.91	3500.9	18524.4	9276.01	0.00	0.040
0.9D + 1.0E	-24.32	-1.32	0.00	-99.07	0.00	-99.07	3653.35	1826.6	6478.28	3243.96	99.75	0.037
1.0D + 1.0W 60 mph Wind	-63.93	-11.22	-0.38	-1423.5	0.00	-1423.5	7001.91	3500.9	18524.4	9276.01	0.00	0.163

Base Plate Summary

Structure: CT07824-S-SB	Code: EIA/TIA-222-G	11/10/2020
Site Name: South Windsor	Exposure: C	
Height: 187.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 46

Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 72.00
Moment (kip-ft): 6540.46	Width (in): 78.00	Number Bolts: 26.00
Axial (kip): 82.75	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 47.90	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 5991.07	Effective Len (in): 11.23	Ultimate (ksi): 100.00
Axial (kip): 76.66	Moment (kip-in): 564.00	Arrangement: Radial
Shear (kip): 46.93	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 48.60	Start Angle (deg): 0.00
	Stress Ratio: 0.60	Compression
		Force (kip): 158.43
		Allowable (kip): 260.00
		Ratio: 0.62
		Tension
		Force (kip): 148.81
		Allowable (kip): 260.00
		Ratio: 0.59



Monopole Mat Foundation Design

Date

11/10/2020

Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	187
Site Number:	CT07824-S-SBA	Engineer Name:	J. Chen
Engr. Number:	99271	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	76.9	Shear Force (Kips):	47.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6057.6

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	8.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Depth of Base BG (ft.):	12.0
Length of Pad (ft.):	24.5	Thickness of Pad (ft.):	2.50
Final Length of pad (ft)	24.5	Width of Pad (ft.):	24.5
Final width of pad (ft):	24.5		

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
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):	42	Qty. of Rebar in Pad (W):	42
---------------------------	----	---------------------------	----

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42
---------------------------	----	---------------------------	----

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

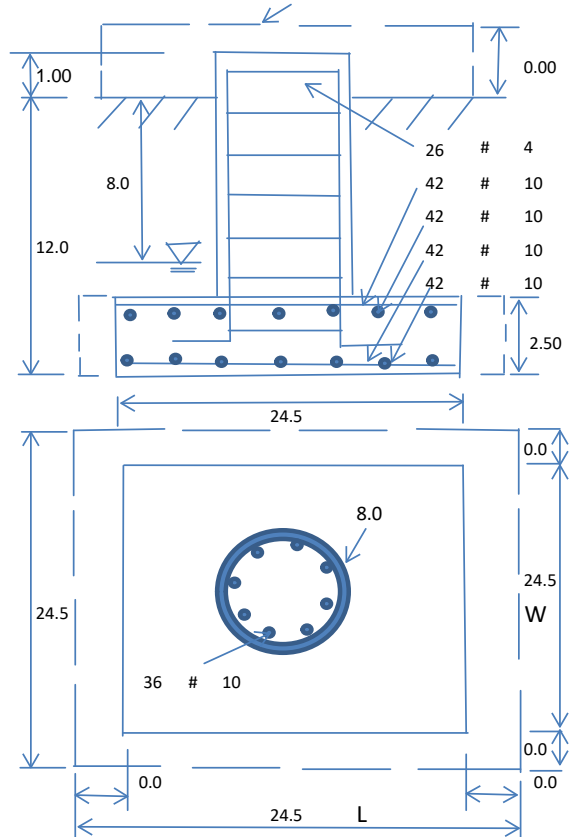
Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf	Angle from Top of Pad:	30
Water Table B.G.S. (ft):	8.0	Unit Weight of Water:	62.4	pcf	Angle from Bottm of Pad:	25
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Reduction factor on the maximum soil bearing pressure:	1.00
Consider soil hor. resist. for OTM.:	Yes					

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	4399.88	Total Dry Soil Weight (Kips):	527.99
Total Buoyant Soil Volume (cu. Ft.):	889.38	Total Buoyant Soil Weight (Kips):	44.47
Total Effective Soil Weight (Kips):	572.45	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	452.39	Total Dry Concrete Weight (Kips):	67.86
Total Buoyant Concrete Volume (cu. Ft.):	1576.02	Total Buoyant Concrete Weight (Kips):	138.06
Total Effective Concrete Weight (Kips):	205.92	Total Vertical Load on Base (Kips):	855.27

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	4811	< Allowable Factored Soil Bearing (psf):	6000	0.80	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	9488.1	> Design Factored Momont (kips-ft):	5987	0.63	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.58				OK!



Check the capacities of Reinforcing Concrete:

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

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8888.9	> Design Factored Moment (Mu, Kips-F	6554.3	0.74	OK!
Calculated Shear Capacity (Kips):	993.9	> Design Factored Shear (Kips):	47.3	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	> Design Factored Axial Load (Pu Kips):	76.9	0.01	OK!
Moment & Axial Strength Combination:	0.74	OK! Check Tie Spacing (Design/Required):	0.5		OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	735.6	> One-Way Factored Shear (L-D. Kips):	398.2	0.54	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	735.6	> One-Way Factored Shear (W-D., Kips)	398.2	0.54	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	668.1	> One-Way Factored Shear (C-C, Kips):	390.7	0.58	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0069		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	5946.5	> Moment at Bottom (L-Dir. K-Ft):	1982.7	0.33	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	5946.5	> Moment at Bottom (W-Dir. K-Ft):	1982.7	0.33	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	8246.5	> Moment at Bottom (C-C Dir. K-Ft):	2804.0	0.34	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0069		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5946.5	> Moment at the top (L-Dir K-Ft):	732.3	0.12	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5946.5	> Moment at the top (W-Dir K-Ft):	732.3	0.12	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	8246.5	> Moment at the top (C-C Dir. K-Ft):	692.6	0.08	OK!

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

Moment transferred by punching shear:	2423.0	k-ft.	Max. factored shear stress $v_{u,CD}$:	4.0	Psi
Max. factored shear stress $v_{u,AB}$:	16.5	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	16.5	Psi	Check Usage of Punching Shear Capacity:	0.09	OK!

EXHIBIT 8



Tower Engineering Solutions

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

Post-Mod Antenna Mount Analysis Report

Existing 187-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT07824-S-SBA / South Windsor

Customer Site Name: South Windsor

Carrier Name: T-Mobile (App#: 141546, V1)

Carrier Site ID / Name: CT11497A / South Windsor

Site Location: 151 Sand Hill Road

South Windsor, Connecticut

Hartford County

Latitude: 41.836000

Longitude: -72.552000

Analysis Result:

Max Structural Usage: 70.8% [Pass]

Report Prepared By: Ishwor Dhakal



12/2/20

Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Support Rail at 160.00' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

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

Sources of Information

Mount Drawings	Mount Mapping by Full Metal Tower Services, dated 04/28/2019.
Antenna Loading	SBA, Application #: 141546, v1.
Existing Modification	N/A.
Proposed Modification	TES Project No. 99814

Analysis Criteria

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

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

Operational Wind Speed: 60 mph +0" Radial ice

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

Exposure Category: C

Structure Class: II

Topographic Category: 1

Crest Height (Ft): 0

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

Mount Information

(1) Platform w/ Support Rail at 160.00' elevation.

Proposed Modification

(1) Kicker Kit (Metrosite MS-HK122-8)

(1) Collar Mount (Metrosite MS-H1436)

Final Antenna Configuration

- 3 RFS APXVAARR24_43-U-NA20
- 3 Ericsson Air32 KRD901146-1_B66A_B2A
- 3 Ericsson AIR6449 B41
- 3 Ericsson KRY 112 144/1
- 3 Commscope SDX1926Q-43
- 3 Ericsson 4449 B71+B85
- 3 Ericsson 4415 B25

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 70.8%, which occurs in the end connection member. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.
2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.
4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.
6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.
8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.
9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Sector: **A**

11/30/2020

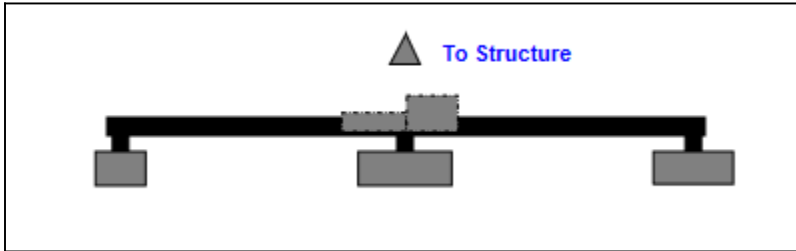


Structure Type: Monopole

Page: 1

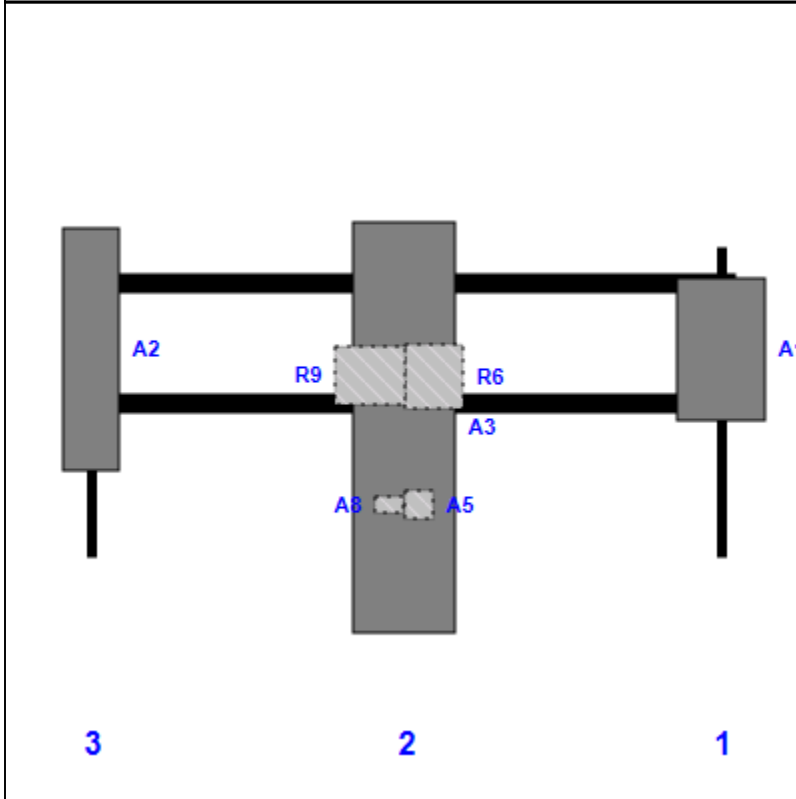
Mount Elev: 160.00

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	AIR6449 B41	33.10	20.50	151.00	1	a	Front	24.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	77.00	2	a	Front	42.00			
A5	KRY 112 144/1	6.90	6.10	77.00	2	a	Behind	60.00	3.50		
R6	4449 B71+B85	14.90	13.10	77.00	2	a	Behind	30.00	7.00		
A8	SDX1926Q-43	4.10	6.90	77.00	2	a	Behind	60.00	-3.50		
R9	4415 B25	13.50	16.50	77.00	2	a	Behind	30.00	-8.00		
A2	Air32 KRD901146-1_B66A_B2A	56.60	12.90	4.00	3	a	Front	24.00			

Structure: CT07824-S-SBA - South Windsor

Sector: **B**

11/30/2020

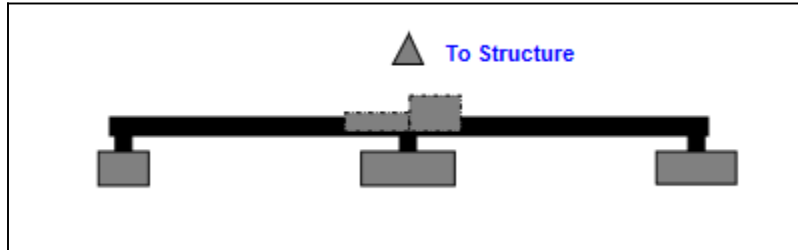


Structure Type: Monopole

Page: 2

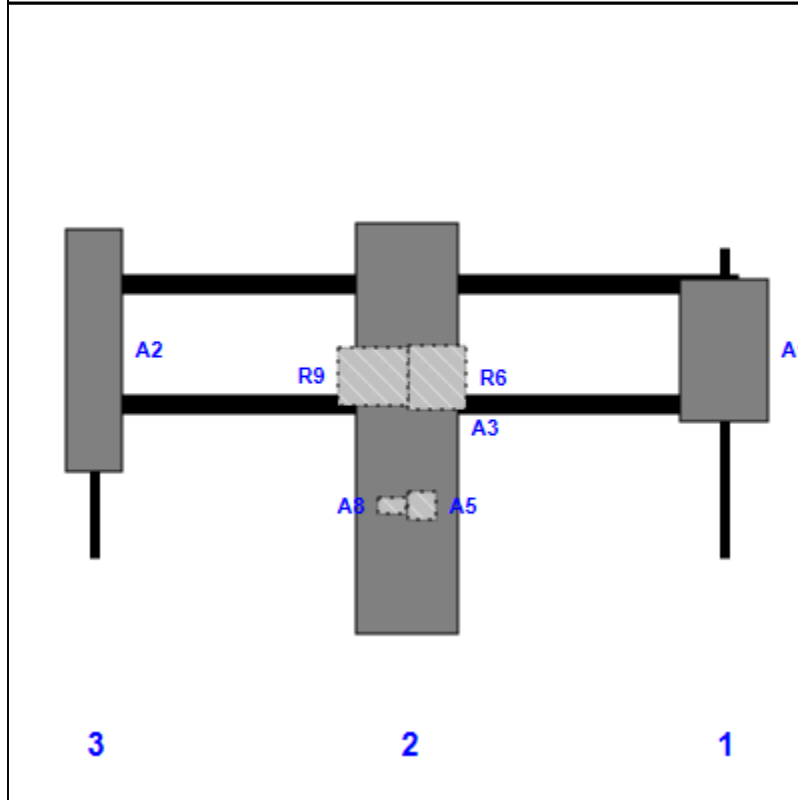
Mount Elev: 160.00

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	AIR6449 B41	33.10	20.50	151.00	1	a	Front	24.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	77.00	2	a	Front	42.00			
A5	KRY 112 144/1	6.90	6.10	77.00	2	a	Behind	60.00	3.50		
R6	4449 B71+B85	14.90	13.10	77.00	2	a	Behind	30.00	7.00		
A8	SDX1926Q-43	4.10	6.90	77.00	2	a	Behind	60.00	-3.50		
R9	4415 B25	13.50	16.50	77.00	2	a	Behind	30.00	-8.00		
A2	Air32 KRD901146-1_B66A_B2A	56.60	12.90	4.00	3	a	Front	24.00			

