



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

May 2, 2022

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

RE: Exempt Modification Application  
56 Roper Road, Plainfield, CT 06374  
Latitude: 41.746058  
Longitude: -71.880150  
Site #: CT00594-S\_CT11155F\_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 56 Roper Road, Plainfield, CT 06374. T-Mobile currently maintains six (6) antennas at the 165-foot level of the existing 178-foot monopole tower. The property is owned by Tilcon, Inc, and the tower is owned by SBA. T-Mobile now intends to replace (3) existing antennas with (3) new antennas. The new antennas would be installed at the 165-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

**T-Mobile Planned Modifications:**

**Remove:** None

**Remove and Replace:**

(3) RFS APX18DWV-206516S-C-A20 Antennas (Remove) – (3) Ericsson AIR6449 B41 Antennas (Replace)

**Install New:**

(3) ERICSSON 4460 B25+B66 RRU

(1) HCS Fiber Cable 1.9”

**Existing to Remain:**

(3) RFS APXVAALL24-43-U-NA20 Antennas

(3) ERICSSON 4449 B71+B85 RRU

(3) HCS Fiber Cable 1.9”

(6) Coax – 1-5/8” \*

(6) Twin TMAs – KRY 112 489/2 \*

(3) KATHREIN Bias Ts - 782 11056 \*

\*Equipment listed for entitlement purposed only



The facility was approved by the Town of Plainfield Planning & Zoning Commission on July 14, 1998. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-SOj-73, a copy of this letter is being sent to Kevin M. Cunningham, First Selectman, and Mary Ann Chinatti, Town Planner for the Town of Plainfield, 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  
*Turnkey Wireless Development*

Attachments

Cc: Kevin M. Cunningham, First Selectman  
Town of Plainfield  
8 Community Avenue  
Plainfield, CT 06374

Mary Ann Chinatti, Town Planner  
Town of Plainfield  
8 Community Avenue  
Plainfield, CT 06374

Tilcon, Inc – Property Owner  
PO Box 311228  
Newington, CT 06131

SBA - Tower Owner

# Exhibit A

## **Original Facility Approval**





Town Hall  
8 Community Avenue  
Plainfield, CT 06374

Telephone 564-4071  
Fax 564-0612

**THE PLAINFIELD TOWN HALL**

PLAINFIELD - CENTRAL VILLAGE - MOOSUP - WAUREGAN

PLANNING AND ZONING COMMISSION

July 28, 1998

SBA, Inc.  
Esther McNary  
Nextel Communications  
125 Shaw St. #116  
New London, CT 06320

Dear Applicant:

At its meeting, on Tuesday, July 14, 1998, the Planning and Zoning Commission approved your request SP-98-06 for the construction of a telecommunication tower on Green Hollow Rd., Wauregan. Map 20, Block 124, Parcel 6.

The following are conditions of that approval:

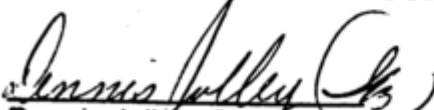
**None**

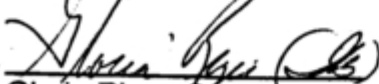
A copy of the Legal Notice is enclosed for your records and appeared in the Norwich Bulletin on Wednesday, July 22, 1998.

Please file the enclosed Special Permit Record in the Town Clerk's Office after the above date of publication. The Special Permit Record shall not be effective until the record is filed.

Very truly yours,

PLANNING AND ZONING COMMISSION

  
Dennis Jolley, Chairman

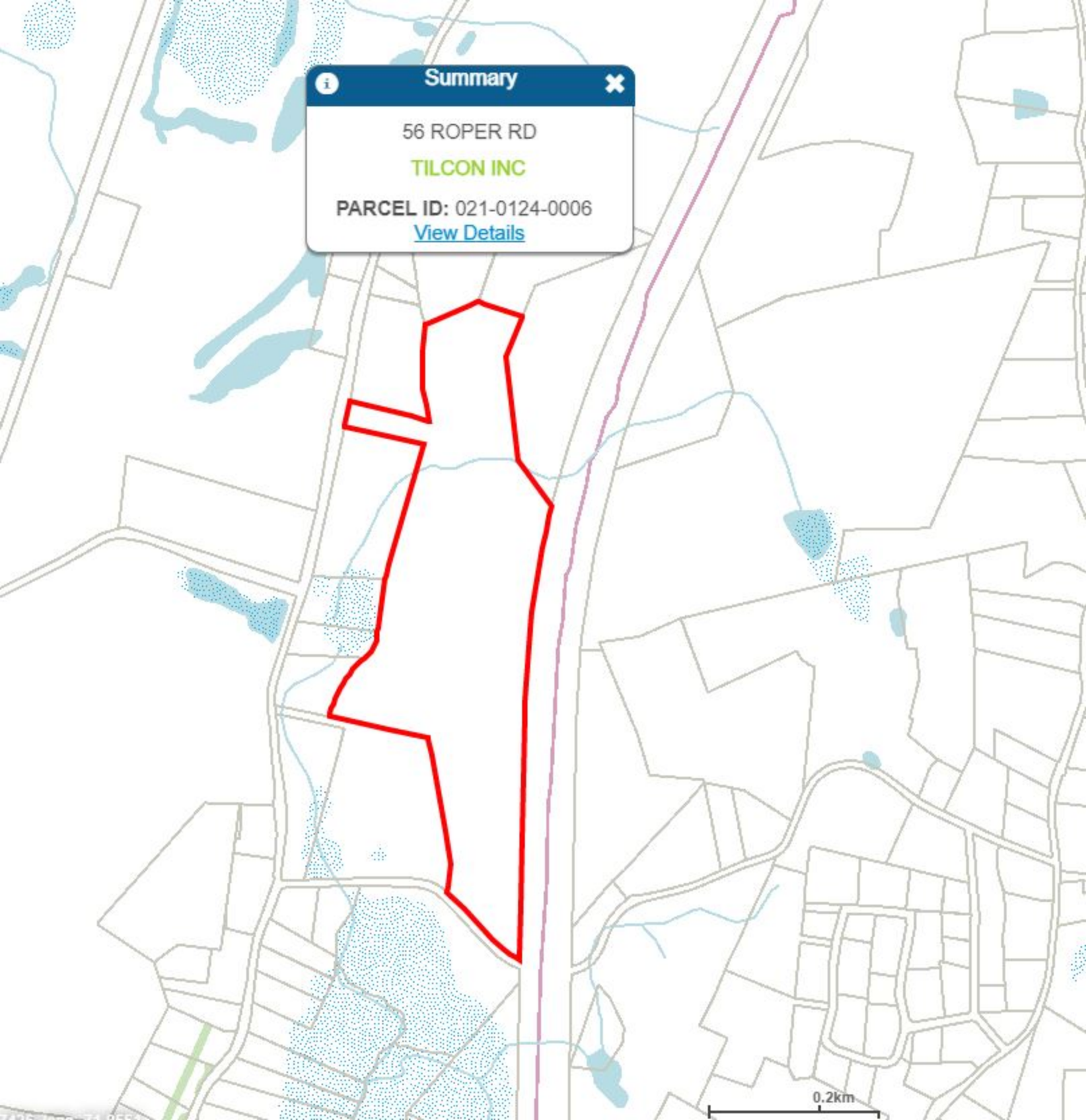
  
Gloria Rizer, Secretary

# Exhibit B

## **Property Card**

**Summary** ✕

56 ROPER RD  
**TILCON INC**  
PARCEL ID: 021-0124-0006  
[View Details](#)



0.2km



# PLAINFIELD,CT

56 ROPER RD

**Location**

56 ROPER RD

**Mblu**

021/ 0124/ 0006/ /

**Acct#**

00276300

**Owner**

TILCON INC

**Assessment**

\$324,870

**Appraisal**

\$464,100

**PID**

3062

**Building Count**

1

Current Value

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**Appraisal**

Valuation Year	Improvements	Land	Total
2020	\$54,000	\$410,100	\$464,100

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**Assessment**

Valuation Year	Improvements	Land	Total
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2020	\$37,800	\$287,070	\$324,870
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**Owner of Record**

**Owner** TILCON INC

**Co-Owner**

**Address** PO BOX 311228  
NEWINGTON, CT 06131

**Sale Price** \$0

**Certificate**

**Book & Page** 0277/0805

**Sale Date** 07/16/2001

**Instrument** 29

Ownership History

**Ownership History**

Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
TILCON INC	\$0		0277/0805	29	07/16/2001
TILCON MINERALS INC	\$0		0140/0268		07/30/1981
TILCON MINERALS	\$0		0132/0853		04/26/1979

Building Information

Building 1 : Section 1

**Year Built:**

**Living Area:** 0

**Replacement Cost:** \$0

**Building Percent Good:**

**Replacement Cost**

**Less Depreciation:** \$0

**Building Attributes**


Field	Description
Style:	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 Baths:	
Half Baths:	
Extra Fixtures:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces:	
Xtra Openings:	
Gas Fireplaces:	
Woodstove/Pellet	
Bsmt Gar:	
Num Park	
Fireplaces	

Color	
Basement:	
Fndtn Cndtn	
Basement	



Building Photo

Building Layout 

**Building Sub-Areas (sq ft) Legend**

No Data for Building Sub-Areas

Extra Features

**Extra Features Legend**

No Data for Extra Features

Land

Land Use

**Use Code** 4400

**Description** IND LD DV

**Zone** IND

**Neighborhood** 4000

**Alt Land Appr** No

**Category**

Land Line Valuation

**Size (Acres)** 65.8

**Frontage**

**Depth**

**Assessed Value** \$287,070

**Appraised Value** \$410,100

Outbuildings

**Outbuildings Legend**

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
TT4	Cell Tower			200.00 HEIGHT	\$54,000	1

Valuation History

**Appraisal**

Valuation Year	Improvements	Land	Total
2020	\$54,000	\$410,100	\$464,100
2019	\$54,000	\$410,100	\$464,100

**Assessment**

Valuation Year	Improvements	Land	Total
2020	\$37,800	\$287,070	\$324,870
2019	\$37,800	\$287,070	\$324,870

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closecloseclose



# Exhibit C

## **Construction Drawings**



# PLAINFIELD NORTH

56 ROPER ROAD  
PLAINFIELD, CT 06114  
WINDHAM/PLAINFIELD COUNTY

## SITE NO.: CT11155F

SITE TYPE: 178'± MONOPOLE

RF DESIGN GUIDELINE: 67D5D998E 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

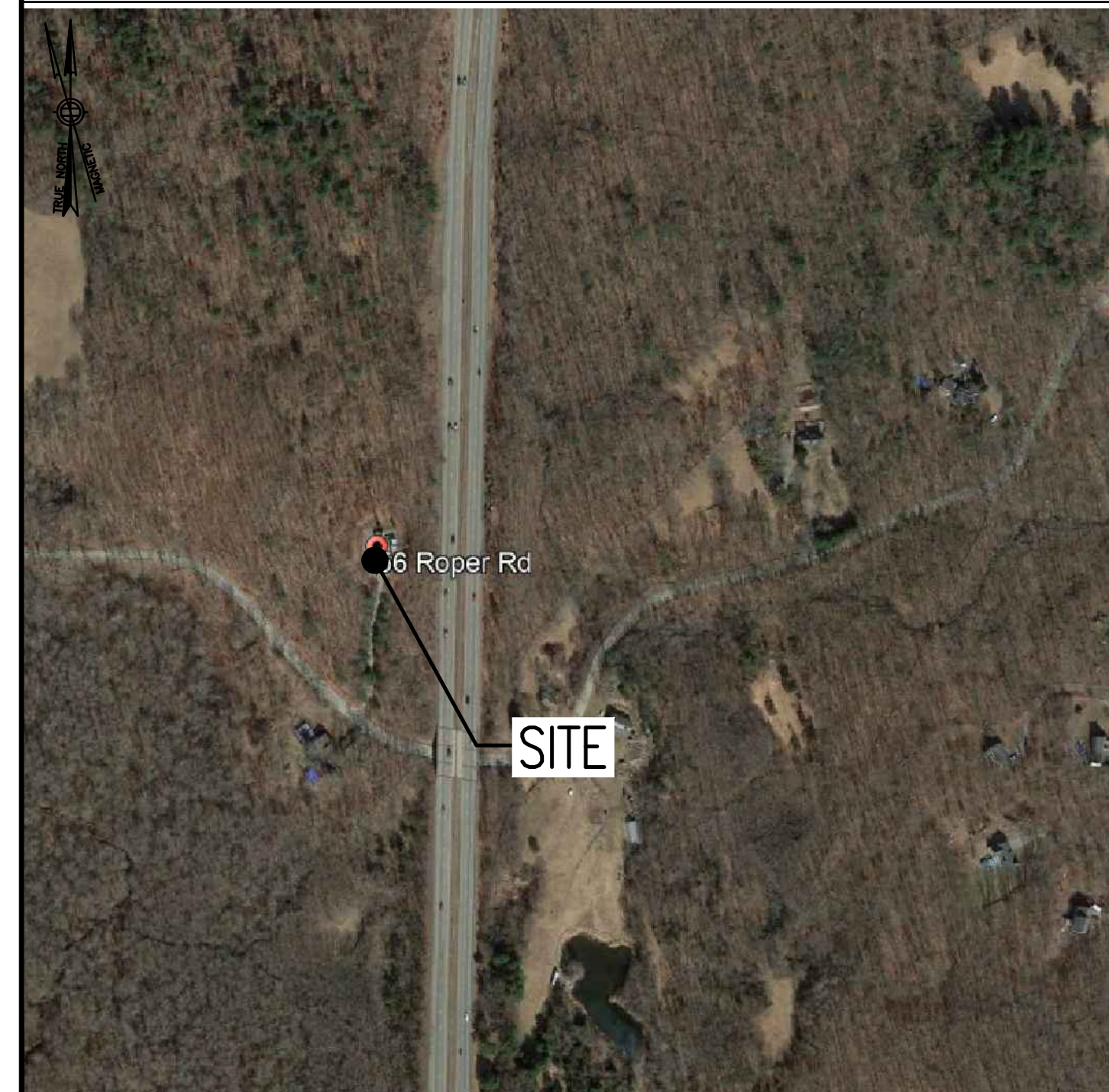
- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT 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 OMBUDSMAN 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: NTS



### DIRECTIONS

MERGE ONTO I-495 N VIA THE RAMP ON THE LEFT. MERGE ONTO I-95 S VIA EXIT 33B TOWARD PROVIDENCE RI. MERGE ONTO I-295 S VIA EXIT 6 TOWARD WOONSOCKET RI/WARWICK RI (CROSSING INTO RHODE ISLAND). TAKE THE US-6 W EXIT, EXIT 9C, TOWARD HARTFORD CT. MERGE ONTO US-6 W/RI-101 TOWARD FOSTER/SCITUATE. TURN SLIGHT LEFT ONTO US-6 W (CROSSING INTO CONNECTICUT). TAKE GOVERNOR JOHN DAVIS LODGE TURNPIKE. GOVERNOR JOHN DAVIS LODGE TURNPIKE BECOMES I-395 S. TAKE RIGHT ON ROPER ROAD. SITE IS ON RIGHT SIDE.

### SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	TOWER ELEVATION & ANTENNA PLANS	0
A-3	SITE DETAILS	0
A-4	ANTENNA & FEEDLINE CHARTS	0
E-1	ELECTRIC & GROUNDING DETAILS	0

### DO NOT SCALE DRAWINGS

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

### SCOPE OF WORK

REMOVE:	INSTALL:
• 3 ANTENNAS	• 3 ANTENNAS
• 6 COAX CABLES	• 3 RADIOS
• 6 TMA'S	• 1 6160 EQUIPMENT CABINET
• 1 60A-2P BREAKER	• 1 B160 BATTERY CABINET
	• 1 SLACKBOX
	• 2 125A-2P BREAKER2
	• 1 25A-1P BREAKER
	• 1 HYBRID CABLE
	• 1 ICE BRIDGE

### 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:	CT11155F
SITE NAME:	PLAINFIELD NORTH
SBA SITE NUMBER:	CT00594-S
SBA SITE NAME:	PLAINFIELD NORTH
SITE ADDRESS:	56 ROPER ROAD PLAINFIELD, CT 06114
PROPERTY OWNER:	TILCON CONNECTICUT, INC. PO BOX 416789 BOSTON, MA 02241-6789
TOWER OWNER:	SBA PROPERTIES, LLC 8051 CONGRESS AVENUE BOCA RATON, FL 33487-1307
COUNTY:	ROCKINGHAM
ZONING DISTRICT:	IND (INDUSTRIAL)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	178'±
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: 41.746° N41°44'45.61" LONGITUDE: -71.8802° W71°52'48.57"

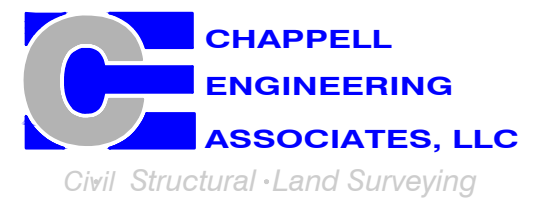
**SPECIAL ZONING NOTE:**  
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A),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

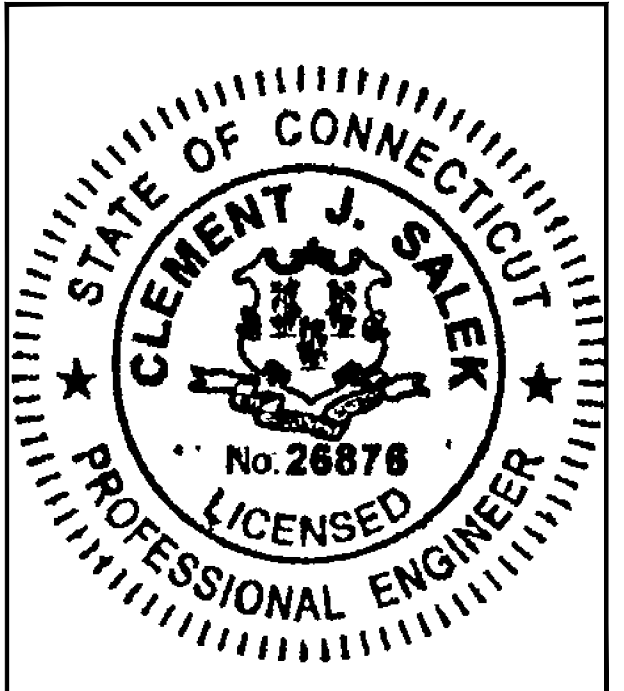
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



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



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	04/01/21	ISSUED FOR REVIEW	TRB

SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
56 ROPER ROAD  
PLAINFIELD, CT 06114

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**



**GENERAL NOTES:**

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

**SITE WORK GENERAL NOTES:**

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

**CONCRETE AND REINFORCING STEEL NOTES:**

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNDO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND 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 .....½ IN.
- A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;  
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.  
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.  
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

**STRUCTURAL STEEL NOTES:**

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

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

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

**COMPACTION EQUIPMENT:**

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

**CONSTRUCTION NOTES:**

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

**ELECTRICAL INSTALLATION NOTES:**

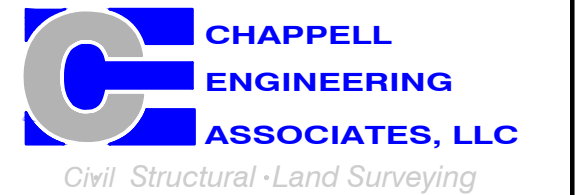
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TERCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLE TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR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

**T-MOBILE  
NORTHEAST LLC**

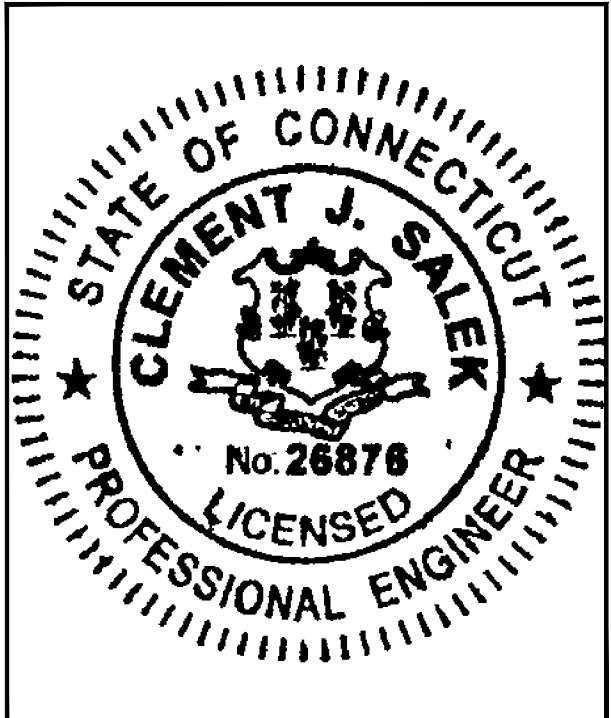
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



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



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	04/01/21	ISSUED FOR REVIEW	TRB

SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
56 ROPER ROAD  
PLAINFIELD, CT 06114

SHEET TITLE

**GENERAL NOTES**

SHEET NUMBER

**GN-1**



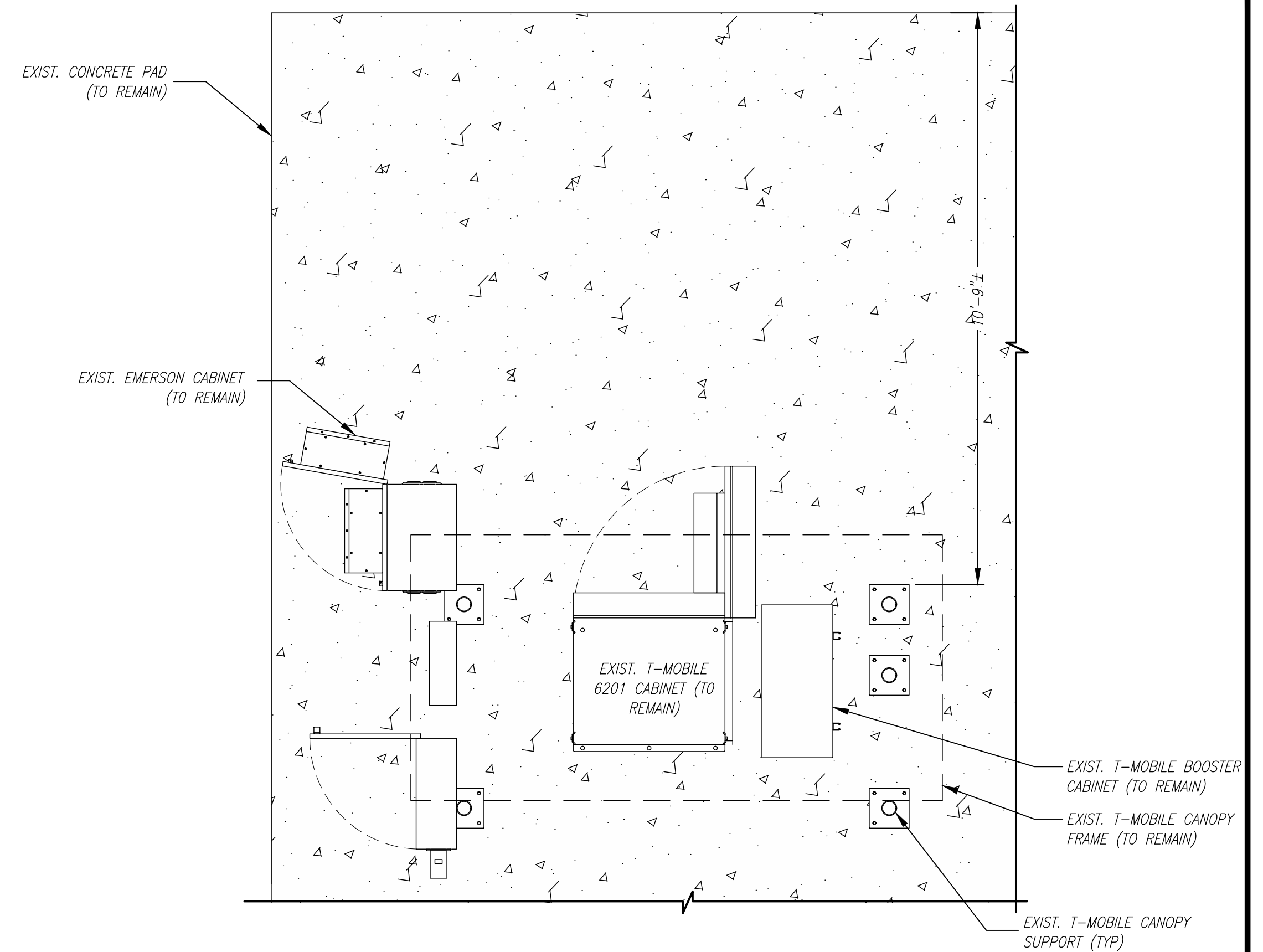
**SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):**  
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR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

**SPECIAL CONSTRUCTION NOTE:**  
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

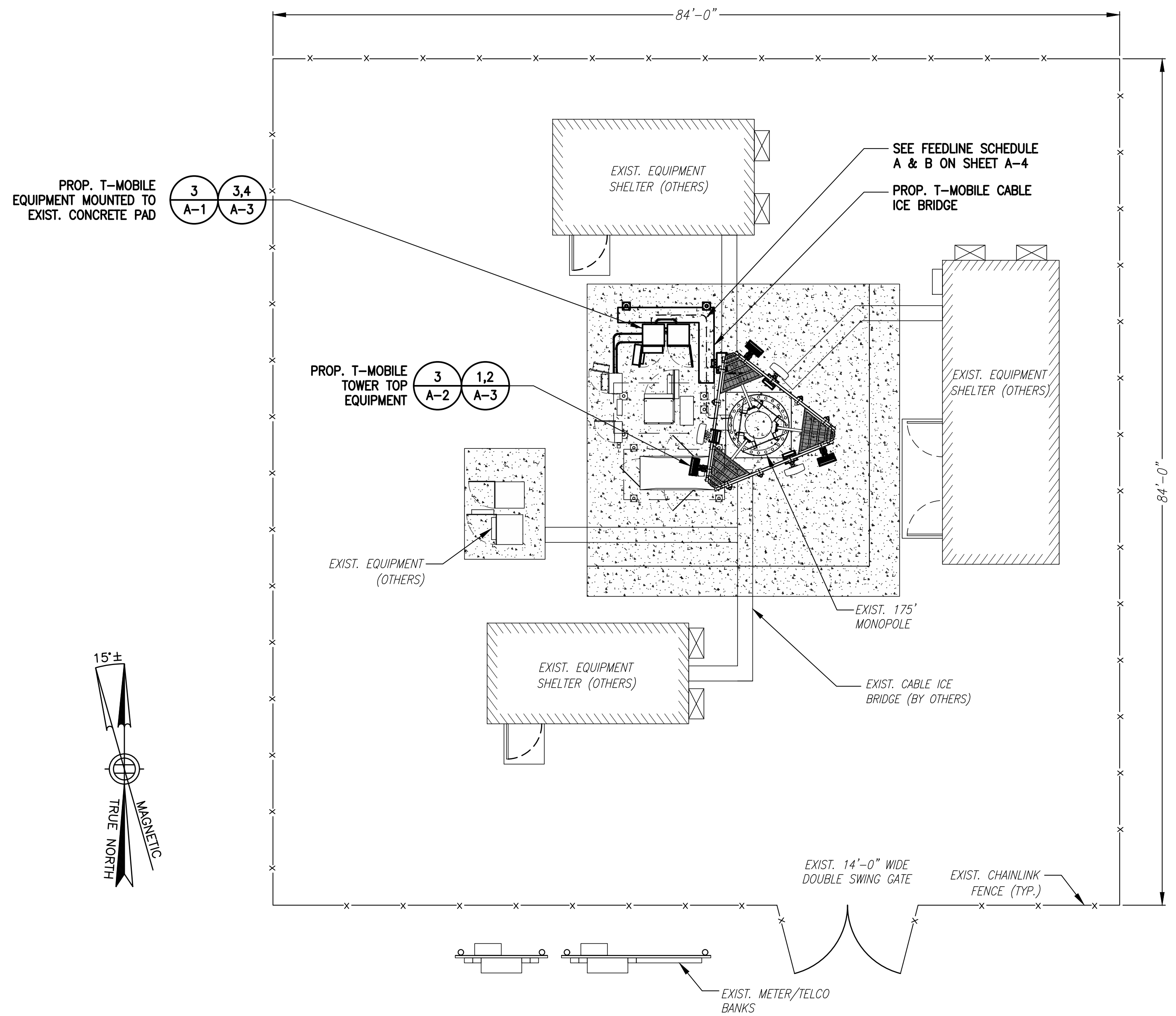


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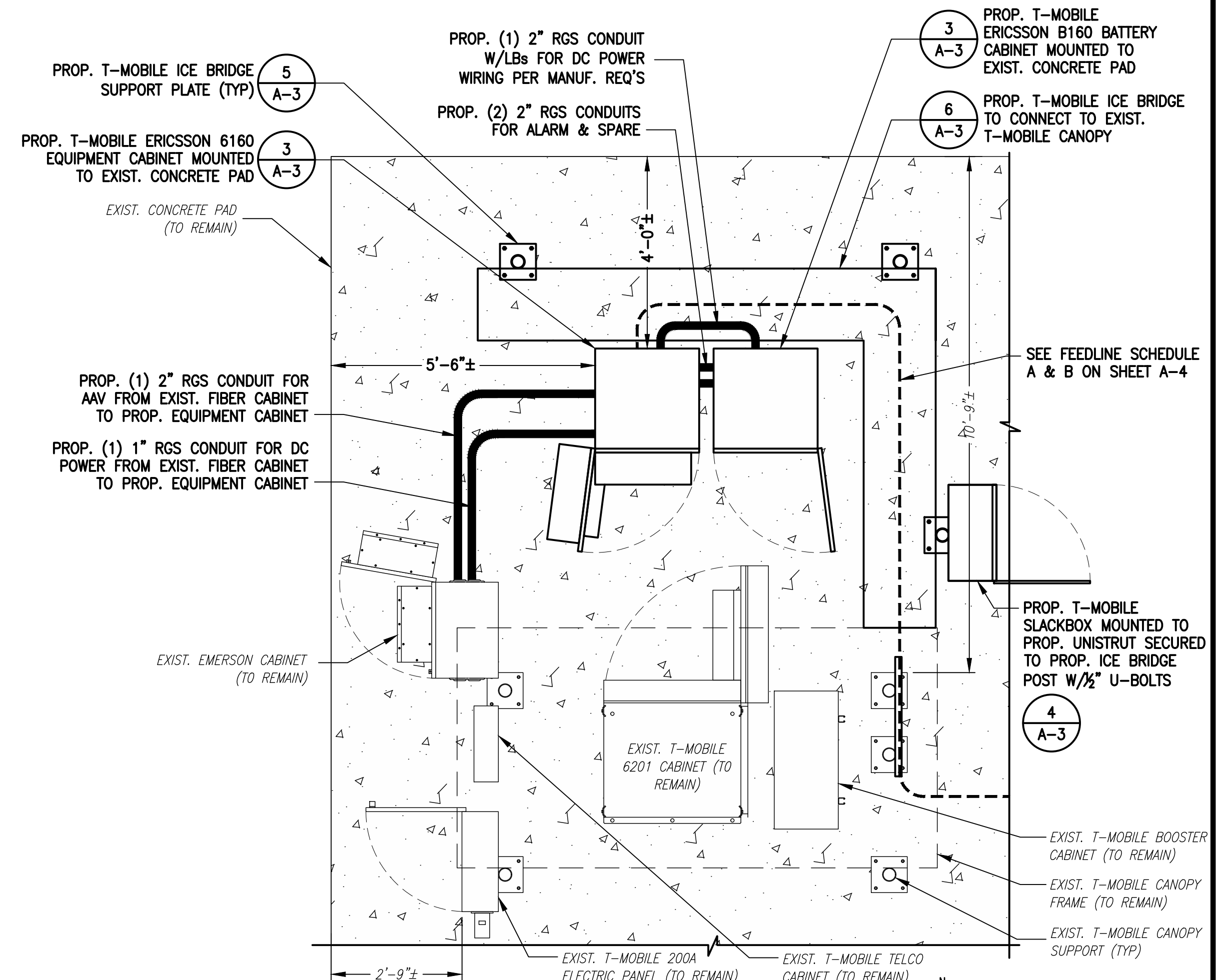
**EXISTING EQUIPMENT PHOTO** 4  
 SCALE: N.T.S. A-1



