



**NSS** **NORTHEAST**  
SITE SOLUTIONS  
*Turnkey Wireless Development*

Northeast Site Solutions  
Denise Sabo  
4 Angela's Way, Burlington CT 06013  
203-435-3640  
denise@northeastsitesolutions.com

June 3, 2022

Members of the Siting Council  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: Exempt Modification Application  
151 Berkshire Road, Newtown, CT 06470  
Latitude: 41.397500  
Longitude: -73.235833  
Site #: CT13057-A\_CT11668B\_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 151 Berkshire Road, Newtown, CT 06470. T-Mobile currently maintains six (6) antennas at the 97-foot level of the existing 148-foot monopole tower. The property and the tower are owned by SBA. T-Mobile now intends to replace (6) antennas and add (3) antennas. The new antennas would be installed at the 97-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

**T-Mobile Planned Modifications:**

**Remove:**

(4) Coax – 1-1/4”

**Remove and Replace:**

(3) RFS Antennas (REMOVE) - (3) ERICSSON AIR6419 B41 Antennas (REPLACE)

**Install New:**

(3) RFS APXVAALL24-43-U-NA20 Antennas  
(3) COMMSCOPE VV-65A-R1 Antennas  
(3) ERICSSON 4480 B71+B85 RRU  
(3) ERICSSON 4460 B25+B66A RRU  
(3) HCS Fiber Cable 1.9”

**Existing to Remain:**

(3) Andrew RR65-18-00DPL2 Antennas \*  
(3) RFS TMAs \*  
(3) Kathrein 782 11054 Bias-Ts \*  
(8) Coax – 1-1/4” \*

\*Equipment listed for entitlement purposed only



The facility was approved by the Connecticut Siting Council, Docket No. 220 on June 3, 2002. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-72(b)(2), 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 Daniel Rosenthal, First Selectman and George Benson, Director of Planning for the Town of Newtown, as well as the property owner and the tower owner.

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 modifications 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 modifications 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 telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo  
Mobile: 203-435-3640  
Fax: 413-521-0558  
Office: 4 Angela's Way, Burlington CT 06013  
Email: [denise@northeastsitesolutions.com](mailto:denise@northeastsitesolutions.com)



**NSS** **NORTHEAST**  
SITE SOLUTIONS  
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Attachments

Cc: Daniel Rosenthal, First Selectman  
Newtown Municipal Center  
3 Primrose Street  
Newtown, CT 06470

George Benson, Director of Planning  
Newtown Municipal Center  
3 Primrose Street  
Newtown, CT 06470

SBA Infrastructure LLC - Tower & Property Owner  
8051 Congress Avenue  
Boca Raton, FL 33487

# Exhibit A

## **Original Facility Approval**

# Connecticut Siting Council <sup>(/CSC)</sup>

[CT.gov Home](#) [\(/\)](#) [Connecticut Siting Council](#) [\(/CSC\)](#) Dec220

**DOCKET NO. 220** - Connecticut Agricultural Towers LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a cellular telecommunications facility at 14 Osborn Hill Road, or 151 Berkshire Road (Route 34), Sandy Hook/Newtown, Connecticut. }

} Connecticut  
Siting  
Council  
}  
} June 3,  
2002

## 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 at the proposed alternate site in Newtown, Connecticut, 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 James E. Dwyer Company for the construction, maintenance and operation of a cellular telecommunications facility at the proposed alternate site located at 151 Berkshire Road (Route 34), Newtown, Connecticut. We deny certification of the proposed prime site located at 14 Osborn Hill Road, Newtown, 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 telecommunications providers, both public and private, but such tower shall not exceed a height of 120 feet above ground level, capable of being increased in height as needed by means of a petition to the Council.
2. 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 submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location and specifications for the tower, tower foundation, antennas, equipment building, security fence, access road, utility line, and landscaping plan. The D&M Plan shall also include construction plans to be submitted prior to construction for site clearing, water drainage, and erosion and sedimentation control consistent with the [2002 Connecticut Guidelines for Soil Erosion and Sediment Control](#).
3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of 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 provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. 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.
5. 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.
6. If the facility does not initially provide, or permanently ceases to provide wireless services following completion of construction, 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.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct 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 Hartford Courant, and the Danbury News-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**

James E. Dwyer Co., Inc. Its Representative

**Its Representatives**

James E. Dwyer Co., Inc.  
106 Sherman Street  
Fairfield, CT 06430  
Stephen J. Humes  
LeBoeuf, Lamb, Greene & MacRae  
Goodwin Square  
225 Asylum Avenue  
Hartford, CT 06103

**Intervenor**

Town of Newtown

Robert A. Fuller, Esq.  
75 East Meadow Road  
Wilton, CT 06897

# Exhibit B

## Property Card

# 151 BERKSHIRE ROAD

**Location** 151 BERKSHIRE ROAD

**M/B/L** 50/ 9/ 16/C C/

**Acct#** 00713001C

**Owner** SBA INFRASTRUCTURE LLC

**Assessment** \$329,470

**Appraisal** \$470,670

**PID** 15216

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$110,670	\$360,000	\$470,670

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$77,470	\$252,000	\$329,470

## Owner of Record

**Owner** SBA INFRASTRUCTURE LLC  
**Co-Owner**  
**Address** 8051 CONGRESS AVENUE  
BOCA RATON, FL 33487

**Sale Price** \$425,000  
**Book & Page** 1039/1152  
**Sale Date** 10/02/2013  
**Instrument** 03

## Ownership History

Ownership History				
Owner	Sale Price	Book & Page	Instrument	Sale Date
SBA INFRASTRUCTURE LLC	\$425,000	1039/1152	03	10/02/2013
SBA TOWERS V LLC	\$675,000	1035/1004	38	07/29/2013
FRIEDMAN KEVIN D & KELLY KATHY	\$0	0527/0870		12/25/2009

## Building Information

### Building 1 : Section 1

**Year Built:**

**Living Area:** 0

Building Attributes	
Field	Description



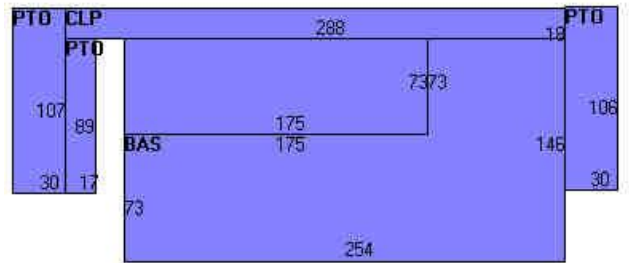
Style	Outbuildings
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Extra Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
Blocked FPL(s)	
Woodstove(s)	
SF Fin Bsmt	
Fin Bsmt Qual	
Bsmt Garage	
Int Millwork	
Ext. Millwork	
Foundation	
MH Park	

### Building Photo



(<https://images.vgsi.com/photos/NewtownCTPhotos/\00\01\88\97.jpg>)

### Building Layout



([https://images.vgsi.com/photos/NewtownCTPhotos//Sketches/15216\\_205t](https://images.vgsi.com/photos/NewtownCTPhotos//Sketches/15216_205t))

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

### Extra Features

Extra Features	Legend
No Data for Extra Features	

No Data for Extra Features

## Land

### Land Use

**Use Code** 4310  
**Description** CELL SITE  
**Zone** R-2  
**Neighborhood**  
**Alt Land Appr Category** No

### Land Line Valuation

**Size (Acres)** 0  
**Frontage**  
**Depth**  
**Assessed Value** \$252,000  
**Appraised Value** \$360,000

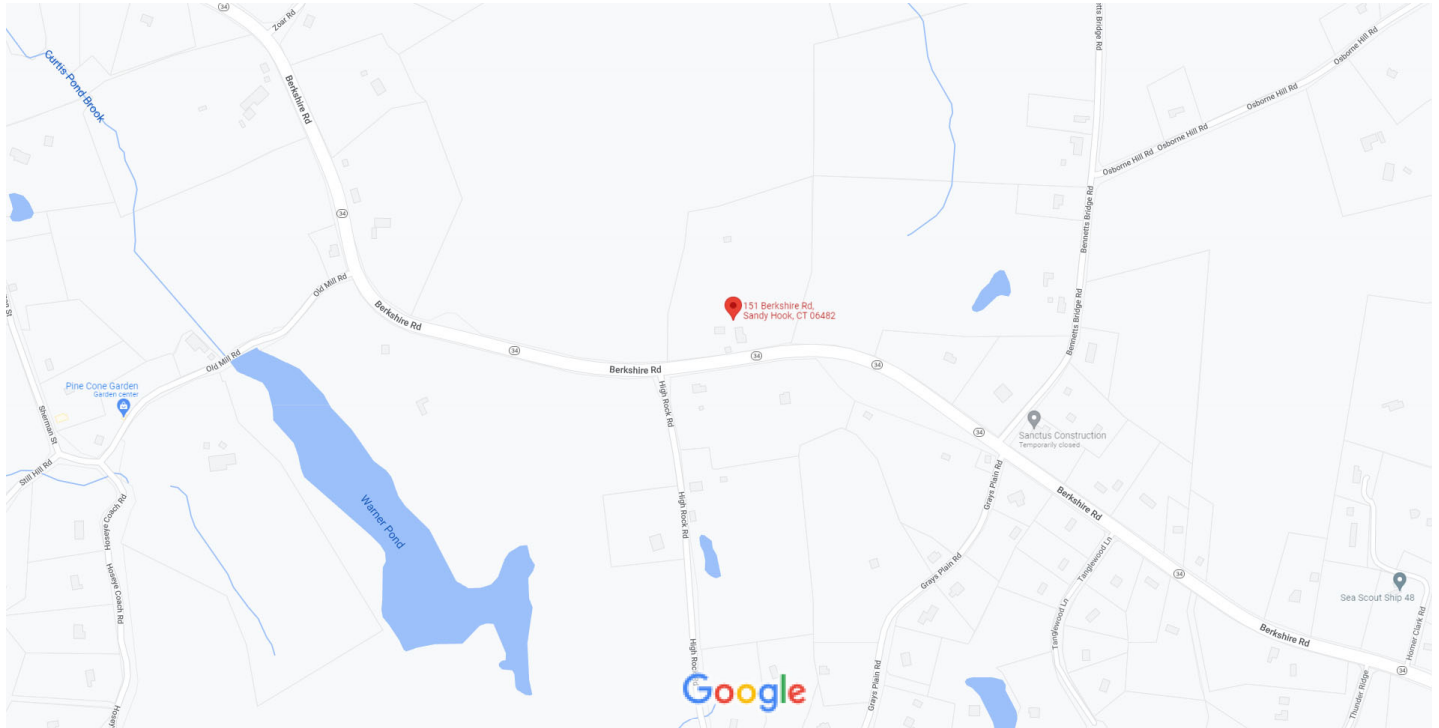
## Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CELL	Cell Tower			1 Units	\$96,000	1
FN1	Fence			276 L.F.	\$990	1
SHD4	Cellular Shed			360 S.F.	\$6,480	1
SHD1	Shed	FR	Frame	1000 S.F.	\$7,200	1

## Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$110,670	\$360,000	\$470,670
2019	\$110,670	\$360,000	\$470,670
2018	\$103,470	\$360,000	\$463,470

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$77,470	\$252,000	\$329,470
2019	\$77,470	\$252,000	\$329,470
2018	\$72,430	\$252,000	\$324,430



# Exhibit C

## **Construction Drawings**

# CT668/ARCH TWRS-NEWTWN

151 BERKSHIRE ROAD  
 NEWTON, CT 06470  
 FAIRFIELD COUNTY

## SITE NO.: CT11668B

SITE TYPE: 149'± MONOPOLE

RF DESIGN GUIDELINE: 67E5D998E ODE+6160

### APPROVALS

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

### T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

### GENERAL NOTES

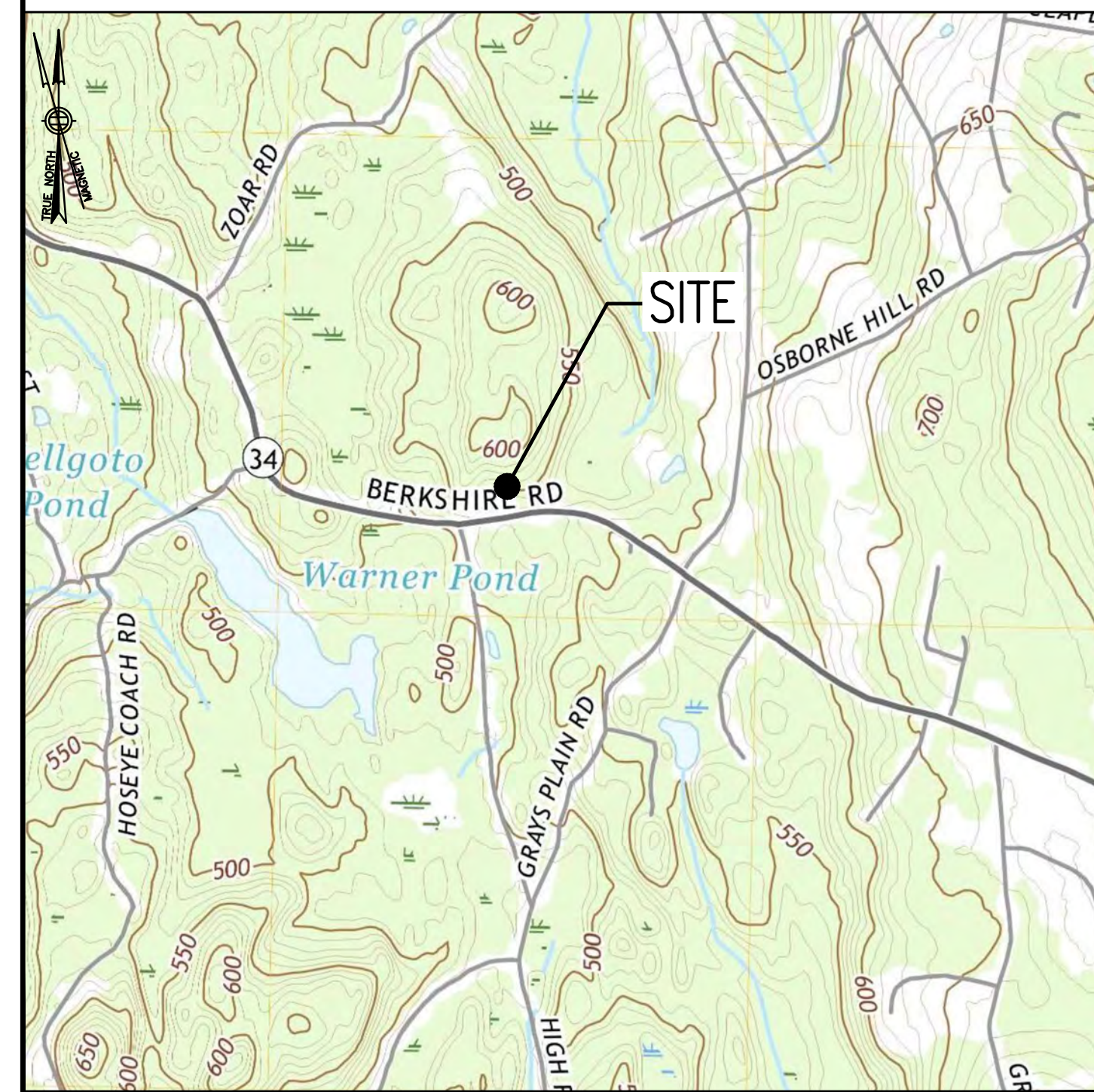
- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT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

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



### VICINITY MAP

SCALE: 1" = 1000'-0"



### DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 58 TO MERGE ONTO I-90 WEST. TAKE EXIT 78 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY. TAKE EXIT 11 TOWARD CT-34/DERBY/NEW HAVEN. TURN RIGHT ONTO WASSERMAN WAY. TURN RIGHT ONTO CT-34 E. SITE WILL BE ON THE LEFT.

### SHEET INDEX

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

### 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.

### SCOPE OF WORK

REMOVE:	INSTALL:
• 6 ANTENNAS	• 9 ANTENNAS
• ALL TMAs	• 6 RADIOS
• 1 60A-2P BREAKER	• 3 HYBRID FIBER CABLES
• ALL 1-1/4" COAX CABLES	• 1 6160 EQUIPMENT CABINET
	• 1 6160 BATTERY CABINET
	• 1 SLACKBOX
	• 1 125A-2P BREAKER
	• 1 150A-2P BREAKER
	• 2 25A-1P BREAKER
	• 1 HANDRAIL KIT

### SITE NOTES

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

### PROJECT SUMMARY

SITE NUMBER:	CT11668B
SITE NAME:	CT668/ARCH TWRS-NEWTWN
SBA SITE NUMBER:	CT13057-A
SBA SITE NAME:	NEWTOWN
SITE ADDRESS:	151 BERKSHIRE ROAD NEWTON, CT 06470
PROPERTY OWNER:	KEVIN D. FRIEDMAN & KATHY KELLY 151 BERKSHIRE ROAD SANDY HOOK, CT 06482
TOWER OWNER:	SBA INFRASTRUCTURE, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	FAIRFIELD
ZONING DISTRICT:	COMMERCIAL PARK B
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	149'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
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.41.3974" (41°-23'-50.64") LONGITUDE W.-73.2361" (73°-14'-09.96")

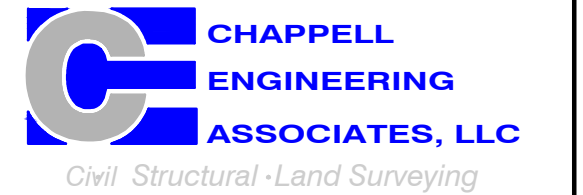
**SPECIAL ZONING NOTE:**  
 BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), 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).

..T-Mobile..

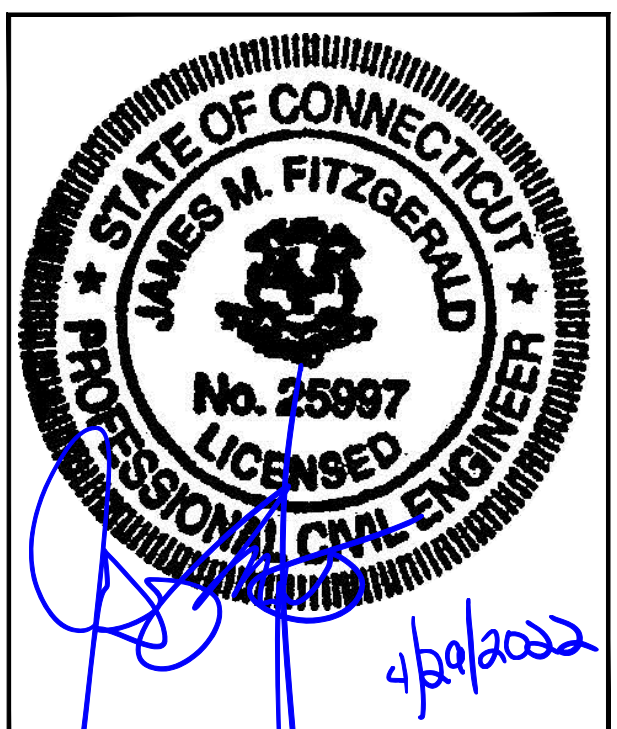
T-MOBILE NORTHEAST LLC  
 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 OFFICE: (508) 286-2700



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



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:  
**CT11668B**  
 SITE ADDRESS:  
 151 BERKSHIRE ROAD  
 NEWTOWN, CT 06470

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**

**GENERAL NOTES:**

1. 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
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. 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.
5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
9. 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.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
13. 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.
14. 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.
15. CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
16. 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.
17. 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.
18. 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:**

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. 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.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
6. 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.
7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
8. 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.
9. 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.
10. 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.
11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

**CONCRETE AND REINFORCING STEEL NOTES:**

1. 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.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
3. 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, UNO.
4. 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 LARGER .....2 IN.  
#5 AND SMALLER & WWF .....1½ IN.  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER  
OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL .....¾ IN.  
BEAMS AND COLUMNS .....1½ IN.
5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. 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.
7. 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.
8. 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.
9. 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:**

1. 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".
2. 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.
3. 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.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL
6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

**SOIL COMPACTION NOTES FOR SLAB ON GRADE:**

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. 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.
4. 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.
5. 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:**

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

**CONSTRUCTION NOTES:**

1. FIELD VERIFICATION: SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
2. COORDINATION OF WORK: SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
3. 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:**

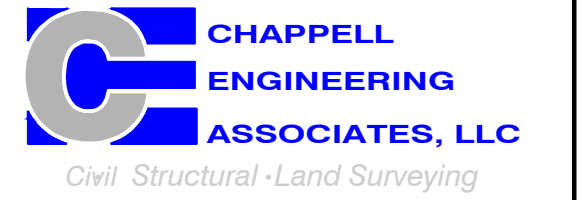
1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
5. 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.
6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATINGS, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. 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.
11. 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.
12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
13. 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.
14. 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).
15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEE AND NEC.
16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
17. 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.
18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
20. 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.
21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEE AND NEC.
24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
25. 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.
26. 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.
27. 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.
28. 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.
29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
30. 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.
31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.



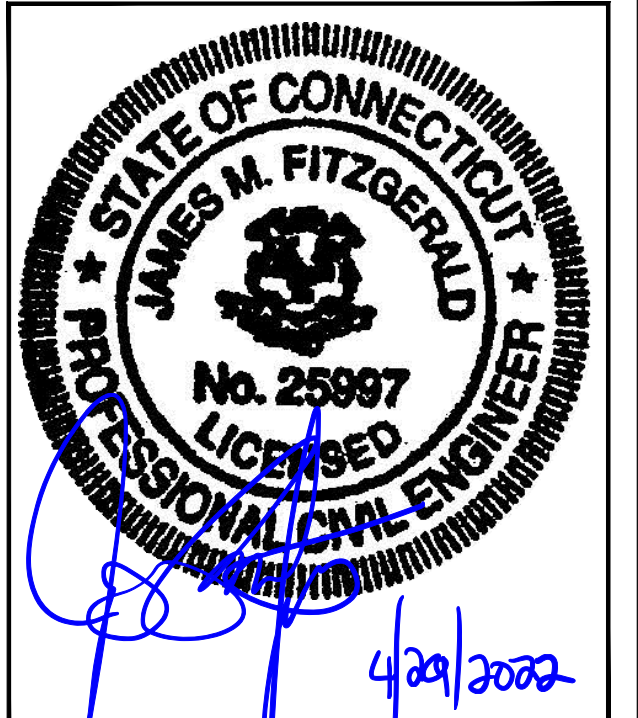
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CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:  
**CT11668B**  
SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

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.

**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.

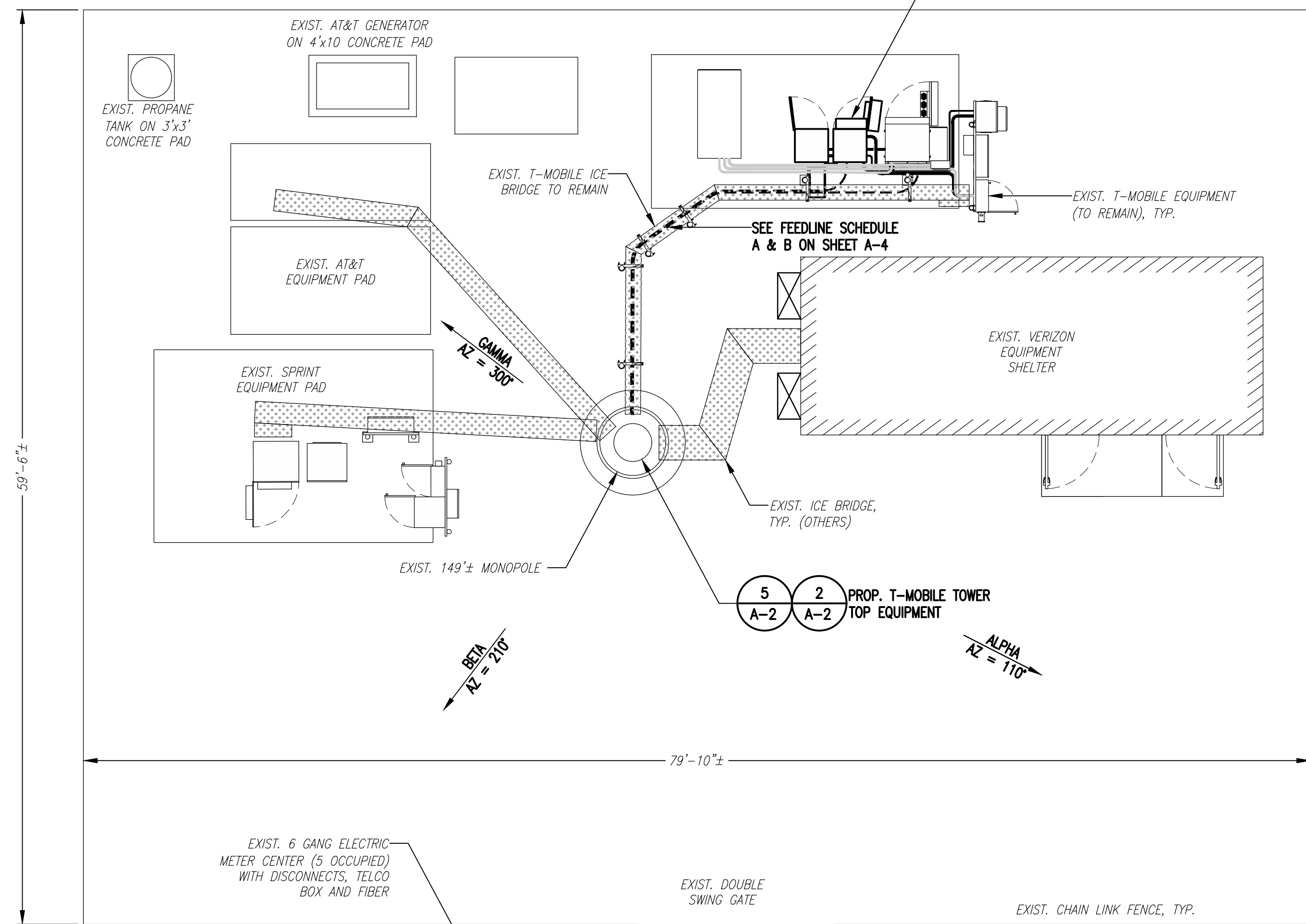


**EXISTING EQUIPMENT PHOTO DETAIL**

SCALE: NTS

2  
A-1

4  
A-1  
PROP. T-MOBILE EQUIPMENT TO BE MOUNTED TO EXIST. CONCRETE PAD

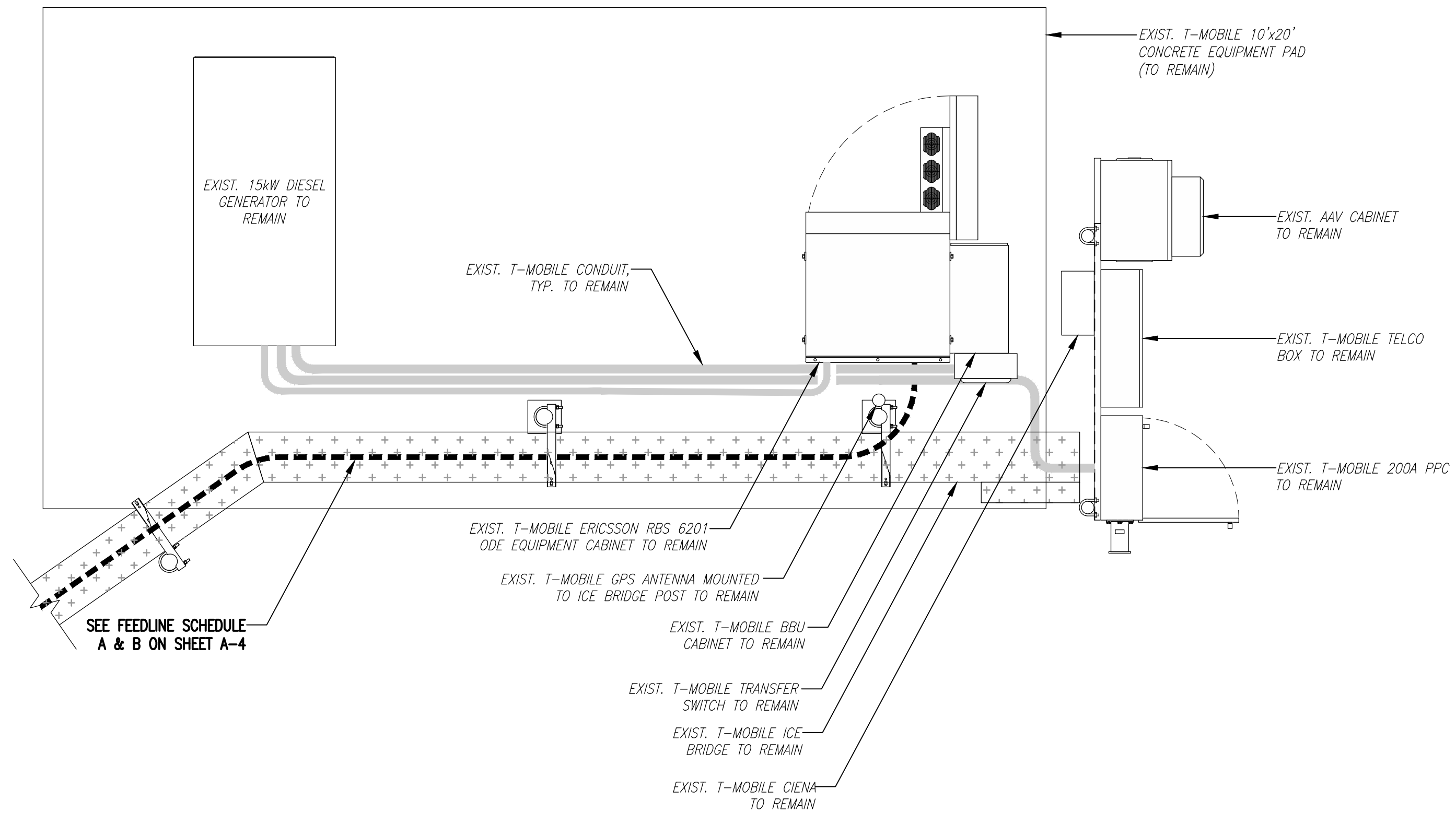


**COMPOUND PLAN**

SCALE: 1" = 6'-0"

1  
A-1

0 3'-0" 6'-0" 12'-0" 18'-0"

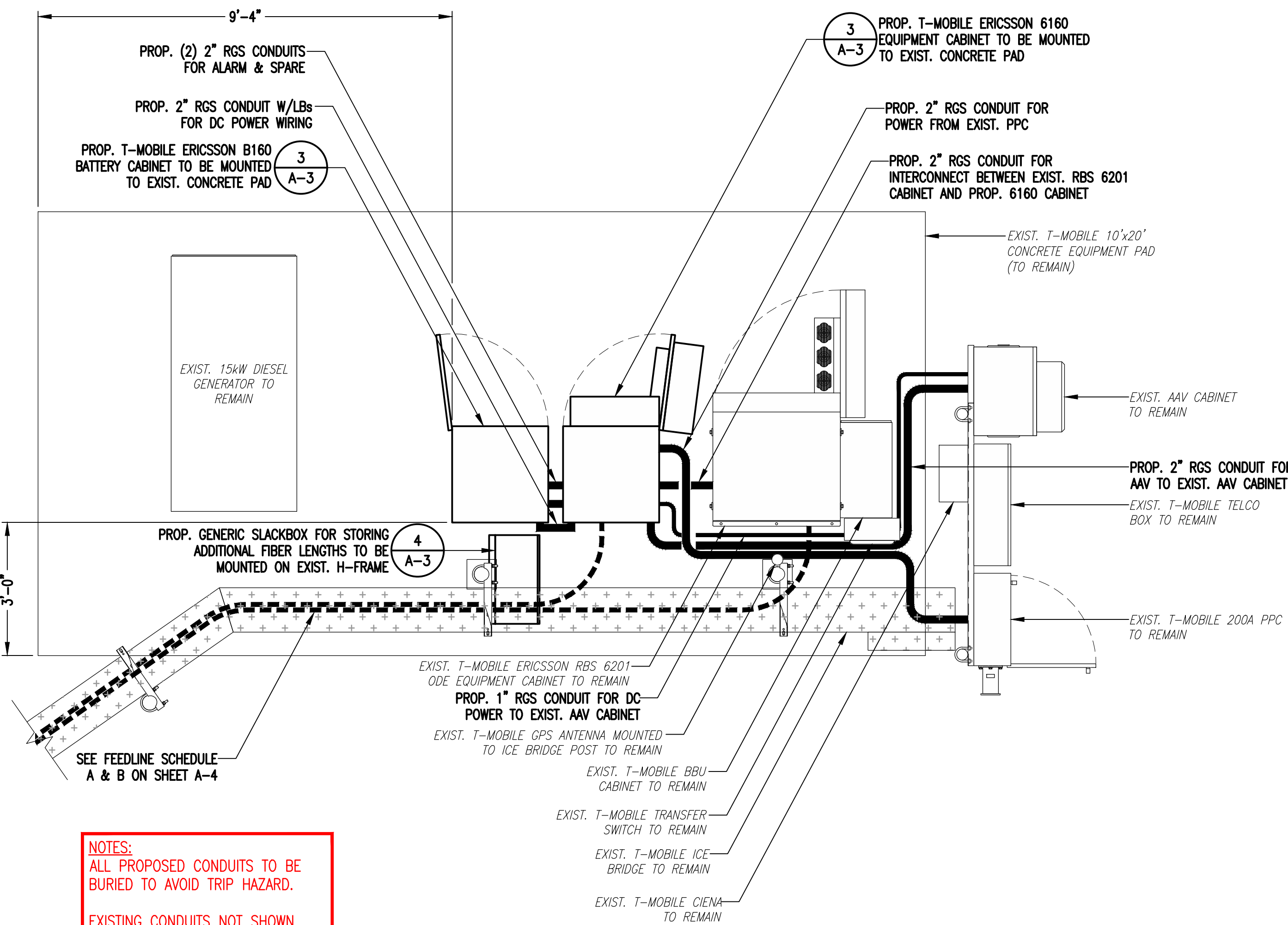


**EXISTING EQUIPMENT PLAN**

SCALE: 1/2" = 1'-0"

3  
A-1

0 2'-0" 4'-0" 6'-0"



**NOTES:**  
 ALL PROPOSED CONDUITS TO BE BURIED TO AVOID TRIP HAZARD.  
 EXISTING CONDUITS NOT SHOWN FOR CLARITY.

**PROPOSED EQUIPMENT PLAN**

SCALE: 1/2" = 1'-0"

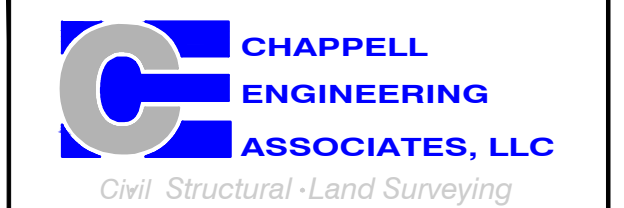
4  
A-1

0 2'-0" 4'-0" 6'-0"

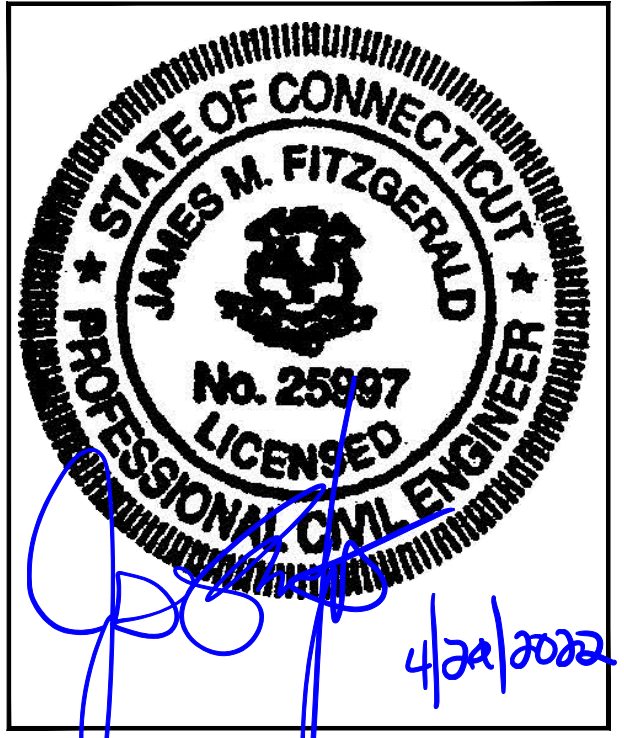
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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
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SITE NUMBER:  
**CT11668B**  
 SITE ADDRESS:  
 151 BERKSHIRE ROAD  
 NEWTOWN, CT 06470

SHEET TITLE  
**COMPOUND & EQUIPMENT PLAN**

SHEET NUMBER  
**A-1**



2022.3.30 14:59

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

1  
A-2

- TOP OF EXIST. TOWN OMNI ANTENNA  
EL. = 153± AGL
- TOP OF EXIST. MONOPOLE TOWER  
EL. = 149± AGL
- TOP OF EXIST. TOWN TROMBONE ANTENNA  
EL. = 147± AGL
- EXIST. VERIZON ANTENNAS  
EL. = 137.5± AGL

- EXIST. AT&T ANTENNAS  
EL. = 118.5± AGL

PROP. T-MOBILE HANDRAIL KIT TO BE MOUNTED TO EXIST. MOUNTING PIPES SECURED TO EXIST. PLATFORM (1 PER SECTOR, TOTAL OF 3)

- EXIST. SPRINT ANTENNAS  
EL. = 109± AGL

- EXIST. T-MOBILE (3) ANTENNAS  
EL. = 97± AGL

- PROP. T-MOBILE (6) ANTENNAS  
EL. = 97± AGL

ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE ERICSSON M-MIMO AIR6419 B41 PANEL ANTENNAS TO BE MOUNTED TO EXIST. MOUNTING PIPES SECURED TO EXIST. PLATFORM (1 PER SECTOR, TOTAL OF 3)

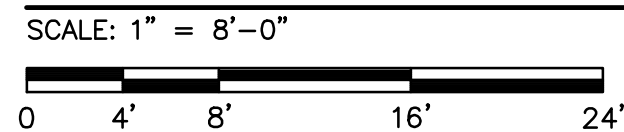
SEE FEEDLINE SCHEDULE A & B ON SHEET A-4

EXIST. 149± MONOPOLE

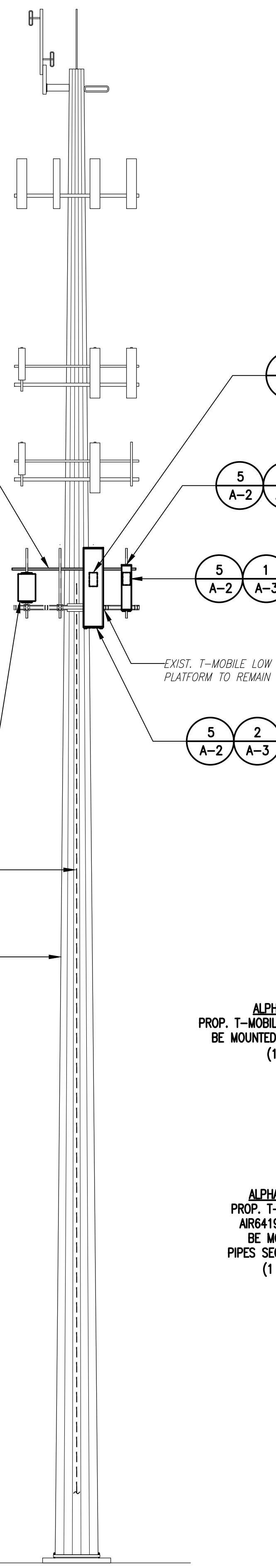
NOTE:  
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

- GROUND LEVEL (REF. POINT)  
EL. = 0'-0"± AGL

TOWER ELEVATION  
SCALE: 1" = 8'-0"



2  
A-2



ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE RADIO 4480 B71+B85 TO BE MOUNTED TO EXIST. MOUNTING PIPES (1 PER SECTOR, TOTAL OF 3)

ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE COMMSCOPE VV-65A-R1 PANEL ANTENNAS TO BE MOUNTED TO EXIST. MOUNTING PIPES SECURED TO EXIST. LOW PROFILE PLATFORM (1 PER SECTOR, TOTAL OF 3)

ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE RADIO 4460 B25+B66 TO BE MOUNTED BEHIND PROP. ANTENNA (1 PER SECTOR, TOTAL OF 3)

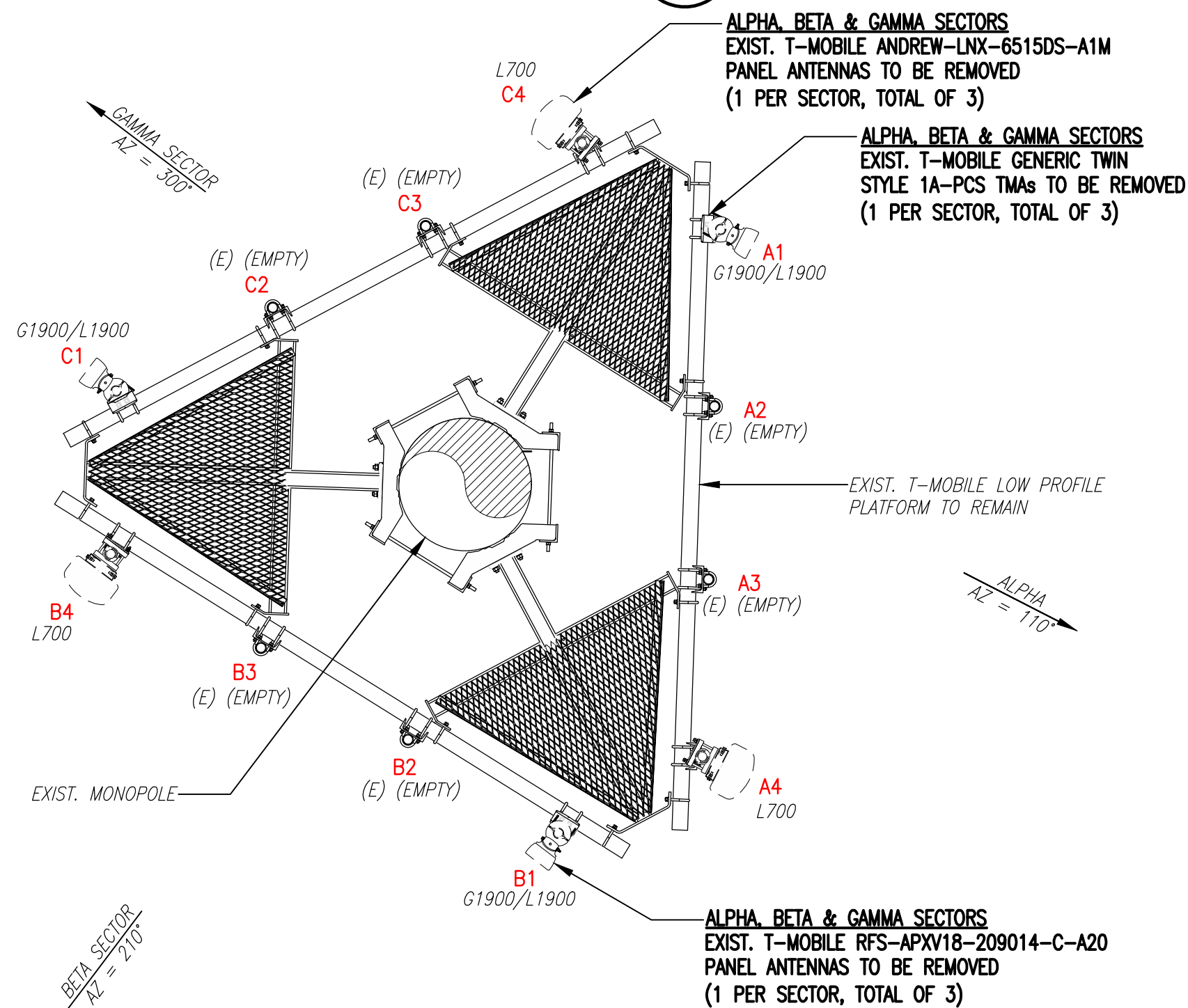
ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE RFS-APXVALL24 43-U-NA20 PANEL ANTENNAS TO BE MOUNTED TO EXIST. MOUNTING PIPES SECURED TO EXIST. LOW PROFILE PLATFORM (1 PER SECTOR, TOTAL OF 3)

NOTE:  
PROPOSED HANDRAIL KIT NOT SHOWN, FOR CLARITY.



