



Filed by:

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

June 16, 2021

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

RE: Notice of Exempt Modification
237 Sandy Hollow Road, Groton, CT 06355
Latitude: 41.369510
Longitude: -71.982463
T-Mobile Site #: CTNL053A_L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 129-foot and three (3) antennas at the 127-foot level of the existing 130-foot Monopole Tower at 237 Sandy Hollow Rd., Groton, CT. The 130-foot tower is owned by SBA Infrastructure, LLC. The property is owned by Mystic River Ambulance Association Inc. T-Mobile now intends to remove three (3) antennas from the 127-foot level and replace with three (3) new 600/700 MHz antennas. The total amount of antennas will remain at nine (9).

- **The new antennas support 5G services and would be installed at the 127-foot and 129-foot levels of the tower.**

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

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) LNX-6515DS antennas (remove) – (3) RFS APXVAALL24_43-U-NA20 600/700MHz antennas (replace)
- (3) Ericsson RRUS-11 B12 RRUs (remove) – (3) Ericsson 4449 B71 + B85 RRUs (replace)
- (3) 1-5/8" Coax (remove) – (3) 1.9" Fiber (replace)

Install New:

- N/A

Existing Equipment to Remain:

- (3) Ericsson AIR 21 B2A/B4P antennas
- (3) Ericsson AIR 21 B4P/B2P antennas
- (1) Low profile platform w/handrails
- (3) Ericsson KRY 112 144/1 TMAs

Entitlements:

- (6) 1-5/8" coax
- (1) 1-1/4" Fiber

GROUND

Remove:

- Nortel S12000 Equipment Cabinet

Remove and Replace:

- N/A

Install New:

- (1) Emerson 2416 Fiber Cabinet
- T-Mobile equipment mounted to existing H-Frame
- T-Mobile equipment within existing cabinet

Existing to Remain:

- (1) 15' x 15' Concrete pad
- 9' x 25' Lease area
- (1) GPS antenna
- (1) RBS3106 Equipment cabinet (relocated)
- T-Mobile existing Ice bridge
- Cienna box
- T-Mobile fiber box

Entitlements:

- N/A



This facility was approved by the Council on March 26, 2008 under Docket 343. Approval was given for a monopole no taller than necessary to provide space for public and private entities, but not to exceed 130' above ground level. The height of the top of antennas was also not to exceed 130' above ground level. An updated EME report was to be provided when operations would cause a change in power density levels. The certificate holder was to provide public and private entities shared reasonable space and space was to be provided to Town public safety services for zero compensation. And any non-functioning equipment was to be removed within 60 days. 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 City of Groton's Mayor, Keith Hedrick, Town Manager, Joseph Summers, Planning & Zoning Development, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

G. Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581

508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
gshepherd@sbsite.com

Attachments



cc: Keith Hedrick, Mayor / with attachments
295 Main St., Groton CT 06340
Joseph Summers, Planning & Zoning Development / with attachments
295 Main St., Groton, CT 06340
Mystic River Ambulance Association Inc. / with attachments
PO Box 64, West Mystic CT 06388

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	CSC 3/26/2008 Docket 343
Exhibit 6	Construction Drawings	Chappell Engineering 4/28/21
Exhibit 7	Structural Analysis	TES 6/1/21
Exhibit 8	Mount Analysis	TES 5/19/21
Exhibit 9	EME Report	EBI Consulting 5/27/21

EXHIBIT 1

Normally, Exhibit 1 would contain the 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: 16 JUN 21
ACTWGT: 1.00 LB
CAD: 105843304#NET14340

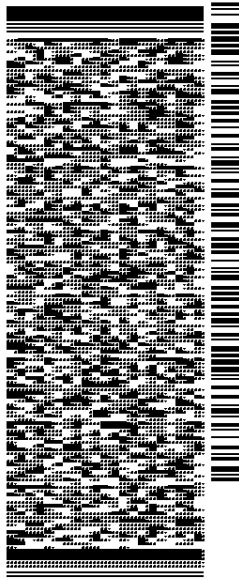
BILL SENDER

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

NEW BRITAIN CT 06051

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

56DJ3/B387/FE4A

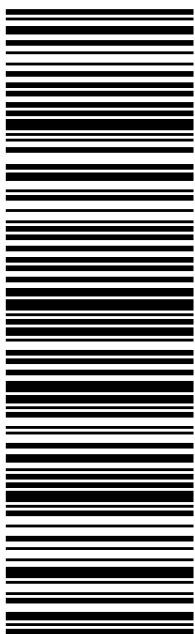


J211321033101uv

TRK# 7740 1889 3610 THU - 17 JUN 10:30A
0201 PRIORITY OVERNIGHT

EB BDLA

06051
BDL
CT-US



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



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

SHIP DATE: 21 JUN 21
ACTWGT: 1.00 LB
CAD: 105843304#NET14340

BILL SENDER

TO KEITH HEDRICK, MAYOR
CITY OF GROTON
295 MAIN ST

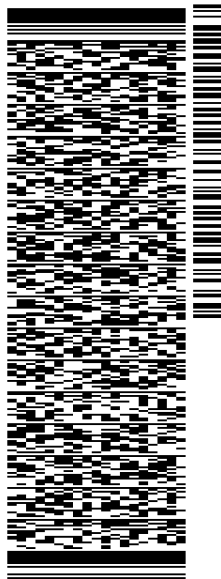
GROTON CT 06340

(508) 251-0720 X 3807

REF: 105692009-6089

INV#

DEPT:



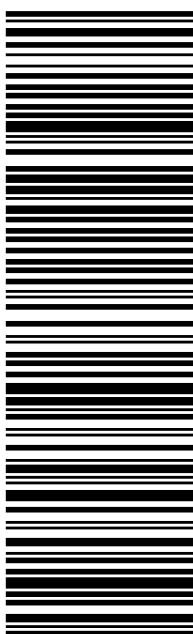
J211321033101uv

TRK# 7740 5080 4025
0201

TUE - 22 JUN 10:30A
PRIORITY OVERNIGHT

EB GONA

06340
CT:US BDL



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SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 21 JUN 21
ACTWGT: 1.00 LB
CAD: 105843304#INET4340

BILL SENDER

TO **JOSEPH SUMMERS, PLANNING & ZONING**
CITY OF GROTON
295 MAIN ST

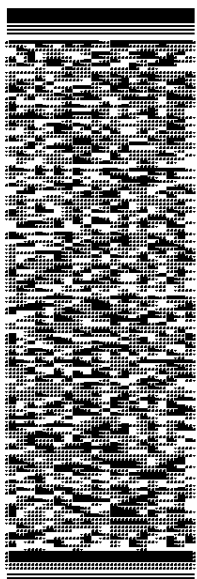
GROTON CT 06340

REF: 105692009-6089

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

DEPT:

56DJ3/B387/FE4A

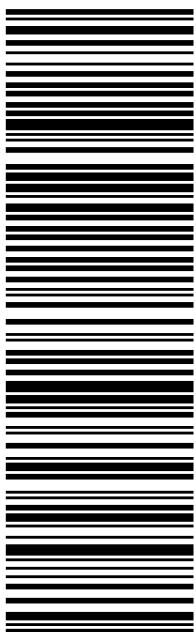


TRK# 7740 5078 5184
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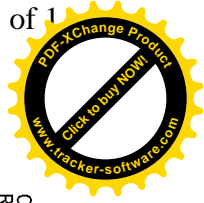


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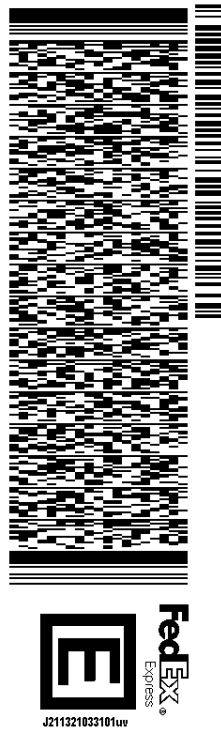


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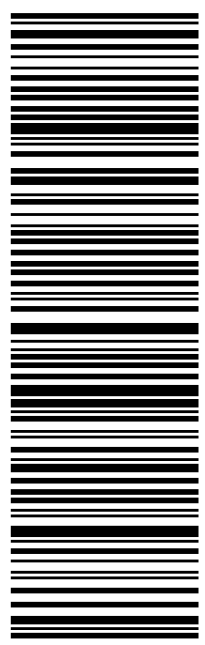
TO
 MYSTIC RIVER AMBULANCE ASSOC.
 P.O. BOX 64

WEST MYSTIC CT 06388
 (508) 251-0720 X 3807 REF: 105692009-6089
 INV# DEPT:
 PO:



TRK# 7740 1901 9306 THU - 17 JUN 10:30A
 0201 PRIORITY OVERNIGHT

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 CT:US BDL



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EXHIBIT 3

Commercial Property Card

Card 1 of 1

Account 261909065371 E	Location 237 SANDY HOLLOW RD	Zoning RS-20	Deed Book/Page 518/	Acres 3.35
District OLD MYSTIC	Use Code ALL OTHER CHARITABLE ORGANIZATIONS			

Current Owner

MYSTIC RIVER AMBULANCE ASSOC
P O BOX 64
W MYSTIC CT 06388

Property Picture



Building Information

Building No:	1
Year Built:	1992
No of Units:	1
Structure Type:	POLICE/FIRE STATION
Building Total Area:	5624 sqft.
Grade:	B-
Identical Units:	1

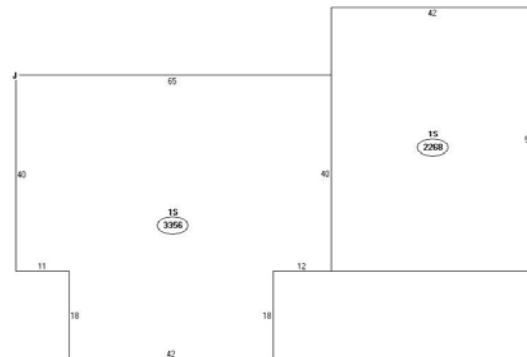
Valuation

Land:	\$670,000
Building:	\$445,400
Total:	\$1,115,400
Total Assessed Value:	\$780,780

Recent Sales

Book/Page	Date	Price
518/656	1990-09-25	\$141,900

Building Sketch



Describe
A 090 2268 sqft
B 000 3396 sqft
C 001 144 sqft
D LFP3 360 sqft
E 15 3396 sqft
F 15 2268 sqft
G PA1 10000 sq
H 001 150 sqft
I PA1 54 sqft
J CP1 36 sqft

Sketch Legend

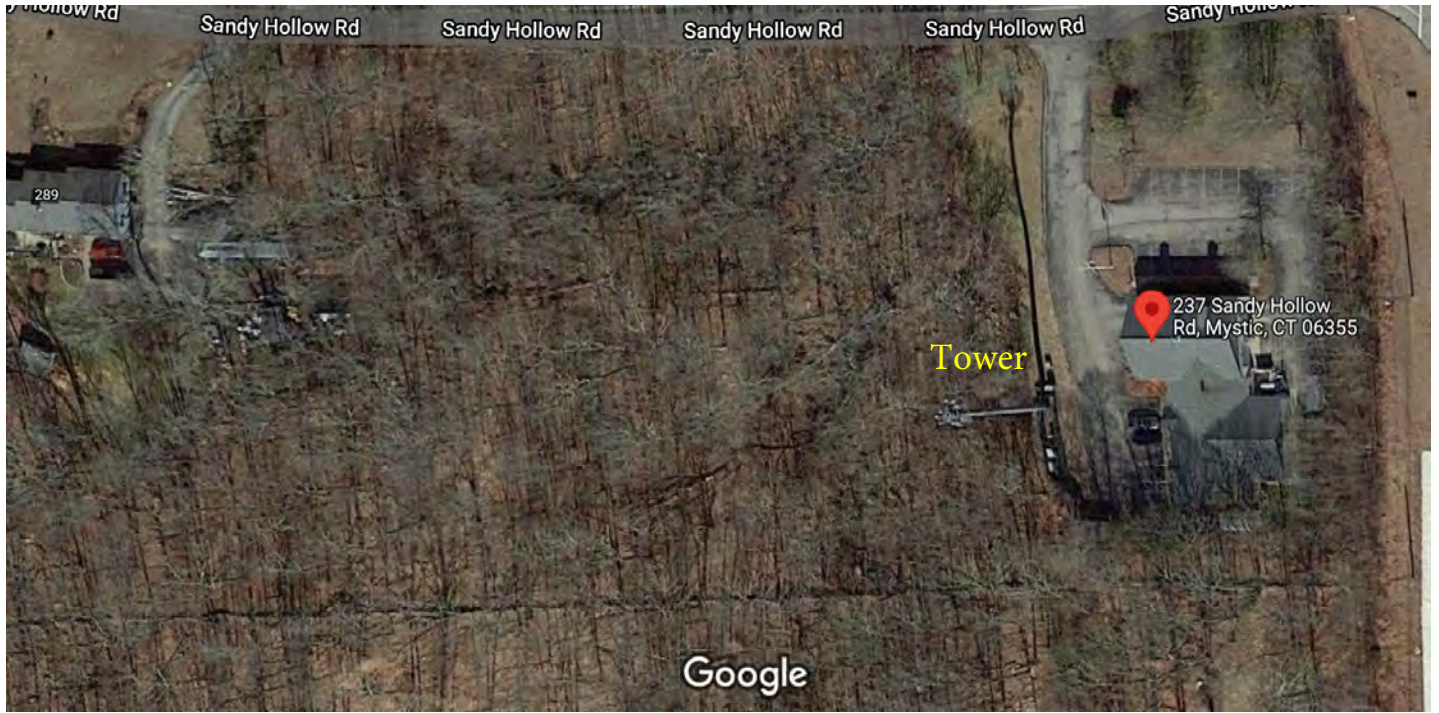
----	Main Living Area	LSMA	Masonry	GRHS	Attached Greenhouse
1FR	Frame	OMP	Open Masonry Porch	CAT	Cathedral Ceiling
OFF	Open Frame Porch	EMP	Enclosed Msry Porch	SOP	Screen Open Frame Prch
EFP	Enclosed Frame Porch	MUB	Masonry Utility	SMP	Screen Open Msrny Prch
FUB	Frame Utility Building	MB	Masonry Bay	CPAT	Concrete Patio
FB	Frame Bay	MOH	Masonry Overhang	B	Basement
FG	Frame Garage	.SMA	1/2 Story Masonry		
FOH	Frame Overhang	MP	Masonry Patio		
.SFR	1/2 Story Frame	WD	Wood Deck		
A(U)	Attic (Unfinished)	CPY	Canopy		
A(F)	Attic (Finished)				

Exterior/Interior Information

Levels	Use Type	Ext. Walls	Const. Type	Heating	A/C	Condition
01 - 01	PARKING GARAGE	FRAME	WOOD JOIST	HOT AIR	NONE	NORMAL
01 - 01	MULTI-USE OFFICE	FRAME	WOOD JOIST	HOT AIR	CENTRAL	NORMAL

EXHIBIT 4






Google Maps 237 Sandy Hollow Rd



Imagery ©2021 Maxar Technologies, USDA Farm Service Agency, Map data ©2021 50 ft



237 Sandy Hollow Rd Building

- 
Directions
- 
Save
- 
Nearby
- 
Send to your phone
- 
Share

 237 Sandy Hollow Rd, Mystic, CT 06355

Photos

EXHIBIT 5

DOCKET NO. 343 - MCF Communications bg, Inc and }
Omnipoint Communications, Inc. application for a Certificate of }
Environmental Compatibility and Public Need for the }
construction, maintenance and operation of a telecommunications }
facility located at 237 Sandy Hollow Road, Groton, Connecticut. }

Connecticut

Siting

Council

March 26, 2008

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to MCF Communications bg, Inc and Omnipoint Communications, Inc., hereinafter referred to as the Certificate Holders, for a telecommunications facility at 237 Sandy Hollow Road, Groton, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level. The height at the top of the antennas shall not exceed 130 feet above ground level.
2. The tower shall be installed 60 feet north of the proposed compound.
3. The equipment compound shall be located within a 35-foot by 50-foot fenced area.
4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Groton for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

5. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Groton public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
9. Any request for extension of the time period referred to in Condition 8 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Groton. Any proposed modifications to this Decision and Order shall likewise be so served.
10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Day, the Norwich Bulletin and The Groton Times.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

MCF Communications bj, Inc and Omnipoint
Communications, Inc

Its Representative

Julie Kohler, Esq.
Carrie Larson, Esq.
Cohen and Wolf, P.C
1115 Broad Street
Bridgeport, CT 06604

Intervenor

Charles E. Stevens
12 Stony Hill Drive
Mystic, CT 06355-1636

EXHIBIT 6

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).

NL053/MCF-AMBULANCE

237 SANDY HOLLOW ROAD
 GROTON, CT 06355
 NEW LONDON COUNTY

SITE NO.: CTNL053A

SITE TYPE: 130'± MONOPOLE

RF DESIGN GUIDELINE: 67D02C OUTDOOR

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

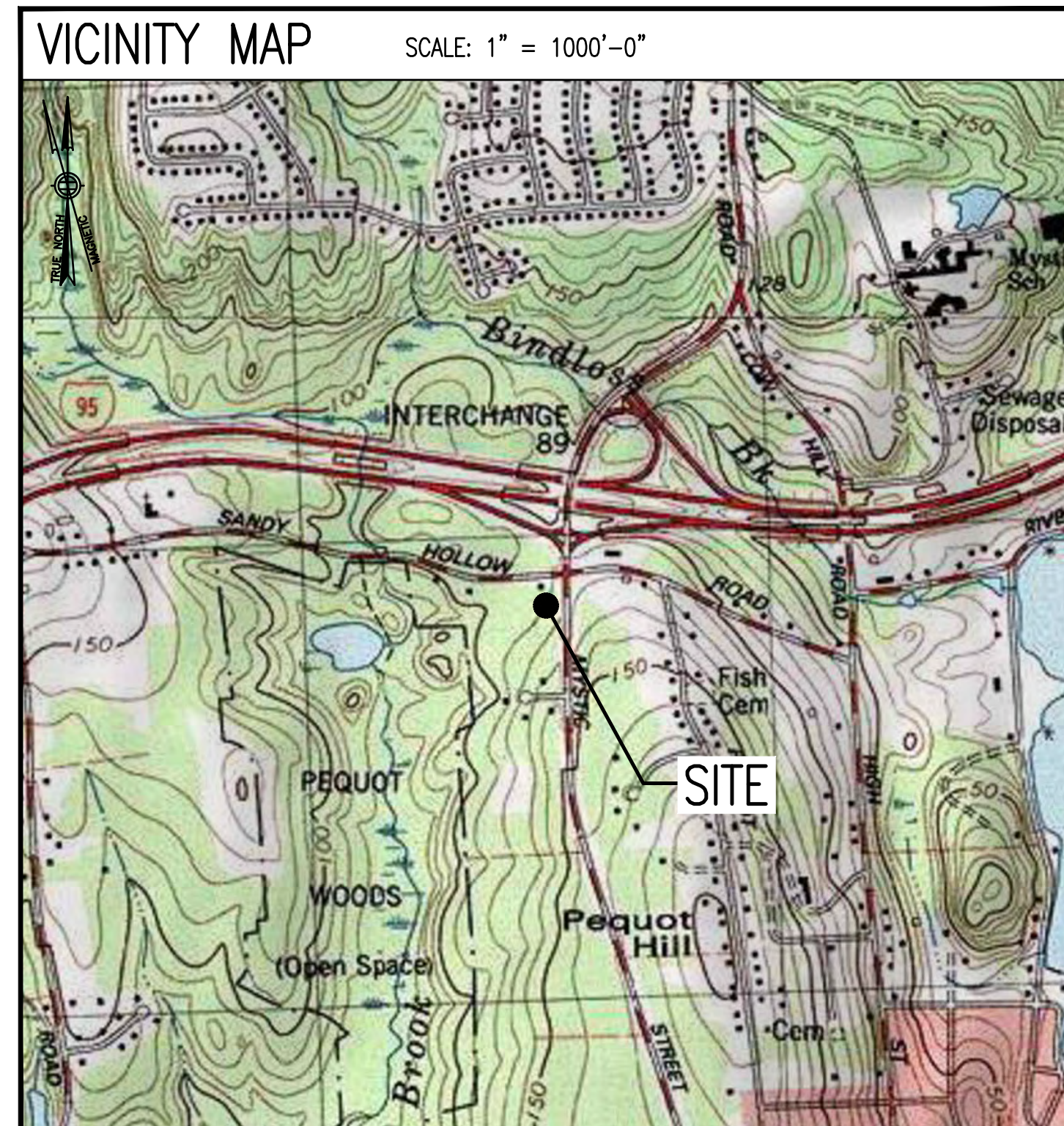
SCOPE OF WORK	
REMOVE:	INSTALL:
<ul style="list-style-type: none"> 3 ANTENNAS 3 RADIOS 6 COAX CABLES 1 HYBRID CABLE 1 EQUIPMENT CABINET 	<ul style="list-style-type: none"> 3 ANTENNAS 3 RADIOS 3 HYBRID CABLES 1 EMERSON CABINET 1 FUTURE GENERATOR 1 FUTURE ATS

SITE NOTES	
1.	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. <ul style="list-style-type: none"> ADA COMPLIANCE NOT REQUIRED. POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED. NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2.	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.
3.	NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. <ul style="list-style-type: none"> 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.

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
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

GENERAL NOTES	
1. 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.	11. 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.
2. 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.	12. 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.
3. 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.	13. 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.
4. 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.	14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
5. 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.	15. 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.
6. 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.	16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
7. 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.	17. 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.
8. 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.	
9. 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.	
10. 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.	

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



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		
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A-2	TOWER ELEVATIONS & ANTENNA PLAN	3
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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:	CTNL053A
SBA SITE NUMBER:	CT11561-A
SBA SITE NAME:	GROTON 2, CT
SITE ADDRESS:	237 SANDY HOLLOW ROAD GROTON, CT 06355
PROPERTY OWNER:	MYSTIC RIVER AMBULANCE ASSOC. P.O. BOX 64 W. MYSTIC, CT 06388
TOWER OWNER:	SBA INFRASTRUCTURE, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	COMMERCIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	130'
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: N.41.370002° N.41°22'12.01" LONGITUDE W.71.982496° W.71°58'56.99"

T-MOBILE NORTHEAST LLC

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

SBA

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
 Civil Structural-Land Surveying

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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	04/28/21	CONSTRUCTION REVISED	CMC
2	04/21/21	CONSTRUCTION REVISED	CMC
1	08/18/19	ISSUED FOR CONSTRUCTION	JRV
0	05/16/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CTNL053A

SITE ADDRESS:
 237 SANDY HOLLOW ROAD
 GROTON, CT 06355

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – T-MOBILE
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNDO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS½ IN.
- A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

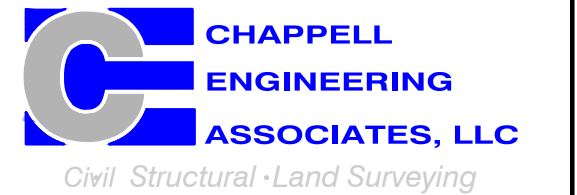
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND, DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

**T-MOBILE
NORTHEAST LLC**

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SITE NUMBER:
CTNL053A

SITE ADDRESS:
237 SANDY HOLLOW ROAD
GROTON, CT 06355

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-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.

T-MOBILE NORTHEAST LLC

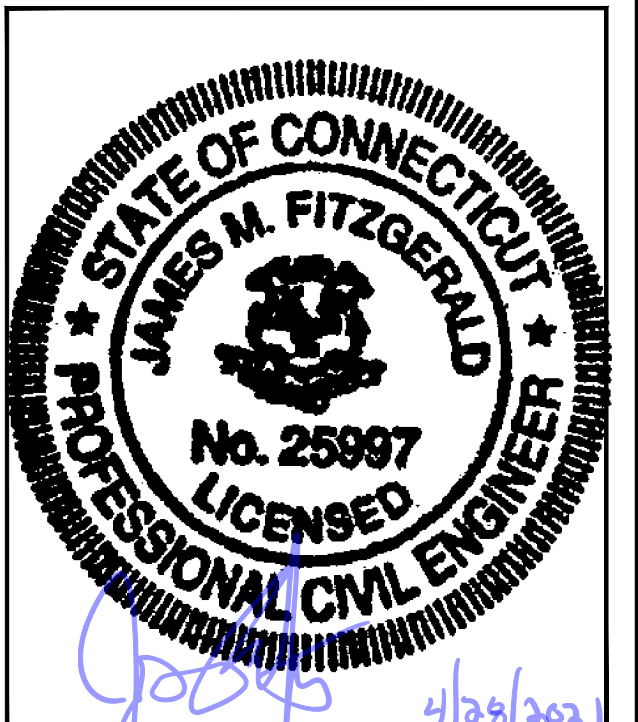
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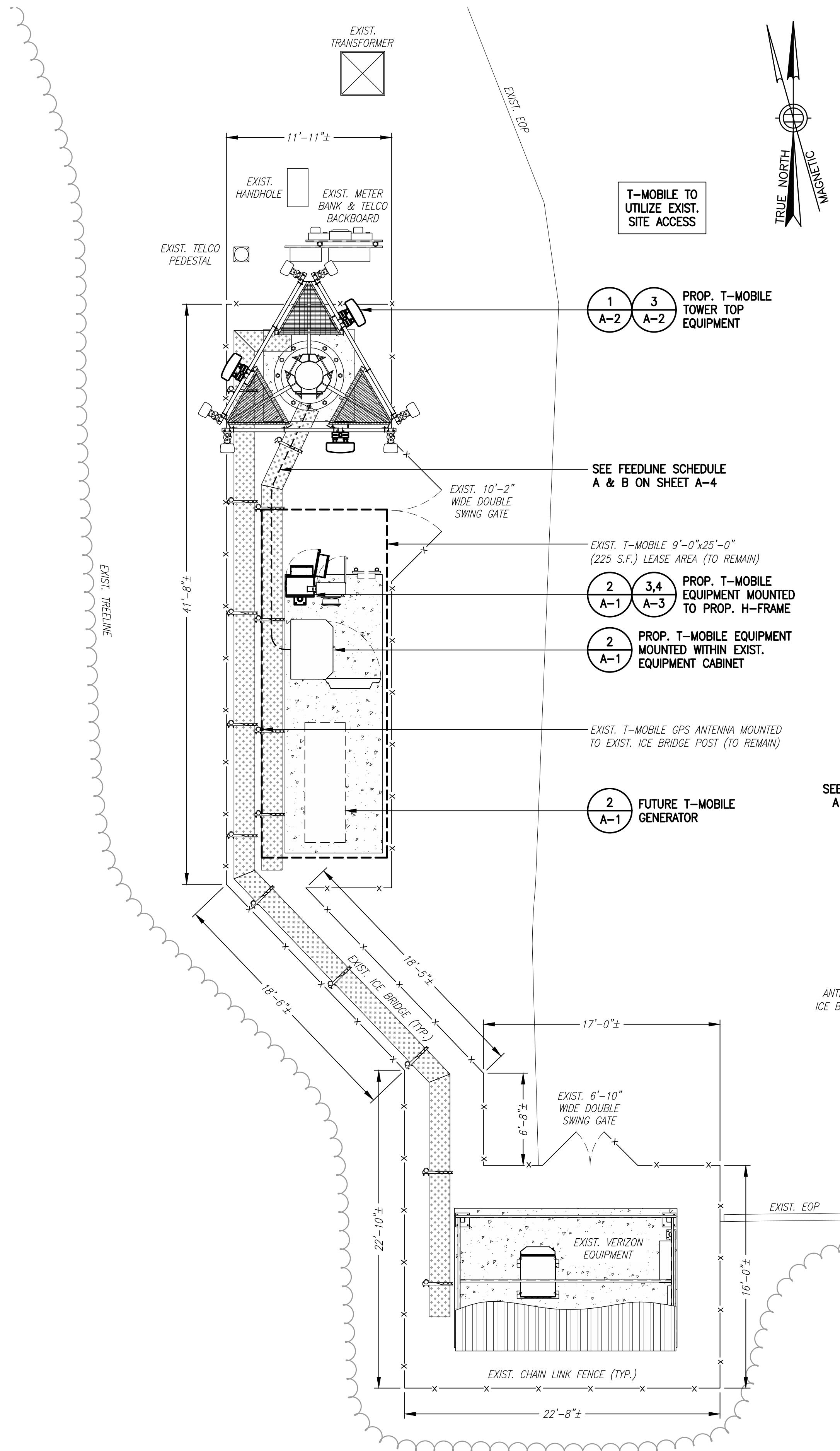
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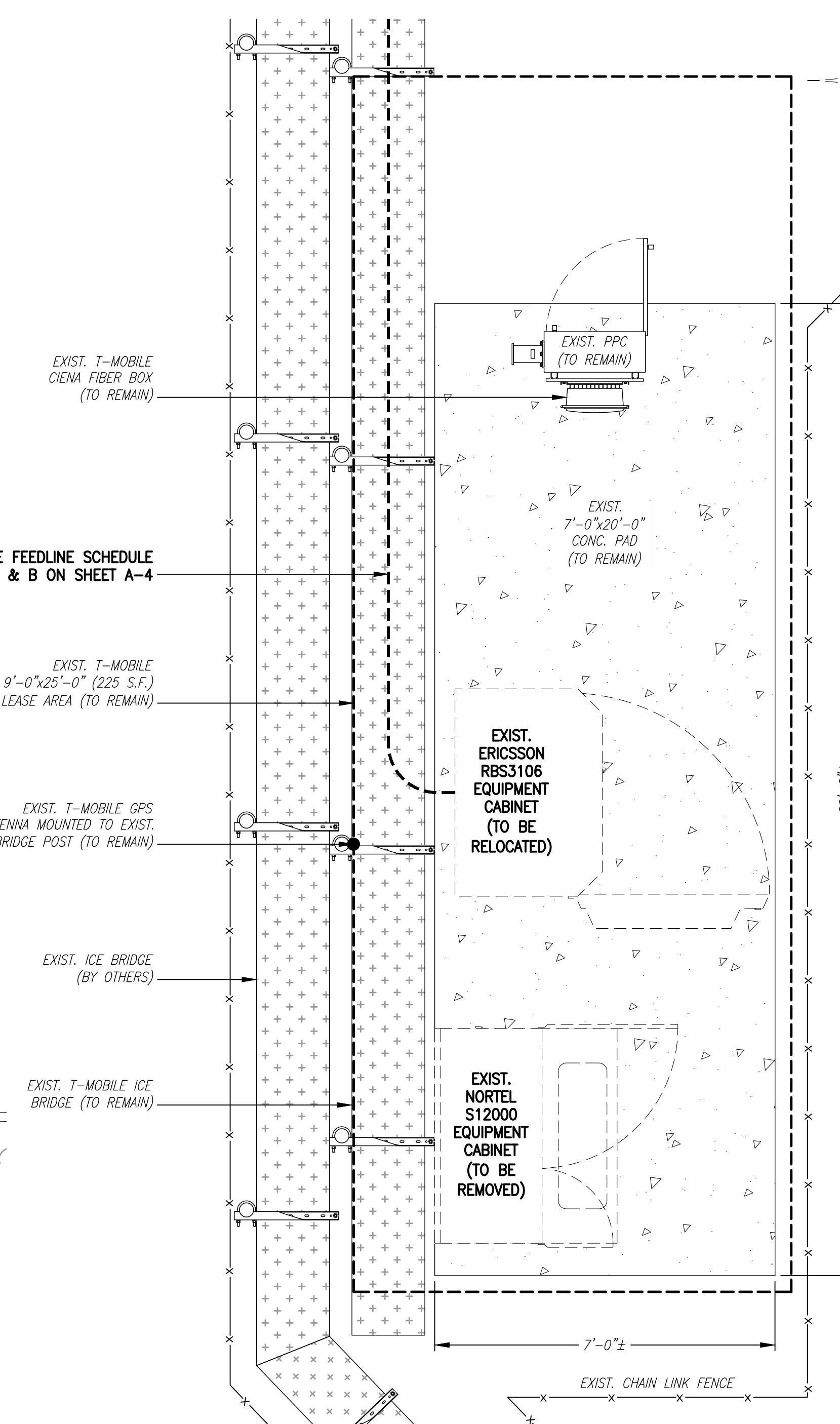
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SHEET TITLE
COMPOUND & EQUIPMENT PLAN

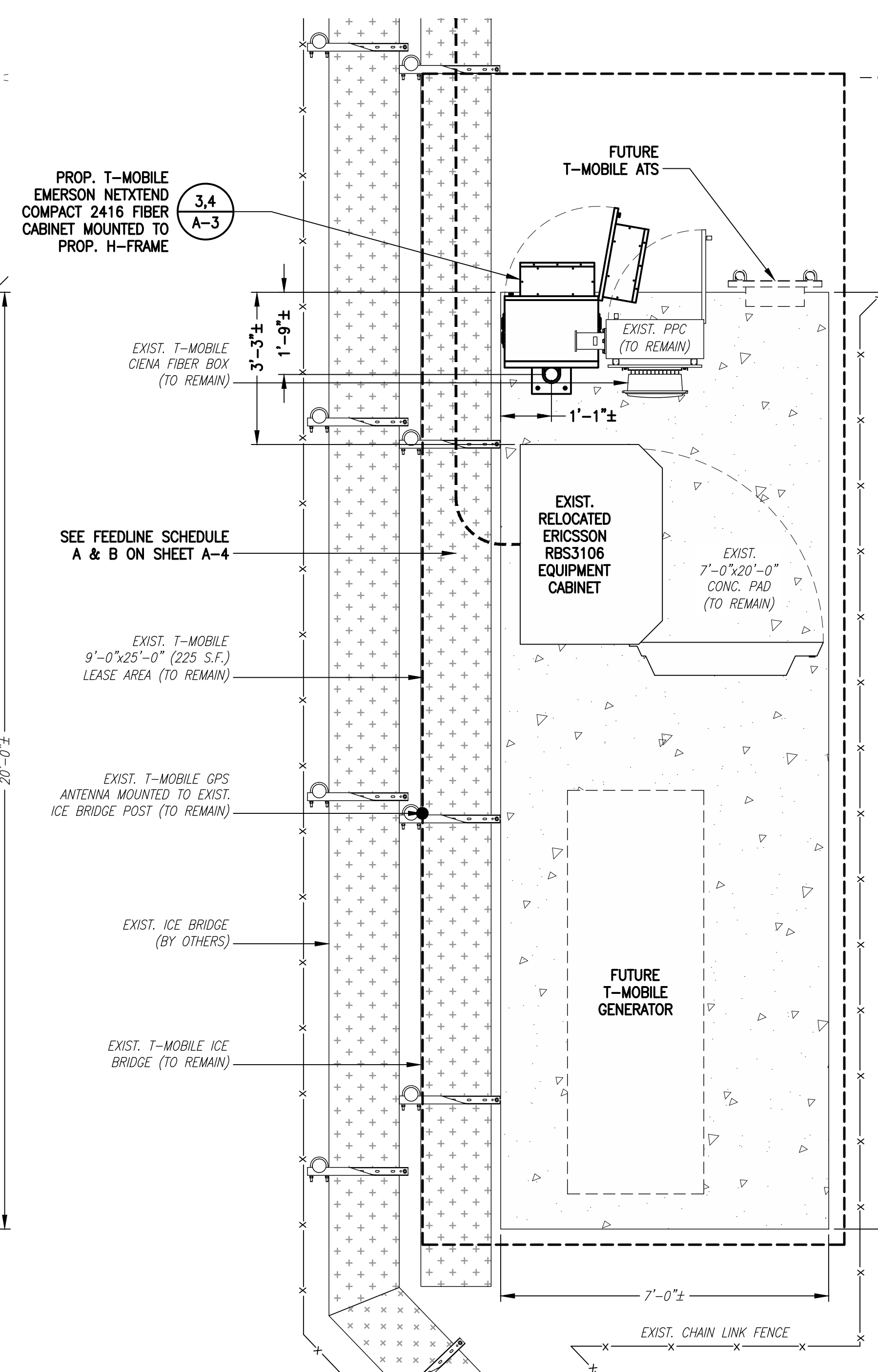
SHEET NUMBER
A-1



COMPOUND PLAN (1/A-1)
 SCALE: 3/16" = 1'-0"
 0 2'-0" 4'-0" 8'-0" 16'-0"