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



**COMPOUND PLAN** 1  
 SCALE: 1" = 8'-0" A-1



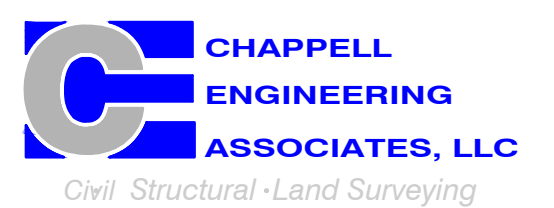
**PROPOSED EQUIPMENT PLAN** 3  
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**T-MOBILE  
 NORTHEAST LLC**

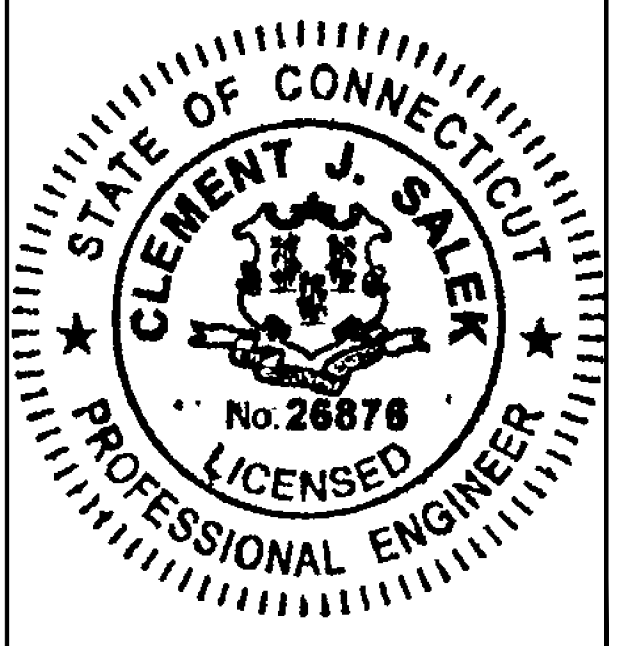
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 (508) 286-2700



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 WESTBOROUGH, MA 01581  
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SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
 56 ROPER ROAD  
 PLAINFIELD, CT 06114

SHEET TITLE  
**COMPOUND &  
 EQUIPMENT PLANS**

SHEET NUMBER  
**A-1**



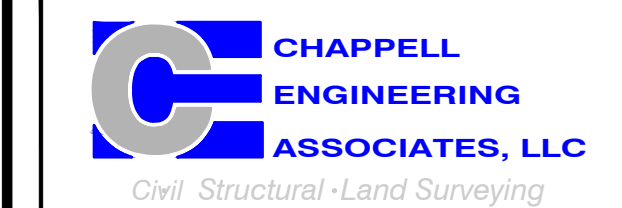
**RAD CENTER NOTE:**  
 T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

**T-MOBILE  
 NORTHEAST LLC**

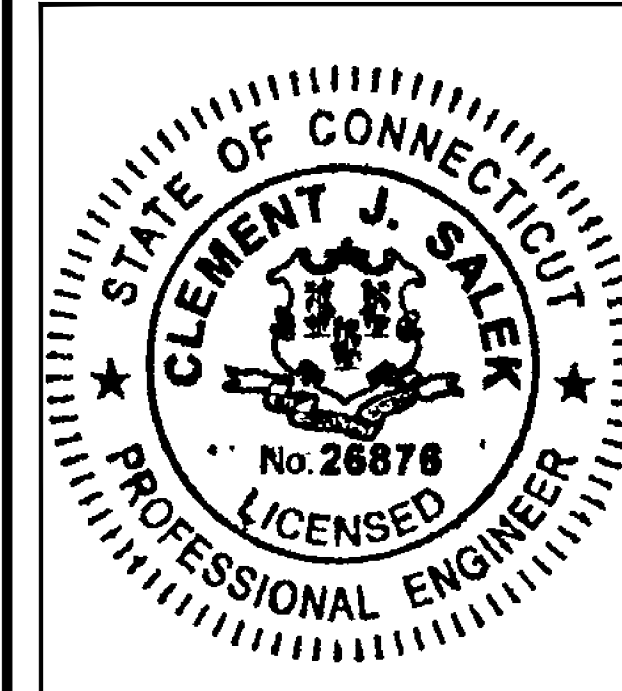
15 COMMERCE WAY, SUITE B  
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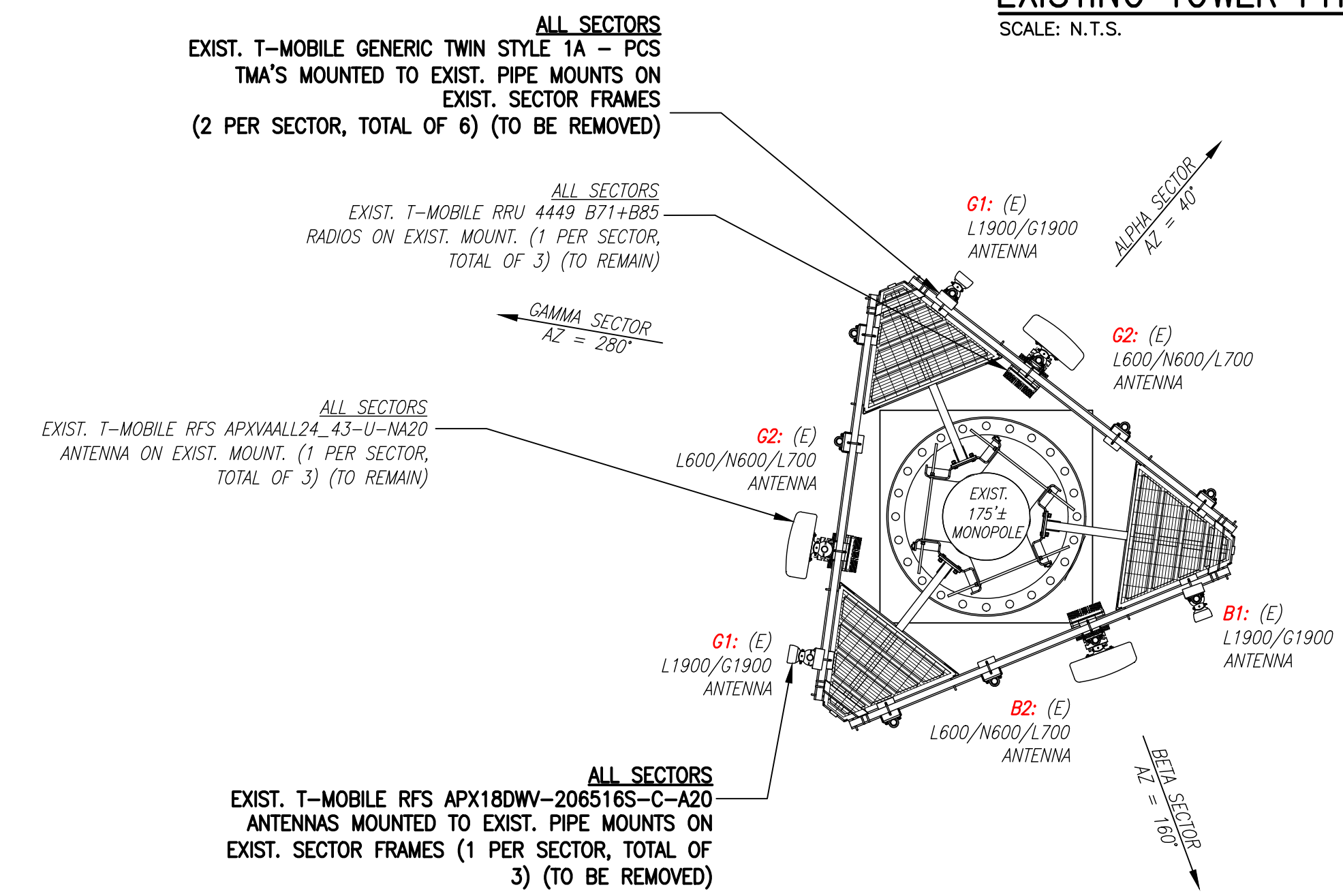
TOWER ELEVATION &  
 ANTENNA PLANS

SHEET NUMBER

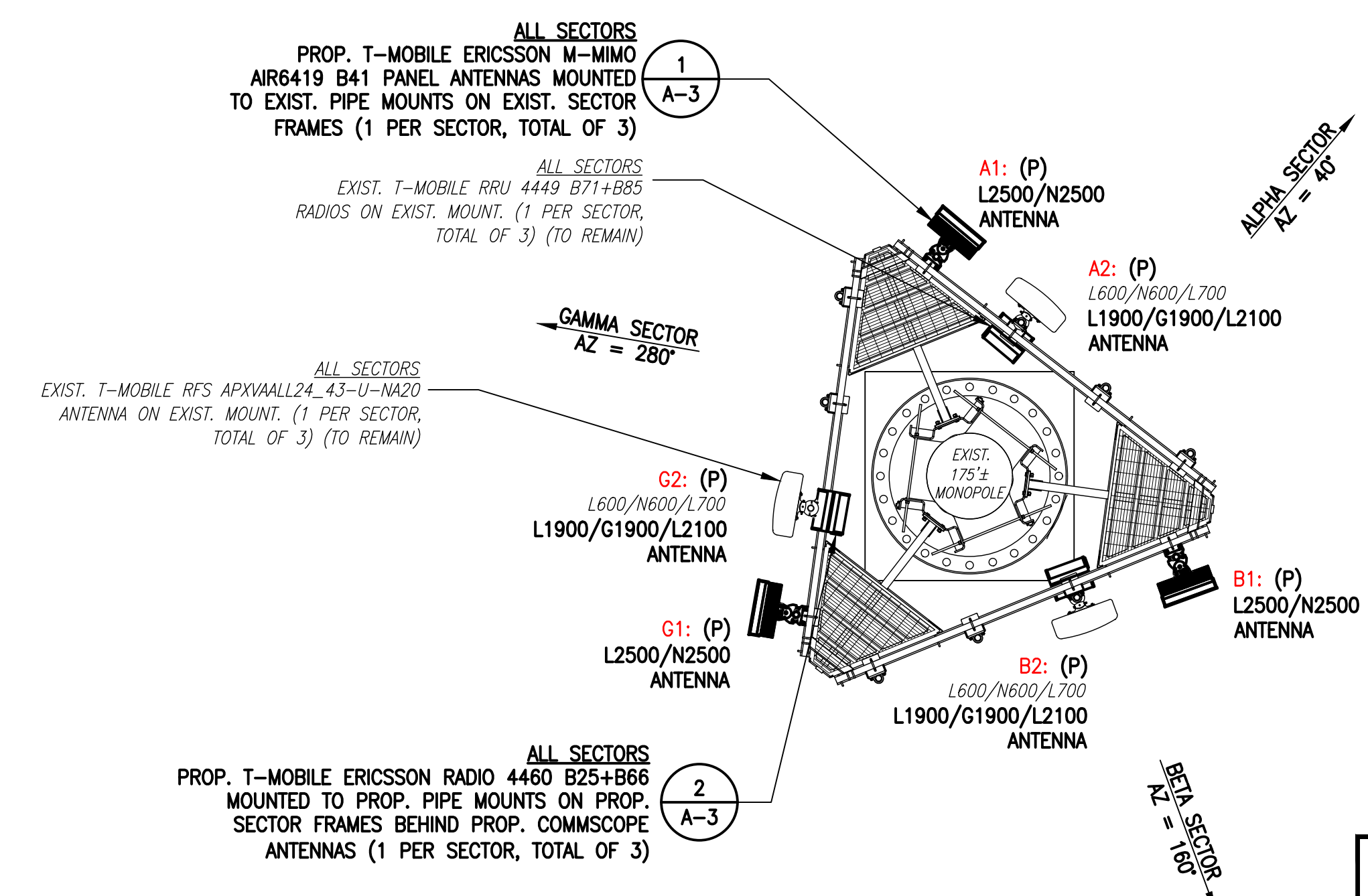
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**EXISTING TOWER PHOTO**  
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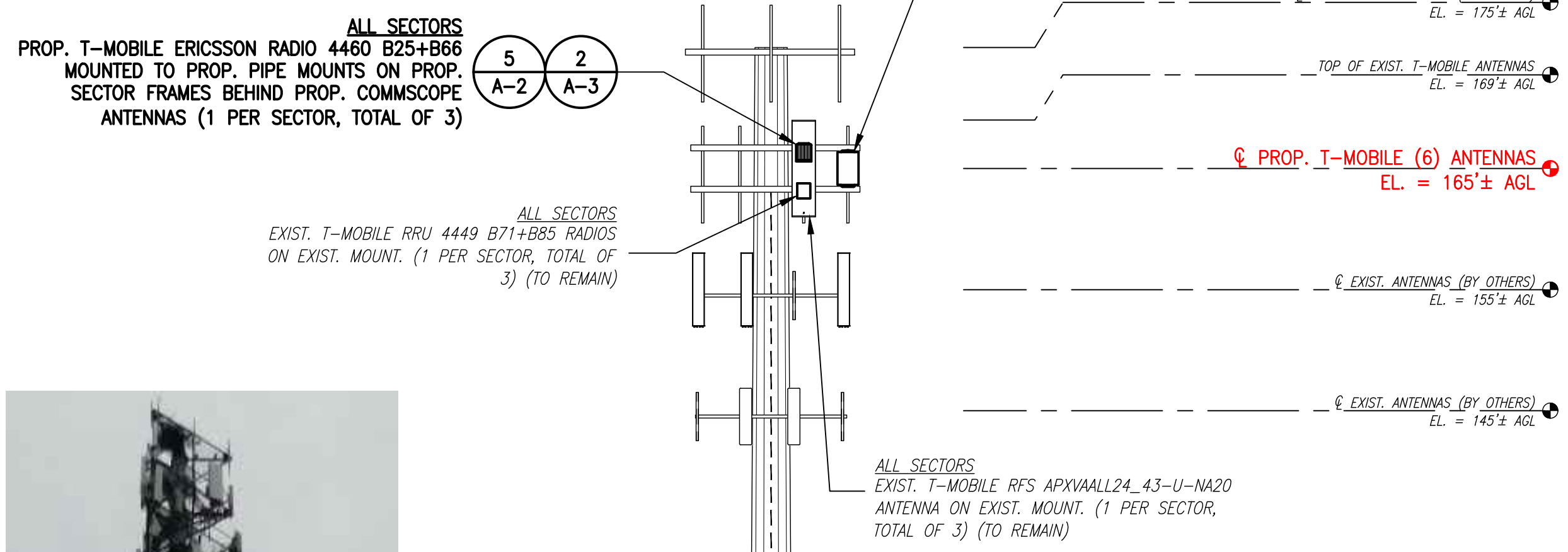


**EXISTING ANTENNA PLAN**  
 SCALE: N.T.S.



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

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



**TOWER ELEVATION**  
 SCALE: 1" = 10'-0"



**EXISTING TOWER PHOTO**  
 SCALE: N.T.S.

GROUND LEVEL  
 EL. = 0' AGL

**NOTE:**  
 GROUND EQUIPMENT NOT  
 SHOWN, FOR CLARITY.

SEE FEEDLINE SCHEDULE  
 A & B ON SHEET A-4

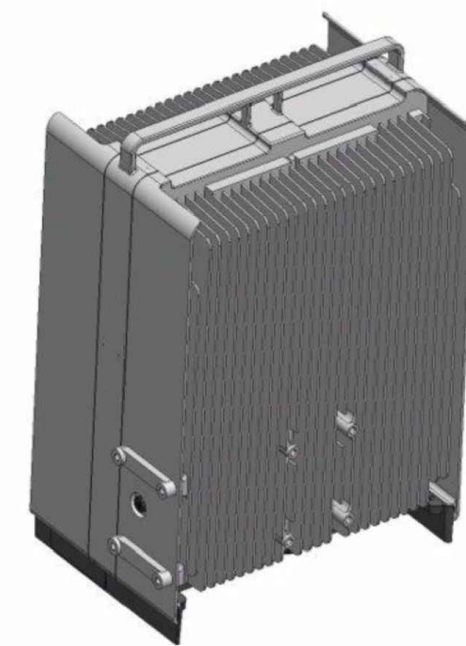




**ERICSSON M-MIMO AIR6419 B41 ANTENNA**  
 DIMENSIONS: 36.3"H x 20.9"W x 9.0"D  
 WEIGHT: 83.3 lbs  
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