EXISTING ANTENNA PHOTO  
SCALE: N.T.S.

3  
A-2

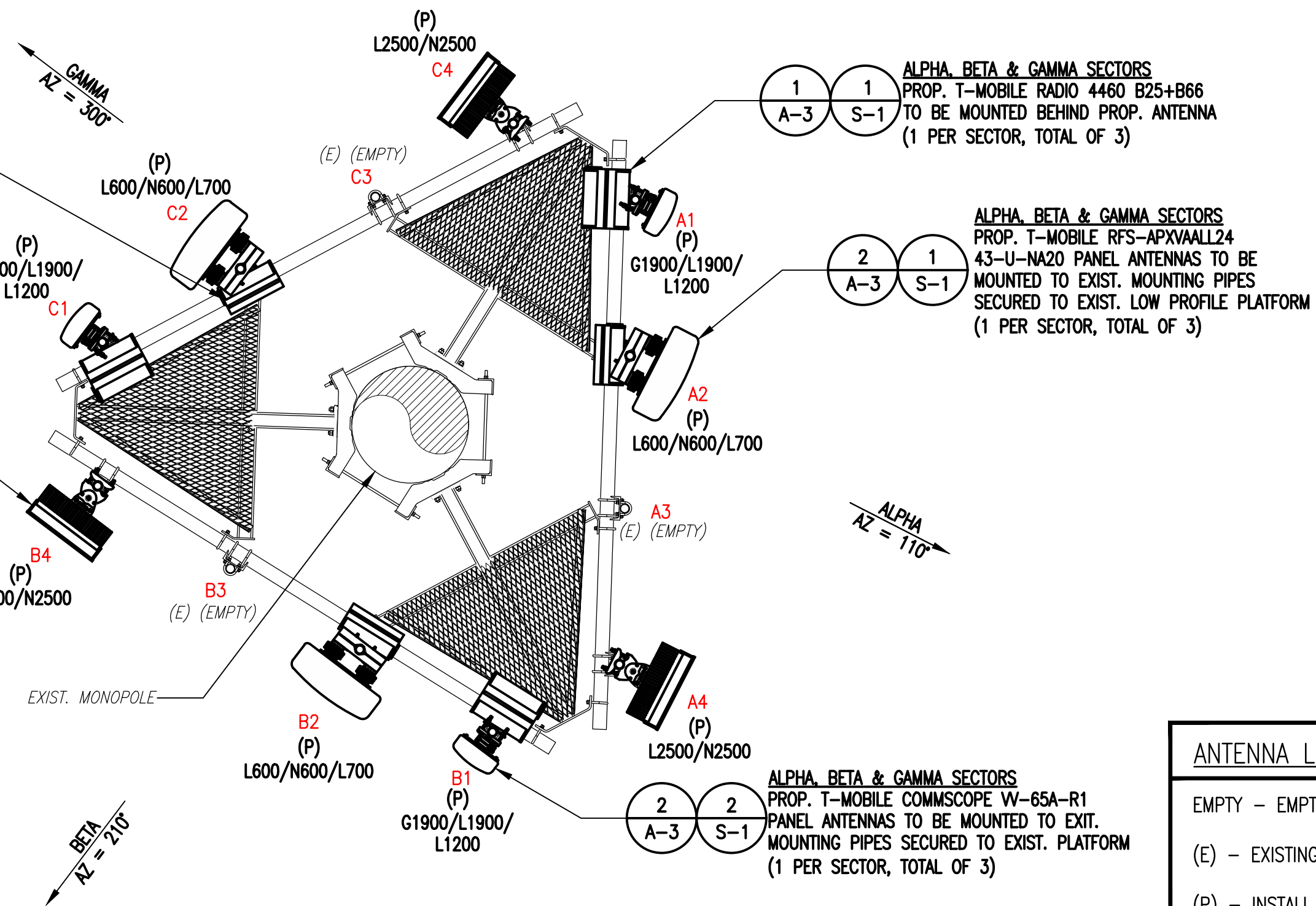


EXISTING ANTENNA PLAN  
SCALE: N.T.S.

4  
A-2

ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE RADIO 4480 B71+B85 TO BE MOUNTED TO EXIST. MOUNTING PIPES (1 PER SECTOR, TOTAL OF 3)

ALPHA, BETA & GAMMA SECTORS  
PROP. T-MOBILE ERICSSON M-MIMO AIR6419 B41 PANEL ANTENNAS TO BE MOUNTED TO EXIST. MOUNTING PIPES SECURED TO EXIST. PLATFORM (1 PER SECTOR, TOTAL OF 3)



PROPOSED ANTENNA PLAN  
SCALE: N.T.S.

5  
A-2

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

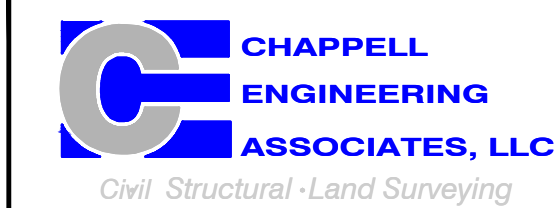
NOTE:  
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

..T-Mobile..

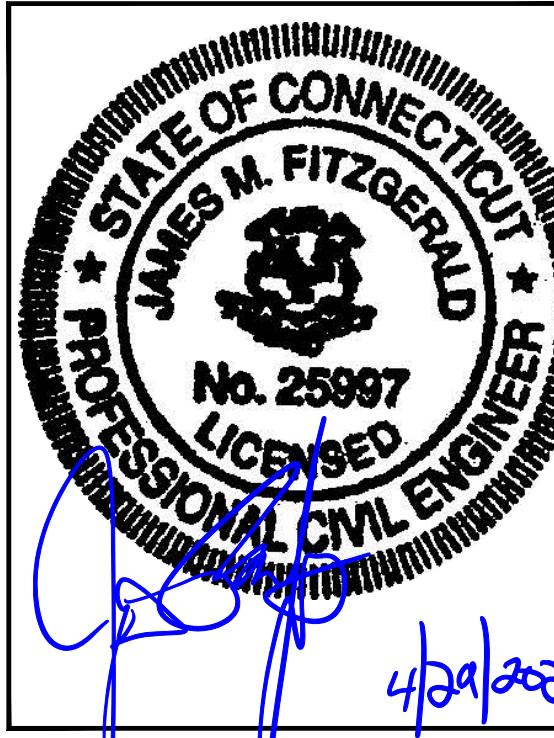
T-MOBILE NORTHEAST LLC  
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
OFFICE: (508) 286-2700



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134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:  
**CT11668B**  
SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

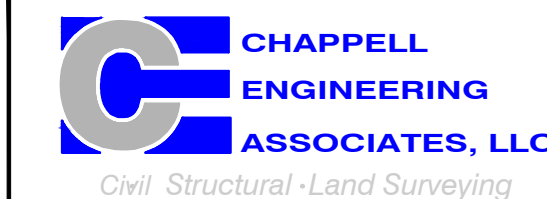
SHEET TITLE  
TOWER ELEVATIONS & ANTENNA PLANS

SHEET NUMBER  
**A-2**

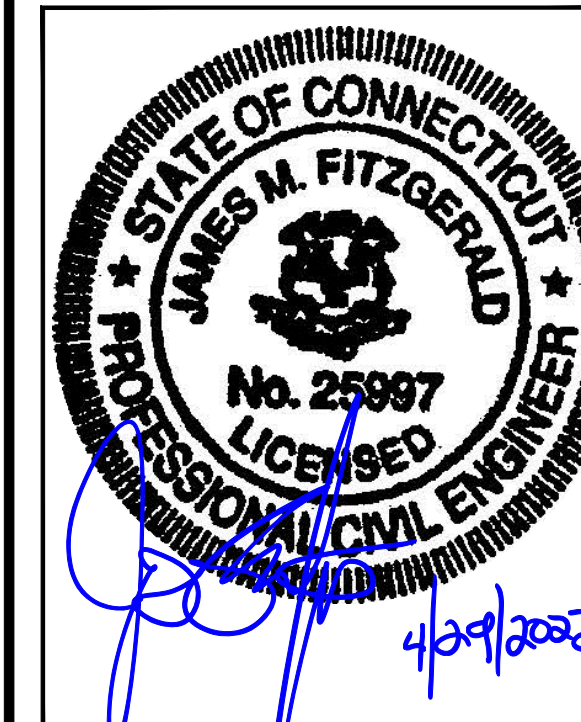




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**CT11668B**  
SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

SHEET TITLE:  
**SITE DETAILS**

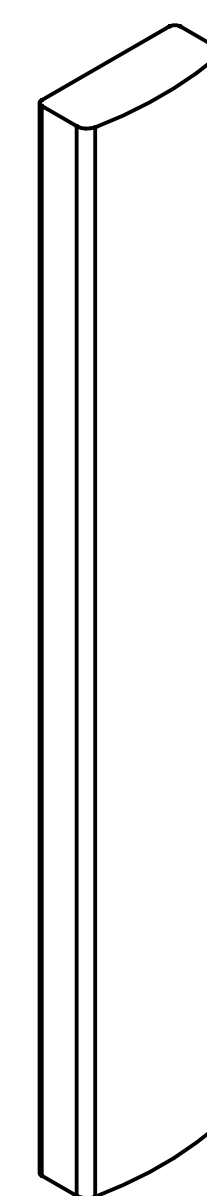
SHEET NUMBER:  
**A-3**



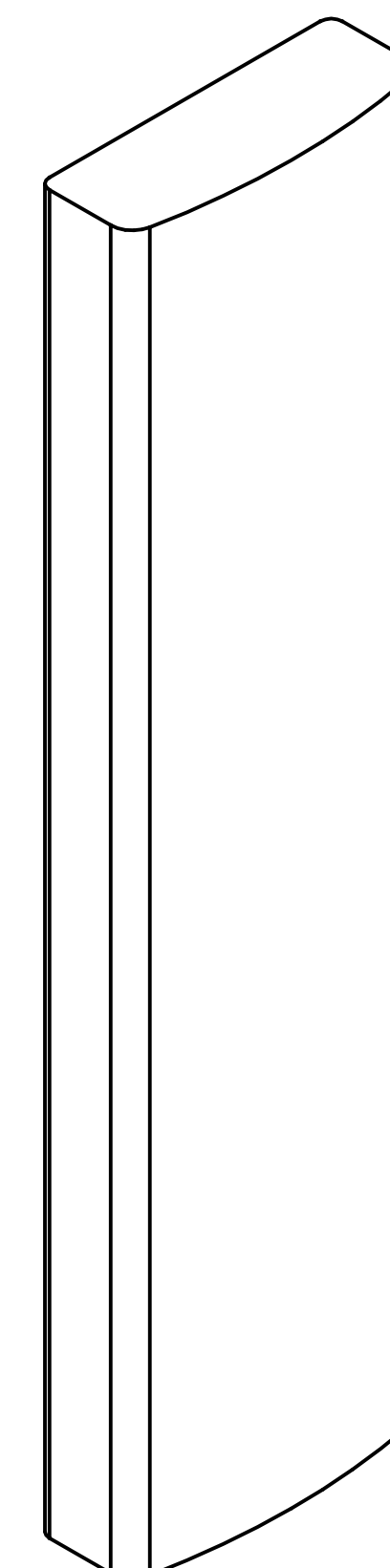
**ERICSSON RADIO 4460 B25+B66**  
DIMENSIONS: 17.0"H x 15.1"W x 11.9"D  
WEIGHT: 104.0 lbs  
QUANTITY: 1 PER SECTOR, TOTAL OF 3



**ERICSSON RADIO 4480 B71+B85**  
DIMENSIONS: 19.2"H x 15.1"W x 7.5"D  
WEIGHT: 92.6 lbs  
QUANTITY: 1 PER SECTOR, TOTAL OF 3



**COMMSCOPE W-65A-R1 ANTENNA**  
DIMENSIONS: 54.7"H x 12.1"W x 4.7"D  
WEIGHT: 23.8 lbs  
QUANTITY: 1 PER SECTOR, TOTAL OF 3

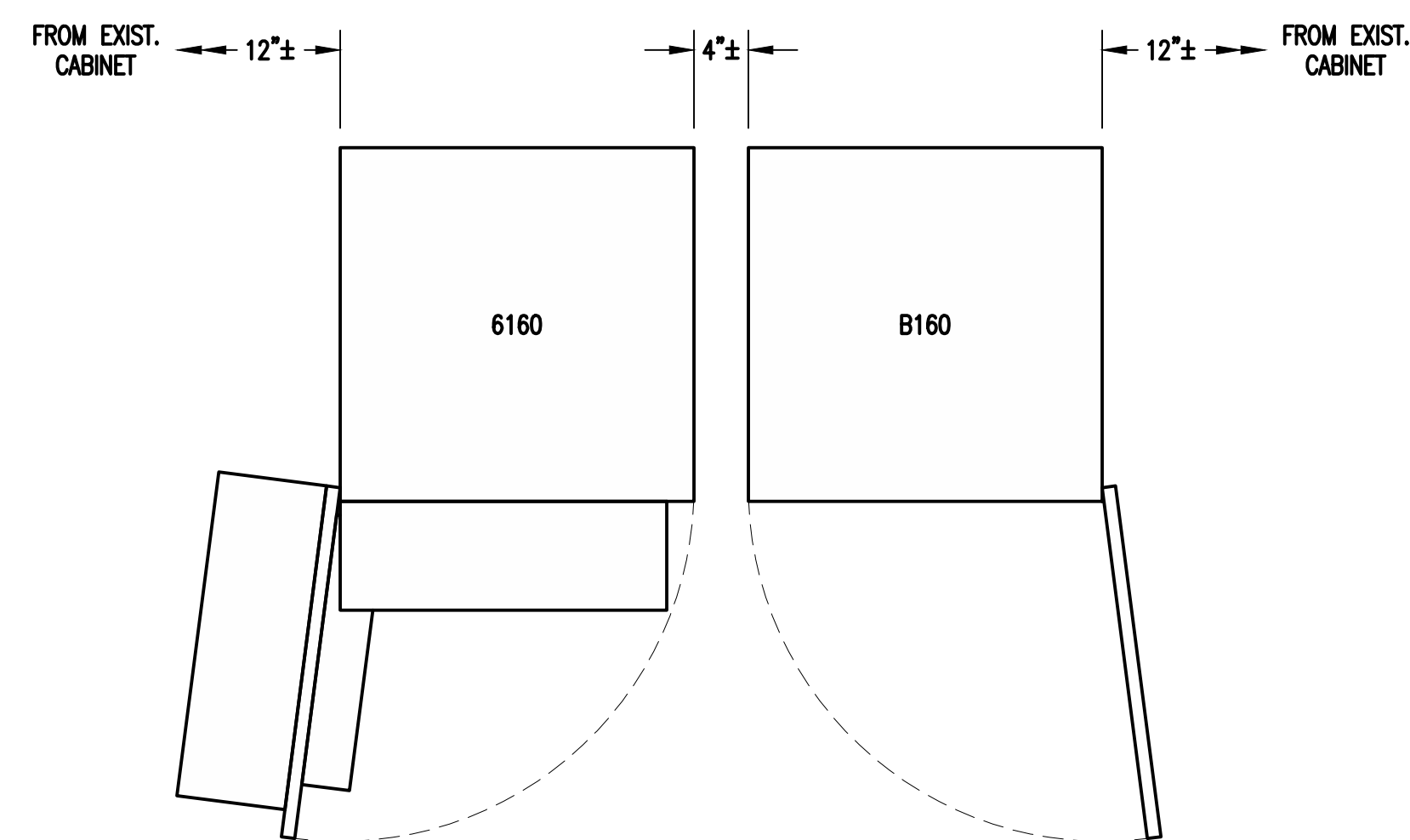
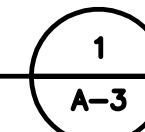


**RFS APXVAALL24 43-U-NA20 ANTENNA**  
DIMENSIONS: 95.9"H x 24.0"W x 8.5"D  
WEIGHT: 122.8 lbs  
QUANTITY: 1 PER SECTOR, TOTAL OF 3



**ERICSSON M-MIMO AIR6419 B41 ANTENNA**  
DIMENSIONS: 36.3"H x 20.9"W x 9.0"D  
WEIGHT: 83.3 lbs  
QUANTITY: 1 PER SECTOR, TOTAL OF 3

**RADIO DETAIL**  
SCALE: N.T.S.

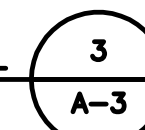


CABINETS TO BE MOUNTED PER MANUFACTURER'S SPECIFICATIONS

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

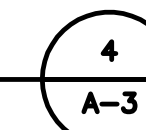
**ERICSSON B160 BATTERY CABINET**  
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D  
QUANTITY: TOTAL OF 1

**EQUIPMENT DETAIL**  
SCALE: N.T.S.



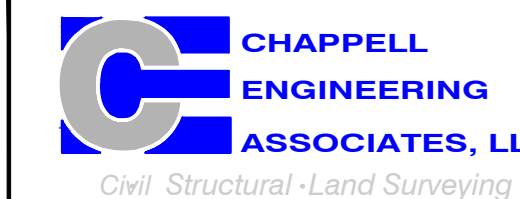
**SLACKBOX - HOFFMAN 32FH91 NEMA 3R ENCLOSURE**  
DIMENSIONS: 24.0"H x 24.0"W x 12.0"D  
QUANTITY: TOTAL OF 1

**SSC DETAILS**  
SCALE: N.T.S.





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MARLBOROUGH, MA 01752  
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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:  
**CT11668B**

SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

SHEET TITLE:  
**ANTENNA & FEEDLINE CHARTS**

SHEET NUMBER:  
**A-4**

FINAL ANTENNA CONFIGURATION							
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS
ALPHA	A1 COMMSCOPE VW-65A-R1	97'± AGL	110°	0°	0°	G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66
	A2 RFS APXVALL24_43-U-NA20	97'± AGL	110°	0°	0°	L600/N600/L700	ERICSSON RADIO 4480 B71+B85
	A3 EMPTY						
	A4 ERICSSON M-MIMO AIR6419 B41	97'± AGL	110°	0°	0°	L2500/N2500	-
BETA	B1 COMMSCOPE VW-65A-R1	97'± AGL	210°	0°	0°	G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66
	B2 RFS APXVALL24_43-U-NA20	97'± AGL	210°	0°	0°	L600/N600/L700	ERICSSON RADIO 4480 B71+B85
	B3 EMPTY						
	B4 ERICSSON M-MIMO AIR6419 B41	97'± AGL	210°	0°	0°	L2500/N2500	-
GAMMA	C1 COMMSCOPE VW-65A-R1	97'± AGL	300°	0°	0°	G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66
	C2 RFS APXVALL24_43-U-NA20	97'± AGL	300°	0°	0°	L600/N600/L700	ERICSSON RADIO 4480 B71+B85
	C3 EMPTY						
	C4 ERICSSON M-MIMO AIR6419 B41	97'± AGL	300°	0°	0°	L2500/N2500	-

(P) (3) 1-3/4" (6x24) HCS FIBER CABLES

CABLE NOTE: EXISTING T-MOBILE ALL 1-1/4" COAX CABLES, TO BE CAPPED, WRAPPED & REMOVED. (1) 1/2" COAX CABLE USED FOR GPS ANTENNA TO REMAIN. SEE FEEDLINE SCHEDULE A & B BELOW.

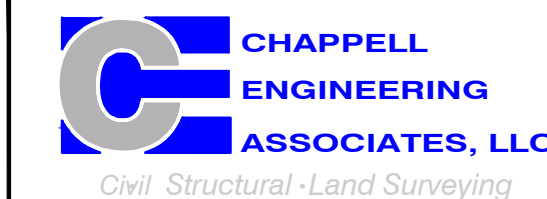
NOTE: RFDS REV5 - 04/01/22

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAX CABLE FOR GPS ANTENNA  EXISTING TO BE REMOVED: ALL 1-1/4" COAX CABLES, TO BE CAPPED, WRAPPED AND REMOVED.	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 1-3/4" (6x24) HCS FIBER CABLES	

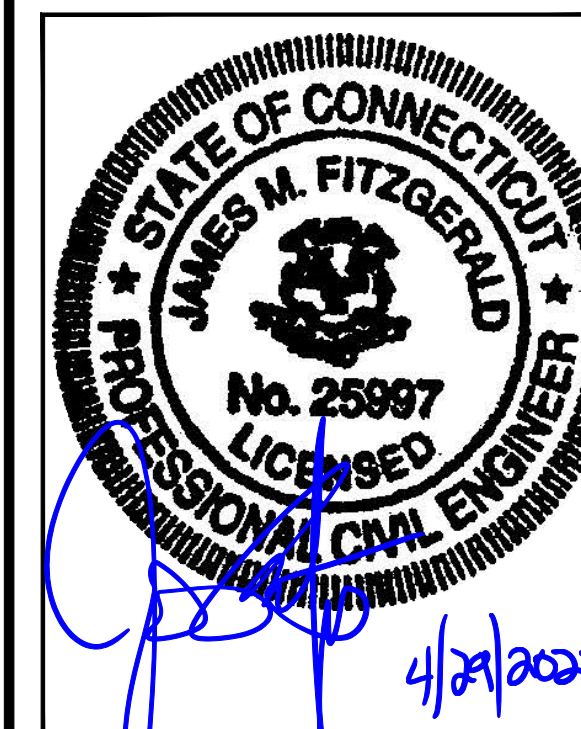
NOTE:  
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.



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SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:

**CT11668B**

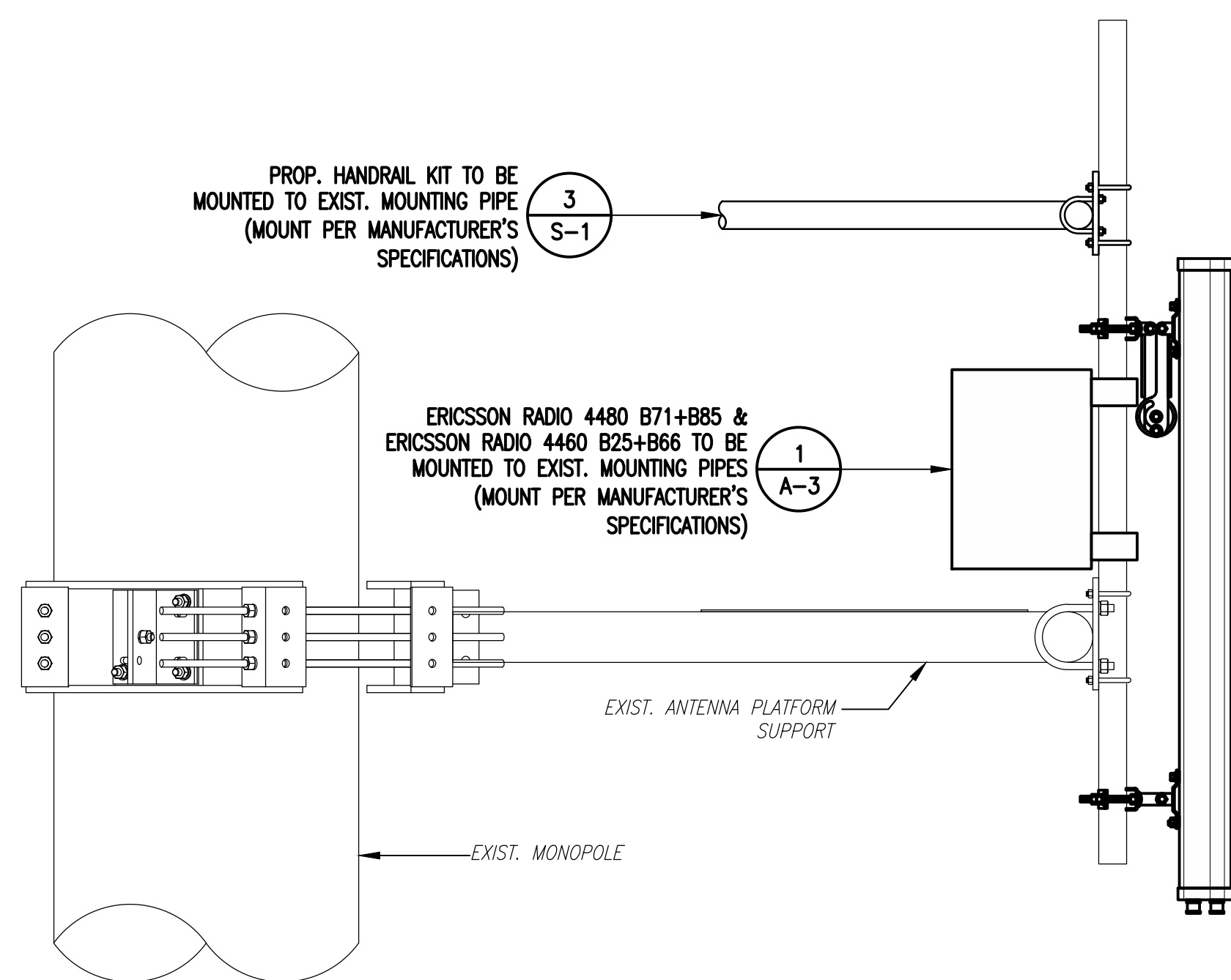
SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

SHEET TITLE

ANTENNA & RADIO MOUNTING DETAIL

SHEET NUMBER

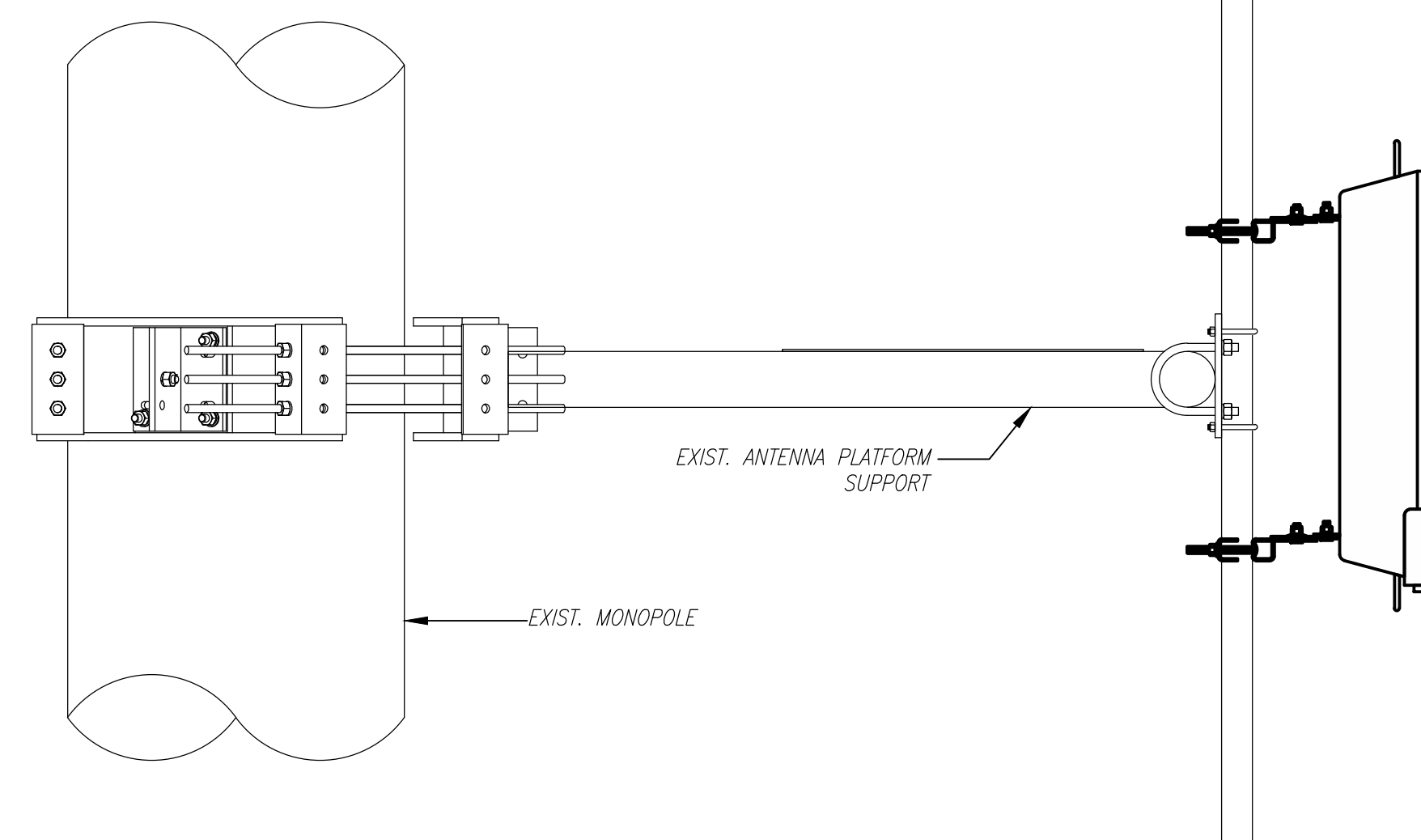
**S-1**



ANTENNA & RADIO MOUNT DETAIL

SCALE: N.T.S.

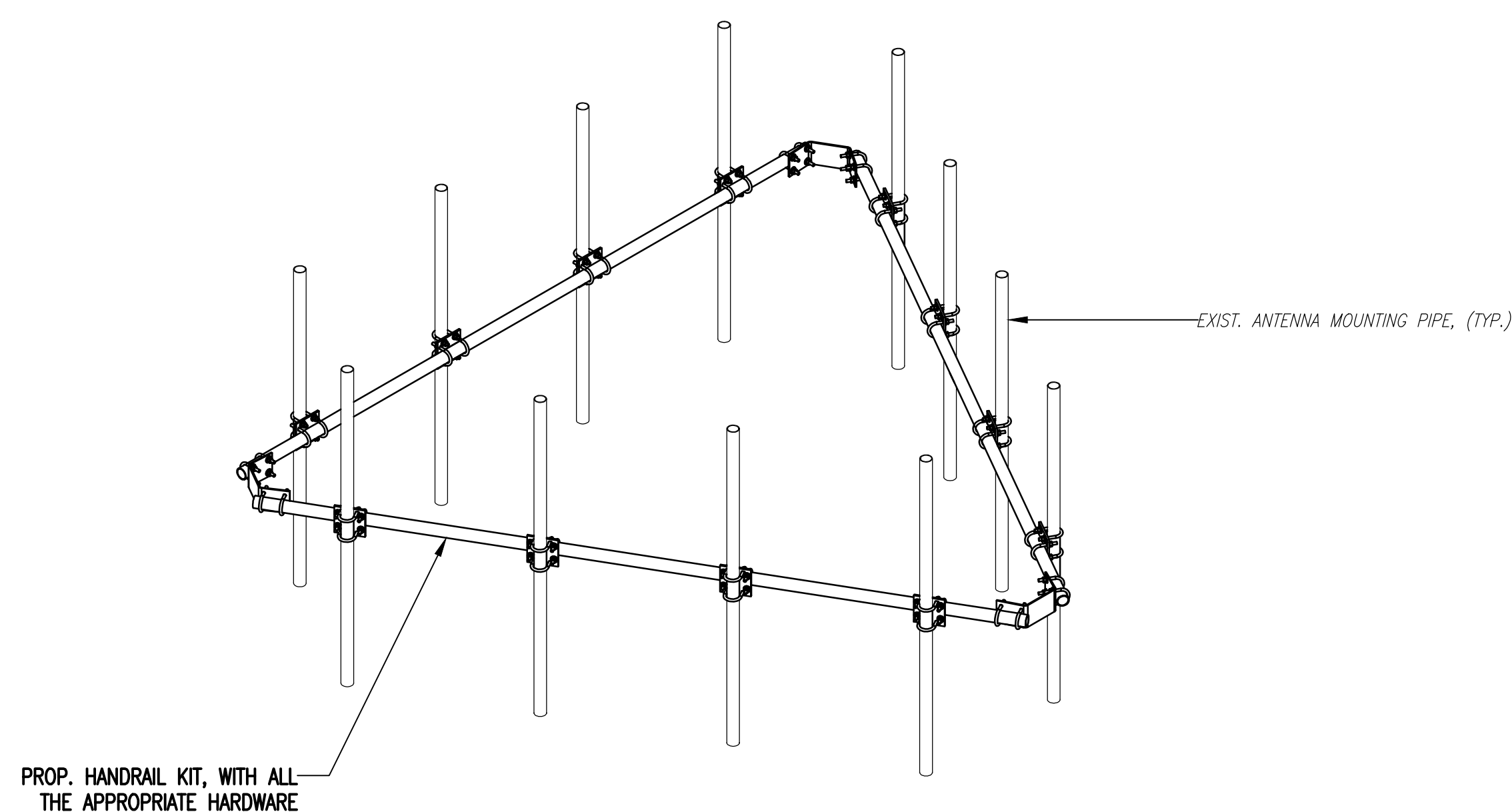
1 S-1



ANTENNA MOUNT DETAIL

SCALE: N.T.S.

2 S-1



NOTE:  
ANTENNAS & ANTENNA MOUNT NOT SHOWN, FOR CLARITY.

SITE-PRO HANDRAIL KIT  
PART NUMBER: HRK12

HANDRAIL DETAIL

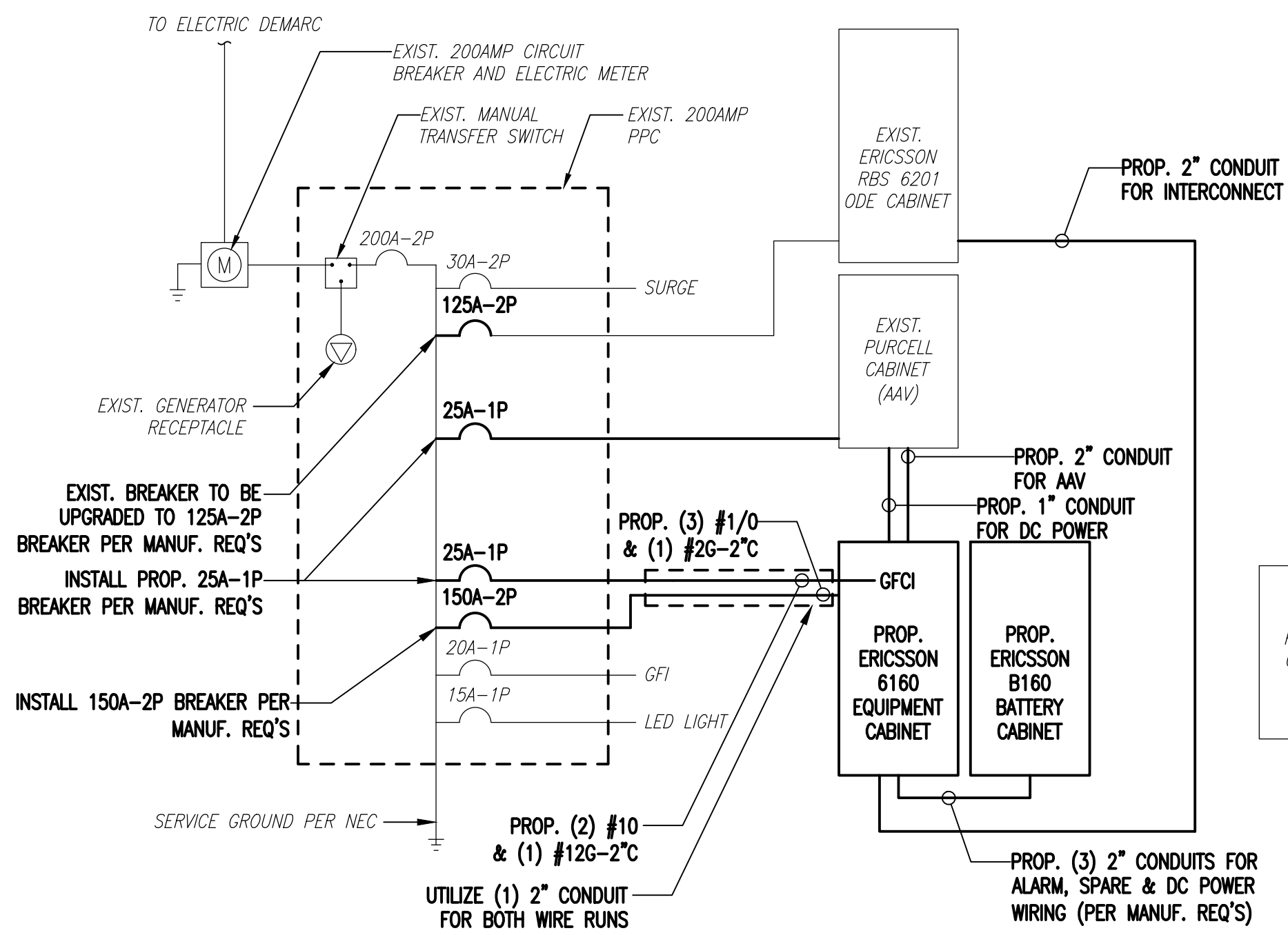
SCALE: N.T.S.