Structure: CT07824-S-SBA - South Windsor

Sector: C

11/30/2020

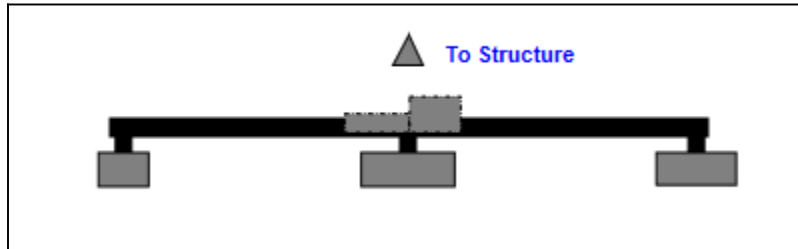


Structure Type: Monopole

Page: 3

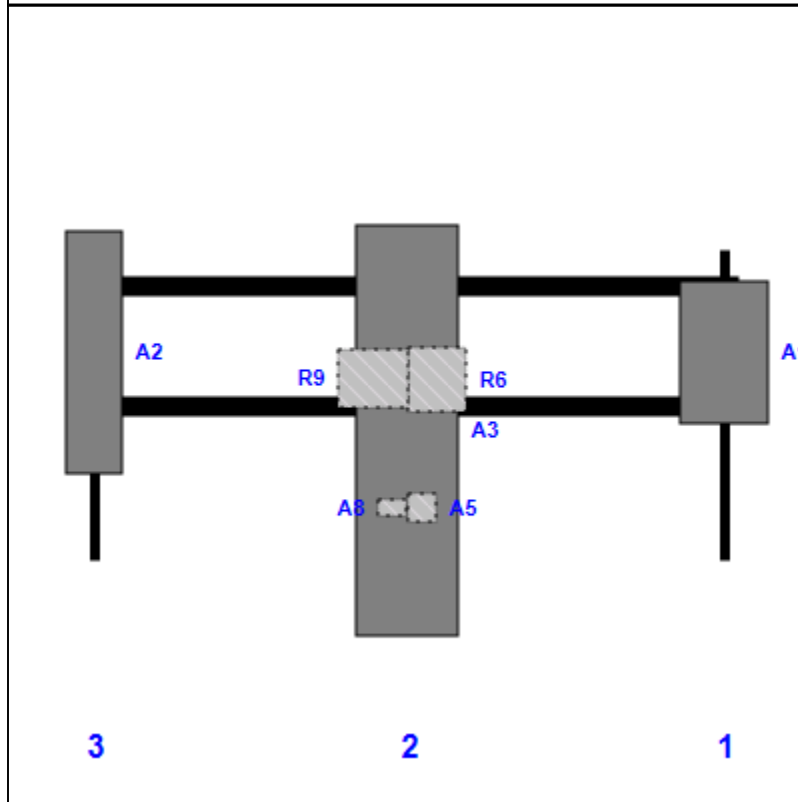
Mount Elev: 160.00

Plan View




Front View

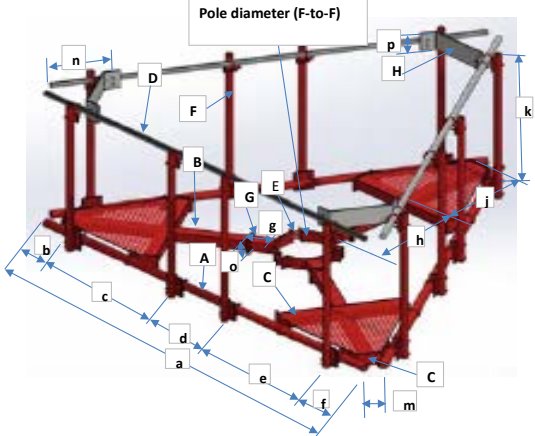
Looking Toward Structure



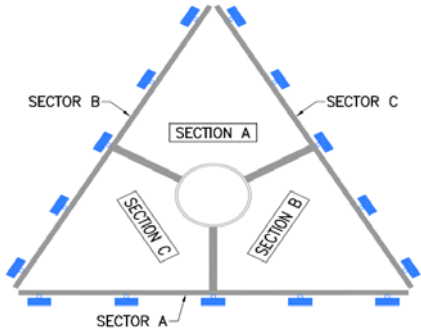
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6449 B41	33.10	20.50	151.00	1	a	Front	24.00			
A3	APXVAARR24_43-U-NA20	95.90	24.00	77.00	2	a	Front	42.00			
A5	KRY 112 144/1	6.90	6.10	77.00	2	a	Behind	60.00	3.50		
R6	4449 B71+B85	14.90	13.10	77.00	2	a	Behind	30.00	7.00		
A8	SDX1926Q-43	4.10	6.90	77.00	2	a	Behind	60.00	-3.50		
R9	4415 B25	13.50	16.50	77.00	2	a	Behind	30.00	-8.00		
A2	Air32 KRD901146-1_B66A_B2A	56.60	12.90	4.00	3	a	Front	24.00			

	Antenna Mount Type "MT-X" Mapping Form (PATENT PENDING)			FCC #
				1236056
Tower Owner:	SBA Communications	Mapping Date:	4/28/19	
Site Name:	South Windsor	Structure Type:	Monopole	
Site Number or ID:	CT07824-S-SBA	Structure Height (Ft.):	199	
Mapping Contractor:	Full Metal Tower Services	Mount Height (Ft.):	160.7	

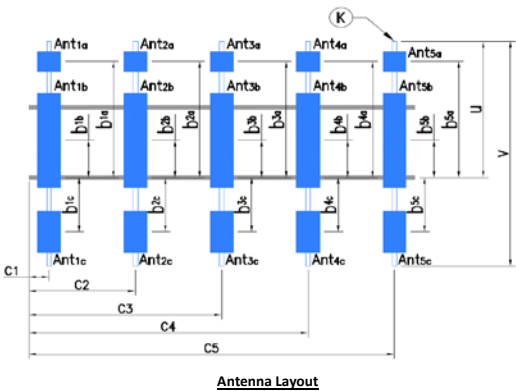
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Geometries (Unit: inches)									
a	154	e	45	j	45	o	10	s	N/A
b	9	f	9	k	28	p	2.5	t	21
c	45	g	5.5	m	15	q	N/A	u*	35
d	46	h	18.5	n	16	r	N/A	v*	72
Members/Bolts (Unit: inches) * - See Ant. Layout for "u", "v" and member "K" (pipe)									
Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	F	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
B	Tubing 4x4x1/4	4	4	0.25	G	1/2" Thick. Plate	0	0	0.5
C	Tubing 4x4x1/4	4	4	0.25	H	L2 1/2x2 1/2x1/4	2.5	2.5	0.25
D	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	J				
E	3/4" Bolt			24	K* (pipe)	2.375 OD x 0.154 Pipe	2.375	2.067	0.154
Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)									1.5'
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)									5.5'
Please enter the information below if members can't be found from the drop down lists									



Climbing ladder is Located at Section A, at 0° Degree Azimuth

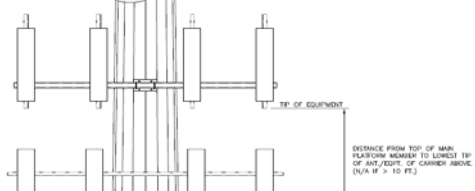


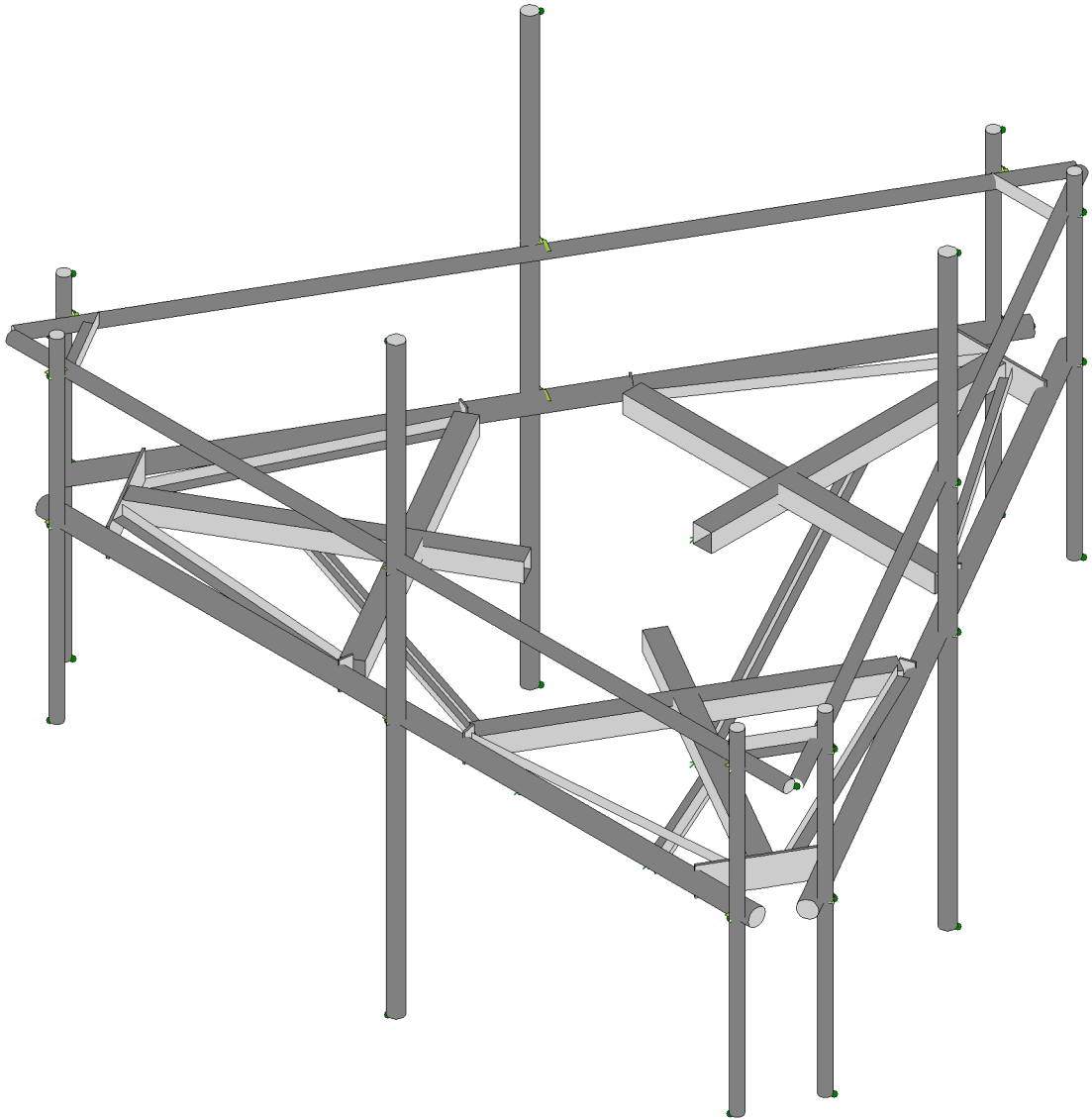
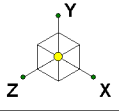
Antenna Layout

Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Mounting Locations (Unit: inches)			Photos of antennas
						Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (in.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C ₁ , C ₂ , C ₃ , C ₄ , C ₅ " (in.)	
Sector A									
Ant _{1a}									
Ant _{1b}	Antenna A	12	8	56	1/2" (1)	+16"	7	3	
Ant _{1c}									
Ant _{2a}									
Ant _{2b}	Antenna B	12	7.5	96.5	1/2" (2)	+28"	7	77	
Ant _{2c}	RRH A	17	7	20	1/2" (2)	+20"	N/A	77	
Ant _{3a}									
Ant _{3b}	Antenna C	13	9	56	1/2" (2)	+16"	8	150	
Ant _{3c}	TMA A	6	3	8	1/2" (2)	+16"	N/A	150	
Ant _{4a}									
Ant _{4b}									
Ant _{4c}									
Ant _{5a}									
Ant _{5b}									
Ant _{5c}									
Are Ant same as sector A?		Yes		Antennas on Sector B are the same as Sector A					

Azimuth (Degree) of Each Sector and Climbing Information		
Sector A:	15°	Deg
Sector B:	175°	Deg
Sector C:	280°	Deg
Climbing	0°	Deg Located at Section A
Climbing Facility	Corrosion Type:	No corrosion observed
	Access:	Climbing path was unobstructed.
	Condition:	N/A