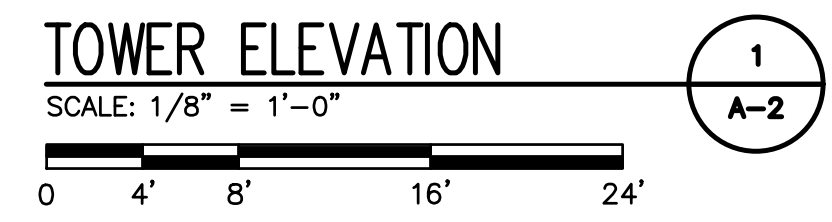
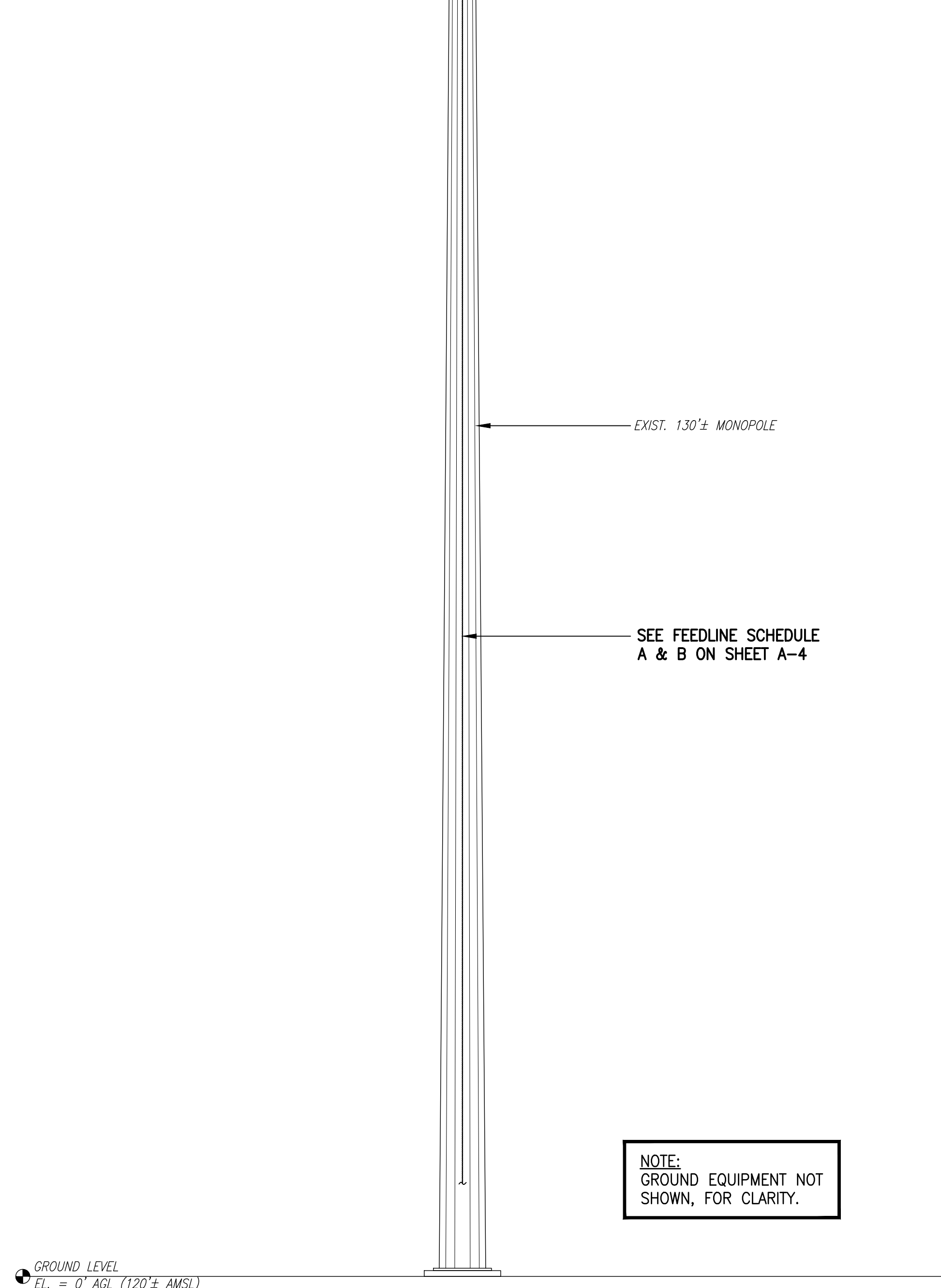
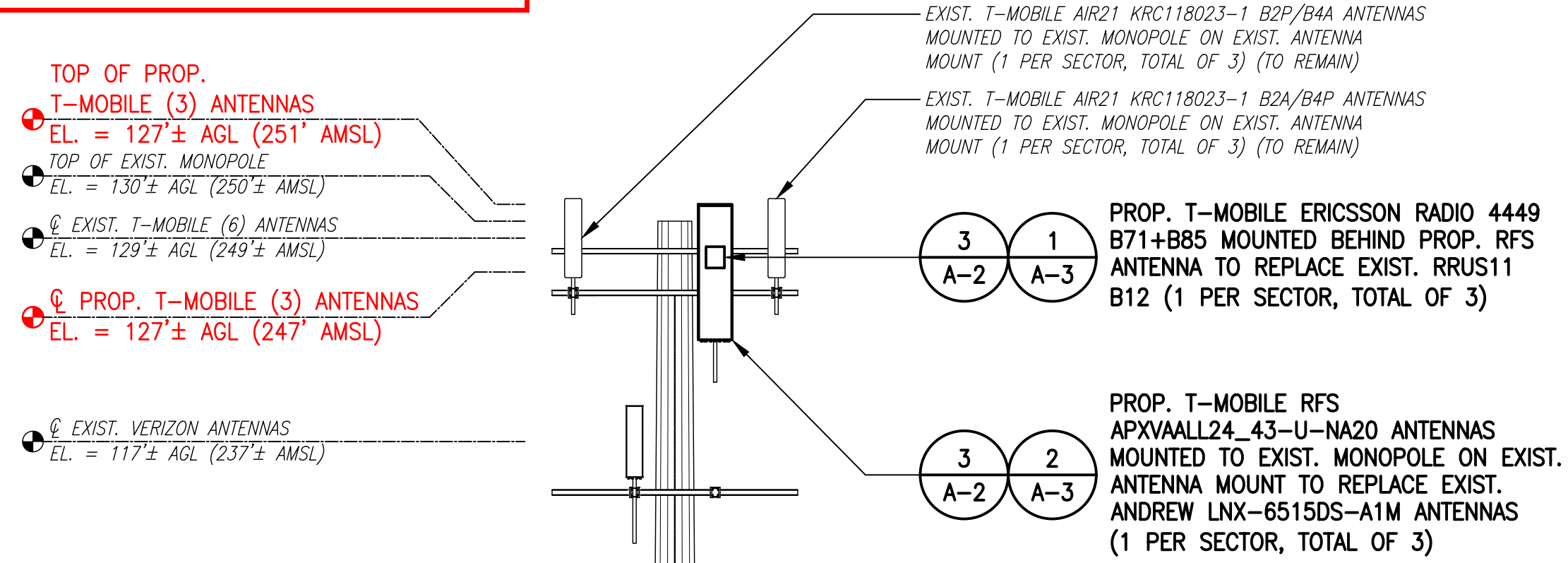
EXISTING EQUIPMENT PLAN (2/A-1)
 SCALE: 1/2" = 1'-0"
 0 2'-0" 4'-0" 6'-0"



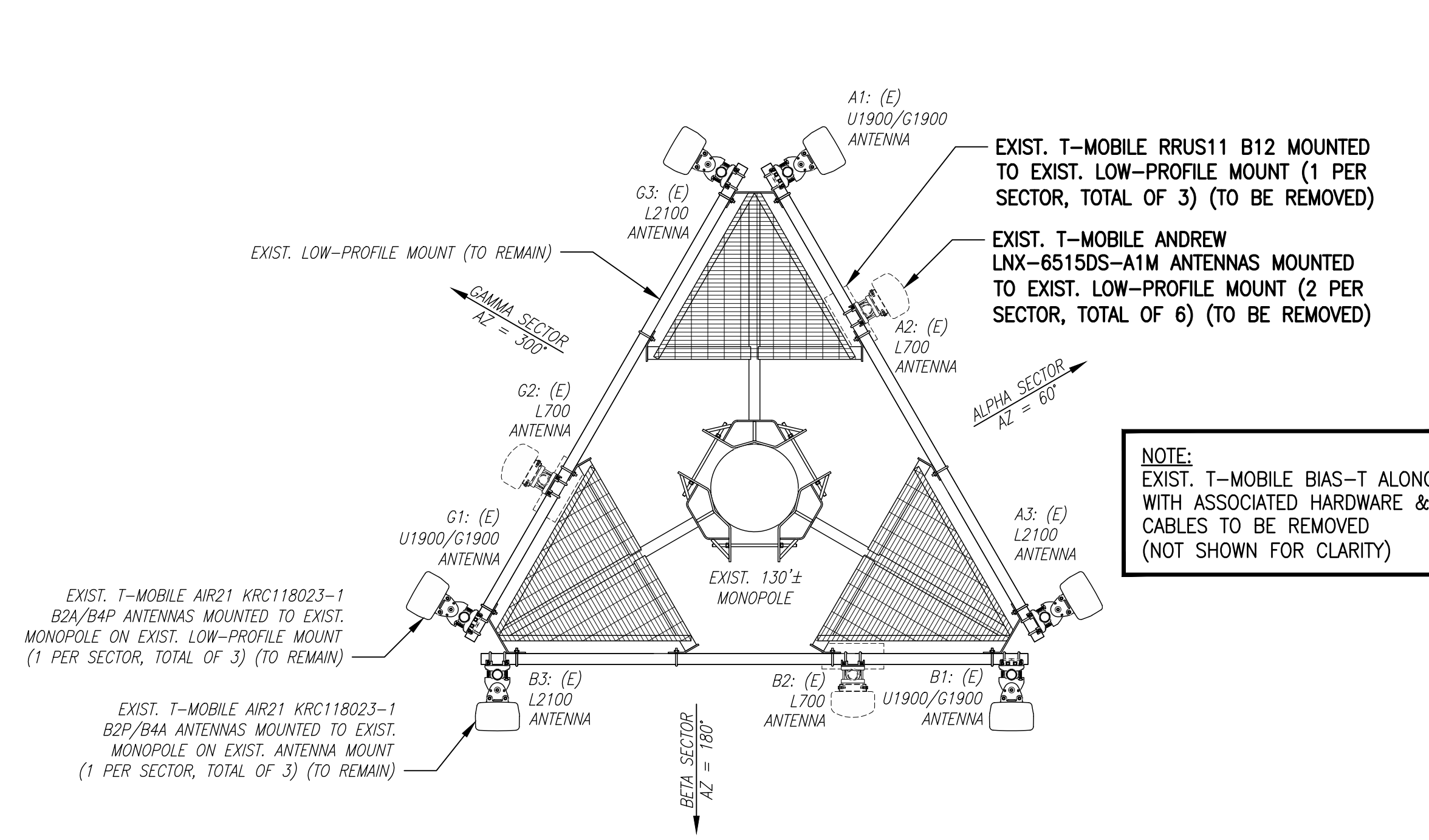
PROPOSED EQUIPMENT PLAN (3/A-1)
 SCALE: 1/2" = 1'-0"
 0 2'-0" 4'-0" 6'-0"

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).

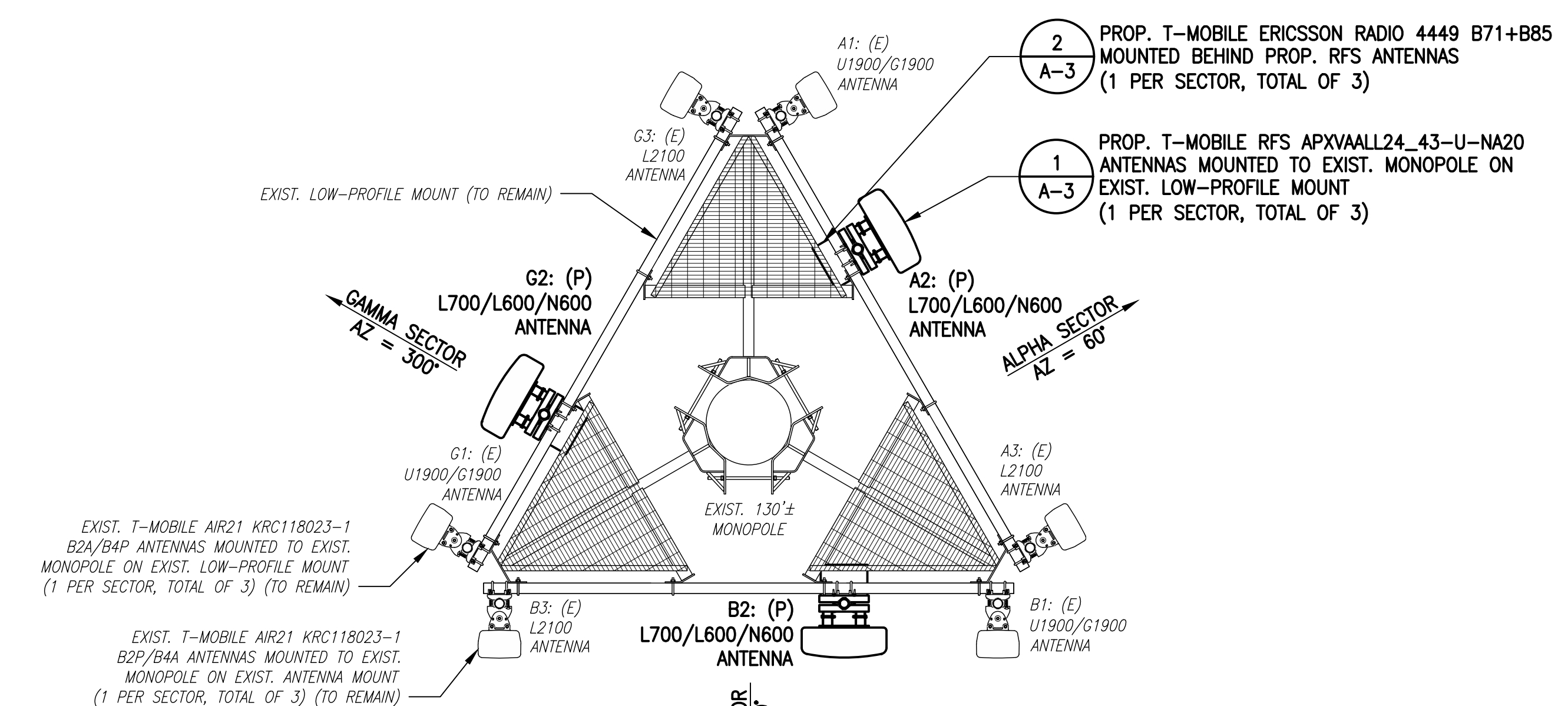
RAD CENTER NOTE:
 T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.



SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
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EXISTING ANTENNA PLAN
 SCALE: 3/8" = 1'-0"



PROPOSED ANTENNA PLAN
 SCALE: 3/8" = 1'-0"

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

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

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CHAPPELL ENGINEERING ASSOCIATES, LLC
 Civil Structural-Land Surveying
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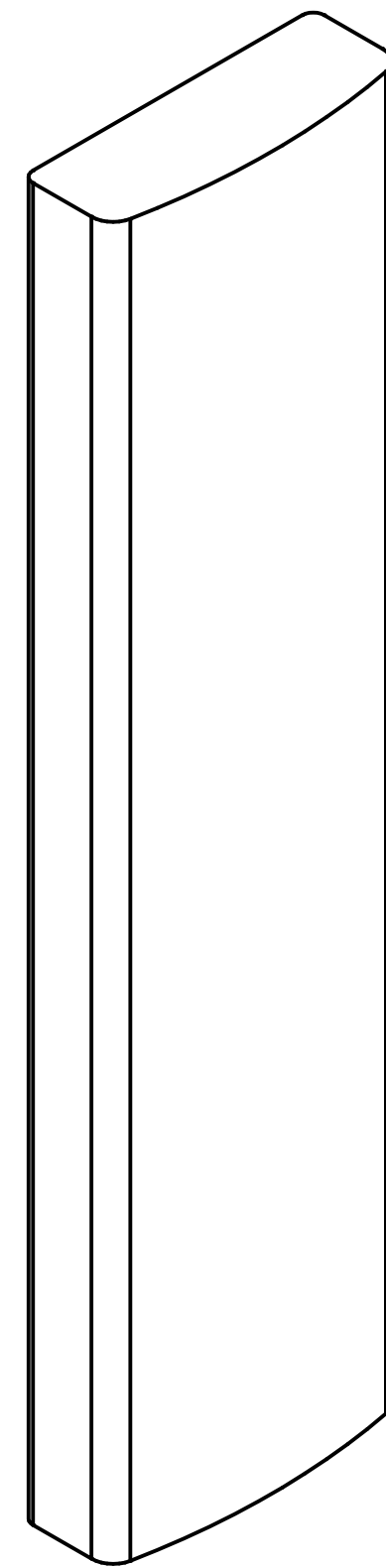
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SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2



RFS APXVAALL24-43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.5"D
 WEIGHT: 122.8 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAIL 1
A-3
 SCALE: N.T.S.



ERICSSON RADIO 4449 B71+B85

DIMENSIONS: 17.9"H x 13.1"W x 10.6"D
 WEIGHT: 75.0 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

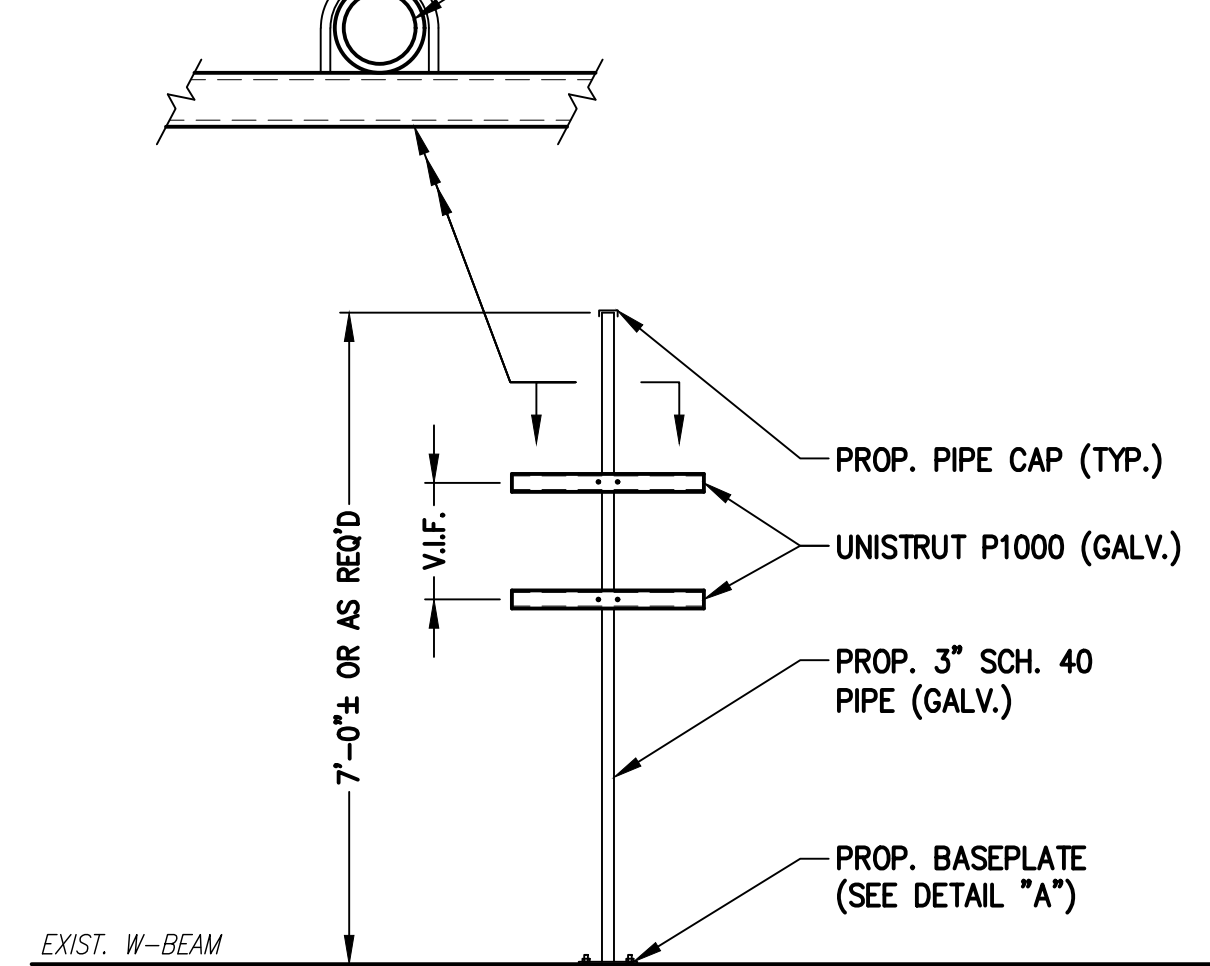


EMERSON NETXTEND COMPACT 2416 FIBER CABINET

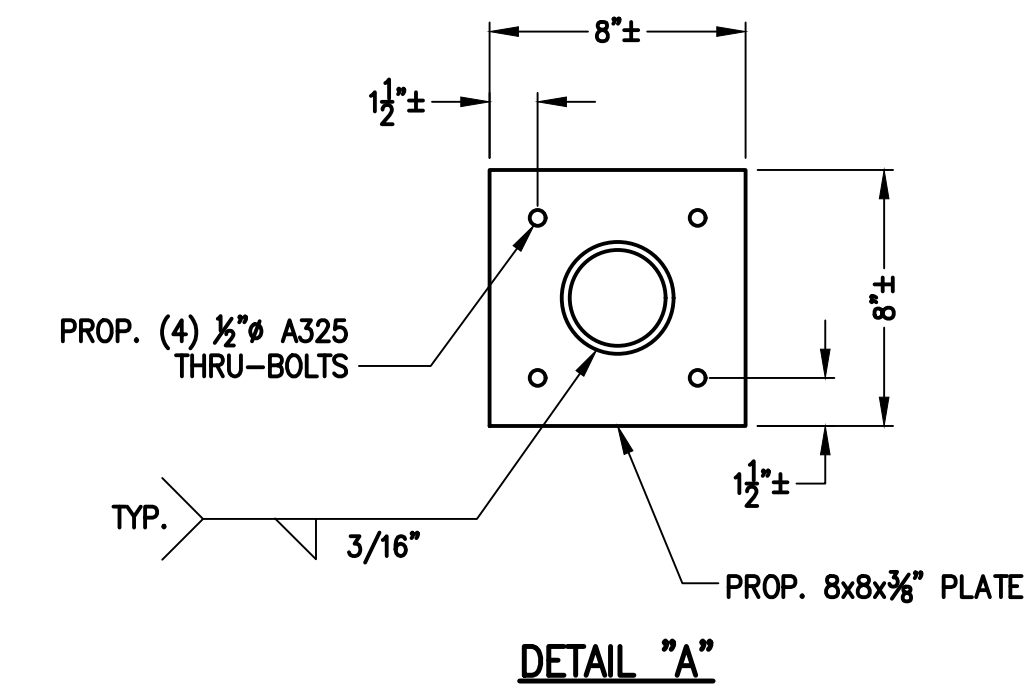
DIMENSIONS: 24.0"H x 24.0"W x 25.2"D
 WEIGHT: 64 lbs
 QUANTITY: TOTAL OF 1

SSC DETAILS 3
A-3
 SCALE: N.T.S.

PROP. 1/2" U-BOLT (TYP.) PROP. 3" SCH. 40 PIPE (GALV.)



H-FRAME DETAIL 4
A-3
 SCALE: N.T.S.

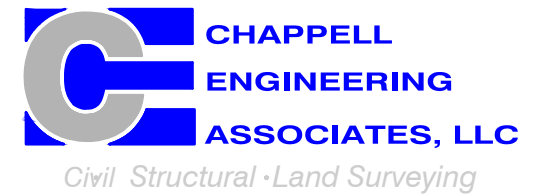


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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

FINAL ANTENNA CONFIGURATION								
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 ERICSSON AIR21 KRC118023-1 B2A/B4P	129'± AGL	60°	0°	2'	U1900/G1900	-	PROP. (3) 2" (6x24) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	127'± AGL	60°	0°	2'	L700/L600/N600	ERICSSON RADIO 4449 B71+BB5	
	A3 ERICSSON AIR21 KRC118023-1 B2P/B4A	129'± AGL	60°	0°	-	L2100	-	
BETA	B1 ERICSSON AIR21 KRC118023-1 B2A/B4P	129'± AGL	180°	0°	2'	U1900/G1900	-	
	B2 RFS APXVAALL24_43-U-NA20	127'± AGL	180°	0°	2'	L700/L600/N600	ERICSSON RADIO 4449 B71+BB5	
	B3 ERICSSON AIR21 KRC118023-1 B2P/B4A	129'± AGL	180°	0°	-	L2100	-	
GAMMA	G1 ERICSSON AIR21 KRC118023-1 B2A/B4P	129'± AGL	300°	0°	2'	U1900/G1900	-	
	G2 RFS APXVAALL24_43-U-NA20	127'± AGL	300°	0°	2'	L700/L600/N600	ERICSSON RADIO 4449 B71+BB5	
	G3 ERICSSON AIR21 KRC118023-1 B2P/B4A	129'± AGL	300°	0°	-	L2100	-	

CABLE NOTE: EXISTING (6) 1-5/8" COAX CABLES & (1) 1-1/4" (9x18) HCS FIBER CABLE TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV3 - 02/09/21

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAX FOR GPS ANTENNA EXISTING TO BE REMOVED: (6) 1-5/8" COAX CABLES (1) 1-1/4" (9x18) HCS FIBER CABLE	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 2" (6x24) HCS FIBER CABLES	

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

T-MOBILE NORTHEAST LLC

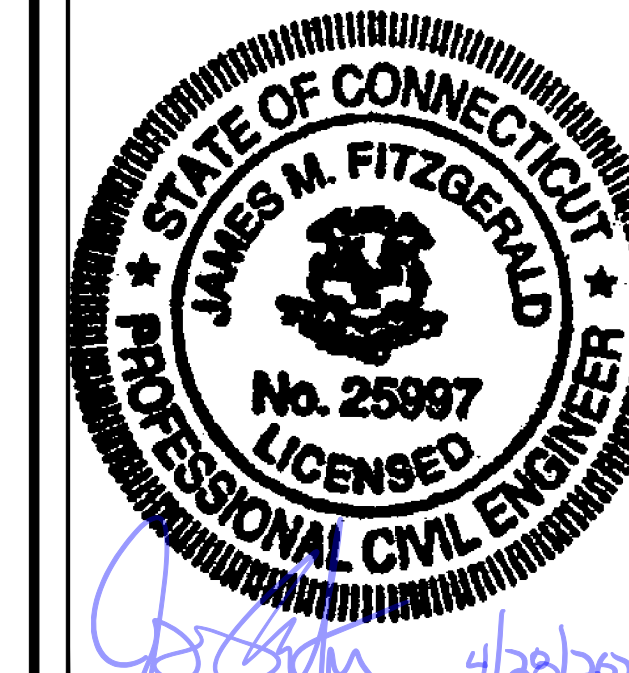
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SHEET TITLE
**ANTENNA &
FEEDLINE CHARTS**

SHEET NUMBER

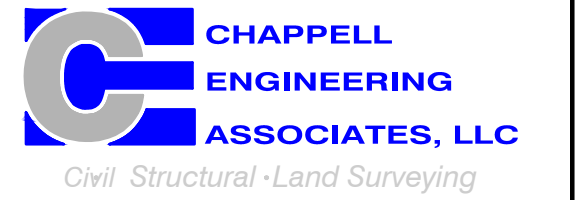
A-4

T-MOBILE
NORTHEAST LLC

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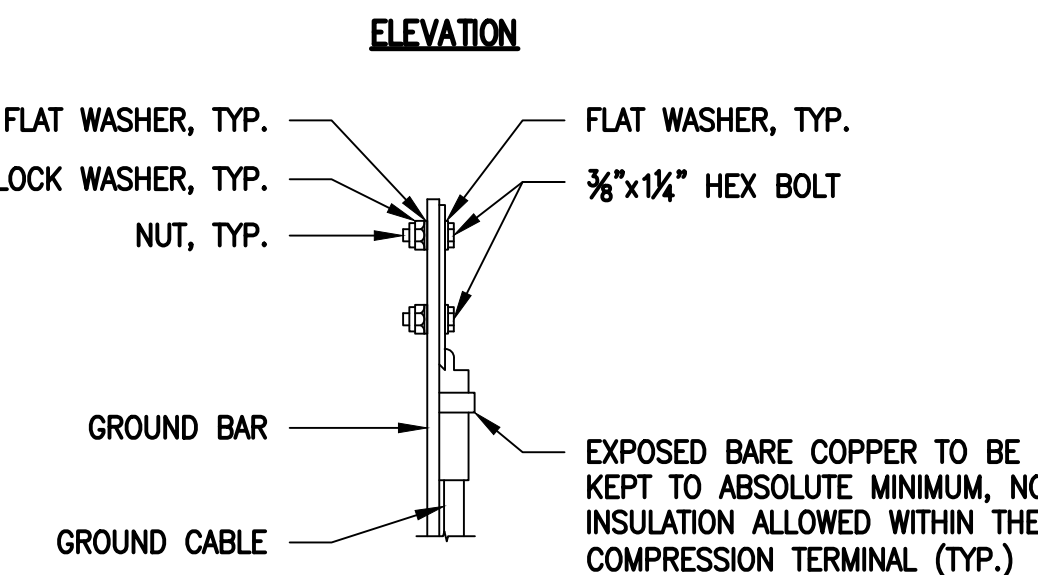
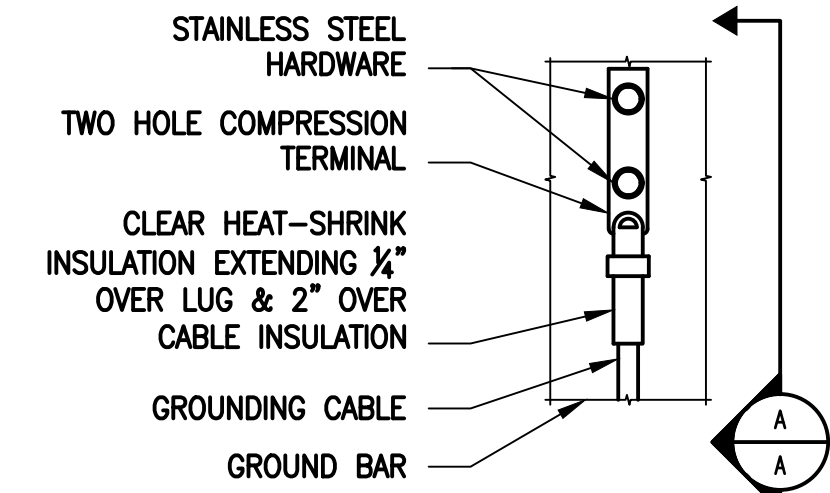
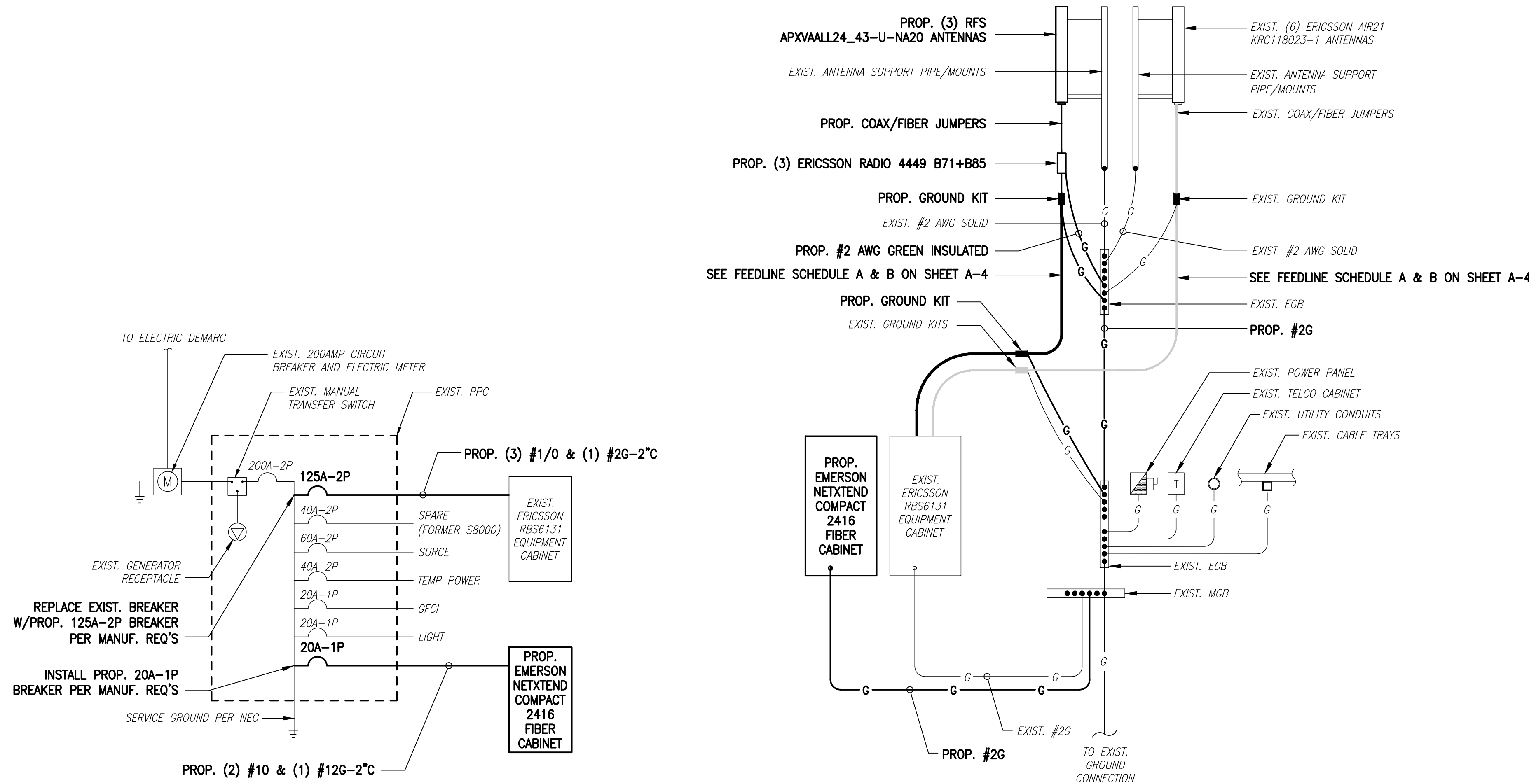
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SHEET TITLE