3 S-1



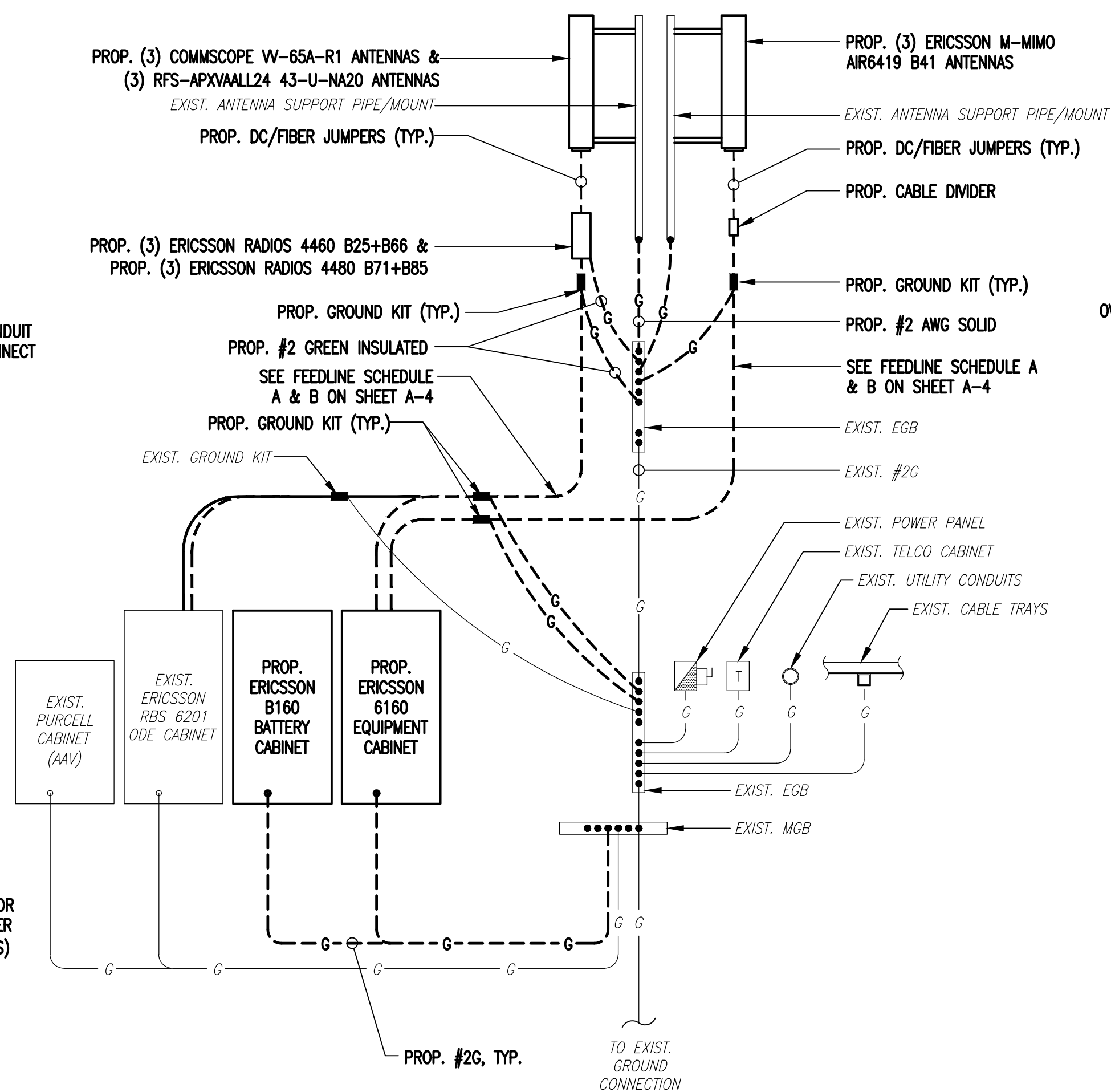
PPC PHOTO DETAIL  
SCALE: NOT TO SCALE

1  
E-1



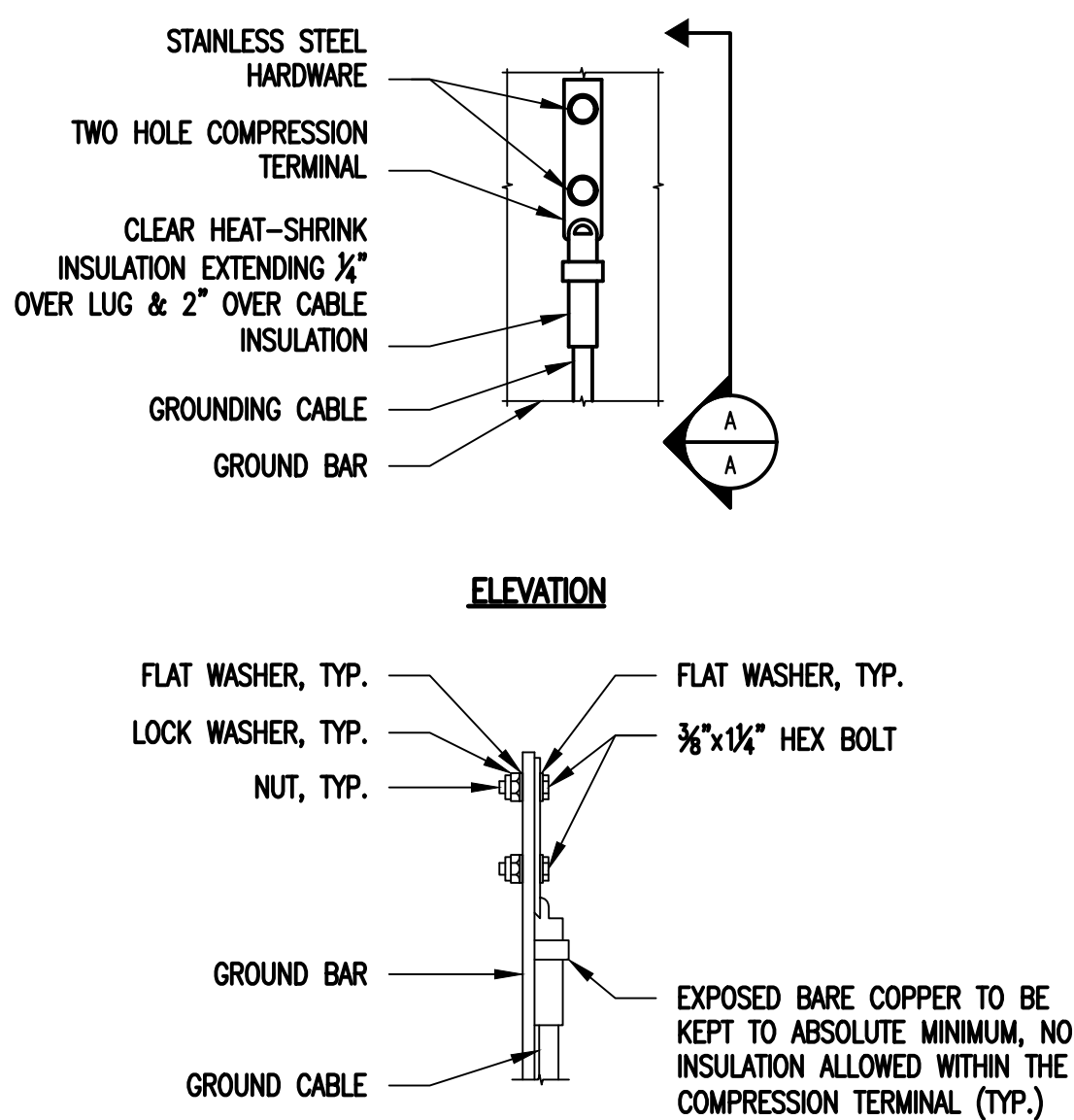
ONE LINE DIAGRAM  
SCALE: NOT TO SCALE

2  
E-1



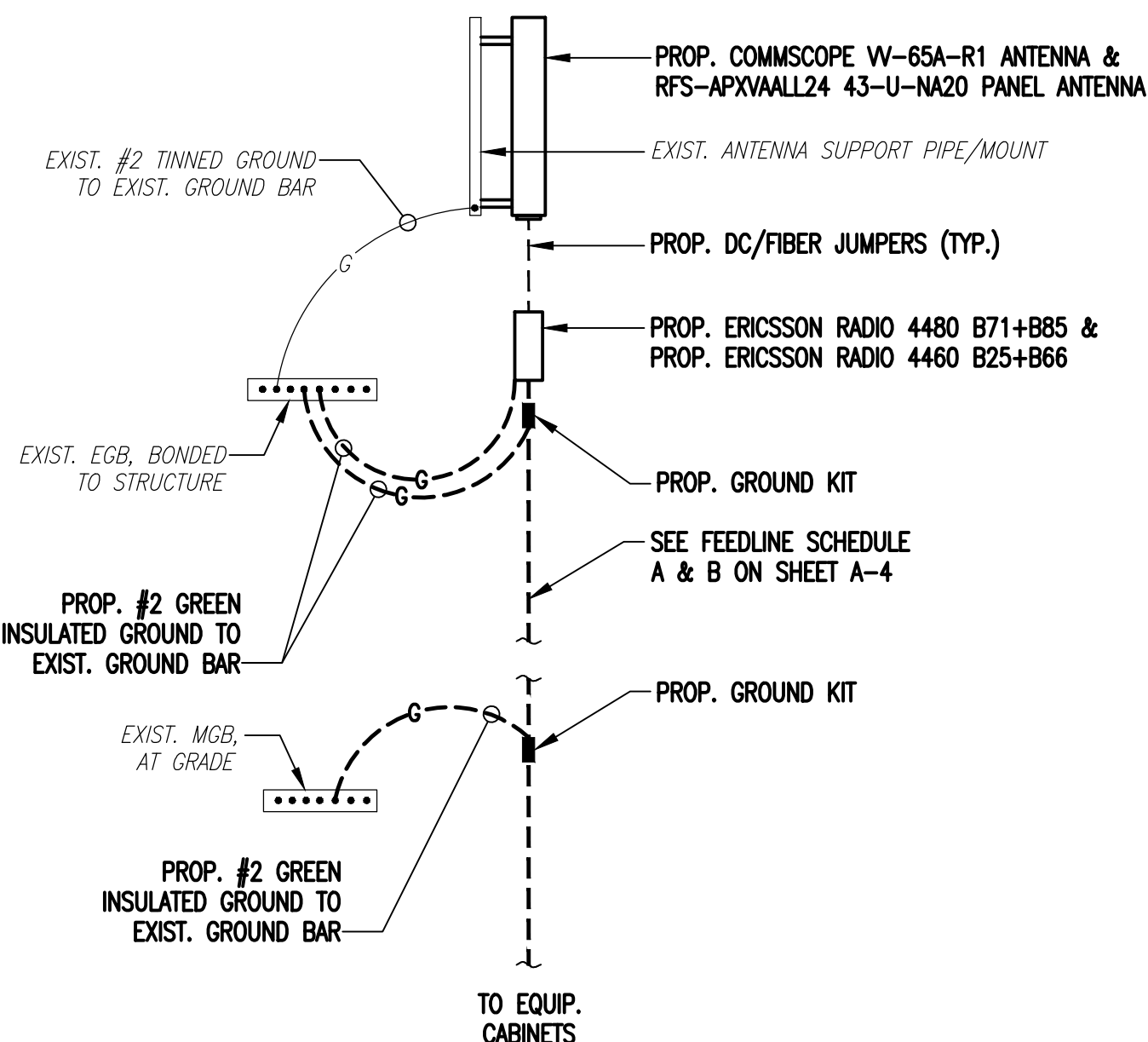
GROUNDING RISER DIAGRAM  
SCALE: NOT TO SCALE

3  
E-1

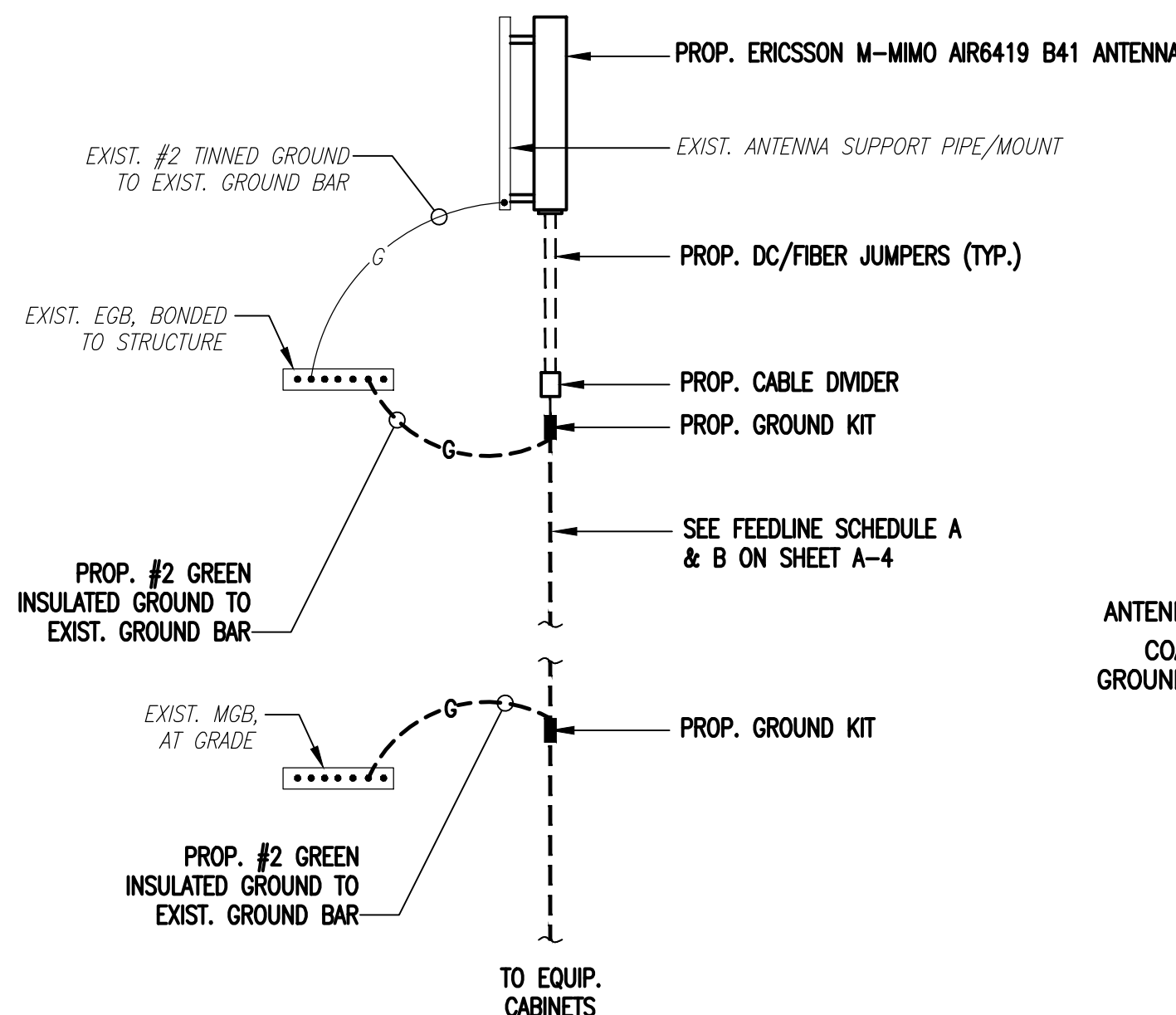


TYPICAL GROUND BAR CONNECTIONS DETAIL  
SCALE: NOT TO SCALE

4  
E-1



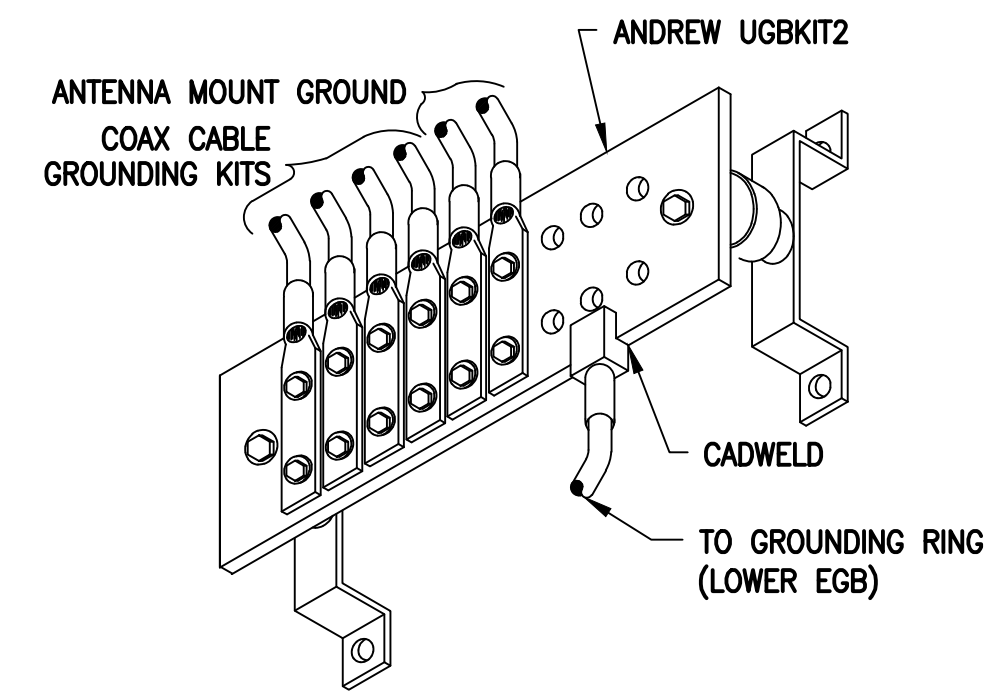
L600/N600/L700 ANTENNA &  
G1900/L1900/L2100 ANTENNA



L2500/N2500 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL  
SCALE: NOT TO SCALE

5  
E-1



GROUND BAR (EGB)  
SCALE: NOT TO SCALE

6  
E-1

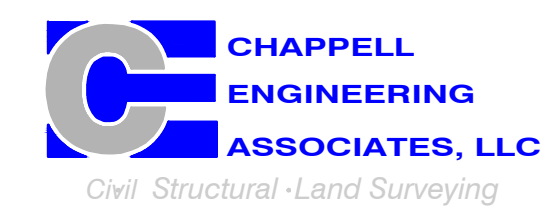
ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.
- 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 GREENLEEE 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 BURNED HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

T-Mobile  
T-MOBILE NORTHEAST LLC  
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
OFFICE: (508) 286-2700



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WESTBOROUGH, MA 01581  
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MARLBOROUGH, MA 01752  
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CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	04/29/22	ISSUED FOR CONSTRUCTION	BDJ
0	04/04/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:  
**CT11668B**  
SITE ADDRESS:  
151 BERKSHIRE ROAD  
NEWTOWN, CT 06470

SHEET TITLE  
**ELECTRICAL & GROUNDING DETAILS**

SHEET NUMBER  
**E-1**

# Exhibit D

## **Structural Analysis Report**



**Tower Engineering Solutions**

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

---

## **Structural Analysis Report**

**Existing 148 ft PennSummit Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT13057-A**

**Customer Site Name: Newtown**

**Carrier Name: T-Mobile (App#: 194458-2)**

**Carrier Site ID / Name: CT11668B / CT668/Arch Twrs-Newtown**

**Site Location: 151 Berkshire Road**

**Newtown, Connecticut**

**Fairfield County**

**Latitude: 41.397375**

**Longitude: -73.236069**

**Analysis Result:**

**Max Structural Usage: 76.1% [Pass]**

**Max Foundation Usage: 56.0% [Pass]**

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



**Report Prepared By: Kevin Azisllari**



**Tower Engineering Solutions**

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

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## **Structural Analysis Report**

**Existing 148 ft PennSummit Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT13057-A**

**Customer Site Name: Newtown**

**Carrier Name: T-Mobile (App#: 194458-2)**

**Carrier Site ID / Name: CT11668B / CT668/Arch Twrs-Newtwn**

**Site Location: 151 Berkshire Road**

**Newtown, Connecticut**

**Fairfield County**

**Latitude: 41.397375**

**Longitude: -73.236069**

### **Analysis Result:**

**Max Structural Usage: 76.1% [Pass]**

**Max Foundation Usage: 56.0% [Pass]**

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

**Report Prepared By: Kevin Azisllari**

## Introduction

The purpose of this report is to summarize the analysis results on the 148 ft PennSummit Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

## Sources of Information

<b>Tower Drawings</b>	PennSummit/PJF, Job # 29203-0081, dated 4/22/2003:
<b>Foundation Drawing</b>	PennSummit/PJF, Job # 29203-0081, dated 4/28/2003:
<b>Geotechnical Report</b>	Dennis Morrissey, dated 06/20/2002
<b>Modification Drawings</b>	N/A
<b>Mount Analysis</b>	TES 127390, dated 05/05/2022

## Analysis Criteria

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

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_5 = 0.203$ , $S_1 = 0.065$

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	148.0	1	Decibel - DB-TDD6492A-A - Whip	(1) 2 ft. Standoff	(1) 7/8"	Town of Newtown
2	147.0	1	Trombone - Whip		(1) 7/8"	
3	137.5	3	Swedcom SC-E 6014 Rev2 - Panel	Low Profile Platform Modified	(6) 1 5/8" (1) 1/2" (1) 12x24 Hybrid	Verizon
4		6	JMA Wireless MX06FRO660-03 - Panel			
5		3	Samsung MT6407-77A - Panel			
6		3	Commscope TD-850B-LTE78-43			
7		3	Samsung RF4439d-25A RRU			
8		3	Samsung RF4440d-13A RRU			
9		1	Commscope FE-16148-OVP-B12 Junction Box			
10	118.5	3	Powerwave 7770 - Panel	Low Profile Platform + (1) RRH Collar Mount w/SitePro Sitepro 1 P/N HRK12-Handrail Kit/3 2-1/2" std. (2.88" O.D.)-Pipe Mast	(6) 1 5/8" (4) 3/4" DC Power (2) 1/2" Fiber	AT&T
11		6	Kathrein 800-10965 - Panel			
12		6	Powerwave LGP21401 TMA			
13		3	Ericsson 4449 B5/B12			
14		3	Ericsson RRUS 8843 B2 B66A			
15		2	Raycap DC6-48-60-18-8F (24x11" 32.8 lbs))			
16	109.0	3	RFS - APXVSP18-C-A20 - Panel	(3) T-Arms w/ Working Platforms	(4) 1 1/4"	Sprint
17		3	RFS - APXVTM14-C-I20 - Panel			
18		3	ALU - 800 MHz RRH - RRU			
19		3	ALU - 1900MHz RRH - RRU			
20		3	ALU - TD-RRH8x20 - RRU			
21		3	ALU - 800MHz RRH Filter			
22		4	RFS - ACU-A20-N - RET			
-	99.5	6	Andrew - RR65-18-00DPL2 - Panel	Platform w/ Hand Rails (Commscope MT-195-12)	(12) 1 1/4"	T-Mobile
-		3	RFS - APXV18-206513-C-A20 - Panel			
-		3	Commscope - LNX-6515DS-A1M - Panel			
-		3	RFS - ATMAA1412D-1A2 - TMA			
-		3	Kathrein - 782 11054 - Bias Ts			
31	85.0	3	Commscope FFVV-65B-R2 - Panel	(1) Platform w/HRK Commscope: MC-PK8-DSH	(1) 1.75" Hybrid	Dish Wireless
32		3	Fujitsu TA08025-B605 RRU			
33		3	Fujitsu TA08025-B604 RRU			
34		1	Raycap RDIDC-9181-PF-48			
35	50.5	1	Decibel - 260B - GPS	(1) 3 ft. Standoff	(1) 1/2"	Sprint

## **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
23	97.0	3	Commscope VV-65A-R1 - Panel	Platform w/ Hand Rails (Commscope MT-195-12)	(8) 1-1/4” Coax (3) 1.9” Fiber	T-Mobile
24		3	RFS APXVAALL24_43-U-NA20 - Panel			
25		3	Andrew RR65-18-00DPL2 - Panel			
26		3	Ericsson AIR6419 B41 - Panel			
27		3	RFS ATMAA1412D-1A20 TMA			
28		3	Ericsson 4460 B25 + B66 – RRU’s			
29		3	Ericsson 4480 B71 + B85 – RRU’s			
30		3	Kathrein 782 11054			

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:	<b>74.6%</b>	<b>69.7%</b>	<b>76.1%</b>	<b>42.9</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3557.2	35.5	46.2

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 0.8302 degrees under the operational wind speed as specified in the Analysis Criteria.

## **Conclusions**

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

## Standard Conditions

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

# Usage Diagram - Max Ratio 74.57% at 0.0ft

**Structure:** CT13057-A-SBA  
**Site Name:** Newtown  
**Height:** 148.00 (ft)  
**Base Elev:** 0.000 (ft)

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

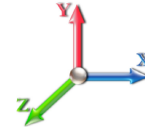
5/11/2022



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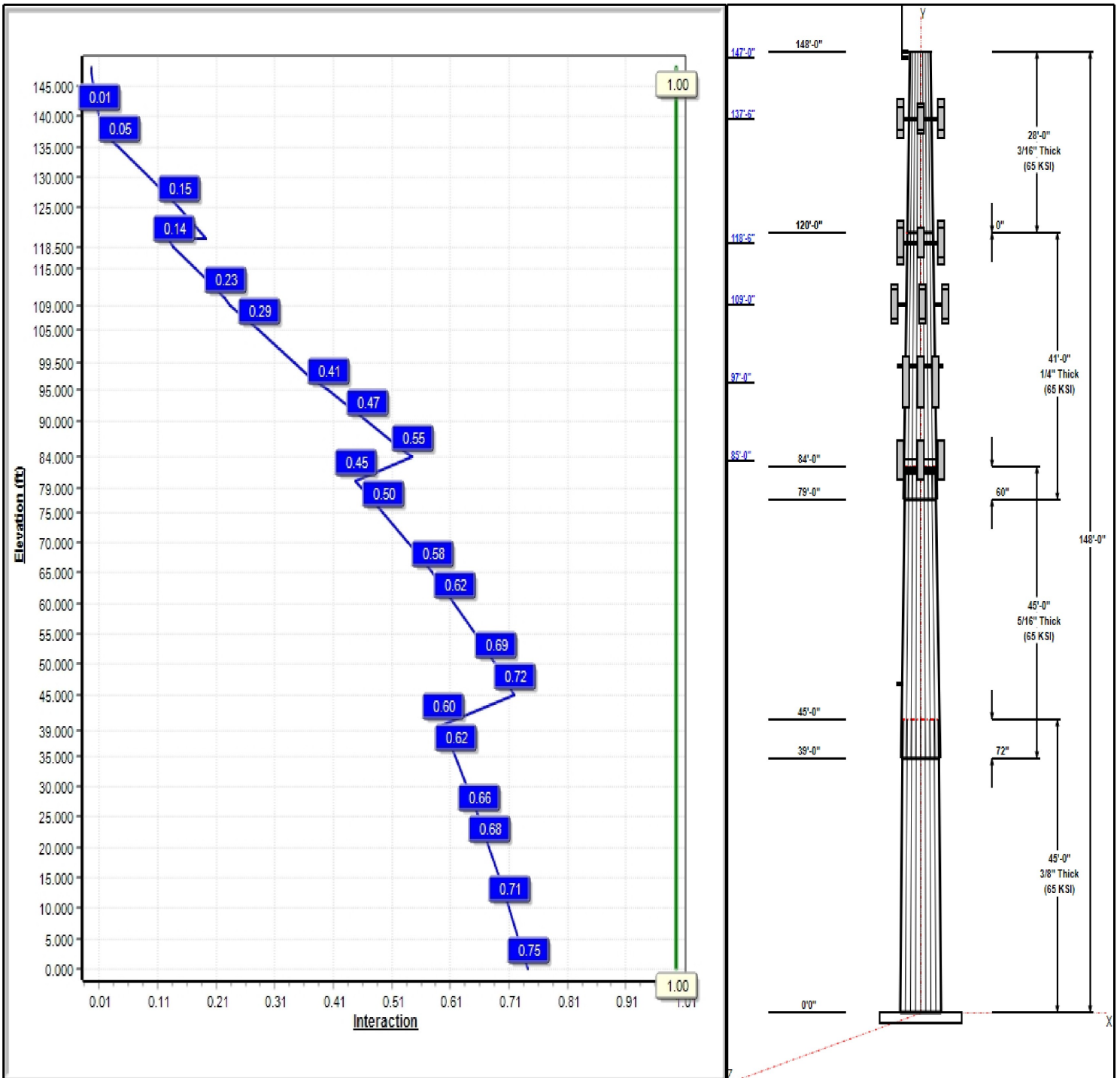
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 93 mph Wind**



**Iterations:** 24

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# Structure: CT13057-A-SBA

**Type:** Tapered  
**Site Name:** Newtown  
**Height:** 148.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.20983

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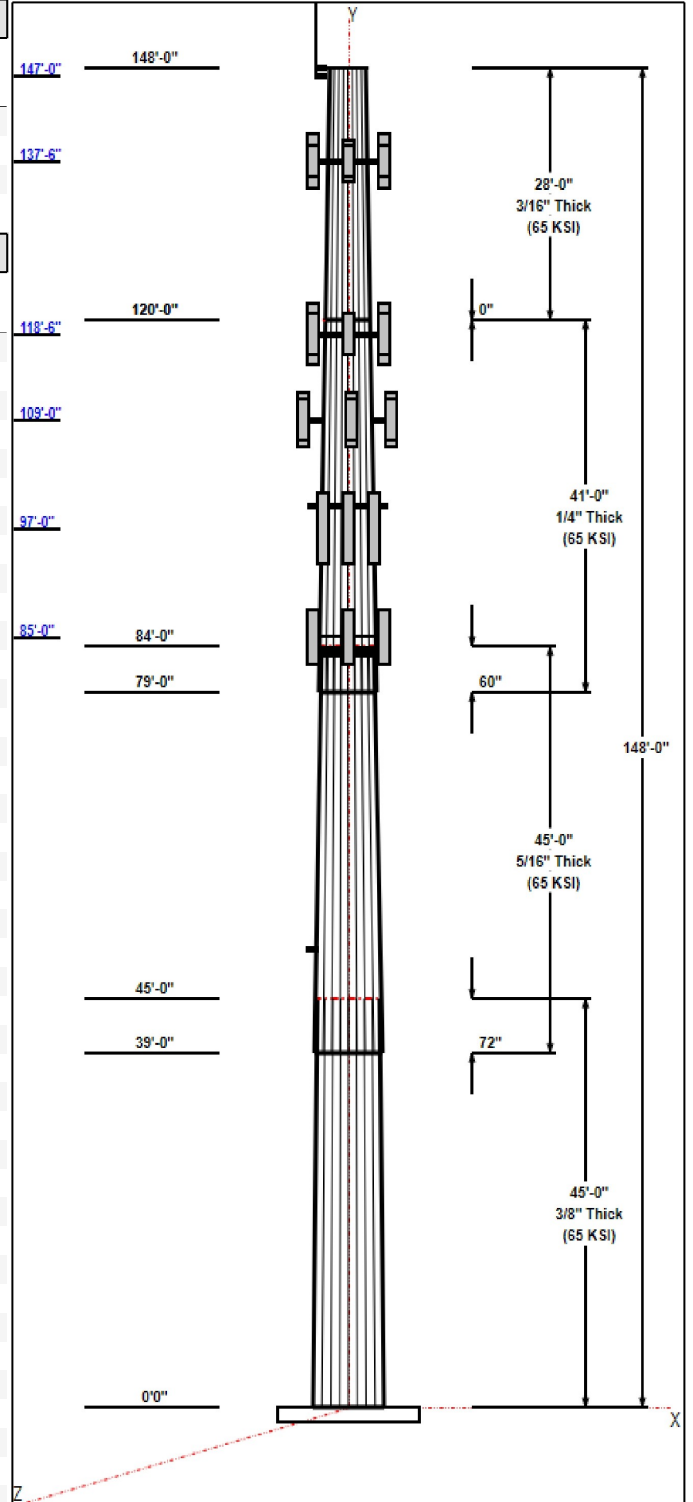


### Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	45.99	55.43	0.375		0.20983	65
2	45.00	38.43	47.87	0.313	Slip	0.20983	65
3	41.00	31.38	39.98	0.250	Slip	0.20983	65
4	28.00	25.50	31.38	0.188	Butt	0.20983	65

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
148.00	148.00	1	6' Lightning rod	
148.00	152.02	1	DB-TDD6492A-A	Town of Newtown
148.00	148.00	1	Pipe Mount	Town of Newtown
147.00	147.00	1	Standoff	Town of Newtown
147.00	148.46	1	Trombone	Town of Newtown
137.50	137.50	3	Commscope	Verizon
137.50	137.50	3	Swedcom SC-E 6014	Verizon
137.50	137.50	1	Low Profile Platform	Verizon
137.50	137.50	6	JMA Wireless	Verizon
137.50	137.50	3	Samsung MT6407-77A -	Verizon
137.50	137.50	3	Samsung RF4439d-25A	Verizon
137.50	137.50	3	Samsung RF4440d-13A	Verizon
137.50	137.50	1	Commscope	Verizon
118.50	118.50	6	Kathrein 800-10965	AT&T
118.50	118.50	3	Ericsson 4449 B5/B12	AT&T
118.50	118.50	3	Ericsson RRUS 8843 B2	AT&T
118.50	118.50	1	SitePro Sitepro 1 P/N	AT&T
118.50	118.50	3	Pipe Mast	AT&T
118.50	118.50	3	Powerwave 7770	AT&T
118.50	118.50	6	Powerwave LGP21401	AT&T
118.50	118.50	1	Low Profile Platform	AT&T
118.50	118.50	2	Raycap DC6-48-60-18-8F	AT&T
118.50	118.50	1	RRH Collar Mount	AT&T
109.00	109.00	3	APXVSP18-C-A20	Sprint
109.00	109.00	3	APXVTM14-C-I20	Sprint
109.00	109.00	3	1900MHz RRH - RRU	Sprint
109.00	109.00	3	800 MHz RRH - RRU	Sprint
109.00	109.00	3	800MHz RRH Filter	Sprint
109.00	109.00	3	TD-RRH8x20 - RRU	Sprint
109.00	109.00	4	ACU-A20-N - RET	Sprint
109.00	109.00	3	T-Arms w/ Working	Sprint
99.50	99.50	1	Platform w/ Hand Rail	T-Mobile
97.00	97.00	3	Commscope VV-65A-R1	T-Mobile
97.00	97.00	3	RFS	T-Mobile
97.00	97.00	3	Andrew RR65-18-00DPL2	T-Mobile
97.00	97.00	3	Ericsson AIR6419 B41	T-Mobile
97.00	97.00	3	RFS ATMAA1412D-1A20	T-Mobile
97.00	97.00	3	Ericsson 4460 B25 + B66	T-Mobile
97.00	97.00	3	Ericsson 4480 B71 + B85	T-Mobile
97.00	97.00	3	Kathrein 782 11054	T-Mobile
85.00	85.00	3	FFVV-65B-R2	Dish Wireless
85.00	85.00	3	TA08025-B605	Dish Wireless
85.00	85.00	3	TA08025-B604	Dish Wireless
85.00	85.00	1	RDIDC-9181-OF-48	Dish Wireless
85.00	85.00	1	MC-PK8-DSH	Dish Wireless



**Structure: CT13057-A-SBA**

**Type:** Tapered  
**Site Name:** Newtown  
**Height:** 148.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.20983

5/11/2022

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50.50	50.50	1	260B	Sprint
50.50	50.50	1	3 ft Standoff	Sprint

**Linear Appurtenances**

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	148.00	Inside	7/8" Coax	Town of Newtown
0.00	147.00	Inside	7/8" Coax	Town of Newtown
0.00	137.50	Inside	1 5/8" Coax	Verizon
0.00	137.50	Inside	1/2" Coax	Verizon
0.00	137.50	Inside	12x24 Hybrid	Verizon
0.00	118.50	Inside	1 5/8" Coax	AT&T
0.00	118.50	Inside	1/2" Fiber	AT&T
0.00	118.50	Inside	3/4" DC	AT&T
0.00	109.00	Inside	1 1/4" Coax	Sprint
0.00	99.50	Inside	1 1/4" Coax	T-Mobile
0.00	99.50	Inside	1.9" Hybrid	T-Mobile
0.00	85.00	Inside	1.75" Hybrid	Dish Wireless
0.00	50.50	Outside	1/2" Coax	Sprint

**Anchor Bolts**

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

**Base Plate**

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	61.0	55.0	Clipped

**Reactions**

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3557.2	35.5	46.2
0.9D + 1.6W 93 mph Wind	3526.5	35.5	34.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1119.8	11.1	75.8
1.2D + 1.0E	117.8	1.2	46.3
0.9D + 1.0E	116.7	1.2	34.7
1.0D + 1.0W 60 mph Wind	920.8	9.2	38.6

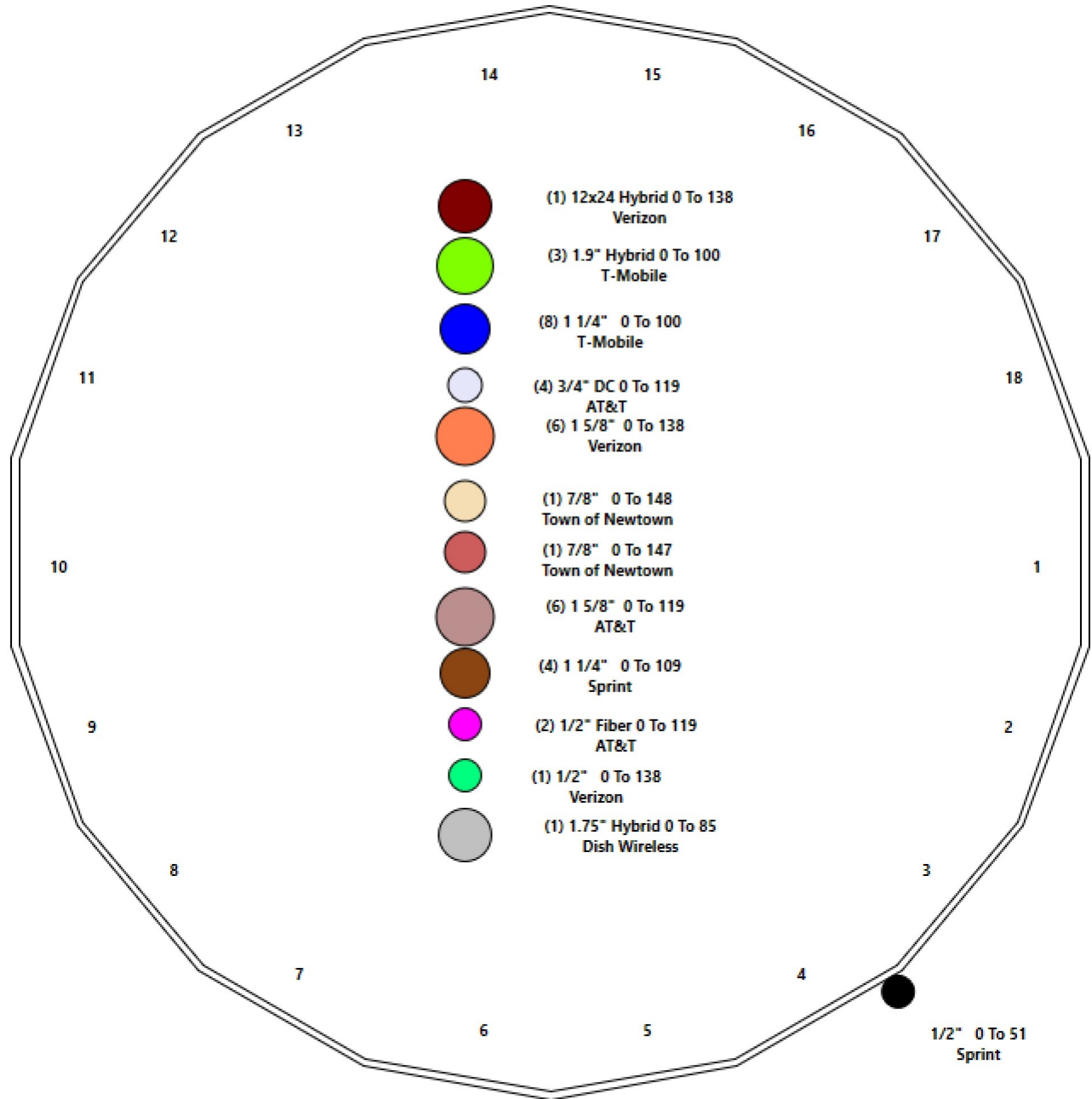
# Structure: CT13057-A-SBA - Coax Line Placement

Type: Monopole  
Site Name: Newtown  
Height: 148.00 (ft)

5/11/2022



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## Shaft Properties

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.3750	65		0.00	9,173
2	18	45.000	0.3125	65	Slip	72.00	6,506
3	18	41.000	0.2500	65	Slip	60.00	3,922
4	18	28.000	0.1875	65	Flange	0.00	1,602
<b>Total Shaft Weight:</b>							<b>21,203</b>

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	55.43	0.00	65.53	25093.77	24.65	147.81	45.99	45.00	54.29	14270.2	20.21	122.6	0.209831
2	47.87	39.00	47.17	13480.16	25.60	153.19	38.43	84.00	37.81	6939.69	20.27	122.9	0.209831
3	39.98	79.00	31.52	6286.17	26.79	159.91	31.38	120.00	24.70	3022.90	20.72	125.5	0.209831
4	31.38	120.0	18.56	2280.86	28.10	167.33	25.50	148.00	15.06	1219.41	22.57	136.0	0.209831

## Load Summary

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	148.00	6' Lightning rod	1	6.50	0.38	1.00	42.75	1.466	1.00	0.00	0.00
2	148.00	DB-TDD6492A-A	1	21.00	2.41	1.00	82.34	5.194	1.00	0.00	4.02
3	148.00	Pipe Mount	1	40.00	2.63	1.00	120.17	8.591	1.00	0.00	0.00
4	147.00	Standoff	1	40.00	2.63	1.00	120.12	8.587	1.00	0.00	0.00
5	147.00	Trombone	1	6.00	1.00	1.00	14.68	2.712	1.00	0.00	1.46
6	137.50	Commscope TD-850B-LTE78-43	3	20.00	6.49	0.89	194.71	8.547	0.89	0.00	0.00
7	137.50	Swedcom SC-E 6014 Rev2 - Panel	3	15.00	3.33	0.97	108.97	4.985	0.97	0.00	0.00
8	137.50	Low Profile Platform	1	1500.00	22.00	1.00	2797.57	39.509	1.00	0.00	0.00
9	137.50	JMA Wireless MX06FRO660-03 - P	6	46.00	9.87	0.87	312.29	11.233	0.87	0.00	0.00
10	137.50	Samsung MT6407-77A - Panel	3	79.40	4.69	0.70	197.69	5.629	0.70	0.00	0.00
11	137.50	Samsung RF4439d-25A RRU	3	48.50	1.32	0.67	83.98	1.784	0.67	0.00	0.00
12	137.50	Samsung RF4440d-13A RRU	3	48.50	1.32	0.67	83.98	1.784	0.67	0.00	0.00
13	137.50	Commscope FE-16148-OVP-B12	1	20.00	5.60	0.67	134.05	7.247	0.67	0.00	0.00
14	118.50	Kathrein 800-10965	6	108.60	13.81	0.71	398.79	15.352	1.00	0.00	0.00
15	118.50	Ericsson 4449 B5/B12	3	71.00	1.97	0.67	123.14	2.505	1.00	0.00	0.00
16	118.50	Ericsson RRUS 8843 B2 B66A	3	70.00	1.64	0.67	114.91	2.144	1.00	0.00	0.00
17	118.50	SitePro Sitepro 1 P/N HRK12	1	406.61	9.75	1.00	877.91	19.057	1.00	0.00	0.00
18	118.50	Pipe Mast	3	60.00	1.55	0.75	117.27	3.452	1.00	0.00	0.00
19	118.50	Powerwave 7770	3	35.00	5.50	0.73	166.32	6.539	0.84	0.00	0.00
20	118.50	Powerwave LGP21401 TMA	6	14.10	1.29	0.70	38.52	2.106	0.70	0.00	0.00
21	118.50	Low Profile Platform	1	1500.00	22.00	1.00	2778.42	39.250	1.00	0.00	0.00
22	118.50	Raycap DC6-48-60-18-8F (24x11"	2	32.80	0.92	0.75	95.08	1.348	1.00	0.00	0.00
23	118.50	RRH Collar Mount	1	250.00	5.00	0.75	846.60	13.523	0.75	0.00	0.00
24	109.00	APXVSP18-C-A20	3	57.00	8.02	0.83	224.42	10.726	0.83	0.00	0.00
25	109.00	APXVTM14-C-I20	3	56.00	6.34	0.85	210.38	7.416	0.85	0.00	0.00
26	109.00	1900MHz RRH - RRU	3	44.00	3.80	0.67	149.73	5.146	0.67	0.00	0.00
27	109.00	800 MHz RRH - RRU	3	53.00	2.49	0.67	124.64	3.598	0.67	0.00	0.00
28	109.00	800MHz RRH Filter	3	8.80	0.78	0.67	25.89	1.407	0.67	0.00	0.00
29	109.00	TD-RRH8x20 - RRU	3	70.00	4.05	0.67	176.29	4.836	0.67	0.00	0.00
30	109.00	ACU-A20-N - RET	4	1.00	0.14	0.50	5.16	0.427	0.50	0.00	0.00
31	109.00	T-Arms w/ Working Platforms	3	350.00	12.00	0.75	586.65	22.142	0.75	0.00	0.00
32	99.50	Platform w/ Hand Rail (round)	1	1600.00	32.00	1.00	3615.39	58.800	1.00	0.00	0.00
33	97.00	Commscope VV-65A-R1	3	29.50	7.90	0.74	194.51	9.122	0.74	0.00	0.00
34	97.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	530.08	22.056	0.73	0.00	0.00
35	97.00	Andrew RR65-18-00DPL2	3	18.00	4.36	0.68	111.30	5.300	0.68	0.00	0.00
36	97.00	Ericsson AIR6419 B41	3	66.10	3.80	0.76	158.21	4.562	0.76	0.00	0.00
37	97.00	RFS ATMAA1412D-1A20 TMA	3	13.00	1.17	0.67	38.45	1.919	0.67	0.00	0.00
38	97.00	Ericsson 4460 B25 + B66	3	109.00	2.85	0.67	177.84	3.496	0.67	0.00	0.00
39	97.00	Ericsson 4480 B71 + B85	3	93.00	2.85	0.67	161.87	3.496	0.67	0.00	0.00
40	97.00	Kathrein 782 11054	3	2.60	0.28	0.67	8.85	0.664	0.67	0.00	0.00
41	85.00	FFVV-65B-R2	3	70.80	12.27	0.74	340.23	13.646	0.74	0.00	0.00
42	85.00	TA08025-B605	3	75.00	1.96	0.67	124.42	2.490	0.67	0.00	0.00
43	85.00	TA08025-B604	3	63.90	1.96	0.67	111.73	2.490	0.67	0.00	0.00
44	85.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	72.21	2.547	1.00	0.00	0.00
45	85.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3321.64	82.216	1.00	0.00	0.00
46	50.50	260B	1	1.00	0.09	1.00	5.86	0.248	1.00	0.00	0.00
47	50.50	3 ft Standoff	1	40.00	2.63	1.00	112.00	7.983	1.00	0.00	0.00
<b>Totals:</b>			<b>120</b>	<b>13,511.51</b>			<b>33,589.49</b>				

## 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		

## Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	148.00	(1) 7/8" Coax	0.00	Inside
0.00	147.00	(1) 7/8" Coax	0.00	Inside
0.00	137.50	(6) 1 5/8" Coax	0.00	Inside
0.00	137.50	(1) 1/2" Coax	0.00	Inside
0.00	137.50	(1) 12x24 Hybrid	0.00	Inside
0.00	118.50	(6) 1 5/8" Coax	0.00	Inside
0.00	118.50	(2) 1/2" Fiber	0.00	Inside
0.00	118.50	(4) 3/4" DC	0.00	Inside
0.00	109.00	(4) 1 1/4" Coax	0.00	Inside
0.00	99.50	(8) 1 1/4" Coax	0.00	Inside
0.00	99.50	(3) 1.9" Hybrid	0.00	Inside
0.00	85.00	(1) 1.75" Hybrid	0.00	Inside
0.00	50.50	(1) 1/2" Coax	0.65	Outside

## Shaft Section Properties

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Increment Length:** 5 (ft)