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

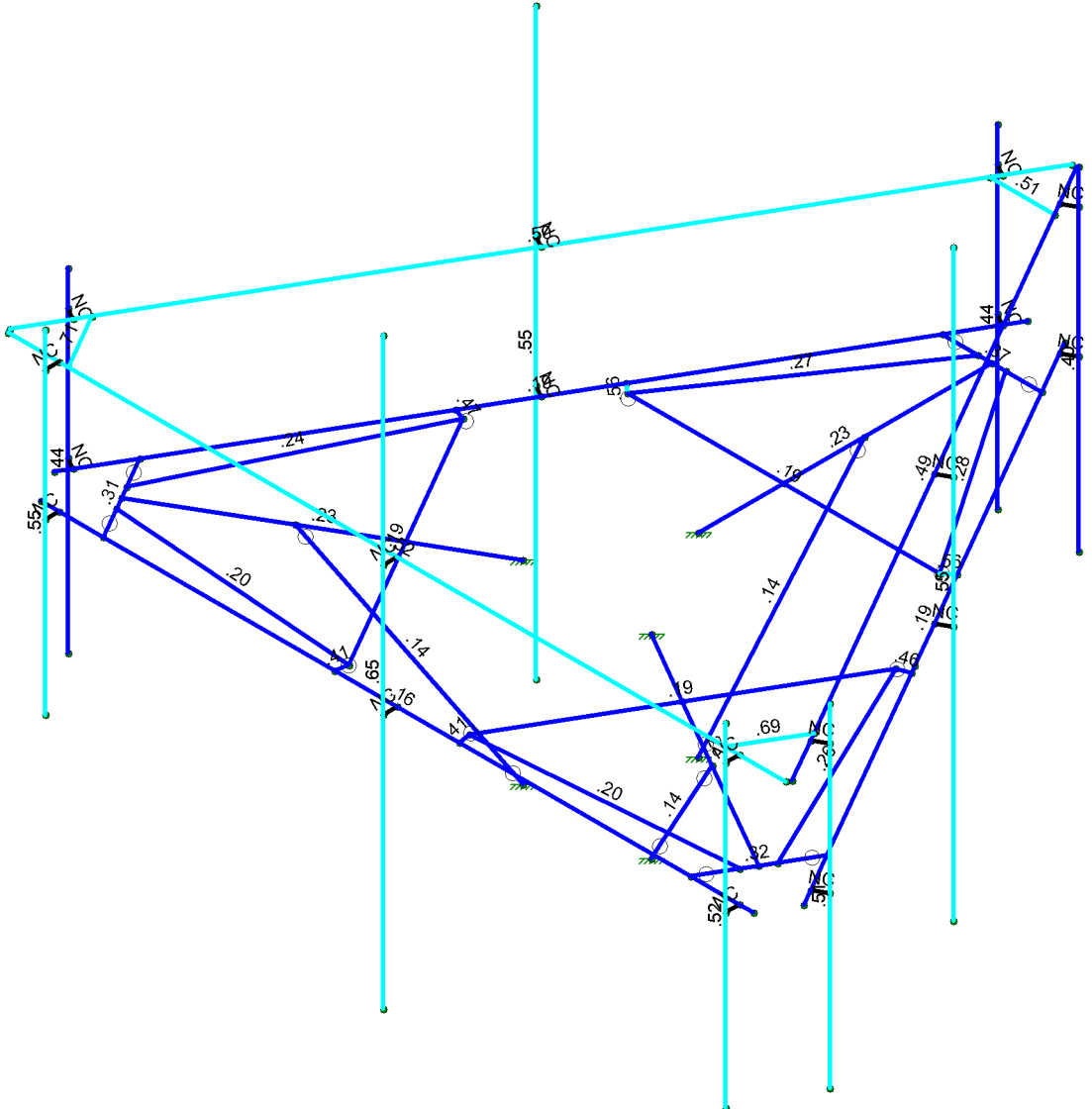
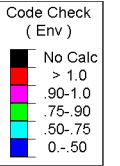
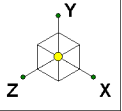




Tower Engineering Solutio...
TES Project No. 99814

CT07824-S-SBA_MT_LO_Loads Only_G

SK - 1
Nov 30, 2020 at 8:11 AM
CT07824-S-SBA_99814_G_RISA_L...



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

Tower Engineering Solutio...

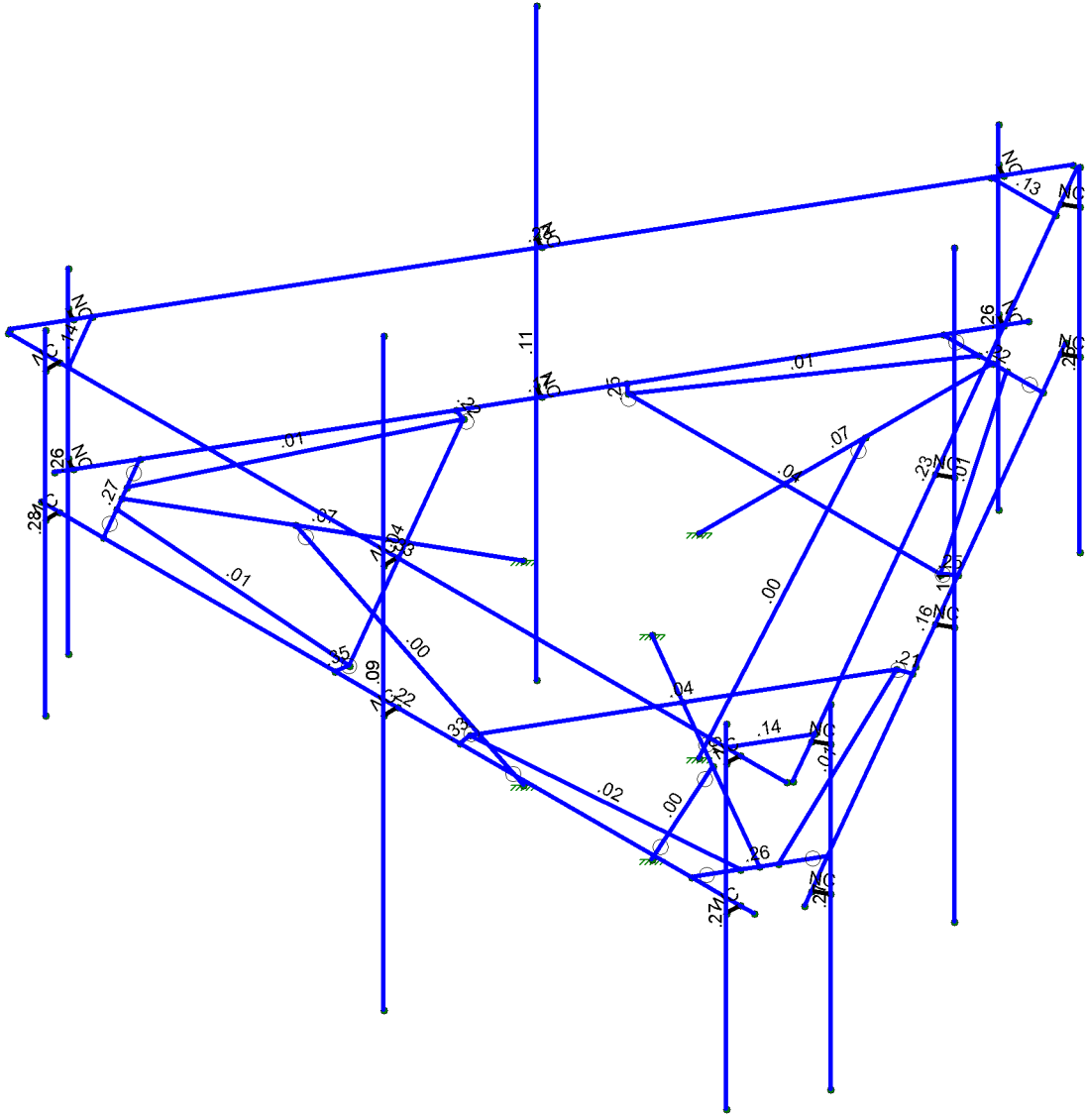
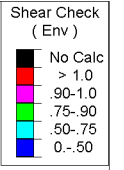
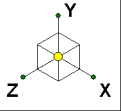
CT07824-S-SBA_MT_LO_Loads Only_G

SK - 2

Nov 30, 2020 at 8:11 AM

TES Project No. 99814

CT07824-S-SBA_99814_G_RISA_L...



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

Tower Engineering Solutio...	CT07824-S-SBA_MT_LO_Loads Only_G	SK - 3
TES Project No. 99814		Nov 30, 2020 at 8:12 AM
		CT07824-S-SBA_99814_G_RISA_L...

A Ya Vyf Dfja Ufm8 UUf7 cbhbi YXL

Sää\	ÖR äc	RÄ äc	SÄ äc	Ü[æ Q^* D Ü^&ç] ÆÜç^	V] ^	Ö•ã} Ääc	Tæ:æ	Ö•ã} ÄU' ^•
HF	THF	PIG	PIF		Ö:æVÖÖ	Ö^æ	Üä *^ÄÉ *^	ÖH'Ä:ÉH' V']ææ
HG	THG	PIL	PII		Ö:æVÖÖ	Ö^æ	Üä *^ÄÉ *^	ÖH'Ä:ÉH' V']ææ
HH	THH	PII	PII		Ö:æVÖÖ	Ö^æ	Üä *^ÄÉ *^	ÖH'Ä:ÉH' V']ææ
HI	THI	PIH	PII		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
HÍ	THÍ	PIÍ	PJE		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
HĪ	THĪ	PIĪ	PJG		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
Hİ	THİ	PII	PJH		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
Hİ	THİ	PIJ	PJİ		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
HU	THU	PIF	PJI		ÜäÄ:æÄ:æÄ:æ	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
I€	TIE	PII	PJCE		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IF	TIF	PII	PIJ		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IG	TIG	PII	PJCE		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IH	TIH	PII	PJCE		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
II	TII	PIJ	PJI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IÍ	TIÍ	PII	PJF		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IĪ	TIĪ	PIE	PFEI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
Iİ	TIİ	PII	PFEF		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
Iİ	TIİ	PIF	PFEI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IJ	TIJ	PIJ	PFEG		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
I€	TIE	PIG	PFEI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IF	TIF	PIE	PFEH		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IG	TIG	PIH	PFFI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IH	TIH	PIF	PFFH		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
II	TII	PII	PFFI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IÍ	TIÍ	PIG	PFFI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
IĪ	TIĪ	PII	PFFI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
Iİ	TIİ	PIH	PFFI		ÜÖÖ	Ö^æ	P[]^	ÜÖÖ ÖÜF
Iİ	TIİ	PFEI	PFEI		P^, Ää^!Ää	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
IJ	TIJ	PFFE	PFEJ		P^, Ää^!Ää	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ
I€	TIE	PFFG	PFFF		P^, Ää^!Ää	Ö^æ	ÜÖÖV	ÖH'Ä:ÉH' V']ææ

A Ya Vyf 5 Xj Ub WX 8 UU

Sää\	ÖU^Äæ^	RÄU^Äæ^	ÖU~^çá	RÄU~^çá	VEDAU]r	Ü@•ææ	Ö^ÄUæÉçæ•äÄÉ	Qæç^	Üä{ æÉÉ
F	TF					ÿ^•			P[]^
G	TG					ÿ^•			P[]^
H	TH					ÿ^•			P[]^
I	TI					ÿ^•			P[]^
Í	TÍ					ÿ^•			P[]^
Ī	TĪ					ÿ^•			P[]^
İ	Tİ					ÿ^•			P[]^
ì	Tì					ÿ^•			P[]^
J	TJ					ÿ^•			P[]^
F€	TF€	Ö}ÜÖ	Ö}ÜÖ			ÿ^•			P[]^
FF	TF€	Ö}ÜÖ	Ö}ÜÖ			ÿ^•			P[]^
FG	TFG	Ö}ÜÖ	Ö}ÜÖ			ÿ^•			P[]^
FH	TFH					ÿ^•			P[]^
FI	TFI					ÿ^•			P[]^
FÍ	TÍ					ÿ^•			P[]^
FĪ	TĪ					ÿ^•			P[]^
Fİ	Tİ					ÿ^•			P[]^

A Ya Vyf'Dc]bh@UXg'f6 @ '%. '5 bhYbbU'8 L'f7 c]h]bi YXL

	T ^{ à^!Áæ ^ }	Öá^&ç }	T æ } æ ^ à^ ŽaÉ Éeá	Š } &ç } ŽeÁ á
Í	T ÚFÓ	Ÿ	É FÉ	É
Î	T ÚFÓ	Ÿ	É FÉ	HÉ
Ï	T ÚHÓE	Ÿ	É Í É	€
Ï	T ÚHÓE	Ÿ	É Í É	Í
J	T ÚHÓ	Ÿ	É Í É	€
F€	T ÚHÓ	Ÿ	É Í É	Í
FF	T ÚHÓ	Ÿ	É Í É	€
FG	T ÚHÓ	Ÿ	É Í É	Í
FH	T ÚGÉ	Ÿ	É Í	É
FI	T ÚGÉ	Ÿ	É Í	Î É
FÍ	T ÚGÓ	Ÿ	É Í	É
FÎ	T ÚGÓ	Ÿ	É Í	Î É
FÏ	T ÚGÓ	Ÿ	É Í	É
FÌ	T ÚGÓ	Ÿ	É Í	Î É
FJ	T ÚGÉ	Ÿ	É F	Í
G€	T ÚGÓ	Ÿ	É F	Í
GF	T ÚGÓ	Ÿ	É F	Í
GG	T ÚGÉ	Ÿ	É Í	GÉ
GH	T ÚGÓ	Ÿ	É Í	GÉ
G	T ÚGÓ	Ÿ	É Í	GÉ
G	T ÚGÉ	Ÿ	É É	Í
G	T ÚGÓ	Ÿ	É É	Í
G	T ÚGÓ	Ÿ	É É	Í
G	T ÚGÉ	Ÿ	É Í É	GÉ
GJ	T ÚGÓ	Ÿ	É Í É	GÉ
H€	T ÚGÓ	Ÿ	É Í É	GÉ

A Ya Vyf'Dc]bh@UXg'f6 @ '&. '5 bhYbbU'8 JL

	T ^{ à^!Áæ ^ }	Öá^&ç }	T æ } æ ^ à^ ŽaÉ Éeá	Š } &ç } ŽeÁ á
F	T ÚFÉ	Ÿ	É É È H	É
G	T ÚFÉ	Ÿ	É É È H	HÉ
H	T ÚFÓ	Ÿ	É É È H	É
I	T ÚFÓ	Ÿ	É É È H	HÉ
Í	T ÚFÓ	Ÿ	É É È H	É
Î	T ÚFÓ	Ÿ	É É È H	HÉ
Ï	T ÚHÓE	Ÿ	É H É É Í	€
Ï	T ÚHÓE	Ÿ	É H É É Í	Í
J	T ÚHÓ	Ÿ	É H É É Í	€
F€	T ÚHÓ	Ÿ	É H É É Í	Í
FF	T ÚHÓ	Ÿ	É H É É Í	€
FG	T ÚHÓ	Ÿ	É H É É Í	Í
FH	T ÚGÉ	Ÿ	É H F É Í	É
FI	T ÚGÉ	Ÿ	É H F É Í	Î É
FÍ	T ÚGÓ	Ÿ	É H F É Í	É
FÎ	T ÚGÓ	Ÿ	É H F É Í	Î É
FÏ	T ÚGÓ	Ÿ	É H F É Í	É
FÌ	T ÚGÓ	Ÿ	É H F É Í	Î É
FJ	T ÚGÉ	Ÿ	É G É G F F	Í
G€	T ÚGÓ	Ÿ	É G É G F F	Í
GF	T ÚGÓ	Ÿ	É G É G F F	Í
GG	T ÚGÉ	Ÿ	É Í É F H	GÉ