**ELECTRIC & GROUNDING
DETAILS**

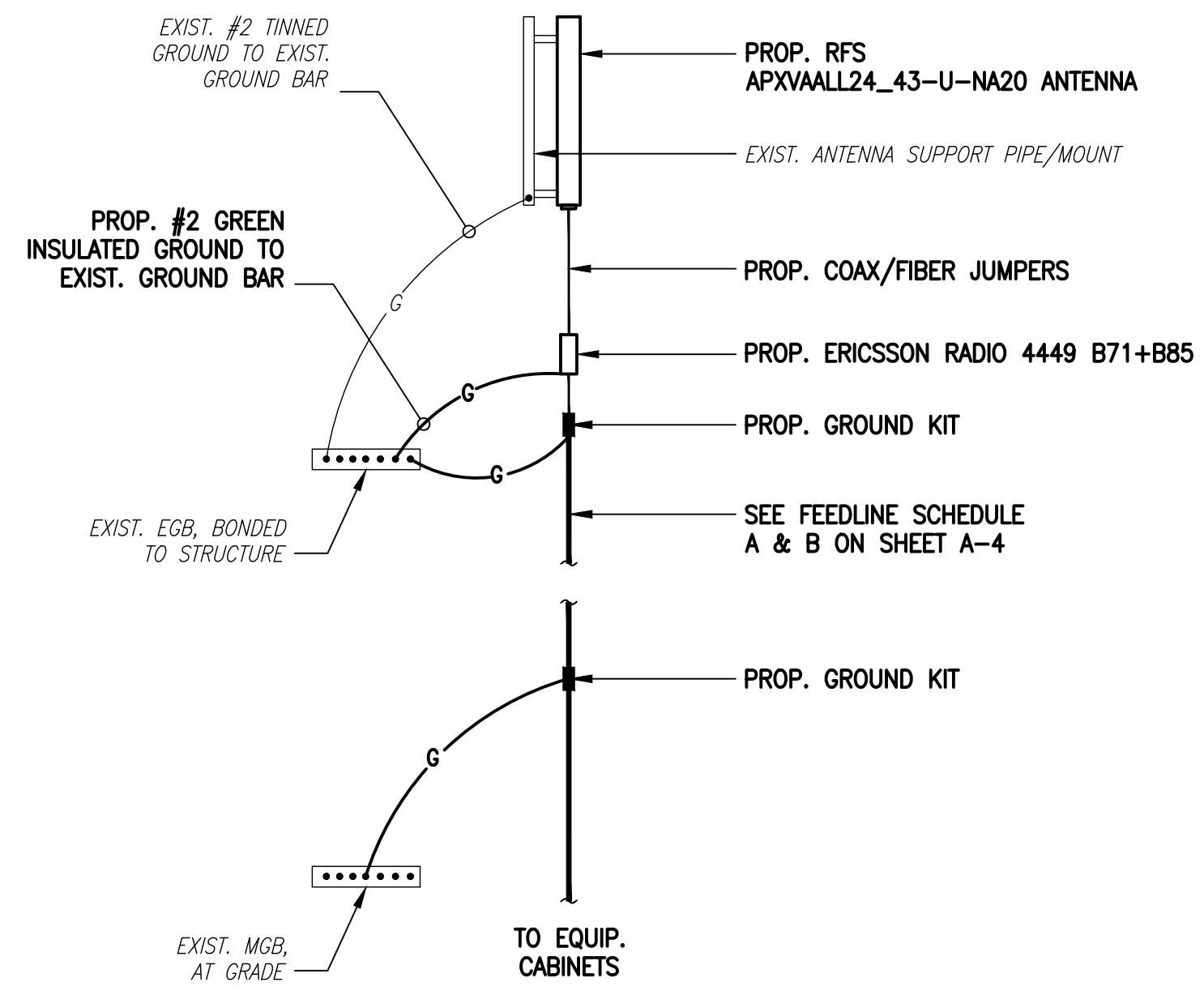
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E-1

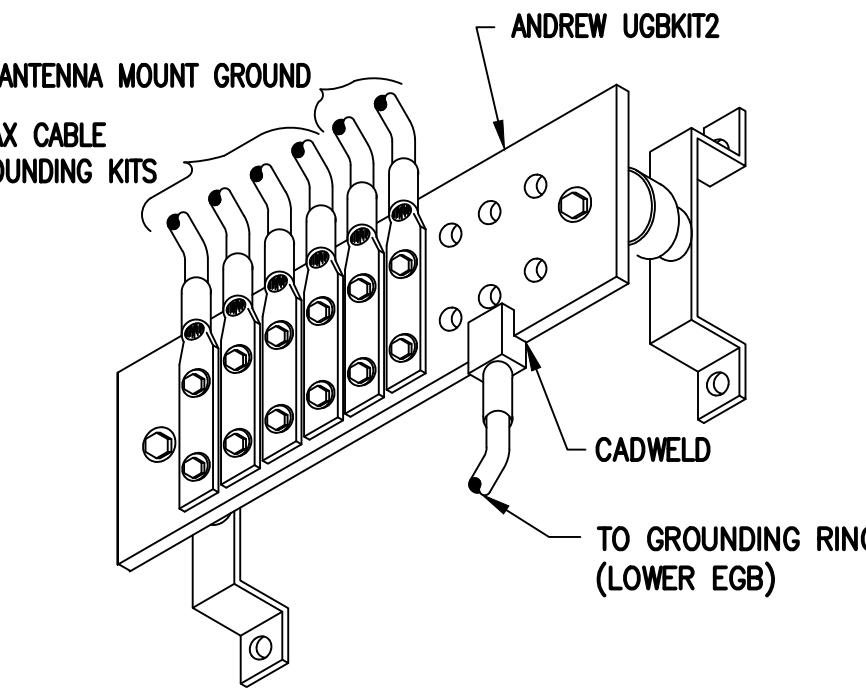
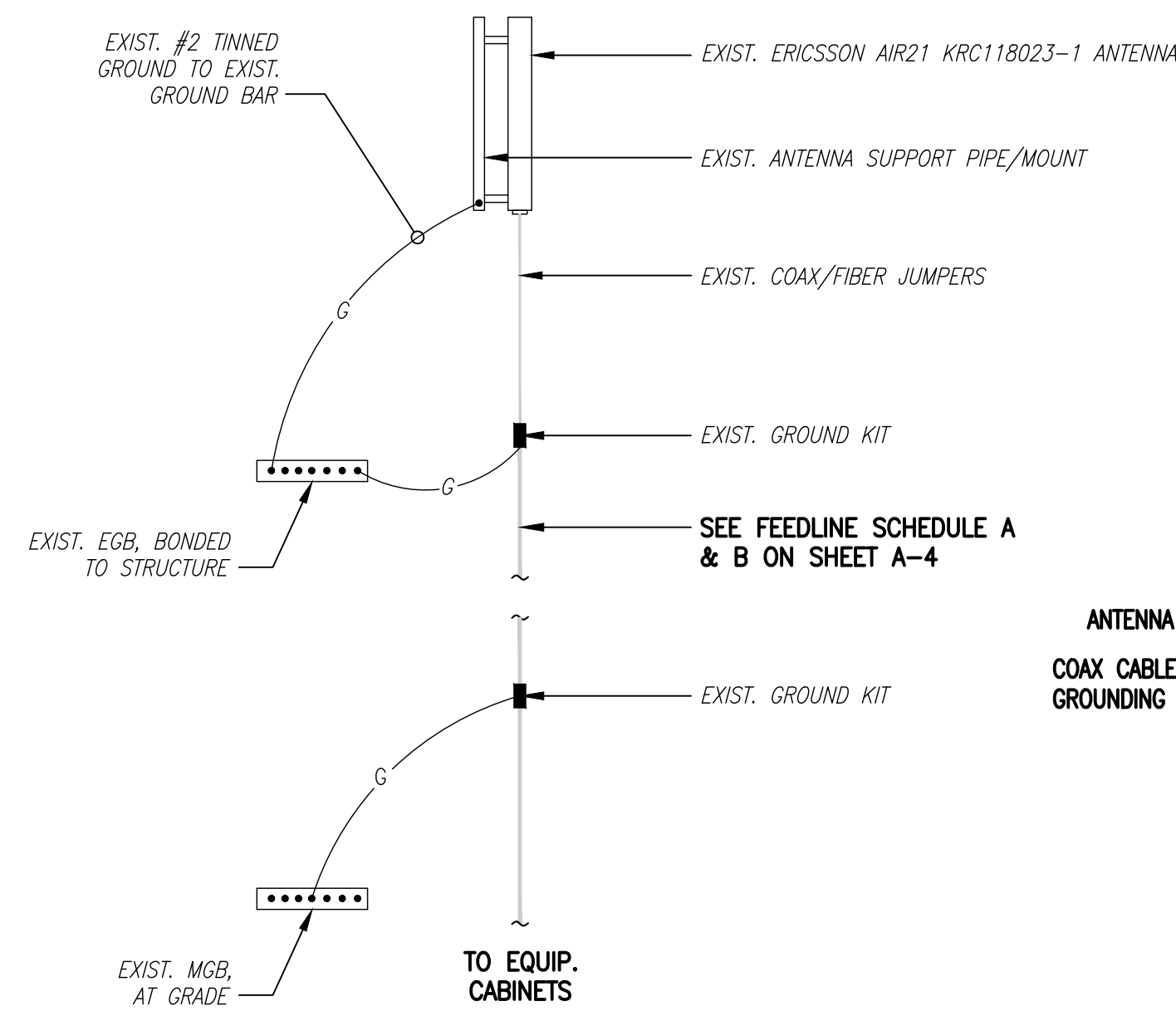


- NOTES:**
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

**TYPICAL GROUND BAR
CONNECTIONS DETAIL**
SCALE: NOT TO SCALE



**COAX CABLE CONNECTION
AND GROUNDING DETAIL**
SCALE: NOT TO SCALE



GROUND BAR (EGB)
SCALE: NOT TO SCALE

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 130 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT11561-A

Customer Site Name: Groton 2, CT

Carrier Name: T-Mobile (App#: 116835, v3)

Carrier Site ID / Name: CTNL053A / Groton

Site Location: 237 Sandy Hollow Road

Groton, Connecticut

New London County

Latitude: 41.369510

Longitude: -71.982463

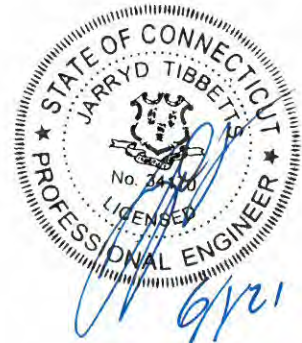
Analysis Result:

Max Structural Usage: 52.5% [Pass]

Max Foundation Usage: 31.8% [Pass]

Additional Usage Caused by Mount Modification: +3.8%

Report Prepared By: Walter Velez



Introduction

The purpose of this report is to summarize the analysis results on the 130 ft Nudd Corporation 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	Original shaft section data prepared by Fred. A. Nudd Corp. Dated 05-09-2008. Drawing No 208-13077-1. Previous structural report prepared by Tower Engineering Solutions. Dated 09-29-2015. TES Project No 17801.
Foundation Drawing	Original foundation drawings prepared by Fred. A. Nudd Corp. Dated 05-09-2008. Drawing No 208-13077-1.
Geotechnical Report	Geotechnical report prepared by FDH Engineering, Inc. Dated 03-26-2014. Project No 1424W71600.
Modification Drawings	N/A
Mount Analysis	Antenna mount analysis report prepared by Tower Engineering Solutions. Dated 05-19-2021. TES Project No 106968.

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 $V_{ult} = 135.0$ mph (3-Sec. Gust)
(Based on IBC 2015)	Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2, 2015 IBC & 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.160$, $S_1 = 0.058$

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	129.0	3	Ericsson Air21 B2A/B4P - Panel	Low Profile Platform	(12) 1 5/8"; (1) 1 5/8" Fiber	T-Mobile
2		3	Ericsson Air21 B4A/B2P - Panel			
3		6	Ericsson KRY 112 144/1 TMAs			
4		3	Ericsson S11B12 RRUs			
5	127.0	3	Commscope LNX-6515DS-A1M - Panel	Low Profile Platform (Valmont RMQP)	(2) 1 5/8" Fiber	Verizon
6	117.0	4	Commscope HBX-6513DS-A1M - Panel			
7		2	ALU RRH 2x60 AWS			
8		2	ALU RRH 2x60 PCS			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
9	127.0	3	Ericsson Air 21 B2A/B4P - Panel	Platform w/ Hand Rails	(9) 1 5/8" Coax; (3) 1.9" Fiber	T-Mobile
10		3	Ericsson Air 21 B4A/B2P - Panel			
11		3	RFS APXVAALL24_43-U-NA20 - Panel			
12		3	Ericsson KRY 112 144/1 TMAs			
13		3	Ericsson 4449 B71 + B85 RRU's			

All transmission lines are considered running inside of the pole shaft. Please 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	Flange Connection
Max. Usage:	41.4%	36.8%	21.3%	52.5%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	2188.8	22.7	27.8
Analysis Reactions	1528.8	16.9	27.4
Factored Reactions*	2954.9	30.6	37.5

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.6077 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA-222-G standards, the 2015 IBC and the 2018 Connecticut State Building Code under the design basic wind speed 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 41.44% at 90.0ft

Structure: CT11561-A-SBA
Site Name: Groton 2, CT
Height: 130.00 (ft)
Base Elev: 0.000 (ft)

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

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Page: 1

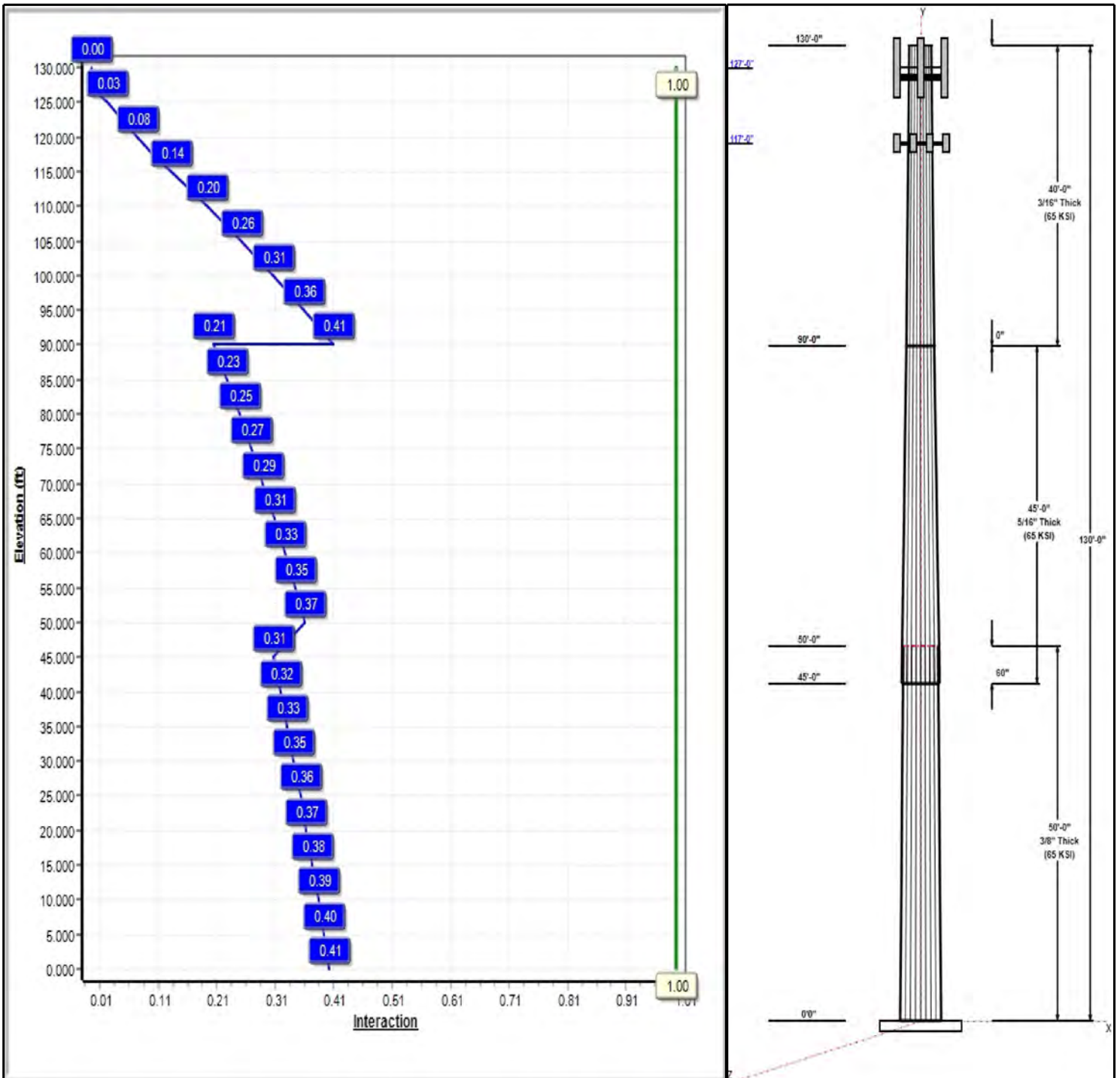
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 22

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Structure: CT11561-A-SBA

Type: Tapered
Site Name: Groton 2, CT
Height: 130.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18942

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	50.00	38.53	48.00	0.375		0.18942	65
2	45.00	31.58	40.10	0.313	Slip	0.18942	65
3	40.00	24.00	31.58	0.188	Butt	0.18942	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
127.00	127.00	3	Ericsson Air 21 B2A/B4P	T-Mobile
127.00	127.00	3	Ericsson Air 21 B4A/B2P	T-Mobile
127.00	127.00	3	RFS	T-Mobile
127.00	127.00	3	Ericsson KRY 112 144/1	T-Mobile
127.00	127.00	3	Ericsson 4449 B71 + B85	T-Mobile
127.00	127.00	1	Platform w/ Hand Rails	T-Mobile
117.00	117.00	1	Low Profile Platform	Verizon
117.00	117.00	4	Commscope	Verizon
117.00	117.00	2	ALU RRH 2x60 PCS	Verizon
117.00	117.00	2	ALU RRH 2x60 AWS	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	127.00	Inside	1 5/8" Coax	T-Mobile
3.00	127.00	Inside	1.9" Fiber	T-Mobile
3.00	117.00	Inside	1 5/8" Fiber	Verizon

Anchor Bolts

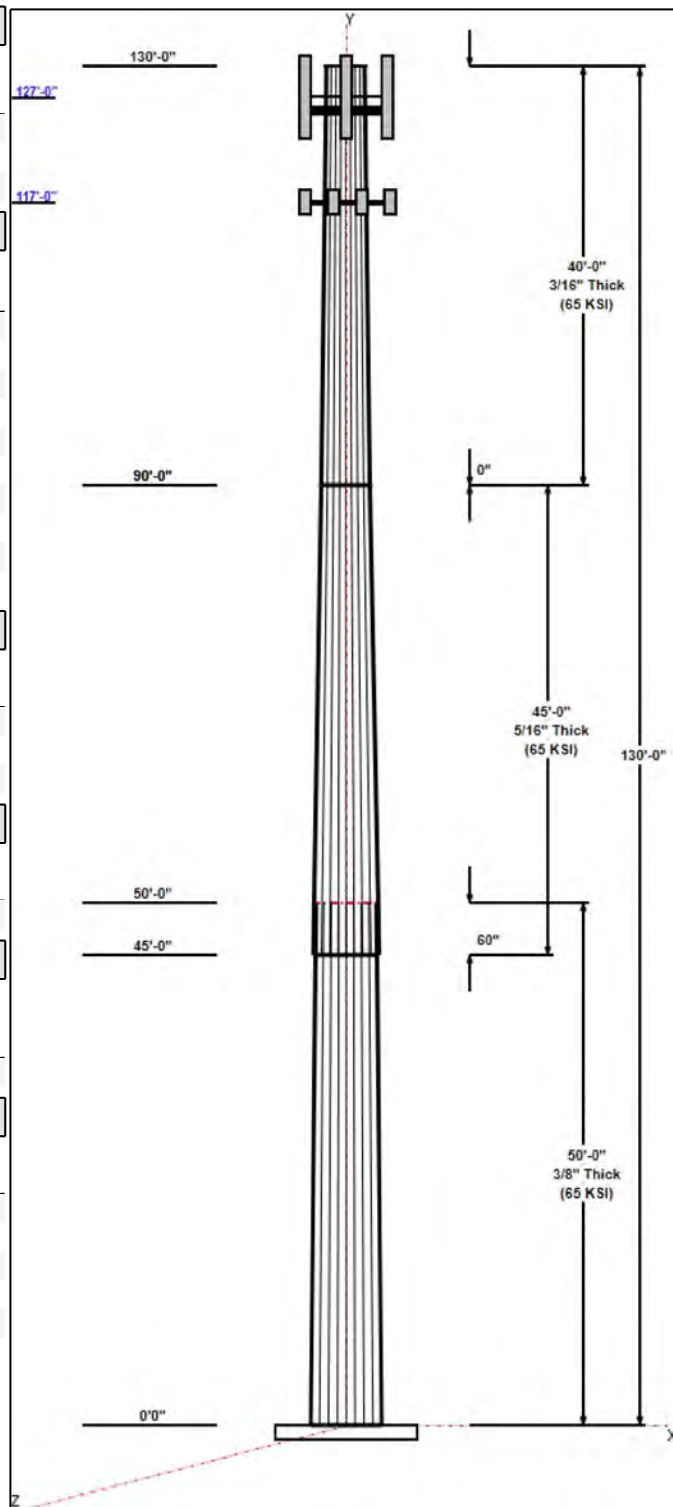
Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" A193 B7	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	60.0	50.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	1528.8	16.9	27.4
0.9D + 1.6W 105 mph Wind	1518.6	16.9	20.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	370.9	4.2	42.1
1.2D + 1.0E	95.1	0.9	27.4
0.9D + 1.0E	94.4	0.9	20.5
1.0D + 1.0W 60 mph Wind	310.6	3.4	22.8

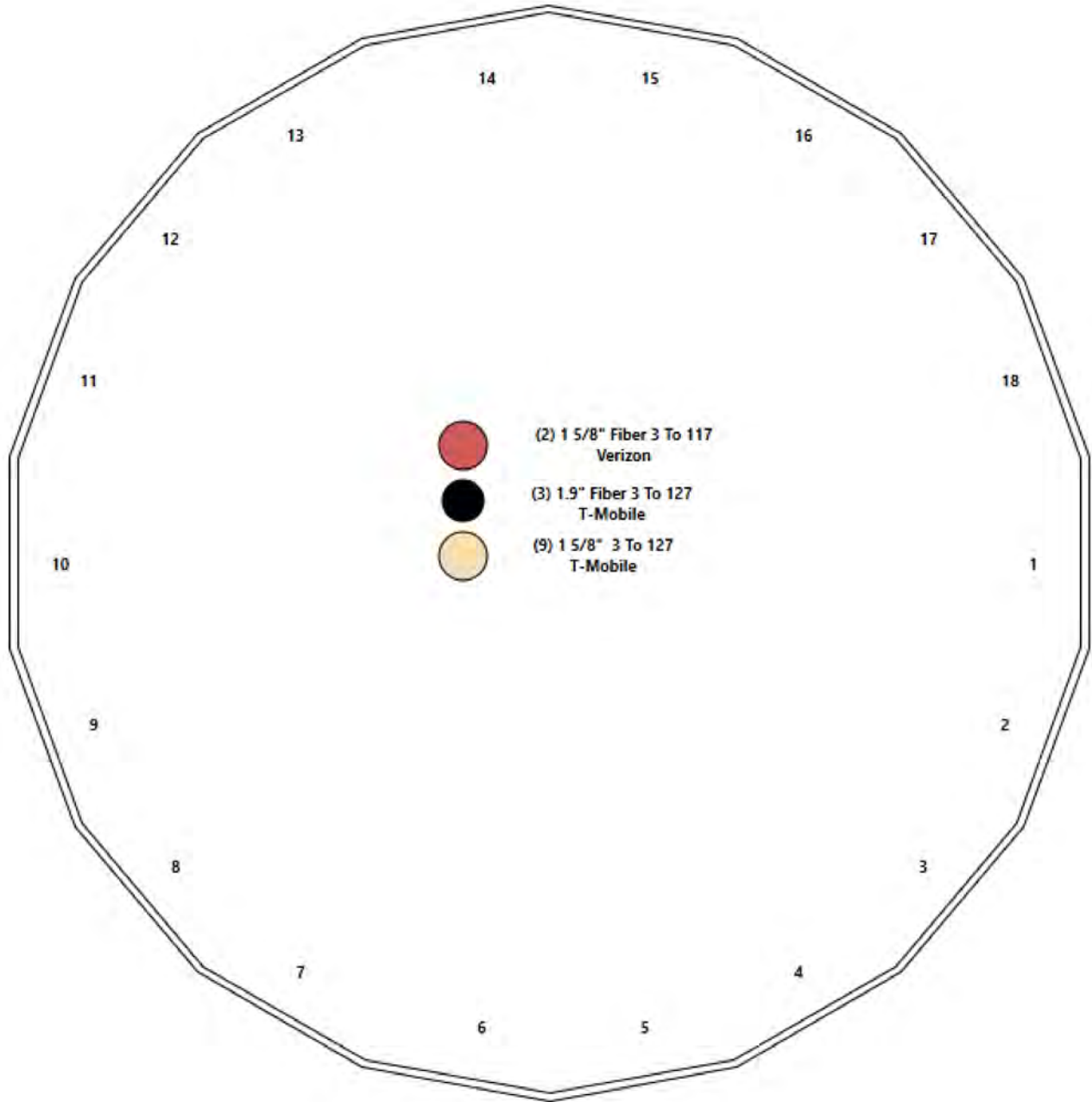


Structure: CT11561-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Groton 2, CT
Height: 130.00 (ft)

6/1/2021

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Shaft Properties

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	50.000	0.3750	65		0.00	8,685
2	18	45.000	0.3125	65	Slip	60.00	5,396
3	18	40.000	0.1875	65	Flange	0.00	2,236
Total Shaft Weight:							16,316

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	48.00	0.00	56.68	16243.54	21.16	128.00	38.53	50.00	45.41	8352.00	16.71	102.7	0.189423
2	40.10	45.00	39.46	7893.43	21.22	128.32	31.58	90.00	31.01	3829.53	16.41	101.0	0.189423
3	31.58	90.00	18.68	2325.39	28.28	168.41	24.00	130.00	14.17	1015.22	21.16	128.0	0.189423

Load Summary

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	127.00	Ericsson Air 21 B2A/B4P	3	91.50	6.04	0.85	255.27	7.109	0.85	0.00	0.00
2	127.00	Ericsson Air 21 B4A/B2P	3	90.30	6.04	0.85	254.07	7.109	0.85	0.00	0.00
3	127.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.72	542.58	22.108	0.72	0.00	0.00
4	127.00	Ericsson KRY 112 144/1 TMAs	3	11.00	0.35	0.60	21.60	0.749	0.60	0.00	0.00
5	127.00	Ericsson 4449 B71 + B85 RRU's	3	75.00	1.95	0.67	154.84	2.529	0.67	0.00	0.00
6	127.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4059.69	60.597	1.00	0.00	0.00
7	117.00	Low Profile Platform (Valmont	1	1500.00	22.00	1.00	2776.79	39.228	1.00	0.00	0.00
8	117.00	Commscope HBX-6513DS-A1M	4	5.70	1.58	0.80	41.91	2.634	0.80	0.00	0.00
9	117.00	ALU RRH 2x60 PCS	2	55.00	1.83	0.67	118.77	2.403	0.67	0.00	0.00
10	117.00	ALU RRH 2x60 AWS	2	60.00	1.83	0.67	145.15	2.232	0.67	0.00	0.00
Totals:			25	4,924.60			11,217.01				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	127.00	(9) 1 5/8" Coax	0.00	Inside
3.00	127.00	(3) 1.9" Fiber	0.00	Inside
3.00	117.00	(2) 1 5/8" Fiber	0.00	Inside

Shaft Section Properties

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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		0.3750	48.000	56.684	16243.5	21.16	128.00	76.5	666.5	0.0
5.00		0.3750	47.053	55.556	15293.6	20.71	125.47	77.0	640.2	954.8
10.00		0.3750	46.106	54.429	14381.4	20.27	122.95	77.6	614.4	935.6
15.00		0.3750	45.159	53.302	13506.2	19.82	120.42	78.1	589.1	916.5
20.00		0.3750	44.212	52.175	12667.3	19.38	117.90	78.6	564.3	897.3
25.00		0.3750	43.264	51.047	11863.9	18.93	115.37	79.1	540.1	878.1
30.00		0.3750	42.317	49.920	11095.1	18.49	112.85	79.7	516.4	858.9
35.00		0.3750	41.370	48.793	10360.3	18.04	110.32	80.2	493.3	839.7
40.00		0.3750	40.423	47.666	9658.7	17.60	107.79	80.7	470.6	820.6
45.00	Bot - Section 2	0.3750	39.476	46.538	8989.5	17.15	105.27	81.2	448.5	801.4
50.00	Top - Section 1	0.3125	39.154	38.524	7343.1	20.68	125.29	0.0	0.0	1445.6
55.00		0.3125	38.207	37.585	6818.9	20.15	122.26	77.7	351.5	647.5
60.00		0.3125	37.260	36.646	6320.3	19.61	119.23	78.3	334.1	631.5
65.00		0.3125	36.312	35.706	5846.6	19.08	116.20	79.0	317.1	615.5
70.00		0.3125	35.365	34.767	5397.2	18.54	113.17	79.6	300.6	599.5
75.00		0.3125	34.418	33.827	4971.4	18.01	110.14	80.2	284.5	583.5
80.00		0.3125	33.471	32.888	4568.6	17.48	107.11	80.8	268.8	567.5
85.00		0.3125	32.524	31.949	4188.2	16.94	104.08	81.5	253.6	551.6
90.00	Top - Section 2	0.3125	31.577	31.009	3829.5	16.41	101.05	82.1	238.9	535.6
90.00	Bot - Section 3	0.1875	31.577	18.680	2325.4	27.34	168.41	68.1	145.0	
95.00		0.1875	30.630	18.116	2121.2	27.39	163.36	69.2	136.4	313.0
100.00		0.1875	29.683	17.553	1929.3	26.50	158.31	70.2	128.0	303.4
105.00		0.1875	28.736	16.989	1749.3	25.61	153.26	71.3	119.9	293.8
110.00		0.1875	27.788	16.425	1581.0	24.72	148.21	72.3	112.1	284.3
115.00		0.1875	26.841	15.862	1423.7	23.83	143.15	73.4	104.5	274.7
117.00		0.1875	26.462	15.636	1363.9	23.47	141.13	73.8	101.5	107.2
120.00		0.1875	25.894	15.298	1277.3	22.94	138.10	74.4	97.2	157.9
125.00		0.1875	24.947	14.735	1141.2	22.05	133.05	75.5	90.1	255.5
127.00		0.1875	24.568	14.509	1089.7	21.69	131.03	75.9	87.4	99.5
130.00		0.1875	24.000	14.171	1015.2	21.16	128.00	76.5	83.3	146.4

16316.4

Wind Loading - Shaft

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Page: 7
	Struct Class: II	

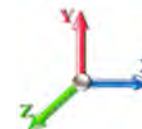


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 22

Dead Load Factor 1.20

Wind Load Factor 1.60



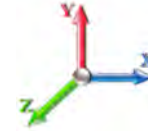
Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	356.82	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	349.78	0.650	0.000	5.00	20.108	13.07	431.8	0.0	1145.8
10.00		1.00	0.70	18.769	20.65	342.74	0.650	0.000	5.00	19.707	12.81	423.2	0.0	1122.8
15.00		1.00	0.70	18.769	20.65	335.70	0.650	0.000	5.00	19.307	12.55	414.5	0.0	1099.8
20.00		1.00	0.70	18.769	20.65	328.66	0.650	0.000	5.00	18.906	12.29	405.9	0.0	1076.7
25.00		1.00	0.70	18.769	20.65	321.62	0.650	0.000	5.00	18.505	12.03	397.3	0.0	1053.7
30.00		1.00	0.70	18.785	20.66	314.71	0.650	0.000	5.00	18.105	11.77	389.1	0.0	1030.7
35.00		1.00	0.73	19.631	21.59	314.51	0.650	0.000	5.00	17.704	11.51	397.6	0.0	1007.7
40.00		1.00	0.76	20.394	22.43	313.23	0.650	0.000	5.00	17.303	11.25	403.7	0.0	984.7
45.00	Bot - Section 2	1.00	0.79	21.092	23.20	311.08	0.650	0.000	5.00	16.902	10.99	407.8	0.0	961.7
50.00	Top - Section 1	1.00	0.81	21.737	23.91	308.22	0.650	0.000	5.00	16.766	10.90	416.9	0.0	1734.8
55.00		1.00	0.83	22.337	24.57	309.84	0.650	0.000	5.00	16.365	10.64	418.2	0.0	776.9
60.00		1.00	0.85	22.899	25.19	305.94	0.650	0.000	5.00	15.965	10.38	418.2	0.0	757.8
65.00		1.00	0.87	23.429	25.77	301.59	0.650	0.000	5.00	15.564	10.12	417.2	0.0	738.6
70.00		1.00	0.89	23.930	26.32	296.85	0.650	0.000	5.00	15.163	9.86	415.1	0.0	719.4
75.00		1.00	0.91	24.406	26.85	291.76	0.650	0.000	5.00	14.763	9.60	412.2	0.0	700.2
80.00		1.00	0.93	24.861	27.35	286.36	0.650	0.000	5.00	14.362	9.34	408.5	0.0	681.1
85.00		1.00	0.94	25.295	27.82	280.68	0.650	0.000	5.00	13.961	9.07	404.0	0.0	661.9
90.00	Top - Section 2	1.00	0.96	25.711	28.28	274.74	0.650	0.000	5.00	13.560	8.81	398.9	0.0	642.7
95.00		1.00	0.97	26.112	28.72	268.56	0.650	0.000	5.00	13.160	8.55	393.1	0.0	375.6
100.00		1.00	0.99	26.497	29.15	262.17	0.650	0.000	5.00	12.759	8.29	386.8	0.0	364.1
105.00		1.00	1.00	26.869	29.56	255.58	0.650	0.000	5.00	12.358	8.03	379.9	0.0	352.6
110.00		1.00	1.02	27.229	29.95	248.81	0.650	0.000	5.00	11.958	7.77	372.5	0.0	341.1
115.00		1.00	1.03	27.577	30.33	241.86	0.650	0.000	5.00	11.557	7.51	364.6	0.0	329.6
117.00	Appurtenance(s)	1.00	1.03	27.713	30.48	239.03	0.650	0.000	2.00	4.511	2.93	143.0	0.0	128.6
120.00		1.00	1.04	27.914	30.71	234.75	0.650	0.000	3.00	6.646	4.32	212.2	0.0	189.5
125.00		1.00	1.05	28.242	31.07	227.48	0.650	0.000	5.00	10.755	6.99	347.5	0.0	306.6
127.00	Appurtenance(s)	1.00	1.06	28.370	31.21	224.54	0.650	0.000	2.00	4.190	2.72	136.0	0.0	119.4
130.00		1.00	1.07	28.560	31.42	220.08	0.650	0.000	3.00	6.165	4.01	201.4	0.0	175.7
Totals:									130.00			10,316.9		19,579.7