Elev (ft)	Description	Thick (in)	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	55.430	65.527	25093.8	24.65	147.81	72.4	891.7	0.0
5.00		0.3750	54.381	64.278	23686.3	24.16	145.02	73.0	857.9	1104.2
10.00		0.3750	53.332	63.029	22332.5	23.67	142.22	73.6	824.8	1083.0
15.00		0.3750	52.283	61.781	21031.3	23.17	139.42	74.1	792.3	1061.8
20.00		0.3750	51.233	60.532	19781.7	22.68	136.62	74.7	760.5	1040.5
25.00		0.3750	50.184	59.283	18582.5	22.19	133.82	75.3	729.3	1019.3
30.00		0.3750	49.135	58.035	17432.9	21.69	131.03	75.9	698.8	998.0
35.00		0.3750	48.086	56.786	16331.6	21.20	128.23	76.5	668.9	976.8
39.00	Bot - Section 2	0.3750	47.247	55.787	15484.8	20.80	125.99	76.9	645.5	766.1
40.00		0.3750	47.037	55.537	15277.7	20.71	125.43	77.0	639.7	349.6
45.00	Top - Section 1	0.3125	46.613	45.922	12437.7	24.89	149.16	0.0	0.0	1724.4
50.00		0.3125	45.563	44.882	11611.2	24.30	145.80	72.8	501.9	772.5
50.50		0.3125	45.459	44.778	11530.6	24.24	145.47	72.9	499.6	76.3
55.00		0.3125	44.514	43.841	10822.2	23.71	142.45	73.5	478.8	678.5
60.00		0.3125	43.465	42.800	10069.7	23.11	139.09	74.2	456.3	737.1
65.00		0.3125	42.416	41.760	9352.9	22.52	135.73	74.9	434.3	719.4
70.00		0.3125	41.367	40.719	8671.0	21.93	132.37	75.6	412.9	701.6
75.00		0.3125	40.318	39.679	8023.1	21.34	129.02	76.3	391.9	683.9
79.00	Bot - Section 3	0.3125	39.478	38.846	7528.6	20.86	126.33	76.9	375.6	534.4
80.00		0.3125	39.269	38.638	7408.3	20.75	125.66	77.0	371.6	238.8
84.00	Top - Section 2	0.2500	38.929	30.691	5801.2	26.05	155.72	0.0	0.0	942.5
85.00		0.2500	38.719	30.524	5707.3	25.90	154.88	70.9	290.3	104.2
90.00		0.2500	37.670	29.692	5252.9	25.16	150.68	71.8	274.7	512.3
95.00		0.2500	36.621	28.859	4823.4	24.42	146.48	72.7	259.4	498.1
97.00		0.2500	36.201	28.526	4658.3	24.12	144.81	73.0	253.4	195.3
99.50		0.2500	35.677	28.110	4457.4	23.75	142.71	73.5	246.1	240.9
100.00		0.2500	35.572	28.027	4417.9	23.68	142.29	73.6	244.6	47.8
105.00		0.2500	34.523	27.194	4035.8	22.94	138.09	74.4	230.3	469.8
109.00		0.2500	33.683	26.528	3746.5	22.35	134.73	75.1	219.1	365.6
110.00		0.2500	33.474	26.362	3676.4	22.20	133.89	75.3	216.3	90.0
115.00		0.2500	32.424	25.529	3339.0	21.46	129.70	76.2	202.8	441.4
118.50		0.2500	31.690	24.947	3115.5	20.94	126.76	76.8	193.6	300.6
120.00	Top - Section 3	0.2500	31.375	24.697	3022.9	20.72	125.50	77.0	189.8	126.7
120.00	Bot - Section 4	0.1875	31.375	18.560	2280.9	27.62	167.33	68.4	143.2	
125.00		0.1875	30.326	17.936	2058.3	27.11	161.74	69.5	133.7	310.5
130.00		0.1875	29.277	17.311	1850.8	26.12	156.14	70.7	124.5	299.8
135.00		0.1875	28.228	16.687	1657.7	25.14	150.55	71.8	115.7	289.2
137.50		0.1875	27.703	16.375	1566.3	24.64	147.75	72.4	111.4	140.6
140.00		0.1875	27.179	16.063	1478.5	24.15	144.95	73.0	107.1	138.0
145.00		0.1875	26.129	15.438	1312.7	23.16	139.36	74.2	98.9	268.0
147.00		0.1875	25.710	15.188	1250.0	22.77	137.12	74.6	95.8	104.2
148.00		0.1875	25.500	15.064	1219.4	22.57	136.00	74.9	94.2	51.5

**21202.9**

## Wind Loading - Shaft

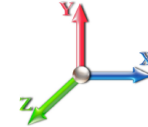
<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 93 mph Wind

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



**Iterations** 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	402.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	394.55	0.650	0.000	5.00	23.230	15.10	475.1	0.0	1325.1
10.00		1.00	0.85	17.879	19.67	386.94	0.650	0.000	5.00	22.786	14.81	466.1	0.0	1299.6
15.00		1.00	0.85	17.879	19.67	379.33	0.650	0.000	5.00	22.342	14.52	457.0	0.0	1274.1
20.00		1.00	0.90	18.971	20.87	382.89	0.650	0.000	5.00	21.899	14.23	475.2	0.0	1248.6
25.00		1.00	0.95	19.883	21.87	383.97	0.650	0.000	5.00	21.455	13.95	488.0	0.0	1223.1
30.00		1.00	0.98	20.661	22.73	383.22	0.650	0.000	5.00	21.011	13.66	496.6	0.0	1197.6
35.00		1.00	1.01	21.343	23.48	381.18	0.650	0.000	5.00	20.567	13.37	502.2	0.0	1172.1
39.00 Bot - Section 2		1.00	1.04	21.834	24.02	378.81	0.650	0.000	4.00	16.134	10.49	403.0	0.0	919.3
40.00		1.00	1.04	21.951	24.15	378.14	0.650	0.000	1.00	4.042	2.63	101.5	0.0	419.5
45.00 Top - Section 1		1.00	1.07	22.502	24.75	374.32	0.650	0.000	5.00	19.943	12.96	513.4	0.0	2069.3
50.00		1.00	1.09	23.007	25.31	375.00	0.650	0.000	5.00	19.500	12.67	513.2	0.0	927.0
50.50 Appurtenance(s)		1.00	1.10	23.055	25.36	374.53	0.650	0.000	0.50	1.926	1.25	50.8	0.0	91.5
55.00		1.00	1.12	23.473	25.82	370.06	0.650	0.000	4.50	17.130	11.13	460.0	0.0	814.2
60.00		1.00	1.14	23.907	26.30	364.66	0.650	0.000	5.00	18.612	12.10	509.0	0.0	884.5
65.00		1.00	1.16	24.313	26.74	358.87	0.650	0.000	5.00	18.168	11.81	505.3	0.0	863.2
70.00		1.00	1.17	24.696	27.17	352.73	0.650	0.000	5.00	17.724	11.52	500.7	0.0	842.0
75.00		1.00	1.19	25.057	27.56	346.29	0.650	0.000	5.00	17.280	11.23	495.3	0.0	820.7
79.00 Bot - Section 3		1.00	1.20	25.333	27.87	340.95	0.650	0.000	4.00	13.504	8.78	391.4	0.0	641.3
80.00		1.00	1.21	25.400	27.94	339.58	0.650	0.000	1.00	3.374	2.19	98.0	0.0	286.6
84.00 Top - Section 2		1.00	1.22	25.662	28.23	334.04	0.650	0.000	4.00	13.319	8.66	391.0	0.0	1131.0
85.00 Appurtenance(s)		1.00	1.22	25.726	28.30	336.98	0.650	0.000	1.00	3.285	2.14	96.7	0.0	125.0
90.00		1.00	1.24	26.037	28.64	329.82	0.650	0.000	5.00	16.160	10.50	481.4	0.0	614.7
95.00		1.00	1.25	26.336	28.97	322.47	0.650	0.000	5.00	15.716	10.22	473.5	0.0	597.7
97.00 Appurtenance(s)		1.00	1.26	26.451	29.10	319.47	0.650	0.000	2.00	6.162	4.01	186.5	0.0	234.3
99.50 Appurtenance(s)		1.00	1.26	26.593	29.25	315.69	0.650	0.000	2.50	7.603	4.94	231.3	0.0	289.1
100.00		1.00	1.27	26.621	29.28	314.93	0.650	0.000	0.50	1.507	0.98	45.9	0.0	57.3
105.00		1.00	1.28	26.896	29.59	307.21	0.650	0.000	5.00	14.828	9.64	456.3	0.0	563.7
109.00 Appurtenance(s)		1.00	1.29	27.109	29.82	300.92	0.650	0.000	4.00	11.543	7.50	358.0	0.0	438.7
110.00		1.00	1.29	27.161	29.88	299.34	0.650	0.000	1.00	2.841	1.85	88.3	0.0	108.0
115.00		1.00	1.30	27.416	30.16	291.32	0.650	0.000	5.00	13.941	9.06	437.2	0.0	529.7
118.50 Appurtenance(s)		1.00	1.31	27.590	30.35	285.62	0.650	0.000	3.50	9.494	6.17	299.7	0.0	360.7
120.00 Top - Section 3		1.00	1.32	27.663	30.43	283.15	0.650	0.000	1.50	4.002	2.60	126.7	0.0	152.0
125.00		1.00	1.33	27.902	30.69	274.87	0.650	0.000	5.00	13.053	8.48	416.6	0.0	372.6
130.00		1.00	1.34	28.133	30.95	266.45	0.650	0.000	5.00	12.609	8.20	405.8	0.0	359.8
135.00		1.00	1.35	28.358	31.19	257.93	0.650	0.000	5.00	12.165	7.91	394.6	0.0	347.1
137.50 Appurtenance(s)		1.00	1.35	28.467	31.31	253.62	0.650	0.000	2.50	5.916	3.85	192.7	0.0	168.8
140.00		1.00	1.36	28.576	31.43	249.29	0.650	0.000	2.50	5.805	3.77	189.8	0.0	165.6
145.00		1.00	1.37	28.788	31.67	240.56	0.650	0.000	5.00	11.277	7.33	371.4	0.0	321.6
147.00 Appurtenance(s)		1.00	1.37	28.871	31.76	237.04	0.650	0.000	2.00	4.387	2.85	144.9	0.0	125.1
148.00 Appurtenance(s)		1.00	1.37	28.912	31.80	235.27	0.650	0.000	1.00	2.167	1.41	71.7	0.0	61.8
<b>Totals:</b>									<b>148.00</b>			<b>13,761.8</b>		<b>25,443.5</b>

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.6W 93 mph Wind	<b>Iterations</b> 24
<b>Dead Load Factor</b> 1.20	
<b>Wind Load Factor</b> 1.60	

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	148.00	DB-TDD6492A-A	1	29.076	31.983	1.00	1.00	2.41	25.20	0.000	4.021	123.33	0.00	495.88
2	148.00	6' Lightning rod	1	28.912	31.803	1.00	1.00	0.38	7.80	0.000	0.000	19.34	0.00	0.00
3	148.00	Pipe Mount	1	28.912	31.803	1.00	1.00	2.63	48.00	0.000	0.000	133.83	0.00	0.00
4	147.00	Trombone	1	28.931	31.824	1.00	1.00	1.00	7.20	0.000	1.458	50.92	0.00	74.26
5	147.00	Standoff	1	28.871	31.758	1.00	1.00	2.63	48.00	0.000	0.000	133.64	0.00	0.00
6	137.50	JMA Wireless	6	28.467	31.314	0.70	0.80	41.22	331.20	0.000	0.000	2065.09	0.00	0.00
7	137.50	Commscope	3	28.467	31.314	0.71	0.80	13.86	72.00	0.000	0.000	694.56	0.00	0.00
8	137.50	Low Profile Platform	1	28.467	31.314	1.00	1.00	22.00	1800.00	0.000	0.000	1102.26	0.00	0.00
9	137.50	Swedcom SC-E 6014	3	28.467	31.314	0.78	0.80	7.75	54.00	0.000	0.000	388.41	0.00	0.00
10	137.50	Samsung RF4439d-25A	3	28.467	31.314	0.54	0.80	2.12	174.60	0.000	0.000	106.35	0.00	0.00
11	137.50	Samsung RF4440d-13A	3	28.467	31.314	0.54	0.80	2.12	174.60	0.000	0.000	106.35	0.00	0.00
12	137.50	Commscope	1	28.467	31.314	0.54	0.80	3.00	24.00	0.000	0.000	150.39	0.00	0.00
13	137.50	Samsung MT6407-77A -	3	28.467	31.314	0.56	0.80	7.88	285.84	0.000	0.000	394.77	0.00	0.00
14	118.50	Pipe Mast	3	27.590	30.349	0.56	0.75	2.62	216.00	0.000	0.000	127.01	0.00	0.00
15	118.50	Kathrein 800-10965	6	27.590	30.349	0.53	0.75	44.12	781.92	0.000	0.000	2142.54	0.00	0.00
16	118.50	Ericsson 4449 B5/B12	3	27.590	30.349	0.50	0.75	2.97	255.60	0.000	0.000	144.21	0.00	0.00
17	118.50	Ericsson RRUS 8843 B2	3	27.590	30.349	0.50	0.75	2.47	252.00	0.000	0.000	120.05	0.00	0.00
18	118.50	SitePro Sitepro 1 P/N	1	27.590	30.349	1.00	1.00	9.75	487.93	0.000	0.000	473.44	0.00	0.00
19	118.50	Low Profile Platform	1	27.590	30.349	1.00	1.00	22.00	1800.00	0.000	0.000	1068.29	0.00	0.00
20	118.50	Powerwave 7770	3	27.590	30.349	0.55	0.75	9.03	126.00	0.000	0.000	438.66	0.00	0.00
21	118.50	Powerwave LGP21401	6	27.590	30.349	0.52	0.75	4.06	101.52	0.000	0.000	197.32	0.00	0.00
22	118.50	Raycap DC6-48-60-18-8F	2	27.590	30.349	0.56	0.75	1.04	78.72	0.000	0.000	50.26	0.00	0.00
23	118.50	RRH Collar Mount	1	27.590	30.349	0.56	0.75	2.81	300.00	0.000	0.000	136.57	0.00	0.00
24	109.00	T-Arms w/ Working	3	27.109	29.820	0.56	0.75	20.25	1260.00	0.000	0.000	966.16	0.00	0.00
25	109.00	1900MHz RRH - RRU	3	27.109	29.820	0.54	0.80	6.11	158.40	0.000	0.000	291.54	0.00	0.00
26	109.00	APXVSPP18-C-A20	3	27.109	29.820	0.66	0.80	15.98	205.20	0.000	0.000	762.23	0.00	0.00
27	109.00	APXVTM14-C-I20	3	27.109	29.820	0.68	0.80	12.93	201.60	0.000	0.000	617.08	0.00	0.00
28	109.00	ACU-A20-N - RET	4	27.109	29.820	0.40	0.80	0.22	4.80	0.000	0.000	10.69	0.00	0.00
29	109.00	800 MHz RRH - RRU	3	27.109	29.820	0.54	0.80	4.00	190.80	0.000	0.000	191.03	0.00	0.00
30	109.00	800MHz RRH Filter	3	27.109	29.820	0.54	0.80	1.25	31.68	0.000	0.000	59.84	0.00	0.00
31	109.00	TD-RRH8x20 - RRU	3	27.109	29.820	0.54	0.80	6.51	252.00	0.000	0.000	310.72	0.00	0.00
32	99.50	Platform w/ Hand Rail	1	26.593	29.253	1.00	1.00	32.00	1920.00	0.000	0.000	1497.74	0.00	0.00
33	97.00	Commscope VV-65A-R1	3	26.451	29.096	0.59	0.80	14.03	106.20	0.000	0.000	653.18	0.00	0.00
34	97.00	RFS	3	26.451	29.096	0.58	0.80	35.46	442.08	0.000	0.000	1650.84	0.00	0.00
35	97.00	Andrew RR65-18-00DPL2	3	26.451	29.096	0.54	0.80	7.12	64.80	0.000	0.000	331.26	0.00	0.00
36	97.00	Ericsson AIR6419 B41	3	26.451	29.096	0.61	0.80	6.93	237.96	0.000	0.000	322.68	0.00	0.00
37	97.00	RFS ATMAA1412D-1A20	3	26.451	29.096	0.54	0.80	1.88	46.80	0.000	0.000	87.59	0.00	0.00
38	97.00	Ericsson 4460 B25 + B66	3	26.451	29.096	0.54	0.80	4.58	392.40	0.000	0.000	213.35	0.00	0.00
39	97.00	Ericsson 4480 B71 + B85	3	26.451	29.096	0.54	0.80	4.58	334.80	0.000	0.000	213.35	0.00	0.00
40	97.00	Kathrein 782 11054	3	26.451	29.096	0.54	0.80	0.45	9.36	0.000	0.000	20.96	0.00	0.00
41	85.00	MC-PK8-DSH	1	25.726	28.299	1.00	1.00	37.59	2072.40	0.000	0.000	1701.99	0.00	0.00
42	85.00	RDIDC-9181-OF-48	1	25.726	28.299	0.75	0.75	1.51	26.28	0.000	0.000	68.26	0.00	0.00
43	85.00	TA08025-B604	3	25.726	28.299	0.50	0.75	2.95	230.04	0.000	0.000	133.78	0.00	0.00
44	85.00	TA08025-B605	3	25.726	28.299	0.50	0.75	2.95	270.00	0.000	0.000	133.78	0.00	0.00
45	85.00	FFVV-65B-R2	3	25.726	28.299	0.55	0.75	20.43	254.88	0.000	0.000	925.01	0.00	0.00
46	50.50	3 ft Standoff	1	23.055	25.361	1.00	1.00	2.63	48.00	0.000	0.000	106.72	0.00	0.00
47	50.50	260B	1	23.055	25.361	1.00	1.00	0.09	1.20	0.000	0.000	3.65	0.00	0.00

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Totals:</b>	<b>16,213.81</b>	<b>21,640.98</b>
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## Total Applied Force Summary

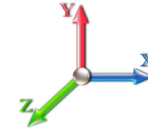
<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 93 mph Wind

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



**Iterations** 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		475.15	1526.90	0.00	0.00
10.00		466.07	1501.41	0.00	0.00
15.00		456.99	1475.91	0.00	0.00
20.00		475.25	1450.42	0.00	0.00
25.00		488.01	1424.92	0.00	0.00
30.00		496.61	1399.43	0.00	0.00
35.00		502.16	1373.94	0.00	0.00
39.00		403.00	1080.79	0.00	0.00
40.00		101.50	459.84	0.00	0.00
45.00		513.39	2271.15	0.00	0.00
50.00		513.23	1128.77	0.00	0.00
50.50	(2) attachments	161.16	160.91	0.00	0.00
55.00		460.00	994.95	0.00	0.00
60.00		509.03	1085.32	0.00	0.00
65.00		505.33	1064.07	0.00	0.00
70.00		500.74	1042.82	0.00	0.00
75.00		495.34	1021.58	0.00	0.00
79.00		391.37	801.97	0.00	0.00
80.00		98.04	326.75	0.00	0.00
84.00		391.00	1291.69	0.00	0.00
85.00	(11) attachments	3059.51	3018.75	0.00	0.00
90.00		481.36	803.61	0.00	0.00
95.00		473.49	786.61	0.00	0.00
97.00	(24) attachments	3679.66	1944.29	0.00	0.00
99.50	(1) attachments	1729.04	2303.53	0.00	0.00
100.00		45.90	69.45	0.00	0.00
105.00		456.26	685.10	0.00	0.00
109.00	(25) attachments	3567.27	2840.33	0.00	0.00
110.00		88.29	129.09	0.00	0.00
115.00		437.24	635.27	0.00	0.00
118.50	(29) attachments	5198.02	4834.27	0.00	0.00
120.00		126.66	169.01	0.00	0.00
125.00		416.64	429.14	0.00	0.00
130.00		405.81	416.40	0.00	0.00
135.00		394.65	403.65	0.00	0.00
137.50	(23) attachments	5200.83	3113.28	0.00	0.00
140.00		189.77	168.69	0.00	0.00
145.00		371.39	327.81	0.00	0.00
147.00	(2) attachments	329.44	182.75	0.00	74.26
148.00	(3) attachments	348.15	143.39	0.00	495.88
Totals:		35,402.74	46,287.97	0.00	570.13



## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 93 mph Wind

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



**Iterations** 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.96
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.96
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.96
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	18.971	0.00	0.96
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	19.883	0.00	0.96
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	20.661	0.00	0.96
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	21.343	0.00	0.96
39.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.013	0.000	21.834	0.00	0.77
40.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	21.951	0.00	0.19
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	22.502	0.00	0.96
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	23.007	0.00	0.96
50.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.014	0.000	23.055	0.00	0.10
<b>Totals:</b>											<b>0.0</b>	<b>9.7</b>

## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 93 mph Wind

**Iterations** 24

**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	-46.23	-35.48	0.00	-3557.1	0.00	3557.19	4270.00	2135.00	9669.74	4842.06	0.00	0.000	0.000	0.746
5.00	-44.58	-35.16	0.00	-3379.7	0.00	3379.78	4222.20	2111.10	9378.04	4695.99	0.11	-0.197	0.000	0.731
10.00	-42.96	-34.83	0.00	-3203.9	0.00	3203.98	4173.09	2086.54	9087.66	4550.58	0.42	-0.394	0.000	0.715
15.00	-41.37	-34.51	0.00	-3029.8	0.00	3029.81	4122.67	2061.34	8798.75	4405.92	0.94	-0.593	0.000	0.698
20.00	-39.80	-34.15	0.00	-2857.2	0.00	2857.27	4070.95	2035.48	8511.51	4262.08	1.67	-0.792	0.000	0.680
25.00	-38.27	-33.78	0.00	-2686.5	0.00	2686.50	4017.93	2008.97	8226.08	4119.16	2.60	-0.991	0.000	0.662
30.00	-36.76	-33.38	0.00	-2517.6	0.00	2517.62	3963.61	1981.80	7942.65	3977.23	3.75	-1.190	0.000	0.643
35.00	-35.30	-32.96	0.00	-2350.7	0.00	2350.71	3907.97	1953.99	7661.39	3836.39	5.10	-1.389	0.000	0.622
39.00	-34.17	-32.59	0.00	-2218.8	0.00	2218.88	3862.53	1931.27	7438.05	3724.55	6.34	-1.548	0.000	0.605
40.00	-33.65	-32.54	0.00	-2186.2	0.00	2186.29	3851.04	1925.52	7382.46	3696.72	6.67	-1.589	0.000	0.600
45.00	-31.29	-32.07	0.00	-2023.5	0.00	2023.57	2980.94	1490.47	5677.43	2842.94	8.44	-1.785	0.000	0.723
50.00	-30.11	-31.58	0.00	-1863.2	0.00	1863.22	2941.52	1470.76	5474.55	2741.34	10.41	-1.978	0.000	0.690
50.50	-29.90	-31.47	0.00	-1847.4	0.00	1847.43	2937.50	1468.75	5454.31	2731.21	10.62	-2.001	0.000	0.687
55.00	-28.81	-31.08	0.00	-1705.8	0.00	1705.83	2900.79	1450.39	5272.72	2640.28	12.60	-2.198	0.000	0.656
60.00	-27.63	-30.63	0.00	-1550.4	0.00	1550.45	2858.76	1429.38	5072.11	2539.83	15.02	-2.412	0.000	0.621
65.00	-26.48	-30.17	0.00	-1397.3	0.00	1397.32	2815.42	1407.71	4872.91	2440.07	17.66	-2.621	0.000	0.583
70.00	-25.36	-29.71	0.00	-1246.4	0.00	1246.48	2770.78	1385.39	4675.26	2341.11	20.51	-2.822	0.000	0.542
75.00	-24.28	-29.23	0.00	-1097.9	0.00	1097.95	2724.84	1362.42	4479.35	2243.01	23.57	-3.014	0.000	0.499
79.00	-23.46	-28.83	0.00	-981.03	0.00	981.03	2687.14	1343.57	4323.99	2165.21	26.16	-3.162	0.000	0.462
80.00	-23.09	-28.75	0.00	-952.19	0.00	952.19	2677.59	1338.79	4285.35	2145.86	26.83	-3.198	0.000	0.453
84.00	-21.78	-28.32	0.00	-837.18	0.00	837.18	1954.67	977.33	3110.93	1557.78	29.57	-3.335	0.000	0.549
85.00	-18.90	-25.13	0.00	-808.85	0.00	808.85	1948.85	974.42	3084.73	1544.66	30.27	-3.369	0.000	0.534
90.00	-18.05	-24.66	0.00	-683.21	0.00	683.21	1918.95	959.48	2954.04	1479.22	33.90	-3.555	0.000	0.472
95.00	-17.25	-24.17	0.00	-559.94	0.00	559.94	1887.76	943.88	2824.00	1414.10	37.71	-3.723	0.000	0.406
97.00	-15.53	-20.39	0.00	-511.60	0.00	511.60	1874.91	937.46	2772.21	1388.16	39.29	-3.787	0.000	0.377
99.50	-13.33	-18.52	0.00	-460.64	0.00	460.64	1858.56	929.28	2707.66	1355.84	41.29	-3.861	0.000	0.347
100.00	-13.24	-18.48	0.00	-451.38	0.00	451.38	1855.26	927.63	2694.78	1349.39	41.69	-3.875	0.000	0.342
105.00	-12.55	-18.01	0.00	-358.96	0.00	358.96	1821.45	910.73	2566.54	1285.18	45.82	-4.006	0.000	0.287
109.00	-9.96	-14.26	0.00	-286.93	0.00	286.93	1793.47	896.73	2464.77	1234.22	49.22	-4.097	0.000	0.238
110.00	-9.82	-14.17	0.00	-272.67	0.00	272.67	1786.34	893.17	2439.46	1221.54	50.08	-4.118	0.000	0.229
115.00	-9.20	-13.70	0.00	-201.83	0.00	201.83	1749.93	874.96	2313.70	1158.57	54.44	-4.210	0.000	0.180
118.50	-4.76	-8.16	0.00	-153.88	0.00	153.88	1723.66	861.83	2226.56	1114.93	57.54	-4.263	0.000	0.141
120.00	-4.59	-8.02	0.00	-141.64	0.00	141.64	1712.21	856.11	2189.45	1096.35	58.88	-4.283	0.000	0.132
120.00	-4.59	-8.02	0.00	-141.64	0.00	141.64	1141.82	570.91	1465.94	734.06	58.88	-4.283	0.000	0.197
125.00	-4.19	-7.58	0.00	-101.52	0.00	101.52	1122.14	561.07	1391.92	696.99	63.40	-4.341	0.000	0.150
130.00	-3.80	-7.15	0.00	-63.61	0.00	63.61	1101.16	550.58	1318.05	660.01	67.97	-4.398	0.000	0.100
135.00	-3.43	-6.72	0.00	-27.87	0.00	27.87	1078.87	539.43	1244.50	623.18	72.60	-4.433	0.000	0.048
137.50	-0.72	-1.30	0.00	-11.06	0.00	11.06	1067.24	533.62	1207.90	604.85	74.92	-4.441	0.000	0.019
140.00	-0.57	-1.10	0.00	-7.81	0.00	7.81	1055.28	527.64	1171.44	586.59	77.24	-4.445	0.000	0.014
145.00	-0.27	-0.70	0.00	-2.33	0.00	2.33	1030.38	515.19	1099.04	550.33	81.90	-4.450	0.000	0.005
147.00	-0.12	-0.36	0.00	-0.85	0.00	0.85	1020.06	510.03	1070.30	535.94	83.76	-4.451	0.000	0.002
148.00	0.00	-0.35	0.00	-0.50	0.00	0.50	1014.82	507.41	1055.98	528.78	84.69	-4.451	0.000	0.001

## Wind Loading - Shaft

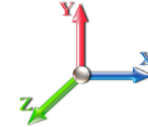
<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 93 mph Wind

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



**Iterations** 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	402.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	394.55	0.650	0.000	5.00	23.230	15.10	475.1	0.0	993.8
10.00		1.00	0.85	17.879	19.67	386.94	0.650	0.000	5.00	22.786	14.81	466.1	0.0	974.7
15.00		1.00	0.85	17.879	19.67	379.33	0.650	0.000	5.00	22.342	14.52	457.0	0.0	955.6
20.00		1.00	0.90	18.971	20.87	382.89	0.650	0.000	5.00	21.899	14.23	475.2	0.0	936.5
25.00		1.00	0.95	19.883	21.87	383.97	0.650	0.000	5.00	21.455	13.95	488.0	0.0	917.3
30.00		1.00	0.98	20.661	22.73	383.22	0.650	0.000	5.00	21.011	13.66	496.6	0.0	898.2
35.00		1.00	1.01	21.343	23.48	381.18	0.650	0.000	5.00	20.567	13.37	502.2	0.0	879.1
39.00 Bot - Section 2		1.00	1.04	21.834	24.02	378.81	0.650	0.000	4.00	16.134	10.49	403.0	0.0	689.5
40.00		1.00	1.04	21.951	24.15	378.14	0.650	0.000	1.00	4.042	2.63	101.5	0.0	314.6
45.00 Top - Section 1		1.00	1.07	22.502	24.75	374.32	0.650	0.000	5.00	19.943	12.96	513.4	0.0	1552.0
50.00		1.00	1.09	23.007	25.31	375.00	0.650	0.000	5.00	19.500	12.67	513.2	0.0	695.2
50.50 Appurtenance(s)		1.00	1.10	23.055	25.36	374.53	0.650	0.000	0.50	1.926	1.25	50.8	0.0	68.6
55.00		1.00	1.12	23.473	25.82	370.06	0.650	0.000	4.50	17.130	11.13	460.0	0.0	610.6
60.00		1.00	1.14	23.907	26.30	364.66	0.650	0.000	5.00	18.612	12.10	509.0	0.0	663.3
65.00		1.00	1.16	24.313	26.74	358.87	0.650	0.000	5.00	18.168	11.81	505.3	0.0	647.4
70.00		1.00	1.17	24.696	27.17	352.73	0.650	0.000	5.00	17.724	11.52	500.7	0.0	631.5
75.00		1.00	1.19	25.057	27.56	346.29	0.650	0.000	5.00	17.280	11.23	495.3	0.0	615.5
79.00 Bot - Section 3		1.00	1.20	25.333	27.87	340.95	0.650	0.000	4.00	13.504	8.78	391.4	0.0	481.0
80.00		1.00	1.21	25.400	27.94	339.58	0.650	0.000	1.00	3.374	2.19	98.0	0.0	214.9
84.00 Top - Section 2		1.00	1.22	25.662	28.23	334.04	0.650	0.000	4.00	13.319	8.66	391.0	0.0	848.3
85.00 Appurtenance(s)		1.00	1.22	25.726	28.30	336.98	0.650	0.000	1.00	3.285	2.14	96.7	0.0	93.7
90.00		1.00	1.24	26.037	28.64	329.82	0.650	0.000	5.00	16.160	10.50	481.4	0.0	461.0
95.00		1.00	1.25	26.336	28.97	322.47	0.650	0.000	5.00	15.716	10.22	473.5	0.0	448.3
97.00 Appurtenance(s)		1.00	1.26	26.451	29.10	319.47	0.650	0.000	2.00	6.162	4.01	186.5	0.0	175.7
99.50 Appurtenance(s)		1.00	1.26	26.593	29.25	315.69	0.650	0.000	2.50	7.603	4.94	231.3	0.0	216.8
100.00		1.00	1.27	26.621	29.28	314.93	0.650	0.000	0.50	1.507	0.98	45.9	0.0	43.0
105.00		1.00	1.28	26.896	29.59	307.21	0.650	0.000	5.00	14.828	9.64	456.3	0.0	422.8
109.00 Appurtenance(s)		1.00	1.29	27.109	29.82	300.92	0.650	0.000	4.00	11.543	7.50	358.0	0.0	329.1
110.00		1.00	1.29	27.161	29.88	299.34	0.650	0.000	1.00	2.841	1.85	88.3	0.0	81.0
115.00		1.00	1.30	27.416	30.16	291.32	0.650	0.000	5.00	13.941	9.06	437.2	0.0	397.3
118.50 Appurtenance(s)		1.00	1.31	27.590	30.35	285.62	0.650	0.000	3.50	9.494	6.17	299.7	0.0	270.5
120.00 Top - Section 3		1.00	1.32	27.663	30.43	283.15	0.650	0.000	1.50	4.002	2.60	126.7	0.0	114.0
125.00		1.00	1.33	27.902	30.69	274.87	0.650	0.000	5.00	13.053	8.48	416.6	0.0	279.4
130.00		1.00	1.34	28.133	30.95	266.45	0.650	0.000	5.00	12.609	8.20	405.8	0.0	269.9
135.00		1.00	1.35	28.358	31.19	257.93	0.650	0.000	5.00	12.165	7.91	394.6	0.0	260.3
137.50 Appurtenance(s)		1.00	1.35	28.467	31.31	253.62	0.650	0.000	2.50	5.916	3.85	192.7	0.0	126.6
140.00		1.00	1.36	28.576	31.43	249.29	0.650	0.000	2.50	5.805	3.77	189.8	0.0	124.2
145.00		1.00	1.37	28.788	31.67	240.56	0.650	0.000	5.00	11.277	7.33	371.4	0.0	241.2
147.00 Appurtenance(s)		1.00	1.37	28.871	31.76	237.04	0.650	0.000	2.00	4.387	2.85	144.9	0.0	93.8
148.00 Appurtenance(s)		1.00	1.37	28.912	31.80	235.27	0.650	0.000	1.00	2.167	1.41	71.7	0.0	46.3
<b>Totals:</b>									<b>148.00</b>			<b>13,761.8</b>		<b>19,082.6</b>

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

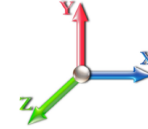


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**Load Case:** 0.9D + 1.6W 93 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	148.00	DB-TDD6492A-A	1	29.076	31.983	1.00	1.00	2.41	18.90	0.000	4.021	123.33	0.00	495.88
2	148.00	6' Lightning rod	1	28.912	31.803	1.00	1.00	0.38	5.85	0.000	0.000	19.34	0.00	0.00
3	148.00	Pipe Mount	1	28.912	31.803	1.00	1.00	2.63	36.00	0.000	0.000	133.83	0.00	0.00
4	147.00	Trombone	1	28.931	31.824	1.00	1.00	1.00	5.40	0.000	1.458	50.92	0.00	74.26
5	147.00	Standoff	1	28.871	31.758	1.00	1.00	2.63	36.00	0.000	0.000	133.64	0.00	0.00
6	137.50	JMA Wireless	6	28.467	31.314	0.70	0.80	41.22	248.40	0.000	0.000	2065.09	0.00	0.00
7	137.50	Commscope	3	28.467	31.314	0.71	0.80	13.86	54.00	0.000	0.000	694.56	0.00	0.00
8	137.50	Low Profile Platform	1	28.467	31.314	1.00	1.00	22.00	1350.00	0.000	0.000	1102.26	0.00	0.00
9	137.50	Swedcom SC-E 6014	3	28.467	31.314	0.78	0.80	7.75	40.50	0.000	0.000	388.41	0.00	0.00
10	137.50	Samsung RF4439d-25A	3	28.467	31.314	0.54	0.80	2.12	130.95	0.000	0.000	106.35	0.00	0.00
11	137.50	Samsung RF4440d-13A	3	28.467	31.314	0.54	0.80	2.12	130.95	0.000	0.000	106.35	0.00	0.00
12	137.50	Commscope	1	28.467	31.314	0.54	0.80	3.00	18.00	0.000	0.000	150.39	0.00	0.00
13	137.50	Samsung MT6407-77A -	3	28.467	31.314	0.56	0.80	7.88	214.38	0.000	0.000	394.77	0.00	0.00
14	118.50	Pipe Mast	3	27.590	30.349	0.56	0.75	2.62	162.00	0.000	0.000	127.01	0.00	0.00
15	118.50	Kathrein 800-10965	6	27.590	30.349	0.53	0.75	44.12	586.44	0.000	0.000	2142.54	0.00	0.00
16	118.50	Ericsson 4449 B5/B12	3	27.590	30.349	0.50	0.75	2.97	191.70	0.000	0.000	144.21	0.00	0.00
17	118.50	Ericsson RRUS 8843 B2	3	27.590	30.349	0.50	0.75	2.47	189.00	0.000	0.000	120.05	0.00	0.00
18	118.50	SitePro Sitepro 1 P/N	1	27.590	30.349	1.00	1.00	9.75	365.95	0.000	0.000	473.44	0.00	0.00
19	118.50	Low Profile Platform	1	27.590	30.349	1.00	1.00	22.00	1350.00	0.000	0.000	1068.29	0.00	0.00
20	118.50	Powerwave 7770	3	27.590	30.349	0.55	0.75	9.03	94.50	0.000	0.000	438.66	0.00	0.00
21	118.50	Powerwave LGP21401	6	27.590	30.349	0.52	0.75	4.06	76.14	0.000	0.000	197.32	0.00	0.00
22	118.50	Raycap DC6-48-60-18-8F	2	27.590	30.349	0.56	0.75	1.04	59.04	0.000	0.000	50.26	0.00	0.00
23	118.50	RRH Collar Mount	1	27.590	30.349	0.56	0.75	2.81	225.00	0.000	0.000	136.57	0.00	0.00
24	109.00	T-Arms w/ Working	3	27.109	29.820	0.56	0.75	20.25	945.00	0.000	0.000	966.16	0.00	0.00
25	109.00	1900MHz RRH - RRU	3	27.109	29.820	0.54	0.80	6.11	118.80	0.000	0.000	291.54	0.00	0.00
26	109.00	APXVSP18-C-A20	3	27.109	29.820	0.66	0.80	15.98	153.90	0.000	0.000	762.23	0.00	0.00
27	109.00	APXVTM14-C-I20	3	27.109	29.820	0.68	0.80	12.93	151.20	0.000	0.000	617.08	0.00	0.00
28	109.00	ACU-A20-N - RET	4	27.109	29.820	0.40	0.80	0.22	3.60	0.000	0.000	10.69	0.00	0.00
29	109.00	800 MHz RRH - RRU	3	27.109	29.820	0.54	0.80	4.00	143.10	0.000	0.000	191.03	0.00	0.00
30	109.00	800MHz RRH Filter	3	27.109	29.820	0.54	0.80	1.25	23.76	0.000	0.000	59.84	0.00	0.00
31	109.00	TD-RRH8x20 - RRU	3	27.109	29.820	0.54	0.80	6.51	189.00	0.000	0.000	310.72	0.00	0.00
32	99.50	Platform w/ Hand Rail	1	26.593	29.253	1.00	1.00	32.00	1440.00	0.000	0.000	1497.74	0.00	0.00
33	97.00	Commscope VV-65A-R1	3	26.451	29.096	0.59	0.80	14.03	79.65	0.000	0.000	653.18	0.00	0.00
34	97.00	RFS	3	26.451	29.096	0.58	0.80	35.46	331.56	0.000	0.000	1650.84	0.00	0.00
35	97.00	Andrew RR65-18-00DPL2	3	26.451	29.096	0.54	0.80	7.12	48.60	0.000	0.000	331.26	0.00	0.00
36	97.00	Ericsson AIR6419 B41	3	26.451	29.096	0.61	0.80	6.93	178.47	0.000	0.000	322.68	0.00	0.00
37	97.00	RFS ATMAA1412D-1A20	3	26.451	29.096	0.54	0.80	1.88	35.10	0.000	0.000	87.59	0.00	0.00
38	97.00	Ericsson 4460 B25 + B66	3	26.451	29.096	0.54	0.80	4.58	294.30	0.000	0.000	213.35	0.00	0.00
39	97.00	Ericsson 4480 B71 + B85	3	26.451	29.096	0.54	0.80	4.58	251.10	0.000	0.000	213.35	0.00	0.00
40	97.00	Kathrein 782 11054	3	26.451	29.096	0.54	0.80	0.45	7.02	0.000	0.000	20.96	0.00	0.00
41	85.00	MC-PK8-DSH	1	25.726	28.299	1.00	1.00	37.59	1554.30	0.000	0.000	1701.99	0.00	0.00
42	85.00	RDIDC-9181-OF-48	1	25.726	28.299	0.75	0.75	1.51	19.71	0.000	0.000	68.26	0.00	0.00
43	85.00	TA08025-B604	3	25.726	28.299	0.50	0.75	2.95	172.53	0.000	0.000	133.78	0.00	0.00
44	85.00	TA08025-B605	3	25.726	28.299	0.50	0.75	2.95	202.50	0.000	0.000	133.78	0.00	0.00
45	85.00	FFVV-65B-R2	3	25.726	28.299	0.55	0.75	20.43	191.16	0.000	0.000	925.01	0.00	0.00
46	50.50	3 ft Standoff	1	23.055	25.361	1.00	1.00	2.63	36.00	0.000	0.000	106.72	0.00	0.00
47	50.50	260B	1	23.055	25.361	1.00	1.00	0.09	0.90	0.000	0.000	3.65	0.00	0.00

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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<b>Totals:</b>	<b>12,160.36</b>	<b>21,640.98</b>
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## Total Applied Force Summary

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 93 mph Wind

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



**Iterations** 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		475.15	1145.18	0.00	0.00
10.00		466.07	1126.06	0.00	0.00
15.00		456.99	1106.94	0.00	0.00
20.00		475.25	1087.81	0.00	0.00
25.00		488.01	1068.69	0.00	0.00
30.00		496.61	1049.57	0.00	0.00
35.00		502.16	1030.45	0.00	0.00
39.00		403.00	810.59	0.00	0.00
40.00		101.50	344.88	0.00	0.00
45.00		513.39	1703.36	0.00	0.00
50.00		513.23	846.58	0.00	0.00
50.50	(2) attachments	161.16	120.68	0.00	0.00
55.00		460.00	746.21	0.00	0.00
60.00		509.03	813.99	0.00	0.00
65.00		505.33	798.05	0.00	0.00
70.00		500.74	782.12	0.00	0.00
75.00		495.34	766.18	0.00	0.00
79.00		391.37	601.48	0.00	0.00
80.00		98.04	245.06	0.00	0.00
84.00		391.00	968.77	0.00	0.00
85.00	(11) attachments	3059.51	2264.06	0.00	0.00
90.00		481.36	602.71	0.00	0.00
95.00		473.49	589.96	0.00	0.00
97.00	(24) attachments	3679.66	1458.22	0.00	0.00
99.50	(1) attachments	1729.04	1727.65	0.00	0.00
100.00		45.90	52.08	0.00	0.00
105.00		456.26	513.83	0.00	0.00
109.00	(25) attachments	3567.27	2130.24	0.00	0.00
110.00		88.29	96.82	0.00	0.00
115.00		437.24	476.45	0.00	0.00
118.50	(29) attachments	5198.02	3625.70	0.00	0.00
120.00		126.66	126.76	0.00	0.00
125.00		416.64	321.86	0.00	0.00
130.00		405.81	312.30	0.00	0.00
135.00		394.65	302.74	0.00	0.00
137.50	(23) attachments	5200.83	2334.96	0.00	0.00
140.00		189.77	126.51	0.00	0.00
145.00		371.39	245.86	0.00	0.00
147.00	(2) attachments	329.44	137.07	0.00	74.26
148.00	(3) attachments	348.15	107.54	0.00	495.88
<b>Totals:</b>		<b>35,402.74</b>	<b>34,715.97</b>	<b>0.00</b>	<b>570.13</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 93 mph Wind

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



**Iterations** 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.72
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.72
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	17.879	0.00	0.72
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	18.971	0.00	0.72
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	19.883	0.00	0.72
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	20.661	0.00	0.72
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	21.343	0.00	0.72
39.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.013	0.000	21.834	0.00	0.58
40.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	21.951	0.00	0.14
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	22.502	0.00	0.72
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	23.007	0.00	0.72
50.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.014	0.000	23.055	0.00	0.07
<b>Totals:</b>											<b>0.0</b>	<b>7.3</b>

## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 93 mph Wind

**Iterations** 24

**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	-34.65	-35.46	0.00	-3526.4	0.00	3526.47	4270.00	2135.00	9669.74	4842.06	0.00	0.000	0.000	0.737
5.00	-33.39	-35.10	0.00	-3349.1	0.00	3349.16	4222.20	2111.10	9378.04	4695.99	0.11	-0.195	0.000	0.721
10.00	-32.15	-34.74	0.00	-3173.6	0.00	3173.66	4173.09	2086.54	9087.66	4550.58	0.41	-0.391	0.000	0.705
15.00	-30.93	-34.38	0.00	-2999.9	0.00	2999.97	4122.67	2061.34	8798.75	4405.92	0.93	-0.587	0.000	0.689
20.00	-29.73	-33.99	0.00	-2828.0	0.00	2828.08	4070.95	2035.48	8511.51	4262.08	1.65	-0.784	0.000	0.671
25.00	-28.55	-33.59	0.00	-2658.1	0.00	2658.12	4017.93	2008.97	8226.08	4119.16	2.58	-0.982	0.000	0.653
30.00	-27.40	-33.16	0.00	-2490.1	0.00	2490.19	3963.61	1981.80	7942.65	3977.23	3.71	-1.179	0.000	0.633
35.00	-26.28	-32.72	0.00	-2324.3	0.00	2324.37	3907.97	1953.99	7661.39	3836.39	5.06	-1.375	0.000	0.613
39.00	-25.42	-32.34	0.00	-2193.4	0.00	2193.49	3862.53	1931.27	7438.05	3724.55	6.28	-1.533	0.000	0.596
40.00	-25.01	-32.28	0.00	-2161.1	0.00	2161.15	3851.04	1925.52	7382.46	3696.72	6.60	-1.573	0.000	0.591
45.00	-23.22	-31.80	0.00	-1999.7	0.00	1999.74	2980.94	1490.47	5677.43	2842.94	8.35	-1.766	0.000	0.712
50.00	-22.33	-31.30	0.00	-1840.7	0.00	1840.76	2941.52	1470.76	5474.55	2741.34	10.31	-1.958	0.000	0.680
50.50	-22.16	-31.18	0.00	-1825.1	0.00	1825.11	2937.50	1468.75	5454.31	2731.21	10.51	-1.980	0.000	0.676
55.00	-21.32	-30.76	0.00	-1684.8	0.00	1684.82	2900.79	1450.39	5272.72	2640.28	12.47	-2.175	0.000	0.646
60.00	-20.42	-30.30	0.00	-1531.0	0.00	1531.01	2858.76	1429.38	5072.11	2539.83	14.87	-2.386	0.000	0.610
65.00	-19.54	-29.83	0.00	-1379.5	0.00	1379.52	2815.42	1407.71	4872.91	2440.07	17.48	-2.592	0.000	0.573
70.00	-18.68	-29.35	0.00	-1230.3	0.00	1230.39	2770.78	1385.39	4675.26	2341.11	20.30	-2.790	0.000	0.533
75.00	-17.85	-28.87	0.00	-1083.6	0.00	1083.62	2724.84	1362.42	4479.35	2243.01	23.32	-2.980	0.000	0.490
79.00	-17.23	-28.48	0.00	-968.13	0.00	968.13	2687.14	1343.57	4323.99	2165.21	25.88	-3.126	0.000	0.454
80.00	-16.95	-28.39	0.00	-939.65	0.00	939.65	2677.59	1338.79	4285.35	2145.86	26.54	-3.162	0.000	0.445
84.00	-15.96	-27.97	0.00	-826.09	0.00	826.09	1954.67	977.33	3110.93	1557.78	29.25	-3.297	0.000	0.539
85.00	-13.83	-24.81	0.00	-798.12	0.00	798.12	1948.85	974.42	3084.73	1544.66	29.95	-3.331	0.000	0.524
90.00	-13.18	-24.33	0.00	-674.07	0.00	674.07	1918.95	959.48	2954.04	1479.22	33.53	-3.514	0.000	0.463
95.00	-12.58	-23.85	0.00	-552.40	0.00	552.40	1887.76	943.88	2824.00	1414.10	37.30	-3.680	0.000	0.398
97.00	-11.34	-20.10	0.00	-504.70	0.00	504.70	1874.91	937.46	2772.21	1388.16	38.86	-3.743	0.000	0.370
99.50	-9.71	-18.26	0.00	-454.46	0.00	454.46	1858.56	929.28	2707.66	1355.84	40.84	-3.816	0.000	0.341
100.00	-9.64	-18.23	0.00	-445.32	0.00	445.32	1855.26	927.63	2694.78	1349.39	41.24	-3.830	0.000	0.336
105.00	-9.13	-17.76	0.00	-354.18	0.00	354.18	1821.45	910.73	2566.54	1285.18	45.32	-3.959	0.000	0.281
109.00	-7.24	-14.05	0.00	-283.16	0.00	283.16	1793.47	896.73	2464.77	1234.22	48.67	-4.049	0.000	0.234
110.00	-7.13	-13.97	0.00	-269.11	0.00	269.11	1786.34	893.17	2439.46	1221.54	49.52	-4.070	0.000	0.225
115.00	-6.67	-13.50	0.00	-199.28	0.00	199.28	1749.93	874.96	2313.70	1158.57	53.83	-4.160	0.000	0.176
118.50	-3.43	-8.06	0.00	-152.01	0.00	152.01	1723.66	861.83	2226.56	1114.93	56.90	-4.213	0.000	0.138
120.00	-3.31	-7.92	0.00	-139.92	0.00	139.92	1712.21	856.11	2189.45	1096.35	58.23	-4.233	0.000	0.130
120.00	-3.31	-7.92	0.00	-139.92	0.00	139.92	1141.82	570.91	1465.94	734.06	58.23	-4.233	0.000	0.194
125.00	-3.01	-7.49	0.00	-100.30	0.00	100.30	1122.14	561.07	1391.92	696.99	62.69	-4.289	0.000	0.147
130.00	-2.72	-7.06	0.00	-62.86	0.00	62.86	1101.16	550.58	1318.05	660.01	67.21	-4.346	0.000	0.098
135.00	-2.45	-6.65	0.00	-27.55	0.00	27.55	1078.87	539.43	1244.50	623.18	71.78	-4.380	0.000	0.047
137.50	-0.52	-1.28	0.00	-10.94	0.00	10.94	1067.24	533.62	1207.90	604.85	74.07	-4.389	0.000	0.019
140.00	-0.41	-1.08	0.00	-7.73	0.00	7.73	1055.28	527.64	1171.44	586.59	76.37	-4.393	0.000	0.014
145.00	-0.19	-0.69	0.00	-2.31	0.00	2.31	1030.38	515.19	1099.04	550.33	80.97	-4.398	0.000	0.004
147.00	-0.08	-0.36	0.00	-0.85	0.00	0.85	1020.06	510.03	1070.30	535.94	82.81	-4.398	0.000	0.002
148.00	0.00	-0.35	0.00	-0.50	0.00	0.50	1014.82	507.41	1055.98	528.78	83.73	-4.399	0.000	0.001



## Wind Loading - Shaft

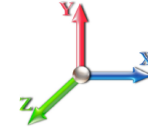
<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	24.265	29.12	165.5	432.8	1757.9
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	23.896	28.67	163.0	455.8	1755.4
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	23.498	28.20	160.3	466.1	1740.2
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	23.087	27.70	167.1	470.6	1719.2
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	22.670	27.20	172.0	471.9	1695.1
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	22.249	26.70	175.4	471.1	1668.7
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	21.824	26.19	177.7	468.7	1640.8
39.00 Bot - Section 2		1.00	1.04	6.311	6.94	0.00	1.200	1.525	4.00	17.151	20.58	142.9	372.8	1292.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	1.00	4.297	5.16	36.0	94.2	513.7
45.00 Top - Section 1		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.233	25.48	182.3	466.7	2536.1
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	20.803	24.96	182.6	461.6	1388.5
50.50 Appurtenance(s)		1.00	1.10	6.664	7.33	0.00	1.200	1.565	0.50	2.056	2.47	18.1	46.1	137.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	4.50	18.314	21.98	164.0	410.2	1224.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	19.939	23.93	181.9	449.4	1333.9
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	19.506	23.41	180.9	442.6	1305.8
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	19.072	22.89	179.7	435.4	1277.3
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	18.637	22.36	178.2	427.8	1248.5
79.00 Bot - Section 3		1.00	1.20	7.322	8.05	0.00	1.200	1.637	4.00	14.596	17.51	141.1	337.2	978.5
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	1.00	3.647	4.38	35.3	85.0	371.6
84.00 Top - Section 2		1.00	1.22	7.418	8.16	0.00	1.200	1.647	4.00	14.417	17.30	141.2	334.8	1465.8
85.00 Appurtenance(s)		1.00	1.22	7.436	8.18	0.00	1.200	1.649	1.00	3.560	4.27	34.9	83.4	208.4
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	17.542	21.05	174.3	408.4	1023.1
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	17.106	20.53	171.9	399.8	997.5
97.00 Appurtenance(s)		1.00	1.26	7.646	8.41	0.00	1.200	1.671	2.00	6.719	8.06	67.8	158.5	392.8
99.50 Appurtenance(s)		1.00	1.26	7.687	8.46	0.00	1.200	1.675	2.50	8.301	9.96	84.2	195.9	485.0
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	0.50	1.647	1.98	16.7	39.1	96.4
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	16.232	19.48	166.6	381.8	945.6
109.00 Appurtenance(s)		1.00	1.29	7.836	8.62	0.00	1.200	1.690	4.00	12.670	15.20	131.0	299.6	738.3
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	1.00	3.123	3.75	32.4	74.5	182.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	15.357	18.43	160.6	363.1	892.9
118.50 Appurtenance(s)		1.00	1.31	7.975	8.77	0.00	1.200	1.705	3.50	10.489	12.59	110.4	249.5	610.2
120.00 Top - Section 3		1.00	1.32	7.996	8.80	0.00	1.200	1.707	1.50	4.429	5.31	46.7	106.1	258.1
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	14.481	17.38	154.2	343.8	716.4
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	14.043	16.85	150.7	333.9	693.7
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.604	16.32	147.2	323.9	671.0
137.50 Appurtenance(s)		1.00	1.35	8.229	9.05	0.00	1.200	1.730	2.50	6.637	7.96	72.1	159.4	328.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	2.50	6.527	7.83	71.2	156.9	322.4
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.727	15.27	139.8	303.5	625.0
147.00 Appurtenance(s)		1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	4.967	5.96	54.7	119.7	244.8
148.00 Appurtenance(s)		1.00	1.37	8.357	9.19	0.00	1.200	1.743	1.00	2.457	2.95	27.1	59.5	121.2
<b>Totals:</b>									<b>148.00</b>			<b>4,959.8</b>		<b>37,604.5</b>

## Discrete Appurtenance Forces

**Structure:** CT13057-A-SBA

**Code:** TIA-222-G

5/11/2022

**Site Name:** Newtown

**Exposure:** C

**Height:** 148.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

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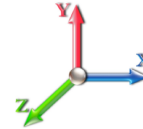


**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 23

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



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	148.00	DB-TDD6492A-A	1	8.404	9.245	1.00	1.00	5.19	68.94	0.000	4.021	48.02	0.00	193.07
2	148.00	6' Lightning rod	1	8.357	9.193	1.00	1.00	1.47	38.75	0.000	0.000	13.48	0.00	0.00
3	148.00	Pipe Mount	1	8.357	9.193	1.00	1.00	8.59	105.17	0.000	0.000	78.97	0.00	0.00
4	147.00	Trombone	1	8.362	9.199	1.00	1.00	2.71	-5.02	0.000	1.458	24.95	0.00	36.39
5	147.00	Standoff	1	8.345	9.180	1.00	1.00	8.59	105.12	0.000	0.000	78.82	0.00	0.00
6	137.50	JMA Wireless	6	8.229	9.051	0.70	0.80	46.91	1928.94	0.000	0.000	424.60	0.00	0.00
7	137.50	Commscope	3	8.229	9.051	0.71	0.80	18.26	444.94	0.000	0.000	165.25	0.00	0.00
8	137.50	Low Profile Platform	1	8.229	9.051	1.00	1.00	39.51	2797.57	0.000	0.000	357.61	0.00	0.00
9	137.50	Swedcom SC-E 6014	3	8.229	9.051	0.78	0.80	11.60	254.59	0.000	0.000	105.03	0.00	0.00
10	137.50	Samsung RF4439d-25A	3	8.229	9.051	0.54	0.80	2.87	255.23	0.000	0.000	25.97	0.00	0.00
11	137.50	Samsung RF4440d-13A	3	8.229	9.051	0.54	0.80	2.87	255.23	0.000	0.000	25.97	0.00	0.00
12	137.50	Commscope	1	8.229	9.051	0.54	0.80	3.88	105.05	0.000	0.000	35.16	0.00	0.00
13	137.50	Samsung MT6407-77A -	3	8.229	9.051	0.56	0.80	9.46	640.71	0.000	0.000	85.59	0.00	0.00
14	118.50	Pipe Mast	3	7.975	8.772	0.75	0.75	7.77	402.82	0.000	0.000	68.14	0.00	0.00
15	118.50	Kathrein 800-10965	6	7.975	8.772	0.75	0.75	69.09	2523.09	0.000	0.000	606.05	0.00	0.00
16	118.50	Ericsson 4449 B5/B12	3	7.975	8.772	0.75	0.75	5.64	371.21	0.000	0.000	49.44	0.00	0.00
17	118.50	Ericsson RRUS 8843 B2	3	7.975	8.772	0.75	0.75	4.82	352.84	0.000	0.000	42.32	0.00	0.00
18	118.50	SitePro Sitepro 1 P/N	1	7.975	8.772	1.00	1.00	19.06	1365.84	0.000	0.000	167.17	0.00	0.00
19	118.50	Low Profile Platform	1	7.975	8.772	1.00	1.00	39.25	2778.42	0.000	0.000	344.32	0.00	0.00
20	118.50	Powerwave 7770	3	7.975	8.772	0.63	0.75	12.36	519.97	0.000	0.000	108.41	0.00	0.00
21	118.50	Powerwave LGP21401	6	7.975	8.772	0.52	0.75	6.63	205.43	0.000	0.000	58.20	0.00	0.00
22	118.50	Raycap DC6-48-60-18-8F	2	7.975	8.772	0.75	0.75	2.02	169.89	0.000	0.000	17.74	0.00	0.00
23	118.50	RRH Collar Mount	1	7.975	8.772	0.56	0.75	7.61	721.60	0.000	0.000	66.73	0.00	0.00
24	109.00	T-Arms w/ Working	3	7.836	8.619	0.56	0.75	37.37	1759.96	0.000	0.000	322.07	0.00	0.00
25	109.00	1900MHz RRH - RRU	3	7.836	8.619	0.54	0.80	8.28	382.00	0.000	0.000	71.33	0.00	0.00
26	109.00	APXVSPP18-C-A20	3	7.836	8.619	0.66	0.80	21.37	558.96	0.000	0.000	184.16	0.00	0.00
27	109.00	APXVTM14-C-I20	3	7.836	8.619	0.68	0.80	15.13	664.75	0.000	0.000	130.40	0.00	0.00
28	109.00	ACU-A20-N - RET	4	7.836	8.619	0.40	0.80	0.68	16.24	0.000	0.000	5.89	0.00	0.00
29	109.00	800 MHz RRH - RRU	3	7.836	8.619	0.54	0.80	5.79	342.41	0.000	0.000	49.87	0.00	0.00
30	109.00	800MHz RRH Filter	3	7.836	8.619	0.54	0.80	2.26	67.95	0.000	0.000	19.49	0.00	0.00
31	109.00	TD-RRH8x20 - RRU	3	7.836	8.619	0.54	0.80	7.78	570.87	0.000	0.000	67.02	0.00	0.00
32	99.50	Platform w/ Hand Rail	1	7.687	8.456	1.00	1.00	58.80	3335.39	0.000	0.000	497.19	0.00	0.00
33	97.00	Commscope VV-65A-R1	3	7.646	8.410	0.59	0.80	16.20	601.22	0.000	0.000	136.25	0.00	0.00
34	97.00	RFS	3	7.646	8.410	0.58	0.80	38.64	1663.91	0.000	0.000	325.00	0.00	0.00
35	97.00	Andrew RR65-18-00DPL2	3	7.646	8.410	0.54	0.80	8.65	344.70	0.000	0.000	72.74	0.00	0.00
36	97.00	Ericsson AIR6419 B41	3	7.646	8.410	0.61	0.80	8.32	446.18	0.000	0.000	69.98	0.00	0.00
37	97.00	RFS ATMAA1412D-1A20	3	7.646	8.410	0.54	0.80	3.09	100.34	0.000	0.000	25.95	0.00	0.00
38	97.00	Ericsson 4460 B25 + B66	3	7.646	8.410	0.54	0.80	5.62	547.92	0.000	0.000	47.28	0.00	0.00
39	97.00	Ericsson 4480 B71 + B85	3	7.646	8.410	0.54	0.80	5.62	490.40	0.000	0.000	47.28	0.00	0.00
40	97.00	Kathrein 782 11054	3	7.646	8.410	0.54	0.80	1.07	22.42	0.000	0.000	8.98	0.00	0.00
41	85.00	MC-PK8-DSH	1	7.436	8.180	1.00	1.00	82.22	3294.04	0.000	0.000	672.51	0.00	0.00
42	85.00	RDIDC-9181-OF-48	1	7.436	8.180	0.75	0.75	1.91	63.89	0.000	0.000	15.62	0.00	0.00
43	85.00	TA08025-B604	3	7.436	8.180	0.50	0.75	3.75	337.24	0.000	0.000	30.70	0.00	0.00
44	85.00	TA08025-B605	3	7.436	8.180	0.50	0.75	3.75	380.45	0.000	0.000	30.70	0.00	0.00
45	85.00	FFVV-65B-R2	3	7.436	8.180	0.55	0.75	22.72	865.78	0.000	0.000	185.85	0.00	0.00
46	50.50	3 ft Standoff	1	6.664	7.331	1.00	1.00	7.98	97.00	0.000	0.000	58.52	0.00	0.00
47	50.50	260B	1	6.664	7.331	1.00	1.00	0.25	4.56	0.000	0.000	1.82	0.00	0.00

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 23



**Totals:** 33,364.90

6,074.54

## Total Applied Force Summary

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		165.53	1972.43	0.00	0.00
10.00		163.01	1971.61	0.00	0.00
15.00		160.30	1957.39	0.00	0.00
20.00		167.11	1937.27	0.00	0.00
25.00		171.98	1913.74	0.00	0.00
30.00		175.39	1887.96	0.00	0.00
35.00		177.72	1860.56	0.00	0.00
39.00		142.88	1468.15	0.00	0.00
40.00		35.99	557.73	0.00	0.00
45.00		182.30	2756.59	0.00	0.00
50.00		182.61	1609.39	0.00	0.00
50.50	(2) attachments	78.43	261.28	0.00	0.00
55.00		164.02	1405.12	0.00	0.00
60.00		181.88	1534.71	0.00	0.00
65.00		180.95	1506.65	0.00	0.00
70.00		179.70	1478.18	0.00	0.00
75.00		178.18	1449.35	0.00	0.00
79.00		141.08	1139.15	0.00	0.00
80.00		35.35	411.75	0.00	0.00
84.00		141.16	1626.50	0.00	0.00
85.00	(11) attachments	970.33	5189.92	0.00	0.00
90.00		174.27	1212.05	0.00	0.00
95.00		171.88	1186.40	0.00	0.00
97.00	(24) attachments	801.27	4685.48	0.00	0.00
99.50	(1) attachments	581.41	3914.83	0.00	0.00
100.00		16.73	108.54	0.00	0.00
105.00		166.57	1066.94	0.00	0.00
109.00	(25) attachments	981.29	5198.54	0.00	0.00
110.00		32.37	203.61	0.00	0.00
115.00		160.64	998.41	0.00	0.00
118.50	(29) attachments	1638.93	10095.19	0.00	0.00
120.00		46.75	275.07	0.00	0.00
125.00		154.16	772.94	0.00	0.00
130.00		150.74	750.31	0.00	0.00
135.00		147.19	727.54	0.00	0.00
137.50	(23) attachments	1297.26	7038.72	0.00	0.00
140.00		71.17	325.55	0.00	0.00
145.00		139.79	631.28	0.00	0.00
147.00	(2) attachments	158.49	347.38	0.00	36.39
148.00	(3) attachments	167.57	334.71	0.00	193.07
	<b>Totals:</b>	<b>11,034.35</b>	<b>75,768.91</b>	<b>0.00</b>	<b>229.45</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



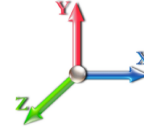
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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 23

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.31	0.00	0.012	0.000	5.168	0.00	13.70
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.38	0.00	0.012	0.000	5.168	0.00	15.33
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.43	0.00	0.012	0.000	5.168	0.00	16.38
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.46	0.00	0.012	0.000	5.483	0.00	17.18
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.49	0.00	0.013	0.000	5.747	0.00	17.83
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.51	0.00	0.013	0.000	5.972	0.00	18.38
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.53	0.00	0.013	0.000	6.169	0.00	18.86
39.00	1/2" Coax	Yes	4.00	0.000	0.65	1.23	0.00	0.013	0.000	6.311	0.00	15.36
40.00	1/2" Coax	Yes	1.00	0.000	0.65	0.31	0.00	0.014	0.000	6.345	0.00	3.86
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.56	0.00	0.014	0.000	6.504	0.00	19.67
50.00	1/2" Coax	Yes	5.00	0.000	0.65	1.57	0.00	0.014	0.000	6.650	0.00	20.02
50.50	1/2" Coax	Yes	0.50	0.000	0.65	0.16	0.00	0.014	0.000	6.664	0.00	2.01
<b>Totals:</b>											<b>0.0</b>	<b>178.6</b>

## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

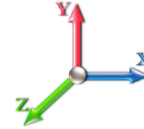


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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 23

**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	-75.76	-11.08	0.00	-1119.8	0.00	1119.81	4270.00	2135.00	9669.74	4842.06	0.00	0.000	0.000	0.249
5.00	-73.78	-10.99	0.00	-1064.4	0.00	1064.43	4222.20	2111.10	9378.04	4695.99	0.03	-0.062	0.000	0.244
10.00	-71.80	-10.90	0.00	-1009.4	0.00	1009.49	4173.09	2086.54	9087.66	4550.58	0.13	-0.124	0.000	0.239
15.00	-69.83	-10.81	0.00	-954.98	0.00	954.98	4122.67	2061.34	8798.75	4405.92	0.30	-0.187	0.000	0.234
20.00	-67.88	-10.71	0.00	-900.93	0.00	900.93	4070.95	2035.48	8511.51	4262.08	0.53	-0.250	0.000	0.228
25.00	-65.95	-10.60	0.00	-847.37	0.00	847.37	4017.93	2008.97	8226.08	4119.16	0.82	-0.312	0.000	0.222
30.00	-64.06	-10.49	0.00	-794.36	0.00	794.36	3963.61	1981.80	7942.65	3977.23	1.18	-0.375	0.000	0.216
35.00	-62.19	-10.36	0.00	-741.93	0.00	741.93	3907.97	1953.99	7661.39	3836.39	1.61	-0.438	0.000	0.209
39.00	-60.71	-10.23	0.00	-700.50	0.00	700.50	3862.53	1931.27	7438.05	3724.55	2.00	-0.488	0.000	0.204
40.00	-60.15	-10.23	0.00	-690.27	0.00	690.27	3851.04	1925.52	7382.46	3696.72	2.10	-0.501	0.000	0.202
45.00	-57.38	-10.09	0.00	-639.10	0.00	639.10	2980.94	1490.47	5677.43	2842.94	2.66	-0.563	0.000	0.244
50.00	-55.77	-9.92	0.00	-588.67	0.00	588.67	2941.52	1470.76	5474.55	2741.34	3.28	-0.624	0.000	0.234
50.50	-55.50	-9.87	0.00	-583.71	0.00	583.71	2937.50	1468.75	5454.31	2731.21	3.35	-0.631	0.000	0.233
55.00	-54.09	-9.76	0.00	-539.27	0.00	539.27	2900.79	1450.39	5272.72	2640.28	3.97	-0.694	0.000	0.223
60.00	-52.55	-9.62	0.00	-490.50	0.00	490.50	2858.76	1429.38	5072.11	2539.83	4.74	-0.761	0.000	0.212
65.00	-51.03	-9.47	0.00	-442.43	0.00	442.43	2815.42	1407.71	4872.91	2440.07	5.57	-0.827	0.000	0.199
70.00	-49.55	-9.32	0.00	-395.07	0.00	395.07	2770.78	1385.39	4675.26	2341.11	6.47	-0.891	0.000	0.187
75.00	-48.09	-9.17	0.00	-348.46	0.00	348.46	2724.84	1362.42	4479.35	2243.01	7.44	-0.952	0.000	0.173
79.00	-46.95	-9.03	0.00	-311.80	0.00	311.80	2687.14	1343.57	4323.99	2165.21	8.25	-0.999	0.000	0.162
80.00	-46.53	-9.01	0.00	-302.77	0.00	302.77	2677.59	1338.79	4285.35	2145.86	8.46	-1.010	0.000	0.159
84.00	-44.91	-8.86	0.00	-266.73	0.00	266.73	1954.67	977.33	3110.93	1557.78	9.33	-1.054	0.000	0.194
85.00	-39.73	-7.82	0.00	-257.87	0.00	257.87	1948.85	974.42	3084.73	1544.66	9.55	-1.065	0.000	0.187
90.00	-38.52	-7.66	0.00	-218.77	0.00	218.77	1918.95	959.48	2954.04	1479.22	10.70	-1.124	0.000	0.168
95.00	-37.33	-7.49	0.00	-180.47	0.00	180.47	1887.76	943.88	2824.00	1414.10	11.91	-1.178	0.000	0.147
97.00	-32.66	-6.60	0.00	-165.50	0.00	165.50	1874.91	937.46	2772.21	1388.16	12.41	-1.199	0.000	0.137
99.50	-28.75	-5.95	0.00	-148.99	0.00	148.99	1858.56	929.28	2707.66	1355.84	13.04	-1.223	0.000	0.125
100.00	-28.64	-5.94	0.00	-146.02	0.00	146.02	1855.26	927.63	2694.78	1349.39	13.17	-1.227	0.000	0.124
105.00	-27.58	-5.77	0.00	-116.33	0.00	116.33	1821.45	910.73	2566.54	1285.18	14.48	-1.270	0.000	0.106
109.00	-22.40	-4.68	0.00	-93.26	0.00	93.26	1793.47	896.73	2464.77	1234.22	15.55	-1.299	0.000	0.088
110.00	-22.20	-4.65	0.00	-88.59	0.00	88.59	1786.34	893.17	2439.46	1221.54	15.83	-1.306	0.000	0.085
115.00	-21.20	-4.47	0.00	-65.36	0.00	65.36	1749.93	874.96	2313.70	1158.57	17.21	-1.336	0.000	0.069
118.50	-11.15	-2.60	0.00	-49.71	0.00	49.71	1723.66	861.83	2226.56	1114.93	18.20	-1.353	0.000	0.051
120.00	-10.87	-2.55	0.00	-45.82	0.00	45.82	1712.21	856.11	2189.45	1096.35	18.62	-1.359	0.000	0.048
120.00	-10.87	-2.55	0.00	-45.82	0.00	45.82	1141.82	570.91	1465.94	734.06	18.62	-1.359	0.000	0.072
125.00	-10.10	-2.38	0.00	-33.08	0.00	33.08	1122.14	561.07	1391.92	696.99	20.06	-1.378	0.000	0.056
130.00	-9.35	-2.21	0.00	-21.20	0.00	21.20	1101.16	550.58	1318.05	660.01	21.51	-1.397	0.000	0.041
135.00	-8.63	-2.05	0.00	-10.14	0.00	10.14	1078.87	539.43	1244.50	623.18	22.98	-1.409	0.000	0.024
137.50	-1.63	-0.58	0.00	-5.02	0.00	5.02	1067.24	533.62	1207.90	604.85	23.72	-1.412	0.000	0.010
140.00	-1.30	-0.50	0.00	-3.58	0.00	3.58	1055.28	527.64	1171.44	586.59	24.46	-1.414	0.000	0.007
145.00	-0.67	-0.34	0.00	-1.09	0.00	1.09	1030.38	515.19	1099.04	550.33	25.94	-1.416	0.000	0.003
147.00	-0.33	-0.18	0.00	-0.37	0.00	0.37	1020.06	510.03	1070.30	535.94	26.54	-1.417	0.000	0.001
148.00	0.00	-0.17	0.00	-0.19	0.00	0.19	1014.82	507.41	1055.98	528.78	26.83	-1.417	0.000	0.000

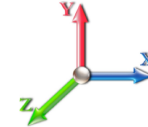
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E						<b>Iterations</b> 21
<b>Gust Response Factor</b>	1.10			<b>Sds</b>	0.22	<b>Ss</b> 0.20
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.10	<b>S1</b> 0.07
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.36	<b>SA</b>	0.04	<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1104.2	0.00	0.03	0.02	24.11	
10.00		1083.0	0.01	0.05	0.03	33.90	
15.00		1061.7	0.02	0.06	0.04	38.08	
20.00		1040.5	0.03	0.07	0.04	39.72	
25.00		1019.2	0.05	0.07	0.04	40.28	
30.00		998.02	0.08	0.07	0.04	40.48	
35.00		976.77	0.11	0.07	0.04	40.59	
39.00	Bot - Section 2	766.12	0.13	0.07	0.03	32.44	
40.00		349.56	0.14	0.07	0.03	14.86	
45.00	Top - Section 1	1724.4	0.17	0.07	0.03	74.47	
50.00		772.46	0.22	0.06	0.02	33.26	
50.50	Appurtenance(s)	117.27	0.22	0.06	0.02	5.04	
55.00		678.49	0.26	0.05	0.02	28.06	
60.00		737.05	0.31	0.04	0.01	27.40	
65.00		719.35	0.36	0.03	0.01	21.22	
70.00		701.65	0.42	0.01	0.01	12.47	
75.00		683.94	0.49	-0.01	0.01	1.77	
79.00	Bot - Section 3	534.41	0.54	-0.03	0.01	-5.70	
80.00		238.81	0.55	-0.04	0.01	-3.33	
84.00	Top - Section 2	942.51	0.61	-0.06	0.02	-24.58	
85.00	Appurtenance(s)	2482.1	0.62	-0.06	0.02	-71.39	
90.00		512.26	0.70	-0.09	0.03	-20.11	
95.00		498.09	0.78	-0.11	0.05	-21.93	
97.00	Appurtenance(s)	1557.2	0.81	-0.11	0.06	-68.89	
99.50	Appurtenance(s)	1840.9	0.85	-0.12	0.07	-79.36	
100.00		47.76	0.86	-0.12	0.07	-2.04	
105.00		469.76	0.95	-0.12	0.11	-16.60	
109.00	Appurtenance(s)	2286.0	1.03	-0.10	0.14	-57.57	
110.00		89.99	1.04	-0.10	0.15	-1.99	
115.00		441.44	1.14	-0.04	0.21	-1.33	
118.50	Appurtenance(s)	3966.9	1.21	0.02	0.26	54.51	
120.00	Top - Section 3	126.70	1.24	0.05	0.29	2.76	
125.00		310.47	1.35	0.19	0.38	16.28	
130.00		299.84	1.46	0.40	0.49	26.68	
135.00		289.22	1.57	0.70	0.63	38.06	
137.50	Appurtenance(s)	2570.8	1.63	0.88	0.71	399.02	
140.00		137.97	1.69	1.09	0.80	24.89	
145.00		267.97	1.81	1.60	1.00	63.12	
147.00	Appurtenance(s)	150.22	1.86	1.85	1.09	38.97	
148.00	Appurtenance(s)	118.97	1.89	1.98	1.14	32.33	
<b>Totals:</b>		<b>34,714.4</b>				<b>829.9</b>	<b>Total Wind: 35,402.7</b>

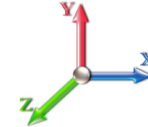
## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E										<b>Iterations</b> 21
<b>Gust Response Factor</b> 1.10						<b>Sds</b> 0.22				<b>Ss</b> 0.20
<b>Dead Load Factor</b> 1.20		<b>Seismic Load Factor</b> 1.00		<b>Sd1</b> 0.10						<b>S1</b> 0.07
<b>Wind Load Factor</b> 0.00		<b>Structure Frequency (f1)</b> 0.36		<b>SA</b> 0.04		<b>Seismic Importance Factor</b> 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.29	-1.21	0.00	-117.76	0.00	117.76	4270.00	2135.00	9669.74	4842.06	0.00	0.00	0.00	0.035
5.00	-44.76	-1.19	0.00	-111.73	0.00	111.73	4222.20	2111.10	9378.04	4695.99	0.00	-0.01	0.034	
10.00	-43.26	-1.16	0.00	-105.79	0.00	105.79	4173.09	2086.54	9087.66	4550.58	0.01	-0.01	0.034	
15.00	-41.78	-1.12	0.00	-100.00	0.00	100.00	4122.67	2061.34	8798.75	4405.92	0.03	-0.02	0.033	
20.00	-40.33	-1.09	0.00	-94.38	0.00	94.38	4070.95	2035.48	8511.51	4262.08	0.06	-0.03	0.032	
25.00	-38.91	-1.05	0.00	-88.93	0.00	88.93	4017.93	2008.97	8226.08	4119.16	0.09	-0.03	0.031	
30.00	-37.51	-1.02	0.00	-83.67	0.00	83.67	3963.61	1981.80	7942.65	3977.23	0.12	-0.04	0.031	
35.00	-36.13	-0.98	0.00	-78.59	0.00	78.59	3907.97	1953.99	7661.39	3836.39	0.17	-0.05	0.030	
39.00	-35.05	-0.95	0.00	-74.68	0.00	74.68	3862.53	1931.27	7438.05	3724.55	0.21	-0.05	0.029	
40.00	-34.59	-0.93	0.00	-73.73	0.00	73.73	3851.04	1925.52	7382.46	3696.72	0.22	-0.05	0.029	
45.00	-32.32	-0.86	0.00	-69.07	0.00	69.07	2980.94	1490.47	5677.43	2842.94	0.28	-0.06	0.035	
50.00	-31.19	-0.83	0.00	-64.77	0.00	64.77	2941.52	1470.76	5474.55	2741.34	0.34	-0.07	0.034	
50.50	-31.03	-0.82	0.00	-64.35	0.00	64.35	2937.50	1468.75	5454.31	2731.21	0.35	-0.07	0.034	
55.00	-30.04	-0.80	0.00	-60.64	0.00	60.64	2900.79	1450.39	5272.72	2640.28	0.42	-0.07	0.033	
60.00	-28.95	-0.77	0.00	-56.64	0.00	56.64	2858.76	1429.38	5072.11	2539.83	0.50	-0.08	0.032	
65.00	-27.89	-0.76	0.00	-52.77	0.00	52.77	2815.42	1407.71	4872.91	2440.07	0.59	-0.09	0.032	
70.00	-26.85	-0.74	0.00	-48.99	0.00	48.99	2770.78	1385.39	4675.26	2341.11	0.69	-0.10	0.031	
75.00	-25.82	-0.74	0.00	-45.27	0.00	45.27	2724.84	1362.42	4479.35	2243.01	0.79	-0.10	0.030	
79.00	-25.02	-0.74	0.00	-42.29	0.00	42.29	2687.14	1343.57	4323.99	2165.21	0.88	-0.11	0.029	
80.00	-24.69	-0.75	0.00	-41.54	0.00	41.54	2677.59	1338.79	4285.35	2145.86	0.91	-0.11	0.029	
84.00	-23.40	-0.74	0.00	-38.56	0.00	38.56	1954.67	977.33	3110.93	1557.78	1.00	-0.12	0.037	
85.00	-20.38	-0.74	0.00	-37.82	0.00	37.82	1948.85	974.42	3084.73	1544.66	1.03	-0.12	0.035	
90.00	-19.58	-0.74	0.00	-34.11	0.00	34.11	1918.95	959.48	2954.04	1479.22	1.16	-0.13	0.033	
95.00	-18.79	-0.74	0.00	-30.41	0.00	30.41	1887.76	943.88	2824.00	1414.10	1.30	-0.14	0.031	
97.00	-16.85	-0.74	0.00	-28.92	0.00	28.92	1874.91	937.46	2772.21	1388.16	1.36	-0.14	0.030	
99.50	-14.55	-0.73	0.00	-27.08	0.00	27.08	1858.56	929.28	2707.66	1355.84	1.43	-0.15	0.028	
100.00	-14.48	-0.73	0.00	-26.71	0.00	26.71	1855.26	927.63	2694.78	1349.39	1.45	-0.15	0.028	
105.00	-13.79	-0.73	0.00	-23.04	0.00	23.04	1821.45	910.73	2566.54	1285.18	1.61	-0.15	0.025	
109.00	-10.95	-0.73	0.00	-20.10	0.00	20.10	1793.47	896.73	2464.77	1234.22	1.74	-0.16	0.022	
110.00	-10.82	-0.73	0.00	-19.38	0.00	19.38	1786.34	893.17	2439.46	1221.54	1.77	-0.16	0.022	
115.00	-10.19	-0.73	0.00	-15.74	0.00	15.74	1749.93	874.96	2313.70	1158.57	1.94	-0.17	0.019	
118.50	-5.35	-0.66	0.00	-13.20	0.00	13.20	1723.66	861.83	2226.56	1114.93	2.07	-0.17	0.015	
120.00	-5.18	-0.66	0.00	-12.21	0.00	12.21	1712.21	856.11	2189.45	1096.35	2.13	-0.17	0.014	
120.00	-5.18	-0.66	0.00	-12.21	0.00	12.21	1141.82	570.91	1465.94	734.06	2.13	-0.17	0.021	
125.00	-4.75	-0.64	0.00	-8.93	0.00	8.93	1122.14	561.07	1391.92	696.99	2.31	-0.18	0.017	
130.00	-4.34	-0.61	0.00	-5.74	0.00	5.74	1101.16	550.58	1318.05	660.01	2.50	-0.18	0.013	
135.00	-3.93	-0.57	0.00	-2.69	0.00	2.69	1078.87	539.43	1244.50	623.18	2.70	-0.19	0.008	
137.50	-0.82	-0.16	0.00	-1.26	0.00	1.26	1067.24	533.62	1207.90	604.85	2.80	-0.19	0.003	
140.00	-0.65	-0.14	0.00	-0.86	0.00	0.86	1055.28	527.64	1171.44	586.59	2.90	-0.19	0.002	
145.00	-0.33	-0.07	0.00	-0.18	0.00	0.18	1030.38	515.19	1099.04	550.33	3.10	-0.19	0.001	
147.00	-0.14	-0.03	0.00	-0.03	0.00	0.03	1020.06	510.03	1070.30	535.94	3.17	-0.19	0.000	
148.00	0.00	-0.03	0.00	0.00	0.00	0.00	1014.82	507.41	1055.98	528.78	3.21	-0.19	0.000	



## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E				<b>Iterations</b> 21
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.22	<b>Ss</b> 0.20
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.07
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.36	<b>SA</b> 0.04
				<b>Seismic Importance Factor</b> 1.00



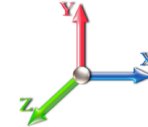
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1104.2	0.00	0.03	0.02	24.11	
10.00		1083.0	0.01	0.05	0.03	33.90	
15.00		1061.7	0.02	0.06	0.04	38.08	
20.00		1040.5	0.03	0.07	0.04	39.72	
25.00		1019.2	0.05	0.07	0.04	40.28	
30.00		998.02	0.08	0.07	0.04	40.48	
35.00		976.77	0.11	0.07	0.04	40.59	
39.00	Bot - Section 2	766.12	0.13	0.07	0.03	32.44	
40.00		349.56	0.14	0.07	0.03	14.86	
45.00	Top - Section 1	1724.4	0.17	0.07	0.03	74.47	
50.00		772.46	0.22	0.06	0.02	33.26	
50.50	Appurtenance(s)	117.27	0.22	0.06	0.02	5.04	
55.00		678.49	0.26	0.05	0.02	28.06	
60.00		737.05	0.31	0.04	0.01	27.40	
65.00		719.35	0.36	0.03	0.01	21.22	
70.00		701.65	0.42	0.01	0.01	12.47	
75.00		683.94	0.49	-0.01	0.01	1.77	
79.00	Bot - Section 3	534.41	0.54	-0.03	0.01	-5.70	
80.00		238.81	0.55	-0.04	0.01	-3.33	
84.00	Top - Section 2	942.51	0.61	-0.06	0.02	-24.58	
85.00	Appurtenance(s)	2482.1	0.62	-0.06	0.02	-71.39	
90.00		512.26	0.70	-0.09	0.03	-20.11	
95.00		498.09	0.78	-0.11	0.05	-21.93	
97.00	Appurtenance(s)	1557.2	0.81	-0.11	0.06	-68.89	
99.50	Appurtenance(s)	1840.9	0.85	-0.12	0.07	-79.36	
100.00		47.76	0.86	-0.12	0.07	-2.04	
105.00		469.76	0.95	-0.12	0.11	-16.60	
109.00	Appurtenance(s)	2286.0	1.03	-0.10	0.14	-57.57	
110.00		89.99	1.04	-0.10	0.15	-1.99	
115.00		441.44	1.14	-0.04	0.21	-1.33	
118.50	Appurtenance(s)	3966.9	1.21	0.02	0.26	54.51	
120.00	Top - Section 3	126.70	1.24	0.05	0.29	2.76	
125.00		310.47	1.35	0.19	0.38	16.28	
130.00		299.84	1.46	0.40	0.49	26.68	
135.00		289.22	1.57	0.70	0.63	38.06	
137.50	Appurtenance(s)	2570.8	1.63	0.88	0.71	399.02	
140.00		137.97	1.69	1.09	0.80	24.89	
145.00		267.97	1.81	1.60	1.00	63.12	
147.00	Appurtenance(s)	150.22	1.86	1.85	1.09	38.97	
148.00	Appurtenance(s)	118.97	1.89	1.98	1.14	32.33	
<b>Totals:</b>		<b>34,714.4</b>				<b>829.9</b>	<b>Total Wind: 35,402.7</b>

## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 0.9D + 1.0E		<b>Iterations</b> 21
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.22	<b>Ss</b> 0.20
<b>Dead Load Factor</b> 0.90	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.07
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.36	<b>SA</b> 0.04
	<b>Seismic Importance Factor</b> 1.00	