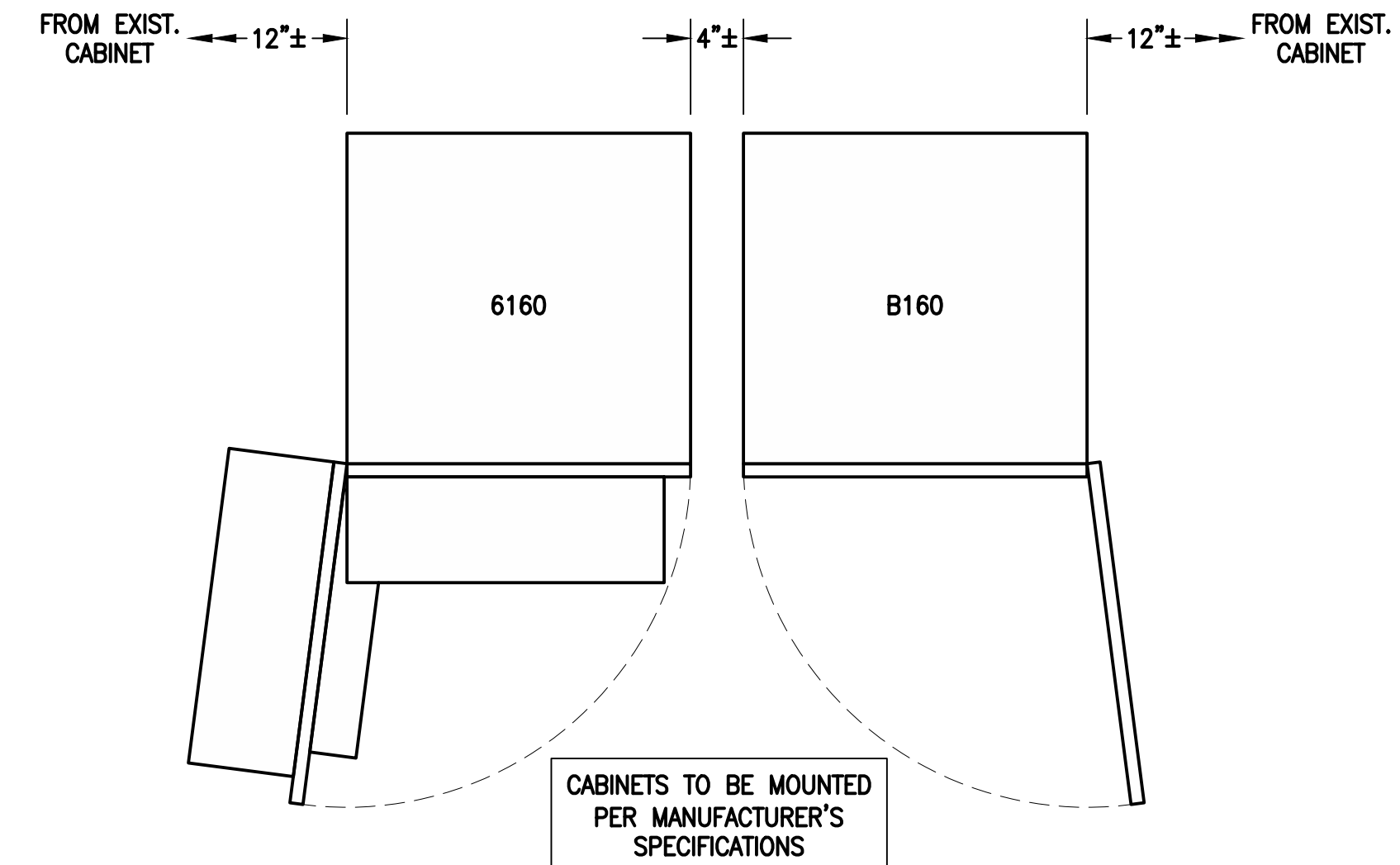
1  
A-3



**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

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

2  
A-3



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

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

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

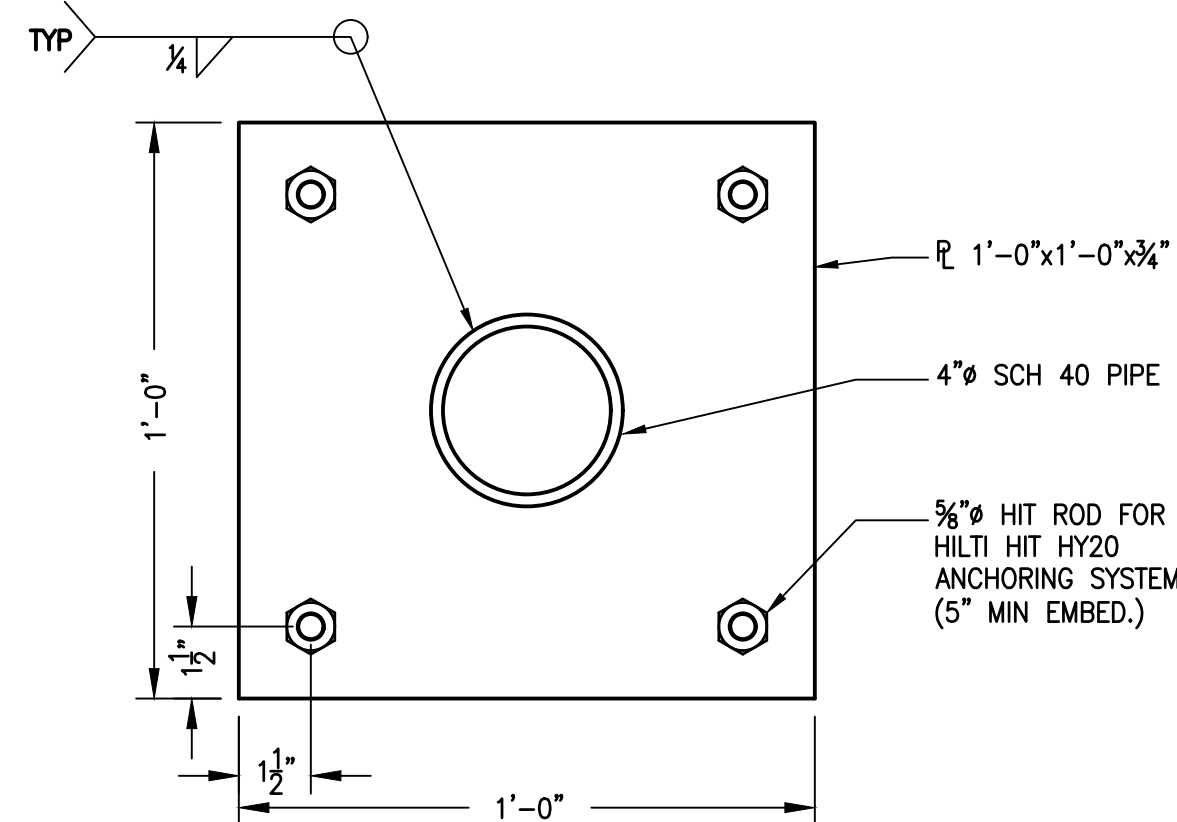
3  
A-3



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

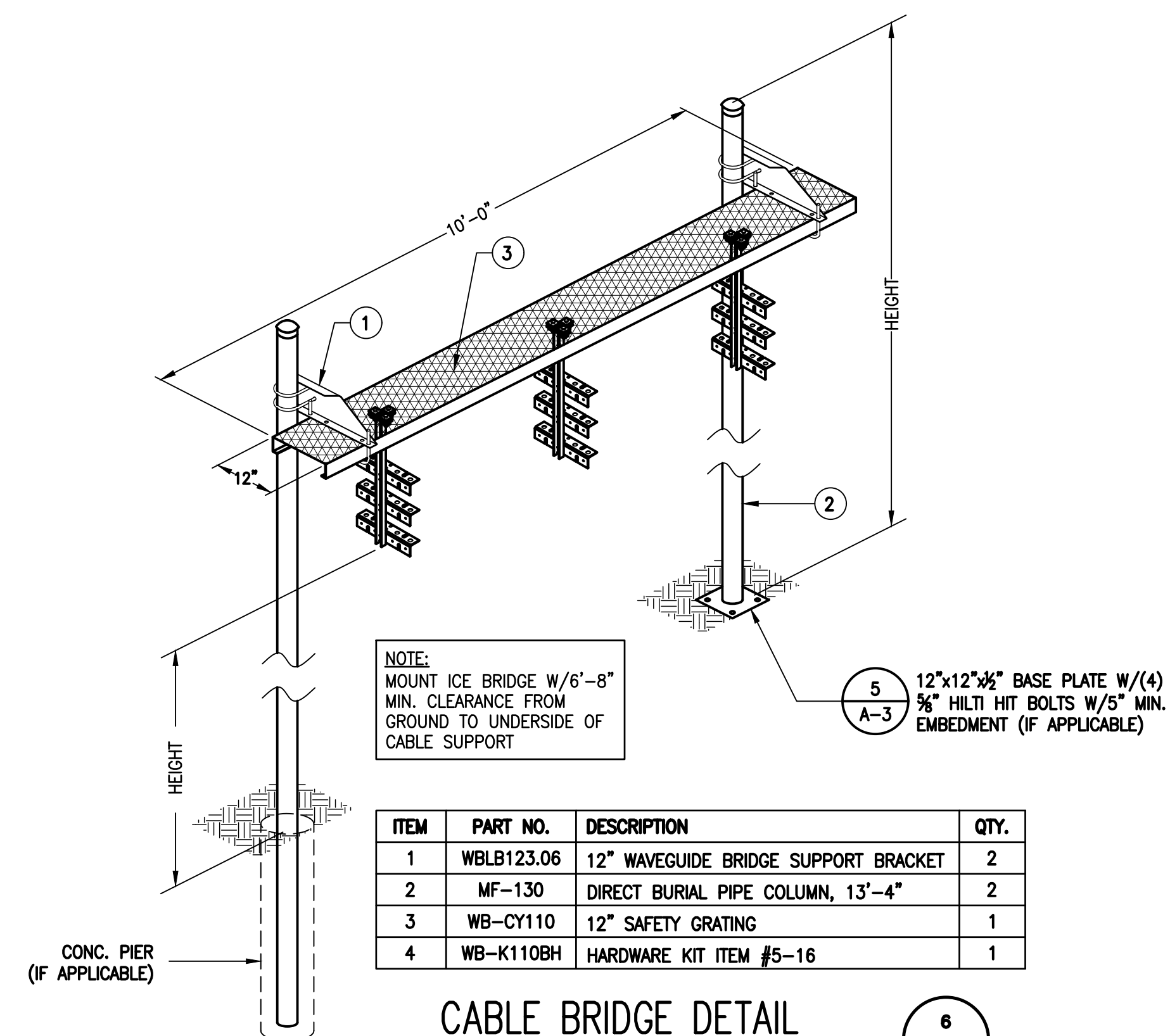
**SSC DETAILS**  
 SCALE: N.T.S.

4  
A-3



**CABLE BRIDGE BASE PLATE**  
 SCALE: N.T.S.

5  
A-3



ITEM	PART NO.	DESCRIPTION	QTY.
1	WBLB123.06	12" WAVEGUIDE BRIDGE SUPPORT BRACKET	2
2	MF-130	DIRECT BURIAL PIPE COLUMN, 13'-4"	2
3	WB-CY110	12" SAFETY GRATING	1
4	WB-K110BH	HARDWARE KIT ITEM #5-16	1

**CABLE BRIDGE DETAIL**  
 SCALE: N.T.S.

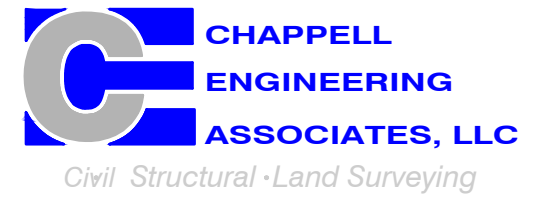
6  
A-3

**T-MOBILE NORTHEAST LLC**

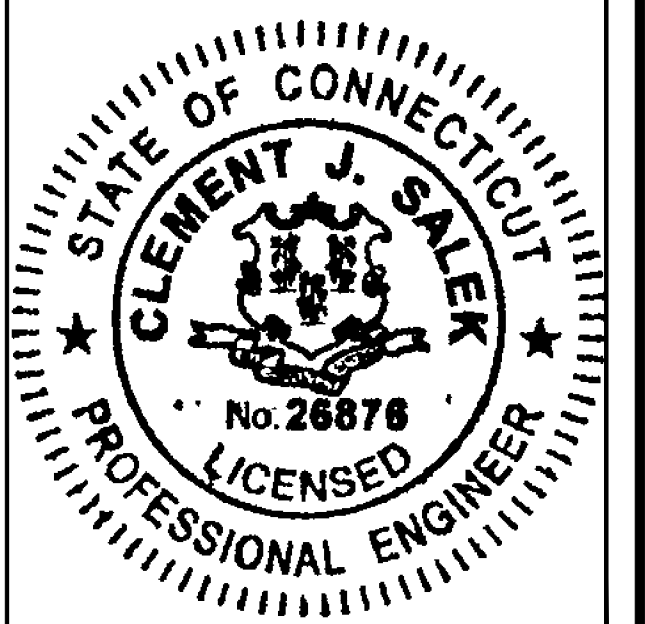
15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 (508) 286-2700



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



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	04/01/21	ISSUED FOR REVIEW	TRB

SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
 56 ROPER ROAD  
 PLAINFIELD, CT 06114

SHEET TITLE  
**SITE DETAILS**

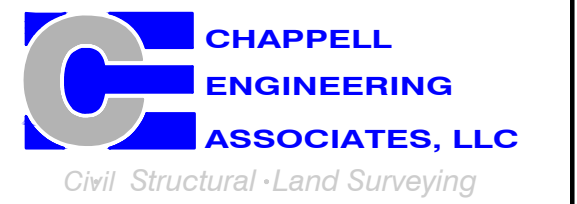
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**T-MOBILE  
NORTHEAST LLC**

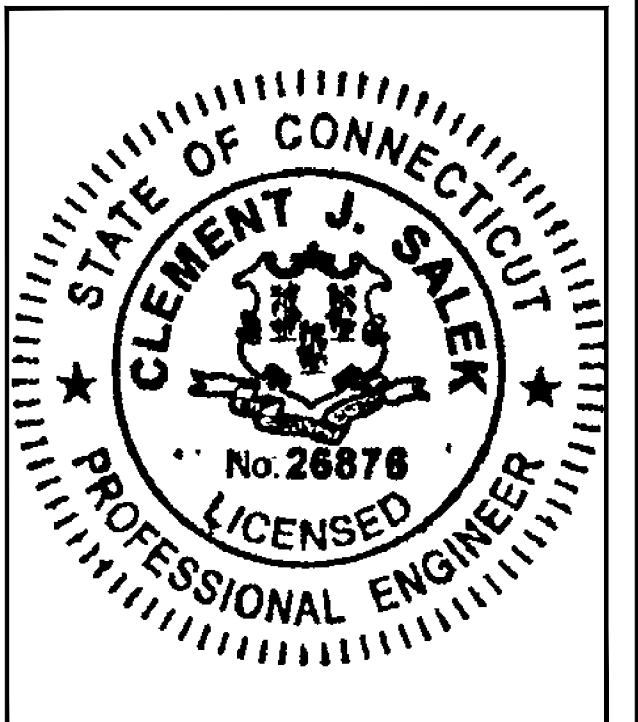
15 COMMERCE WAY, SUITE B  
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REV.	DATE	DESCRIPTION	BY
0	04/01/21	ISSUED FOR REVIEW	TRB

SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
56 ROPER ROAD  
PLAINFIELD, CT 06114

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	CABLES
ALPHA	A1 ERICSSON M-MIMO AIR6419 B41	165'± AGL	40°	0°	2'	L2500/N2500	-	EXIST. (3) 2" (6x24) HCS FIBER CABLES  PROP. (1) 2" (6x24) HCS FIBER CABLE
	A2 RFS APXVAALL24_43-U-NA20	165'± AGL	40°	0°	2'	L700/L600/N600 L1900/G1900/L2100	ERICSSON RADIO 4480 B71+BB5 ERICSSON RADIO 4460 B25+B66	
BETA	B1 ERICSSON M-MIMO AIR6419 B41	165'± AGL	160°	0°	2'	L2500/N2500	-	
	B2 RFS APXVAALL24_43-U-NA20	165'± AGL	160°	0°	2'	L700/L600/N600 L1900/G1900/L2100	ERICSSON RADIO 4480 B71+BB5 ERICSSON RADIO 4460 B25+B66	
GAMMA	G1 ERICSSON M-MIMO AIR6419 B41	165'± AGL	280°	0°	2'	L2500/N2500	-	
	G2 RFS APXVAALL24_43-U-NA20	165'± AGL	280°	0°	2'	L700/L600/N600 L1900/G1900/L2100	ERICSSON RADIO 4480 B71+BB5 ERICSSON RADIO 4460 B25+B66	

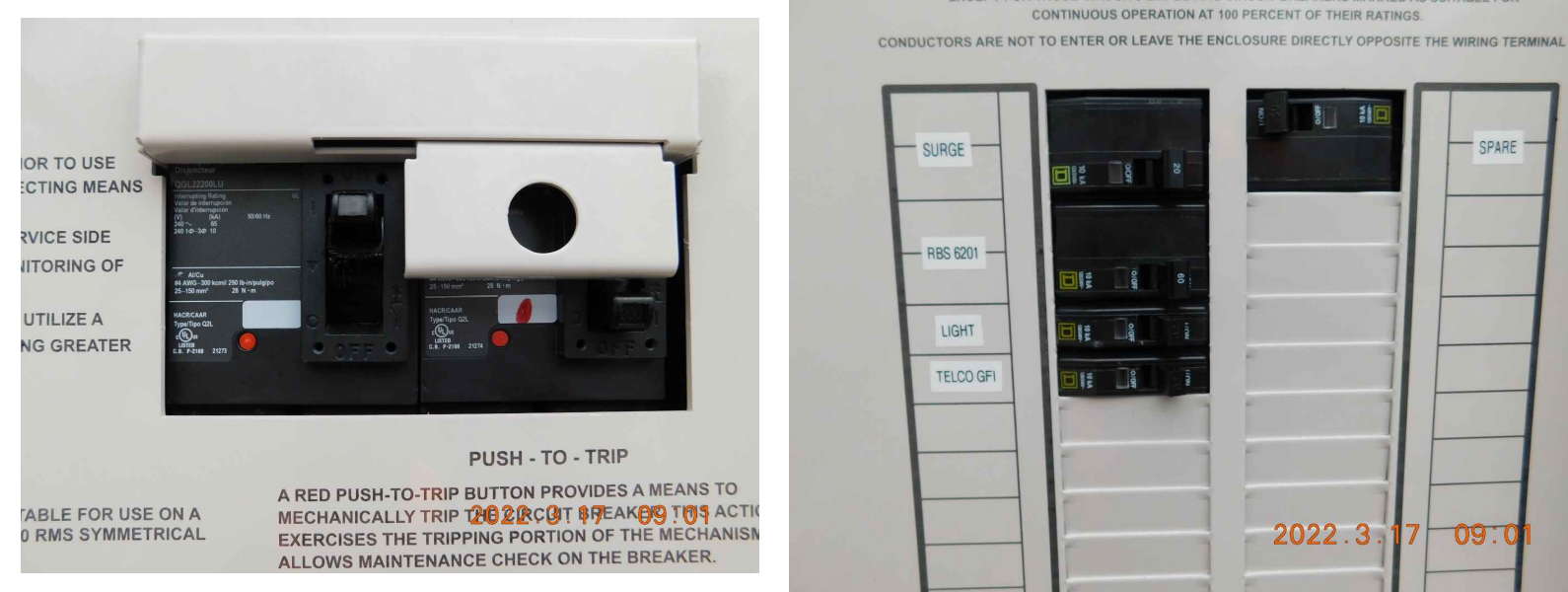
CABLE NOTE: (6) 1-5/8" COAX CABLES TO BE REMOVED.  
SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV4 - 3/08/22

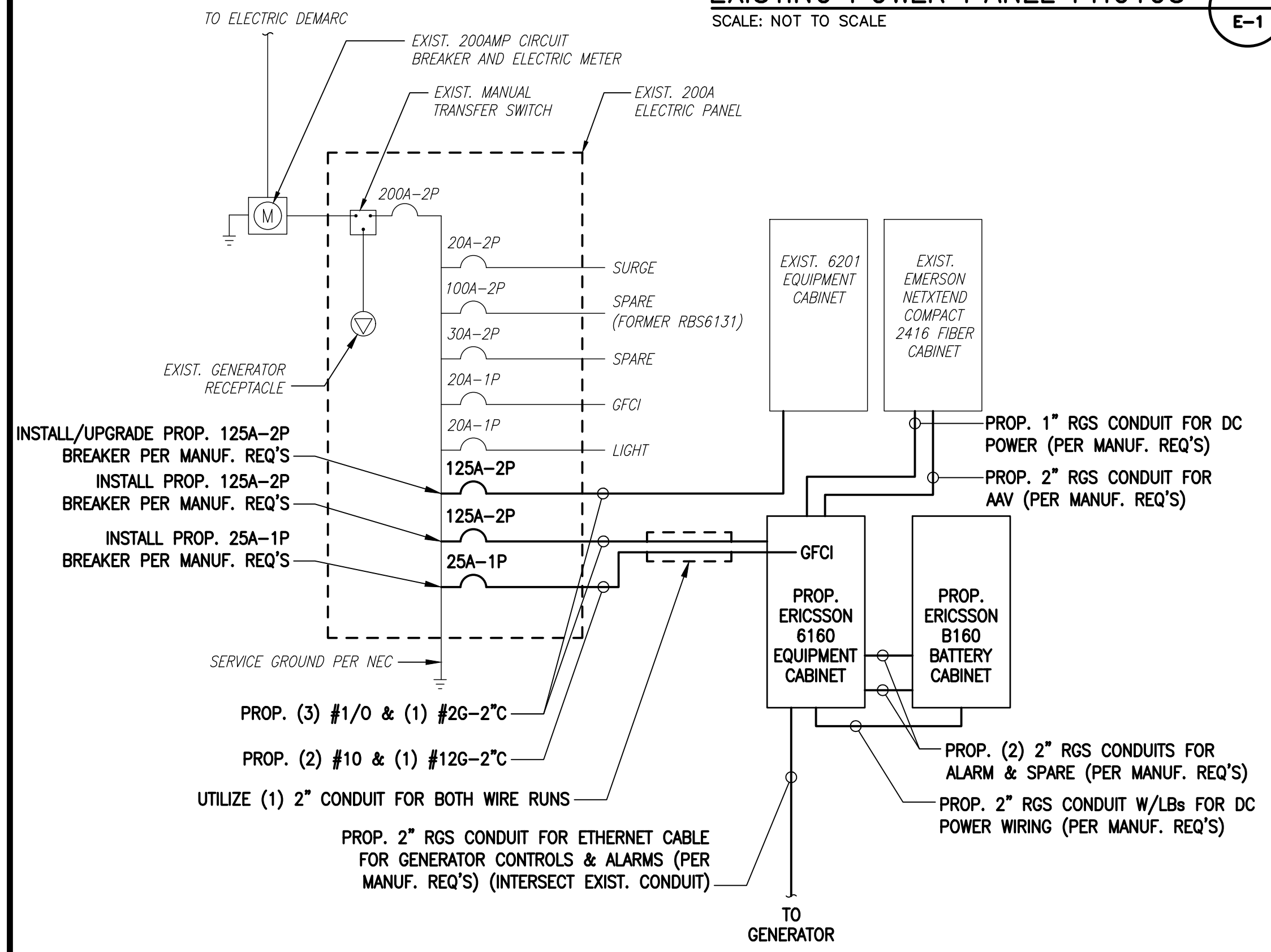
FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAX FOR GPS ANTENNA (3) 2" (6X24) HCS FIBER CABLES  EXISTING TO BE REMOVED: (6) 1-5/8" COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 2" (6X24) HCS FIBER CABLE	