9bj YcdY>c]bh8]gd`UWã Ybtg fY cb]bi YXL

	Rãc	YÁá	ŜÖ	YÁá	ŜÖ	ZÁá	ŜÖ	YÁU[]c) / ÁÉSSÖ	YÁU[]c) / ÁÉSSÖ	ZÁU[]c) / ÁÉSSÖ
FG		{ á	É F G	I	É H	Í	É F	F É F Á É	F É É Á É	G É É I Á É H
FG	ÞÍ	{ æ	É F	H	É G	G	F É F	G I É Ó Á É	G F É G Á É	H Í É Á É
FG		{ á	É F G	I	É É H	Í	É I	F É É J Á É	F É É Á É	I É É H Á É H
FG	ÞÍ J	{ æ	É F G	H	É I	F	É H	G J É G Á É	G F É É Á É	G I É H Á É
FG		{ á	É F G	I	É I	Í	É H I	F É É É Á É	F É É J Á É	F É É F Á É H
FGJ	ÞÍ É	{ æ	É F H	H	É I	I	É	G I É G Á É	G I É I Á É	G I É J Á É
FHE		{ á	É F	I	É F	I	É G	F É É Á É	F É É Á É	F É É Á É H
FHF	ÞÍ F	{ æ	É H G	H	É É	H	É F	G F É Á É	G F É G Á É	F G É H Á É I
FHG		{ á	É J	I	É	I	É I	F É É G Á É	F É É G Á É	G É É I Á É H
FHH	ÞÍ G	{ æ	É G	H	É F	G	É F	G I É É Á É	G I É J Á É	H I É F Á É
FH		{ á	É G	I	É I	Í	É F	F É É Á É	F É É É Á É	I É É H Á É H
FH	ÞÍ H	{ æ	É H	H	É I	G	É É	G I É É Á É	G I É I Á É	H I É G Á É
FH		{ á	É H H	I	É H	Í	É Ó	F É É Á É	F É É J Á É	I É É Á É H
FH	ÞÍ I	{ æ	É J I	H	É É H	I	É H	G F É J Á É	G F É F Á É	G G É I Á É
FH		{ á	É H	I	É J	I	É H	F É É F Á É	F É É H Á É	F É É F Á É H
FHU	ÞÍ I	{ æ	É F F	H	É G	H	É	G I É Á É	G I É H Á É	F I É H Á É I
FIÉ		{ á	É F G	I	É I	I	É G	F É É Á É	F É É Á É	G É É I Á É H
FIF	ÞÍ I	{ æ	É I	H	É G	G	É É	G G É Á É	G G É H Á É	G G É Á É I
FIG		{ á	É I	I	É F	I	É É	F É É Á É	F É É É Á É	F É É F Á É H
FIH	ÞÍ I	{ æ	É F	H	É É H	G	É G	H G É Á É	H I É É Á É	I É É Á É G
FI		{ á	É F	I	É I	Í	É G H	I É É Á É	I É É Á É H	H É É H Á É I
FI	ÞÍ I	{ æ	É I	H	É G	G	É É	G F É Á É	G G É H Á É	F G É J Á É
FI		{ á	É I	I	É F F	I	É É	F É É Á É	I É É Á É	G É É F Á É H
FI	ÞÍ J	{ æ	É F	H	É É	G	É G	I G É Á É	I I É F Á É	G H É I Á É I
FI		{ á	É F	I	É I	Í	É G H	H É É J Á É	I É É I Á É	F G É Á É G
FIJ	ÞÍ É	{ æ	É É	G	É É	H	É G	G H É Á É	G F É I Á É	H G É J Á É G
FÍÉ		{ á	É É	F	É É	I	É G	F É É F G Á É	F É É É Á É	I É É É Á É F
FÍF	ÞÍ F	{ æ	É F	H	É É	FÉ	É F	G É É F Á É	H J É G Á É	I G É G Á É I
FÍG		{ á	É F	I	É I	Í	É F	F É É G Á É	I É É J Á É	H G É F Á É F
FÍH	ÞÍ G	{ æ	É É	G	É F	H	É G	G G É Á É	J G É G Á É	I H É G Á É
FÍ		{ á	É É	F	É É	I	É F	F É É Á É	F É É H Á É	H É É G Á É H
FÍ	ÞÍ H	{ æ	É É	G	É É	F	É É	G H É G Á É	I F É I Á É	F F É J Á É F
FÍ		{ á	É É	F	É H	I	É É	F I É H Á É	H É É U Á É	G É É G Á É I
FÍ	ÞÍ I	{ æ	É É	F	É F H	I	É F	G G É U Á É	G G É F Á É	I G É I Á É I
FÍ		{ á	É É	G	É É	I	É F	F É É I Á É	F É É I Á É	H É É F Á É H
FÍJ	ÞÍ I	{ æ	É É H	F	É É	F	É É	G H É H Á É	I G É G Á É	G F É Á É I
FÍÉ		{ á	É É H	G	É I	I	É É	F H É F G Á É	I É G G Á É	F É É F G Á É F
FÍF	ÞÍ I	{ æ	É É	F	É É	I	É F	G I É H Á É	G F É J Á É	H I É G Á É F
FÍG		{ á	É É	G	É É	I	É F	F É É G Á É	F É É J Á É	I É É É Á É I
FÍH	ÞÍ I	{ æ	É F	H	É É	FÉ	É F	G É É G Á É	I I É H Á É	I É É H Á É F
FÍ		{ á	É F	I	É I	Í	É F	F É É H Á É	I É É I Á É	H É É G Á É I
FÍ	ÞÍ I	{ æ	É F	H	É F F	F	É É	G G É G Á É	G J É É Á É	I H É U Á É J
FÍ		{ á	É F	I	É F	Í	É É	F É É G Á É	F É É É Á É	H É É É Á É FÉ
FÍ	ÞJÉ	{ æ	É F	H	É F	I	É É	G G É Á É	G I É F Á É	I I É H Á É FÉ
FÍ		{ á	É F	I	É F	I	É É	F É É I Á É	F É É Á É	H É É Á É G
FÍJ	ÞJG	{ æ	É G H	H	É É	FÉ	É G	G I É F Á É	I F É É Á É	H F É I Á É I
FÍÉ		{ á	É G H	I	É F	I	É G	F É É Á É	H É É Á É	I É É F Á É H
FÍF	ÞJH	{ æ	É F J	H	É É H	G	É G	H I É I Á É	I F É H Á É	G F É H Á É I
FÍG		{ á	É F J	I	É H	I	É G	I É É J Á É	H É É Á É	F É É H Á É H
FÍH	ÞJÍ	{ æ	É F J	H	É É	G	É G	I I É J Á É	H F É Á É	F F É I Á É I
FÍ		{ á	É F J	I	É G	I	É G	H É É I Á É	I É É Á É	G É É H Á É H
FÍ	ÞJÍ	{ æ	É G H	H	É É	H	É G	G I É G Á É	H F É G Á É	H F É G Á É I

9bjYcdY5=G7 % h fl * \$!%\$L' @ : 8' GhY7 cXY7 \ YWg

T^ { a^i	Úa^	Ô{ à^iÁÔ@& š žca šô	Ú@ažš žcaĐašô	ÔÚ) &žš @Ú) žš @T) Ážš @T) Ážš	Ô)
F	TH	ÚŠĐ cÍ	ÉFÉ € I	ÉÍ i € ^	F i e J i žš i G i € i É i J É F H F É P F É à
G	TH	ÚŠĐ cÍ	ÉFG € I	ÉHG € ^	F i e J i žš i G i € i É i J É F H F É P F É à
H	TFH	ÚQO' GÉ	ÉF i I	G ÉHF FÉ i i	G i e i É i G H F H E F É i G F É i G É P H É
I	TÚFOE	ÚQO' GÉ	É i I	ÉH i	G É i i žš i H G F H E F É i G F É i G H É P H É
Í	TÚFÔ	ÚQO' GÉ	É E J	ÉH i	F É i H ÉH F É i i žš i H G F H E F É i G F É i G H É P H É
Î	TFÉ	ÚŠĐ cÍ	ÉFF É J i	I É i € É J i ^	F H e i i žš i J i G e e F É F G F G H i F É P F É à
Ï	TÚHCE	ÚQO' GÉ	ÉF i ÉH i	G É i i É G	G É i i žš i H G F H E F É i G F É i G i É P H É
Ì	TÚHÔ	ÚQO' GÉ	É i i ÉH i	F É i i ÉH i	F É i i žš i H G F H E F É i G F É i G H É P F É à
J	TF	ÚŠĐ cÍ	ÉF i É J i	H É i i € ^	F H e i i žš i J i G e e F É F G F G H i F É P F É à
FÉ	TÚFÔ	ÚQO' GÉ	É i F ÉH i	I É i i ÉH i	I É i i žš i H G F H E F É i G F É i G H É P H É
FF	TH	ÚŠĐ cÍ	É i F €	F É i i € ^	H i e J i žš i G i € i É i J É F H F É P F É à
FG	TH	ÚŠĐ cÍ	É i H €	G É i F € ^	I i e J i žš i G i € i É i J É F H F É P F É à
FH	TÚHÔ	ÚQO' GÉ	É Ú i ÉH i	G É i ÉH i	H É i i žš i H G F H E F É i G F É i G H É P F É à
FI	TFI	ÚQO' GÉ	É J G i	H É H G FÉ i i	H i e i É i G H F H E F É i G F É i G F É P H É
FÍ	TFÍ	ÚQO' GÉ	É E H i	F É i F G H É	I i e i É i G H F H E F É i G F É i G F É P F É à
FÏ	THU	ÚŠĐ cÍ	É i G €	H É i € € ^	G i e J i žš i G i € i É i J É F H F É P F É à
FÌ	TFG	ÚŠĐ cÍ	É i H É J i	F É i € É J i ^	H e i i žš i J i G e e F É F G F G H i F É P F É à
Fİ	TF	ÚQO' HÉ	É i H i É F i	I É i F i i É F i	G É e F É i i G e i i É i J i É i J i F É P F É à
FJ	TH	ÚŠĐ cÍ	É i i €	I É i F G € ^	G i e J i žš i G i € i É i J É F H F É P F É à
GÉ	TH	ÚQO' HÉ	É J G i É F i	G É i i i É F i	I G e F É i i G e i i É i J i É i J i F É P F É à
GF	TG	ÚQO' HÉ	É J i i É F i	G É i i € i É F i	H G e F É i i G e i i É i J i É i J i F É P F É à
GG	TFİ	ŠGÉ cGÉ cI	É J € FÉ i i	G ÉHU FÉ i i	G H i i F É H i i i F É F i G É H i F É P G É
GH	TFİ	ŠGÉ cGÉ cI	É E i €	G ÉH i €	F H i i F É H i i i F É F i G É H i F É P G É
G	TFİ	ŠGÉ cGÉ cI	É F G €	I É G i €	H H i i F É H i i i F É F i G É H i F É P G É
G	TÚGÔ	ÚQO' GÉ	É i i i É E	G É i i i É E	F É i i H É i i É F i H É J i H É J i F É P F É à
G	TÚGÔ	ÚQO' GÉ	É i i i É E	G É i i i É E	G É i i H É i i É F i H É J i H É J i F É P F É à
G	TÚGOE	ÚQO' GÉ	É i J i É E	F É i i i É E	I É i i H É i i É F i H É J i H É J i F É P F É à
G	Tİ	PÚU i Y i Y i	É G i É i i	i É i H É i i ^	i F G e i J é F H i F i F i F i F i F é P F É à
GJ	Tİ	PÚU i Y i Y i	É G i É i i	i É i J É i i ^	i F G e i J é F H i F i F i F i F i F é P F É à
HÉ	Tİ	PÚU i Y i Y i	É H i É i i	i É i J É i i ^	i F G e i J é F H i F i F i F i F i F é P F É à
HF	Tİ	PÚU i Y i Y i	É i i GÉ F G	i É i G GÉ F G ^	i F G G F i F H i F i F i F i F i F é P F É à
HG	Tİ	PÚU i Y i Y i	É i i GÉ F G	i É i G GÉ F G ^	i F G G F i F H i F i F i F i F i F é P F É à
HH	TJ	PÚU i Y i Y i	É i i GÉ F G	i É i G GÉ F G ^	i F G G F i F H i F i F i F i F i F é P F É à
HI	THH	ŠGÉ cI	É E H €	H É F i i É i G	F F e i i G H e i i i É É J F F É i i F É P G É
HÍ	THE	ŠGÉ cI	É E i €	I É F i i É i G	F F e i i G H e i i i É É J F F É i i F É P G É
HÏ	THF	ŠGÉ cI	É i € i É i G	I É F H i É i G	H F e i i G H e i i i É É J F F É i H F É P G É
Hİ	THG	ŠGÉ cI	É i J i É i G	H É F G i É i G	I F e i i G H e i i i É É J F F É i i F É P G É
HÌ	TGİ	ŠGÉ cI	É i G €	F É F É i É i G	H F e i i G H e i i i É É J F F É i i F É P G É
HJ	TGJ	ŠGÉ cI	É i i €	F É F É i É i G	I F e i i G H e i i i É É J F F É i i F É P G É
I€	TİJ	ŠŠGÉ cI cÉ	É H i i É F i	i É E H i i É F ^	i H i H É i i F G H i G É J i G É F i F É P F É a E
IF	Tİ€	ŠŠGÉ cI cÉ	É H i i É F i	i É E H i i É F	G H i H É i i F G H i G É J i G É F i F É P F É a E
IG	Tİi	ŠŠGÉ cI cÉ	É i F i É F i	i É E H i i É F ^	i H i H É i i F G H i G É J i G É F i F P F É a E

EXHIBIT 9

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT07824-S

CARRIER SITE #/NAME: CT11497A / SOUTH WINDSOR

COORDINATES (LATITUDE: 41.836000°, LONGITUDE: -72.552000°)

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

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
SAF-1	SAFETY CABLE GUIDE DETAILS	0
MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	
MPHW-1	METROSITE HEAVY COLLAR MOUNT PLATE WELDMENT	
MS-HK22-8	METROSITE HEAVY KICKER SUPPORT KIT	

NOTE:

- THE MODIFICATION DRAWINGS ARE BASED ON THE TES PROJECT NO. 99270, DATED 11/09/2020.