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-34.72	-1.21	0.00	-116.67	0.00	116.67	4270.00	2135.00	9669.74	4842.06	0.00	0.00	0.00	0.032
5.00	-33.57	-1.19	0.00	-110.64	0.00	110.64	4222.20	2111.10	9378.04	4695.99	0.00	-0.01	0.032	
10.00	-32.44	-1.16	0.00	-104.71	0.00	104.71	4173.09	2086.54	9087.66	4550.58	0.01	-0.01	0.031	
15.00	-31.34	-1.12	0.00	-98.94	0.00	98.94	4122.67	2061.34	8798.75	4405.92	0.03	-0.02	0.030	
20.00	-30.25	-1.08	0.00	-93.34	0.00	93.34	4070.95	2035.48	8511.51	4262.08	0.05	-0.03	0.029	
25.00	-29.18	-1.05	0.00	-87.92	0.00	87.92	4017.93	2008.97	8226.08	4119.16	0.09	-0.03	0.029	
30.00	-28.13	-1.01	0.00	-82.69	0.00	82.69	3963.61	1981.80	7942.65	3977.23	0.12	-0.04	0.028	
35.00	-27.10	-0.97	0.00	-77.65	0.00	77.65	3907.97	1953.99	7661.39	3836.39	0.17	-0.05	0.027	
39.00	-26.29	-0.94	0.00	-73.77	0.00	73.77	3862.53	1931.27	7438.05	3724.55	0.21	-0.05	0.027	
40.00	-25.94	-0.92	0.00	-72.83	0.00	72.83	3851.04	1925.52	7382.46	3696.72	0.22	-0.05	0.026	
45.00	-24.24	-0.85	0.00	-68.21	0.00	68.21	2980.94	1490.47	5677.43	2842.94	0.28	-0.06	0.032	
50.00	-23.39	-0.82	0.00	-63.95	0.00	63.95	2941.52	1470.76	5474.55	2741.34	0.34	-0.07	0.031	
50.50	-23.27	-0.82	0.00	-63.54	0.00	63.54	2937.50	1468.75	5454.31	2731.21	0.35	-0.07	0.031	
55.00	-22.53	-0.79	0.00	-59.87	0.00	59.87	2900.79	1450.39	5272.72	2640.28	0.41	-0.07	0.030	
60.00	-21.71	-0.76	0.00	-55.93	0.00	55.93	2858.76	1429.38	5072.11	2539.83	0.49	-0.08	0.030	
65.00	-20.92	-0.74	0.00	-52.11	0.00	52.11	2815.42	1407.71	4872.91	2440.07	0.58	-0.09	0.029	
70.00	-20.13	-0.73	0.00	-48.39	0.00	48.39	2770.78	1385.39	4675.26	2341.11	0.68	-0.10	0.028	
75.00	-19.37	-0.73	0.00	-44.73	0.00	44.73	2724.84	1362.42	4479.35	2243.01	0.78	-0.10	0.027	
79.00	-18.77	-0.73	0.00	-41.80	0.00	41.80	2687.14	1343.57	4323.99	2165.21	0.87	-0.11	0.026	
80.00	-18.52	-0.73	0.00	-41.07	0.00	41.07	2677.59	1338.79	4285.35	2145.86	0.90	-0.11	0.026	
84.00	-17.55	-0.73	0.00	-38.13	0.00	38.13	1954.67	977.33	3110.93	1557.78	0.99	-0.12	0.033	
85.00	-15.29	-0.73	0.00	-37.40	0.00	37.40	1948.85	974.42	3084.73	1544.66	1.02	-0.12	0.032	
90.00	-14.68	-0.73	0.00	-33.76	0.00	33.76	1918.95	959.48	2954.04	1479.22	1.15	-0.13	0.030	
95.00	-14.09	-0.73	0.00	-30.11	0.00	30.11	1887.76	943.88	2824.00	1414.10	1.28	-0.14	0.029	
97.00	-12.64	-0.73	0.00	-28.65	0.00	28.65	1874.91	937.46	2772.21	1388.16	1.34	-0.14	0.027	
99.50	-10.91	-0.72	0.00	-26.83	0.00	26.83	1858.56	929.28	2707.66	1355.84	1.42	-0.14	0.026	
100.00	-10.86	-0.72	0.00	-26.47	0.00	26.47	1855.26	927.63	2694.78	1349.39	1.43	-0.14	0.025	
105.00	-10.34	-0.72	0.00	-22.85	0.00	22.85	1821.45	910.73	2566.54	1285.18	1.59	-0.15	0.023	
109.00	-8.21	-0.72	0.00	-19.95	0.00	19.95	1793.47	896.73	2464.77	1234.22	1.72	-0.16	0.021	
110.00	-8.12	-0.72	0.00	-19.23	0.00	19.23	1786.34	893.17	2439.46	1221.54	1.75	-0.16	0.020	
115.00	-7.64	-0.72	0.00	-15.63	0.00	15.63	1749.93	874.96	2313.70	1158.57	1.92	-0.17	0.018	
118.50	-4.01	-0.65	0.00	-13.12	0.00	13.12	1723.66	861.83	2226.56	1114.93	2.05	-0.17	0.014	
120.00	-3.89	-0.65	0.00	-12.14	0.00	12.14	1712.21	856.11	2189.45	1096.35	2.10	-0.17	0.013	
120.00	-3.89	-0.65	0.00	-12.14	0.00	12.14	1141.82	570.91	1465.94	734.06	2.10	-0.17	0.020	
125.00	-3.56	-0.63	0.00	-8.88	0.00	8.88	1122.14	561.07	1391.92	696.99	2.29	-0.18	0.016	
130.00	-3.25	-0.61	0.00	-5.71	0.00	5.71	1101.16	550.58	1318.05	660.01	2.47	-0.18	0.012	
135.00	-2.95	-0.57	0.00	-2.68	0.00	2.68	1078.87	539.43	1244.50	623.18	2.67	-0.19	0.007	
137.50	-0.62	-0.16	0.00	-1.26	0.00	1.26	1067.24	533.62	1207.90	604.85	2.77	-0.19	0.003	
140.00	-0.49	-0.14	0.00	-0.86	0.00	0.86	1055.28	527.64	1171.44	586.59	2.86	-0.19	0.002	
145.00	-0.24	-0.07	0.00	-0.18	0.00	0.18	1030.38	515.19	1099.04	550.33	3.06	-0.19	0.001	
147.00	-0.11	-0.03	0.00	-0.03	0.00	0.03	1020.06	510.03	1070.30	535.94	3.14	-0.19	0.000	
148.00	0.00	-0.03	0.00	0.00	0.00	0.00	1014.82	507.41	1055.98	528.78	3.18	-0.19	0.000	

## Wind Loading - Shaft

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



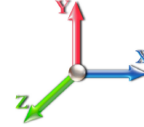
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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 23

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	259.46	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	254.55	0.650	0.000	5.00	23.230	15.10	123.6	0.0	1104.2
10.00		1.00	0.85	7.442	8.19	249.64	0.650	0.000	5.00	22.786	14.81	121.2	0.0	1083.0
15.00		1.00	0.85	7.442	8.19	244.73	0.650	0.000	5.00	22.342	14.52	118.9	0.0	1061.8
20.00		1.00	0.90	7.896	8.69	247.03	0.650	0.000	5.00	21.899	14.23	123.6	0.0	1040.5
25.00		1.00	0.95	8.276	9.10	247.72	0.650	0.000	5.00	21.455	13.95	127.0	0.0	1019.3
30.00		1.00	0.98	8.600	9.46	247.24	0.650	0.000	5.00	21.011	13.66	129.2	0.0	998.0
35.00		1.00	1.01	8.883	9.77	245.92	0.650	0.000	5.00	20.567	13.37	130.6	0.0	976.8
39.00 Bot - Section 2		1.00	1.04	9.088	10.00	244.40	0.650	0.000	4.00	16.134	10.49	104.8	0.0	766.1
40.00		1.00	1.04	9.137	10.05	243.96	0.650	0.000	1.00	4.042	2.63	26.4	0.0	349.6
45.00 Top - Section 1		1.00	1.07	9.366	10.30	241.49	0.650	0.000	5.00	19.943	12.96	133.6	0.0	1724.4
50.00		1.00	1.09	9.576	10.53	241.94	0.650	0.000	5.00	19.500	12.67	133.5	0.0	772.5
50.50 Appurtenance(s)		1.00	1.10	9.596	10.56	241.63	0.650	0.000	0.50	1.926	1.25	13.2	0.0	76.3
55.00		1.00	1.12	9.770	10.75	238.75	0.650	0.000	4.50	17.130	11.13	119.7	0.0	678.5
60.00		1.00	1.14	9.951	10.95	235.27	0.650	0.000	5.00	18.612	12.10	132.4	0.0	737.1
65.00		1.00	1.16	10.120	11.13	231.53	0.650	0.000	5.00	18.168	11.81	131.5	0.0	719.4
70.00		1.00	1.17	10.279	11.31	227.57	0.650	0.000	5.00	17.724	11.52	130.3	0.0	701.6
75.00		1.00	1.19	10.430	11.47	223.42	0.650	0.000	5.00	17.280	11.23	128.9	0.0	683.9
79.00 Bot - Section 3		1.00	1.20	10.544	11.60	219.96	0.650	0.000	4.00	13.504	8.78	101.8	0.0	534.4
80.00		1.00	1.21	10.572	11.63	219.09	0.650	0.000	1.00	3.374	2.19	25.5	0.0	238.8
84.00 Top - Section 2		1.00	1.22	10.681	11.75	215.51	0.650	0.000	4.00	13.319	8.66	101.7	0.0	942.5
85.00 Appurtenance(s)		1.00	1.22	10.708	11.78	217.40	0.650	0.000	1.00	3.285	2.14	25.2	0.0	104.2
90.00		1.00	1.24	10.838	11.92	212.79	0.650	0.000	5.00	16.160	10.50	125.2	0.0	512.3
95.00		1.00	1.25	10.962	12.06	208.04	0.650	0.000	5.00	15.716	10.22	123.2	0.0	498.1
97.00 Appurtenance(s)		1.00	1.26	11.010	12.11	206.11	0.650	0.000	2.00	6.162	4.01	48.5	0.0	195.3
99.50 Appurtenance(s)		1.00	1.26	11.069	12.18	203.67	0.650	0.000	2.50	7.603	4.94	60.2	0.0	240.9
100.00		1.00	1.27	11.081	12.19	203.18	0.650	0.000	0.50	1.507	0.98	11.9	0.0	47.8
105.00		1.00	1.28	11.195	12.31	198.20	0.650	0.000	5.00	14.828	9.64	118.7	0.0	469.8
109.00 Appurtenance(s)		1.00	1.29	11.284	12.41	194.14	0.650	0.000	4.00	11.543	7.50	93.1	0.0	365.6
110.00		1.00	1.29	11.305	12.44	193.12	0.650	0.000	1.00	2.841	1.85	23.0	0.0	90.0
115.00		1.00	1.30	11.412	12.55	187.95	0.650	0.000	5.00	13.941	9.06	113.7	0.0	441.4
118.50 Appurtenance(s)		1.00	1.31	11.484	12.63	184.27	0.650	0.000	3.50	9.494	6.17	78.0	0.0	300.6
120.00 Top - Section 3		1.00	1.32	11.514	12.67	182.68	0.650	0.000	1.50	4.002	2.60	33.0	0.0	126.7
125.00		1.00	1.33	11.614	12.78	177.33	0.650	0.000	5.00	13.053	8.48	108.4	0.0	310.5
130.00		1.00	1.34	11.710	12.88	171.91	0.650	0.000	5.00	12.609	8.20	105.6	0.0	299.8
135.00		1.00	1.35	11.803	12.98	166.41	0.650	0.000	5.00	12.165	7.91	102.7	0.0	289.2
137.50 Appurtenance(s)		1.00	1.35	11.849	13.03	163.63	0.650	0.000	2.50	5.916	3.85	50.1	0.0	140.6
140.00		1.00	1.36	11.894	13.08	160.83	0.650	0.000	2.50	5.805	3.77	49.4	0.0	138.0
145.00		1.00	1.37	11.982	13.18	155.20	0.650	0.000	5.00	11.277	7.33	96.6	0.0	268.0
147.00 Appurtenance(s)		1.00	1.37	12.017	13.22	152.93	0.650	0.000	2.00	4.387	2.85	37.7	0.0	104.2
148.00 Appurtenance(s)		1.00	1.37	12.034	13.24	151.79	0.650	0.000	1.00	2.167	1.41	18.6	0.0	51.5
<b>Totals:</b>								<b>148.00</b>			<b>3,580.1</b>	<b>21,202.9</b>		

## Discrete Appurtenance Forces

**Structure:** CT13057-A-SBA  
**Site Name:** Newtown  
**Height:** 148.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

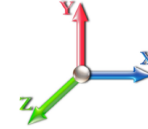
**Code:** TIA-222-G  
**Exposure:** C  
**Crest Height:** 0.00  
**Site Class:** D - Stiff Soil  
**Struct Class:** II

5/11/2022  
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**Load Case:** 1.0D + 1.0W 60 mph Wind

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



**Iterations** 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	148.00	DB-TDD6492A-A	1	12.102	13.312	1.00	1.00	2.41	21.00	0.000	4.021	32.08	0.00	129.00
2	148.00	6' Lightning rod	1	12.034	13.238	1.00	1.00	0.38	6.50	0.000	0.000	5.03	0.00	0.00
3	148.00	Pipe Mount	1	12.034	13.238	1.00	1.00	2.63	40.00	0.000	0.000	34.81	0.00	0.00
4	147.00	Trombone	1	12.042	13.246	1.00	1.00	1.00	6.00	0.000	1.458	13.25	0.00	19.32
5	147.00	Standoff	1	12.017	13.219	1.00	1.00	2.63	40.00	0.000	0.000	34.76	0.00	0.00
6	137.50	JMA Wireless	6	11.849	13.034	0.70	0.80	41.22	276.00	0.000	0.000	537.22	0.00	0.00
7	137.50	Commscope	3	11.849	13.034	0.71	0.80	13.86	60.00	0.000	0.000	180.69	0.00	0.00
8	137.50	Low Profile Platform	1	11.849	13.034	1.00	1.00	22.00	1500.00	0.000	0.000	286.75	0.00	0.00
9	137.50	Swedcom SC-E 6014	3	11.849	13.034	0.78	0.80	7.75	45.00	0.000	0.000	101.04	0.00	0.00
10	137.50	Samsung RF4439d-25A	3	11.849	13.034	0.54	0.80	2.12	145.50	0.000	0.000	27.67	0.00	0.00
11	137.50	Samsung RF4440d-13A	3	11.849	13.034	0.54	0.80	2.12	145.50	0.000	0.000	27.67	0.00	0.00
12	137.50	Commscope	1	11.849	13.034	0.54	0.80	3.00	20.00	0.000	0.000	39.12	0.00	0.00
13	137.50	Samsung MT6407-77A -	3	11.849	13.034	0.56	0.80	7.88	238.20	0.000	0.000	102.70	0.00	0.00
14	118.50	Pipe Mast	3	11.484	12.632	0.56	0.75	2.62	180.00	0.000	0.000	33.04	0.00	0.00
15	118.50	Kathrein 800-10965	6	11.484	12.632	0.53	0.75	44.12	651.60	0.000	0.000	557.37	0.00	0.00
16	118.50	Ericsson 4449 B5/B12	3	11.484	12.632	0.50	0.75	2.97	213.00	0.000	0.000	37.51	0.00	0.00
17	118.50	Ericsson RRUS 8843 B2	3	11.484	12.632	0.50	0.75	2.47	210.00	0.000	0.000	31.23	0.00	0.00
18	118.50	SitePro Sitepro 1 P/N	1	11.484	12.632	1.00	1.00	9.75	406.61	0.000	0.000	123.16	0.00	0.00
19	118.50	Low Profile Platform	1	11.484	12.632	1.00	1.00	22.00	1500.00	0.000	0.000	277.91	0.00	0.00
20	118.50	Powerwave 7770	3	11.484	12.632	0.55	0.75	9.03	105.00	0.000	0.000	114.12	0.00	0.00
21	118.50	Powerwave LGP21401	6	11.484	12.632	0.52	0.75	4.06	84.60	0.000	0.000	51.33	0.00	0.00
22	118.50	Raycap DC6-48-60-18-8F	2	11.484	12.632	0.56	0.75	1.04	65.60	0.000	0.000	13.07	0.00	0.00
23	118.50	RRH Collar Mount	1	11.484	12.632	0.56	0.75	2.81	250.00	0.000	0.000	35.53	0.00	0.00
24	109.00	T-Arms w/ Working	3	11.284	12.412	0.56	0.75	20.25	1050.00	0.000	0.000	251.34	0.00	0.00
25	109.00	1900MHz RRH - RRU	3	11.284	12.412	0.54	0.80	6.11	132.00	0.000	0.000	75.84	0.00	0.00
26	109.00	APXVSP18-C-A20	3	11.284	12.412	0.66	0.80	15.98	171.00	0.000	0.000	198.29	0.00	0.00
27	109.00	APXVTM14-C-I20	3	11.284	12.412	0.68	0.80	12.93	168.00	0.000	0.000	160.53	0.00	0.00
28	109.00	ACU-A20-N - RET	4	11.284	12.412	0.40	0.80	0.22	4.00	0.000	0.000	2.78	0.00	0.00
29	109.00	800 MHz RRH - RRU	3	11.284	12.412	0.54	0.80	4.00	159.00	0.000	0.000	49.70	0.00	0.00
30	109.00	800MHz RRH Filter	3	11.284	12.412	0.54	0.80	1.25	26.40	0.000	0.000	15.57	0.00	0.00
31	109.00	TD-RRH8x20 - RRU	3	11.284	12.412	0.54	0.80	6.51	210.00	0.000	0.000	80.83	0.00	0.00
32	99.50	Platform w/ Hand Rail	1	11.069	12.176	1.00	1.00	32.00	1600.00	0.000	0.000	389.63	0.00	0.00
33	97.00	Commscope VV-65A-R1	3	11.010	12.111	0.59	0.80	14.03	88.50	0.000	0.000	169.92	0.00	0.00
34	97.00	RFS	3	11.010	12.111	0.58	0.80	35.46	368.40	0.000	0.000	429.46	0.00	0.00
35	97.00	Andrew RR65-18-00DPL2	3	11.010	12.111	0.54	0.80	7.12	54.00	0.000	0.000	86.18	0.00	0.00
36	97.00	Ericsson AIR6419 B41	3	11.010	12.111	0.61	0.80	6.93	198.30	0.000	0.000	83.94	0.00	0.00
37	97.00	RFS ATMAA1412D-1A20	3	11.010	12.111	0.54	0.80	1.88	39.00	0.000	0.000	22.78	0.00	0.00
38	97.00	Ericsson 4460 B25 + B66	3	11.010	12.111	0.54	0.80	4.58	327.00	0.000	0.000	55.50	0.00	0.00
39	97.00	Ericsson 4480 B71 + B85	3	11.010	12.111	0.54	0.80	4.58	279.00	0.000	0.000	55.50	0.00	0.00
40	97.00	Kathrein 782 11054	3	11.010	12.111	0.54	0.80	0.45	7.80	0.000	0.000	5.45	0.00	0.00
41	85.00	MC-PK8-DSH	1	10.708	11.779	1.00	1.00	37.59	1727.00	0.000	0.000	442.77	0.00	0.00
42	85.00	RDIDC-9181-OF-48	1	10.708	11.779	0.75	0.75	1.51	21.90	0.000	0.000	17.76	0.00	0.00
43	85.00	TA08025-B604	3	10.708	11.779	0.50	0.75	2.95	191.70	0.000	0.000	34.80	0.00	0.00
44	85.00	TA08025-B605	3	10.708	11.779	0.50	0.75	2.95	225.00	0.000	0.000	34.80	0.00	0.00
45	85.00	FFVV-65B-R2	3	10.708	11.779	0.55	0.75	20.43	212.40	0.000	0.000	240.64	0.00	0.00
46	50.50	3 ft Standoff	1	9.596	10.556	1.00	1.00	2.63	40.00	0.000	0.000	27.76	0.00	0.00
47	50.50	260B	1	9.596	10.556	1.00	1.00	0.09	1.00	0.000	0.000	0.95	0.00	0.00

## Discrete Appurtenance Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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**Totals:** 13,511.51

5,629.81

## Total Applied Force Summary

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		123.61	1272.42	0.00	0.00
10.00		121.25	1251.17	0.00	0.00
15.00		118.88	1229.93	0.00	0.00
20.00		123.63	1208.68	0.00	0.00
25.00		126.95	1187.44	0.00	0.00
30.00		129.19	1166.19	0.00	0.00
35.00		130.63	1144.95	0.00	0.00
39.00		104.84	900.66	0.00	0.00
40.00		26.41	383.20	0.00	0.00
45.00		133.56	1892.62	0.00	0.00
50.00		133.51	940.64	0.00	0.00
50.50	(2) attachments	41.92	134.09	0.00	0.00
55.00		119.67	829.12	0.00	0.00
60.00		132.42	904.43	0.00	0.00
65.00		131.46	886.73	0.00	0.00
70.00		130.26	869.02	0.00	0.00
75.00		128.86	851.32	0.00	0.00
79.00		101.81	668.31	0.00	0.00
80.00		25.50	272.29	0.00	0.00
84.00		101.72	1076.41	0.00	0.00
85.00	(11) attachments	795.92	2515.63	0.00	0.00
90.00		125.22	669.68	0.00	0.00
95.00		123.18	655.51	0.00	0.00
97.00	(24) attachments	957.25	1620.24	0.00	0.00
99.50	(1) attachments	449.80	1919.61	0.00	0.00
100.00		11.94	57.87	0.00	0.00
105.00		118.69	570.92	0.00	0.00
109.00	(25) attachments	928.01	2366.94	0.00	0.00
110.00		22.97	107.58	0.00	0.00
115.00		113.75	529.39	0.00	0.00
118.50	(29) attachments	1352.24	4028.56	0.00	0.00
120.00		32.95	140.84	0.00	0.00
125.00		108.39	357.62	0.00	0.00
130.00		105.57	347.00	0.00	0.00
135.00		102.67	336.38	0.00	0.00
137.50	(23) attachments	1352.97	2594.40	0.00	0.00
140.00		49.37	140.57	0.00	0.00
145.00		96.62	273.17	0.00	0.00
147.00	(2) attachments	85.70	152.30	0.00	19.32
148.00	(3) attachments	90.57	119.49	0.00	129.00
<b>Totals:</b>		<b>9,209.87</b>	<b>38,573.30</b>	<b>0.00</b>	<b>148.32</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

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



**Iterations** 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	7.442	0.00	0.80
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	7.442	0.00	0.80
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	7.442	0.00	0.80
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	7.896	0.00	0.80
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	8.276	0.00	0.80
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	8.600	0.00	0.80
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	8.883	0.00	0.80
39.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.013	0.000	9.088	0.00	0.64
40.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	9.137	0.00	0.16
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	9.366	0.00	0.80
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	9.576	0.00	0.80
50.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.014	0.000	9.596	0.00	0.08
<b>Totals:</b>											<b>0.0</b>	<b>8.1</b>

## Calculated Forces

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Iterations** 23

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



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.57	-9.23	0.00	-920.83	0.00	920.83	4270.00	2135.00	9669.74	4842.06	0.00	0.000	0.000	0.199
5.00	-37.29	-9.14	0.00	-874.70	0.00	874.70	4222.20	2111.10	9378.04	4695.99	0.03	-0.051	0.000	0.195
10.00	-36.03	-9.05	0.00	-829.02	0.00	829.02	4173.09	2086.54	9087.66	4550.58	0.11	-0.102	0.000	0.191
15.00	-34.79	-8.96	0.00	-783.79	0.00	783.79	4122.67	2061.34	8798.75	4405.92	0.24	-0.153	0.000	0.186
20.00	-33.58	-8.86	0.00	-739.02	0.00	739.02	4070.95	2035.48	8511.51	4262.08	0.43	-0.205	0.000	0.182
25.00	-32.38	-8.76	0.00	-694.73	0.00	694.73	4017.93	2008.97	8226.08	4119.16	0.67	-0.256	0.000	0.177
30.00	-31.21	-8.65	0.00	-650.95	0.00	650.95	3963.61	1981.80	7942.65	3977.23	0.97	-0.308	0.000	0.172
35.00	-30.06	-8.54	0.00	-607.71	0.00	607.71	3907.97	1953.99	7661.39	3836.39	1.32	-0.359	0.000	0.166
39.00	-29.15	-8.44	0.00	-573.57	0.00	573.57	3862.53	1931.27	7438.05	3724.55	1.64	-0.400	0.000	0.162
40.00	-28.77	-8.42	0.00	-565.14	0.00	565.14	3851.04	1925.52	7382.46	3696.72	1.72	-0.411	0.000	0.160
45.00	-26.87	-8.30	0.00	-523.02	0.00	523.02	2980.94	1490.47	5677.43	2842.94	2.18	-0.462	0.000	0.193
50.00	-25.92	-8.17	0.00	-481.52	0.00	481.52	2941.52	1470.76	5474.55	2741.34	2.69	-0.512	0.000	0.184
50.50	-25.79	-8.14	0.00	-477.44	0.00	477.44	2937.50	1468.75	5454.31	2731.21	2.75	-0.518	0.000	0.184
55.00	-24.95	-8.04	0.00	-440.81	0.00	440.81	2900.79	1450.39	5272.72	2640.28	3.26	-0.569	0.000	0.176
60.00	-24.04	-7.92	0.00	-400.63	0.00	400.63	2858.76	1429.38	5072.11	2539.83	3.89	-0.624	0.000	0.166
65.00	-23.15	-7.80	0.00	-361.04	0.00	361.04	2815.42	1407.71	4872.91	2440.07	4.57	-0.678	0.000	0.156
70.00	-22.27	-7.68	0.00	-322.06	0.00	322.06	2770.78	1385.39	4675.26	2341.11	5.31	-0.730	0.000	0.146
75.00	-21.42	-7.55	0.00	-283.68	0.00	283.68	2724.84	1362.42	4479.35	2243.01	6.10	-0.779	0.000	0.134
79.00	-20.75	-7.45	0.00	-253.47	0.00	253.47	2687.14	1343.57	4323.99	2165.21	6.77	-0.817	0.000	0.125
80.00	-20.47	-7.43	0.00	-246.03	0.00	246.03	2677.59	1338.79	4285.35	2145.86	6.94	-0.827	0.000	0.122
84.00	-19.40	-7.32	0.00	-216.31	0.00	216.31	1954.67	977.33	3110.93	1557.78	7.65	-0.862	0.000	0.149
85.00	-16.89	-6.49	0.00	-209.00	0.00	209.00	1948.85	974.42	3084.73	1544.66	7.83	-0.871	0.000	0.144
90.00	-16.22	-6.37	0.00	-176.53	0.00	176.53	1918.95	959.48	2954.04	1479.22	8.77	-0.919	0.000	0.128
95.00	-15.56	-6.24	0.00	-144.69	0.00	144.69	1887.76	943.88	2824.00	1414.10	9.76	-0.963	0.000	0.111
97.00	-13.95	-5.26	0.00	-132.20	0.00	132.20	1874.91	937.46	2772.21	1388.16	10.16	-0.979	0.000	0.103
99.50	-12.04	-4.78	0.00	-119.04	0.00	119.04	1858.56	929.28	2707.66	1355.84	10.68	-0.998	0.000	0.094
100.00	-11.98	-4.77	0.00	-116.65	0.00	116.65	1855.26	927.63	2694.78	1349.39	10.78	-1.002	0.000	0.093
105.00	-11.41	-4.65	0.00	-92.78	0.00	92.78	1821.45	910.73	2566.54	1285.18	11.85	-1.036	0.000	0.078
109.00	-9.06	-3.68	0.00	-74.17	0.00	74.17	1793.47	896.73	2464.77	1234.22	12.73	-1.059	0.000	0.065
110.00	-8.95	-3.66	0.00	-70.49	0.00	70.49	1786.34	893.17	2439.46	1221.54	12.95	-1.065	0.000	0.063
115.00	-8.42	-3.54	0.00	-52.19	0.00	52.19	1749.93	874.96	2313.70	1158.57	14.08	-1.088	0.000	0.050
118.50	-4.42	-2.11	0.00	-39.81	0.00	39.81	1723.66	861.83	2226.56	1114.93	14.89	-1.102	0.000	0.038
120.00	-4.28	-2.08	0.00	-36.64	0.00	36.64	1712.21	856.11	2189.45	1096.35	15.23	-1.107	0.000	0.036
120.00	-4.28	-2.08	0.00	-36.64	0.00	36.64	1141.82	570.91	1465.94	734.06	15.23	-1.107	0.000	0.054
125.00	-3.93	-1.96	0.00	-26.27	0.00	26.27	1122.14	561.07	1391.92	696.99	16.40	-1.122	0.000	0.041
130.00	-3.58	-1.85	0.00	-16.46	0.00	16.46	1101.16	550.58	1318.05	660.01	17.58	-1.137	0.000	0.028
135.00	-3.25	-1.74	0.00	-7.21	0.00	7.21	1078.87	539.43	1244.50	623.18	18.78	-1.146	0.000	0.015
137.50	-0.68	-0.34	0.00	-2.86	0.00	2.86	1067.24	533.62	1207.90	604.85	19.38	-1.148	0.000	0.005
140.00	-0.54	-0.28	0.00	-2.02	0.00	2.02	1055.28	527.64	1171.44	586.59	19.98	-1.149	0.000	0.004
145.00	-0.27	-0.18	0.00	-0.60	0.00	0.60	1030.38	515.19	1099.04	550.33	21.19	-1.150	0.000	0.001
147.00	-0.12	-0.09	0.00	-0.22	0.00	0.22	1020.06	510.03	1070.30	535.94	21.67	-1.151	0.000	0.001
148.00	0.00	-0.09	0.00	-0.13	0.00	0.13	1014.82	507.41	1055.98	528.78	21.91	-1.151	0.000	0.000



## Final Analysis Summary

<b>Structure:</b> CT13057-A-SBA	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	35.5	0.00	46.23	0.00	0.00	3557.19
0.9D + 1.6W 93 mph Wind	35.5	0.00	34.65	0.00	0.00	3526.47
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.1	0.00	75.76	0.00	0.00	1119.81
1.2D + 1.0E	1.2	0.00	46.29	0.00	0.00	117.76
0.9D + 1.0E	1.2	0.00	34.72	0.00	0.00	116.67
1.0D + 1.0W 60 mph Wind	9.2	0.00	38.57	0.00	0.00	920.83

### 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 93 mph Wind	-46.23	-35.48	0.00	-3557.1	0.00	-3557.1	4270.00	2135.0	9669.74	4842.06	0.00	0.746
0.9D + 1.6W 93 mph Wind	-34.65	-35.46	0.00	-3526.4	0.00	-3526.4	4270.00	2135.0	9669.74	4842.06	0.00	0.737
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-75.76	-11.08	0.00	-1119.8	0.00	-1119.8	4270.00	2135.0	9669.74	4842.06	0.00	0.249
1.2D + 1.0E	-23.40	-0.74	0.00	-38.56	0.00	-38.56	1954.67	977.33	3110.93	1557.78	84.00	0.037
0.9D + 1.0E	-17.55	-0.73	0.00	-38.13	0.00	-38.13	1954.67	977.33	3110.93	1557.78	84.00	0.033
1.0D + 1.0W 60 mph Wind	-38.57	-9.23	0.00	-920.83	0.00	-920.83	4270.00	2135.0	9669.74	4842.06	0.00	0.199

## Base Plate Summary

<b>Structure:</b> CT13057-A-SB	<b>Code:</b> TIA-222-G	5/11/2022
<b>Site Name:</b> Newtown	<b>Exposure:</b> C	
<b>Height:</b> 148.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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Reactions	Base Plate	Anchor Bolts
Original Design	<b>Yield (ksi):</b> 55.00	<b>Bolt Circle:</b> 62.00
<b>Moment (kip-ft):</b> 3750.00	<b>Width (in):</b> 61.00	<b>Number Bolts:</b> 16.00
<b>Axial (kip):</b> 38.00	<b>Style:</b> Clipped	<b>Bolt Type:</b> 2.25" 18J
<b>Shear (kip):</b> 35.00	<b>Polygon Sides:</b> 0.00	<b>Bolt Diameter (in):</b> 2.25
Analysis (1.2D + 1.6W)	<b>Clip Length (in):</b> 10.00	<b>Yield (ksi):</b> 75.00
<b>Moment (kip-ft):</b> 3557.19	<b>Effective Len (in):</b> 8.16	<b>Ultimate (ksi):</b> 100.00
<b>Axial (kip):</b> 46.23	<b>Moment (kip-in):</b> 580.98	<b>Arrangement:</b> Clustered
<b>Shear (kip):</b> 35.48	<b>Allow Stress (ksi):</b> 74.25	<b>Cluster Dist (in):</b> 6.00
	<b>Applied Stress (ksi):</b> 56.43	<b>Start Angle (deg):</b> 45.00
	<b>Stress Ratio:</b> 0.76	Compression
		<b>Force (kip):</b> 176.86
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.70
		Tension
		<b>Force (kip):</b> 167.39
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.66



# Monopole Mat Foundation Design

Date

5/11/2022

<b>Customer Name:</b>	T-Mobile	<b>TIA Standard:</b>	TIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	148
<b>Site Number:</b>	CT13057-A-SBA	<b>Engineer Name:</b>	K. Azisllari
<b>Engr. Number:</b>	128988	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations
Monopole
Analysis

**Structure Type:**

**Analysis or Design?**

**Base Reactions (Factored):**

Axial Load (Kips):	46.2	Shear Force (Kips):	35.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3557.2

Allowable overstress %: 5.0%

**Foundation Geometries:**

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	7.5
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5

Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5
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**Material Properties and Rebar Info:**

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	11	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

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

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

**Soil Design Parameters:**

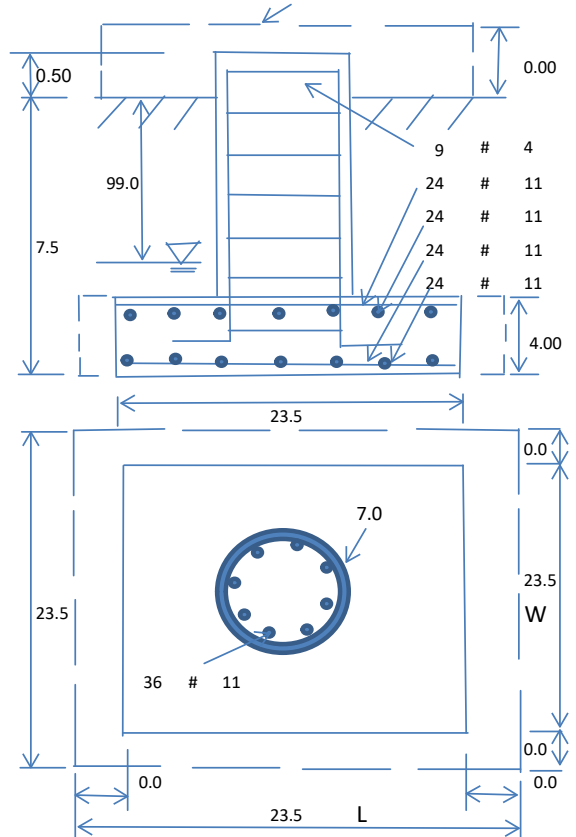
Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	425	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00			

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1798.18	Total Dry Soil Weight (Kips):	197.80
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	197.80	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2362.94	Total Dry Concrete Weight (Kips):	354.44
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	354.44	Total Vertical Load on Base (Kips):	598.44

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	2503	< Allowable Factored Soil Bearing (psf):	6000	0.42	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6382.8	> Design Factored Momont (kips-ft):	3573	0.56	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.79				OK!



**Check the capacities of Reinforcing Concrete:**

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

Load/  
Capacity  
Ratio

**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8832.5	> Design Factored Moment (Mu, Kips-F	3699.2	0.42	OK!
Calculated Shear Capacity (Kips):	589.7	> Design Factored Shear (Kips):	35.5	0.06	OK!
Calculated Tension Capacity (Tn, Kips):	3032.6	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7273.9	> Design Factored Axial Load (Pu Kips):	46.2	0.01	OK!
Moment & Axial Strength Combination:	0.42	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is satisfied per ACI			

**(2).Concrete Pad:**

One-Way Design Shear Capacity (L-Direction, Kips):	1026.7	> One-Way Factored Shear (L-D. Kips):	197.6	0.19	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1026.7	> One-Way Factored Shear (W-D., Kips)	197.6	0.19	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	823.5	> One-Way Factored Shear (C-C, Kips):	187.3	0.23	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0030	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0030		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	7202.6	> Moment at Bottom ( L-Dir. K-Ft):	1197.1	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	7202.6	> Moment at Bottom ( W-Dir. K-Ft):	1197.1	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	10086.7	> Moment at Bottom ( C-C Dir. K-Ft):	1693.0	0.17	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct. ):	0.0030	OK! Upper Steel Reinf. Ratio (W-Dir. ):	0.0030		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	7202.6	> Moment at the top (L-Dir K-Ft):	529.1	0.07	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	7202.6	> Moment at the top (W-Dir K-Ft):	529.1	0.07	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	10086.7	> Moment at the top (C-C Dir. K-Ft):	497.7	0.05	OK!

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

Moment transferred by punching shear:	1422.9	k-ft.	Max. factored shear stress $v_{u,CD}$ :	3.2	Psi
Max. factored shear stress $v_{u,AB}$ :	7.0	Psi	Factored shear Strength $\phi v_n$ :	164.3	Psi
Max. factored shear stress $v_u$ :	7.0	Psi	Check Usage of Punching Shear Capacity:	0.04	OK!



# Exhibit E

## **Mount Analysis**



**Tower Engineering Solutions**

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

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**Antenna Mount Analysis Report**

**Existing Monopole Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT13057-A-SBA**

**Customer Site Name: Newtown**

**Carrier Name: T-Mobile (App#: 194458, V2)**

**Carrier Site ID / Name: CT11668B / CT668/Arch Twrs-Newtown**

**Site Location: 151 Berkshire Road**

**Newtown, Connecticut**

**Fairfield County**

**Latitude: 41.397375**

**Longitude: -73.236069**



**Analysis Result:**

**Max Structural Usage: 54.70% [Pass]**

**Report Prepared By: Sarath Basamsetti**

NOTE: The proposed handrail kit (Commscope MT-195-12) was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.



**Tower Engineering Solutions**

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

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## **Antenna Mount Analysis Report**

### **Existing Monopole Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT13057-A-SBA**

**Customer Site Name: Newtown**

**Carrier Name: T-Mobile (App#: 194458, V2)**

**Carrier Site ID / Name: CT11668B / CT668/Arch Twrs-Newtwn**

**Site Location: 151 Berkshire Road**

**Newtown, Connecticut**

**Fairfield County**

**Latitude: 41.397375**

**Longitude: -73.236069**

### **Analysis Result:**

**Max Structural Usage: 54.70% [Pass]**

**Report Prepared By: Sarath Basamsetti**

NOTE: The proposed handrail kit (Commscope MT-195-12) was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

## **Introduction**

The purpose of this report is to summarize the analysis results on the (1) Platform w/Handrail at 97.00' 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: Tower Engineering Professionals, dated: 04/12/2022
Antenna Loading	SBA, Application #: 194458, v2 dated 05/04/2022
Modification Drawings	N/A

## **Analysis Criteria**

Basic Wind Speed Used in the Analysis:  $V_{ULT} = 120$  mph (3-Sec. Gust) / Equivalent to  
 $V_{ASD} = 93$  mph (3-Sec. Gust)

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

Operational Wind Speed: 60 mph +0" Radial ice

Standard/Codes: ANSI/TIA/EIA 222-G

Exposure Category: C

Structure Class: II

Topographic Category: 1

Crest Height (Ft): 0

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

## **Mount Information**

(1) Platform w/Handrail at 97.00' elevation.

## **Final Antenna Configuration**

3	Commscope VV-65A-R1
3	RFS APXVAALL24_43-U-NA20
3	Andrew RR65-18-00DPL2
3	Ericsson AIR6419 B41
3	RFS ATMAA1412D-1A20 TMA
3	Ericsson 4460 B25 + B66
3	Ericsson 4480 B71 + B85
3	Kathrein Scala 782 11054

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 54.70%, which occurs in the mount pipe. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

**NOTE: The proposed handrail kit (Commscope MT-195-12) was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.**

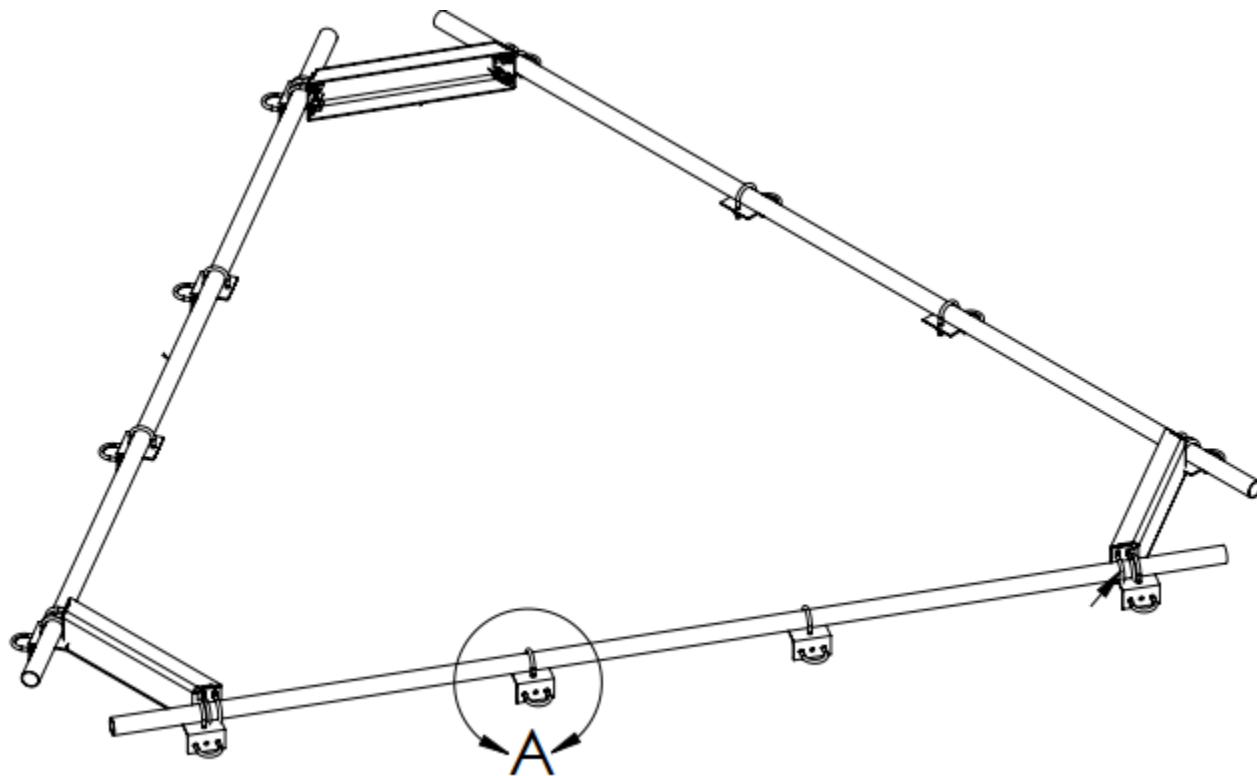
## **Attachments**

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.