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

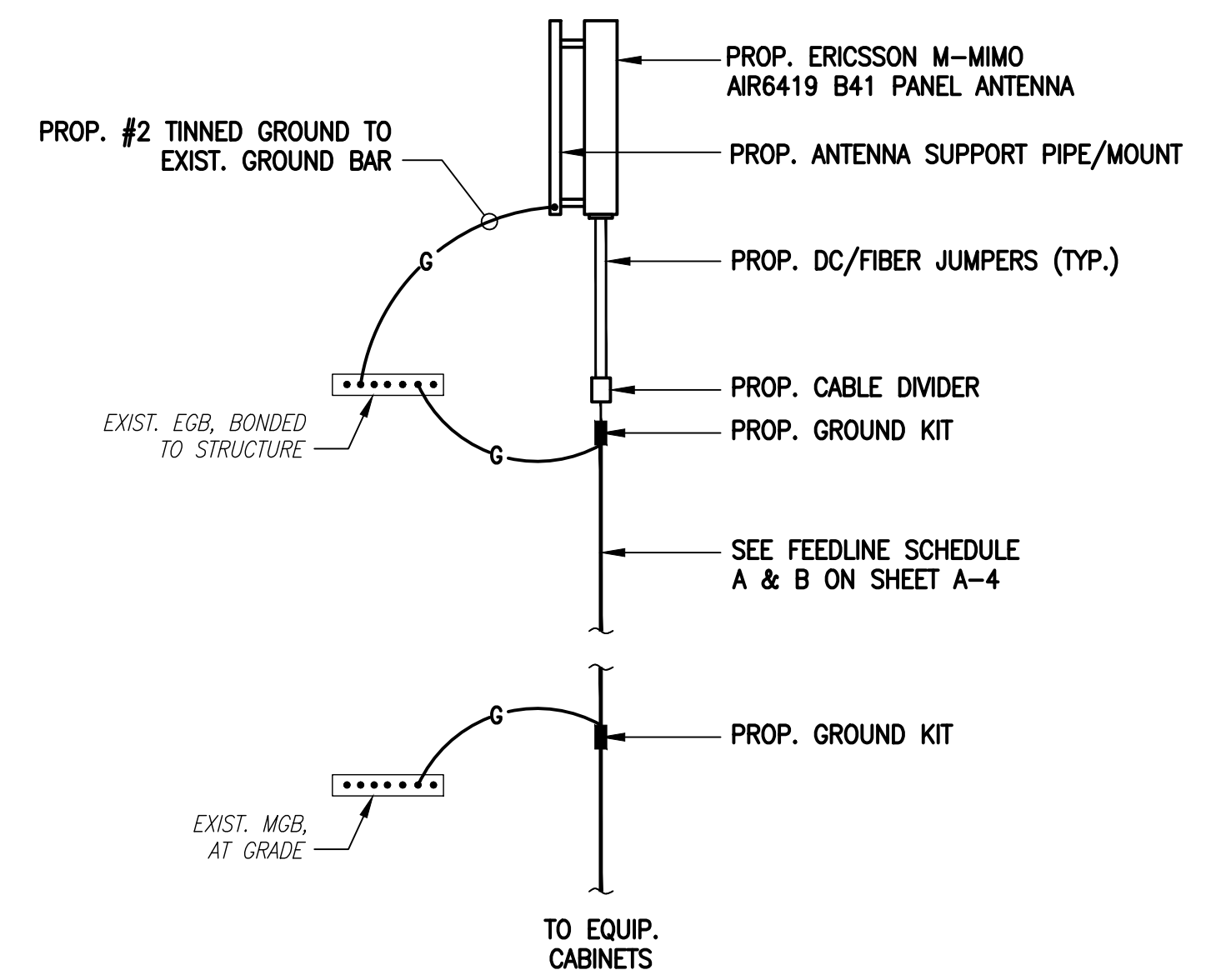




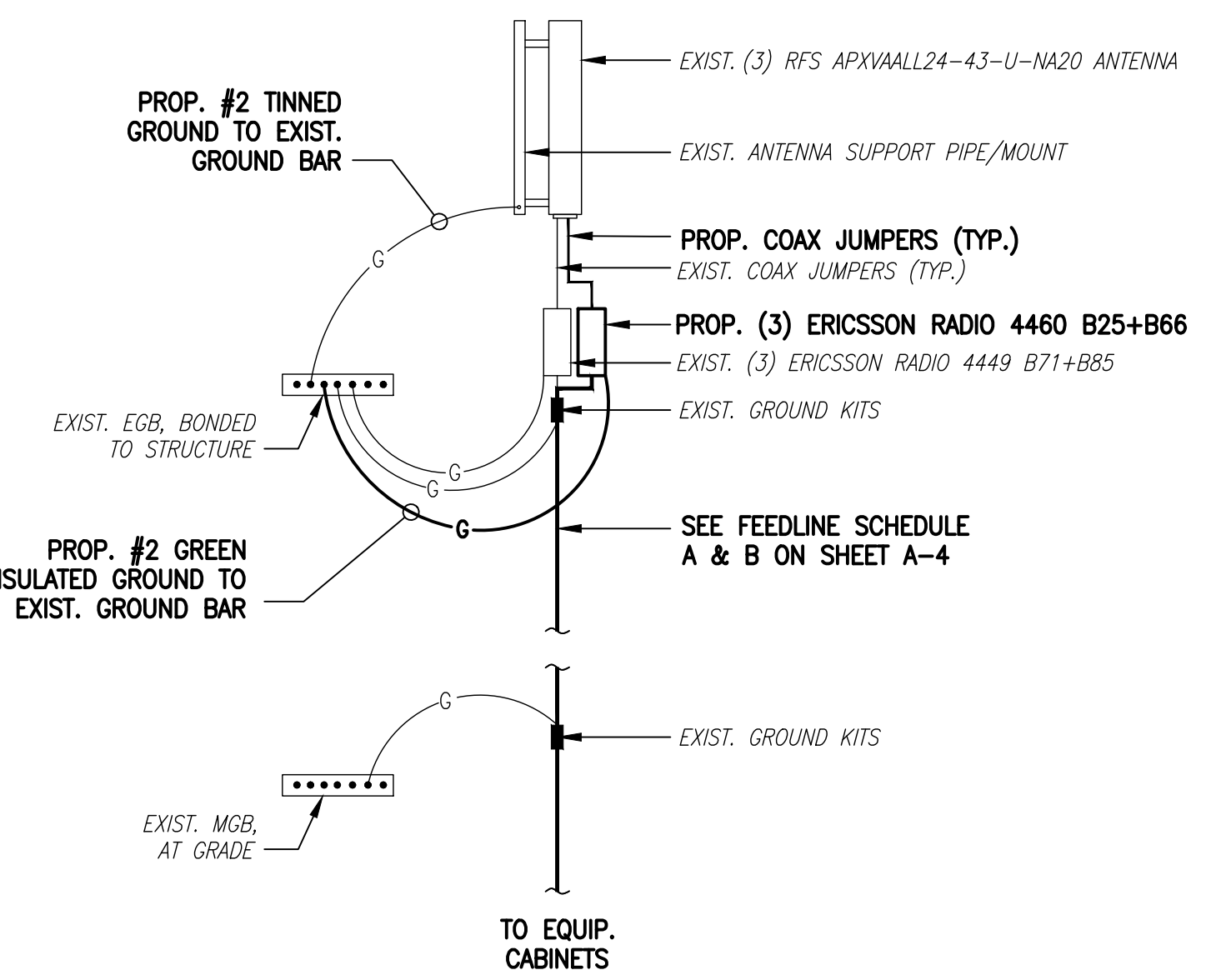
**EXISTING POWER PANEL PHOTOS**  
SCALE: NOT TO SCALE



**ONE LINE DIAGRAM**  
SCALE: NOT TO SCALE

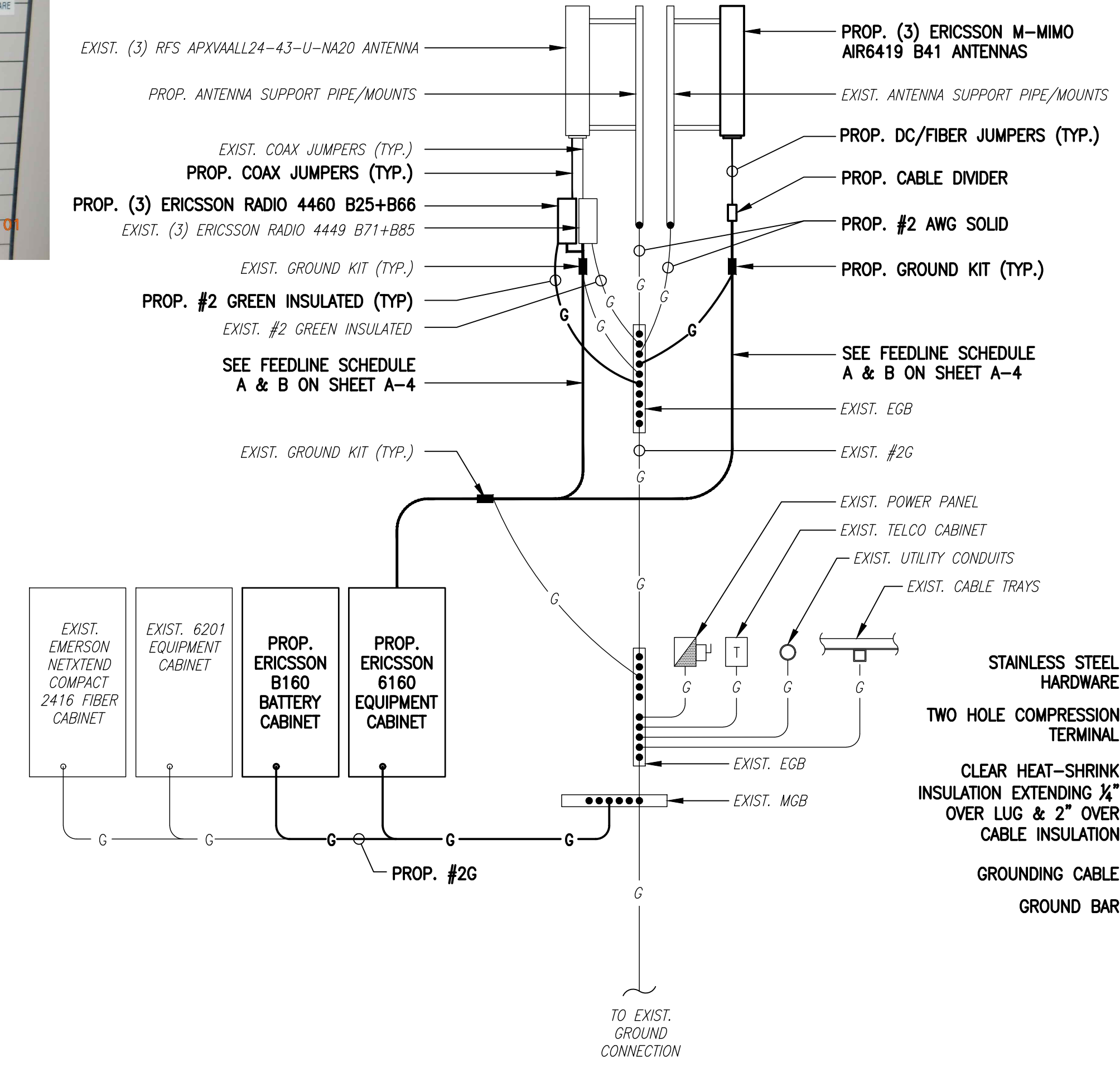


**L2500/N2500 ANTENNA**

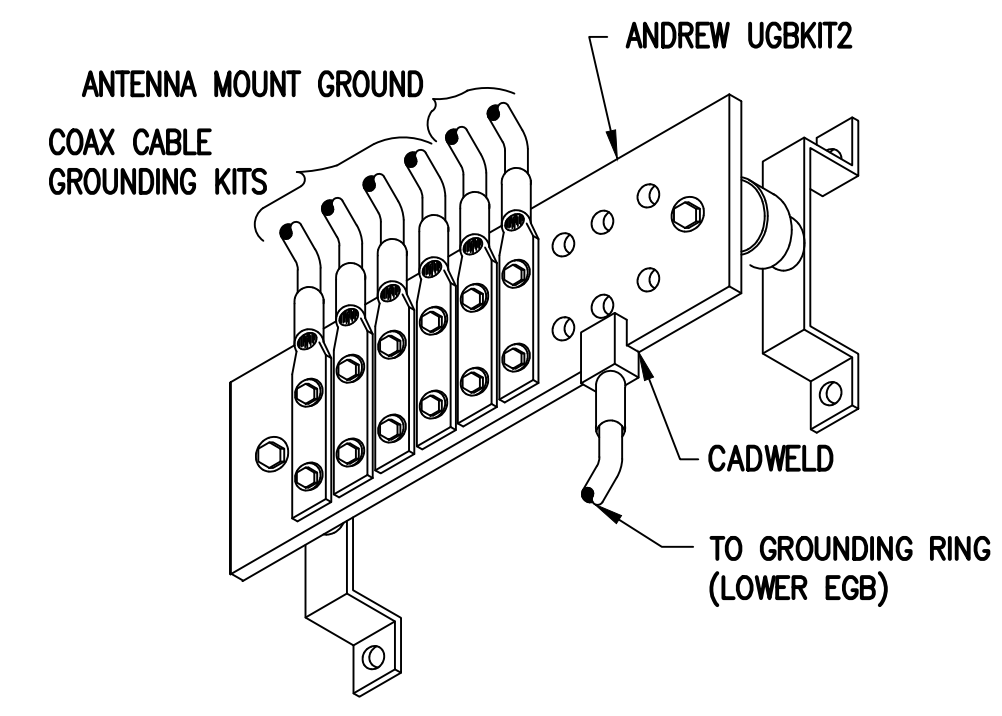


**L700/L600/N600/L1900/L2100/G1900 ANTENNA**

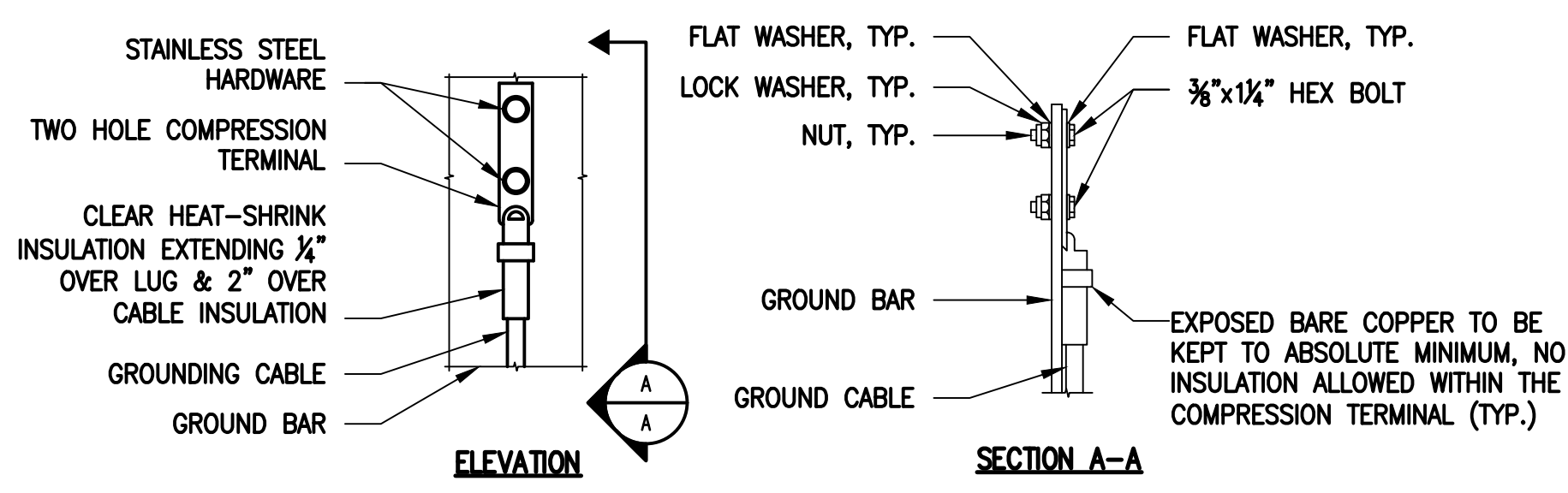
**COAX CABLE CONNECTION AND GROUNDING DETAIL**  
SCALE: NOT TO SCALE



**GROUNDING RISER DIAGRAM**  
SCALE: NOT TO SCALE



**GROUND BAR (EGB)**  
SCALE: NOT TO SCALE



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

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

**ELECTRICAL AND GROUNDING NOTES**

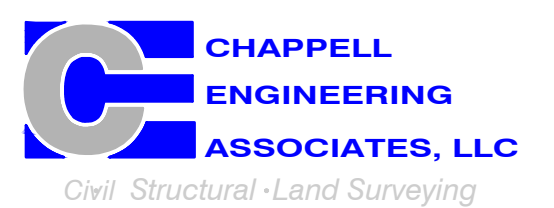
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BITS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BITS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BITS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BITS SITE GROUNDING STANDARDS".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE 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 NORTHEAST LLC**

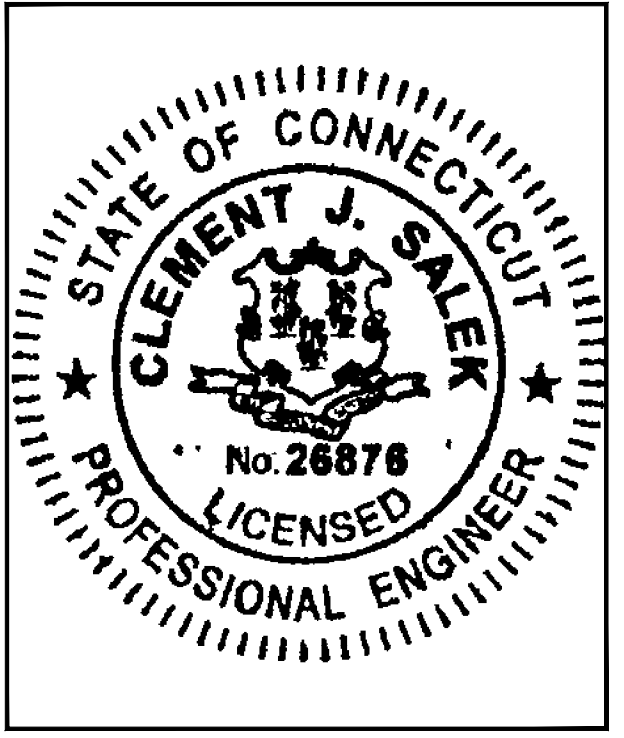
15 COMMERCE WAY, SUITE B  
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SBA COMMUNICATIONS CORP.  
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CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	04/01/21	ISSUED FOR REVIEW	TRB

SITE NUMBER:  
**CT11155F**

SITE ADDRESS:  
56 ROPER ROAD  
PLAINFIELD, CT 06114

SHEET TITLE  
**ELECTRIC & 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

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## Structural Analysis Report

**Existing 178 ft Valmont Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT00594-S**

**Customer Site Name: Plainfield North**

**Carrier Name: T-Mobile (App#: 192382-1)**

**Carrier Site ID / Name: CT11155F / Plainfield**

**Site Location: 56 Roper Road**

**Plainfield, Connecticut**

**Windham County**

**Latitude: 41.746002**

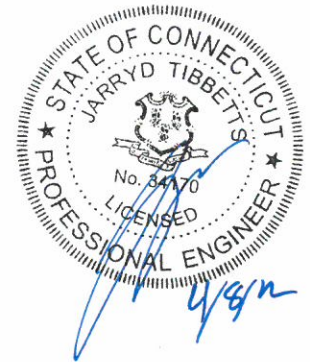
**Longitude: -71.880158**

**Analysis Result:**

**Max Structural Usage: 85.8% [Pass]**

**Max Foundation Usage: 83.0% [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

---

## **Structural Analysis Report**

**Existing 178 ft Valmont Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT00594-S**

**Customer Site Name: Plainfield North**

**Carrier Name: T-Mobile (App#: 192382-1)**

**Carrier Site ID / Name: CT11155F / Plainfield**

**Site Location: 56 Roper Road**

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**Windham County**

**Latitude: 41.746002**

**Longitude: -71.880158**

### **Analysis Result:**

**Max Structural Usage: 85.8% [Pass]**

**Max Foundation Usage: 83.0% [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 178 ft Valmont 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>	Monopole original shaft section data prepared by Valmont. Dated 09-11-1998. Project No F138. Order No 17665-98. Monopole previous structural report prepared by FDH Engineering, Inc. Dated 03-28-2014. Project No 1425O21400.
<b>Foundation Drawing</b>	Monopole foundation mapping report prepared by FDH Engineering, Inc. Dated 08-16-2012. Project No 1207132 EN1.
<b>Geotechnical Report</b>	Monopole geotechnical report prepared by Jaworski Geotech, Inc. Dated 07-23-1998. Project No C98326G.
<b>Modification Drawings</b>	Tower previous modifications by Tower Engineering Solutions. Dated 11-25-2015. TES Project No 18414. Modification Inspection Report prepared by Tower Engineering Solutions. Dated 03-21-2016. TES Project No 20244.
<b>Mount Analysis</b>	N/A

## 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 $V_{ult} = 135.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 1" 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>	B
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_S = 0.171$ , $S_1 = 0.061$

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
-	165.0	3	RFS APXV18-206516S-C-A20 - Panel	Platform w/ Hand Rails & Reinforcement Kit PRK-1245 & PRK-SFS	(3) 1.9" Fiber (8) 1 5/8"	T-Mobile
-		3	Kathrein 782 11056			
-		3	RFS APXVAALL24-43-U-NA20 - Panel			
-		6	Ericsson KRY 112 489/2 TMAs			
-		3	Ericsson 4449 B71 + B85 RRUs			
7	155.0	1	Kathrein 800 10764 - Panel	Platform w/ Hand Rails	(12) 1 5/8" (2) 3/4" DC Power (1) 7/16" Fiber (1) 1/2"	AT&T
8		1	KMW AM-X-CD-17-65-00T - Panel			
9		1	Nokia CS72188.01			
10		6	Powerwave 7770 - Panel			
11		6	Powerwave LGP21401 TMAs			
12		6	Powerwave LGP21903 Diplexers			
13		1	Powerwave P65-17-XLH-RR - Panel			
14	152.5	6	Ericsson RRUS11 RRUs	Ring Mount (Part No LWRM)	-	-
15		1	Raycap DC2-48-60-18-8F			
16	145.0	3	ALU 1900 MHz - RRUs	Platform w/ Hand Rails w/ (1) SitePro platform reinforcement kit PRK-1245L and (1) SitePro v-brace kit PRK-SFS-H-L	(4) 1-1/4" Fiber	Sprint Nextel
17		6	ALU 800 MHz - RRUs			
18		3	ALU TD-RRH8x20-25 - RRUs			
19		3	RFS APXVTM14-C-I20 - Panel			
20		3	Commscope NNVV-65B-R4 - Panel			
21	135.0	3	JMA Wireless MX08FRO665-21 Panel	(1) Commscope MC-PK8-DSH Platform w/HRK	(1) 1.6" Hybrid	Dish Wireless
22		3	Fujitsu TA08025-B605 RRU			
23		3	Fujitsu TA08025-B604 RRU			
24		1	Raycap RDIDC-9181-PF-48 OVP			
25	125.0	6	Antel LPA-80080-4CF-EDIN-0-Panel	(1) Low Profile Platform (3) JMA 91900314-02 (15) VZWSMART-MSK1 (1) VZWSMART-PLK7 (1) VZWSMART-PLK5 (3) L3x3x1/4 (3) P2 1/2 STD (6) HSS 3x2 1/2x1/4	(11) 1 5/8" Coax (2) 1 5/8" Fiber (1) 1/2" Coax	Verizon
26		6	JMA Wireless MX06FRO660-03-Panel			
27		3	Samsung MT6407-77A- Panel			
28		3	Samsung RF4439d-25A-RRH			
29		3	Samsung RF4440d-13A-RRH			
30		2	RFS DB-T1-6Z-8AB-OZ-OVP			
31		1	Lucent KS-24019-GPS @126'			