Discrete Appurtenance Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021	
Site Name: Groton 2, CT	Exposure: B		
Height: 130.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil		
Gh: 1.1	Topography: 1	Struct Class: II	
		Page: 8	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	127.00	Ericsson Air 21 B2A/B4P	3	28.370	31.207	0.64	0.75	11.55	329.40	0.000	0.000	576.78	0.00	0.00
2	127.00	Ericsson Air 21 B4A/B2P	3	28.370	31.207	0.64	0.75	11.55	325.08	0.000	0.000	576.78	0.00	0.00
3	127.00	RFS	3	28.370	31.207	0.54	0.75	32.79	442.08	0.000	0.000	1637.18	0.00	0.00
4	127.00	Ericsson KRY 112 144/1	3	28.370	31.207	0.45	0.75	0.47	39.60	0.000	0.000	23.59	0.00	0.00
5	127.00	Ericsson 4449 B71 + B85	3	28.370	31.207	0.50	0.75	2.94	270.00	0.000	0.000	146.78	0.00	0.00
6	127.00	Platform w/ Hand Rails	1	28.370	31.207	1.00	1.00	40.00	2400.00	0.000	0.000	1997.25	0.00	0.00
7	117.00	Low Profile Platform	1	27.713	30.484	1.00	1.00	22.00	1800.00	0.000	0.000	1073.04	0.00	0.00
8	117.00	Commscope	4	27.713	30.484	0.80	1.00	5.06	27.36	0.000	0.000	246.61	0.00	0.00
9	117.00	ALU RRH 2x60 PCS	2	27.713	30.484	0.67	1.00	2.45	132.00	0.000	0.000	119.61	0.00	0.00
10	117.00	ALU RRH 2x60 AWS	2	27.713	30.484	0.67	1.00	2.45	144.00	0.000	0.000	119.61	0.00	0.00
Totals:									5,909.52			6,517.22		

Total Applied Force Summary

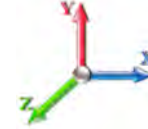
Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

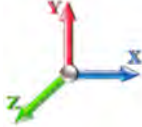
Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.76	1176.84	0.00	0.00
10.00		423.15	1200.41	0.00	0.00
15.00		414.55	1177.39	0.00	0.00
20.00		405.94	1154.38	0.00	0.00
25.00		397.34	1131.36	0.00	0.00
30.00		389.06	1108.35	0.00	0.00
35.00		397.58	1085.33	0.00	0.00
40.00		403.70	1062.32	0.00	0.00
45.00		407.84	1039.30	0.00	0.00
50.00		416.92	1812.42	0.00	0.00
55.00		418.19	854.59	0.00	0.00
60.00		418.22	835.41	0.00	0.00
65.00		417.15	816.23	0.00	0.00
70.00		415.11	797.05	0.00	0.00
75.00		412.18	777.87	0.00	0.00
80.00		408.46	758.69	0.00	0.00
85.00		404.00	739.51	0.00	0.00
90.00		398.86	720.34	0.00	0.00
95.00		393.10	453.27	0.00	0.00
100.00		386.76	441.76	0.00	0.00
105.00		379.87	430.25	0.00	0.00
110.00		372.47	418.75	0.00	0.00
115.00		364.59	407.24	0.00	0.00
117.00	(9) attachments	1701.86	2263.03	0.00	0.00
120.00		212.22	228.57	0.00	0.00
125.00		347.49	371.74	0.00	0.00
127.00	(16) attachments	5094.34	3951.64	0.00	0.00
130.00		201.42	175.66	0.00	0.00
Totals:		16,834.14	27,389.72	0.00	0.00

Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 10

Load Case: 1.2D + 1.6W 105 mph Wind	Iterations 22
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	-27.37	-16.87	0.00	-1528.7	0.00	1528.76	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.407
5.00	-26.16	-16.49	0.00	-1444.4	0.00	1444.43	3851.93	1925.96	7386.73	3698.85	0.07	-0.130	0.000	0.397
10.00	-24.92	-16.12	0.00	-1361.9	0.00	1361.97	3799.43	1899.71	7137.04	3573.82	0.28	-0.261	0.000	0.388
15.00	-23.71	-15.75	0.00	-1281.3	0.00	1281.37	3745.86	1872.93	6889.51	3449.88	0.62	-0.391	0.000	0.378
20.00	-22.52	-15.39	0.00	-1202.6	0.00	1202.60	3691.24	1845.62	6644.27	3327.07	1.10	-0.522	0.000	0.368
25.00	-21.36	-15.03	0.00	-1125.6	0.00	1125.64	3635.55	1817.78	6401.45	3205.48	1.72	-0.653	0.000	0.357
30.00	-20.23	-14.67	0.00	-1050.4	0.00	1050.49	3578.80	1789.40	6161.16	3085.16	2.47	-0.783	0.000	0.346
35.00	-19.11	-14.30	0.00	-977.12	0.00	977.12	3520.99	1760.49	5923.54	2966.17	3.36	-0.913	0.000	0.335
40.00	-18.03	-13.92	0.00	-905.61	0.00	905.61	3462.11	1731.06	5688.70	2848.58	4.39	-1.043	0.000	0.323
45.00	-16.97	-13.53	0.00	-836.00	0.00	836.00	3402.17	1701.09	5456.79	2732.45	5.55	-1.171	0.000	0.311
50.00	-15.13	-13.11	0.00	-768.34	0.00	768.34	2672.34	1336.17	4264.27	2135.31	6.84	-1.298	0.000	0.366
55.00	-14.26	-12.70	0.00	-702.79	0.00	702.79	2628.44	1314.22	4091.13	2048.60	8.27	-1.423	0.000	0.349
60.00	-13.41	-12.30	0.00	-639.27	0.00	639.27	2583.48	1291.74	3919.82	1962.82	9.84	-1.563	0.000	0.331
65.00	-12.57	-11.89	0.00	-577.79	0.00	577.79	2537.45	1268.73	3750.46	1878.02	11.55	-1.700	0.000	0.313
70.00	-11.76	-11.47	0.00	-518.36	0.00	518.36	2490.36	1245.18	3583.19	1794.26	13.40	-1.833	0.000	0.294
75.00	-10.98	-11.06	0.00	-460.99	0.00	460.99	2442.21	1221.10	3418.12	1711.60	15.39	-1.962	0.000	0.274
80.00	-10.21	-10.65	0.00	-405.69	0.00	405.69	2392.99	1196.50	3255.39	1630.11	17.51	-2.086	0.000	0.253
85.00	-9.47	-10.23	0.00	-352.45	0.00	352.45	2342.71	1171.36	3095.11	1549.86	19.76	-2.205	0.000	0.232
90.00	-8.74	-9.82	0.00	-301.28	0.00	301.28	2291.37	1145.69	2937.41	1470.89	22.13	-2.316	0.000	0.209
90.00	-8.74	-9.82	0.00	-301.28	0.00	301.28	1145.45	572.73	1480.17	741.18	22.13	-2.316	0.000	0.414
95.00	-8.29	-9.43	0.00	-252.16	0.00	252.16	1127.97	563.98	1413.34	707.72	24.61	-2.418	0.000	0.364
100.00	-7.84	-9.05	0.00	-205.01	0.00	205.01	1109.42	554.71	1346.59	674.30	27.23	-2.572	0.000	0.311
105.00	-7.41	-8.66	0.00	-159.78	0.00	159.78	1089.82	544.91	1280.05	640.97	30.00	-2.706	0.000	0.256
110.00	-6.99	-8.28	0.00	-116.47	0.00	116.47	1069.15	534.57	1213.84	607.82	32.89	-2.818	0.000	0.198
115.00	-6.60	-7.90	0.00	-75.07	0.00	75.07	1047.42	523.71	1148.08	574.89	35.89	-2.905	0.000	0.137
117.00	-4.42	-6.09	0.00	-59.26	0.00	59.26	1038.42	519.21	1121.94	561.80	37.12	-2.931	0.000	0.110
120.00	-4.20	-5.87	0.00	-40.99	0.00	40.99	1024.62	512.31	1082.91	542.26	38.97	-2.963	0.000	0.080
125.00	-3.84	-5.50	0.00	-11.64	0.00	11.64	1000.76	500.38	1018.44	509.98	42.09	-2.992	0.000	0.027
127.00	-0.16	-0.21	0.00	-0.63	0.00	0.63	990.92	495.46	992.88	497.18	43.34	-2.995	0.000	0.001
130.00	0.00	-0.20	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	45.22	-2.995	0.000	0.000

Wind Loading - Shaft

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Page: 11
	Struct Class: II	

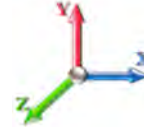


Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 22

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	0.70	18.769	20.65	356.82	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	349.78	0.650	0.000	5.00	20.108	13.07	431.8	0.0	859.3
10.00		1.00	0.70	18.769	20.65	342.74	0.650	0.000	5.00	19.707	12.81	423.2	0.0	842.1
15.00		1.00	0.70	18.769	20.65	335.70	0.650	0.000	5.00	19.307	12.55	414.5	0.0	824.8
20.00		1.00	0.70	18.769	20.65	328.66	0.650	0.000	5.00	18.906	12.29	405.9	0.0	807.6
25.00		1.00	0.70	18.769	20.65	321.62	0.650	0.000	5.00	18.505	12.03	397.3	0.0	790.3
30.00		1.00	0.70	18.785	20.66	314.71	0.650	0.000	5.00	18.105	11.77	389.1	0.0	773.0
35.00		1.00	0.73	19.631	21.59	314.51	0.650	0.000	5.00	17.704	11.51	397.6	0.0	755.8
40.00		1.00	0.76	20.394	22.43	313.23	0.650	0.000	5.00	17.303	11.25	403.7	0.0	738.5
45.00	Bot - Section 2	1.00	0.79	21.092	23.20	311.08	0.650	0.000	5.00	16.902	10.99	407.8	0.0	721.2
50.00	Top - Section 1	1.00	0.81	21.737	23.91	308.22	0.650	0.000	5.00	16.766	10.90	416.9	0.0	1301.1
55.00		1.00	0.83	22.337	24.57	309.84	0.650	0.000	5.00	16.365	10.64	418.2	0.0	582.7
60.00		1.00	0.85	22.899	25.19	305.94	0.650	0.000	5.00	15.965	10.38	418.2	0.0	568.3
65.00		1.00	0.87	23.429	25.77	301.59	0.650	0.000	5.00	15.564	10.12	417.2	0.0	553.9
70.00		1.00	0.89	23.930	26.32	296.85	0.650	0.000	5.00	15.163	9.86	415.1	0.0	539.6
75.00		1.00	0.91	24.406	26.85	291.76	0.650	0.000	5.00	14.763	9.60	412.2	0.0	525.2
80.00		1.00	0.93	24.861	27.35	286.36	0.650	0.000	5.00	14.362	9.34	408.5	0.0	510.8
85.00		1.00	0.94	25.295	27.82	280.68	0.650	0.000	5.00	13.961	9.07	404.0	0.0	496.4
90.00	Top - Section 2	1.00	0.96	25.711	28.28	274.74	0.650	0.000	5.00	13.560	8.81	398.9	0.0	482.0
95.00		1.00	0.97	26.112	28.72	268.56	0.650	0.000	5.00	13.160	8.55	393.1	0.0	281.7
100.00		1.00	0.99	26.497	29.15	262.17	0.650	0.000	5.00	12.759	8.29	386.8	0.0	273.1
105.00		1.00	1.00	26.869	29.56	255.58	0.650	0.000	5.00	12.358	8.03	379.9	0.0	264.5
110.00		1.00	1.02	27.229	29.95	248.81	0.650	0.000	5.00	11.958	7.77	372.5	0.0	255.8
115.00		1.00	1.03	27.577	30.33	241.86	0.650	0.000	5.00	11.557	7.51	364.6	0.0	247.2
117.00	Appurtenance(s)	1.00	1.03	27.713	30.48	239.03	0.650	0.000	2.00	4.511	2.93	143.0	0.0	96.5
120.00		1.00	1.04	27.914	30.71	234.75	0.650	0.000	3.00	6.646	4.32	212.2	0.0	142.1
125.00		1.00	1.05	28.242	31.07	227.48	0.650	0.000	5.00	10.755	6.99	347.5	0.0	229.9
127.00	Appurtenance(s)	1.00	1.06	28.370	31.21	224.54	0.650	0.000	2.00	4.190	2.72	136.0	0.0	89.6
130.00		1.00	1.07	28.560	31.42	220.08	0.650	0.000	3.00	6.165	4.01	201.4	0.0	131.7
Totals:									130.00			10,316.9		14,684.8

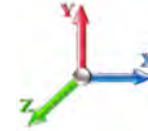
Discrete Appurtenance Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Page: 12
	Struct Class: II	



Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	127.00	Ericsson Air 21 B2A/B4P	3	28.370	31.207	0.64	0.75	11.55	247.05	0.000	0.000	576.78	0.00	0.00
2	127.00	Ericsson Air 21 B4A/B2P	3	28.370	31.207	0.64	0.75	11.55	243.81	0.000	0.000	576.78	0.00	0.00
3	127.00	RFS	3	28.370	31.207	0.54	0.75	32.79	331.56	0.000	0.000	1637.18	0.00	0.00
4	127.00	Ericsson KRY 112 144/1	3	28.370	31.207	0.45	0.75	0.47	29.70	0.000	0.000	23.59	0.00	0.00
5	127.00	Ericsson 4449 B71 + B85	3	28.370	31.207	0.50	0.75	2.94	202.50	0.000	0.000	146.78	0.00	0.00
6	127.00	Platform w/ Hand Rails	1	28.370	31.207	1.00	1.00	40.00	1800.00	0.000	0.000	1997.25	0.00	0.00
7	117.00	Low Profile Platform	1	27.713	30.484	1.00	1.00	22.00	1350.00	0.000	0.000	1073.04	0.00	0.00
8	117.00	Commscope	4	27.713	30.484	0.80	1.00	5.06	20.52	0.000	0.000	246.61	0.00	0.00
9	117.00	ALU RRH 2x60 PCS	2	27.713	30.484	0.67	1.00	2.45	99.00	0.000	0.000	119.61	0.00	0.00
10	117.00	ALU RRH 2x60 AWS	2	27.713	30.484	0.67	1.00	2.45	108.00	0.000	0.000	119.61	0.00	0.00
Totals:									4,432.14			6,517.22		

Total Applied Force Summary

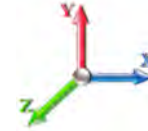
Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 13

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.76	882.63	0.00	0.00
10.00		423.15	900.31	0.00	0.00
15.00		414.55	883.04	0.00	0.00
20.00		405.94	865.78	0.00	0.00
25.00		397.34	848.52	0.00	0.00
30.00		389.06	831.26	0.00	0.00
35.00		397.58	814.00	0.00	0.00
40.00		403.70	796.74	0.00	0.00
45.00		407.84	779.48	0.00	0.00
50.00		416.92	1359.31	0.00	0.00
55.00		418.19	640.94	0.00	0.00
60.00		418.22	626.56	0.00	0.00
65.00		417.15	612.17	0.00	0.00
70.00		415.11	597.79	0.00	0.00
75.00		412.18	583.40	0.00	0.00
80.00		408.46	569.02	0.00	0.00
85.00		404.00	554.64	0.00	0.00
90.00		398.86	540.25	0.00	0.00
95.00		393.10	339.95	0.00	0.00
100.00		386.76	331.32	0.00	0.00
105.00		379.87	322.69	0.00	0.00
110.00		372.47	314.06	0.00	0.00
115.00		364.59	305.43	0.00	0.00
117.00	(9) attachments	1701.86	1697.28	0.00	0.00
120.00		212.22	171.43	0.00	0.00
125.00		347.49	278.81	0.00	0.00
127.00	(16) attachments	5094.34	2963.73	0.00	0.00
130.00		201.42	131.75	0.00	0.00
	Totals:	16,834.14	20,542.29	0.00	0.00

Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 22

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	-20.52	-16.86	0.00	-1518.5	0.00	1518.59	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.402
5.00	-19.60	-16.47	0.00	-1434.3	0.00	1434.30	3851.93	1925.96	7386.73	3698.85	0.07	-0.129	0.000	0.393
10.00	-18.67	-16.09	0.00	-1351.9	0.00	1351.96	3799.43	1899.71	7137.04	3573.82	0.27	-0.259	0.000	0.383
15.00	-17.75	-15.71	0.00	-1271.5	0.00	1271.53	3745.86	1872.93	6889.51	3449.88	0.62	-0.389	0.000	0.373
20.00	-16.85	-15.33	0.00	-1193.0	0.00	1193.00	3691.24	1845.62	6644.27	3327.07	1.09	-0.518	0.000	0.363
25.00	-15.98	-14.96	0.00	-1116.3	0.00	1116.35	3635.55	1817.78	6401.45	3205.48	1.71	-0.648	0.000	0.353
30.00	-15.12	-14.60	0.00	-1041.5	0.00	1041.54	3578.80	1789.40	6161.16	3085.16	2.45	-0.777	0.000	0.342
35.00	-14.28	-14.22	0.00	-968.56	0.00	968.56	3520.99	1760.49	5923.54	2966.17	3.34	-0.906	0.000	0.331
40.00	-13.46	-13.83	0.00	-897.47	0.00	897.47	3462.11	1731.06	5688.70	2848.58	4.36	-1.034	0.000	0.319
45.00	-12.66	-13.44	0.00	-828.31	0.00	828.31	3402.17	1701.09	5456.79	2732.45	5.51	-1.161	0.000	0.307
50.00	-11.28	-13.02	0.00	-761.13	0.00	761.13	2672.34	1336.17	4264.27	2135.31	6.79	-1.287	0.000	0.361
55.00	-10.62	-12.61	0.00	-696.05	0.00	696.05	2628.44	1314.22	4091.13	2048.60	8.21	-1.411	0.000	0.344
60.00	-9.97	-12.20	0.00	-633.02	0.00	633.02	2583.48	1291.74	3919.82	1962.82	9.76	-1.550	0.000	0.326
65.00	-9.35	-11.78	0.00	-572.03	0.00	572.03	2537.45	1268.73	3750.46	1878.02	11.46	-1.686	0.000	0.308
70.00	-8.73	-11.37	0.00	-513.11	0.00	513.11	2490.36	1245.18	3583.19	1794.26	13.29	-1.818	0.000	0.290
75.00	-8.14	-10.96	0.00	-456.26	0.00	456.26	2442.21	1221.10	3418.12	1711.60	15.26	-1.945	0.000	0.270
80.00	-7.56	-10.55	0.00	-401.48	0.00	401.48	2392.99	1196.50	3255.39	1630.11	17.37	-2.068	0.000	0.250
85.00	-7.01	-10.13	0.00	-348.75	0.00	348.75	2342.71	1171.36	3095.11	1549.86	19.60	-2.185	0.000	0.228
90.00	-6.46	-9.73	0.00	-298.08	0.00	298.08	2291.37	1145.69	2937.41	1470.89	21.95	-2.295	0.000	0.206
90.00	-6.46	-9.73	0.00	-298.08	0.00	298.08	1145.45	572.73	1480.17	741.18	21.95	-2.295	0.000	0.408
95.00	-6.12	-9.33	0.00	-249.44	0.00	249.44	1127.97	563.98	1413.34	707.72	24.40	-2.396	0.000	0.358
100.00	-5.78	-8.95	0.00	-202.78	0.00	202.78	1109.42	554.71	1346.59	674.30	27.00	-2.548	0.000	0.306
105.00	-5.46	-8.57	0.00	-158.04	0.00	158.04	1089.82	544.91	1280.05	640.97	29.74	-2.681	0.000	0.252
110.00	-5.15	-8.19	0.00	-115.21	0.00	115.21	1069.15	534.57	1213.84	607.82	32.61	-2.792	0.000	0.195
115.00	-4.85	-7.81	0.00	-74.28	0.00	74.28	1047.42	523.71	1148.08	574.89	35.58	-2.877	0.000	0.134
117.00	-3.24	-6.03	0.00	-58.65	0.00	58.65	1038.42	519.21	1121.94	561.80	36.79	-2.904	0.000	0.108
120.00	-3.08	-5.81	0.00	-40.57	0.00	40.57	1024.62	512.31	1082.91	542.26	38.63	-2.935	0.000	0.078
125.00	-2.82	-5.45	0.00	-11.52	0.00	11.52	1000.76	500.38	1018.44	509.98	41.72	-2.964	0.000	0.026
127.00	-0.12	-0.21	0.00	-0.62	0.00	0.62	990.92	495.46	992.88	497.18	42.96	-2.967	0.000	0.001
130.00	0.00	-0.20	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	44.83	-2.967	0.000	0.000

Wind Loading - Shaft

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

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	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	21.143	25.37	118.8	375.8	1521.5
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	20.817	24.98	116.9	395.6	1518.3
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	20.462	24.55	115.0	404.2	1503.9
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	20.095	24.11	112.9	407.9	1484.6
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	19.721	23.67	110.8	408.7	1462.4
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	19.343	23.21	108.8	407.6	1438.3
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	18.961	22.75	111.4	405.2	1412.9
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	18.577	22.29	113.4	401.8	1386.5
45.00	Bot - Section 2	1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	18.192	21.83	114.8	397.5	1359.2
50.00	Top - Section 1	1.00	0.81	4.929	5.42	0.00	1.200	1.564	5.00	18.069	21.68	117.6	398.7	2133.5
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	17.681	21.22	118.2	393.3	1170.3
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	17.292	20.75	118.5	387.5	1145.2
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	16.902	20.28	118.5	381.2	1119.8
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	16.511	19.81	118.3	374.5	1093.9
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	16.119	19.34	117.8	367.6	1067.8
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	15.728	18.87	117.0	360.3	1041.4
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	15.335	18.40	116.1	352.8	1014.7
90.00	Top - Section 2	1.00	0.96	5.830	6.41	0.00	1.200	1.658	5.00	14.942	17.93	115.0	345.1	987.8
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	5.00	14.549	17.46	113.7	337.2	712.8
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	5.00	14.155	16.99	112.3	329.1	693.2
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	5.00	13.762	16.51	110.7	320.8	673.4
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	13.367	16.04	108.9	312.3	653.4
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	12.973	15.57	107.1	303.7	633.3
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200	1.702	2.00	5.078	6.09	42.1	120.1	248.7
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	3.00	7.499	9.00	62.7	177.0	366.4
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	12.183	14.62	103.0	286.0	592.6
127.00	Appurtenance(s)	1.00	1.06	6.433	7.08	0.00	1.200	1.716	2.00	4.762	5.71	40.4	113.0	232.4
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	3.00	7.025	8.43	60.1	166.2	341.9
Totals:									130.00			2,940.7		29,010.3

Discrete Appurtenance Forces

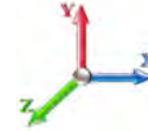
Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 21

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	127.00	Ericsson Air 21 B2A/B4P	3	6.433	7.076	0.64	0.75	13.60	820.70	0.000	0.000	96.22	0.00	0.00
2	127.00	Ericsson Air 21 B4A/B2P	3	6.433	7.076	0.64	0.75	13.60	816.38	0.000	0.000	96.22	0.00	0.00
3	127.00	RFS	3	6.433	7.076	0.54	0.75	35.81	1701.41	0.000	0.000	253.44	0.00	0.00
4	127.00	Ericsson KRY 112 144/1	3	6.433	7.076	0.45	0.75	1.01	62.11	0.000	0.000	7.15	0.00	0.00
5	127.00	Ericsson 4449 B71 + B85	3	6.433	7.076	0.50	0.75	3.81	509.52	0.000	0.000	26.98	0.00	0.00
6	127.00	Platform w/ Hand Rails	1	6.433	7.076	1.00	1.00	60.60	3859.69	0.000	0.000	428.81	0.00	0.00
7	117.00	Low Profile Platform	1	6.284	6.913	1.00	1.00	39.23	2776.79	0.000	0.000	271.17	0.00	0.00
8	117.00	Commscope	4	6.284	6.913	0.80	1.00	8.43	129.80	0.000	0.000	58.27	0.00	0.00
9	117.00	ALU RRH 2x60 PCS	2	6.284	6.913	0.67	1.00	3.22	259.55	0.000	0.000	22.26	0.00	0.00
10	117.00	ALU RRH 2x60 AWS	2	6.284	6.913	0.67	1.00	2.99	274.09	0.000	0.000	20.68	0.00	0.00
Totals:									11,210.03			1,281.18		

Total Applied Force Summary

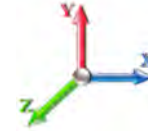
Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 21

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		118.78	1552.59	0.00	0.00
10.00		116.95	1595.96	0.00	0.00
15.00		114.95	1581.56	0.00	0.00
20.00		112.89	1562.23	0.00	0.00
25.00		110.79	1540.05	0.00	0.00
30.00		108.76	1515.98	0.00	0.00
35.00		111.41	1490.56	0.00	0.00
40.00		113.40	1464.10	0.00	0.00
45.00		114.85	1436.84	0.00	0.00
50.00		117.56	2211.17	0.00	0.00
55.00		118.21	1247.93	0.00	0.00
60.00		118.52	1222.88	0.00	0.00
65.00		118.53	1197.41	0.00	0.00
70.00		118.26	1171.59	0.00	0.00
75.00		117.76	1145.45	0.00	0.00
80.00		117.03	1119.03	0.00	0.00
85.00		116.11	1092.36	0.00	0.00
90.00		115.00	1065.45	0.00	0.00
95.00		113.71	790.46	0.00	0.00
100.00		112.27	770.82	0.00	0.00
105.00		110.68	751.02	0.00	0.00
110.00		108.95	731.04	0.00	0.00
115.00		107.08	710.92	0.00	0.00
117.00	(9) attachments	414.50	3719.98	0.00	0.00
120.00		62.66	405.52	0.00	0.00
125.00		102.99	657.78	0.00	0.00
127.00	(16) attachments	949.25	8028.25	0.00	0.00
130.00		60.05	341.87	0.00	0.00
	Totals:	4,221.89	42,120.81	0.00	0.00

Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II

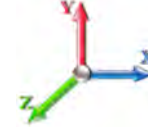


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 21

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	-42.12	-4.23	0.00	-370.94	0.00	370.94	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.108
5.00	-40.56	-4.14	0.00	-349.78	0.00	349.78	3851.93	1925.96	7386.73	3698.85	0.02	-0.032	0.000	0.105
10.00	-38.97	-4.04	0.00	-329.10	0.00	329.10	3799.43	1899.71	7137.04	3573.82	0.07	-0.063	0.000	0.102
15.00	-37.38	-3.94	0.00	-308.90	0.00	308.90	3745.86	1872.93	6889.51	3449.88	0.15	-0.095	0.000	0.100
20.00	-35.82	-3.85	0.00	-289.18	0.00	289.18	3691.24	1845.62	6644.27	3327.07	0.27	-0.126	0.000	0.097
25.00	-34.28	-3.75	0.00	-269.95	0.00	269.95	3635.55	1817.78	6401.45	3205.48	0.42	-0.158	0.000	0.094
30.00	-32.76	-3.66	0.00	-251.19	0.00	251.19	3578.80	1789.40	6161.16	3085.16	0.60	-0.189	0.000	0.091
35.00	-31.27	-3.56	0.00	-232.92	0.00	232.92	3520.99	1760.49	5923.54	2966.17	0.81	-0.220	0.000	0.087
40.00	-29.80	-3.45	0.00	-215.14	0.00	215.14	3462.11	1731.06	5688.70	2848.58	1.06	-0.251	0.000	0.084
45.00	-28.36	-3.35	0.00	-197.88	0.00	197.88	3402.17	1701.09	5456.79	2732.45	1.34	-0.281	0.000	0.081
50.00	-26.15	-3.23	0.00	-181.15	0.00	181.15	2672.34	1336.17	4264.27	2135.31	1.65	-0.311	0.000	0.095
55.00	-24.90	-3.12	0.00	-165.00	0.00	165.00	2628.44	1314.22	4091.13	2048.60	1.99	-0.340	0.000	0.090
60.00	-23.68	-3.01	0.00	-149.41	0.00	149.41	2583.48	1291.74	3919.82	1962.82	2.36	-0.373	0.000	0.085
65.00	-22.48	-2.89	0.00	-134.38	0.00	134.38	2537.45	1268.73	3750.46	1878.02	2.77	-0.405	0.000	0.080
70.00	-21.31	-2.78	0.00	-119.92	0.00	119.92	2490.36	1245.18	3583.19	1794.26	3.21	-0.436	0.000	0.075
75.00	-20.16	-2.66	0.00	-106.05	0.00	106.05	2442.21	1221.10	3418.12	1711.60	3.69	-0.466	0.000	0.070
80.00	-19.04	-2.54	0.00	-92.75	0.00	92.75	2392.99	1196.50	3255.39	1630.11	4.19	-0.494	0.000	0.065
85.00	-17.95	-2.42	0.00	-80.04	0.00	80.04	2342.71	1171.36	3095.11	1549.86	4.72	-0.521	0.000	0.059
90.00	-16.89	-2.31	0.00	-67.92	0.00	67.92	2291.37	1145.69	2937.41	1470.89	5.28	-0.546	0.000	0.054
90.00	-16.89	-2.31	0.00	-67.92	0.00	67.92	1145.45	572.73	1480.17	741.18	5.28	-0.546	0.000	0.106
95.00	-16.10	-2.19	0.00	-56.39	0.00	56.39	1127.97	563.98	1413.34	707.72	5.87	-0.569	0.000	0.094
100.00	-15.32	-2.08	0.00	-45.42	0.00	45.42	1109.42	554.71	1346.59	674.30	6.48	-0.604	0.000	0.081
105.00	-14.57	-1.97	0.00	-35.01	0.00	35.01	1089.82	544.91	1280.05	640.97	7.13	-0.633	0.000	0.068
110.00	-13.84	-1.86	0.00	-25.16	0.00	25.16	1069.15	534.57	1213.84	607.82	7.81	-0.658	0.000	0.054
115.00	-13.13	-1.75	0.00	-15.87	0.00	15.87	1047.42	523.71	1148.08	574.89	8.51	-0.676	0.000	0.040
117.00	-9.42	-1.29	0.00	-12.38	0.00	12.38	1038.42	519.21	1121.94	561.80	8.79	-0.682	0.000	0.031
120.00	-9.01	-1.22	0.00	-8.52	0.00	8.52	1024.62	512.31	1082.91	542.26	9.22	-0.688	0.000	0.025
125.00	-8.36	-1.11	0.00	-2.41	0.00	2.41	1000.76	500.38	1018.44	509.98	9.95	-0.694	0.000	0.013
127.00	-0.34	-0.06	0.00	-0.19	0.00	0.19	990.92	495.46	992.88	497.18	10.24	-0.695	0.000	0.001
130.00	0.00	-0.06	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	10.68	-0.695	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Page: 19
	Struct Class: II	



Load Case: 1.2D + 1.0E

Iterations 20

Gust Response Factor 1.10	Sds 0.13	Ss 0.16	
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.07	
Wind Load Factor 0.00	Structure Frequency (f1) 0.47	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	0.00	0.00	0.00		
5.00		954.82	0.00	0.04	0.02	10.64		
10.00		935.64	0.01	0.06	0.03	15.15		
15.00		916.46	0.03	0.07	0.04	17.04		
20.00		897.28	0.04	0.07	0.04	17.78		
25.00		878.10	0.07	0.07	0.04	18.09		
30.00		858.92	0.10	0.07	0.04	18.26		
35.00		839.74	0.14	0.07	0.03	18.37		
40.00		820.57	0.18	0.07	0.03	18.27		
45.00	Bot - Section 2	801.39	0.23	0.06	0.02	17.72		
50.00	Top - Section 1	1445.6	0.28	0.05	0.01	30.30		
55.00		647.46	0.34	0.04	0.01	11.83		
60.00		631.48	0.40	0.02	0.01	8.62		
65.00		615.49	0.47	-0.01	0.01	4.37		
70.00		599.51	0.55	-0.03	0.01	-0.42		
75.00		583.53	0.63	-0.06	0.02	-4.88		
80.00		567.55	0.72	-0.09	0.03	-8.07		
85.00		551.56	0.81	-0.11	0.06	-9.29		
90.00	Top - Section 2	535.58	0.91	-0.12	0.09	-8.25		
95.00		313.02	1.01	-0.11	0.14	-2.98		
100.00		303.43	1.12	-0.06	0.20	0.29		
105.00		293.84	1.23	0.04	0.28	4.72		
110.00		284.26	1.35	0.20	0.39	10.18		
115.00		274.67	1.48	0.45	0.52	16.56		
117.00	Appurtenance(s)	1859.9	1.53	0.58	0.58	132.84		
120.00		157.89	1.61	0.81	0.68	14.14		
125.00		255.49	1.75	1.31	0.89	31.61		
127.00	Appurtenance(s)	3271.3	1.80	1.56	0.98	454.04		
130.00		146.39	1.89	1.98	1.14	23.85		
Totals:		21,241.0				860.8	Total Wind:	16,834.1