Commscope MT-195-12

Sector: **A**

5/5/2022

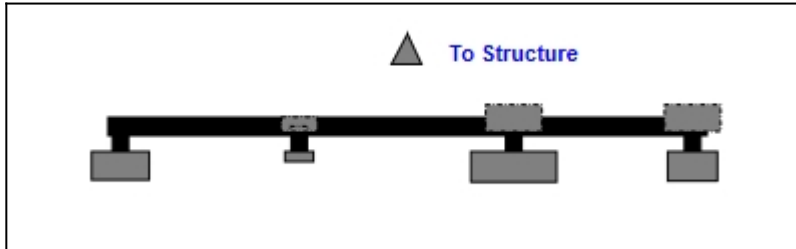
Structure Type: Monopole

Mount Elev: 97.00

Page: 1

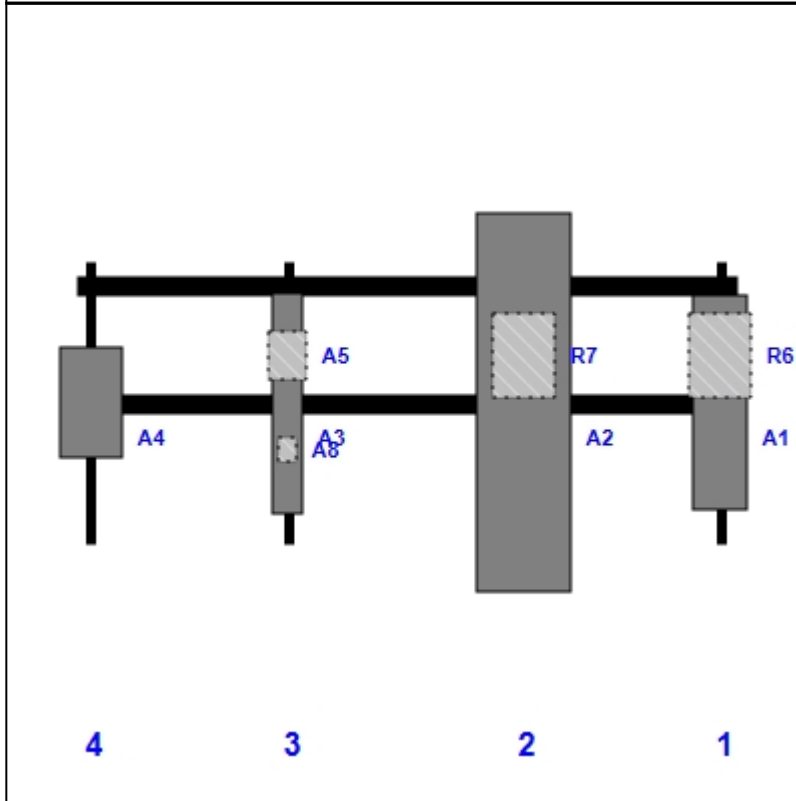


Plan View



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	VV-65A-R1	54.30	13.90	164.00	1	a	Front	36.00		Added	
R6	4460 B25 + B66	21.80	15.70	164.00	1	a	Behind	24.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	114.00	2	a	Front	36.00		Added	
R7	4480 B71 + B85	21.80	15.70	114.00	2	a	Behind	24.00		Added	
A3	RR65-18-00DPL2	56.00	8.00	54.00	3	a	Front	36.00		Leased	
A5	ATMAA1412D-1A20 TMA	12.00	10.00	54.00	3	a	Behind	24.00		Leased	
A8	782 11054	5.70	5.00	54.00	3	a	Behind	48.00		Leased	
A4	AIR6419 B41	28.30	16.10	4.00	4	a	Front	36.00		Added	

Sector: **B**

5/5/2022

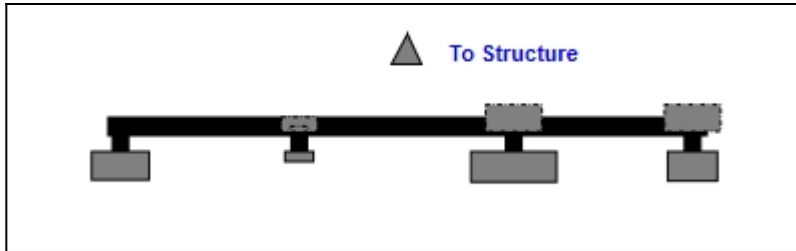
Structure Type: Monopole

Mount Elev: 97.00

Page: 2

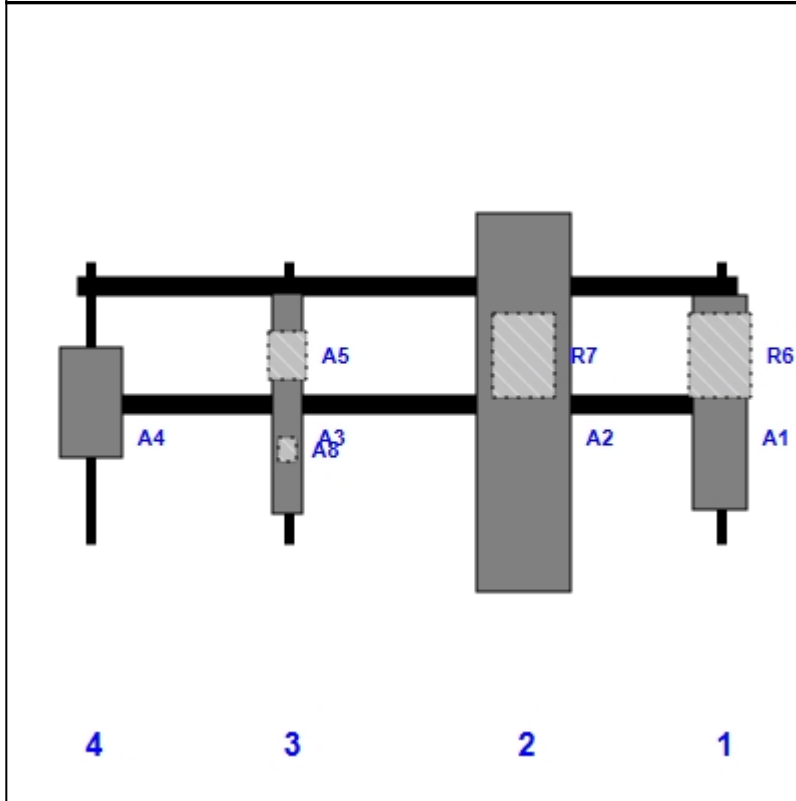


Plan View



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	VV-65A-R1	54.30	13.90	164.00	1	a	Front	36.00		Added	
R6	4460 B25 + B66	21.80	15.70	164.00	1	a	Behind	24.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	114.00	2	a	Front	36.00		Added	
R7	4480 B71 + B85	21.80	15.70	114.00	2	a	Behind	24.00		Added	
A3	RR65-18-00DPL2	56.00	8.00	54.00	3	a	Front	36.00		Leased	
A5	ATMAA1412D-1A20 TMA	12.00	10.00	54.00	3	a	Behind	24.00		Leased	
A8	782 11054	5.70	5.00	54.00	3	a	Behind	48.00		Leased	
A4	AIR6419 B41	28.30	16.10	4.00	4	a	Front	36.00		Added	

Sector: C

5/5/2022

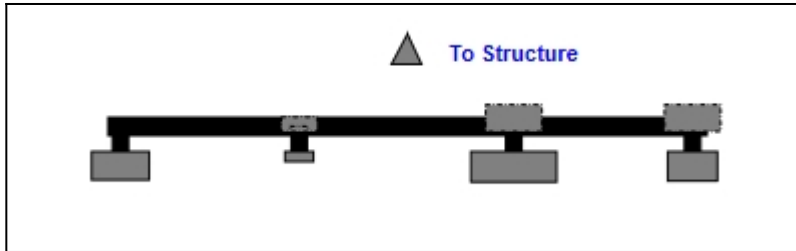
Structure Type: Monopole

Mount Elev: 97.00

Page: 3

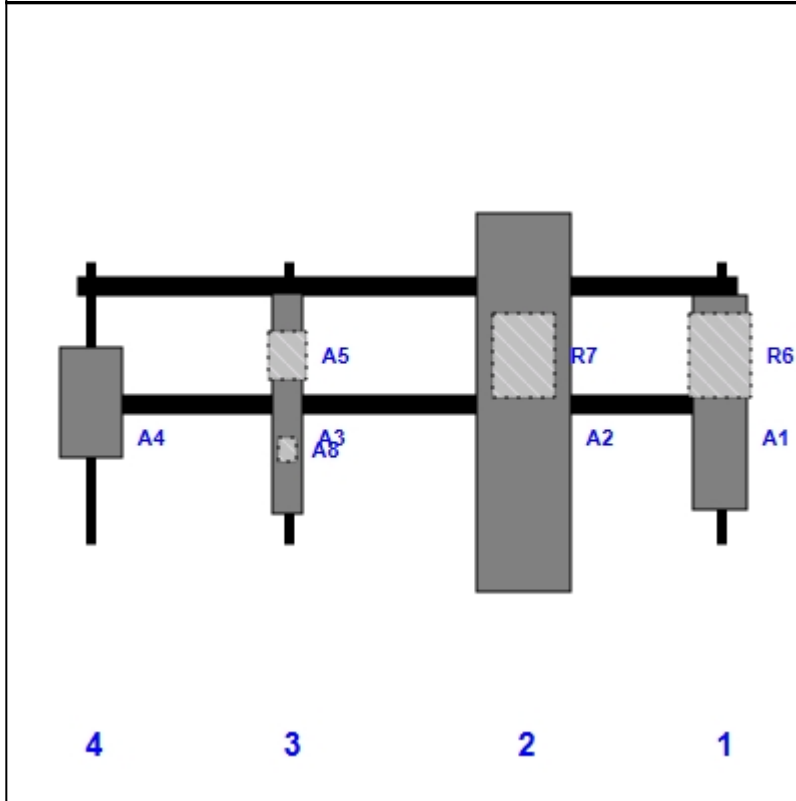


Plan View



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	VV-65A-R1	54.30	13.90	164.00	1	a	Front	36.00		Added	
R6	4460 B25 + B66	21.80	15.70	164.00	1	a	Behind	24.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	114.00	2	a	Front	36.00		Added	
R7	4480 B71 + B85	21.80	15.70	114.00	2	a	Behind	24.00		Added	
A3	RR65-18-00DPL2	56.00	8.00	54.00	3	a	Front	36.00		Leased	
A5	ATMAA1412D-1A20 TMA	12.00	10.00	54.00	3	a	Behind	24.00		Leased	
A8	782 11054	5.70	5.00	54.00	3	a	Behind	48.00		Leased	
A4	AIR6419 B41	28.30	16.10	4.00	4	a	Front	36.00		Added	

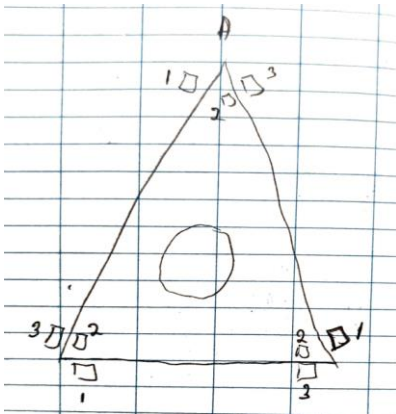


### Antenna Mount Mapping Form (PATENT PENDING)

FCC #

<b>Tower Owner:</b>	SBA	<b>Mapping Date:</b>	4/12/2022
<b>Site Name:</b>	Newton	<b>Tower Type:</b>	Monopole
<b>Site Number or ID:</b>	CT13057-A	<b>Tower Height (Ft.):</b>	151
<b>Mapping Contractor:</b>	Tower Engineering Professionals	<b>Mount Elevation (Ft.):</b>	97

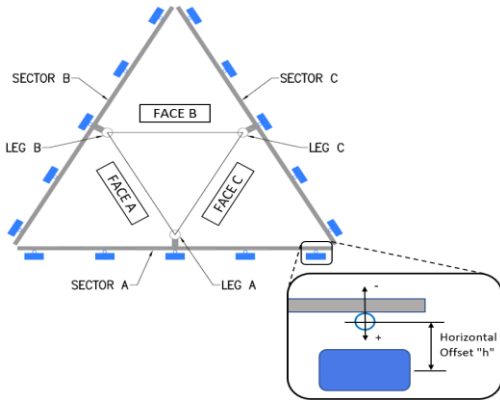
This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is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



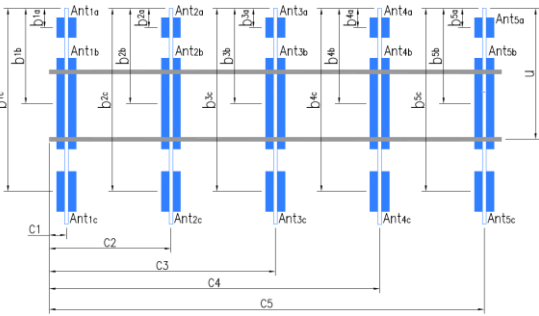
Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2.4"x6'-0"Tx0.154"TH	36.00	4.00	C1	2.4"x6'-0"Tx0.154"TH	36.00	4.00
A2	2.4"x6'-0"Tx0.154"TH	36.00	54.00	C2	2.4"x6'-0"Tx0.154"TH	36.00	54.00
A3	2.4"x6'-0"Tx0.154"TH	36.00	114.00	C3	2.4"x6'-0"Tx0.154"TH	36.00	114.00
A4	2.9"x9'-0"Tx0.203"TH	58.00	164.00	C4	2.9"x9'-0"Tx0.203"TH	58.00	164.00
A5				C5			
A6				C6			
B1	2.4"x6'-0"Tx0.154"TH	36.00	4.00	D1			
B2	2.4"x6'-0"Tx0.154"TH	36.00	54.00	D2			
B3	2.4"x6'-0"Tx0.154"TH	36.00	114.00	D3			
B4	2.9"x9'-0"Tx0.203"TH	58.00	164.00	D4			
B5				D5			
B6				D6			

Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.): 2  
 Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.):  
 Please enter additional information or comments below.

Tower Face Width at Mount Elev. (ft.):	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	36.86
--	---	-------



Enter antenna model. If not labeled, enter "Unknown".		Mounting Locations [Units are inches and degrees]			Photos of antennas					
Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances "b <sub>1a</sub> , b <sub>2a</sub> , b <sub>3a</sub> , b <sub>1b</sub> ..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photo Numbers
<b>Sector A</b>										
Ant <sub>1a</sub>	ATM1900-1A20	8.70	2.80	10.10	2) FH 1-1/2	99	18.00	3.00		128
Ant <sub>1b</sub>	Unknown	7.00	3.00	53.00	Jumpered	99	16.00	7.50	0.00	124, 127
Ant <sub>1c</sub>										
Ant <sub>2a</sub>										
Ant <sub>2b</sub>	Empty									
Ant <sub>2c</sub>										
Ant <sub>3a</sub>										
Ant <sub>3b</sub>	Empty									
Ant <sub>3c</sub>										
Ant <sub>4a</sub>										
Ant <sub>4b</sub>	LNX-6515DS-A1M	11.85	7.10	104.33	2) FH 1-1/2	99	48.00	9.00	0.00	74-75
Ant <sub>4c</sub>										
Ant <sub>5a</sub>										
Ant <sub>5b</sub>										
Ant <sub>5c</sub>										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										



**Antenna Layout (Looking Out From Tower)**





**Observed Safety and Structural Issues During the Mount Mapping**

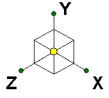
Issue #	Description of Issue	Photo #
1		
2		
3		
4		
5		
6		
7		
8		

**Mapping Notes**

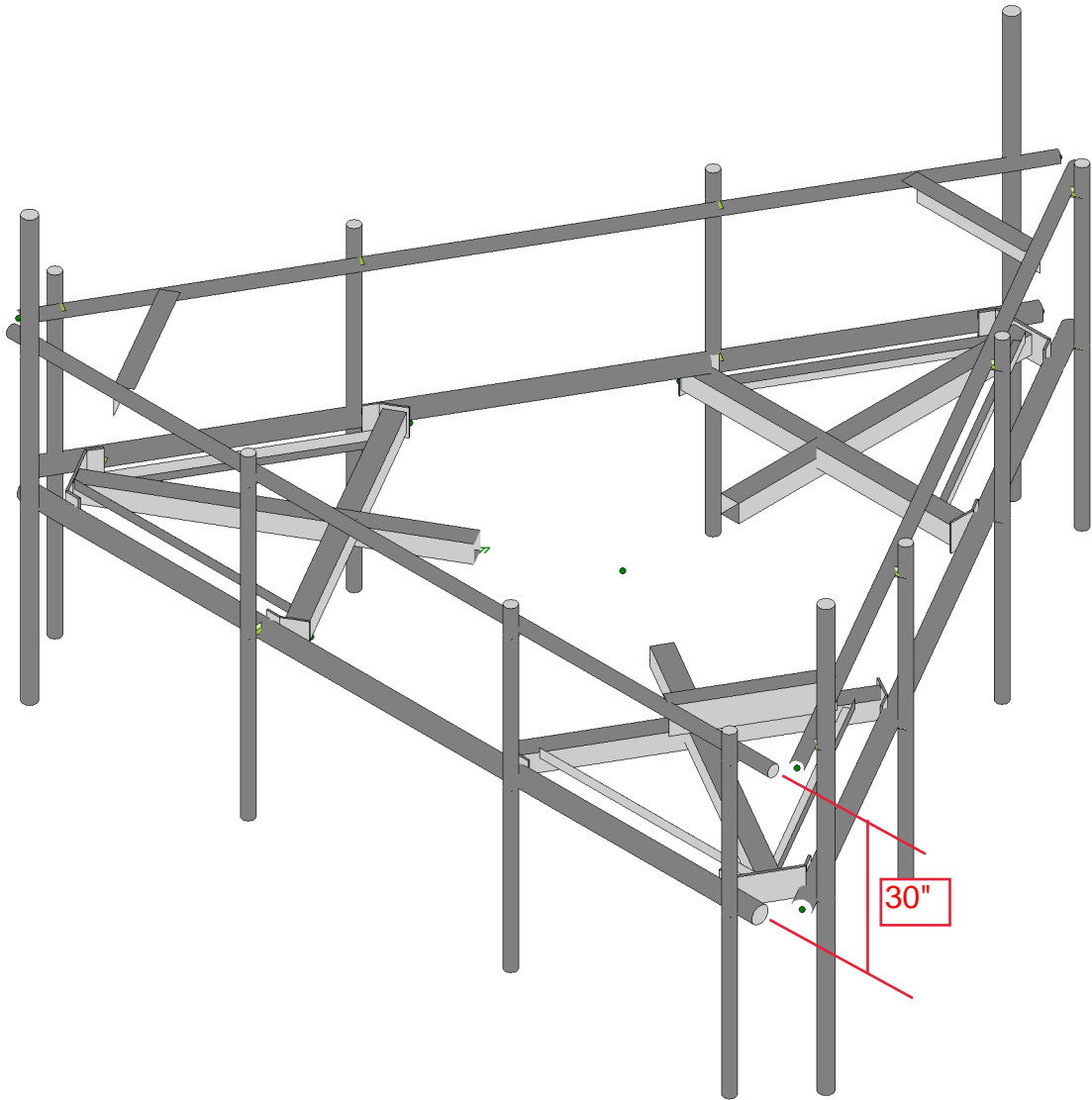
1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

**Standard Conditions**

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.



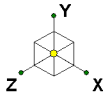
Analysis is void if handrail kit is not installed as per the instructions provided.



Tower Engineering Solutio...  
SB  
TES Project No. 127390

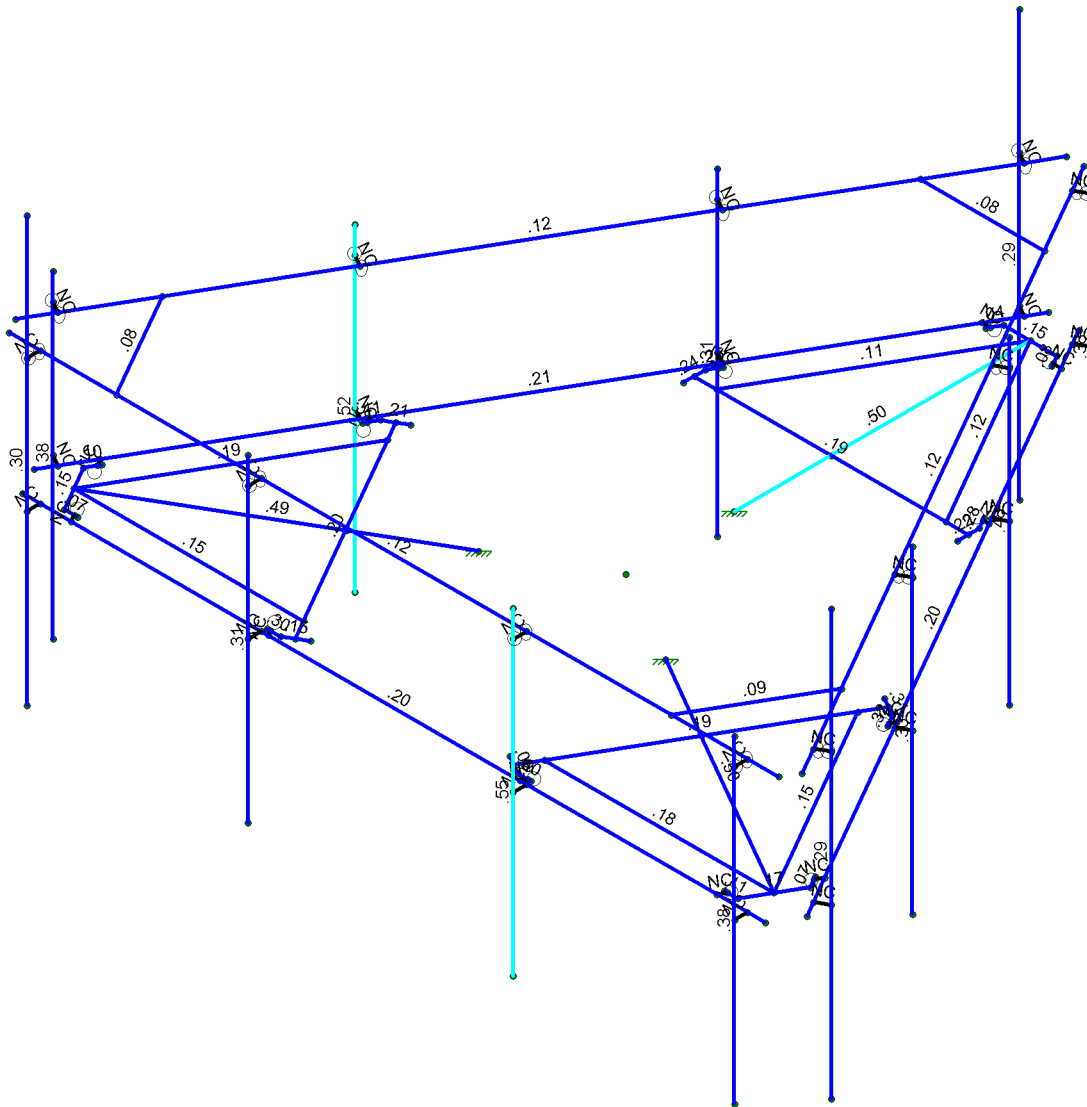
CT13057-A-SBA\_MT\_LO\_Loads Only\_G

SK - 1  
May 5, 2022 at 11:25 AM  
CT13057-A-SBA\_127390\_G\_RISA\_...



Code Check (Env)

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



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

Tower Engineering Solutio...

SB

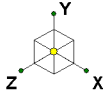
TES Project No. 127390

CT13057-A-SBA\_MT\_LO\_Loads Only\_G

SK - 2

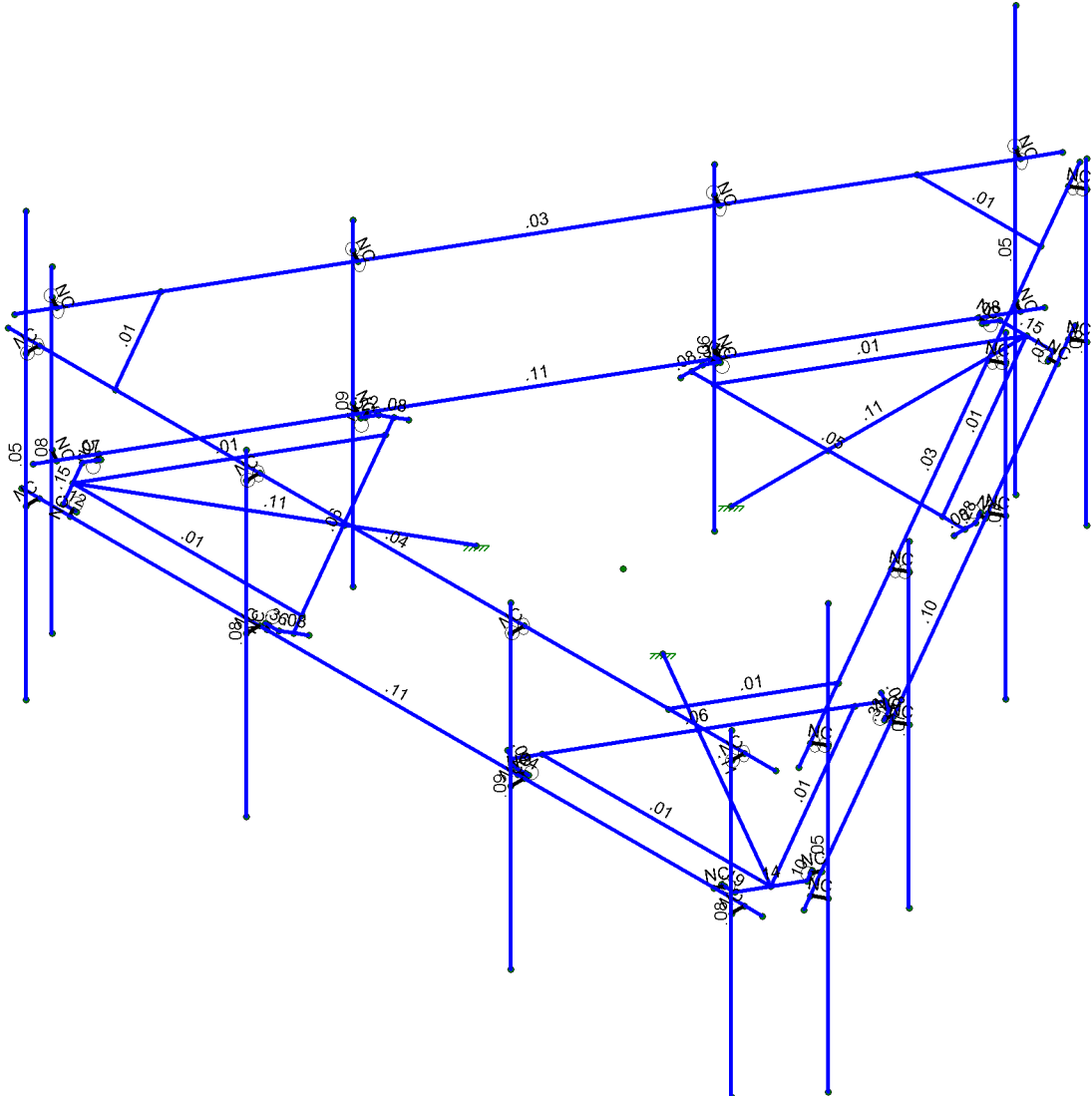
May 5, 2022 at 11:25 AM

CT13057-A-SBA\_127390\_G\_RISA\_...



Shear Check  
( Env )

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



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

Tower Engineering Solutio...	CT13057-A-SBA_MT_LO_Loads Only_G	SK - 3
SB		May 5, 2022 at 11:25 AM
TES Project No. 127390		CT13057-A-SBA_127390_G_RISA_...











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FFİ	ƀFFİ	ÈÈÈÍÍFFF	€	ÈÈÍÈFİÍ	€	
FFÌ	ƀFFÌ	ÈÈÈÍÈFİ	€	ÈÈÍÈFİÍ	€	
FFJ	ƀFFJ	ÈÈÈHÍÍÍ	€	ÈÈÈGFÍFJ	€	
FG€	ƀFG€	ÈÈÈHJÍF	€	ÈÈÈÍÍÍFJ	€	
FGF	ƀFGF	ÈÈÈHÍÍÍ	€	ÈÈÈFİÍÍ	€	
FGG	ƀFGG	ÈÈÈÍHJÍF	€	ÈÈÈÍÍÍÍ	€	
FGH	ƀFGH	ÈÈÈÍÈFİ	I ÈHHHH	ÈÈÍÈFİÍ	€	
FGI	ƀFGI	ÈÈÈÍÈFİ	ÈÈÈÍÍÍÍ	ÈÈÍÈFİÍ	€	
FGİ	ƀFGİ	ÈÈÈHÍGÍ	H	HÈÍFİGF	€	
FGĀ	ƀFGĀ	ÈÈÈHJÍF	H	ÈÈÈÍÍÍFJ	€	
FGĪ	ƀFGĪ	ÈÈÈÍHJÍF	H	ÈÈÈÍÍÍÍ	€	
FGĲ	ƀFGĲ	ÈÈÈHÍGÍ	ÈÈ	HÈÍFİGF	€	
FGĴ	ƀFGĴ	ÈÈÈHJÍF	ÈÈ	ÈÈÈÍÍÍFJ	€	
FH€	ƀFH€	ÈÈÈÍHJÍF	ÈÈ	ÈÈÈÍÍÍÍ	€	
FHF	ƀFHF	ÈÈÈ	GÈ	I ÈÈHÍI	€	
FHG	ƀFHG	I ÈÈ	GÈ	I ÈÈHÍI	€	
FHH	ƀFHH	Í ÈÍÍÍÍ	GÈ	I ÈÈHÍI	€	
FHÌ	ƀFHÌ	Í ÈÍÍÍÍ	GÈ	I ÈÈGHÍ	€	
FHĴ	ƀFHĴ	ÈÈÈÍÍÍÍ	GÈ	I ÈÈHÍI	€	
FHĲ	ƀFHĲ	ÈÈÈÍÍÍÍ	GÈ	I ÈÈGHÍ	€	
FHİ	ƀFHİ	GÈ	GÈ	I ÈÈHÍI	€	
FHĪ	ƀFHĪ	GÈ	GÈ	I ÈÈGHÍ	€	
FHU	ƀFHU	ÈÈÈ	GÈ	I ÈÈHÍI	€	
Fİ€	ƀFİ€	ÈÈÈ	GÈ	I ÈÈGHÍ	€	
FİF	ƀFİF	ÈÈÈÍÍFFF	GÈ	ÈÈÍÈFİÍ	€	
FİG	ƀFİG	ÈÈÈÍÈFİ	GÈ	ÈÈÍÈFİÍ	€	
FİH	ƀFİH	Í ÈÈÈÍÍ	GÈ	HÈÍÍÍGF	€	
FİI	ƀFİI	Í ÈÈHÍGÍ	GÈ	HÈÍFİGF	€	
FİÍ	ƀFİJ	GÈÈHÍÍÍ	GÈ	ÈÈÈFİÍÍ	€	
FİĀ	ƀFİ€	GÈÈHJÍF	GÈ	ÈÈÈÍÍÍÍ	€	
FİĪ	ƀFİF	Í ÈÈHÍÍÍ	GÈ	ÈÈÈGFÍFJ	€	
FİĲ	ƀFİG	Í ÈÈHJÍF	GÈ	ÈÈÈÍÍÍFJ	€	
FİĴ	ƀFİH	ÈÈÈÈÈÍÍ	GÈ	HÈÍÍÍGF	€	
Fİ€	ƀFİI	ÈÈÈHÍGÍ	GÈ	HÈÍFİGF	€	
FİF	ƀFİÍ	ÈÈÈÍÍFFF	GÈ	ÈÈÍÈFİÍ	€	
FİG	ƀFİĀ	ÈÈÈÍÈFİ	GÈ	ÈÈÍÈFİÍ	€	
FİH	ƀFİĪ	ÈÈÈHÍÍÍ	GÈ	ÈÈÈGFÍFJ	€	
FİI	ƀFİĲ	ÈÈÈHJÍF	GÈ	ÈÈÈÍÍÍFJ	€	
FİÍ	ƀFİJ	ÈÈÈHÍÍÍ	GÈ	ÈÈÈFİÍÍ	€	
FİĀ	ƀFİ€	ÈÈÈHJÍF	GÈ	ÈÈÈÍÍÍÍ	€	
FİĪ	ƀFİÍO€	Í ÈÈFGÍÍ	GÈ	I ÈÈJGEGG	€	
FİĲ	ƀFİĀO€	ÈÈÈÍGÍÍ	GÈ	ÈÈÈÍÍHÍ	€	
FİĴ	ƀFİJO€	ÈÈÈÍGÍÍ	GÈ	ÈÈÈÍÍHÍ	€	
Fİ€	ƀFİ€O€	ÈÈÈFGÍÍ	GÈ	I ÈÈJGEGG	€	
FİF	ƀFİF	ÈÈÈÍGÍÈ	GÈ	ÈÈÈFİHÍ	€	
FİG	ƀFİG	FÈÈÍGÍÈ	GÈ	ÈÈÈFİHÍ	€	
FİH	ƀFİH	ÈÈÈGGÍÍ	GÈ	I ÈÈHÍI	€	
FİI	ƀFİI	ÈÈÈÈÈÈG	GÈ	GÈHÍGEGG	€	
FİÍ	ƀFİÍ	Í ÈÈÈÈG	GÈ	GÈHÍGEGG	€	
FİĀ	ƀFİĀ	Í ÈÈGGÍÍ	GÈ	I ÈÈHÍI	€	





**A Ya Vyf'Df]a Ufm8 UU'f' cb]bi YXL**

Šæ^ \	Q[ ]c	R[ ]c	S[ ]c	U[ ]c	U^&ç } U]ç ^	V^ ] ^	Ô•á } Ác	T æÁ Éc	Ô•á } ÁU' ] ÉÉ
İİ	Tİ€	PFİ	PFİ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İJ	TİF	PFİ	PFİ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İ€	TİG	PFİ€	PFİJ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İF	TİH	PFİG	PFİF		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İG	TİI	PFİ	PFİH		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İH	TII	PFİ	PFİ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
II	TII	PFİ	PFİ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
II	TII	PFİ€	PFİJ		ÜÖÖ	Óæ	P[]^	ÜÖÖ	ÖÜF
İÍ	TİÍÖE	PFİÍÖE	PFİÍÖE		Ü' ] ] [ : dÁæ	Óæ	Úá ^	ÉH ÁÖ: É	V' ] ææ
İï	TİïÖE	PFİïÖE	PFİïÖE		Ü' ] ] [ : dÁæ	Óæ	Úá ^	ÉH ÁÖ: É	V' ] ææ
İì	TÌì	PFÌG	PFÌF	FÌ€	Ò} áÁÖ[ ] } ^ & ç }	Óæ	Úá * ^ ÁÖ * ^	ÉH ÁÖ: É	V' ] ææ
İj	TÌj	PFÌ	PFÌH	FÌ€	Ò} áÁÖ[ ] } ^ & ç }	Óæ	Úá * ^ ÁÖ * ^	ÉH ÁÖ: É	V' ] ææ
J€	TJ€	PFÎ	PFÎ	FÌ€	Ò} áÁÖ[ ] } ^ & ç }	Óæ	Úá * ^ ÁÖ * ^	ÉH ÁÖ: É	V' ] ææ

**A Ya Vyf'5 Xj Ub WX'8 UH**

Šæ^ \	Q[ ]c	R[ ]c	Q[ ]c	R[ ]c	V[ ]c	U[ ]c	U^&ç } U]ç ^	Q[ ]c	U^&ç } U]ç ^
F	TF					ÿ^.			P[]^
G	TG					ÿ^.			P[]^
H	TH					ÿ^.			P[]^
I	TI					ÿ^.			P[]^
Í	TÍ					ÿ^.			P[]^
İ	Tİ		Ó} ÚÖ			ÿ^.			P[]^
ï	Tï		Ó} ÚÖ			ÿ^.			P[]^
ì	TÌ					ÿ^.			P[]^
J	TJ					ÿ^.			P[]^
F€	TF€					ÿ^.			P[]^
FF	TF€					ÿ^.			P[]^
FG	TFG					ÿ^.			P[]^
FH	TFH					ÿ^.			P[]^
Fİ	TFİ		Ó} ÚÖ			ÿ^.			P[]^
Fí	TFí		Ó} ÚÖ			ÿ^.			P[]^
Fï	TFï					ÿ^.			P[]^
Fì	TFì					ÿ^.			P[]^
Fj	TFj					ÿ^.			P[]^
F€	TF€					ÿ^.			P[]^
GF	TGF		Ó} ÚÖ			ÿ^.			P[]^
GG	TGG		Ó} ÚÖ			ÿ^.			P[]^
GH	TGH					ÿ^.			P[]^
G	TG					ÿ^.			P[]^
Ĝ	TĜ					ÿ^.			P[]^
Ĝ	TĜ					ÿ^.			P[]^
Ĝ	TĜ					ÿ^.			P[]^
Ĝ	TĜ					ÿ^.			P[]^
Ĝ	TĜ					ÿ^.			P[]^
GJ	TGJ		Ó} ÚÖ			ÿ^.			P[]^
H€	THE		Ó} ÚÖ			ÿ^.			P[]^
HF	TFH					ÿ^.			P[]^
HG	THG					ÿ^.			P[]^
HH	THH					ÿ^.			P[]^
HI	THI					ÿ^.			P[]^





**<chFc`YX`GhY'8 Ygll b'DUfUa YhYg f7 cbh]bi YXL**

Šãá^	Ú@^	Š^)*oZcá	Šã^^Zcá	Šã::Zcá	Š&[] Á[] ZcáŠ&[] Á[] cZcáŠ&[] Á[] S^	S::	Ôa	Ů} &ã
II	T Ú Í Ó	T{ }úã^É	í		Sá^^			Šãá^!ã
IÍ	T Ú H Ó	T{ }úã^•	í		Sá^^			Šãá^!ã
IÎ	T Ú G Ó	T{ }úã^•	í		Sá^^			Šãá^!ã
IÏ	T Ú F Ó	T{ }úã^•	í		Sá^^			Šãá^!ã
IÌ	T Ú Í Ó	T{ }úã^É	í		Sá^^			Šãá^!ã
IJ	T Í H	Ú[]]!oÁã	FÍÉ		Sá^^			Šãá^!ã
I€	T Í Ā Ć	Ú[]]!oÁã	FÍÉ		Sá^^			Šãá^!ã
IF	T Í Ā Ć	Ú[]]!oÁã	FÍÉ		Sá^^			Šãá^!ã
IG	T Í I	Ů:á!Ů[]}]^&ÉÉGHÍ			Sá^^			Šãá^!ã
IH	T Í J	Ů:á!Ů[]}]^&ÉÉGHÍ			Sá^^			Šãá^!ã
IÌ	T J €	Ů:á!Ů[]}]^&ÉÉGHÍ			Sá^^			Šãá^!ã

**>c]bh6 ci bXUf m7 cbX]hcbg**

Rã oŠãá^	ÝÁãÉá	ÝÁãÉá	ZÁãÉá	ÝÁU[ ]čÉÉãá	ÝÁU[ ]čÉÉãá	ZÁU[ ]čÉÉãá
F	PF	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã
G	PI					
H	PG	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã
I	PÍG	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã	Ú^ãã

**9bj YcdY>c]bhFYUM]cbg**

Rã c	ÝÁãá ŠÓ	ÝÁãá ŠÓ	ZÁãá ŠÓ	TÝÁãÉá ŠÓ	TÝÁãÉá ŠÓ	TZÁãÉá ŠÓ
F	PF { æ FÍÉGHÍ I HÉÍÉÍ I GÍJÉÍ	F IÉÍ	I	GÍÍ	H	ÉUÍ
G	{ å ÉÍÉÉÉ H JJHÉH G ÉHÉÉÉ	G FÉÍÍ	G	ÉÍÍ	I	ÉÉÍ
H	PG { æ GÍÍÉG I HÉJÉF I FÍÍÉF	F ÉÉÍ	H	FÉF	F	ÉÉÍF H
I	{ å ÉGFÉÉF H FÉÉÉFH H ÉÍÉÉÍ	G ÉÉÍÍ	I	ÉÉÉF	G	ÉÉJJ
I	PÍG { æ GÍÍÉG I HÉÍÉJ I GÍÍÉF	F ÉÉÉ	I	FÉHH	G	IÉUÍ
I	{ å ÉHJÉÉ H FÉFÉH I ÉHÉHÉ	G ÉÉH	I	ÉÉIG	F	FÉJ
I	V[ ]œK { æ ÍFÉÉÍ I JÉÍÉF Í ÉÍÉÍ	F				
I	{ å ÉFÉÍÍ H HÍÍÉÉ I ÉÉÍÉJ	G				

**9bj YcdYA Ya Vyf'GYW]cb': cfWg**

T^ { }à!	Ú&	OããZá	ŠÓ	ÁU@ãZá	ŠÓ	V[ ]^^ŠÓ	ÉÁ[ ]^ŠÓ	ÉÁ[ ]^ŠÓ
F	TF	F { æ HÉÉÉF	G HÉÍÉÍ	I FÉHÉG	I ÉÉÉ	G GÍÍ	H	IÉÍ
G		{ å ÉUÍJÉÍ	F JÍÉHJ	G ÉÍÉÉH	H ÉUÍ	I ÉÉÍ	I	FÉÍ
H		G { æ HÉÉÉF	G HÉÉG	I FÍÉÉÉ	I ÉÉÉ	G ÉÍH	H	HÉUÍ
I		{ å ÉUÍJÉÍ	F JÍÉF	G ÉÍHÉF	H ÉUÍ	I ÉÍJ	I	ÉÉG
I		H { æ HÉJÉG	G ÍJÉÍ	I GÉGH	I É	H ÉÉH	G	FÉÍ
I		{ å ÉGFHÉH	F FGÉÉG	G ÉGÉJH	H ÉÉF	I ÉÉH	F	ÉÍ
I		I { æ HÉJÉG	G ÍGÉF	I FHÉGJ	H É	H ÉFÍ	I	ÉÍF
I		{ å ÉGFHÉH	F JÍÉÍ	G ÉGFÉJJ	I ÉÉF	I ÉÉG	H	ÉÉÍ
J		Í { æ HÉJÉG	G IÍJÉJ	I ÍÍÉÍ	H É	H ÉGF	H	ÉÉÍ
F€		{ å ÉGFHÉH	F ÍÉÍ	G ÉÍÉG	I ÉÉF	I ÉÉÍ	I	ÉÉÍ
FF	TG	F { æ HÍHÉFF	I ÉFHÉFÍ	G FGHEEG	F ÉÉJ	H ÉFG	I	ÉG
FG		{ å ÉHÉJÍ	H ÉÉÉÍ	I ÉFHÉÉÍ	G ÉÉÍ	I ÉÉG	G	ÉÉÍ
FH		G { æ FÉÉÉÍ	I ÉHÉHÉH	G FHGÉ	G ÉFÍ	H ÉÍ	F	FÉÍ
FÍ		{ å ÉFHÉJH	H ÉFHÉÍ	I ÉFHÉFÍ	F ÉFFJ	I ÉÍJ	G	ÉG
FÍ		H { æ FÉÉÉÍ	I IÍÉH	I HFEJ	I ÉFÍ	H ÉG	F	GÍÍ