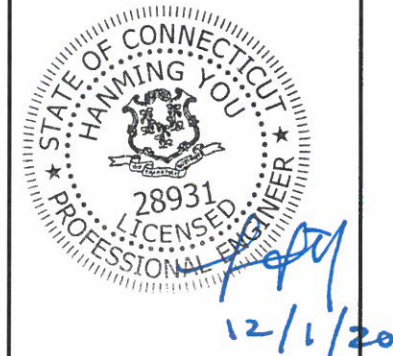
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PH: (972) 483-0607



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

TES JOB NO:
99814

CUSTOMER SITE NO:
CT07824-S-SBA
CUSTOMER SITE NAME:
SOUTH WINDSOR
151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074



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1	FIRST ISSUE	RA	12/01/20

SHEET TITLE:

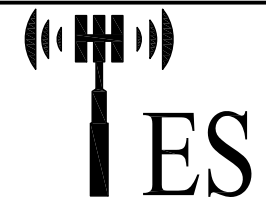
TITLE SHEET

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SHEET NUMBER: **T-1** REV #: **0**

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
MATERIAL & HARDWARE							
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY	A-1, MS-H1436	136.7	136.7	Galvanized
1	1	MS-HK122-8	METROSITE HEAVY KICKER SUPPORT KIT	A-1, MS-HK122-8	211.0	211.0	Galvanized
FOLLOWING ITEMS ARE "CUSTOM" PARTS							
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)	SAF-1	0.00	0.0	GALVANIZED
1	1	TMP-2	PL 1/4" X 2" X 7" A36	SAF-1	1.01	1.0	GALVANIZED
2	3	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5	SAF-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
1	2	---	BOLT 5/8" X 2" A325	SAF-1	0.00	0.0	(1) HHN & LKW-EA GALVANIZED
<p align="center">ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.</p> <p align="center">180 IND PARK BLVD COMMERCE, GA 30529</p> <p align="center">OFFICE: (706) 335-7045</p> <p align="center">FAX: (706) 335-7056</p>							
NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.							
TOTAL WEIGHT (LBS) =						348.7	



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BILL OF MATERIALS

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

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, 2018 CONNECTICUT STATE BUILDING CODE, AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.
7. IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
8. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESORDERS@TESTOWER.US

FABRICATION

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

WELDING

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

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

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

VERIFICATION AND INSPECTION

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

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

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

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

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

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

^d BEVELED WASHER NOT USED.

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

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

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

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

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



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TES JOB NO:
99814

CUSTOMER SITE NO:
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CUSTOMER SITE NAME:
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GN-1 | 0

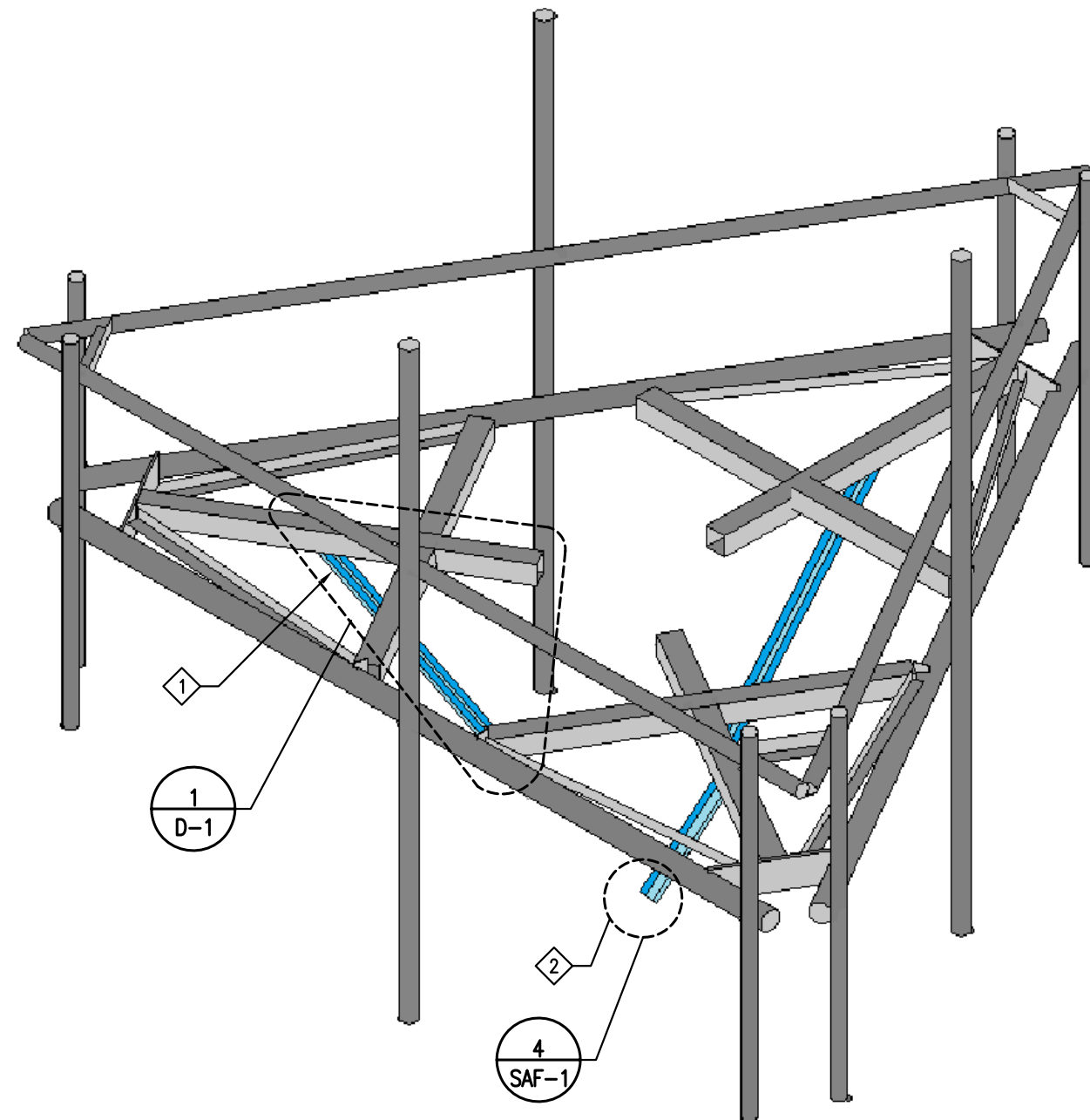
SCOPE OF WORK

- 1 INSTALL NEW HEAVY COLLAR MOUNT (NOT SHOWN FOR CLARITY) & HEAVY KICKER SUPPORT KIT. SEE SHEET D-1, MS-H1436, AND MS-HKI22-8 FOR DETAILS.
- 2 INSTALL NEW SAFETY CLIMB GUIDE TO PREVENT EXISTING SAFETY CLIMB FROM RUBBING AGAINST NEW COLLAR MOUNT. SEE SHEET SAF-1 FOR DETAILS.
- 3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.



PHOTO 1

EXISTING ANTENNA MOUNT
@ 160' ELEV



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 160' ELEV.

CONTRACTOR NOTE:

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

NOTES:

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY
2	1	MS-HKI22-8	METROSITE HEAVY KICKER SUPPORT KIT



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ANTENNA MOUNT
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SHEET NUMBER: | REV #:

A-1 | 0



PHOTO 1



PHOTO 2



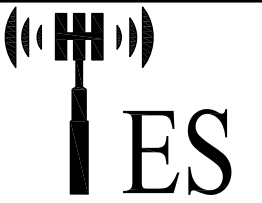
PHOTO 3



PHOTO 4

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

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



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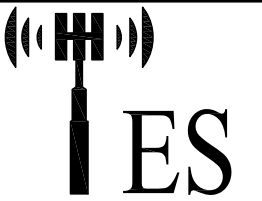
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SHEET NUMBER: A-2 | REV #: 0



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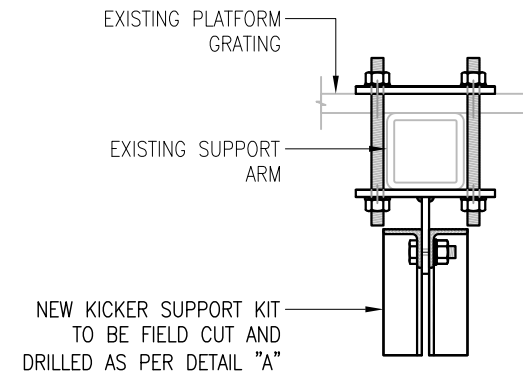
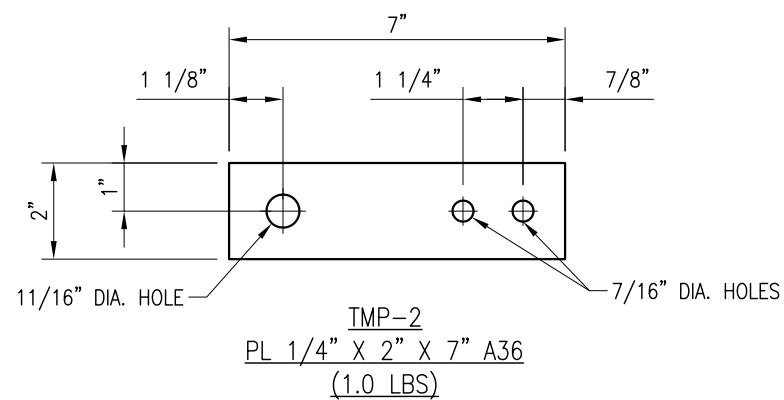
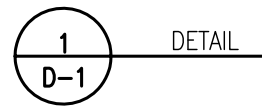
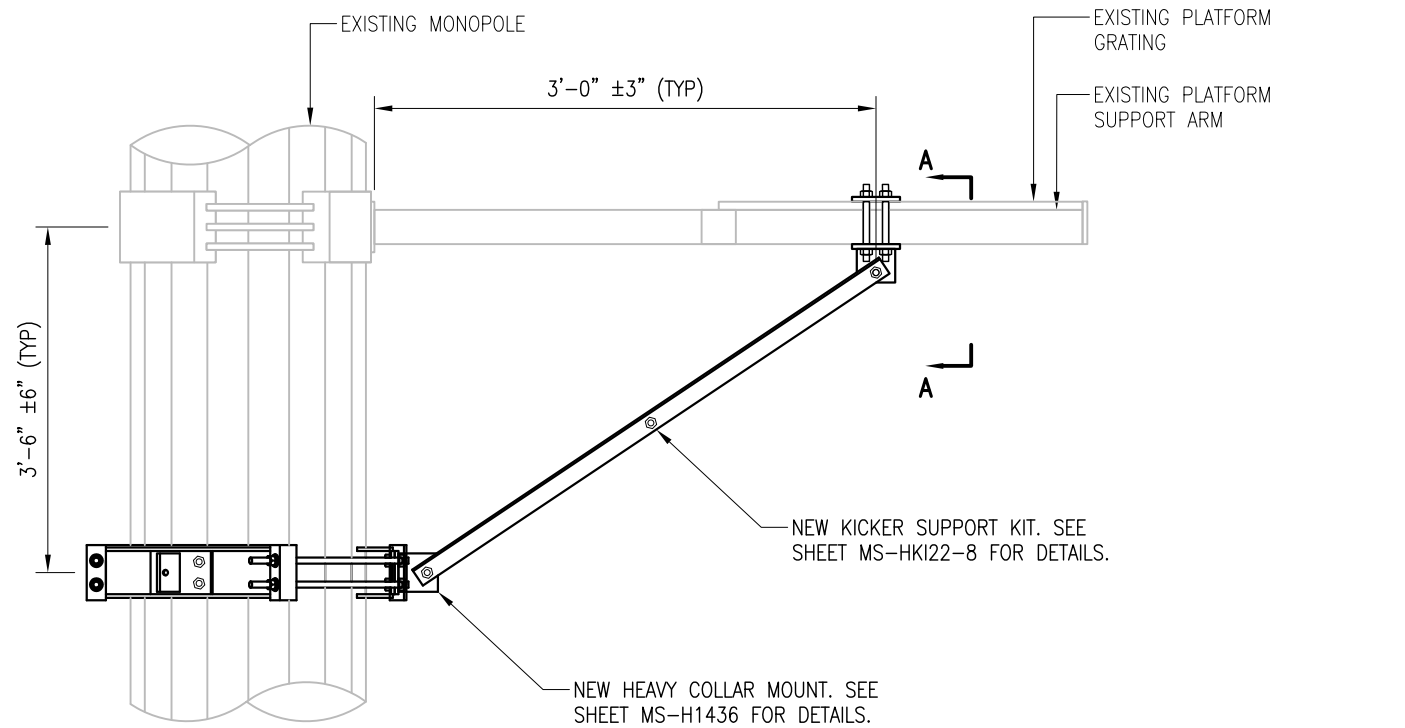
SHEET TITLE:

STANDARD DETAILS

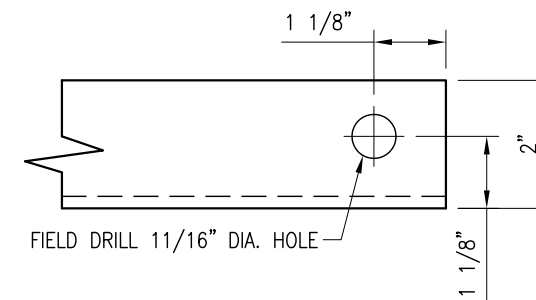
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D-1 | 0



SECTION A-A



DETAIL "A"