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

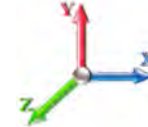
Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 20
Gust Response Factor	1.10			Sds	0.13	Ss 0.16
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.07	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.47	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	-27.39	-0.90	0.00	-95.11	0.00	95.11	3903.36	1951.68	7638.46	3824.91	0.00	0.00	0.00	0.032
5.00	-26.21	-0.89	0.00	-90.62	0.00	90.62	3851.93	1925.96	7386.73	3698.85	0.00	-0.01	0.031	
10.00	-25.01	-0.88	0.00	-86.18	0.00	86.18	3799.43	1899.71	7137.04	3573.82	0.02	-0.02	0.031	
15.00	-23.83	-0.86	0.00	-81.79	0.00	81.79	3745.86	1872.93	6889.51	3449.88	0.04	-0.02	0.030	
20.00	-22.68	-0.85	0.00	-77.47	0.00	77.47	3691.24	1845.62	6644.27	3327.07	0.07	-0.03	0.029	
25.00	-21.55	-0.83	0.00	-73.23	0.00	73.23	3635.55	1817.78	6401.45	3205.48	0.11	-0.04	0.029	
30.00	-20.44	-0.82	0.00	-69.07	0.00	69.07	3578.80	1789.40	6161.16	3085.16	0.16	-0.05	0.028	
35.00	-19.35	-0.80	0.00	-64.98	0.00	64.98	3520.99	1760.49	5923.54	2966.17	0.21	-0.06	0.027	
40.00	-18.29	-0.78	0.00	-60.98	0.00	60.98	3462.11	1731.06	5688.70	2848.58	0.28	-0.07	0.027	
45.00	-17.25	-0.77	0.00	-57.06	0.00	57.06	3402.17	1701.09	5456.79	2732.45	0.35	-0.08	0.026	
50.00	-15.44	-0.74	0.00	-53.23	0.00	53.23	2672.34	1336.17	4264.27	2135.31	0.44	-0.08	0.031	
55.00	-14.59	-0.73	0.00	-49.54	0.00	49.54	2628.44	1314.22	4091.13	2048.60	0.53	-0.09	0.030	
60.00	-13.75	-0.72	0.00	-45.91	0.00	45.91	2583.48	1291.74	3919.82	1962.82	0.64	-0.10	0.029	
65.00	-12.93	-0.71	0.00	-42.32	0.00	42.32	2537.45	1268.73	3750.46	1878.02	0.75	-0.11	0.028	
70.00	-12.14	-0.72	0.00	-38.75	0.00	38.75	2490.36	1245.18	3583.19	1794.26	0.87	-0.12	0.026	
75.00	-11.36	-0.72	0.00	-35.17	0.00	35.17	2442.21	1221.10	3418.12	1711.60	1.01	-0.13	0.025	
80.00	-10.60	-0.72	0.00	-31.60	0.00	31.60	2392.99	1196.50	3255.39	1630.11	1.15	-0.14	0.024	
85.00	-9.86	-0.71	0.00	-28.02	0.00	28.02	2342.71	1171.36	3095.11	1549.86	1.31	-0.15	0.022	
90.00	-9.14	-0.71	0.00	-24.45	0.00	24.45	2291.37	1145.69	2937.41	1470.89	1.47	-0.16	0.021	
90.00	-9.14	-0.71	0.00	-24.45	0.00	24.45	1145.45	572.73	1480.17	741.18	1.47	-0.16	0.041	
95.00	-8.69	-0.71	0.00	-20.88	0.00	20.88	1127.97	563.98	1413.34	707.72	1.64	-0.17	0.037	
100.00	-8.24	-0.71	0.00	-17.30	0.00	17.30	1109.42	554.71	1346.59	674.30	1.83	-0.18	0.033	
105.00	-7.81	-0.71	0.00	-13.73	0.00	13.73	1089.82	544.91	1280.05	640.97	2.02	-0.19	0.029	
110.00	-7.40	-0.70	0.00	-10.18	0.00	10.18	1069.15	534.57	1213.84	607.82	2.23	-0.20	0.024	
115.00	-6.99	-0.68	0.00	-6.68	0.00	6.68	1047.42	523.71	1148.08	574.89	2.45	-0.21	0.018	
117.00	-4.73	-0.54	0.00	-5.32	0.00	5.32	1038.42	519.21	1121.94	561.80	2.54	-0.21	0.014	
120.00	-4.50	-0.53	0.00	-3.69	0.00	3.69	1024.62	512.31	1082.91	542.26	2.67	-0.22	0.011	
125.00	-4.13	-0.49	0.00	-1.06	0.00	1.06	1000.76	500.38	1018.44	509.98	2.90	-0.22	0.006	
127.00	-0.18	-0.02	0.00	-0.07	0.00	0.07	990.92	495.46	992.88	497.18	2.99	-0.22	0.000	
130.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	3.13	-0.22	0.000	

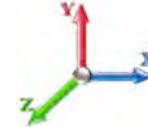
Seismic Segment Forces (Factored)

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E				Iterations 20
Gust Response Factor	1.10	Sds	0.13	Ss 0.16
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.47	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	0.00	0.00	0.00	
5.00		954.82	0.00	0.04	0.02	10.64	
10.00		935.64	0.01	0.06	0.03	15.15	
15.00		916.46	0.03	0.07	0.04	17.04	
20.00		897.28	0.04	0.07	0.04	17.78	
25.00		878.10	0.07	0.07	0.04	18.09	
30.00		858.92	0.10	0.07	0.04	18.26	
35.00		839.74	0.14	0.07	0.03	18.37	
40.00		820.57	0.18	0.07	0.03	18.27	
45.00	Bot - Section 2	801.39	0.23	0.06	0.02	17.72	
50.00	Top - Section 1	1445.6	0.28	0.05	0.01	30.30	
55.00		647.46	0.34	0.04	0.01	11.83	
60.00		631.48	0.40	0.02	0.01	8.62	
65.00		615.49	0.47	-0.01	0.01	4.37	
70.00		599.51	0.55	-0.03	0.01	-0.42	
75.00		583.53	0.63	-0.06	0.02	-4.88	
80.00		567.55	0.72	-0.09	0.03	-8.07	
85.00		551.56	0.81	-0.11	0.06	-9.29	
90.00	Top - Section 2	535.58	0.91	-0.12	0.09	-8.25	
95.00		313.02	1.01	-0.11	0.14	-2.98	
100.00		303.43	1.12	-0.06	0.20	0.29	
105.00		293.84	1.23	0.04	0.28	4.72	
110.00		284.26	1.35	0.20	0.39	10.18	
115.00		274.67	1.48	0.45	0.52	16.56	
117.00	Appurtenance(s)	1859.9	1.53	0.58	0.58	132.84	
120.00		157.89	1.61	0.81	0.68	14.14	
125.00		255.49	1.75	1.31	0.89	31.61	
127.00	Appurtenance(s)	3271.3	1.80	1.56	0.98	454.04	
130.00		146.39	1.89	1.98	1.14	23.85	
Totals:		21,241.0				860.8	Total Wind: 16,834.1

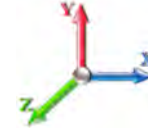
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E							Iterations 20
Gust Response Factor	1.10			Sds	0.13	Ss 0.16	
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.07	S1 0.06	
Wind Load Factor	0.00	Structure Frequency (f1)	0.47	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	-20.54	-0.90	0.00	-94.42	0.00	94.42	3903.36	1951.68	7638.46	3824.91	0.00	0.00	0.00	0.030
5.00	-19.66	-0.89	0.00	-89.94	0.00	89.94	3851.93	1925.96	7386.73	3698.85	0.00	-0.01	0.029	
10.00	-18.76	-0.88	0.00	-85.50	0.00	85.50	3799.43	1899.71	7137.04	3573.82	0.02	-0.02	0.029	
15.00	-17.88	-0.86	0.00	-81.12	0.00	81.12	3745.86	1872.93	6889.51	3449.88	0.04	-0.02	0.028	
20.00	-17.01	-0.84	0.00	-76.82	0.00	76.82	3691.24	1845.62	6644.27	3327.07	0.07	-0.03	0.028	
25.00	-16.16	-0.83	0.00	-72.60	0.00	72.60	3635.55	1817.78	6401.45	3205.48	0.11	-0.04	0.027	
30.00	-15.33	-0.81	0.00	-68.46	0.00	68.46	3578.80	1789.40	6161.16	3085.16	0.16	-0.05	0.026	
35.00	-14.52	-0.79	0.00	-64.40	0.00	64.40	3520.99	1760.49	5923.54	2966.17	0.21	-0.06	0.026	
40.00	-13.72	-0.78	0.00	-60.42	0.00	60.42	3462.11	1731.06	5688.70	2848.58	0.28	-0.07	0.025	
45.00	-12.94	-0.76	0.00	-56.53	0.00	56.53	3402.17	1701.09	5456.79	2732.45	0.35	-0.08	0.024	
50.00	-11.58	-0.73	0.00	-52.73	0.00	52.73	2672.34	1336.17	4264.27	2135.31	0.44	-0.08	0.029	
55.00	-10.94	-0.72	0.00	-49.08	0.00	49.08	2628.44	1314.22	4091.13	2048.60	0.53	-0.09	0.028	
60.00	-10.31	-0.71	0.00	-45.48	0.00	45.48	2583.48	1291.74	3919.82	1962.82	0.63	-0.10	0.027	
65.00	-9.70	-0.71	0.00	-41.92	0.00	41.92	2537.45	1268.73	3750.46	1878.02	0.74	-0.11	0.026	
70.00	-9.10	-0.71	0.00	-38.38	0.00	38.38	2490.36	1245.18	3583.19	1794.26	0.87	-0.12	0.025	
75.00	-8.52	-0.71	0.00	-34.84	0.00	34.84	2442.21	1221.10	3418.12	1711.60	1.00	-0.13	0.024	
80.00	-7.95	-0.71	0.00	-31.30	0.00	31.30	2392.99	1196.50	3255.39	1630.11	1.14	-0.14	0.023	
85.00	-7.39	-0.71	0.00	-27.76	0.00	27.76	2342.71	1171.36	3095.11	1549.86	1.29	-0.15	0.021	
90.00	-6.85	-0.71	0.00	-24.22	0.00	24.22	2291.37	1145.69	2937.41	1470.89	1.46	-0.16	0.019	
90.00	-6.85	-0.71	0.00	-24.22	0.00	24.22	1145.45	572.73	1480.17	741.18	1.46	-0.16	0.039	
95.00	-6.51	-0.71	0.00	-20.68	0.00	20.68	1127.97	563.98	1413.34	707.72	1.63	-0.17	0.035	
100.00	-6.18	-0.71	0.00	-17.14	0.00	17.14	1109.42	554.71	1346.59	674.30	1.81	-0.18	0.031	
105.00	-5.86	-0.70	0.00	-13.60	0.00	13.60	1089.82	544.91	1280.05	640.97	2.01	-0.19	0.027	
110.00	-5.55	-0.69	0.00	-10.09	0.00	10.09	1069.15	534.57	1213.84	607.82	2.21	-0.20	0.022	
115.00	-5.24	-0.68	0.00	-6.62	0.00	6.62	1047.42	523.71	1148.08	574.89	2.43	-0.21	0.017	
117.00	-3.54	-0.54	0.00	-5.27	0.00	5.27	1038.42	519.21	1121.94	561.80	2.52	-0.21	0.013	
120.00	-3.37	-0.52	0.00	-3.66	0.00	3.66	1024.62	512.31	1082.91	542.26	2.65	-0.21	0.010	
125.00	-3.09	-0.49	0.00	-1.05	0.00	1.05	1000.76	500.38	1018.44	509.98	2.87	-0.22	0.005	
127.00	-0.13	-0.02	0.00	-0.07	0.00	0.07	990.92	495.46	992.88	497.18	2.97	-0.22	0.000	
130.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	3.10	-0.22	0.000	

Wind Loading - Shaft

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 20
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	0.70	6.129	6.74	203.90	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	199.87	0.650	0.000	5.00	20.108	13.07	88.1	0.0	954.8
10.00		1.00	0.70	6.129	6.74	195.85	0.650	0.000	5.00	19.707	12.81	86.4	0.0	935.6
15.00		1.00	0.70	6.129	6.74	191.83	0.650	0.000	5.00	19.307	12.55	84.6	0.0	916.5
20.00		1.00	0.70	6.129	6.74	187.80	0.650	0.000	5.00	18.906	12.29	82.8	0.0	897.3
25.00		1.00	0.70	6.129	6.74	183.78	0.650	0.000	5.00	18.505	12.03	81.1	0.0	878.1
30.00		1.00	0.70	6.134	6.75	179.83	0.650	0.000	5.00	18.105	11.77	79.4	0.0	858.9
35.00		1.00	0.73	6.410	7.05	179.72	0.650	0.000	5.00	17.704	11.51	81.1	0.0	839.7
40.00		1.00	0.76	6.659	7.33	178.99	0.650	0.000	5.00	17.303	11.25	82.4	0.0	820.6
45.00	Bot - Section 2	1.00	0.79	6.887	7.58	177.76	0.650	0.000	5.00	16.902	10.99	83.2	0.0	801.4
50.00	Top - Section 1	1.00	0.81	7.098	7.81	176.13	0.650	0.000	5.00	16.766	10.90	85.1	0.0	1445.6
55.00		1.00	0.83	7.294	8.02	177.05	0.650	0.000	5.00	16.365	10.64	85.3	0.0	647.5
60.00		1.00	0.85	7.477	8.22	174.82	0.650	0.000	5.00	15.965	10.38	85.4	0.0	631.5
65.00		1.00	0.87	7.650	8.42	172.34	0.650	0.000	5.00	15.564	10.12	85.1	0.0	615.5
70.00		1.00	0.89	7.814	8.60	169.63	0.650	0.000	5.00	15.163	9.86	84.7	0.0	599.5
75.00		1.00	0.91	7.969	8.77	166.72	0.650	0.000	5.00	14.763	9.60	84.1	0.0	583.5
80.00		1.00	0.93	8.118	8.93	163.63	0.650	0.000	5.00	14.362	9.34	83.4	0.0	567.5
85.00		1.00	0.94	8.260	9.09	160.39	0.650	0.000	5.00	13.961	9.07	82.4	0.0	551.6
90.00	Top - Section 2	1.00	0.96	8.396	9.24	156.99	0.650	0.000	5.00	13.560	8.81	81.4	0.0	535.6
95.00		1.00	0.97	8.526	9.38	153.47	0.650	0.000	5.00	13.160	8.55	80.2	0.0	313.0
100.00		1.00	0.99	8.652	9.52	149.81	0.650	0.000	5.00	12.759	8.29	78.9	0.0	303.4
105.00		1.00	1.00	8.774	9.65	146.05	0.650	0.000	5.00	12.358	8.03	77.5	0.0	293.8
110.00		1.00	1.02	8.891	9.78	142.18	0.650	0.000	5.00	11.958	7.77	76.0	0.0	284.3
115.00		1.00	1.03	9.005	9.91	138.20	0.650	0.000	5.00	11.557	7.51	74.4	0.0	274.7
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	136.59	0.650	0.000	2.00	4.511	2.93	29.2	0.0	107.2
120.00		1.00	1.04	9.115	10.03	134.14	0.650	0.000	3.00	6.646	4.32	43.3	0.0	157.9
125.00		1.00	1.05	9.222	10.14	129.99	0.650	0.000	5.00	10.755	6.99	70.9	0.0	255.5
127.00	Appurtenance(s)	1.00	1.06	9.264	10.19	128.31	0.650	0.000	2.00	4.190	2.72	27.8	0.0	99.5
130.00		1.00	1.07	9.326	10.26	125.76	0.650	0.000	3.00	6.165	4.01	41.1	0.0	146.4
Totals:									130.00			2,105.5		16,316.4

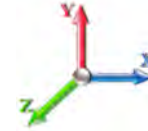
Discrete Appurtenance Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 24



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 20

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	127.00	Ericsson Air 21 B2A/B4P	3	9.264	10.190	0.64	0.75	11.55	274.50	0.000	0.000	117.71	0.00	0.00
2	127.00	Ericsson Air 21 B4A/B2P	3	9.264	10.190	0.64	0.75	11.55	270.90	0.000	0.000	117.71	0.00	0.00
3	127.00	RFS	3	9.264	10.190	0.54	0.75	32.79	368.40	0.000	0.000	334.12	0.00	0.00
4	127.00	Ericsson KRY 112 144/1	3	9.264	10.190	0.45	0.75	0.47	33.00	0.000	0.000	4.81	0.00	0.00
5	127.00	Ericsson 4449 B71 + B85	3	9.264	10.190	0.50	0.75	2.94	225.00	0.000	0.000	29.95	0.00	0.00
6	127.00	Platform w/ Hand Rails	1	9.264	10.190	1.00	1.00	40.00	2000.00	0.000	0.000	407.60	0.00	0.00
7	117.00	Low Profile Platform	1	9.049	9.954	1.00	1.00	22.00	1500.00	0.000	0.000	218.99	0.00	0.00
8	117.00	Commscope	4	9.049	9.954	0.80	1.00	5.06	22.80	0.000	0.000	50.33	0.00	0.00
9	117.00	ALU RRH 2x60 PCS	2	9.049	9.954	0.67	1.00	2.45	110.00	0.000	0.000	24.41	0.00	0.00
10	117.00	ALU RRH 2x60 AWS	2	9.049	9.954	0.67	1.00	2.45	120.00	0.000	0.000	24.41	0.00	0.00
Totals:									4,924.60			1,330.04		

Total Applied Force Summary

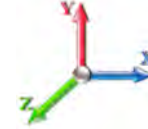
Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 20

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		88.11	980.70	0.00	0.00
10.00		86.36	1000.34	0.00	0.00
15.00		84.60	981.16	0.00	0.00
20.00		82.85	961.98	0.00	0.00
25.00		81.09	942.80	0.00	0.00
30.00		79.40	923.62	0.00	0.00
35.00		81.14	904.44	0.00	0.00
40.00		82.39	885.27	0.00	0.00
45.00		83.23	866.09	0.00	0.00
50.00		85.09	1510.35	0.00	0.00
55.00		85.34	712.16	0.00	0.00
60.00		85.35	696.18	0.00	0.00
65.00		85.13	680.19	0.00	0.00
70.00		84.72	664.21	0.00	0.00
75.00		84.12	648.23	0.00	0.00
80.00		83.36	632.25	0.00	0.00
85.00		82.45	616.26	0.00	0.00
90.00		81.40	600.28	0.00	0.00
95.00		80.23	377.72	0.00	0.00
100.00		78.93	368.13	0.00	0.00
105.00		77.52	358.54	0.00	0.00
110.00		76.01	348.96	0.00	0.00
115.00		74.41	339.37	0.00	0.00
117.00	(9) attachments	347.32	1885.86	0.00	0.00
120.00		43.31	190.47	0.00	0.00
125.00		70.92	309.79	0.00	0.00
127.00	(16) attachments	1039.66	3293.03	0.00	0.00
130.00		41.11	146.39	0.00	0.00
Totals:		3,435.54	22,824.77	0.00	0.00

Calculated Forces

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II

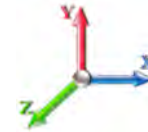


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 20

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	-22.82	-3.44	0.00	-310.62	0.00	310.62	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.087
5.00	-21.84	-3.36	0.00	-293.42	0.00	293.42	3851.93	1925.96	7386.73	3698.85	0.01	-0.026	0.000	0.085
10.00	-20.84	-3.28	0.00	-276.61	0.00	276.61	3799.43	1899.71	7137.04	3573.82	0.06	-0.053	0.000	0.083
15.00	-19.86	-3.21	0.00	-260.19	0.00	260.19	3745.86	1872.93	6889.51	3449.88	0.13	-0.080	0.000	0.081
20.00	-18.89	-3.13	0.00	-244.16	0.00	244.16	3691.24	1845.62	6644.27	3327.07	0.22	-0.106	0.000	0.079
25.00	-17.95	-3.06	0.00	-228.50	0.00	228.50	3635.55	1817.78	6401.45	3205.48	0.35	-0.133	0.000	0.076
30.00	-17.03	-2.98	0.00	-213.21	0.00	213.21	3578.80	1789.40	6161.16	3085.16	0.50	-0.159	0.000	0.074
35.00	-16.12	-2.91	0.00	-198.29	0.00	198.29	3520.99	1760.49	5923.54	2966.17	0.68	-0.185	0.000	0.071
40.00	-15.23	-2.83	0.00	-183.76	0.00	183.76	3462.11	1731.06	5688.70	2848.58	0.89	-0.212	0.000	0.069
45.00	-14.37	-2.75	0.00	-169.62	0.00	169.62	3402.17	1701.09	5456.79	2732.45	1.13	-0.238	0.000	0.066
50.00	-12.86	-2.66	0.00	-155.88	0.00	155.88	2672.34	1336.17	4264.27	2135.31	1.39	-0.263	0.000	0.078
55.00	-12.14	-2.58	0.00	-142.56	0.00	142.56	2628.44	1314.22	4091.13	2048.60	1.68	-0.289	0.000	0.074
60.00	-11.45	-2.50	0.00	-129.67	0.00	129.67	2583.48	1291.74	3919.82	1962.82	2.00	-0.317	0.000	0.070
65.00	-10.76	-2.41	0.00	-117.19	0.00	117.19	2537.45	1268.73	3750.46	1878.02	2.34	-0.345	0.000	0.067
70.00	-10.10	-2.33	0.00	-105.13	0.00	105.13	2490.36	1245.18	3583.19	1794.26	2.72	-0.372	0.000	0.063
75.00	-9.45	-2.24	0.00	-93.49	0.00	93.49	2442.21	1221.10	3418.12	1711.60	3.12	-0.398	0.000	0.058
80.00	-8.82	-2.16	0.00	-82.27	0.00	82.27	2392.99	1196.50	3255.39	1630.11	3.56	-0.423	0.000	0.054
85.00	-8.20	-2.08	0.00	-71.47	0.00	71.47	2342.71	1171.36	3095.11	1549.86	4.01	-0.447	0.000	0.050
90.00	-7.60	-1.99	0.00	-61.09	0.00	61.09	2291.37	1145.69	2937.41	1470.89	4.49	-0.470	0.000	0.045
90.00	-7.60	-1.99	0.00	-61.09	0.00	61.09	1145.45	572.73	1480.17	741.18	4.49	-0.470	0.000	0.089
95.00	-7.22	-1.91	0.00	-51.13	0.00	51.13	1127.97	563.98	1413.34	707.72	5.00	-0.491	0.000	0.079
100.00	-6.86	-1.83	0.00	-41.57	0.00	41.57	1109.42	554.71	1346.59	674.30	5.53	-0.522	0.000	0.068
105.00	-6.50	-1.76	0.00	-32.40	0.00	32.40	1089.82	544.91	1280.05	640.97	6.09	-0.549	0.000	0.057
110.00	-6.15	-1.68	0.00	-23.62	0.00	23.62	1069.15	534.57	1213.84	607.82	6.68	-0.572	0.000	0.045
115.00	-5.81	-1.60	0.00	-15.23	0.00	15.23	1047.42	523.71	1148.08	574.89	7.29	-0.589	0.000	0.032
117.00	-3.93	-1.24	0.00	-12.02	0.00	12.02	1038.42	519.21	1121.94	561.80	7.53	-0.595	0.000	0.025
120.00	-3.74	-1.19	0.00	-8.32	0.00	8.32	1024.62	512.31	1082.91	542.26	7.91	-0.601	0.000	0.019
125.00	-3.43	-1.12	0.00	-2.36	0.00	2.36	1000.76	500.38	1018.44	509.98	8.54	-0.607	0.000	0.008
127.00	-0.15	-0.04	0.00	-0.13	0.00	0.13	990.92	495.46	992.88	497.18	8.80	-0.608	0.000	0.000
130.00	0.00	-0.04	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	9.18	-0.608	0.000	0.000

Final Analysis Summary

Structure: CT11561-A-SBA	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 27



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 105 mph Wind	16.9	0.00	27.37	0.00	0.00	1528.76
0.9D + 1.6W 105 mph Wind	16.9	0.00	20.52	0.00	0.00	1518.59
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.2	0.00	42.12	0.00	0.00	370.94
1.2D + 1.0E	0.9	0.00	27.39	0.00	0.00	95.11
0.9D + 1.0E	0.9	0.00	20.54	0.00	0.00	94.42
1.0D + 1.0W 60 mph Wind	3.4	0.00	22.82	0.00	0.00	310.62

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 105 mph Wind	-8.74	-9.82	0.00	-301.28	0.00	-301.28	2291.37	1145.6	2937.41	1470.89	90.00	0.414
0.9D + 1.6W 105 mph Wind	-6.46	-9.73	0.00	-298.08	0.00	-298.08	2291.37	1145.6	2937.41	1470.89	90.00	0.408
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-42.12	-4.23	0.00	-370.94	0.00	-370.94	3903.36	1951.6	7638.46	3824.91	0.00	0.108
1.2D + 1.0E	-9.14	-0.71	0.00	-24.45	0.00	-24.45	2291.37	1145.6	2937.41	1470.89	90.00	0.041
0.9D + 1.0E	-6.85	-0.71	0.00	-24.22	0.00	-24.22	2291.37	1145.6	2937.41	1470.89	90.00	0.039
1.0D + 1.0W 60 mph Wind	-7.60	-1.99	0.00	-61.09	0.00	-61.09	2291.37	1145.6	2937.41	1470.89	90.00	0.089

Base Plate Summary

Structure: CT11561-A-SB	Code: EIA/TIA-222-G	6/1/2021
Site Name: Groton 2, CT	Exposure: B	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: C - Very Dense Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 28



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 54.00
Moment (kip-ft): 2188.80	Width (in): 60.00	Number Bolts: 12.00
Axial (kip): 27.80	Style: Round	Bolt Type: 2.25" A193 B7
Shear (kip): 22.70	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 105.00
Moment (kip-ft): 1528.76	Effective Len (in): 23.42	Ultimate (ksi): 125.00
Axial (kip): 27.37	Moment (kip-in): 350.25	Arrangement: Radial
Shear (kip): 16.87	Allow Stress (ksi): 67.50	Cluster Dist (in): 0.00
	Applied Stress (ksi): 14.18	Start Angle (deg): 30.00
	Stress Ratio: 0.21	Compression
		Force (kip): 116.75
		Allowable (kip): 325.00
		Ratio: 0.37
		Tension
		Force (kip): 109.73
		Allowable (kip): 325.00
		Ratio: 0.35



Monopole Mat Foundation Design

Date

6/1/2021

Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-G
Site Name:	Groton 2, CT	Structure Height (Ft.):	130
Site Number:	CT11561-A-SBA	Engineer Name:	W. Velez
Engr. Number:	109168	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	27.4	Shear Force (Kips):	16.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1528.8

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	6.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	0.25	Thickness of Pad (ft.):	2.50
Length of Pad (ft.):	23	Width of Pad (ft.):	23

Final Length of pad (ft)	23.0	Final width of pad (ft):	23.0
--------------------------	------	--------------------------	------

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 #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	42	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24
Rebar at the top of the concrete pad:			
Qty. of Rebar in Pad (L):	16	Qty. of Rebar in Pad (W):	16

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

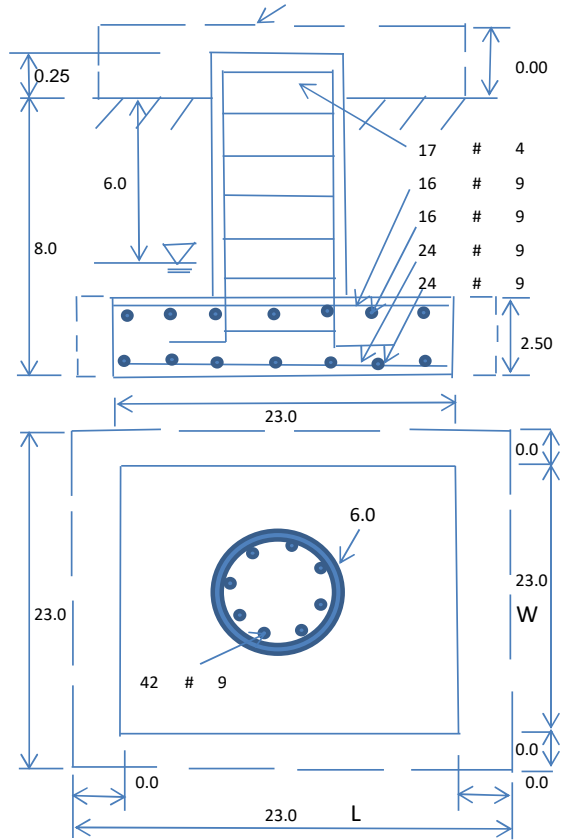
Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	47.6	Pcf
Water Table B.G.S. (ft):	6.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:		Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2753.99	Total Dry Soil Weight (Kips):	302.94
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	302.94	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	427.08	Total Dry Concrete Weight (Kips):	64.06
Total Buoyant Concrete Volume (cu. Ft.):	1058.00	Total Buoyant Concrete Weight (Kips):	92.68
Total Effective Concrete Weight (Kips):	156.74	Total Vertical Load on Base (Kips):	487.05

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1707	< Allowable Factored Soil Bearing (psf):	22500	0.08	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5072.5	> Design Factored Momont (kips-ft):	1468	0.29	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.46				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

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	5713.0	> Design Factored Moment (Mu, Kips-F	1625.9	0.28	OK!
Calculated Shear Capacity (Kips):	616.7	> Design Factored Shear (Kips):	16.9	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	2268.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7124.2	> Design Factored Axial Load (Pu Kips):	27.4	0.00	OK!
Moment & Axial Strength Combination:	0.28	OK! Check Tie Spacing (Design/Required):	0.5	0.5	OK!
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	692.2	> One-Way Factored Shear (L-D. Kips):	168.4	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	692.2	> One-Way Factored Shear (W-D., Kips)	168.4	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	665.8	> One-Way Factored Shear (C-C, Kips):	147.4	0.22	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0033	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0033		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2772.4	> Moment at Bottom (L-Dir. K-Ft):	883.8	0.32	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2772.4	> Moment at Bottom (W-Dir. K-Ft):	883.8	0.32	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3894.2	> Moment at Bottom (C-C Dir. K-Ft):	1249.9	0.32	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0022		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	1866.7	> Moment at the top (L-Dir K-Ft):	223.6	0.12	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	1866.7	> Moment at the top (W-Dir K-Ft):	223.6	0.12	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2628.1	> Moment at the top (C-C Dir. K-Ft):	209.4	0.08	OK!

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

Moment transferred by punching shear:	611.5	k-ft.	Max. factored shear stress v_{u_CD} :	2.2	Psi
Max. factored shear stress v_{u_AB} :	7.5	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	7.5	Psi	Check Usage of Punching Shear Capacity:	0.04	OK!

EXHIBIT 8



Tower Engineering Solutions

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

Antenna Mount Analysis Report

Existing 130-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT11561-A-SBA / Groton 2, CT

Customer Site Name: Groton 2, CT

Carrier Name: T-Mobile (App#: 116835, V3)

Carrier Site ID / Name: CTNL053A / Groton

Site Location: 237 Sandy Hollow Road

Groton, Connecticut

New London County

Latitude: 41.369510

Longitude: -71.982463

Analysis Result:

Max Structural Usage: 69.0% [Pass]

Report Prepared By : Mariana Franco



Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform w/ Hand Rails at 129.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping by Full Metal Tower Services dated 4/30/19.
Antenna Loading	SBA Application #: 116835, v3
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: $V_{ULT} = 135$ mph (3-Sec. Gust) / Equivalent to
 $V_{ASD} = 105$ mph (3-Sec. Gust)

Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent

Operational Wind Speed: 60 mph +0" Radial ice

Standard/Codes: ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code

Exposure Category: C

Structure Class: II

Topographic Category: 1

Crest Height (Ft): 0

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

Mount Information

(1) Platform w/ Hand Rails at 129.00' elevation

Final Antenna Configuration

- 3 Ericsson Air 21 B2A/B4P
- 3 Ericsson Air 21 B4A/B2P
- 3 RFS APXVAALL24_43-U-NA20
- 3 Ericsson KRY 112 144/1
- 3 Ericsson 4449 B71 + B85

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 69.0%, which occurs in the support rail 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
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**

5/19/2021

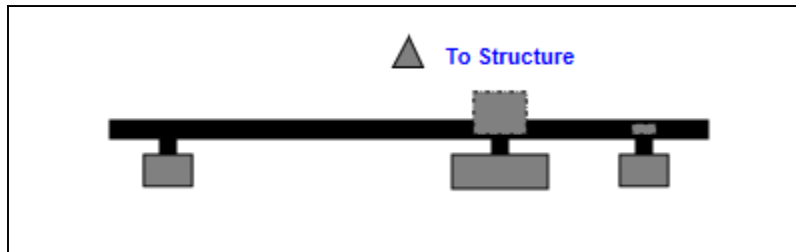
Structure Type: Monopole

Mount Elev: 129.00

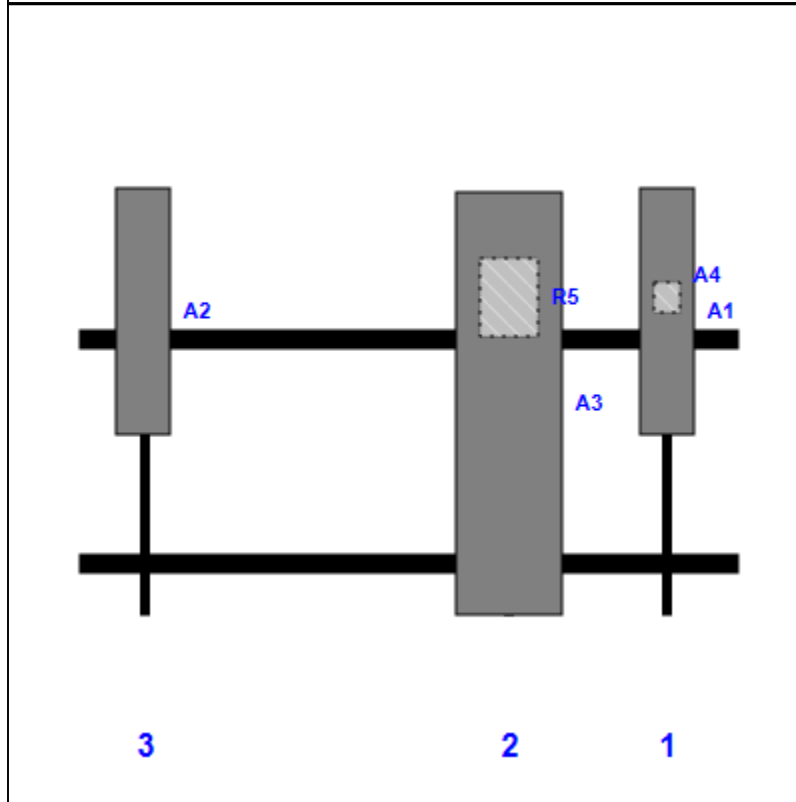
Page: 1



Plan View



Front View
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	56.00	12.10	134.00	1	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	134.00	1	a	Behind	24.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	98.00	2	a	Front	48.00			
R5	4449 B71 + B85	17.90	13.20	98.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	56.00	12.10	15.00	3	a	Front	27.00			

Structure: CT11561-A-SBA - Groton 2, CT

Sector: B

5/19/2021

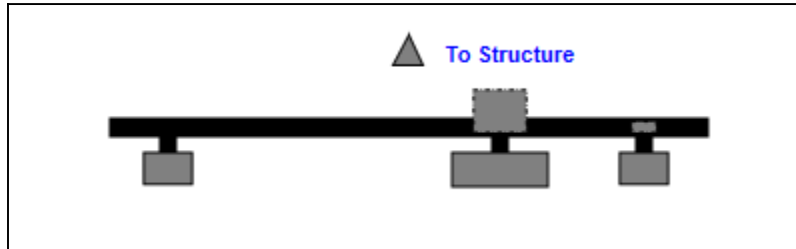
Structure Type: Monopole

Mount Elev: 129.00

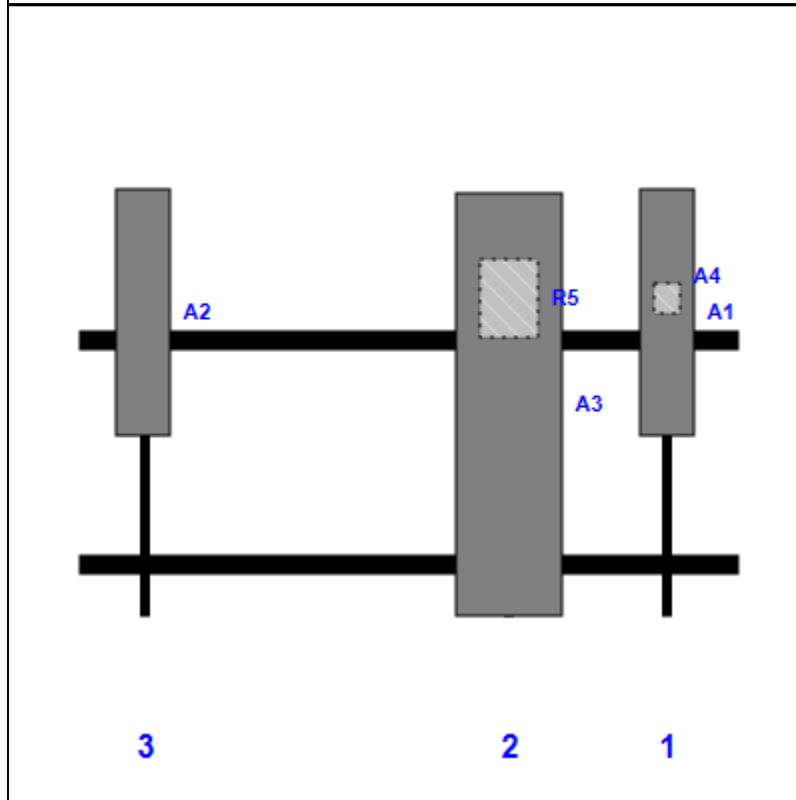
Page: 2



Plan View



Front View
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	56.00	12.10	134.00	1	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	134.00	1	a	Behind	24.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	98.00	2	a	Front	48.00			
R5	4449 B71 + B85	17.90	13.20	98.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	56.00	12.10	15.00	3	a	Front	27.00			