**9bj YcdYA Ya Vyf GYWJcb: cfWg f7 cbh7bi YXL**

	T ^{ âˆ!	Û&	Ôrâ â	ÏÏ	^Â@â â	ÏÏ	: Â@â â	ÏÏ	V 'ˆ^Z ÊÊÏ	ÏÏ	^ÊÁ{  ^ÊÊÏ	ÏÏ	: ÊÁ{  ^ÊÊÏ	ÏÏ
FÍ			{ â ÊÊÍ ÊÊJH	H	ÊÊGG ÊÊ	Í	ÊÊH ÊÊ	G	ÊÊGG	Í	ÊÊHI	G	ÊÊI G	J
FÌ		I	{ æ ÊÊÍ ÊÊH	H	FFG ÊÊH	Ì	FÌ ÊÊÍ	F	ÊÊFI	H	ÊÊI F	F	FÊ ÊH	Ì
FÌ			{ â ÊÊG ÊÊJH	I	HÌ ÊÊG	H	ÊÊÍ ÊÊJÍ	G	ÊÊGG	Í	ÊÊH H	G	ÊÊ	H
FJ		Í	{ æ ÊÊG ÊÊJ F	F	FÊÍ ÊÊJ	Ì	FÊJ ÊÊG	G	ÊÊÍ	H	ÊÊG	F	ÊÊFJ	Ì
GE			{ â ÊÊG ÊÊFI	G	HÊÊÍ	H	ÊÊÊÊÍ	F	ÊÊG	Í	ÊÊGH	G	ÊÊ	H
GF	TH	F	{ æ ÊÊG ÊÊI	H	FFÍ ÊÊJ	Í	FJHÊÍ	G	ÊÊ	Í	ÊÊ	G	ÊÊG	H
GG			{ â ÊÊJ ÊÊJÍ	I	ÊÊFGG J	H	ÊÊGF ÊÊ F	F	ÊÊH	Í	ÊÊG	F	ÊÊGJ	Í
GH		G	{ æ ÊÊG ÊÊI	H	FFGG Í	Í	GE ÊÊ	G	ÊÊ	Í	ÊÊJ	G	ÊÊÍ	H
G			{ â ÊÊJ ÊÊJÍ	I	ÊÊFI ÊÊ F	H	ÊÊGÊ G	F	ÊÊH	Í	ÊÊH	F	ÊÊÍ	Í
G		H	{ æ ÊÊÍ ÊÊÍ	I	IÊÊGJ	Ì	GGÊÊÍ	F	ÊÊ	Í	ÊÊH	G	ÊÊJH	Ì
G			{ â ÊÊJ ÊÊF	H	ÌÊÊJ	FE	ÊÊJ ÊÊ	G	ÊÊÍ	Ì	ÊÊÍ	F	ÊÊ	FE
G		I	{ æ ÊÊÍ ÊÊÍ	I	HJ ÊÊ J	Ì	GFÊÊF	I	ÊÊÍ	H	ÊÊG	G	ÊÊJH	Ì
G			{ â ÊÊJ ÊÊF	H	ÌÊÊH	FE	ÊÊHÊ ÊF	G	ÊÊÍ	Ì	ÊÊF	F	ÊÊJ	FE
GJ		Í	{ æ ÊÊÍ ÊÊÍ	I	HJÊÊF	Ì	GFÊÊF	I	ÊÊÍ	H	ÊÊJ	I	ÊÊJ	Ì
HE			{ â ÊÊJ ÊÊF	H	ÌÊÊG F	FE	ÊÊJ ÊÊ J	H	ÊÊÍ	Ì	ÊÊ F	H	ÊÊFJ	FE
HF	TI	F	{ æ ÊÊÍ ÊÊ F	I	HJ ÊÊ JF	Ì	ÌÊÊH H	H	ÊÊÍ	Í	ÊÊ J	I	ÊÊG	Ì
HG			{ â ÊÊÍ ÊÊ	H	ÌÊÊÍ	FE	ÊÊÍ ÊÊ J	I	€	G	ÊÊ F	H	ÊÊEH	H
HH		G	{ æ ÊÊÍ ÊÊF	I	HÌ ÊÊG	Ì	ÌÊÊGF	H	ÊÊÍ	Í	ÊÊ	G	ÊÊJ	Ì
H			{ â ÊÊJ ÊÊG	H	ÌÊÊJ	FE	ÊÊH ÊÊ	I	€	G	ÊÊH	F	ÊÊJ	H
H		H	{ æ ÊÊÍ ÊÊ F	I	HÌ ÊÊ F	Ì	ÌÊÊFJ	H	ÊÊÍ	Í	ÊÊH	G	ÊÊH	Ì
H			{ â ÊÊÍ ÊÊ	H	ÌÊÊG	FE	ÊÊH ÊÊ G	I	€	G	ÊÊH	F	ÊÊÍ	H
H		I	{ æ ÊÊÍ ÊÊG F	I	HÌ ÊÊ J	Ì	ÌÊÊH	H	ÊÊÍ	Í	ÊÊG	H	ÊÊJ	Ì
H			{ â ÊÊÍ ÊÊ	H	ÌÊÊÍ	FE	ÊÊH ÊÊ H	I	€	G	ÊÊH	I	ÊÊGF	H
HJ		Í	{ æ €	FF	ÊÊEG	H	ÊÊH	G	€	FF	€	FF	€	FF
I€			{ â €	F	ÊÊEG	F	€	Í	€	F	€	F	€	F
IF	TÍ	F	{ æ ÊÊÍ ÊÊ	F	FFGG H	G	ÊÊGH	H	ÊÊÍ	Í	ÊÊG	F	ÊÊ	H
IG			{ â ÊÊÍ ÊÊÍ	G	ÊÊFI ÊÊ	Í	ÊÊÍ ÊÊ J	I	ÊÊÍ	F	ÊÊ	G	ÊÊÍ	Í
IH		G	{ æ ÊÊÍ ÊÊÍ	F	FFÊÊÍ	H	G ÊÊ F	H	ÊÊÍ	Í	ÊÊG	F	ÊÊJ	H
II			{ â ÊÊÍ ÊÊJ	G	ÊÊFI ÊÊÍ	Í	ÊÊÍ ÊÊÍ	I	ÊÊÍ	F	ÊÊH	G	ÊÊ	Í
II		H	{ æ ÊÊÍ ÊÊÍ	F	FFÊÊ J	H	GH ÊÊ J	H	ÊÊÍ	Í	ÊÊH	F	ÊÊJ	Í
II			{ â ÊÊÍ ÊÊH	G	ÊÊFI ÊÊ	Í	ÊÊÍ ÊÊ	I	ÊÊÍ	F	ÊÊHG	G	ÊÊH	Í
II		I	{ æ ÊÊÍ ÊÊG	F	FFÊÊGH	H	GH ÊÊÍ	H	ÊÊÍ	Í	ÊÊH	F	ÊÊJ	Í
II			{ â ÊÊÍ ÊÊÍ	G	ÊÊFI ÊÊ	Í	ÊÊÍ ÊÊGG	I	ÊÊÍ	F	ÊÊG	G	ÊÊG	Í
IJ		Í	{ æ €	FF	ÊÊEG	I	€	Í	€	FF	€	FF	€	FF
I€			{ â €	F	ÊÊEH	F	ÊÊEH	G	€	F	€	F	€	F
IF	TÍ	F	{ æ ÊÊÍ ÊÊÍ	I	HÌ ÊÊÍ	Ì	GFGGJ	I	ÊÊHG	H	ÊÊG	H	ÊÊÍ	Ì
IG			{ â ÊÊJ ÊÊÍ	H	ÌÊÊG	FE	ÊÊJ ÊÊÍ	H	ÊÊH	Í	ÊÊG	I	ÊÊFG	FE
IH		G	{ æ ÊÊÍ ÊÊÍ	I	HÌ ÊÊÍ	Ì	GFGGJ	I	ÊÊHG	H	ÊÊG	H	ÊÊÍ	Ì
II			{ â ÊÊJ ÊÊÍ	H	ÌÊÊG	FE	ÊÊJ ÊÊÍ	H	ÊÊH	Í	ÊÊG	I	ÊÊJ	FE
II		H	{ æ ÊÊÍ ÊÊÍ	I	HÌ ÊÊÍ	Ì	GFGGJ	I	ÊÊHG	H	ÊÊFI	H	ÊÊG	Ì
II			{ â ÊÊJ ÊÊÍ	H	ÌÊÊG	FE	ÊÊJ ÊÊÍ	H	ÊÊH	Í	ÊÊFI	I	ÊÊ	FE
II		I	{ æ ÊÊÍ ÊÊÍ	I	HÌ ÊÊÍ	Ì	GFGGJ	I	ÊÊHG	H	ÊÊ	H	ÊÊÍ	Ì
II			{ â ÊÊJ ÊÊÍ	H	ÌÊÊG	FE	ÊÊJ ÊÊÍ	H	ÊÊH	Í	ÊÊ	I	ÊÊH	FE
ÍJ		Í	{ æ ÊÊÍ ÊÊÍ	I	HÌ ÊÊÍ	Ì	GFGGJ	I	ÊÊHG	H	€	FF	€	F
Í€			{ â ÊÊJ ÊÊÍ	H	ÌÊÊG	FE	ÊÊJ ÊÊÍ	H	ÊÊH	Í	€	G	€	Í
ÍF	TÍ	F	{ æ ÊÊÍ ÊÊG	H	FÊÊÍ G	H	FÌ ÊÊÍ	G	ÊÊEG	Í	ÊÊH	F	ÊÊÍ	H
ÍG			{ â ÊÊÍ ÊÊ	I	ÊÊFI ÊÊ	Í	ÊÊFI ÊÊ F	F	ÊÊFJ	Í	ÊÊG	G	ÊÊFI	Í
ÍH		G	{ æ ÊÊÍ ÊÊG	H	FÊÊÍ G	H	FÌ ÊÊÍ	G	ÊÊEG	Í	ÊÊG	F	ÊÊFG	H
ÍI			{ â ÊÊÍ ÊÊ	I	ÊÊFI ÊÊ	Í	ÊÊFI ÊÊ F	F	ÊÊFJ	Í	ÊÊGF	G	ÊÊFH	Í
ÍI		H	{ æ ÊÊÍ ÊÊG	H	FÊÊÍ G	H	FÌ ÊÊÍ	G	ÊÊEG	Í	ÊÊFI	F	ÊÊ	H
ÍI			{ â ÊÊÍ ÊÊ	I	ÊÊFI ÊÊ	Í	ÊÊFI ÊÊ F	F	ÊÊFJ	Í	ÊÊFI	G	ÊÊJ	Í
ÍI		I	{ æ ÊÊÍ ÊÊG	H	FÊÊÍ G	H	FÌ ÊÊÍ	G	ÊÊEG	Í	ÊÊ	F	ÊÊ	H























**9bj YcdYA Ya Vvf GYW|cb': cfWwg f'f cb|bi YXL**

T^{  }ã!		U^&	ÖraYáá	SÖ	^Á @æZáá	SÖ	: Á @æZáá	SÖ	V {  }æZ	Æ SÖ	^ÊÁ {  }æ SÖ	: ÊÁ {  }æ SÖ		
ÍH			{ ä FJJE	I	ÊG B I	H	ÊÊEÊ	G	ÊÊ	G	ÊEJG	G	ÊÊ	I
ÍH		I	{ æÊ JÊG	FE	GFJE	H	II EJG	G	€	FF	E	F	ÊFI	H
ÍH			{ äÊJ B I	I	ÊG JÊ	I	ÊI ÊI	F	€	F	ÊG	G	ÊFFI	I
ÍHU		I	{ æ€	FF	ÊJF	I	ÊI	I	€	FF	€	FF	€	FF
ÍI€			{ ä€	F	ÊÊ	H	ÊÊGH	G	€	F	€	F	€	F
ÍIF	T U F Ö E	F	{ æ€	FF	ÊFI	I	ÊÊ	I	€	FF	€	FF	€	FF
ÍIG			{ ä€	F	ÊÊ	H	ÊÊ	G	€	F	€	F	€	F
ÍIH		G	{ æGFÊG	J	GÊEH	I	JFE	I	Ê	F	ÊJF	I	ÊÊEH	H
ÍII			{ äÊÊÊJ	FE	ÊÊFG	H	GÊEH	I	ÊÊ	G	ÊEG	FE	ÊÊJ	I
ÍII		H	{ æH Ê F	I	H Ê	I	HÊI	F	Ê	F	ÊI	F	ÊI	H
ÍII			{ äFÊÊHU	FE	ÊI FÊHU	H	ÊG Ê	G	ÊÊ	G	ÊÊ	G	ÊÊ	I
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ÍJG			{ a	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	Í	ÊÍÊÍÊÍ	G	ÊÍ	G	ÊÍ	H	ÊÍG	I
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ÍJI			{ a	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	Í	ÊÍÊÍÊÍ	G	ÊÍ	G	ÊÍ	H	ÊÍG	I
ÍJÍ		H	{ æ	HHÊÍÊÍ	I	ÊÍÊÍÊÍ	G	HÍÊÍÊÍ	F	ÊÍ	F	ÊÍ	I	ÊÍG	H
ÍJÎ			{ a	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	Í	ÊÍÊÍÊÍ	G	ÊÍ	G	ÊÍ	H	ÊÍG	I
ÍJÏ		I	{ æ	HHÊÍÊÍ	I	ÊÍÊÍÊÍ	G	HÍÊÍÊÍ	F	ÊÍ	F	ÊÍ	I	ÊÍG	H
ÍJÏ			{ a	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	Í	ÊÍÊÍÊÍ	G	ÊÍ	G	ÊÍ	H	ÊÍG	I
ÍJJ		Í	{ æ	HHÊÍÊÍ	I	ÊÍÊÍÊÍ	G	HÍÊÍÊÍ	F	ÊÍ	F	ÊÍ	I	ÊÍG	H
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ÍÊI			{ a	HÍÊÍÊÍ	F	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	G	ÊÍ	I	ÊÍ	G	ÊÍ	I
ÍÊJ		H	{ æ	GÍÊÍÊÍ	I	HÍÊÍÊÍ	I	GÍÊÍÊÍ	F	ÊÍ	H	ÊÍ	F	ÊÍ	H
ÍÊK			{ a	ÍÍÊÍÊÍ	F	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	G	ÊÍ	I	ÊÍ	G	ÊÍ	I
ÍÊL		I	{ æ	ÊÍÊÍÊÍ	F	FÍÊÍÊÍ	H	FÍÊÍÊÍ	G	€	FF	ÊÍ	F	ÊÍ	H
ÍÊM			{ a	ÊÍÊÍÊÍ	Í	ÊÍÊÍÊÍ	I	ÊÍÊÍÊÍ	F	€	F	ÊÍ	G	ÊÍ	I
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ÍÊO			{ a	€	F	ÊÍ	Í	ÊÍ	F	€	F	€	F	€	F
ÍÊP	TÚGÔ	F	{ æ	€	FF	ÊÍ	Í	ÊÍ	F	€	FF	€	FF	€	FF
ÍÊQ			{ a	€	F	ÊÍ	Í	ÊÍ	Í	€	F	€	F	€	F
ÍÊR		G	{ æ	HÍÊÍÊÍ	G	HÍÊÍÊÍ	I	FJÊÍÊÍ	F	ÊÍ	G	ÊÍ	F	ÊÍ	H
ÍÊS			{ a	ÍJÊÍÊÍ	F	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	G	ÊÍ	F	ÊÍ	Í	ÊÍ	H
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ÍÊU			{ a	FJÊÍÊÍ	J	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	G	ÊÍ	F	ÊÍ	G	ÊÍ	I
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ÍÊW			{ a	ÊÍÊÍÊÍ	F	ÊÍÊÍÊÍ	I	ÊÍÊÍÊÍ	G	€	F	ÊÍ	G	ÊÍ	I
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ÍÊZ	TÚFÔ	F	{ æ	€	FF	ÊÍ	Í	ÊÍ	F	€	FF	€	FF	€	FF
ÍG			{ a	€	F	ÊÍ	Í	ÊÍ	Í	€	F	€	F	€	F
ÍGA		G	{ æ	FÍÊÍÊÍ	Í	FÍÊÍÊÍ	F	ÊÍÊÍÊÍ	F	ÊÍ	I	ÊÍ	H	ÊÍ	G
ÍGB			{ a	ÊÍÊÍÊÍ	F	ÊÍÊÍÊÍ	G	ÊÍÊÍÊÍ	Í	ÊÍ	H	ÊÍ	Í	ÊÍ	F
ÍGC		H	{ æ	HÍÊÍÊÍ	Í	GÍÊÍÊÍ	F	FÍÊÍÊÍ	G	ÊÍ	I	ÊÍ	H	ÊÍ	H
ÍGD			{ a	FÍÊÍÊÍ	F	ÊÍÊÍÊÍ	H	ÊÍÊÍÊÍ	G	ÊÍ	H	ÊÍ	J	ÊÍ	I
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**9bj YcdYA Ya Vyf GYWJcb: cfWg f7 cbh7bi YXL**

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ÌÌJG		{ a	Ê ÊÊ	Ì	Ê ÊÊ	J	Ê ÊEH	J	Ê ÊEH	J	Ê ÊEH	J	Ê ÊEH	H	Ê ÊJ	Ì	Ê ÊJ	J
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ÌÌJÌ		{ a	Ê ÊÊ	Ì	Ê ÊEH	J	Ê ÊEH	G	€	G	Ê ÊH	Ì	Ê ÊH	Ì	Ê ÊU	J	Ê ÊU	J
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ÌÌJÎ		{ a	Ê ÊÊ	Ì	Ê ÊG	J	Ê ÊEH	J	€	G	Ê Ê	Ì	G	Ê ÊG	J	Ê ÊG	J	
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Ô{ }â´ K V[ ^\i) \*â^iâ \*Á{ }ã) •ÊSSÔ  
 Ô•â) ^\ K ÚÔ  
 Rãâ{ } â\ K VOUÁU{ } b&â{ } ÊGÍ HJÉ  
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### 9bj YcdYA Ya Vyf GYWcb: cfWg fl cbhpi YXL

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### 9bj YcdY5-G7 %H fl \*\$!\$L @F: 8 GHY7cXY7\ YWg

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F	T ÚOCE	ÚWÓ' GÉ	ÊÍ	H	F	ÊJF	H	G	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
G	T ÚOÓ	ÚWÓ' GÉ	ÊGH	H	H	ÊJG	H	I	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
H	TF	PUÙÍ YÍ YÍ	ÊÉ	€	Í	ÊEJ	€	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
I	TF	PUÙÍ YÍ YÍ	ÊJÍ	€	Í	ÊEJ	€	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
Í	TFÍ	PUÙÍ YÍ YÍ	ÊÍ	€	Í	ÊEJ	€	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
Î	T ÚOÓ	ÚWÓ' GÉ	ÊÍH	H	I	ÊJH	H	H	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
Ï	T GÍ	ÚSHD' ÇÍ	ÊÉ	ÊH	H	ÊGF	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
Ì	T IG	ÚSHD' ÇÍ	Ê€€	ÊH	F	ÊGH	Ê	^	F	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
J	T ÚFOE	ÚWÓ' GÉ	ÊHÍ	H	Í	ÊÍ	H	F	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FE	T ÚFO	ÚWÓ' GÉ	ÊH	H	Í	ÊÍ	€	H	H	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
FF	T ÚFO	ÚWÓ' GÉ	ÊHÍ	H	Í	ÊÍ	H	H	H	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
FG	T IH	ÚSHD' ÇÍ	ÊFJ	ÊH	I	ÊHG	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FH	T ÚHÓ	ÚWÓ' GÉ	ÊFI	H	G	ÊÍ	H	I	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FI	T ÚHOE	ÚWÓ' GÉ	ÊHÉ	H	H	ÊÍ	H	G	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FÍ	T I €	ÚSHD' ÇÍ	ÊHÉ	Ê	I	ÊÍ	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FÎ	T ÚHÓ	ÚWÓ' GÉ	ÊHG	H	I	ÊÍ	€	H	H	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
FÏ	T GÍ	ÚSHD' ÇÍ	ÊJ	ÊH	F	ÊÍ	Ê	^	F	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
FÌ	T ÚI CE	ÚWÓ' GÉ	ÊJÍ	I ÊH	Í	ÊJ	ÊH	H	ÊH	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
FJ	T ÚI Ó	ÚWÓ' GÉ	ÊJH	I ÊH	Í	ÊJ	ÊH	I	ÊH	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
G€	T ÚI Ó	ÚWÓ' GÉ	ÊJG	I ÊH	Í	ÊJ	ÊH	F	ÊH	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ
GF	T FG	ÚSHD' ÇÍ	ÊH	ÊH	G	ÊÍ	Ê	^	I	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
GG	T FH	ÚSHD' ÇÍ	ÊÍ	ÊH	G	ÊÍ	Ê	^	H	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
GH	T FE	ÚSHD' ÇÍ	ÊHÍ	Ê	G	ÊJ	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
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G	T IÍ	ÚWÓ' HÉ	Ê	I ÊÍ	Í	ÊEJ	ÊG	Í	GG	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
G	T IÍ	ÚWÓ' HÉ	ÊEH	I ÊÍ	Í	ÊE	ÊG	Í	GG	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
G	T IÍ	ÚWÓ' HÉ	ÊEG	I ÊÍ	Í	ÊEH	ÊG	Í	GG	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
GJ	T FÍ	PUÙÍ YÍ YÍ	ÊJÍ	ÊH	Í	ÊÍ	€	ÊÍ	I	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
H€	T HG	PUÙÍ YÍ YÍ	ÊJG	ÊH	Í	ÊÍ	F	ÊÍ	G	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
HF	T G	PUÙÍ YÍ YÍ	ÊJ	ÊH	Í	ÊÍ	ÊH	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
HG	T G	ŠG ÇÍ	ÊÍ	I ÊH	I	ÊE	I ÊH	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
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HI	T HH	ÚSHD' ÇÍ	ÊÍ	Ê	H	ÊF	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
HÍ	T H	ÚSHD' ÇÍ	ÊÍ	Ê	F	ÊÍ	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
HÎ	T FÍ	ÚSHD' ÇÍ	ÊÍ	G	I	ÊÍ	Ê	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
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IG	T IÍ H	ÚWÓ' GÉ	ÊGE	I ÊH	Í	ÊH	ÊG	FE	I	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
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IÍ	T HI	ÚSHD' ÇÍ	ÊÉ	€	F	ÊÍ	€	^	FE	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	
IÎ	T FJ	ÚSHD' ÇÍ	Ê€€	€	H	ÊÍ	H	€	^	Í	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ	ÊÍ	ÊGÍ

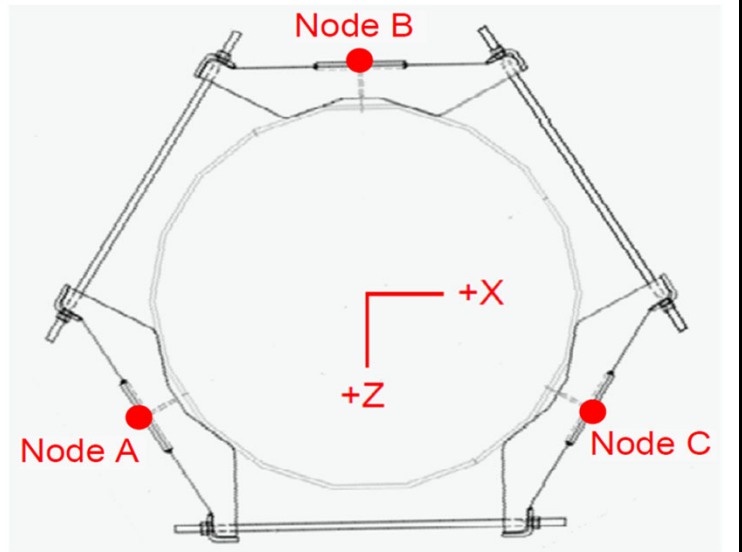




Collar Mount Calculations			Date
Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
Carrier:	T Mobile	Mount Elev. [ft]:	97
Site Name:	Newtown	Engineer Name:	Sarath Basamsetti
Site Number:	CT13057-A-SBA	TES Project #:	127390

NOTE: The results for all load combinations are presented in the Results Summary Table.

Collar # =	1	
RISA Joint Label =	N52	
Load Combination # =	7	
Collar Configuration # =	1	
Applied Axial Force, Fx =	-0.634	[Kips]
Applied Moment, M <sub>UY</sub> =	0.031	[Kip-Ft]
Applied Moment, M <sub>UZ</sub> =	8.756	[Kip-Ft]
Collar Height, H =	10	[Inches]
# of Rows of Thread Rod, n <sub>rows</sub> =	3	
Diameter of Thread Rod, db =	0.75	[Inches]
Thread Rod Vert. Spacing, Sv =	3.5	[Inches]
Thread Rod Horiz. Spacing, Sh =	22.554	[Inches]
Thread Rod Fy =	36	[KSI]
Thread Rod Fu =	58	[KSI]
Thread Rod Pretension, Fp =	8.836	[K/bolt]
Fpx =	7.652	[K/bolt]
φ =	1.0	



Typical Collar Mount Configuration

**Check Sliding:**

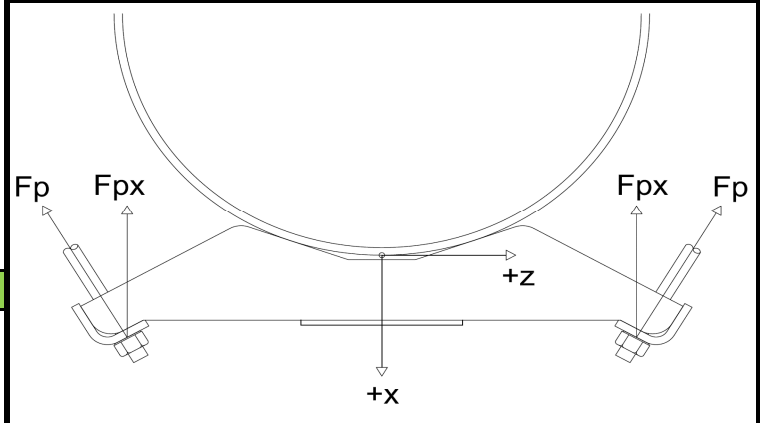
$$\phi Rns = (2 \cdot n_{rows} \cdot F_{px} - T) \cdot \mu$$

Applied Tension, T =	0.634	
Coefficient of Friction, μ =	0.30	
Applied Vertical Shear, Vy =	3.068	[Kips]
φRns =	13.583	
Max Usage (Vy/φRns):	22.6%	PASS

**Check Rotation:**

$$\phi Mny = (2 \cdot n_{rows} \cdot F_{px} + F_x) \cdot (Sh/4)$$

Applied Moment, M <sub>UY</sub> =	0.031	[Kip-Ft]
φMny =	21.275	[Kip-Ft]
Max Usage (Muy/φMny):	0.1%	PASS



Local Coordinates

**Check Tilting:**


$$\phi Mnz = \sum_{i=1}^{n_{rows}} (2 \cdot F_{px} \cdot y_i) - \left( \frac{T \cdot H}{2} \right)$$

Applied Moment, M <sub>UZ</sub> =	8.756	
φMnz =	18.866	
Max Usage (Muz/φMnz):	46.4%	PASS

**Check Interaction:**


$$\sqrt{\left( \frac{Vy}{\phi Rns} \right)^2 + \left( \frac{Muy}{\phi Mny} \right)^2 + \left( \frac{Muz}{\phi Mnz} \right)^2} \leq 1$$

Interaction Check:	51.6%	PASS
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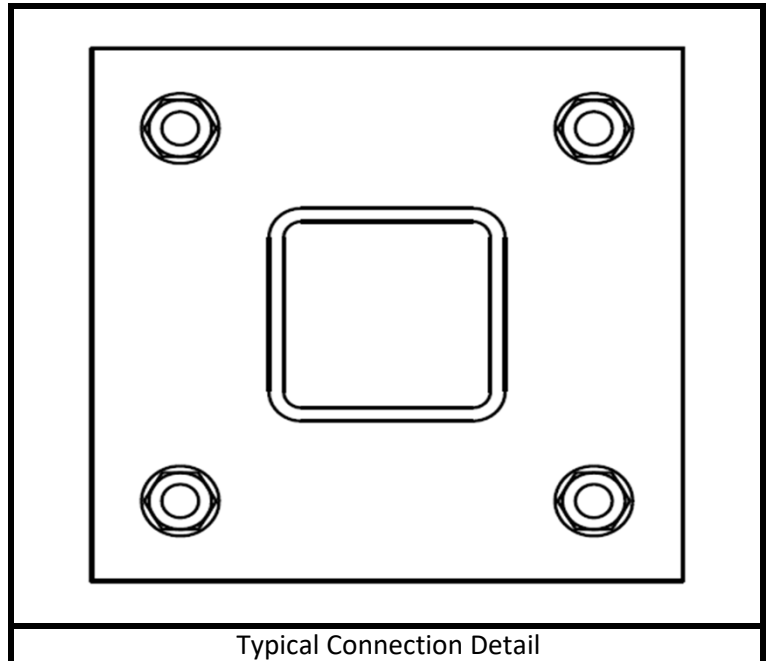
	Collar Mount Calculations			Date
				5/5/2022
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T Mobile	Mount Elev. [ft]:	97
	Site Name:	Newtown	Engineer Name:	Sarath Basamsetti
Site Number:	CT13057-A-SBA	TES Project #:	127390	

### Results Summary Table

Collar #	Joint Label	Load Combo #	Tension [K]	Muy [K-Ft]	Muz [K-Ft]	Sliding Check	Rotation Check	Tilting Check	Interaction Check
1	N1	1	0.0000	0.9926	1.6131	9.6%	4.4%	8.4%	13.6%
1	N1	2	1.6471	1.0211	0.6204	7.5%	4.9%	3.4%	9.6%
1	N1	3	0.0000	2.6893	1.2750	8.5%	12.0%	6.7%	16.2%
1	N1	4	1.7040	2.7113	0.9601	8.7%	13.1%	5.2%	16.5%
1	N1	5	0.0000	0.2416	3.0168	22.3%	1.1%	15.8%	27.4%
1	N1	6	0.4972	0.3215	2.7046	21.7%	1.5%	14.3%	26.0%
1	N1	7	0.0000	0.6564	2.9004	21.9%	3.0%	15.2%	26.8%
1	N1	8	0.4804	0.7361	2.8211	22.1%	3.4%	14.9%	26.9%
1	N1	9	0.0000	0.0718	1.0803	7.6%	0.3%	5.6%	9.5%
1	N1	10	0.0000	0.0869	0.9761	7.6%	0.4%	5.1%	9.2%
1	N1	11	0.0219	0.0181	1.3048	9.8%	0.1%	6.8%	12.0%
1	N27	1	1.7454	1.6622	0.7358	8.2%	8.0%	4.0%	12.1%
1	N27	2	0.0000	1.6417	1.0193	9.0%	7.3%	5.3%	12.7%
1	N27	3	0.8957	1.0112	0.6681	7.5%	4.8%	3.6%	9.6%
1	N27	4	0.0000	0.9980	1.0862	9.5%	4.5%	5.7%	12.0%
1	N27	5	0.5370	0.4972	2.1814	22.0%	2.3%	11.5%	24.9%
1	N27	6	0.0000	0.4419	2.2903	22.1%	2.0%	12.0%	25.2%
1	N27	7	0.3059	0.2945	2.1578	21.7%	1.4%	11.4%	24.5%
1	N27	8	0.0000	0.2400	2.3138	22.3%	1.1%	12.1%	25.4%
1	N27	9	0.2025	0.1686	2.4793	15.4%	0.8%	13.0%	20.2%
1	N27	10	0.1943	0.1599	0.7149	7.8%	0.7%	3.8%	8.7%
1	N27	11	0.0239	0.0117	1.0259	9.8%	0.1%	5.4%	11.2%
1	N52	1	0.0000	2.5178	2.7316	7.8%	11.2%	14.3%	19.7%
1	N52	2	2.0140	2.5091	3.8650	9.5%	12.2%	21.1%	26.2%
1	N52	3	2.6215	0.2748	4.1043	10.0%	1.4%	22.8%	24.9%
1	N52	4	0.0000	0.2729	2.4927	7.4%	1.2%	13.0%	15.0%
1	N52	5	0.0000	0.6427	8.3064	21.7%	2.9%	43.4%	48.6%
1	N52	6	0.4361	0.6322	8.6788	22.4%	3.0%	45.8%	51.1%
1	N52	7	0.6341	0.0310	8.7556	22.6%	0.1%	46.4%	51.6%
1	N52	8	0.0000	0.0414	8.2301	21.6%	0.2%	43.0%	48.1%
1	N52	9	0.0000	0.2349	2.7668	7.7%	1.1%	14.5%	16.4%
1	N52	10	0.0000	0.2382	6.9771	15.3%	1.1%	36.5%	39.6%
1	N52	11	0.0000	0.0026	3.8518	9.8%	0.0%	20.1%	22.4%

	<b>Standoff Arm Flange Connection Check</b>		Date	
			5/5/2022	
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T-Mobile	Mount Elev. [ft]:	97
	Site Name:	Newtown	Engineer Name:	Sarath Basamsetti
Site Number:	CT13057-A-SBA	Project #:	127390	
<p><i>NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.</i></p>				


RISA Member Label =	M31	
I or J End?	I	
Load Combination # =	6	
Plate Width, Wp =	10	[In]
Plate Height, Hp =	10	[In]
Plate Thickness, tp =	0.5	[In]
Plate Fy =	50	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	8	[In]
Bolt Vertical Spacing, Sbv =	8	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



NOTES
Standoff and Stiffener welds are assumed 0.1875 in.

### Capacity Checks:

Max Bolt Shear =	0.944	[Kips]
Bolt Shear Capacity =	13.81	[Kips]
Max Bolt Shear Usage =	6.8%	PASS
Max Bolt Tension =	6.12	[Kips]
Bolt Tension Capacity =	20.34	[Kips]
Max Bolt Tension Usage =	30.1%	PASS
Max Bolt Interaction =	30.4%	PASS
Max Plate Bending Moment =	23.01	[Kip-In]
Length of Yield Line =	7.85	[In]
Plate Moment Capacity =	22.08	[Kip-In]
Max Plate Usage =	84.8%	PASS
Max Weld Usage =	55.0%	PASS

	<b>Standoff Arm Flange Connection Check</b>			Date
				5/5/2022
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T-Mobile	Mount Elev. [ft]:	97
	Site Name:	Newtown	Engineer Name:	Sarath Basamsetti
Site Number:	CT13057-A-SBA	Project #:	127390	

### Results Summary Table

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M1	I	1	0.4540	3.5926	3.3%	17.7%	17.8%	50.5%	30.2%
M1	I	2	0.2538	0.7673	1.8%	3.8%	4.2%	10.6%	17.5%
M1	I	3	0.6610	4.5270	4.8%	22.3%	22.6%	62.8%	40.8%
M1	I	4	0.5550	4.1764	4.0%	20.5%	20.9%	57.9%	4.0%
M1	I	5	0.9295	5.9266	6.7%	29.1%	29.9%	84.2%	53.1%
M1	I	6	0.8732	5.0651	6.3%	24.9%	25.7%	71.8%	49.2%
M1	I	7	0.9376	6.0958	6.8%	30.0%	30.4%	84.5%	55.4%
M1	I	8	0.9126	6.0268	6.6%	29.6%	30.3%	83.6%	44.7%
M1	I	9	0.3505	2.0088	2.5%	9.9%	10.2%	28.5%	17.9%
M1	I	10	0.2997	2.0002	2.2%	9.8%	10.0%	28.4%	17.9%
M1	I	11	0.4030	2.4957	2.9%	12.3%	12.6%	35.5%	22.7%
M16	I	1	0.4579	2.4864	3.3%	12.2%	12.5%	34.5%	28.7%
M16	I	2	0.4773	3.7807	3.5%	18.6%	18.8%	52.4%	15.2%
M16	I	3	0.3132	0.8656	2.3%	4.3%	4.8%	12.0%	17.9%
M16	I	4	0.5171	3.5220	3.7%	17.3%	17.5%	49.3%	29.7%
M16	I	5	0.9097	5.5594	6.6%	27.3%	27.7%	77.1%	52.4%
M16	I	6	0.9188	5.9783	6.7%	29.4%	30.1%	82.9%	48.7%
M16	I	7	0.8788	5.1140	6.4%	25.1%	25.9%	72.4%	49.3%
M16	I	8	0.9360	5.8897	6.8%	29.0%	29.6%	83.6%	52.8%
M16	I	9	0.6096	4.6769	4.4%	23.0%	23.4%	65.3%	43.1%
M16	I	10	0.3125	1.8319	2.3%	9.0%	9.2%	25.4%	17.4%
M16	I	11	0.4030	2.4957	2.9%	12.3%	12.6%	35.5%	22.7%
M31	I	1	0.4744	2.6803	3.4%	13.2%	13.6%	37.2%	6.4%
M31	I	2	0.6458	4.4942	4.7%	22.1%	22.4%	62.3%	39.1%
M31	I	3	0.4280	3.6306	3.1%	17.8%	17.9%	50.3%	30.8%
M31	I	4	0.2891	1.1765	2.1%	5.8%	6.2%	16.3%	15.9%
M31	I	5	0.8947	5.5943	6.5%	27.5%	28.2%	77.6%	46.4%
M31	I	6	0.9442	6.1164	6.8%	30.1%	30.4%	84.8%	55.0%
M31	I	7	0.9221	5.8978	6.7%	29.0%	29.4%	83.3%	52.9%
M31	I	8	0.8845	5.1718	6.4%	25.4%	26.2%	72.8%	49.0%
M31	I	9	0.3368	1.8447	2.4%	9.1%	9.4%	25.6%	15.3%
M31	I	10	0.7084	4.7034	5.1%	23.1%	23.7%	65.2%	41.1%
M31	I	11	0.4030	2.4957	2.9%	12.3%	12.6%	35.5%	22.7%

# Exhibit F

## **Power Density/RF Emissions Report**

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

T-Mobile Existing Facility

Site ID: CT11668B

CT668/Arch Twrs-Newtown  
151 Berkshire Road  
Newtown, Connecticut 06482

**June 2, 2022**

**EBI Project Number: 6222003618**

<b>Site Compliance Summary</b>	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>38.21%</b>



June 2, 2022

T-Mobile

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

Emissions Analysis for Site: CT11668B - CT668/Arch Twrs-Newtown

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

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

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 11) 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.
- 12) 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.
- 13) The antennas used in this modeling are the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all

calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 14) The antenna mounting height centerline of the proposed antennas is 97 feet above ground level (AGL).
- 15) 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.
- 16) 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:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd
Height (AGL):	97 feet	Height (AGL):	97 feet	Height (AGL):	97 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360.00 Watts	Total TX Power (W):	360.00 Watts	Total TX Power (W):	360.00 Watts
ERP (W):	13,446.73	ERP (W):	13,446.73	ERP (W):	13,446.73
Antenna A1 MPE %:	5.84%	Antenna B1 MPE %:	5.84%	Antenna C1 MPE %:	5.84%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	97 feet	Height (AGL):	97 feet	Height (AGL):	97 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	4.29%	Antenna B2 MPE %:	4.29%	Antenna C2 MPE %:	4.29%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	97 feet	Height (AGL):	97 feet	Height (AGL):	97 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A3 MPE %:	13.46%	Antenna B3 MPE %:	13.46%	Antenna C3 MPE %:	13.46%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	23.59%
Sprint	0.07%
Town of Newtown	0.17%
Verizon	6.87%
AT&T	7.51%
<b>Site Total MPE % :</b>	<b>38.21%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	23.59%
T-Mobile Sector B Total:	23.59%
T-Mobile Sector C Total:	23.59%
Site Total MPE % :	38.21%

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	1076.77	97.0	18.70	1900 MHz GSM	1000	1.87%
T-Mobile 1900 MHz LTE	2	2153.53	97.0	18.70	1900 MHz LTE	1000	1.87%
T-Mobile 2100 MHz LTE	2	2416.30	97.0	20.98	2100 MHz LTE	1000	2.10%
T-Mobile 600 MHz LTE	2	591.73	97.0	5.14	600 MHz LTE	400	1.28%
T-Mobile 600 MHz NR	1	1577.94	97.0	6.85	600 MHz NR	400	1.71%
T-Mobile 700 MHz LTE	2	695.22	97.0	6.04	700 MHz LTE	467	1.29%
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	9619.47	97.0	41.76	2500 MHz LTE IC & 2C Traffic	1000	4.18%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	717.84	97.0	3.12	2500 MHz LTE IC & 2C Broadcast	1000	0.31%
T-Mobile 2500 MHz NR Traffic	1	19238.94	97.0	83.52	2500 MHz NR Traffic	1000	8.35%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	97.0	6.23	2500 MHz NR Broadcast	1000	0.62%
						<b>Total:</b>	<b>23.59%</b>

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

## Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	23.59%
Sector B:	23.59%
Sector C:	23.59%
T-Mobile Maximum MPE % (Sector A):	23.59%
Site Total:	38.21%
Site Compliance Status:	<b>COMPLIANT</b>


The anticipated composite MPE value for this site assuming all carriers present is **38.21%** 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.

# Exhibit G

## Recipient Mailings






DANIEL C ROSENTHAL  
FIRST SELECTMAN  
3 PRIMROSE ST  
NEWTOWN CT 06470-5307

DEBORAH CHASE  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

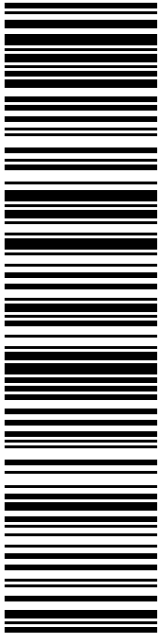
Expected Delivery Date: 06/06/22  
Ref#: SBCT-668B

**R006**



Electronic Rate Approved #038555749

USPS TRACKING #



9405 5036 9930 0264 6828 05

06/03/2022


Mailed from 01566

**P**

usps.com  
9405 5036 9930 0264 6828 05 0089 5000 0010 6470  
**\$8.95**  
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Trans. #:	564855561	Priority Mail® Postage:	<b>\$8.95</b>
Print Date:	06/03/2022	Total:	<b>\$8.95</b>
Ship Date:	06/03/2022		
Expected			
Delivery Date:	06/06/2022		

**From:** DEBORAH CHASE  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

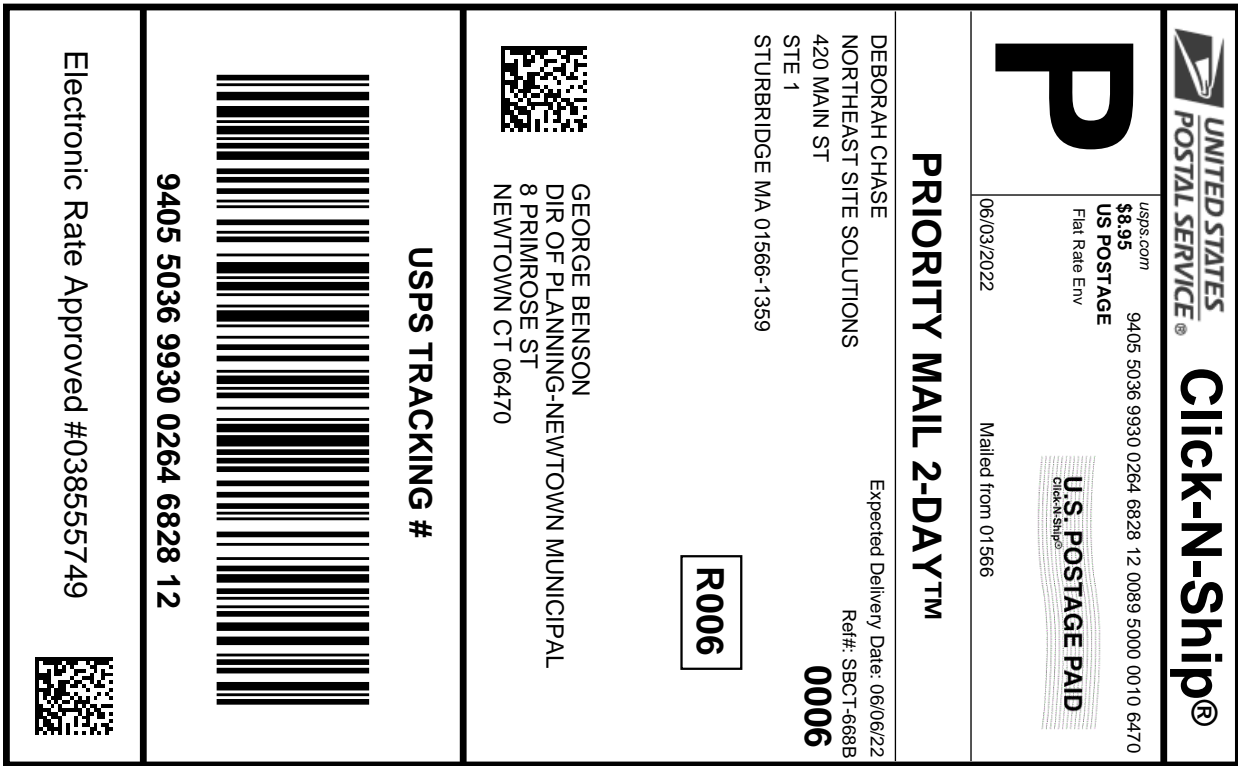
**To:** DANIEL C ROSENTHAL  
FIRST SELECTMAN  
3 PRIMROSE ST  
NEWTOWN CT 06470-5307

Ref#: SBCT-668B

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<b>USPS TRACKING # :</b>	
<b>9405 5036 9930 0264 6828 12</b>	
Trans. #:	564855561
Print Date:	06/03/2022
Ship Date:	06/03/2022
Expected Delivery Date:	06/06/2022
Priority Mail® Postage:	<b>\$8.95</b>
Total:	<b>\$8.95</b>
<b>From:</b>	DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359
<b>To:</b>	GEORGE BENSON DIR OF PLANNING-NEWTOWN MUNICIPAL BLDG 8 PRIMROSE ST NEWTOWN CT 06470
Ref#:	SBCT-668B

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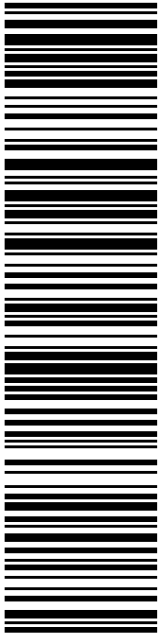
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SBA INFRASTRUCTURE LLC  
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BOCA RATON FL 33487-1307

**USPS TRACKING #**



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**P**

06/03/2022 Mailed from 01566

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DEBORAH CHASE  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

Expected Delivery Date: 06/06/22 Ref#: SBCT-668B  
**0006**

**C036**

Electronic Rate Approved #038555749





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5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0264 6828 29**

Trans. #: 564855561	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 06/03/2022	Total: <b>\$8.95</b>
Ship Date: 06/03/2022	
Expected Delivery Date: 06/06/2022	

**From:** DEBORAH CHASE Ref#: SBCT-668B  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

**To:** SBA INFRASTRUCTURE LLC  
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BOCA RATON FL 33487-1307

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CT 11668B SBA  
TMS



FARMINGTON  
210 MAIN ST  
FARMINGTON, CT 06032-9998  
(800)275-8777

06/07/2022 08:51 AM

Product	Qty	Unit Price	Price
Prepaid Mail Newtown, CT 06470 Weight: 0 lb 9.70 oz Acceptance Date: Tue 06/07/2022 Tracking #: 9405 5036 9930 0264 6828 05	1		\$0.00
Prepaid Mail Newtown, CT 06470 Weight: 0 lb 9.70 oz Acceptance Date: Tue 06/07/2022 Tracking #: 9405 5036 9930 0264 6828 12	1		\$0.00
Prepaid Mail Boca Raton, FL 33487 Weight: 0 lb 1.90 oz Acceptance Date: Tue 06/07/2022 Tracking #: 9405 5036 9930 0264 6828 29	1		\$0.00

Grand Total: \$0.00

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