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



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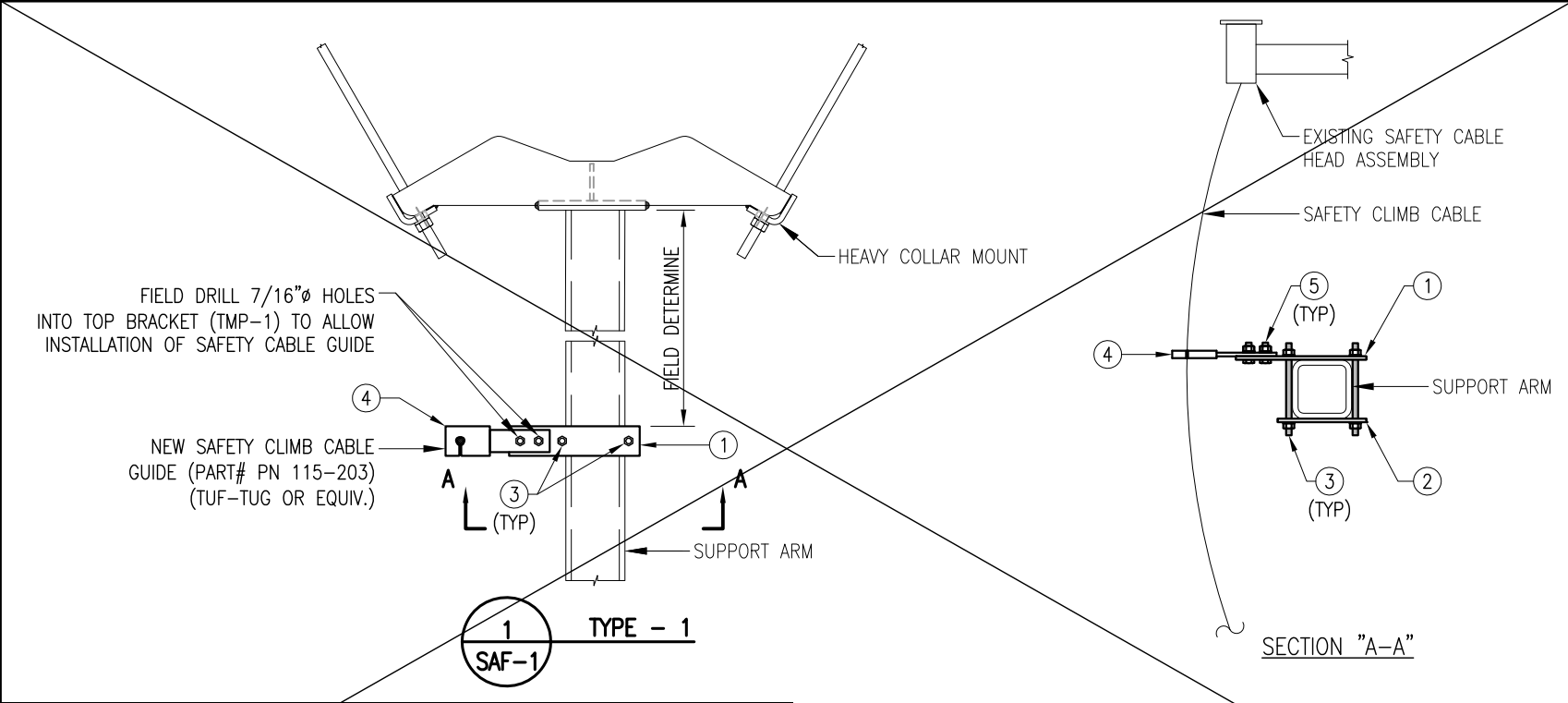
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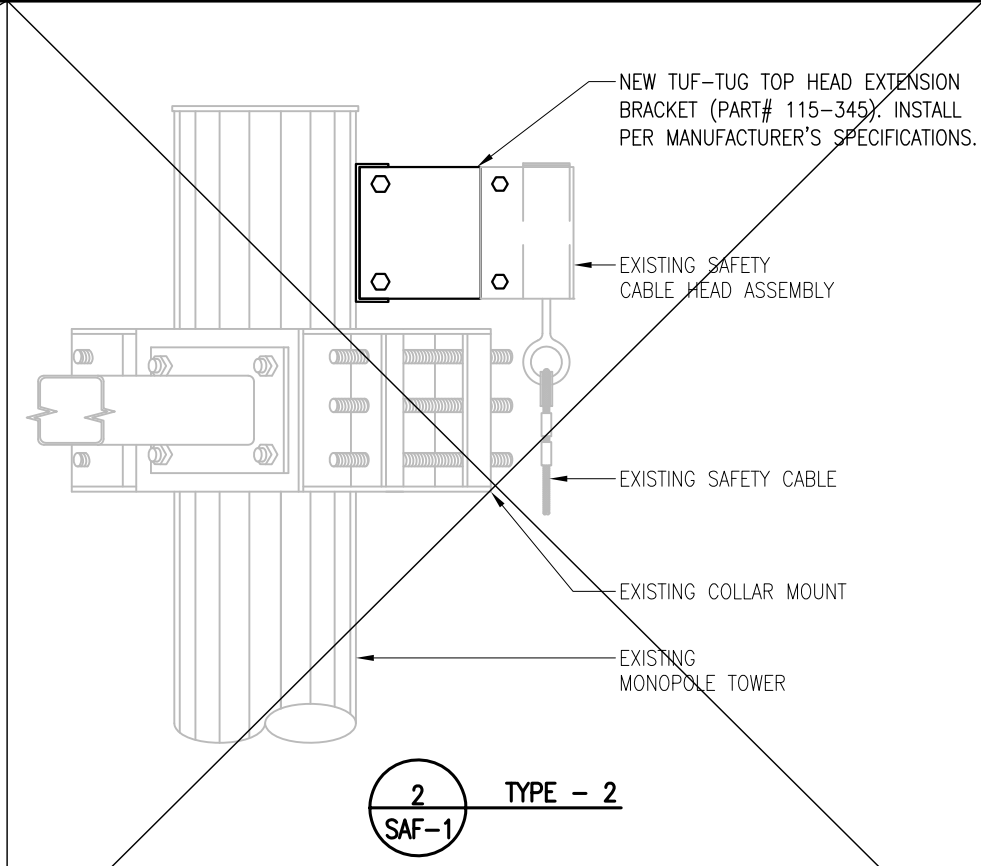
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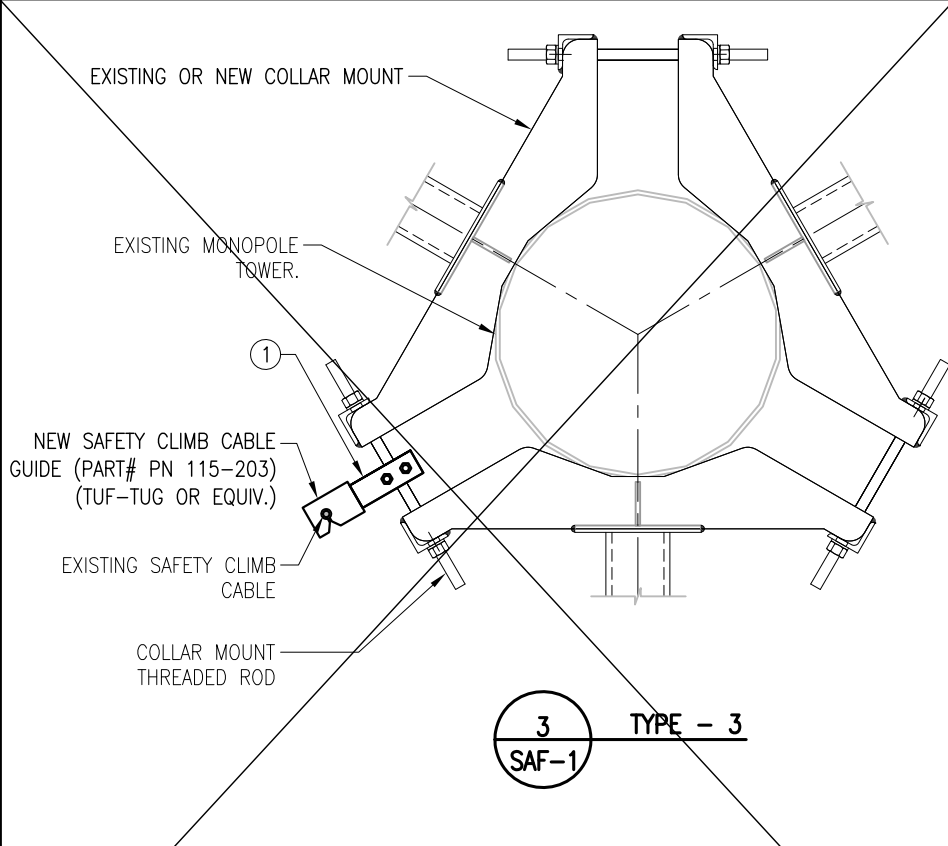


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	TMP-1	PL 1/4" X 2" X 9 1/2" A36
2	1	BMP-1	PL 1/4" X 2" X 6 1/2" A36
3	2	---	THREADED ROD 3/8" X 8" A36
4	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)
5	2	---	BOLT 3/8" X 1 1/2" FULL THREAD SAE GR 5

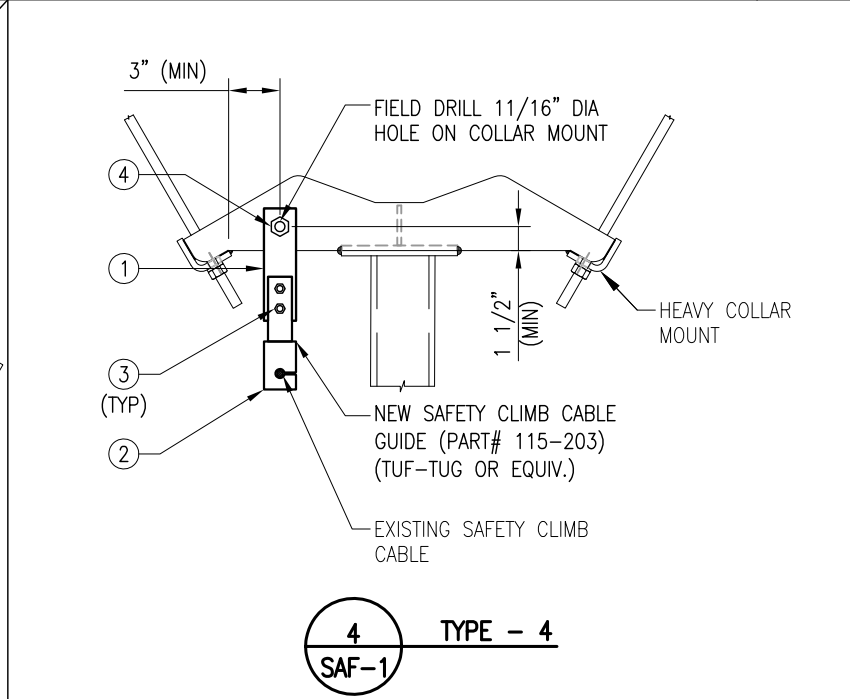
NOTE:
SAFETY CLIMB GUIDE MAY BE INSTALLED ON EITHER LEFT OR RIGHT SIDE OF THE SUPPORT ARM, DEPENDING ON WHERE THE EXISTING SAFETY CLIMB IS LOCATED.



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

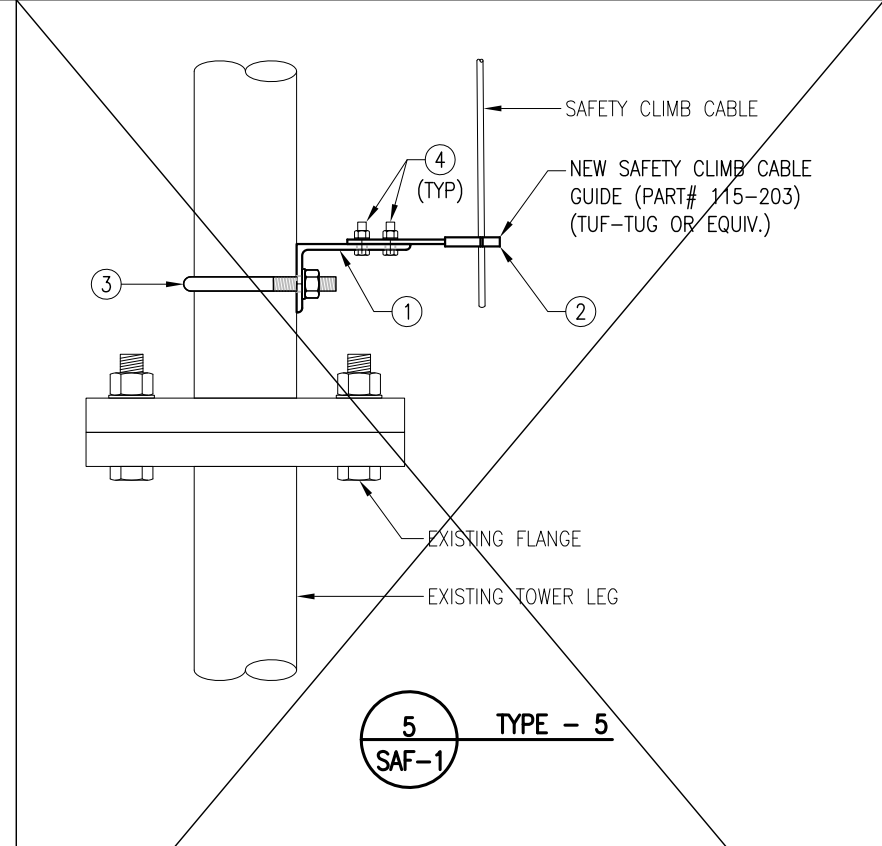


ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	PN 115-203	SAFETY CABLE GUIDE (TUF-TUG OR EQUIV.)