Structure: CT11561-A-SBA - Groton 2, CT

Sector: C

5/19/2021

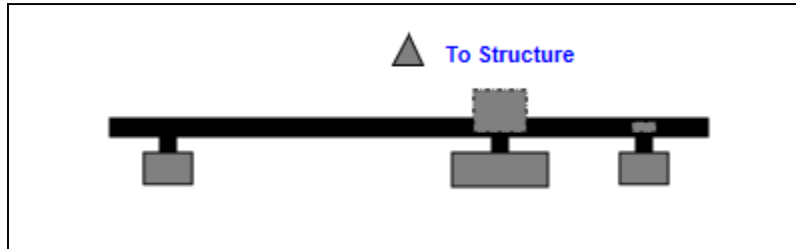
Structure Type: Monopole

Mount Elev: 129.00

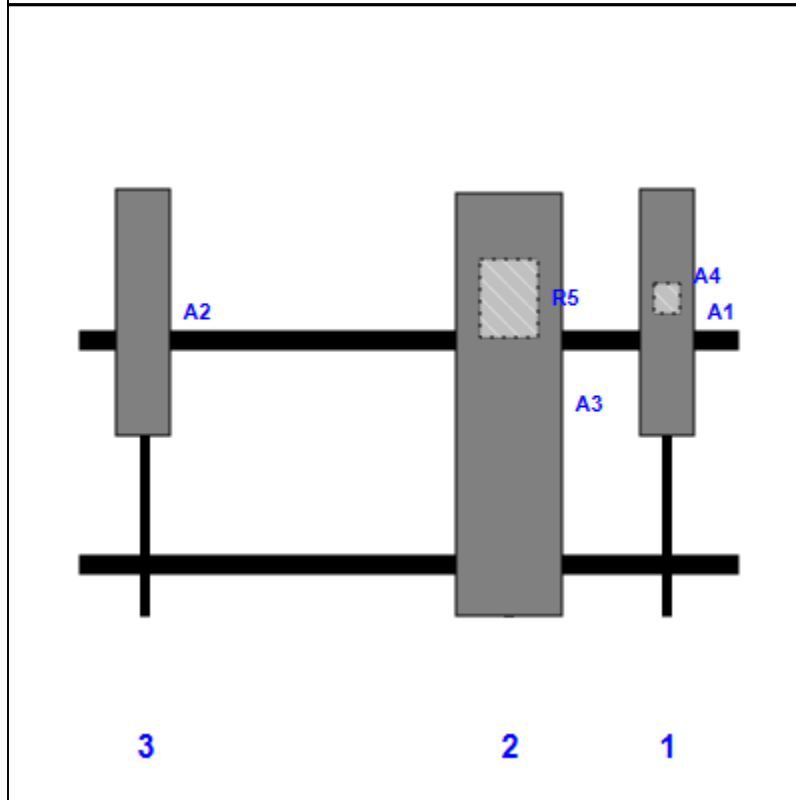
Page: 3




Plan View



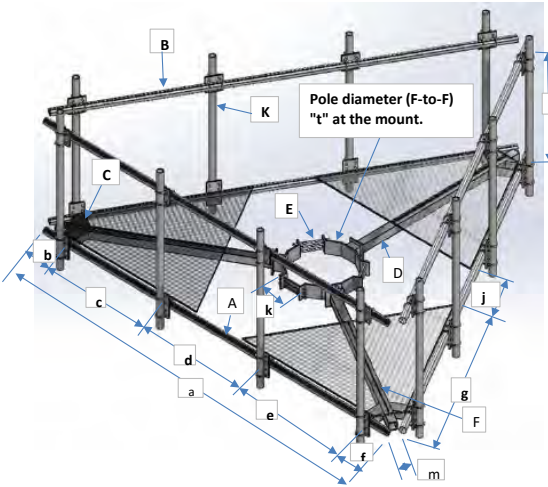
Front View
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 21 B2A/B4P	56.00	12.10	134.00	1	a	Front	27.00			
A4	KRY 112 144/1	6.90	6.10	134.00	1	a	Behind	24.00			
A3	APXVAALL24_43-U-NA20	95.90	24.00	98.00	2	a	Front	48.00			
R5	4449 B71 + B85	17.90	13.20	98.00	2	a	Behind	24.00			
A2	Air 21 B4A/B2P	56.00	12.10	15.00	3	a	Front	27.00			

	Antenna Mount Type "MT-B" Mapping Form (PATENT PENDING)			FCC #
				1261047
	Tower Owner:	SBA Communications	Mapping Date:	4/30/19
	Site Name:	Groton 2, CT	Structure Type:	Monopole
Site Number or ID:	CT11561-A-SBA	Structure Height (Ft.):	131	
Mapping Contractor:	Full Metal Tower Services	Mount Height (Ft.):	128.4	

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



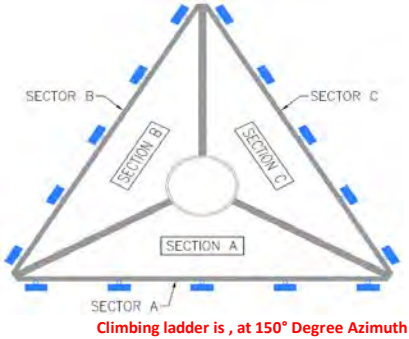
Geometries (Unit: inches)									
a	150	e	45	j	41	o	N/A	s	N/A
b	10	f	9	k	36	p	N/A	t	24
c	45	g	45	m	12	q	N/A	u*	33
d	41	h	-45	n	N/A	r	N/A	v*	96

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	Tubing 4x4x1/4	4	4	0.25
B	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	G				
C	1/2" Thick. Plate	0	0	0.5	H				
D	Tubing 4x4x1/4	4	4	0.25	J				
E	3/4" Bolt		36		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.) N/A

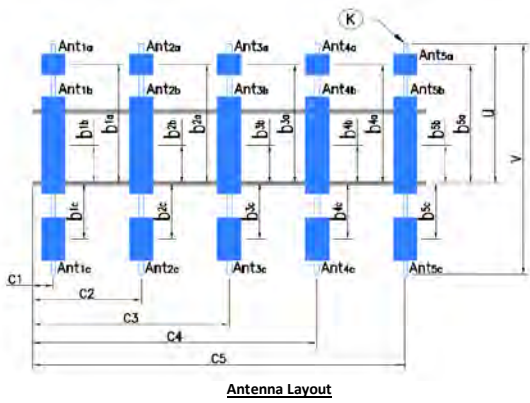
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) 7.5'

Please enter the information below if members can't be found from the drop down lists



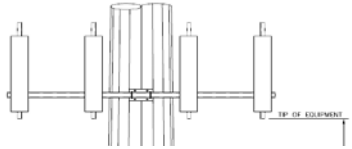
Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.						Mounting Locations (Unit: inches)			Photos of antennas
Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances "b _{1a} ", "b _{2a} ", "b _{3a} ", "b _{1b} ",..." (in.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C ₁ ", "C ₂ ", "C ₃ ", "C ₄ ", "C ₅ " (in.)	Photo Numbers
Sector A									
Ant _{1a}									
Ant _{1b}	Antenna A	12	8	56	1/2" (2)	+4"	7	16	
Ant _{1c}	TMA A				1/2" (2)		N/A	16	
Ant _{2a}									
Ant _{2b}	Antenna B	12	7.5	96.5	1/2" (2)	-27"	7	52	
Ant _{2c}	RRH A	17	7	20	1/2" (2)	-23"	N/A	52	
Ant _{3a}									
Ant _{3b}	Antenna C	13	9	56	1/2" (1)	+4"	8	135	
Ant _{3c}									
Ant _{4a}									
Ant _{4b}									
Ant _{4c}									
Ant _{5a}									
Ant _{5b}									
Ant _{5c}									

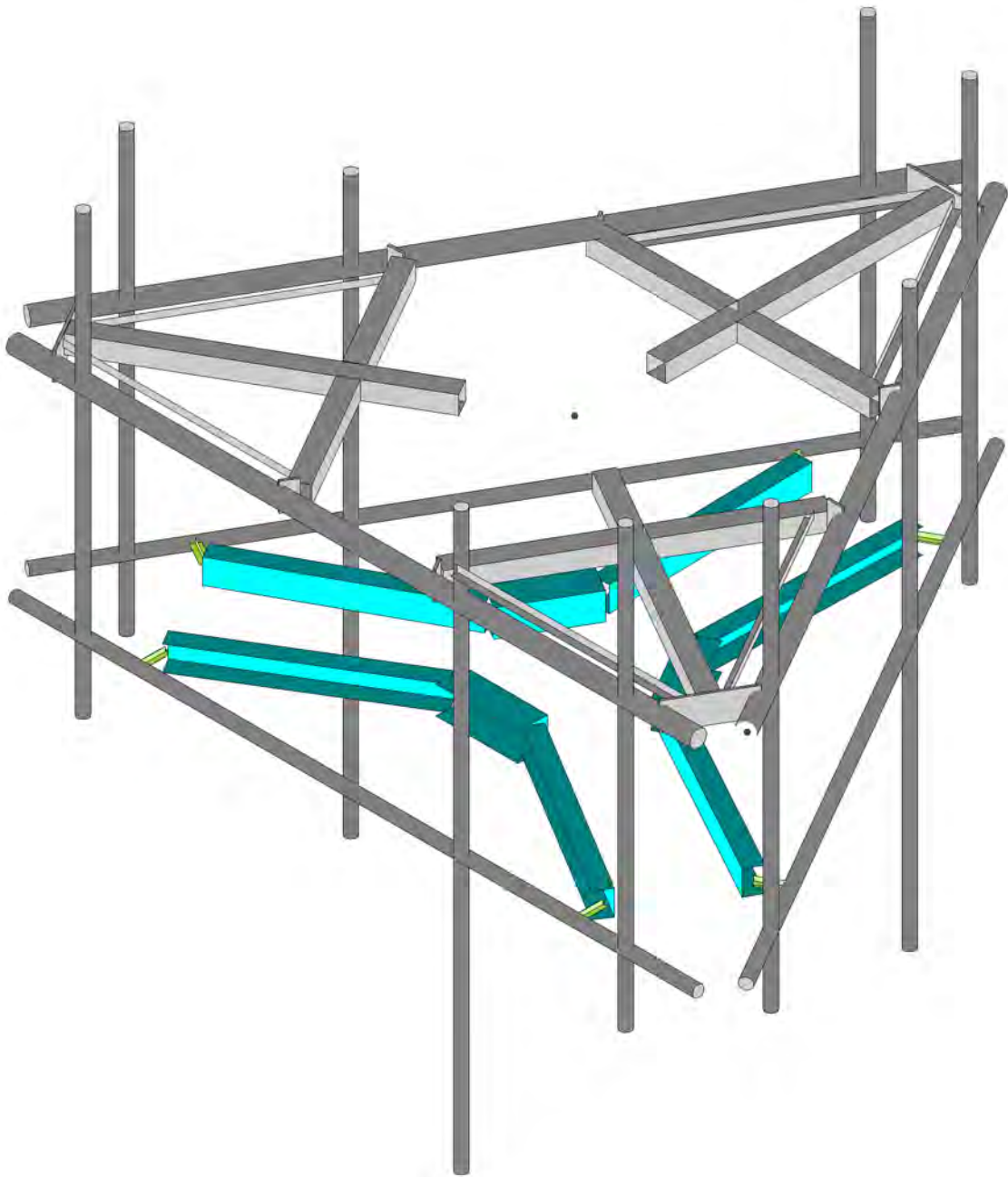
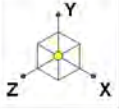
Are Ant same as sector A? Yes **Antennas on Sector B are the same as Sector A**



Azimuth (Degree) of Each Sector and Climbing Information		
Sector A:	70°	Deg
Sector B:	190°	Deg
Sector C:	310°	Deg
Climbing:	150°	Deg
Climbing Facility	Corrosion Type:	
	Access:	
	Condition:	

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



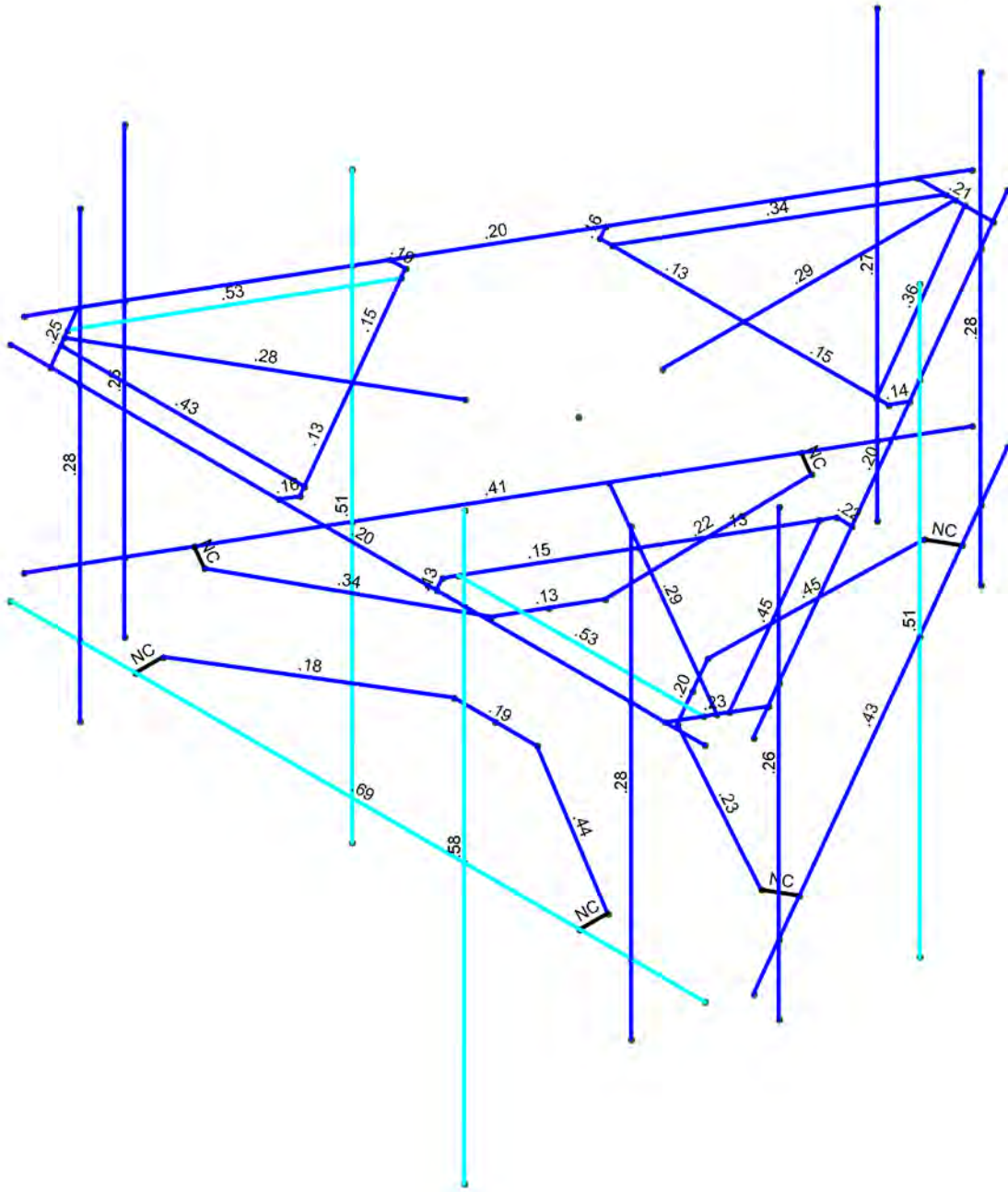
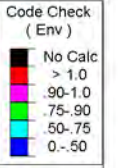
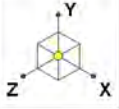


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LK
TES Project No. 106968

CT11561-A-SBA_MT_LO_Loads Only_G

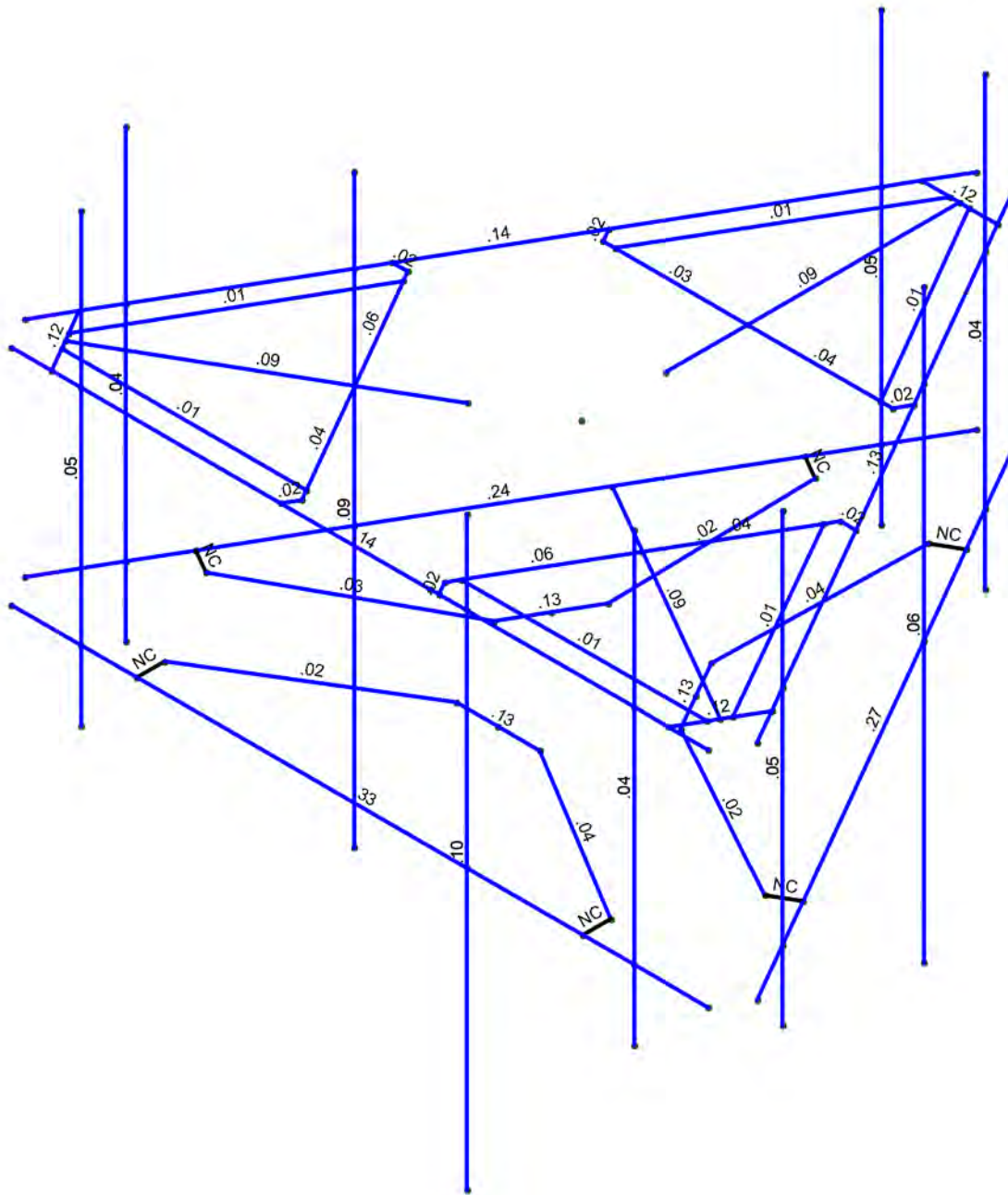
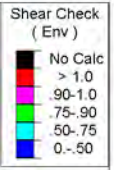
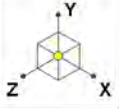
SK - 1

May 19, 2021 at 3:43 PM
CT11561-A-SBA_106968_G_RISA_...



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

Tower Engineering Solutio...	CT11561-A-SBA_MT_LO_Loads Only_G	SK - 2
LK		May 19, 2021 at 3:43 PM
TES Project No. 106968		CT11561-A-SBA_106968_G_RISA_...



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

Tower Engineering Solutio...	CT11561-A-SBA_MT_LO_Loads Only_G	SK - 3
LK		May 19, 2021 at 3:44 PM
TES Project No. 106968		CT11561-A-SBA_106968_G_RISA_...



6 U_jW @ UX⁷ U_jY_j

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me... Surface(...
1	Antenna D	None					24	
2	Antenna Di	None					24	
3	Antenna W Front	None					24	
4	Antenna Wi Front	None					24	
5	Antenna W Side	None					24	
6	Antenna Wi Side	None					24	
7	Service Lm1	None					1	
8	Service Lm2	None					1	
9	Structure D	None		-1				3
10	Structure Di	None					48	3
11	Structure W Front	None					48	
12	Structure Wi Front	None					48	
13	Structure W Side	None					48	
14	Structure Wi Side	None					48	
15	BLC 9 Transient Area Loads	None						
16	BLC 10 Transient Area Loads	None					54	

@UX⁷ca V_jbU_jc_jbg

	Description	So.. P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.2D+1.6W (Front)	Yes	Y	1	1.2	9	1.2	3	1.6	11	1.6									
2	1.2D+1.6W (Back)	Yes	Y	1	1.2	9	1.2	3	-1.6	11	-1.6									
3	1.2D+1.6W (Left)	Yes	Y	1	1.2	9	1.2	5	1.6	13	1.6									
4	1.2D+1.6W (Right)	Yes	Y	1	1.2	9	1.2	5	-1.6	13	-1.6									
5	1.2D+1.0Di+1.0Wi (Front)	Yes	Y	1	1.2	9	1.2	2	1	10	1	4	1	12	1					
6	1.2D+1.0Di+1.0Wi (Back)	Yes	Y	1	1.2	9	1.2	2	1	10	1	4	-1	12	-1					
7	1.2D+1.0Di+1.0Wi (Left)	Yes	Y	1	1.2	9	1.2	2	1	10	1	6	1	14	1					
8	1.2D+1.0Di+1.0Wi (Right)	Yes	Y	1	1.2	9	1.2	2	1	10	1	6	-1	14	-1					
9	1.2D+1.5L1+.16W (Mai...	Yes	Y	1	1.2	9	1.2	7	1.5	3	.16	11	.16							
10	1.2D+1.5L2+.16W (Mai...	Yes	Y	1	1.2	9	1.2	8	1.5	3	.16	11	.16							
11	1.4D	Yes	Y	1	1.4	9	1.4													

>c_jb_jh_j7 ccfX_jbU_jY_jU_bX^HY_a dY_fU_i fY_j

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	-1.299038	0	.75	0	
3	N3	-2.580756	0	1.49	0	
4	N4	-3.880756	0	-0.761666	0	
5	N5	-5.871652	0	3.39	0	
6	N6	-1.280756	0	3.741666	0	
7	N7	-1.390131	0	3.552223	0	
8	N8	-3.771381	0	-0.572223	0	
9	N9	-5.531652	0	3.978897	0	
10	N10	-6.211652	0	2.801103	0	
11	N11	-5.956652	0	3.242776	0	
12	N12	-5.786652	0	3.537224	0	



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

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
13	N13	5.531652	0	3.978897	0	
14	N14	-1.422991	0	3.978897	0	
15	N15	-4.157322	0	-0.757102	0	
16	N16	1.299038	0	0.75	0	
17	N17	2.580756	0	1.49	0	
18	N18	1.280756	0	3.741666	0	
19	N19	5.871652	0	3.39	0	
20	N20	3.880756	0	-0.761666	0	
21	N21	3.771381	0	-0.572223	0	
22	N22	1.390131	0	3.552223	0	
23	N23	6.211652	0	2.801103	0	
24	N24	5.786652	0	3.537224	0	
25	N25	5.956652	0	3.242776	0	
26	N26	4.157322	0	-0.757102	0	
27	N27	1.422991	0	3.978897	0	
28	N28	1.8e-13	0	-1.5	0	
29	N29	-5e-14	0	-2.98	0	
30	N30	2.6	0	-2.98	0	
31	N31	1.8e-13	0	-6.78	0	
32	N32	-2.6	0	-2.98	0	
33	N33	-2.38125	0	-2.98	0	
34	N34	2.38125	0	-2.98	0	
35	N35	-0.68	0	-6.78	0	
36	N36	0.68	0	-6.78	0	
37	N37	0.17	0	-6.78	0	
38	N38	-0.17	0	-6.78	0	
39	N39	-2.734331	0	-3.221795	0	
40	N40	2.734331	0	-3.221795	0	
41	N41	6.25	0	3.978897	0	
42	N42	-6.25	0	3.978897	0	
43	N43	0.320826	0	-7.402107	0	
44	N44	6.570826	0	3.42321	0	
45	N45	-6.570826	0	3.42321	0	
46	N46	-0.320826	0	-7.402107	0	
47	N47	1.25	0	3.978897	0	
48	N48	4.92	0	3.978897	0	
49	N49	0.985826	0	-6.250294	0	
50	N50	-5.905826	0	2.271396	0	
51	N51	1.92	0	3.978897	0	
52	N52	2.485826	0	-3.652217	0	
53	N53	-4.405826	0	-0.32668	0	
54	N54	-5.	0	3.978897	0	
55	N55	5.945826	0	2.340678	0	
56	N56	-0.945826	0	-6.319576	0	
57	N57	4.92	2.75	3.978897	0	
58	N58	0.985826	2.75	-6.250294	0	
59	N59	-5.905826	2.75	2.271396	0	
60	N60	-5.	2.75	3.978897	0	
61	N61	5.945826	2.75	2.340678	0	
62	N62	-0.945826	2.75	-6.319576	0	
63	N63	4.92	-5.25	3.978897	0	
64	N64	0.985826	-5.25	-6.250294	0	



>c]bh7ccfX]bUhg'UbX'HYa dYUhi fYg'f7 cb]bi YXL

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
65	N65	-5.905826	-5.25	2.271396	0	
66	N66	-5.	-5.25	3.978897	0	
67	N67	5.945826	-5.25	2.340678	0	
68	N68	-0.945826	-5.25	-6.319576	0	
69	N69	1.92	1.5	3.978897	0	
70	N70	2.485826	1.5	-3.652217	0	
71	N71	-4.405826	1.5	-0.32668	0	
72	N72	1.92	-9	3.978897	0	
73	N73	2.485826	-9	-3.652217	0	
74	N74	-4.405826	-9	-0.32668	0	
75	N75	6.25	-4	3.978897	0	
76	N76	-6.25	-4	3.978897	0	
77	N77	-1.7e-13	-4	1.5	0	
78	N79	4.	-4	3.978897	0	
79	N80	-4.	-4	3.978897	0	
80	N80A	0.320826	-4	-7.402107	0	
81	N81	6.570826	-4	3.42321	0	
82	N85	-6.570826	-4	3.42321	0	
83	N86	-0.320826	-4	-7.402107	0	
84	N90	-5.	-4	3.978897	0	
85	N91	1.92	-4	3.978897	0	
86	N92	4.92	-4	3.978897	0	
87	N93	5.945826	-4	2.340678	0	
88	N94	2.485826	-4	-3.652217	0	
89	N95	0.985826	-4	-6.250294	0	
90	N96	-0.945826	-4	-6.319576	0	
91	N97	-4.405826	-4	-0.32668	0	
92	N98	-5.905826	-4	2.271396	0	
93	N93A	0.75	-4	1.5	0	
94	N94A	-0.75	-4	1.5	0	
95	N95A	4.	-4	3.478897	0	
96	N96A	-4.	-4	3.478897	0	
97	N97A	1.299038	-4	-0.75	0	
98	N98A	1.445826	-4	-5.45355	0	
99	N99	5.445826	-4	1.474653	0	
100	N100	0.924038	-4	-1.399519	0	
101	N101	1.674038	-4	-0.100481	0	
102	N102	1.012813	-4	-5.20355	0	
103	N103	5.012813	-4	1.724653	0	
104	N104	-1.299038	-4	-0.75	0	
105	N105	-5.445826	-4	1.474653	0	
106	N106	-1.445826	-4	-5.45355	0	
107	N107	-1.674038	-4	-0.100481	0	
108	N108	-0.924038	-4	-1.399519	0	
109	N109	-5.012813	-4	1.724653	0	
110	N110	-1.012813	-4	-5.20355	0	



<chFc`YX`GhYY`GYWjcb`GYtg

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Standoff	HSS4x4x5	Beam	SquareTube	A500 Gr.B ...	Typical	4.1	9.14	9.14	15.3
2	Internal Fa...	L1.5x1.5x3	Beam	Single Angle	A36 Gr.36	Typical	.527	.11	.11	.006
3	Plate Conn...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
4	Internal Bra...	HSS4x4x4	Beam	Tube	A500 Gr.B ...	Typical	3.37	7.8	7.8	12.8
5	End Conne...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
6	Face Horiz...	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
7	Support Rail	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	End Conne...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
9	Mount Pipe...	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

7c`X: cfa`YX`GhYY`GYWjcb`GYtg

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	V-Brace	5.44CU3.7x1875	Beam	CU	A570 Gr.33	Typical	2.262	3.221	11.043	.027
2	V-Brace C...	6CU6.5x250	Beam	CU	A570 Gr.33	Typical	4.491	20.132	29.124	.094

5`i`a`jbi`a`GYWjcb`GYtg

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

<chFc`YX`GhYY`DfcdYfhYg

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

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

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570 Gr.33	29500	11346	.3	.65	.49	33	52
2	A607 C1 Gr.55	29500	11346	.3	.65	.49	55	70

5`i`a`jbi`a`DfcdYfhYg

	Label	E [ksi]	G [ksi]	Nu	Therm (...Density[...Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct		
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B...	1	19	16	13	12	141
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B...	1	38	35	35	24	141
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B...	1	22	16	16	13	141
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B...	1	30	25	25	19	141
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B...	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B...	1	24	15	15	15	141



A Ya Vyf DfJa Ufm8 UU

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N5			Standoff	Beam	SquareTube	A500 Gr.B...	Typical
2	M2	N4	N3			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
3	M3	N7	N12			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N3	N6			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
5	M5	N8	N11			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
6	M6	N6	N14			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
7	M7	N9	N10			End Connectio...	Beam	RECT	A36 Gr.36	Typical
8	M8	N42	N41			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
9	M9	N4	N15			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
10	M10	N16	N19			Standoff	Beam	SquareTube	A500 Gr.B...	Typical
11	M11	N18	N17			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
12	M12	N21	N25			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N17	N20			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
14	M14	N22	N24			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N20	N26			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
16	M16	N23	N13			End Connectio...	Beam	RECT	A36 Gr.36	Typical
17	M17	N18	N27			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
18	M18	N28	N31			Standoff	Beam	SquareTube	A500 Gr.B...	Typical
19	M19	N30	N29			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
20	M20	N33	N38			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
21	M21	N29	N32			Internal Brace ...	Beam	Tube	A500 Gr.B...	Typical
22	M22	N34	N37			Internal Face ...	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N32	N39			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
24	M24	N35	N36			End Connectio...	Beam	RECT	A36 Gr.36	Typical
25	M25	N30	N40			Plate Connecti...	Beam	RECT	A36 Gr.36	Typical
26	M26	N44	N43			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
27	M27	N46	N45			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
28	MP3A	N60	N66			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
29	MP2A	N69	N72			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
30	MP1A	N57	N63			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
31	MP3C	N61	N67			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
32	MP2C	N70	N73			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
33	MP1C	N58	N64			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
34	MP3B	N62	N68			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
35	MP2B	N71	N74			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
36	MP1B	N59	N65			Mount Pipe 2 s...	Beam	Pipe	A53 Gr.B	Typical
37	M37	N76	N75			Support Rail	Beam	Pipe	A53 Gr.B	Typical
38	M38	N94A	N96A		180	V-Brace	Beam	CU	A570 Gr.33	Typical
39	M39	N93A	N95A			V-Brace	Beam	CU	A570 Gr.33	Typical
40	M40	N81	N80A			Support Rail	Beam	Pipe	A53 Gr.B	Typical
41	M43	N86	N85			Support Rail	Beam	Pipe	A53 Gr.B	Typical
42	M42	N80	N96A			RIGID	Beam	None	RIGID	DR1
43	M43A	N79	N95A			RIGID	Beam	None	RIGID	DR1
44	M44	N94A	N93A			V-Brace Conn...	Beam	CU	A570 Gr.33	Typical
45	M45	N101	N103		180	V-Brace	Beam	CU	A570 Gr.33	Typical
46	M46	N100	N102			V-Brace	Beam	CU	A570 Gr.33	Typical
47	M47	N99	N103			RIGID	Beam	None	RIGID	DR1
48	M48	N98A	N102			RIGID	Beam	None	RIGID	DR1
49	M49	N101	N100			V-Brace Conn...	Beam	CU	A570 Gr.33	Typical
50	M50	N108	N110		180	V-Brace	Beam	CU	A570 Gr.33	Typical
51	M51	N107	N109			V-Brace	Beam	CU	A570 Gr.33	Typical



A Ya Vyf DfJa Ufm8 UUf7 cbHbi YXL

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
52	M52	N106	N110			RIGID	Beam	None	RIGID	DR1
53	M53	N105	N109			RIGID	Beam	None	RIGID	DR1
54	M54	N108	N107			V-Brace Conn...	Beam	CU	A570 Gr.33	Typical