**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
1	165.0	3	Kathrein 782 11056	Platform w/ Hand Rails & Reinforcement Kit PRK-1245 & PRK-SFS	(4) 1.9" Fiber (6) 1 5/8"	T-Mobile
2		3	RFS APXVAALL24-43-U-NA20 - Panel			
3		6	Ericsson KRY 112 489/2			
4		3	Ericsson 4449 B71 + B85 -			
5		3	Ericsson AIR6419 B41 - Panel			
6		3	Ericsson 4460 B25 + B66			

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

## **Analysis Results**

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	<b>85.8%</b>	<b>73.6%</b>	<b>53.1%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	6083.4	50.4	124.0

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 1.4402 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 85.82% at 0.0ft

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)

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

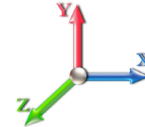
4/8/2022



Page: 1

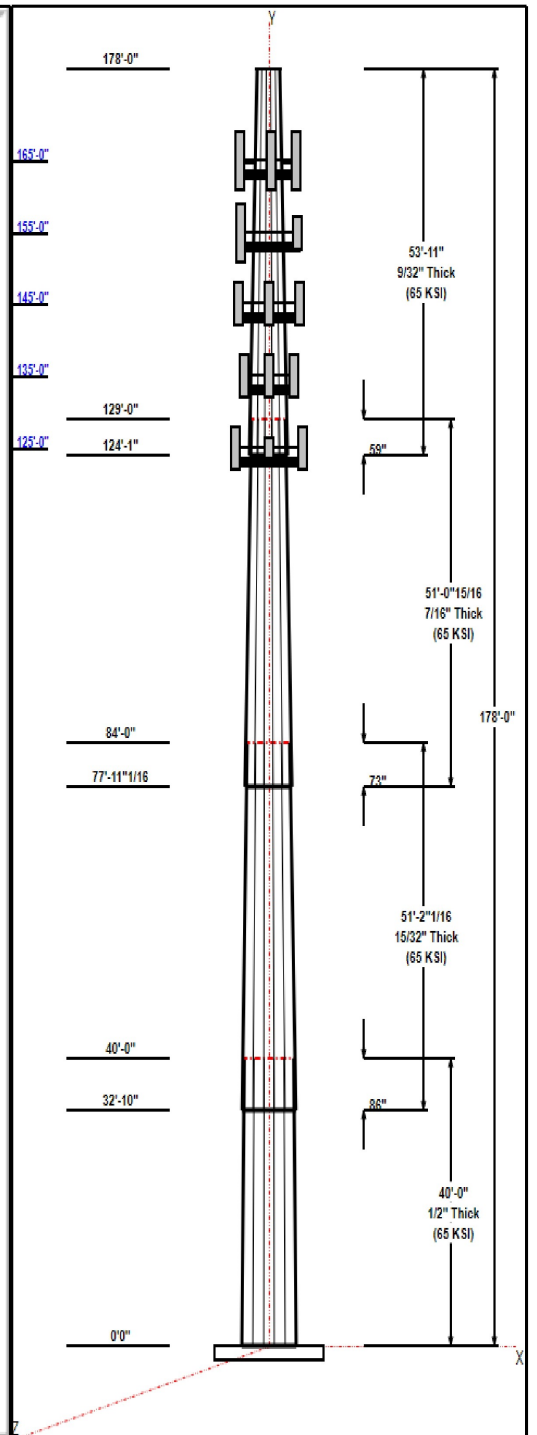
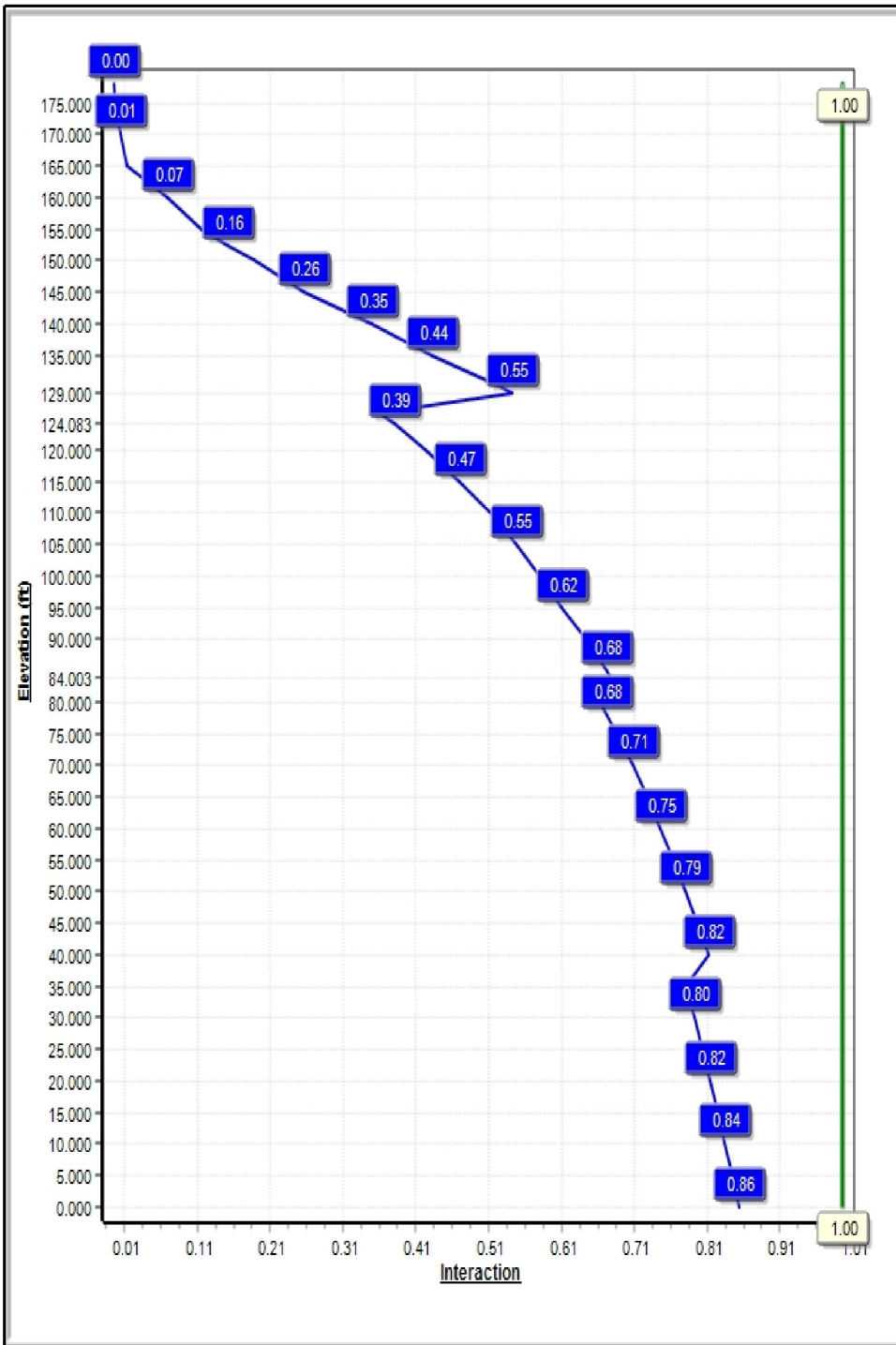
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 105 mph Wind**



**Iterations:** 25

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## Structure: CT00594-S-SBA

**Type:** Tapered  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 12 Sided  
**Taper:** 0.22997

4/8/2022

Page: 2

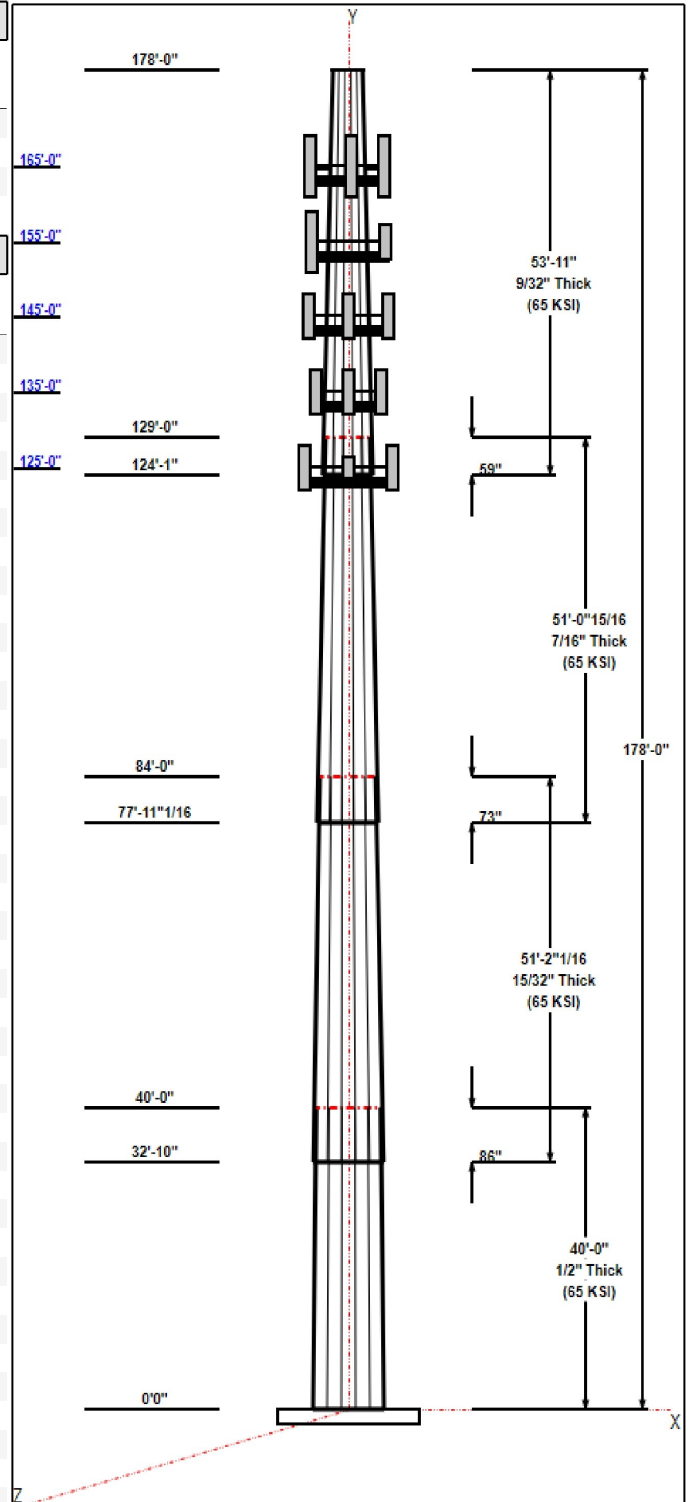


### Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	40.00	49.05	58.25	0.500		0.22997	65
2	51.17	39.87	51.64	0.469	Slip	0.22997	65
3	51.08	30.40	42.14	0.438	Slip	0.22997	65
4	53.92	19.69	32.09	0.281	Slip	0.22997	65

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
165.00	165.00	1	Platform w/ Hand Rails	T-Mobile
165.00	165.00	3	RFS	T-Mobile
165.00	165.00	6	Ericsson KRY 112 489/2	T-Mobile
165.00	165.00	3	Ericsson 4449 B71 + B85	T-Mobile
165.00	165.00	1	(3) SFS-H-L (V-Braces)	T-Mobile
165.00	165.00	3	Ericsson AIR6419 B41	T-Mobile
165.00	165.00	3	Ericsson 4460 B25 + B66	T-Mobile
165.00	165.00	3	Kathrein 782 11056	T-Mobile
165.00	165.00	3	Reinf. Kit (SitePro1	T-Mobile
155.00	155.00	1	Platform w/ Hand Rails	AT&T
155.00	155.00	6	Powerwave 7770	AT&T
155.00	155.00	1	KMW AM-X-CD-17-65-00T	AT&T
155.00	155.00	1	Powerwave	AT&T
155.00	155.00	1	Kathrein 800 10764	AT&T
155.00	155.00	1	Nokia CS72188.01	AT&T
155.00	155.00	6	Powerwave LGP21401	AT&T
155.00	155.00	6	Powerwave LGP21903	AT&T
152.50	152.50	6	Ericsson RRUS11 RRUs	---
152.50	152.50	1	Raycap DC2-48-60-18-8F	---
152.50	152.50	1	Ring Mount (Part No	---
145.00	145.00	1	Platform w/ Hand Rails	Sprint Nextel
145.00	145.00	3	ALU 1900 Mhz- RRUs	Sprint Nextel
145.00	145.00	6	ALU 800 Mhz- RRUs	Sprint Nextel
145.00	145.00	3	ALU TD-RRH8x20-25-	Sprint Nextel
145.00	145.00	3	APXVTM14-C-I20	Sprint Nextel
145.00	145.00	3	NNVV-65B-R4	Sprint Nextel
145.00	145.00	1	(3) SFS-H-L (V-Braces)	Sprint Nextel
145.00	145.00	1	PRK-1245 (kicker kit)	Sprint Nextel
135.00	135.00	1	RDIDC-9181-PF-48	Dish Wireless
135.00	135.00	3	MX08FRO665-21	Dish Wireless
135.00	135.00	1	MC-PK8-DSH	Dish Wireless
135.00	135.00	3	TA08025-B605	Dish Wireless
135.00	135.00	3	TA08025-B604	Dish Wireless
126.00	126.00	1	GPS	Verizon
125.00	125.00	6	MX06FRO660-03	Verizon
125.00	125.00	3	MT6407-77A	Verizon
125.00	125.00	3	RF4439d-25A	Verizon
125.00	125.00	3	RF4440d-13A	Verizon
125.00	125.00	1	Handrail Kit (P2 1/2 STD)	Verizon
125.00	125.00	1	VZWSMART	Verizon
125.00	125.00	1	VZWSMART	Verizon
125.00	125.00	1	Low Profile Platform	Verizon
125.00	125.00	6	Antel	Verizon
125.00	125.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon



### Linear Appurtenances

## Structure: CT00594-S-SBA

**Type:** Tapered  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 12 Sided  
**Taper:** 0.22997

4/8/2022

Page: 3



Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	165.00	Inside	1.9" Fiber	T-Mobile
3.00	165.00	Inside	1 5/8" Coax	T-Mobile
3.00	155.00	Inside	1 5/8" Coax	AT&T
3.00	155.00	Inside	1/2" Coax	AT&T
3.00	155.00	Inside	3/4" DC Power	AT&T
3.00	155.00	Inside	7/16" Fiber	AT&T
3.00	145.00	Inside	1-1/4" Fiber	Sprint Nextel
3.00	135.00	Inside	1.6" Hybrid	Dish Wireless
3.00	125.00	Outside	1 5/8" Coax	Verizon
3.00	125.00	Outside	1 5/8" Fiber	Verizon
3.00	125.00	Outside	1/2" Coax	Verizon