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

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



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

DRAWN BY: RA CHECKED BY: ID/BT

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	RA	12/01/20

SHEET TITLE:

SAFETY CABLE GUIDE DETAILS

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SHEET NUMBER: SAF-1 REV #: 0

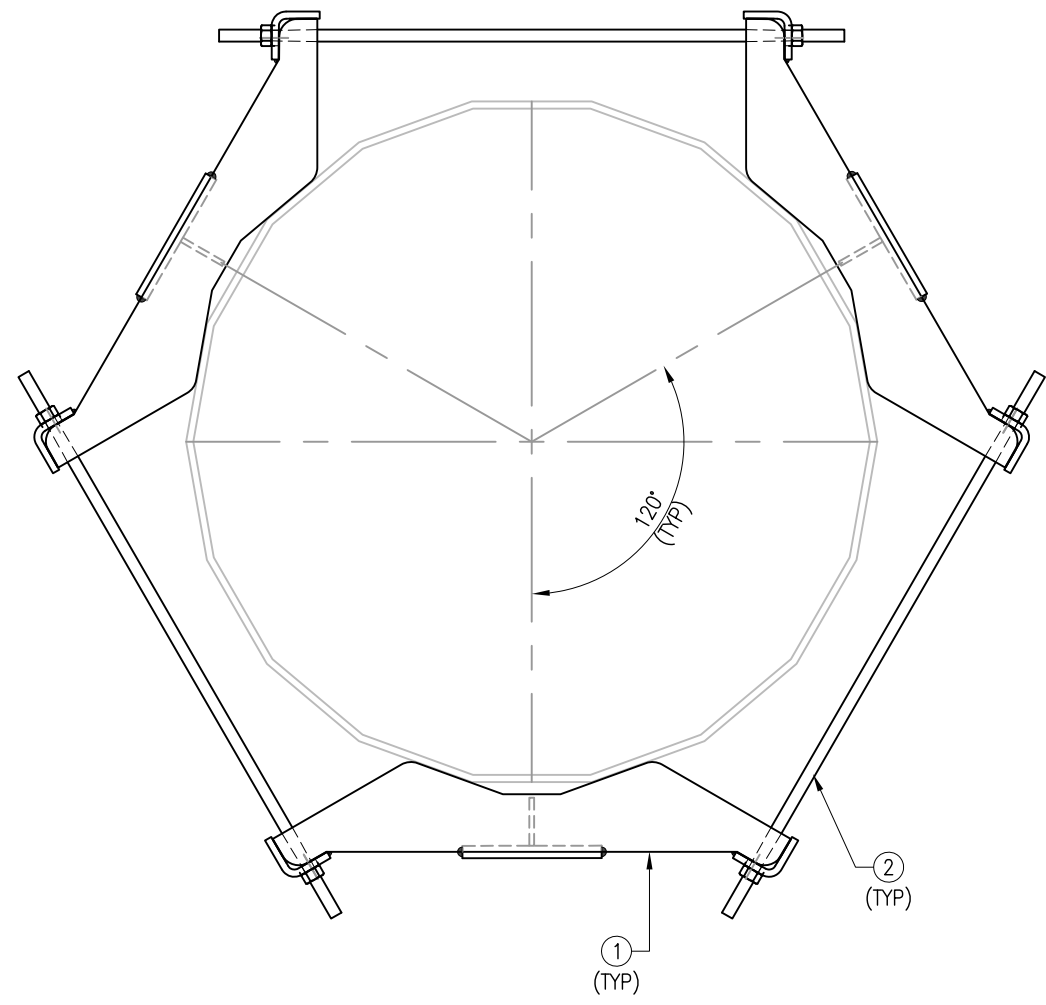
Copyright 2020 Tower Engineering Solutions, LLC

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

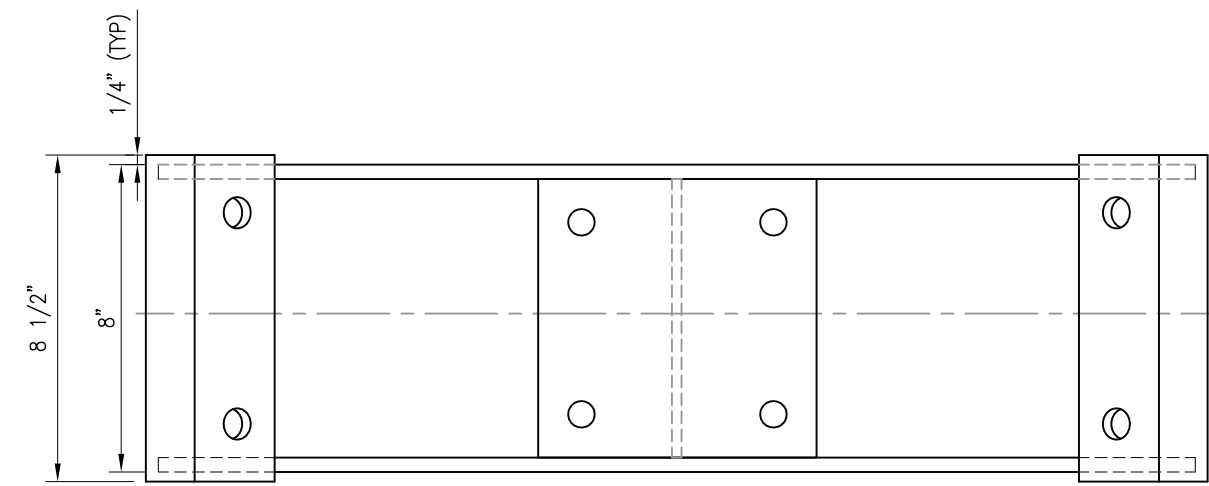
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 2'-4 3/4" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 136.7 LBS

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



TOP VIEW

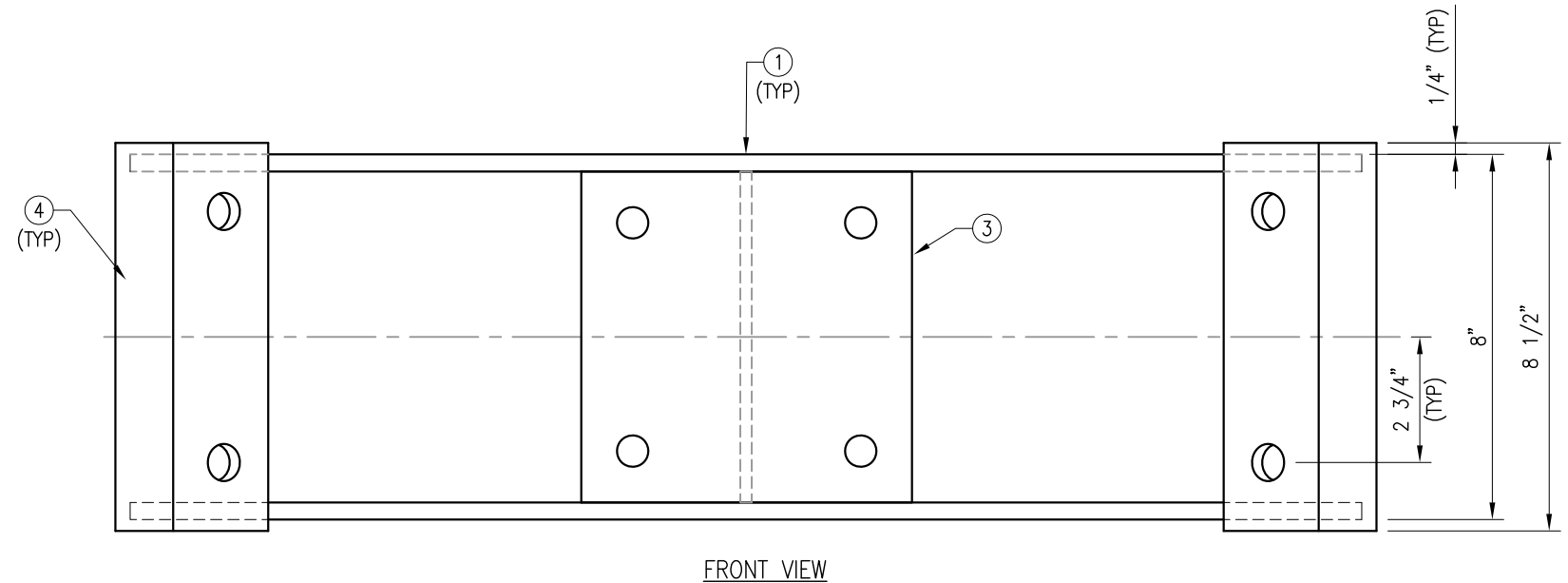
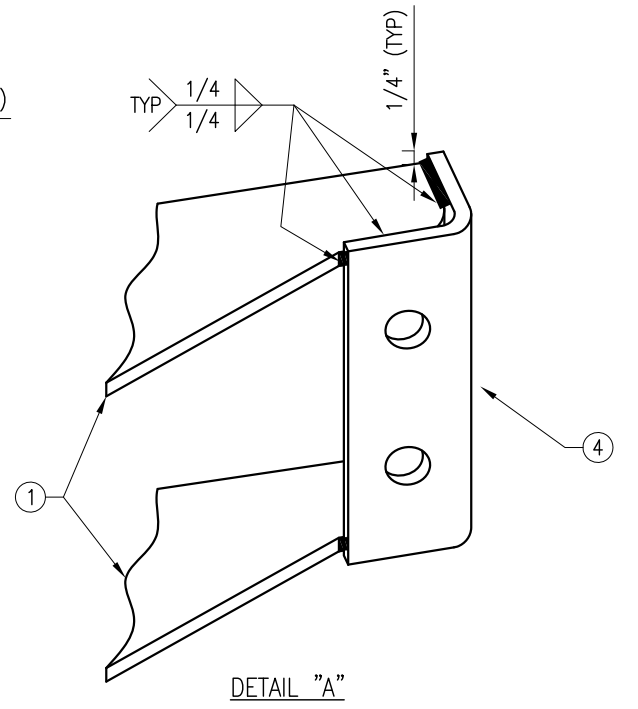
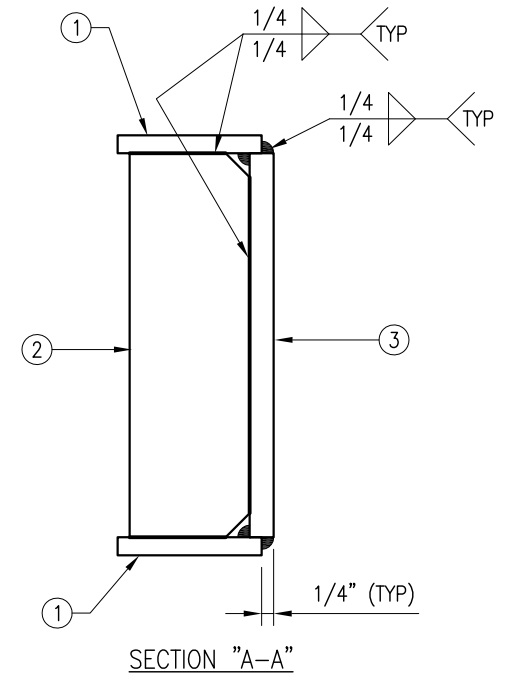
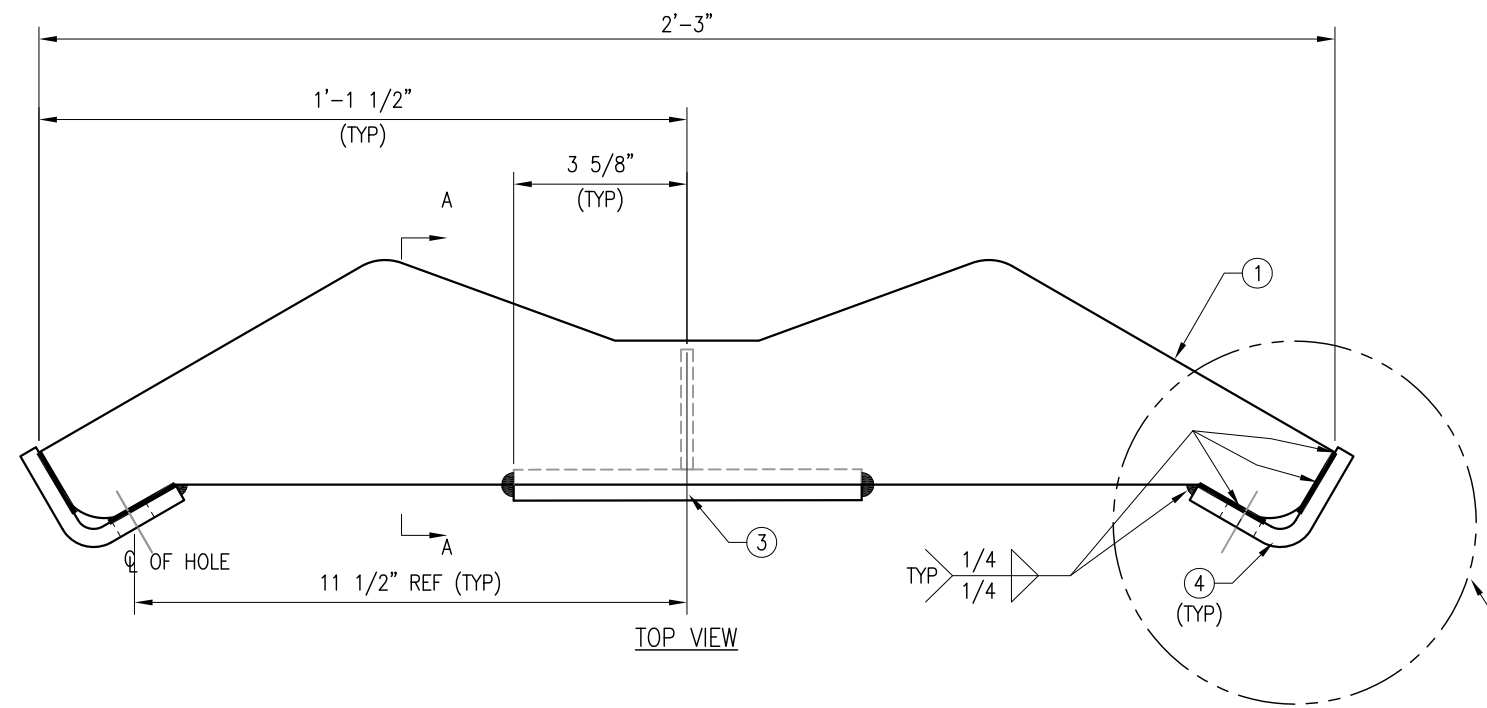