A Ya Vyf 5 Xj UbWX 8 UHJ

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	M1						Yes			None
2	M2				M1		Yes			None
3	M3						Yes			None
4	M4			M1			Yes			None
5	M5						Yes			None
6	M6		OOOXOO				Yes			None
7	M7	OOOOOX	OOOOOX				Yes			None
8	M8						Yes			None
9	M9		OOOXOO				Yes			None
10	M10						Yes			None
11	M11				M1		Yes			None
12	M12						Yes			None
13	M13			M1			Yes			None
14	M14						Yes			None
15	M15		OOOXOO				Yes			None
16	M16	OOOOOX	OOOOOX				Yes			None
17	M17		OOOXOO				Yes			None
18	M18						Yes			None
19	M19				M1		Yes			None
20	M20						Yes			None
21	M21			M1			Yes			None
22	M22						Yes			None
23	M23		OOOXOO				Yes			None
24	M24	OOOOOX	OOOOOX				Yes			None
25	M25		OOOXOO				Yes			None
26	M26						Yes			None
27	M27						Yes			None
28	MP3A						Yes			None
29	MP2A						Yes			None
30	MP1A						Yes			None
31	MP3C						Yes			None
32	MP2C						Yes			None
33	MP1C						Yes			None
34	MP3B						Yes			None
35	MP2B						Yes			None
36	MP1B						Yes			None
37	M37						Yes			None
38	M38						Yes			None
39	M39						Yes			None
40	M40						Yes			None
41	M43						Yes			None
42	M42						Yes			None
43	M43A						Yes			None
44	M44						Yes			None



A Ya Vyf'5 Xj Ub WX'8 UHfT' c b h i YXL

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
45	M45						Yes			None
46	M46						Yes			None
47	M47						Yes			None
48	M48						Yes			None
49	M49						Yes			None
50	M50						Yes			None
51	M51						Yes			None
52	M52						Yes			None
53	M53						Yes			None
54	M54						Yes			None

< chFc`YX'GhYY'8 YgJj b'DUfUa YhYfg

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-torq...	Kyy	Kzz	Cb	Funct...
1	M1	Standoff	5.28			Lbyy						Lateral
2	M2	Internal Brace Bottom	2.6			Lbyy						Lateral
3	M3	Internal Face Horizontal	4.397			Lbyy						Lateral
4	M4	Internal Brace Bottom	2.6			Lbyy						Lateral
5	M5	Internal Face Horizontal	4.397			Lbyy						Lateral
6	M6	Plate Connection	.277			Lbyy						Lateral
7	M7	End Connection Bottom	1.36			Lbyy						Lateral
8	M8	Face Horizontal	12.5			Lbyy						Lateral
9	M9	Plate Connection	.277			Lbyy						Lateral
10	M10	Standoff	5.28			Lbyy						Lateral
11	M11	Internal Brace Bottom	2.6			Lbyy						Lateral
12	M12	Internal Face Horizontal	4.397			Lbyy						Lateral
13	M13	Internal Brace Bottom	2.6			Lbyy						Lateral
14	M14	Internal Face Horizontal	4.397			Lbyy						Lateral
15	M15	Plate Connection	.277			Lbyy						Lateral
16	M16	End Connection Bottom	1.36			Lbyy						Lateral
17	M17	Plate Connection	.277			Lbyy						Lateral
18	M18	Standoff	5.28			Lbyy						Lateral
19	M19	Internal Brace Bottom	2.6			Lbyy						Lateral
20	M20	Internal Face Horizontal	4.397			Lbyy						Lateral
21	M21	Internal Brace Bottom	2.6			Lbyy						Lateral
22	M22	Internal Face Horizontal	4.397			Lbyy						Lateral
23	M23	Plate Connection	.277			Lbyy						Lateral
24	M24	End Connection Bottom	1.36			Lbyy						Lateral
25	M25	Plate Connection	.277			Lbyy						Lateral
26	M26	Face Horizontal	12.5			Lbyy						Lateral
27	M27	Face Horizontal	12.5			Lbyy						Lateral
28	MP3A	Mount Pipe 2 std	8			Lbyy						Lateral
29	MP2A	Mount Pipe 2 std	10.5			Lbyy						Lateral
30	MP1A	Mount Pipe 2 std	8			Lbyy						Lateral
31	MP3C	Mount Pipe 2 std	8			Lbyy						Lateral
32	MP2C	Mount Pipe 2 std	10.5			Lbyy						Lateral
33	MP1C	Mount Pipe 2 std	8			Lbyy						Lateral
34	MP3B	Mount Pipe 2 std	8			Lbyy						Lateral
35	MP2B	Mount Pipe 2 std	10.5			Lbyy						Lateral
36	MP1B	Mount Pipe 2 std	8			Lbyy						Lateral
37	M37	Support Rail	12.5			Lbyy						Lateral



<chFc`YX'GhY'8 Yg]] b'DUFUa Yhfg f7 cb]bi YXL

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-torq...	Kyy	Kzz	Cb	Funct...
38	M40	Support Rail	12.5			Lbyy						Lateral
39	M43	Support Rail	12.5			Lbyy						Lateral

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

	Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-torque...	Kyy	Kzz	Cm-...	Cm-...	Cb	R	a[ft]	y sw...	z sw...
1	M38	V-Brace	3.805			Lbyy											
2	M39	V-Brace	3.805			Lbyy											
3	M44	V-Brace..	1.5			Lbyy											
4	M45	V-Brace	3.805			Lbyy											
5	M46	V-Brace	3.805			Lbyy											
6	M49	V-Brace..	1.5			Lbyy											
7	M50	V-Brace	3.805			Lbyy											
8	M51	V-Brace	3.805			Lbyy											
9	M54	V-Brace..	1.5			Lbyy											

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

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

>c]bh6ci bXUf m7 cbX]]cbg

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N16	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N28	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N77	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N93A						
6	N94A						
7	N97A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N100						
9	N101						
10	N104	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N107						
12	N108						

9bj YcdY>c]bhFYUM]]cbg

	Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N2	max	2391.137	4	2489.895	7	1326.965	1	-.718	2	.916	1	-1.558	10
2		min	-2383.64	3	732.891	4	-1392.503	2	-2.112	5	-1.062	2	-4.684	5
3	N16	max	1826.416	4	2487.858	5	2023.402	1	-1.004	1	1.297	2	4.171	8
4		min	-1886.59	3	729.326	2	-1996.342	2	-3.001	6	-1.445	1	1.394	1
5	N28	max	1628.656	4	2486.985	6	2546.678	1	5.109	7	1.785	3	.536	5
6		min	-1575.012	3	716.054	9	-2507.205	2	1.657	10	-1.932	4	.094	10
7	N77	max	730.993	4	433.03	6	1713.835	1	-.048	1	1.524	2	.109	10
8		min	-654.198	3	-20.201	1	-1550.434	2	-.154	8	-1.415	1	-.099	1
9	N97A	max	1434.187	4	429.608	7	869.016	1	.132	3	2.354	3	.142	8
10		min	-1331.154	3	3.019	4	-1017.847	2	-.079	4	-2.24	4	-.003	3



9bj YcdY>c]bhFYUM]cbgf77 cbl]bi YXL

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
11	N104	max	1354.293	4	422.786	8	895.224	1	.099	2	1.822	1	.001	2
12		min	-1535.087	3	37.765	3	-910.79	2	-.042	1	-1.709	2	-.144	5
13	Totals:	max	9365.681	4	8586.736	7	9375.121	1						
14		min	-9365.681	3	3040.41	4	-9375.121	2						

9bj YcdYA Ya VYf'GYW]cb': cfWYg

Member	Sec	Axial [lb]	LC	y Shear [lb]	LC	z Shear [lb]	LC	Torque [k-...]	LC	y-y Mome...	LC	z-z Mome...	LC		
1	M1	1	max	2355.276	3	2490.791	7	957.373	2	.378	9	.916	1	5.113	5
2			min	-2394.433	4	730.986	4	-904.633	1	-.532	6	-1.062	2	1.722	10
3		2	max	2331.264	3	2446.835	7	915.783	2	.378	9	.467	3	1.915	8
4			min	-2370.421	4	707.219	4	-863.044	1	-.532	6	-.543	4	.424	3
5		3	max	2054.386	3	488.764	5	116.26	2	.005	9	.049	3	1.001	5
6			min	-2084.921	4	117.761	2	-114.545	1	-.145	7	-.058	4	.23	2
7		4	max	2030.375	3	425.726	5	74.67	2	.005	9	.13	2	.399	5
8			min	-2060.909	4	93.993	2	-72.955	1	-.145	7	-.136	1	.09	2
9		5	max	2006.363	3	373.074	5	33.081	2	.005	9	.201	2	.012	4
10			min	-2036.898	4	70.226	2	-31.366	1	-.145	7	-.205	1	-.134	7
11	M2	1	max	301.119	2	-223.239	4	1362.669	4	.221	4	.053	4	.123	4
12			min	-285.848	1	-906.569	7	-1307.554	3	-.285	3	-.055	3	-.158	3
13		2	max	604.383	3	-241.552	4	167.274	4	.237	4	.368	4	.506	8
14			min	-617.046	4	-963.36	7	-151.632	3	-.28	3	-.361	3	.079	3
15		3	max	615.449	3	-250.555	4	186.441	4	.237	4	.476	4	1.086	6
16			min	-628.112	4	-987.818	7	-170.799	3	-.28	3	-.459	3	.324	1
17		4	max	626.515	3	-259.558	4	205.607	4	.237	4	.595	4	1.691	6
18			min	-639.178	4	-1012.276	7	-189.966	3	-.28	3	-.569	3	.495	1
19		5	max	637.581	3	-268.562	4	224.774	4	.237	4	.726	4	2.311	6
20			min	-650.244	4	-1036.733	7	-209.133	3	-.28	3	-.69	3	.671	1
21	M3	1	max	1006.635	2	34.719	5	48.495	2	0	1	.018	1	.063	1
22			min	-1011.661	1	-5.112	2	-49.794	1	0	6	-.028	6	-.045	2
23		2	max	1006.576	2	23.498	5	31.179	2	0	1	0	2	.019	1
24			min	-1011.602	1	-7.479	2	-32.479	1	0	6	-.002	1	-.009	2
25		3	max	1006.517	2	11.944	1	13.864	2	0	1	.011	2	.015	2
26			min	-1011.543	1	-9.846	2	-15.164	1	0	6	-.011	1	-.01	1
27		4	max	1006.458	2	9.577	1	4.994	4	0	1	.007	2	.028	2
28			min	-1011.484	1	-17.269	6	-6.276	3	0	6	-.007	1	-.024	1
29		5	max	1006.399	2	7.211	1	19.466	1	0	1	.008	1	.029	2
30			min	-1011.425	1	-29.886	6	-20.766	2	0	6	-.022	6	-.022	1
31	M4	1	max	241.618	1	878.815	7	100.23	1	.252	1	.407	2	1.959	7
32			min	-303.881	2	247.353	4	-92.513	2	-.231	2	-.426	1	.552	4
33		2	max	230.552	1	854.355	7	93.841	1	.252	1	.353	2	1.432	7
34			min	-292.815	2	238.349	4	-86.124	2	-.231	2	-.367	1	.384	1
35		3	max	219.486	1	829.896	7	87.452	1	.252	1	.302	2	.927	6
36			min	-281.749	2	229.346	4	-79.735	2	-.231	2	-.312	1	.192	1
37		4	max	208.42	1	805.436	7	81.063	1	.252	1	.256	2	.442	6
38			min	-270.683	2	220.343	4	-73.346	2	-.231	2	-.26	1	.006	1
39		5	max	288.311	2	751.66	7	923.78	1	.28	1	.078	2	.135	2
40			min	-354.675	1	209.689	4	-912.826	2	-.243	2	-.084	1	-.155	1
41	M5	1	max	1428.495	4	37.89	8	37.762	3	0	6	.02	4	.052	8
42			min	-1381.903	3	2.582	3	-40.669	4	0	3	-.031	7	-.023	3
43		2	max	1435.963	4	26.667	8	24.724	3	0	6	.002	4	.016	8



9bj YcdYA Ya VYf GYVJcb: cfWkg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
44		min	-1389.371	3	.215	3	-27.632	4	0	3	-.005	3	0	3	
45	3	max	1443.431	4	7.458	8	11.687	3	0	6	.01	7	.015	3	
46		min	-1396.839	3	-2.152	3	-14.594	4	0	3	-.008	4	-.012	4	
47	4	max	1450.899	4	4.577	4	1.084	1	0	6	.01	3	.022	3	
48		min	-1404.307	3	-11.726	7	-5.732	7	0	3	-.01	4	-.022	4	
49	5	max	1458.367	4	2.21	4	11.481	4	0	6	.002	1	.02	3	
50		min	-1411.775	3	-24.343	7	-14.388	3	0	3	-.016	7	-.021	4	
51	M6	1	max	635.401	1	751.867	7	759.087	1	0	.078	2	.278	2	
52		min	-657.874	2	209.312	4	-695.02	2	0	1	-.084	1	-.32	1	
53	2	max	633.48	1	750.101	7	760.239	1	0	1	.03	2	.262	2	
54		min	-655.952	2	208.465	4	-696.172	2	0	1	-.031	1	-.339	1	
55	3	max	631.558	1	748.335	7	761.391	1	0	1	.021	1	.246	2	
56		min	-654.03	2	207.618	4	-697.324	2	0	1	-.018	2	-.358	1	
57	4	max	629.636	1	746.569	7	762.544	1	0	1	.074	1	.23	2	
58		min	-652.108	2	206.771	4	-698.476	2	0	1	-.067	2	-.377	1	
59	5	max	627.714	1	744.803	7	763.696	1	0	1	.127	1	.213	2	
60		min	-650.187	2	205.924	4	-699.629	2	0	1	-.115	2	-.395	1	
61	M7	1	max	297.073	1	24.891	10	165.049	1	.05	.068	2	0	1	
62		min	-341.044	2	-55.056	1	-165.518	2	-.031	2	-.069	1	0	1	
63	2	max	306.351	1	20.726	10	170.405	1	.05	1	.011	2	.019	1	
64		min	-350.322	2	-59.221	1	-170.875	2	-.031	2	-.012	1	-.008	10	
65	3	max	398.498	4	294.978	5	1463.859	4	.032	1	.247	3	.19	5	
66		min	-445.759	3	-54.818	1	-1429.956	3	-.088	7	-.25	4	.034	9	
67	4	max	263.573	3	262.914	5	180.317	4	.007	4	.012	4	.088	5	
68		min	-334.84	4	39.532	9	-187.558	3	-.072	7	-.014	3	.013	9	
69	5	max	254.296	3	254.231	5	164.248	4	.007	4	.071	4	0	1	
70		min	-325.563	4	35.367	9	-171.49	3	-.072	7	-.075	3	0	1	
71	M8	1	max	0	0	0	0	0	0	1	0	1	0	1	
72		min	0	1	0	1	0	1	0	1	0	1	0	1	
73	2	max	97.766	3	-110.078	4	148.632	2	.171	2	.043	1	.33	8	
74		min	-237.376	4	-404.311	7	-127.026	1	-.287	1	-.034	2	.049	3	
75	3	max	827.07	2	353.718	9	19.784	2	.07	8	.141	2	.769	5	
76		min	-1009.103	1	46.103	2	-50.192	1	-.027	3	-.127	1	-.175	9	
77	4	max	105.883	4	156.568	4	115.979	1	.201	1	.111	1	.149	10	
78		min	-251.524	3	-49.427	3	-108.759	2	-.099	2	-.15	2	-.188	5	
79	5	max	0	1	0	1	0	1	0	1	0	1	0	1	
80		min	0	1	0	1	0	1	0	1	0	1	0	1	
81	M9	1	max	1078.001	3	907.283	7	790.136	4	0	.055	3	.253	4	
82		min	-1119.142	4	220.604	4	-753.145	3	0	1	-.053	4	-.326	3	
83	2	max	1077.929	3	905.517	7	790.137	4	0	1	.013	1	.238	4	
84		min	-1119.07	4	219.757	4	-753.147	3	0	1	-.009	2	-.352	3	
85	3	max	1077.857	3	903.751	7	790.139	4	0	1	.056	4	.223	4	
86		min	-1118.998	4	218.91	4	-753.148	3	0	1	-.049	3	-.379	3	
87	4	max	1077.785	3	901.985	7	790.14	4	0	1	.111	4	.208	4	
88		min	-1118.926	4	218.063	4	-753.149	3	0	1	-.101	3	-.406	3	
89	5	max	1077.714	3	900.219	7	790.141	4	0	1	.165	4	.193	4	
90		min	-1118.854	4	217.216	4	-753.15	3	0	1	-.153	3	-.432	3	
91	M10	1	max	2059.737	4	2488.411	5	1431.321	1	-.122	4	1.297	2	5.11	8
92		min	-2098.503	3	728.029	2	-1376.533	2	-.687	9	-1.445	1	1.709	1	
93	2	max	2035.725	4	2444.456	5	1389.732	1	-.122	4	.417	1	1.956	10	
94		min	-2074.491	3	704.261	2	-1334.943	2	-.687	9	-.492	2	.393	1	
95	3	max	1807.783	4	538.559	10	107.001	1	-.017	3	.045	1	1.283	10	



9bj YcdYA Ya VYf GYVJcb : cfWVg fT cbhji YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
96		min	-1838.682	3	131.332	3	-105.172	2	-.534	10	-.053	2	.274	1	
97	4	max	1783.771	4	514.791	10	65.411	1	-.017	3	.158	1	.588	10	
98		min	-1814.67	3	107.564	3	-63.583	2	-.534	10	-.164	2	.082	1	
99	5	max	1759.759	4	491.023	10	32.937	3	-.017	3	.217	1	.002	2	
100		min	-1790.658	3	83.796	3	-31.181	4	-.534	10	-.221	2	-.132	5	
101	M11	1	max	283.554	1	-184.114	2	1334.166	2	.245	2	.035	3	.136	2
102		min	-269.028	2	-913.287	5	-1280.662	1	-.309	1	-.037	4	-.171	1	
103	2	max	1001.408	1	-202.202	2	178.58	2	.26	2	.324	2	.502	6	
104		min	-1011.798	2	-969.931	5	-163.158	1	-.304	1	-.317	1	.089	1	
105	3	max	1012.474	1	-211.206	2	184.969	2	.26	2	.435	2	1.083	7	
106		min	-1022.864	2	-994.389	5	-169.547	1	-.304	1	-.419	1	.332	4	
107	4	max	1023.54	1	-220.209	2	191.358	2	.26	2	.549	2	1.691	5	
108		min	-1033.93	2	-1018.847	5	-175.936	1	-.304	1	-.524	1	.503	2	
109	5	max	1034.606	1	-229.212	2	197.747	2	.26	2	.667	2	2.319	5	
110		min	-1044.996	2	-1043.304	5	-182.325	1	-.304	1	-.633	1	.639	2	
111	M12	1	max	1152.496	3	34.798	8	41.183	3	0	.015	4	.06	4	
112		min	-1156.876	4	-5.452	3	-42.474	4	0	10	-.027	7	-.042	3	
113	2	max	1159.964	3	23.576	8	28.146	3	0	2	0	1	.019	4	
114		min	-1164.344	4	-7.819	3	-29.437	4	0	10	-.004	10	-.01	3	
115	3	max	1167.432	3	12.275	4	15.108	3	0	2	.009	7	.014	3	
116		min	-1171.812	4	-10.185	3	-16.399	4	0	10	-.008	4	-.009	4	
117	4	max	1174.9	3	9.909	4	2.155	2	0	2	.007	3	.03	3	
118		min	-1179.28	4	-17.347	7	-3.434	1	0	10	-.008	4	-.025	4	
119	5	max	1182.368	3	7.542	4	9.676	4	0	2	.002	4	.037	3	
120		min	-1186.749	4	-29.964	7	-10.967	3	0	10	-.021	7	-.03	4	
121	M13	1	max	143.468	2	879.877	8	131.779	4	.212	4	.48	3	1.963	5
122		min	-206.32	1	240.828	3	-124.146	3	-.192	3	-.498	4	.515	2	
123	2	max	132.402	2	855.418	8	112.612	4	.212	4	.41	3	1.438	5	
124		min	-195.254	1	231.825	3	-104.979	3	-.192	3	-.424	4	.362	2	
125	3	max	121.336	2	830.958	8	93.445	4	.212	4	.352	3	.927	5	
126		min	-184.188	1	222.821	3	-85.812	3	-.192	3	-.361	4	.214	2	
127	4	max	110.27	2	806.499	8	74.278	4	.212	4	.306	3	.435	7	
128		min	-173.122	1	213.818	3	-66.645	3	-.192	3	-.31	4	.044	4	
129	5	max	579.774	3	750.399	8	1033.202	4	.239	4	.103	3	.113	3	
130		min	-646.315	4	212.049	3	-1023.297	3	-.203	3	-.109	4	-.133	4	
131	M14	1	max	1372.334	2	37.917	6	45.312	1	0	.024	2	.053	6	
132		min	-1326.781	1	2.919	1	-48.213	2	0	10	-.033	1	-.025	1	
133	2	max	1372.275	2	26.694	6	27.997	1	0	7	.001	2	.022	10	
134		min	-1326.722	1	.553	1	-30.898	2	0	10	-.005	10	.002	1	
135	3	max	1372.216	2	11.162	10	10.682	1	0	7	.011	1	.017	1	
136		min	-1326.663	1	-1.814	1	-13.583	2	0	10	-.01	2	-.013	2	
137	4	max	1372.157	2	8.795	10	3.732	2	0	7	.01	1	.021	1	
138		min	-1326.604	1	-11.753	5	-7.9	10	0	10	-.01	2	-.022	2	
139	5	max	1372.098	2	6.428	10	21.047	2	0	7	.004	4	.014	1	
140		min	-1326.545	1	-24.37	5	-23.949	1	0	10	-.018	5	-.018	10	
141	M15	1	max	589.835	4	750.978	8	1067.685	4	0	.103	3	.233	3	
142		min	-612.546	3	210.689	3	-1002.954	3	0	1	-.109	4	-.274	4	
143	2	max	589.763	4	749.212	8	1067.686	4	0	1	.034	3	.218	3	
144		min	-612.474	3	209.842	3	-1002.955	3	0	1	-.035	4	-.295	4	
145	3	max	589.691	4	747.446	8	1067.687	4	0	1	.038	4	.204	3	
146		min	-612.403	3	208.995	3	-1002.956	3	0	1	-.035	3	-.315	4	
147	4	max	589.619	4	745.68	8	1067.688	4	0	1	.112	4	.189	3	



9bj YcdYA Ya VYf GYVjcb : cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
148		min	-612.331	3	208.148	3	-1002.957	3	0	1	-.105	3	-.336	4	
149	5	max	589.547	4	743.914	8	1067.69	4	0	1	.186	4	.175	3	
150		min	-612.259	3	207.301	3	-1002.959	3	0	1	-.174	3	-.357	4	
151	M16	1	max	198.709	2	167.22	10	198.48	4	.054	4	.08	3	0	1
152		min	-242.813	1	-43.03	4	-198.928	3	-.035	3	-.081	4	0	1	
153	2	max	207.986	2	163.055	10	214.549	4	.054	4	.009	3	.015	4	
154		min	-252.09	1	-47.195	4	-214.996	3	-.035	3	-.01	4	-.056	10	
155	3	max	370.327	3	645.594	10	1330.557	2	.052	10	.223	1	.432	10	
156		min	-415.987	4	-42.456	4	-1297.733	1	-.087	5	-.226	2	.038	3	
157	4	max	401.956	1	647.882	10	144.58	3	.005	2	.014	2	.22	10	
158		min	-472.885	2	57.393	3	-151.193	4	-.071	5	-.015	1	.019	3	
159	5	max	392.678	1	643.717	10	128.512	3	.005	2	.056	2	0	1	
160		min	-463.608	2	53.228	3	-135.124	4	-.071	5	-.06	1	0	1	
161	M17	1	max	1257.091	1	913.911	5	412.538	2	0	1	.037	4	.28	2
162		min	-1297.067	2	181.461	2	-374.204	1	0	1	-.035	3	-.353	1	
163	2	max	1255.169	1	912.145	5	413.69	2	0	1	.018	4	.268	2	
164		min	-1295.145	2	180.614	2	-375.356	1	0	1	-.014	3	-.383	1	
165	3	max	1253.247	1	910.379	5	414.843	2	0	1	.043	2	.255	2	
166		min	-1293.223	2	179.767	2	-376.508	1	0	1	-.036	1	-.412	1	
167	4	max	1251.325	1	908.613	5	415.995	2	0	1	.072	2	.243	2	
168		min	-1291.301	2	178.92	2	-377.661	1	0	1	-.062	1	-.441	1	
169	5	max	1249.403	1	906.847	5	417.147	2	0	1	.1	2	.231	2	
170		min	-1289.38	2	178.073	2	-378.813	1	0	1	-.088	1	-.471	1	
171	M18	1	max	2507.205	2	2487.984	6	1628.832	4	-.094	10	1.785	3	5.109	7
172		min	-2546.678	1	715.891	9	-1574.832	3	-.536	5	-1.932	4	1.657	10	
173	2	max	2507.205	2	2444.029	6	1573.379	4	-.094	10	.181	4	1.906	7	
174		min	-2546.678	1	692.123	9	-1519.379	3	-.536	5	-.257	3	.506	4	
175	3	max	2237.787	2	485.638	7	136.153	4	-.006	10	.018	2	.999	7	
176		min	-2269.141	1	127.343	4	-134.402	3	-.148	6	-.026	1	.224	4	
177	4	max	2237.787	2	422.6	7	80.701	4	-.006	10	.157	4	.401	7	
178		min	-2269.141	1	103.575	4	-78.949	3	-.148	6	-.163	3	.072	4	
179	5	max	2237.787	2	369.948	7	25.248	4	-.006	10	.227	4	.009	1	
180		min	-2269.141	1	79.808	4	-23.497	3	-.148	6	-.231	3	-.134	6	
181	M19	1	max	541.367	4	-201.529	3	964.995	1	.136	3	.065	1	.076	3
182		min	-525.797	3	-909.973	8	-908.892	2	-.199	4	-.066	2	-.111	4	
183	2	max	993.53	4	-219.431	3	114.869	3	.15	3	.281	1	.503	5	
184		min	-1003.2	3	-966.43	8	-99.497	4	-.194	4	-.273	2	.107	2	
185	3	max	993.53	4	-228.434	3	119.962	1	.15	3	.346	1	1.086	8	
186		min	-1003.2	3	-990.888	8	-104.358	2	-.194	4	-.329	2	.294	9	
187	4	max	993.53	4	-237.438	3	145.518	1	.15	3	.427	1	1.696	8	
188		min	-1003.2	3	-1015.346	8	-129.914	2	-.194	4	-.4	2	.45	9	
189	5	max	993.53	4	-246.441	3	171.074	1	.15	3	.523	1	2.321	8	
190		min	-1003.2	3	-1039.803	8	-155.47	2	-.194	4	-.487	2	.611	9	
191	M20	1	max	956.246	1	34.229	6	33.817	4	0	3	.011	3	.045	3
192		min	-959.954	2	-2.57	1	-35.103	3	0	8	-.026	8	-.027	4	
193	2	max	963.773	1	23.008	6	20.882	4	0	3	0	4	.016	2	
194		min	-967.481	2	-4.937	1	-22.168	3	0	8	-.003	3	-.006	1	
195	3	max	971.3	1	9.383	2	11.883	1	0	3	.009	8	.011	4	
196		min	-975.008	2	-7.304	1	-13.163	2	0	8	-.008	3	-.006	3	
197	4	max	978.827	1	7.016	2	7.503	1	0	3	.005	1	.023	1	
198		min	-982.535	2	-16.78	5	-8.783	2	0	8	-.006	2	-.019	2	
199	5	max	986.354	1	4.649	2	16.638	3	0	3	.006	3	.036	1	



9bj YcdYA Ya VYf GYVJcb: cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
200		min	-990.062	2	-29.396	5	-17.924	4	0	8	-.021	8	-.029	2	
201	M21	1	max	326.345	3	880.839	6	114.021	2	.191	3	.37	1	1.958	8
202		min	-388.234	4	216.802	9	-106.341	1	-.171	4	-.388	2	.488	9	
203		2	max	326.345	3	856.379	6	88.466	2	.191	3	.313	1	1.437	8
204		min	-388.234	4	207.799	9	-80.785	1	-.171	4	-.327	2	.349	3	
205		3	max	326.345	3	831.92	6	62.91	2	.191	3	.272	1	.931	8
206		min	-388.234	4	198.796	9	-55.229	1	-.171	4	-.281	2	.183	3	
207		4	max	326.345	3	807.46	6	60.774	3	.191	3	.246	1	.44	8
208		min	-388.234	4	189.792	9	-53.102	4	-.171	4	-.25	2	.023	3	
209		5	max	424.611	1	752.124	6	830.194	2	.211	3	.084	1	.097	4
210		min	-490.683	2	175.799	9	-820.485	1	-.175	4	-.089	2	-.117	3	
211	M22	1	max	1048.536	1	37.65	7	32.039	4	0	5	.015	3	.05	7
212		min	-1000.525	2	3.34	2	-34.956	3	0	2	-.029	8	-.015	4	
213		2	max	1056.063	1	26.427	7	19.104	4	0	5	.002	1	.016	5
214		min	-1008.052	2	.973	2	-22.021	3	0	2	-.004	2	0	2	
215		3	max	1063.59	1	7.217	7	8.932	2	0	5	.01	8	.012	4
216		min	-1015.58	2	-1.394	2	-11.853	1	0	2	-.007	3	-.009	3	
217		4	max	1071.118	1	3.826	1	4.552	2	0	5	.007	2	.017	2
218		min	-1023.107	2	-11.485	8	-7.473	1	0	2	-.007	1	-.017	1	
219		5	max	1078.645	1	1.459	1	16.785	3	0	5	.005	2	.022	2
220		min	-1030.634	2	-24.102	8	-19.702	4	0	2	-.017	8	-.023	1	
221	M23	1	max	487.697	2	752.592	6	832.656	2	0	1	.084	1	.201	4
222		min	-510.833	1	175.736	9	-769.188	1	0	1	-.089	2	-.242	3	
223		2	max	485.847	2	750.827	6	831.628	2	0	1	.03	1	.182	4
224		min	-508.983	1	174.889	9	-768.161	1	0	1	-.032	2	-.258	3	
225		3	max	483.997	2	749.061	6	830.6	2	0	1	.026	2	.163	4
226		min	-507.133	1	174.042	9	-767.133	1	0	1	-.023	1	-.275	3	
227		4	max	482.147	2	747.295	6	829.572	2	0	1	.083	2	.144	4
228		min	-505.284	1	173.195	9	-766.105	1	0	1	-.076	1	-.291	3	
229		5	max	480.298	2	745.529	6	828.545	2	0	1	.14	2	.125	4
230		min	-503.434	1	172.347	9	-765.077	1	0	1	-.129	1	-.307	3	
231	M24	1	max	269.246	3	8.771	4	209.503	2	.042	2	.082	1	0	1
232		min	-313.453	4	-51.181	3	-210.31	1	-.023	1	-.083	2	0	1	
233		2	max	269.246	3	4.606	4	230.928	2	.042	2	.008	4	.018	3
234		min	-313.453	4	-55.346	3	-231.735	1	-.023	1	-.009	3	-.002	4	
235		3	max	505.7	1	293.227	6	1165.674	1	.023	3	.2	2	.191	6
236		min	-550.836	2	58.086	10	-1131.174	2	-.086	6	-.203	1	.036	1	
237		4	max	349.877	4	260.902	6	212.864	1	-.001	1	.01	3	.087	6
238		min	-421.635	3	50.528	10	-219.629	2	-.071	6	-.012	4	.016	10	
239		5	max	349.877	4	252.219	6	191.439	1	-.001	1	.078	1	0	1
240		min	-421.635	3	46.363	10	-198.204	2	-.071	6	-.082	2	0	1	
241	M25	1	max	972.907	4	910.222	8	709.034	1	0	1	.066	2	.156	3
242		min	-1012.704	3	200.055	3	-670.179	2	0	1	-.065	1	-.228	4	
243		2	max	971.057	4	908.456	8	708.006	1	0	1	.02	2	.142	3
244		min	-1010.854	3	199.208	3	-669.151	2	0	1	-.016	1	-.256	4	
245		3	max	969.207	4	906.69	8	706.978	1	0	1	.033	1	.128	3
246		min	-1009.004	3	198.361	3	-668.123	2	0	1	-.027	2	-.284	4	
247		4	max	967.357	4	904.924	8	705.951	1	0	1	.082	1	.115	3
248		min	-1007.155	3	197.514	3	-667.095	2	0	1	-.073	2	-.313	6	
249		5	max	965.507	4	903.158	8	704.923	1	0	1	.131	1	.101	3
250		min	-1005.305	3	196.666	3	-666.068	2	0	1	-.119	2	-.375	8	
251	M26	1	max	0	1	.007	2	.003	4	0	1	0	1	0	1



9bj YcdYA Ya VYf'GYW]cb: cfWkg f7 cb]bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome... LC
252		min	0	1	-.004	4	0	6	0	1	0	1	0
253	2	max	172.058	1	-102.911	2	103.91	3	.185	3	.105	4	.329
254		min	-311.508	2	-405.273	5	-82.274	4	-.3	4	-.096	3	.054
255	3	max	872.241	3	282.533	8	146.582	3	.096	10	.122	3	.765
256		min	-1054.255	4	45.414	3	-176.962	4	-.038	1	-.108	4	.213
257	4	max	145.545	2	190.646	3	116.16	4	.196	2	.038	2	.051
258		min	-291.119	1	-83.451	4	-109.129	3	-.094	1	-.077	1	-.19
259	5	max	0	1	.004	3	0	7	0	1	0	1	0
260		min	0	1	-.003	1	-.002	1	0	1	0	1	0
261	M27	1	max	0	.007	3	.002	4	0	1	0	1	0
262		min	0	1	-.003	6	0	5	0	1	0	1	0
263	2	max	115.695	2	-102.085	3	144.188	4	.111	1	.047	4	.328
264		min	-255.444	1	-405.106	8	-122.437	3	-.226	2	-.039	3	.054
265	3	max	630.059	1	281.244	6	88.136	3	.078	3	.111	4	.768
266		min	-811.712	2	16.599	9	-118.486	4	-.037	4	-.097	3	.212
267	4	max	203.977	3	183.464	1	78.428	3	.237	3	.149	3	.012
268		min	-348.619	4	-76.228	2	-71.157	4	-.135	4	-.188	4	-.185
269	5	max	0	1	.003	1	0	5	0	1	0	1	0
270		min	0	1	-.004	4	-.004	4	0	1	0	1	0
271	MP3A	1	max	0	.369	8	.2	1	0	1	0	1	0
272		min	0	1	-.07	3	-.255	6	0	1	0	1	0
273	2	max	162.705	6	165.888	4	222.01	1	0	1	.318	1	.234
274		min	62.57	1	-165.803	3	-222.05	2	0	1	-.318	2	-.234
275	3	max	13.247	4	-23.464	3	95.067	7	.022	3	.009	4	-.044
276		min	-47.373	7	-172.47	8	-3.591	4	-.034	4	-.08	7	-.21
277	4	max	21.577	4	-37.587	1	98.031	5	.022	3	.115	5	.124
278		min	-25.51	3	-165.964	6	-15.445	2	-.034	4	-.033	2	.008
279	5	max	0	1	0	10	.014	8	0	1	0	1	0
280		min	0	1	-.003	7	-.001	3	0	1	0	1	0
281	MP2A	1	max	0	-.022	9	.048	1	0	1	0	1	0
282		min	0	1	-.488	7	-.39	6	0	1	0	1	0
283	2	max	79.61	2	143.672	10	129.673	1	.12	2	.17	1	.186
284		min	-553.849	5	3.412	2	-76.402	2	-.127	1	-.255	2	.031
285	3	max	90.543	2	143.672	10	168.959	1	.12	2	.562	1	.071
286		min	-520.344	5	-17.274	3	-115.687	2	-.127	1	-.508	2	-.216
287	4	max	-10.933	10	39.006	3	38.489	2	0	1	.049	1	.051
288		min	-33.505	5	-38.986	4	-38.485	1	0	1	-.049	2	-.051
289	5	max	0	1	.383	8	.8	1	0	1	0	1	0
290		min	0	1	-.279	3	-.797	2	0	1	0	1	0
291	MP1A	1	max	0	.086	4	.239	1	0	1	0	1	0
292		min	0	1	-.263	7	-.276	2	0	1	0	1	0
293	2	max	187.201	5	173.841	4	237.904	1	0	1	.318	1	.234
294		min	74.03	3	-173.904	3	-237.941	2	0	1	-.318	2	-.234
295	3	max	194.733	10	193.273	10	84.184	8	.026	3	.04	1	.189
296		min	-104.721	4	17.907	4	-14.853	3	-.032	4	-.101	2	.023
297	4	max	203.063	10	193.273	10	84.184	8	.026	3	.092	1	-.011
298		min	-96.391	4	37.187	9	-14.853	3	-.032	4	-.051	2	-.197
299	5	max	0	1	.019	6	.005	1	0	1	0	1	0
300		min	0	1	0	1	-.005	2	0	1	0	1	0
301	MP3C	1	max	0	.16	4	.101	1	0	1	0	1	0
302		min	0	1	-.384	7	-.259	6	0	1	0	1	0
303	2	max	162.705	5	207.952	4	179.854	1	0	1	.255	1	.297