FRONT VIEW

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

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

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



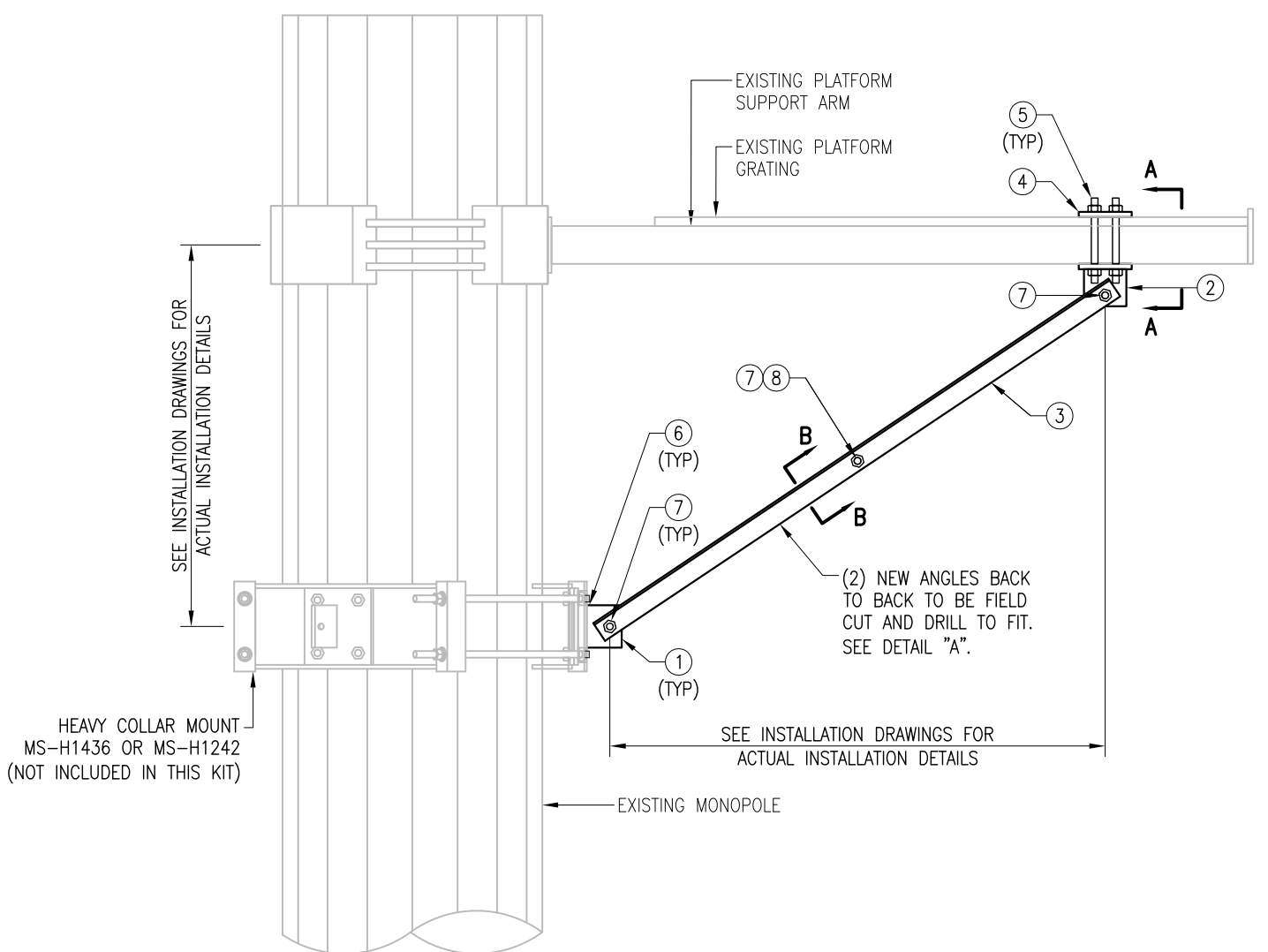
FRONT VIEW
 MPW-1 WELDMENT

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

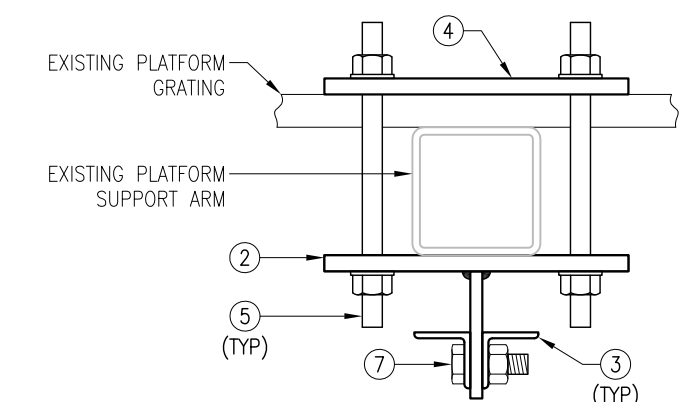
NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.

MS-HK122-8

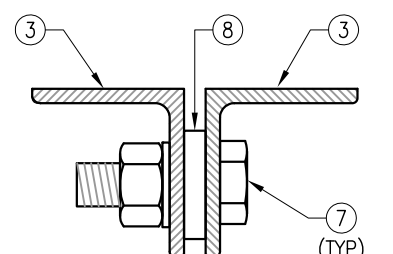
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	BRKW-HK	BRACKET WELDMENT	---	BRKW-HK	23.4
2	3	BRKW-5S	BRACKET WELDMENT	---	BRKW-5S	18.9
3	6	L2225-8	L 2" X 2" X 1/4" X 8'-0"	A36	HKF-8	156.0
4	3	PL5S-375	PL 3/8" X 4 3/4" X 8 1/2"	A36	HKF-8	12.9
5	12	---	ALL THREADED ROD 5/8" DIA. X 1'-0" HDG W/ (2) HHN & LKW EA.	A36	---	---
6	12	---	BOLT 5/8" X 2" W/ HHN & LKW	A325	---	---
7	9	---	BOLT 5/8" X 2 1/4" W/ HHN & LKW	A325	---	---
8	3	---	SPACER/SHIM FOR 5/8" BOLT (3/8" THICK)	A36	---	---
GALVANIZED WT						211



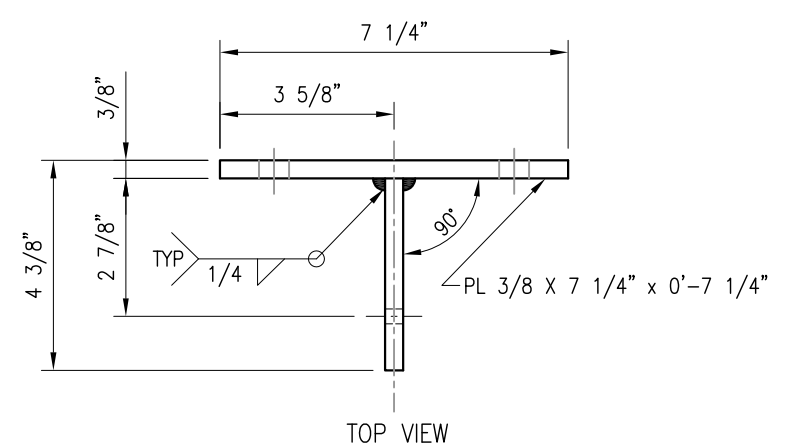
ELEVATION



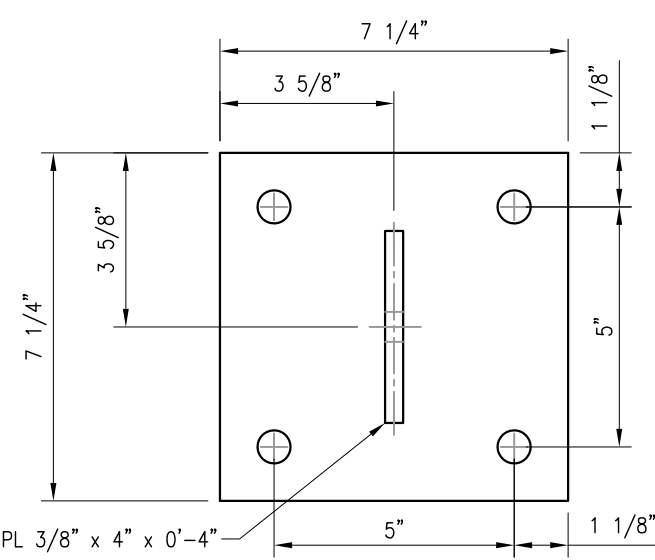
SECTION "A-A"



SECTION "B-B"

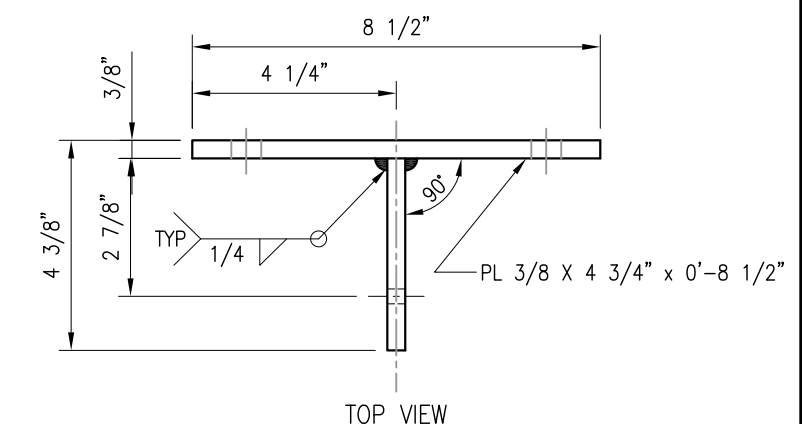


TOP VIEW

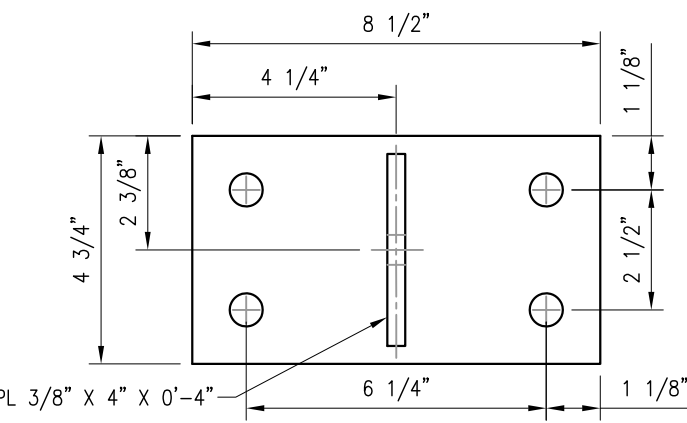


FRONT VIEW

BRKW-HK WELDMENT

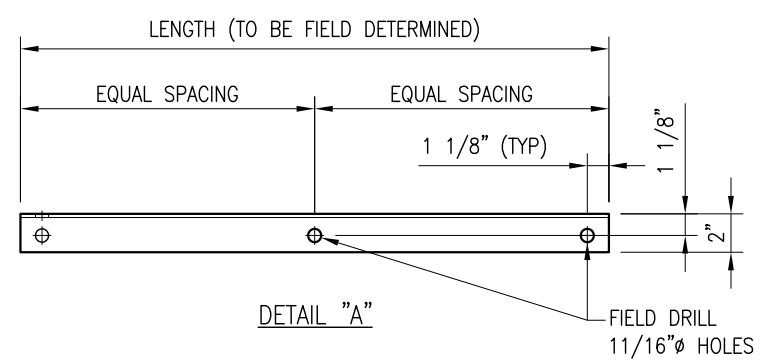


TOP VIEW



FRONT VIEW

BRKW-5S WELDMENT



DETAIL "A"

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

<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH</p> <p>STANDARD SHEET TOLERANCES</p> <table border="1"> <tr> <td>DECIMALS</td> <td>ANGLES</td> </tr> <tr> <td>.X ± 0.1</td> <td>± 1°</td> </tr> <tr> <td>.XX ± 0.02</td> <td>FRACTIONS</td> </tr> <tr> <td>.XXX ± 0.005</td> <td>± 1/32</td> </tr> </table>		DECIMALS	ANGLES	.X ± 0.1	± 1°	.XX ± 0.02	FRACTIONS	.XXX ± 0.005	± 1/32	<p>THIRD ANGLE PROJECTION</p>	<p>METRO Site</p> <p>METROSITE FABRICATORS LLC 180 INDUSTRIAL PARK BLVD. COMMERCE GA 30529</p>
DECIMALS	ANGLES										
.X ± 0.1	± 1°										
.XX ± 0.02	FRACTIONS										
.XXX ± 0.005	± 1/32										
<p>CONFIDENTIAL ALL INFORMATION ON THIS DOCUMENT IS PROPERTY OF METROSITE FABRICATORS LLC</p>		<p>TITLE</p> <p>HEAVY KICKER SUPPORT KIT</p>									
<p>APPROVAL / SIGNATURES</p> <p>DRAWN BY: XXX</p> <p>REVIEWED: XXX</p> <p>APPROVED: XXX</p>	<p>DATE</p> <p>06/21/18</p>	<p>SIZE/DWG NO</p> <p>B MS-HK122-8</p>	<p>REV</p> <p>0</p>								
<p>SCALE</p>		<p>SHEET 1 OF 1</p>									

EXHIBIT 10

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

T-Mobile Existing Facility

Site ID: CT11497A

CT497/SBA South Windsor
151 Sand Hill Road
South Windsor, Connecticut 06074

December 2, 2020

EBI Project Number: 6220006076

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	16.40%

December 2, 2020

T-Mobile

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

Emissions Analysis for Site: CT11497A - CT497/SBA South Windsor

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **151 Sand Hill Road in South Windsor, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 151 Sand Hill Road in South Windsor, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 7) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 8) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 11) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 12) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a

very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 13) The antenna mounting height centerline of the proposed antennas is 160 feet above ground level (AGL).
- 14) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 15) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	38,477.89	ERP (W):	38,477.89	ERP (W):	38,477.89
Antenna A1 MPE %:	5.40%	Antenna B1 MPE %:	5.40%	Antenna C1 MPE %:	5.40%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,055.53	ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	2.34%	Antenna B2 MPE %:	2.34%	Antenna C2 MPE %:	2.34%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	160 feet	Height (AGL):	160 feet	Height (AGL):	160 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A3 MPE %:	1.80%	Antenna B3 MPE %:	1.80%	Antenna C3 MPE %:	1.80%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	9.55%
Town	0.77%
Sprint	0.83%
AT&T	1.79%
Metro PCS	0.22%
Clearwire	0.09%
Nextel	0.28%
Verizon	2.87%
Site Total MPE % :	16.40%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	9.55%
T-Mobile Sector B Total:	9.55%
T-Mobile Sector C Total:	9.55%
Site Total MPE % :	16.40%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2500 MHz LTE	1	19238.94	160.0	27.02	2500 MHz LTE	1000	2.70%
T-Mobile 2500 MHz NR	1	19238.94	160.0	27.02	2500 MHz NR	1000	2.70%
T-Mobile 600 MHz LTE	2	591.73	160.0	1.66	600 MHz LTE	400	0.42%
T-Mobile 600 MHz NR	1	1577.94	160.0	2.22	600 MHz NR	400	0.55%
T-Mobile 700 MHz LTE	2	648.82	160.0	1.82	700 MHz LTE	467	0.39%
T-Mobile 1900 MHz LTE	2	2203.69	160.0	6.19	1900 MHz LTE	1000	0.62%
T-Mobile 2100 MHz UMTS	2	1294.56	160.0	3.64	2100 MHz UMTS	1000	0.36%
T-Mobile 1900 MHz GSM	4	1028.30	160.0	5.78	1900 MHz GSM	1000	0.58%
T-Mobile 1900 MHz LTE	2	2056.61	160.0	5.78	1900 MHz LTE	1000	0.58%
T-Mobile 2100 MHz LTE	2	2307.55	160.0	6.48	2100 MHz LTE	1000	0.65%
						Total:	9.55%

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

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	9.55%
Sector B:	9.55%
Sector C:	9.55%
T-Mobile Maximum MPE % (Sector A):	9.55%
Site Total:	16.40%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **16.40%** 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.