9bj YcdYA Ya VYf GYVjcb: cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
304		min	62.57	1	-208.029	3	-179.907	2	0	1	-.255	2	-.297	4	
305	3	max	49.744	10	160.503	5	108.881	6	.024	4	-.027	1	.173	5	
306		min	-47.248	8	38.748	3	-13.623	4	-.036	3	-.151	6	.028	2	
307	4	max	58.074	10	168.664	8	110.709	10	.024	4	.103	3	-.004	3	
308		min	-27.652	4	8.816	3	-13.623	4	-.036	3	-.062	4	-.157	8	
309	5	max	0	1	.012	6	.002	1	0	1	0	1	0	1	
310		min	0	1	0	1	-.006	6	0	1	0	1	0	1	
311	MP2C	1	max	0	1	.044	4	.608	5	0	1	0	1	0	1
312		min	0	1	-.083	7	.016	2	0	1	0	1	0	1	
313	2	max	131.525	3	59.22	4	3.907	1	.076	3	.226	7	.165	3	
314		min	-565.119	8	-58.992	3	-156.75	6	-.084	4	.022	4	-.155	4	
315	3	max	142.458	3	98.506	4	43.192	1	.076	3	.175	1	.371	3	
316		min	-531.615	8	-98.277	3	-170.377	6	-.084	4	-.299	2	-.362	4	
317	4	max	-10.933	1	38.635	3	38.888	2	0	1	.051	1	.05	3	
318		min	-33.505	5	-38.641	4	-38.907	1	0	1	-.051	2	-.05	4	
319	5	max	0	1	.644	4	.378	1	0	1	0	1	0	1	
320		min	0	1	-.651	3	-.456	6	0	1	0	1	0	1	
321	MP1C	1	max	0	1	.188	4	.327	5	0	1	0	1	0	1
322		min	0	1	-.188	3	-.13	2	0	1	0	1	0	1	
323	2	max	187.201	5	225.838	4	188.432	1	0	1	.255	1	.297	3	
324		min	74.03	1	-225.838	3	-188.358	2	0	1	-.255	2	-.297	4	
325	3	max	193.509	4	46.31	2	-42.34	4	.024	1	.137	7	.065	3	
326		min	-135.888	3	-53.718	1	-160.393	5	-.03	2	.002	4	-.051	4	
327	4	max	201.839	4	46.31	2	-39.572	1	.024	1	-.05	3	.117	1	
328		min	-127.558	3	-53.718	1	-161.799	6	-.03	2	-.186	8	-.089	2	
329	5	max	0	1	.004	4	0	3	0	1	0	1	0	1	
330		min	0	1	-.011	7	-.016	8	0	1	0	1	0	1	
331	MP3B	1	max	0	1	.174	4	.417	5	0	1	0	1	0	1
332		min	0	1	-.182	3	-.095	2	0	1	0	1	0	1	
333	2	max	162.705	5	207.966	4	179.941	1	0	1	.255	1	.297	3	
334		min	62.57	1	-207.973	3	-179.848	2	0	1	-.255	2	-.297	4	
335	3	max	15.708	1	57.763	1	-54.469	2	.028	2	.219	8	.051	5	
336		min	-47.69	6	-50.733	2	-188.658	5	-.04	1	.058	3	-.019	2	
337	4	max	24.038	1	57.763	1	-48.23	1	.028	2	-.049	4	.082	2	
338		min	-27.923	2	-50.733	2	-190.253	6	-.04	1	-.154	7	-.065	1	
339	5	max	0	1	.002	2	0	4	0	1	0	1	0	1	
340		min	0	1	-.012	5	-.008	7	0	1	0	1	0	1	
341	MP2B	1	max	0	1	.579	8	.001	4	0	1	0	1	0	1
342		min	0	1	-.021	3	-.266	7	0	1	0	1	0	1	
343	2	max	62.818	1	62.617	4	73.822	5	.105	4	.056	4	.055	3	
344		min	-555.331	6	-154.178	3	2.463	2	-.113	3	-.123	3	-.217	8	
345	3	max	73.751	1	101.903	4	89.508	1	.105	4	.208	1	.511	3	
346		min	-521.826	6	-193.464	3	-36.822	2	-.113	3	-.137	2	-.408	4	
347	4	max	-10.933	1	38.639	3	38.901	2	0	1	.051	1	.05	3	
348		min	-33.505	5	-38.652	4	-38.886	1	0	1	-.051	2	-.05	4	
349	5	max	0	1	.634	4	.427	5	0	1	0	1	0	1	
350		min	0	1	-.647	3	-.384	2	0	1	0	1	0	1	
351	MP1B	1	max	0	1	.336	8	.105	1	0	1	0	1	0	1
352		min	0	1	-.213	3	-.168	6	0	1	0	1	0	1	
353	2	max	187.201	7	225.927	4	188.333	1	0	1	.255	1	.297	3	
354		min	74.03	4	-225.863	3	-188.37	2	0	1	-.255	2	-.297	4	
355	3	max	193.382	2	-17.897	2	94.225	6	.028	2	.014	4	.005	2	



9bj YcdYA Ya VYf GYVJcb: cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
356		min	-136.004	1	-139.823	5	-16.626	1	-.034	1	-.051	3	-.135	5	
357	4	max	201.712	2	-14.488	4	88.302	8	.028	2	.147	4	.154	7	
358		min	-127.674	1	-142.799	7	-2.658	3	-.034	1	-.056	3	-.006	4	
359	5	max	0	1	.001	1	.016	5	0	1	0	1	0	1	
360		min	0	1	-.011	6	-.001	3	0	1	0	1	0	1	
361	M37	1	max	0	1	0	1	0	1	0	1	0	1	1	
362		min	0	1	0	1	0	1	0	1	0	1	0	1	
363	2	max	455.436	2	50.669	3	179.033	1	.185	2	.201	2	.074	7	
364		min	-407.169	1	-35.272	4	-170.171	2	-.149	1	-.218	1	-.033	4	
365	3	max	455.436	2	37.654	3	132.265	1	.185	2	.269	1	.098	4	
366		min	-407.169	1	-48.287	4	-123.402	2	-.149	1	-.257	2	-.065	3	
367	4	max	452.001	2	250.937	1	758.979	2	.385	1	.317	2	.176	2	
368		min	-495.253	1	-173.349	2	-794.478	1	-.418	2	-.324	1	-.07	1	
369	5	max	0	1	0	1	0	1	0	1	0	1	0	1	
370		min	0	1	0	1	0	1	0	1	0	1	0	1	
371	M38	1	max	649.445	1	-34.079	1	211.198	1	0	.443	3	-.047	10	
372		min	-552.404	2	-182.165	7	-187.024	2	-.003	6	-.526	4	-.145	5	
373	2	max	625.303	1	-25.293	1	171.549	1	0	1	.314	3	.03	2	
374		min	-528.262	2	-157.048	7	-147.375	2	-.003	6	-.374	4	-.025	1	
375	3	max	601.161	1	-16.508	1	138.083	4	0	1	.273	1	.155	6	
376		min	-504.12	2	-131.931	7	-112.782	3	-.003	6	-.308	2	-.006	1	
377	4	max	577.019	1	-7.722	1	123.384	4	0	1	.38	1	.268	6	
378		min	-479.978	2	-106.815	7	-98.083	3	-.003	6	-.391	2	.006	1	
379	5	max	552.877	1	1.063	1	108.684	4	0	1	.449	1	.358	6	
380		min	-455.836	2	-81.698	7	-83.383	3	-.003	6	-.437	2	.009	1	
381	M39	1	max	1028.506	1	189.354	2	663.724	1	.005	6	1.075	2	.164	6
382		min	-855.157	2	-79.728	1	-659.858	2	0	1	-1.031	1	.038	1	
383	2	max	1004.364	1	180.568	2	624.075	1	.005	6	.466	2	.118	1	
384		min	-831.015	2	-88.513	1	-620.209	2	0	1	-.418	1	-.1	2	
385	3	max	980.222	1	171.783	2	584.426	1	.005	6	.249	4	.207	1	
386		min	-806.873	2	-97.299	1	-580.56	2	0	1	-.195	3	-.267	2	
387	4	max	956.08	1	162.997	2	544.777	1	.005	6	.694	1	.303	1	
388		min	-782.731	2	-106.084	1	-540.911	2	0	1	-.639	2	-.426	2	
389	5	max	931.938	1	154.212	2	505.128	1	.005	6	1.193	1	.408	1	
390		min	-758.589	2	-114.869	1	-501.262	2	0	1	-1.134	2	-.577	2	
391	M40	1	max	0	1	0	.008	3	0	1	0	1	0	1	
392		min	0	1	-.002	1	0	5	0	1	0	1	0	1	
393	2	max	562.826	3	58.466	1	124.14	4	.151	3	.109	3	.088	1	
394		min	-512.567	4	-43.038	2	-114.804	3	-.116	4	-.127	4	-.047	2	
395	3	max	542.574	3	45.45	1	89.064	4	.151	3	.206	4	.108	2	
396		min	-492.316	4	-56.054	2	-79.727	3	-.116	4	-.195	3	-.075	1	
397	4	max	409.825	1	341.192	4	575.17	3	.305	4	.282	3	.177	1	
398		min	-449.681	2	-263.866	3	-613.134	4	-.337	3	-.29	4	-.071	2	
399	5	max	0	1	.006	3	0	11	0	1	0	1	0	1	
400		min	0	1	-.005	1	-.006	3	0	1	0	1	0	1	
401	M43	1	max	0	1	0	.007	1	0	1	0	1	0	1	
402		min	0	1	-.002	2	0	8	0	1	0	1	0	1	
403	2	max	423.586	1	54.493	4	149.862	3	.138	4	.191	4	.09	4	
404		min	-371.765	2	-39.057	3	-140.671	4	-.103	3	-.209	3	-.05	3	
405	3	max	403.335	1	41.478	4	114.786	3	.138	4	.205	3	.098	1	
406		min	-351.514	2	-52.073	3	-105.595	4	-.103	3	-.193	4	-.065	2	
407	4	max	563.155	4	290.715	2	570.018	4	.273	3	.198	4	.214	4	



9bj YcdYA Ya VYf GYVjcb: cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
408		min	-604.782	3	-213.755	1	-607.051	3	-.306	4	-.205	3	-.108	3	
409	5	max	0	1	.004	1	0	11	0	1	0	1	0	1	
410		min	0	1	-.007	4	-.006	1	0	1	0	1	0	1	
411	M42	1	max	332.676	1	1.238	1	445.2	1	.304	6	.226	1	-.004	1
412		min	-261.097	2	-81.726	6	-374.29	2	.008	1	-.25	2	-.229	6	
413	2	max	332.676	1	1.238	1	445.2	1	.304	6	.282	1	-.005	1	
414		min	-261.097	2	-81.726	6	-374.29	2	.008	1	-.297	2	-.219	6	
415	3	max	332.676	1	1.238	1	445.2	1	.304	6	.337	1	-.005	1	
416		min	-261.097	2	-81.726	6	-374.29	2	.008	1	-.344	2	-.209	6	
417	4	max	332.676	1	1.238	1	445.2	1	.304	6	.393	1	-.005	1	
418		min	-261.097	2	-81.726	6	-374.29	2	.008	1	-.39	2	-.199	6	
419	5	max	332.676	1	1.238	1	445.2	1	.304	6	.449	1	-.005	1	
420		min	-261.097	2	-81.726	6	-374.29	2	.008	1	-.437	2	-.188	6	
421	M43A	1	max	915.271	1	113.284	1	386.595	2	.349	1	.941	2	.269	1
422		min	-823.448	2	-157.523	2	-534.255	1	-.491	2	-.926	1	-.382	2	
423	2	max	915.271	1	113.284	1	386.595	2	.349	1	.989	2	.255	1	
424		min	-823.448	2	-157.523	2	-534.255	1	-.491	2	-.993	1	-.362	2	
425	3	max	915.271	1	113.284	1	386.595	2	.349	1	1.038	2	.241	1	
426		min	-823.448	2	-157.523	2	-534.255	1	-.491	2	-1.059	1	-.343	2	
427	4	max	915.271	1	113.284	1	386.595	2	.349	1	1.086	2	.227	1	
428		min	-823.448	2	-157.523	2	-534.255	1	-.491	2	-1.126	1	-.323	2	
429	5	max	915.271	1	113.284	1	386.595	2	.349	1	1.134	2	.213	1	
430		min	-823.448	2	-157.523	2	-534.255	1	-.491	2	-1.193	1	-.303	2	
431	M44	1	max	444.739	1	-33.19	1	446.766	2	.073	5	.443	3	.125	5
432		min	-374.708	2	-182.118	6	-518.381	1	.024	3	-.526	4	.04	10	
433	2	max	444.739	1	-40.066	1	470.397	2	.073	5	.42	3	.196	6	
434		min	-374.708	2	-198.522	6	-542.011	1	.024	3	-.531	4	.06	1	
435	3	max	533.802	1	218.108	6	1148.315	1	.028	1	1.849	2	.294	6	
436		min	-386.757	2	-214.216	7	-1056.323	2	-.081	6	-1.874	1	.076	1	
437	4	max	533.802	1	201.705	6	1124.684	1	-.02	1	1.458	2	.215	6	
438		min	-386.757	2	-74.021	1	-1032.692	2	-.081	6	-1.448	1	.003	1	
439	5	max	533.802	1	190.829	2	1101.054	1	-.02	1	1.075	2	.143	6	
440		min	-386.757	2	-80.897	1	-1009.062	2	-.081	6	-1.031	1	.032	1	
441	M45	1	max	739.907	4	-32.768	2	302.668	2	0	4	.617	1	-.046	1
442		min	-643.91	3	-183.883	5	-277.776	1	-.003	10	-.699	2	-.146	6	
443	2	max	717.033	4	-23.983	2	260.824	2	0	4	.492	4	.037	1	
444		min	-621.036	3	-158.766	5	-235.931	1	-.003	10	-.551	3	-.032	2	
445	3	max	694.159	4	-15.197	2	218.979	2	0	4	.46	4	.158	5	
446		min	-598.162	3	-133.649	5	-194.086	1	-.003	10	-.495	3	-.013	2	
447	4	max	671.285	4	-6.412	2	177.134	2	0	4	.415	4	.274	5	
448		min	-575.287	3	-108.533	5	-152.242	1	-.003	10	-.427	3	-.003	2	
449	5	max	648.41	4	2.374	2	135.29	2	0	4	.359	4	.365	5	
450		min	-552.413	3	-83.416	5	-110.397	1	-.003	10	-.347	3	-.001	2	
451	M46	1	max	655.579	2	192.328	3	698.83	4	.005	7	1.4	3	.165	7
452		min	-483.74	1	-82.387	4	-695.127	3	0	4	-1.355	4	.038	4	
453	2	max	654.311	2	183.542	3	644.51	4	.005	7	.765	3	.121	4	
454		min	-482.472	1	-91.173	4	-640.808	3	0	4	-.716	4	-.103	3	
455	3	max	653.044	2	174.757	3	590.191	4	.005	7	.367	2	.212	4	
456		min	-481.204	1	-99.958	4	-586.489	3	0	4	-.314	1	-.273	3	
457	4	max	651.776	2	165.972	3	535.872	4	.005	7	.407	4	.311	4	
458		min	-479.937	1	-108.743	4	-532.17	3	0	4	-.351	3	-.435	3	
459	5	max	650.508	2	157.186	3	481.553	4	.005	7	.891	4	.419	4	



9bj YcdYA Ya Vyf GYVjcb: cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
460		min	-478.669	1	-117.529	4	-477.851	3	0	4	-.831	3	-.589	3	
461	M47	1	max	282.344	4	2.081	2	587.988	4	.31	5	.175	2	0	2
462		min	-209.571	3	-83.051	5	-518.547	3	-.001	2	-.196	1	-.234	5	
463		2	max	282.344	4	2.081	2	587.988	4	.31	5	.165	2	0	2
464		min	-209.571	3	-83.051	5	-518.547	3	-.001	2	-.178	1	-.223	5	
465		3	max	282.344	4	2.081	2	587.988	4	.31	5	.212	4	0	2
466		min	-209.571	3	-83.051	5	-518.547	3	-.001	2	-.218	3	-.213	5	
467		4	max	282.344	4	2.081	2	587.988	4	.31	5	.286	4	0	2
468		min	-209.571	3	-83.051	5	-518.547	3	-.001	2	-.282	3	-.202	5	
469		5	max	282.344	4	2.081	2	587.988	4	.31	5	.359	4	0	2
470		min	-209.571	3	-83.051	5	-518.547	3	-.001	2	-.347	3	-.192	5	
471	M48	1	max	681.504	4	116.645	4	394.415	1	.358	4	.806	3	.276	4
472		min	-590.861	3	-158.677	3	-539.308	2	-.501	3	-.793	4	-.388	3	
473		2	max	681.504	4	116.645	4	394.415	1	.358	4	.812	3	.262	4
474		min	-590.861	3	-158.677	3	-539.308	2	-.501	3	-.818	4	-.368	3	
475		3	max	681.504	4	116.645	4	394.415	1	.358	4	.819	3	.247	4
476		min	-590.861	3	-158.677	3	-539.308	2	-.501	3	-.842	4	-.349	3	
477		4	max	681.504	4	116.645	4	394.415	1	.358	4	.825	3	.232	4
478		min	-590.861	3	-158.677	3	-539.308	2	-.501	3	-.866	4	-.329	3	
479		5	max	681.504	4	116.645	4	394.415	1	.358	4	.831	3	.218	4
480		min	-590.861	3	-158.677	3	-539.308	2	-.501	3	-.891	4	-.309	3	
481	M49	1	max	639.373	4	-32.862	2	299.892	3	.074	6	.617	1	.126	6
482		min	-571.292	3	-183.277	5	-372.64	4	.023	1	-.699	2	.04	1	
483		2	max	649.605	4	-39.738	2	317.615	3	.074	6	.668	1	.196	5
484		min	-581.524	3	-199.681	5	-390.363	4	.023	1	-.777	2	.064	2	
485		3	max	659.837	4	219.526	7	905.185	4	.066	10	1.998	3	.295	7
486		min	-591.756	3	-216.084	5	-814.537	3	-.082	7	-2.021	4	.094	4	
487		4	max	553.146	2	203.123	7	887.462	4	-.02	4	1.696	3	.216	7
488		min	-409.539	1	-76.126	4	-796.814	3	-.082	7	-1.685	4	.003	4	
489		5	max	542.913	2	192.986	3	869.739	4	-.02	4	1.4	3	.143	7
490		min	-399.306	1	-83.003	4	-779.091	3	-.082	7	-1.355	4	.033	4	
491	M50	1	max	484.305	2	-23.896	3	360.108	3	0	3	.576	2	-.048	4
492		min	-390.25	1	-184.722	8	-335.813	4	-.003	8	-.66	1	-.146	7	
493		2	max	483.038	2	-15.111	3	305.789	3	0	3	.472	2	.043	4
494		min	-388.983	1	-159.605	8	-281.494	4	-.003	8	-.532	1	-.038	3	
495		3	max	481.77	2	-6.325	3	251.469	3	0	3	.369	2	.16	8
496		min	-387.715	1	-134.488	8	-227.175	4	-.003	8	-.404	1	-.028	3	
497		4	max	480.502	2	2.46	3	197.15	3	0	3	.265	2	.276	8
498		min	-386.447	1	-109.371	8	-172.855	4	-.003	8	-.277	1	-.026	3	
499		5	max	479.235	2	11.246	3	142.831	3	0	3	.33	3	.368	8
500		min	-385.18	1	-84.255	8	-118.536	4	-.003	8	-.319	4	-.033	3	
501	M51	1	max	1057.873	3	179.534	5	436.636	2	.005	8	1.012	1	.164	5
502		min	-884.457	4	-32.404	2	-432.216	1	0	3	-.967	2	.045	2	
503		2	max	1034.999	3	154.417	5	394.791	2	.005	8	.621	1	.08	2
504		min	-861.583	4	-41.19	2	-390.371	1	0	3	-.572	2	-.062	1	
505		3	max	1012.124	3	129.3	5	352.946	2	.005	8	.386	3	.124	2
506		min	-838.709	4	-49.975	2	-348.526	1	0	3	-.334	4	-.185	1	
507		4	max	989.25	3	116.274	1	311.102	2	.005	8	.672	3	.176	2
508		min	-815.834	4	-58.761	2	-306.682	1	0	3	-.616	4	-.3	1	
509		5	max	966.376	3	107.489	1	281.8	3	.005	8	.946	3	.236	2
510		min	-792.96	4	-67.546	2	-277.337	4	0	3	-.886	4	-.407	1	
511	M52	1	max	249.356	3	11.112	3	465.971	2	.313	8	.262	3	.022	3



9bj YcdYA Ya VYf'GYW]cb: cfWg f' cbi]bi YXL

Member	Sec	Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
512		min -179.472	4	-84.071	8	-398.893	1	-.028	3	-.285	4	-.236	8
513	2	max 249.356	3	11.112	3	465.971	2	.313	8	.279	3	.021	3
514		min -179.472	4	-84.071	8	-398.893	1	-.028	3	-.294	4	-.225	8
515	3	max 249.356	3	11.112	3	465.971	2	.313	8	.296	3	.019	3
516		min -179.472	4	-84.071	8	-398.893	1	-.028	3	-.302	4	-.215	8
517	4	max 249.356	3	11.112	3	465.971	2	.313	8	.313	3	.018	3
518		min -179.472	4	-84.071	8	-398.893	1	-.028	3	-.31	4	-.204	8
519	5	max 249.356	3	11.112	3	465.971	2	.313	8	.33	3	.017	3
520		min -179.472	4	-84.071	8	-398.893	1	-.028	3	-.319	4	-.194	8
521	M53	1 max 743.625	3	67.338	2	532.009	4	.202	2	.62	4	.155	2
522		min -649.087	4	-107.335	1	-680.186	3	-.346	1	-.606	3	-.267	1
523	2	max 743.625	3	67.338	2	532.009	4	.202	2	.686	4	.147	2
524		min -649.087	4	-107.335	1	-680.186	3	-.346	1	-.691	3	-.254	1
525	3	max 743.625	3	67.338	2	532.009	4	.202	2	.753	4	.139	2
526		min -649.087	4	-107.335	1	-680.186	3	-.346	1	-.776	3	-.24	1
527	4	max 743.625	3	67.338	2	532.009	4	.202	2	.819	4	.13	2
528		min -649.087	4	-107.335	1	-680.186	3	-.346	1	-.861	3	-.227	1
529	5	max 743.625	3	67.338	2	532.009	4	.202	2	.886	4	.122	2
530		min -649.087	4	-107.335	1	-680.186	3	-.346	1	-.946	3	-.213	1
531	M54	1 max 470.016	2	-23.504	3	367.693	4	.074	7	.576	2	.126	7
532		min -403.495	1	-184.407	8	-437.576	3	.024	4	-.66	1	.042	4
533	2	max 480.248	2	-30.381	3	385.416	4	.074	7	.687	4	.196	8
534		min -413.727	1	-200.81	8	-455.299	3	.024	4	-.794	3	.059	3
535	3	max 751.239	3	211.281	5	869.442	3	.029	3	1.232	1	.288	5
536		min -605.768	4	-217.214	8	-774.786	4	-.081	5	-1.256	2	.072	3
537	4	max 741.006	3	194.878	5	851.719	3	-.023	2	1.121	1	.212	5
538		min -595.536	4	-25.603	2	-757.064	4	-.081	5	-1.111	2	.028	2
539	5	max 730.774	3	178.475	5	833.996	3	-.023	2	1.012	1	.142	5
540		min -585.304	4	-32.48	2	-739.341	4	-.081	5	-.967	2	.039	2

9bj YcdY5=G7 % h fl * \$!\$L '@: 8`GhY'7cXY7\ YWg

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M37	PIPE 2.0	.690	10.156	2	.332	10.1...			2	6295.422	32130	1.872	1.872	2...	H3-6
2	MP2A	PIPE 2.0	.580	5.578	2	.096	5.469			1	8922.084	32130	1.872	1.872	1...	H1-1b
3	M14	L1.5x1.5x3	.527	0	2	.009	0	z		2	3683.174	17085.9...	.293	.665	2...	H2-1
4	M5	L1.5x1.5x3	.527	0	4	.008	0	y		8	3683.174	17085.9...	.293	.662	2...	H2-1
5	MP2B	PIPE 2.0	.512	5.578	4	.089	5.469			3	8922.084	32130	1.872	1.872	2...	H1-1b
6	MP2C	PIPE 2.0	.512	5.578	4	.064	5.578			4	8922.084	32130	1.872	1.872	2...	H1-1b
7	M12	L1.5x1.5x3	.455	0	3	.009	0	z		3	3683.174	17085.9...	.293	.647	1...	H2-1
8	M40	PIPE 2.0	.435	10.156	4	.269	10.1...			3	6295.422	32130	1.872	1.872	3...	H1-1b
9	M3	L1.5x1.5x3	.430	0	2	.010	0	z		2	3683.174	17085.9...	.293	.652	1...	H2-1
10	M43	PIPE 2.0	.407	10.156	4	.243	10.1...			4	6295.422	32130	1.872	1.872	1...	H1-1b
11	M22	L1.5x1.5x3	.364	0	1	.008	0	y		5	3683.174	17085.9...	.293	.662	2...	H2-1
12	M20	L1.5x1.5x3	.342	0	1	.008	0	y		6	3683.174	17085.9...	.293	.657	2...	H2-1
13	M18	HSS4x4x5	.293	0	8	.087	0	y		8	150374...	169740	19.285	19.285	2...	H1-1b
14	M10	HSS4x4x5	.289	0	5	.087	0	y		5	150374...	169740	19.285	19.285	2...	H1-1b
15	M1	HSS4x4x5	.285	0	6	.086	0	y		6	150374...	169740	19.285	19.285	2...	H1-1b
16	MP3A	PIPE 2.0	.281	2.75	2	.046	2.75			4	14916.0...	32130	1.872	1.872	2...	H1-1b
17	MP1A	PIPE 2.0	.278	2.75	2	.040	2.75			3	14916.0...	32130	1.872	1.872	2...	H1-1b
18	MP1C	PIPE 2.0	.275	2.75	3	.042	2.75			3	14916.0...	32130	1.872	1.872	2...	H1-1b



9bj YcdY5=G7 % h fl * \$!%\$L @: 8 GhY7cXY7\ YWg f7 cbjbi YXL

Member	Shape	Code Check	Loc[ft]	LC Shear Check	Loc[ft]	Dir	LC phi*Pnc...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn			
19	MP3B	PIPE 2.0	.265	2.75	5	.050	2.75		1	14916.0...	32130	1.872	1.872	2...	H1-1b
20	MP3C	PIPE 2.0	.264	2.75	3	.048	2.75		3	14916.0...	32130	1.872	1.872	2...	H1-1b
21	MP1B	PIPE 2.0	.259	2.75	4	.042	2.75		2	14916.0...	32130	1.872	1.872	2...	H1-1b
22	M7	PL1/2x6	.255	.68	4	.122	.68	y	7	49587.6...	97200	1.012	12.15	1...	H1-1b
23	M16	PL1/2x6	.230	.68	2	.121	.68	y	5	49587.6...	97200	1.012	12.15	1...	H1-1b
24	M15	PL1/2x6	.216	.277	4	.019	0	y	8	94531.2...	97200	1.012	12.15	1...	H1-1b
25	M24	PL1/2x6	.208	.68	1	.120	.68	y	6	49587.6...	97200	1.012	12.15	1...	H1-1b
26	M26	PIPE 3.0	.204	4.948	8	.135	7.682		6	28250.5...	65205	5.749	5.749	1...	H1-1b
27	M8	PIPE 3.0	.204	4.948	5	.139	7.682		5	28250.5...	65205	5.749	5.749	1...	H1-1b
28	M27	PIPE 3.0	.202	4.948	6	.139	7.682		7	28250.5...	65205	5.749	5.749	1...	H1-1b
29	M9	PL1/2x6	.193	.277	3	.023	0	y	7	94531.2...	97200	1.012	12.15	1...	H1-1b
30	M6	PL1/2x6	.161	.277	1	.019	0	y	7	94531.2...	97200	1.012	12.15	1...	H1-1b
31	M23	PL1/2x6	.161	.277	2	.019	0	y	6	94531.2...	97200	1.012	12.15	1...	H1-1b
32	M2	HSS4x4x4	.153	2.433	8	.055	.203	z	3	136103...	139518	16.181	16.181	1...	H1-1b
33	M11	HSS4x4x4	.152	2.433	6	.056	.203	z	1	136103...	139518	16.181	16.181	1...	H1-1b
34	M19	HSS4x4x4	.151	2.433	5	.037	.203	z	2	136103...	139518	16.181	16.181	1...	H1-1b
35	M25	PL1/2x6	.145	.277	2	.023	0	y	8	94531.2...	97200	1.012	12.15	1...	H1-1b
36	M17	PL1/2x6	.133	.277	1	.024	0	y	5	94531.2...	97200	1.012	12.15	1...	H1-1b
37	M13	HSS4x4x4	.128	0	8	.045	2.231	z	4	136103...	139518	16.181	16.181	1...	H1-1b
38	M21	HSS4x4x4	.128	0	6	.032	2.231	z	2	136103...	139518	16.181	16.181	1...	H1-1b
39	M4	HSS4x4x4	.126	0	5	.045	2.231	z	1	136103...	139518	16.181	16.181	1...	H1-1b

9bj YcdY5=G-G%\$!%\$. @: 8 7c X: cfa YX GhY7cXY7\ YWg

Member	Shape	Code Check	Loc[ft]	LC Shear...	Loc[ft]	Dir	LC phi*Pn[lb]	phi*Tn[lb]	phi*Mn...	phi*Mn...	Cb	Cmyy	Cmzz	Eqn			
1	M38	5.44CU3...	.176	0	4	.022	0	y	6	50553....	67173....	3.157	10.048	2.285	.85	.85	C5.1.2-1
2	M39	5.44CU3...	.441	3.805	1	.044	0	z	2	50553....	67173....	3.157	9.057	1.64	.85	.85	C5.2.2-3
3	M44	6CU6.5x...	.189	.75	2	.126	.75	y	6	97347....	133378...	10.571	18.263	1.306	.85	.85	C3.3.2-1
4	M45	5.44CU3...	.229	0	2	.022	0	y	5	50553....	67173....	3.157	10.048	2.403	.85	.85	C5.1.2-1
5	M46	5.44CU3...	.447	0	3	.043	0	z	3	50553....	67173....	3.157	9.057	1.762	.85	.85	C5.1.2-2
6	M49	6CU6.5x...	.201	.75	3	.126	.75	y	7	97347....	133378...	10.571	18.263	1.323	.85	.85	C3.3.2-1
7	M50	5.44CU3...	.220	0	1	.022	0	y	8	50553....	67173....	3.157	10.048	1.874	.85	.85	C5.1.2-1
8	M51	5.44CU3...	.336	3.805	3	.029	0	y	5	50553....	67173....	3.157	9.057	1.55	.85	.85	C5.2.2-3
9	M54	6CU6.5x...	.129	.766	1	.125	.75	y	5	97347....	133378...	10.571	18.263	1.295	.85	.85	C5.2.2-3

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

Member	Shape	Code C...	Loc[ft]	LC Shear ...	Loc[ft]	Dir	LC Pnc/O...	Pnt/Om...	Mny/O...	Mnz/O...	Vny/O...	Vnz/O...	Cb	Eqn
No Data to Print ...														

EXHIBIT 9

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

T-Mobile Existing Facility

Site ID: CTNL053A

NL053/ MCF_Ambulance
237 Sandy Hollow Road
West Mystic, Connecticut 06388

May 27, 2021

EBI Project Number: 6221002707

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	4.63%

May 27, 2021

T-Mobile

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

Emissions Analysis for Site: CTNL053A - NL053/ MCF_Ambulance

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **237 Sandy Hollow Road in West Mystic, 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 237 Sandy Hollow Road in West Mystic, 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) 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.
- 3) 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.
- 4) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 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.
- 6) 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.
- 7) 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.
 - 8) The antennas used in this modeling are the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 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.
 - 9) The antenna mounting height centerline of the proposed antennas is 127 feet above ground level (AGL).
 - 10) 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.
 - 11) 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 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	127 feet	Height (AGL):	127 feet	Height (AGL):	127 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A1 MPE %:	1.52%	Antenna B1 MPE %:	1.52%	Antenna C1 MPE %:	1.52%
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 / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	127 feet	Height (AGL):	127 feet	Height (AGL):	127 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	1.41%	Antenna B2 MPE %:	1.41%	Antenna C2 MPE %:	1.41%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	127 feet	Height (AGL):	127 feet	Height (AGL):	127 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A3 MPE %:	1.01%	Antenna B3 MPE %:	1.01%	Antenna C3 MPE %:	1.01%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	3.93%
Verizon	0.31%
Metro PCS	0.39%
Site Total MPE % :	4.63%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.93%
T-Mobile Sector B Total:	3.93%
T-Mobile Sector C Total:	3.93%
Site Total MPE % :	4.63%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	127.0	10.10	1900 MHz GSM	1000	1.01%
T-Mobile 1900 MHz UMTS	2	1028.30	127.0	5.05	1900 MHz UMTS	1000	0.51%
T-Mobile 600 MHz LTE	2	591.73	127.0	2.91	600 MHz LTE	400	0.73%
T-Mobile 700 MHz LTE	2	648.82	127.0	3.19	700 MHz LTE	467	0.68%
T-Mobile 2100 MHz LTE	2	2056.61	127.0	10.10	2100 MHz LTE	1000	1.01%
						Total:	3.93%

• 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:	3.93%
Sector B:	3.93%
Sector C:	3.93%
T-Mobile Maximum MPE % (Sector A):	3.93%
Site Total:	4.63%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **4.63%** 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.