### Anchor Bolts

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

### Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	72.8	60.0	Polygon

### Reactions

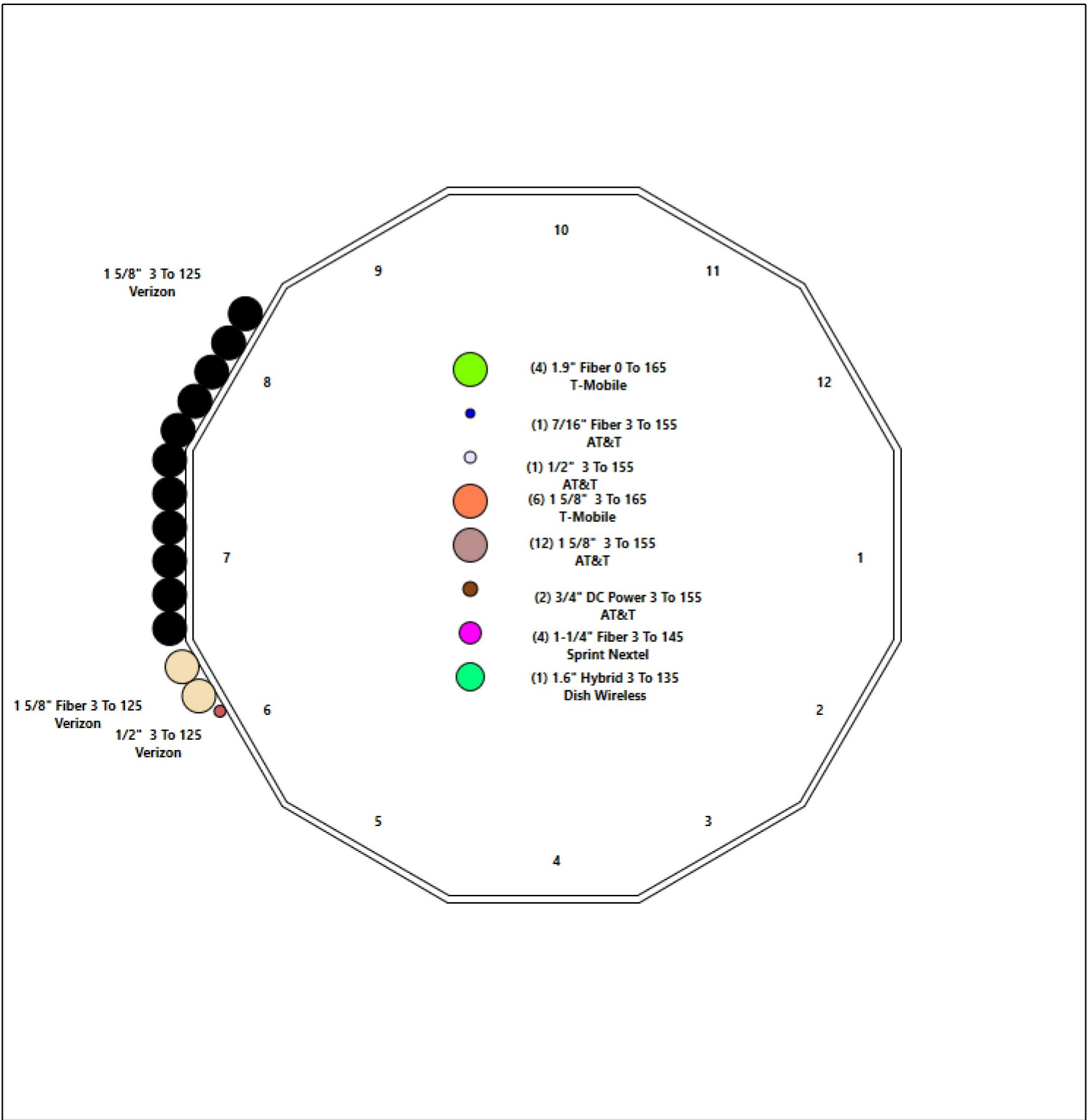
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	6083.4	50.4	70.5
0.9D + 1.6W 105 mph Wind	6000.2	50.3	52.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1447.4	10.9	124.0
1.2D + 1.0E	210.9	1.8	70.6
0.9D + 1.0E	207.8	1.8	52.9
1.0D + 1.0W 60 mph Wind	1232.7	10.3	58.8

# Structure: CT00594-S-SBA - Coax Line Placement

Type: Monopole  
Site Name: Plainfield North  
Height: 178.00 (ft)

4/8/2022

Page: 4



## Shaft Properties

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	40.000	0.5000	65		0.00	11,647
2	12	51.170	0.4688	65	Slip	86.00	11,901
3	12	51.080	0.4375	65	Slip	73.00	8,774
4	12	53.917	0.2813	65	Slip	59.00	4,255
<b>Total Shaft Weight:</b>							<b>36,577</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	58.25	0.00	92.98	39579.27	29.07	116.50	49.05	40.00	78.17	23518.5	24.14	98.10	0.229972
2	51.64	32.83	77.23	25809.44	27.37	110.16	39.87	84.00	59.47	11783.7	20.65	85.05	0.229972
3	42.14	77.92	58.75	13043.76	23.67	96.33	30.40	129.00	42.20	4834.88	16.47	69.48	0.229972
4	32.09	124.0	28.81	3720.03	28.43	114.10	19.69	178.00	17.58	845.14	16.62	70.01	0.229972

## Load Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 6

### 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	165.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4819.09	68.191	1.00	0.00	0.00
2	165.00	RFS APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	723.66	22.831	0.70	0.00	0.00
3	165.00	Ericsson KRY 112 489/2	6	15.40	0.65	0.67	39.12	1.474	0.67	0.00	0.00
4	165.00	Ericsson 4449 B71 + B85	3	71.00	1.97	0.67	142.86	2.707	0.67	0.00	0.00
5	165.00	(3) SFS-H-L (V-Braces)	1	230.00	6.70	1.00	662.26	16.144	1.00	0.00	0.00
6	165.00	Ericsson AIR6419 B41	3	66.10	3.80	0.76	195.61	4.871	0.76	0.00	0.00
7	165.00	Ericsson 4460 B25 + B66	3	109.00	2.85	0.67	205.79	3.758	0.67	0.00	0.00
8	165.00	Kathrein 782 11056	3	1.80	0.13	0.78	5.14	0.523	0.78	0.00	0.00
9	165.00	Reinf. Kit (SitePro1 PRK-1245)	3	95.00	3.50	0.75	351.83	14.259	0.75	0.00	0.00
10	155.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4801.52	68.015	1.00	0.00	0.00
11	155.00	Powerwave 7770	6	27.00	5.54	0.72	179.90	8.396	0.72	0.00	0.00
12	155.00	KMW AM-X-CD-17-65-00T	1	30.80	5.00	0.75	180.62	7.507	0.75	0.00	0.00
13	155.00	Powerwave P65-17-XLH-RR	1	59.00	11.44	0.75	348.75	15.767	0.75	0.00	0.00
14	155.00	Kathrein 800 10764	1	40.80	5.88	0.75	211.38	8.746	0.75	0.00	0.00
15	155.00	Nokia CS72188.01	1	19.80	1.32	0.67	58.65	2.439	0.67	0.00	0.00
16	155.00	Powerwave LGP21401 TMAs	6	14.10	1.29	0.67	47.54	2.408	0.67	0.00	0.00
17	155.00	Powerwave LGP21903 Diplexers	6	5.50	0.27	0.67	16.77	0.802	0.67	0.00	0.00
18	152.50	Ericsson RRUS11 RRUs	6	51.00	3.26	0.67	152.85	4.971	0.67	0.00	0.00
19	152.50	Raycap DC2-48-60-18-8F	1	32.80	1.47	1.00	115.37	2.405	1.00	0.00	0.00
20	152.50	Ring Mount (Part No LWRM)	1	150.00	5.00	1.00	317.82	9.662	1.00	0.00	0.00
21	145.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4782.89	67.829	1.00	0.00	0.00
22	145.00	ALU 1900 Mhz- RRUs	3	60.00	2.77	0.67	170.87	4.456	0.67	0.00	0.00
23	145.00	ALU 800 Mhz- RRUs	6	53.00	2.49	0.67	151.28	4.010	0.67	0.00	0.00
24	145.00	ALU TD-RRH8x20-25- RRUs	3	70.00	4.05	0.67	227.05	5.158	0.67	0.00	0.00
25	145.00	APXVTM14-C-I20	3	56.20	6.34	0.77	283.73	7.851	0.77	0.00	0.00
26	145.00	NNVV-65B-R4	3	77.40	12.27	0.74	456.86	14.205	0.74	0.00	0.00
27	145.00	(3) SFS-H-L (V-Braces)	1	230.00	6.70	1.00	656.71	16.023	1.00	0.00	0.00
28	145.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	896.18	22.719	1.00	0.00	0.00
29	135.00	RDIDC-9181-PF-48	1	21.85	2.01	1.00	91.94	2.760	1.00	0.00	0.00
30	135.00	MX08FRO665-21	3	64.50	12.49	0.74	448.26	14.423	0.74	0.00	0.00
31	135.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3953.86	99.909	1.00	0.00	0.00
32	135.00	TA08025-B605	3	75.00	1.96	0.67	144.01	2.700	0.67	0.00	0.00
33	135.00	TA08025-B604	3	63.90	1.96	0.67	130.70	2.700	0.67	0.00	0.00
34	126.00	GPS	1	4.00	1.00	1.00	19.37	1.933	1.00	0.00	0.00
35	125.00	MX06FRO660-03	6	60.00	9.87	0.87	429.01	11.702	0.87	0.00	0.00
36	125.00	MT6407-77A	3	87.10	4.69	0.70	253.96	5.948	0.70	0.00	0.00
37	125.00	RF4439d-25A	3	74.70	1.46	0.67	140.31	2.104	0.67	0.00	0.00
38	125.00	RF4440d-13A	3	70.33	1.46	0.67	132.10	2.104	0.67	0.00	0.00
39	125.00	Handrail Kit (P2 1/2 STD)	1	261.72	6.75	1.00	668.37	15.387	1.00	0.00	0.00
40	125.00	VZWSMART VZWSMART-PLK5	1	464.91	9.50	1.00	889.82	22.524	1.00	0.00	0.00
41	125.00	VZWSMART	1	150.60	2.50	1.00	425.89	5.927	1.00	0.00	0.00
42	125.00	Low Profile Platform w/Mods	1	1200.00	25.00	1.00	2570.95	52.419	1.00	0.00	0.00
43	125.00	Antel LPA-80080-4CF-EDIN-0	6	12.00	2.61	0.74	163.37	3.786	0.74	0.00	0.00
44	125.00	RFS DB-T1-6Z-8AB-OZ	2	44.00	4.10	1.00	363.30	5.149	1.00	0.00	0.00
<b>Totals:</b>			<b>117</b>	<b>16,098.68</b>			<b>46,315.30</b>				

### Linear Appurtenances

## 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		
<b>Bottom Elev. (ft)</b>	<b>Top Elev. (ft)</b>	<b>Description</b>		<b>Exposed Width</b>	<b>Exposed</b>						
0.00	165.00	(4) 1.9" Fiber		0.00	Inside						
3.00	165.00	(6) 1 5/8" Coax		0.00	Inside						
3.00	155.00	(12) 1 5/8" Coax		0.00	Inside						
3.00	155.00	(1) 1/2" Coax		0.00	Inside						
3.00	155.00	(2) 3/4" DC Power		0.00	Inside						
3.00	155.00	(1) 7/16" Fiber		0.00	Inside						
3.00	145.00	(4) 1-1/4" Fiber		0.00	Inside						
3.00	135.00	(1) 1.6" Hybrid		0.00	Inside						
3.00	125.00	(11) 1 5/8" Coax		2.00	Outside						
3.00	125.00	(2) 1 5/8" Fiber		0.00	Outside						
3.00	125.00	(1) 1/2" Coax		0.00	Outside						

## Shaft Section Properties

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 8

**Increment Length:** 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	58.250	92.978	39579.3	29.07	116.50	73.0	1312.	0.0
5.00		0.5000	57.100	91.126	37261.8	28.46	114.20	73.7	1260.	1566.2
10.00		0.5000	55.950	89.275	35036.7	27.84	111.90	74.4	1209.	1534.7
15.00		0.5000	54.800	87.424	32901.9	27.22	109.60	75.0	1159.	1503.2
20.00		0.5000	53.651	85.572	30855.7	26.61	107.30	75.7	1111.	1471.7
25.00		0.5000	52.501	83.721	28896.1	25.99	105.00	76.4	1063.	1440.2
30.00		0.5000	51.351	81.870	27021.3	25.38	102.70	77.0	1016.	1408.7
32.83	Bot - Section 2	0.5000	50.699	80.821	25995.8	25.03	101.40	77.4	990.5	784.3
35.00		0.5000	50.201	80.019	25229.4	24.76	100.40	77.7	970.9	1159.5
40.00	Top - Section 1	0.4688	49.989	74.744	23394.9	26.43	106.64	0.0	0.0	2632.1
45.00		0.4688	48.839	73.008	21802.8	25.77	104.19	76.6	862.4	1256.9
50.00		0.4688	47.689	71.273	20284.5	25.12	101.74	77.3	821.7	1227.4
55.00		0.4688	46.539	69.537	18838.5	24.46	99.28	78.0	782.0	1197.9
60.00		0.4688	45.389	67.802	17462.8	23.80	96.83	78.8	743.3	1168.3
65.00		0.4688	44.239	66.066	16155.9	23.14	94.38	79.5	705.5	1138.8
70.00		0.4688	43.089	64.331	14915.8	22.49	91.92	80.2	668.7	1109.3
75.00		0.4688	41.940	62.595	13740.8	21.83	89.47	80.9	632.9	1079.8
77.92	Bot - Section 3	0.4688	41.268	61.582	13084.1	21.45	88.04	81.3	612.5	616.9
80.00		0.4688	40.790	60.860	12629.2	21.17	87.02	81.6	598.1	846.8
84.00	Top - Section 2	0.4375	40.744	56.782	11774.7	22.81	93.13	0.0	0.0	1601.9
85.00		0.4375	40.515	56.459	11574.9	22.67	92.61	80.0	551.9	192.0
90.00		0.4375	39.365	54.839	10606.9	21.97	89.98	80.8	520.5	946.8
95.00		0.4375	38.215	53.219	9694.5	21.26	87.35	81.5	490.1	919.2
100.00		0.4375	37.065	51.599	8835.9	20.56	84.72	81.9	460.5	891.7
105.00		0.4375	35.915	49.980	8029.6	19.85	82.09	81.9	431.9	864.1
110.00		0.4375	34.766	48.360	7273.9	19.15	79.46	81.9	404.2	836.6
115.00		0.4375	33.616	46.740	6567.2	18.44	76.84	81.9	377.4	809.0
120.00		0.4375	32.466	45.120	5907.8	17.74	74.21	81.9	351.5	781.4
124.08	Bot - Section 4	0.4375	31.527	43.797	5403.2	17.17	72.06	81.9	331.1	617.7
125.00		0.4375	31.316	43.500	5294.1	17.04	71.58	81.9	326.6	225.7
126.00		0.4375	31.086	43.176	5176.7	16.90	71.05	81.9	321.7	244.5
129.00	Top - Section 3	0.2813	30.959	27.782	3337.3	27.35	110.08	0.0	0.0	722.6
130.00		0.2813	30.729	27.574	3262.8	27.13	109.26	75.1	205.1	94.2
135.00		0.2813	29.579	26.533	2906.9	26.04	105.17	76.3	189.9	460.3
140.00		0.2813	28.429	25.491	2577.9	24.94	101.08	77.5	175.2	442.6
145.00		0.2813	27.279	24.450	2274.7	23.85	96.99	78.7	161.1	424.8
150.00		0.2813	26.129	23.409	1996.2	22.75	92.90	79.9	147.6	407.1
152.50		0.2813	25.554	22.888	1866.0	22.20	90.86	80.5	141.1	196.9
155.00		0.2813	24.979	22.367	1741.5	21.65	88.82	81.1	134.7	192.5
160.00		0.2813	23.829	21.326	1509.4	20.56	84.73	81.9	122.4	371.7
165.00		0.2813	22.680	20.285	1298.9	19.46	80.64	81.9	110.6	354.0
170.00		0.2813	21.530	19.243	1109.0	18.37	76.55	81.9	99.5	336.3
175.00		0.2813	20.380	18.202	938.5	17.27	72.46	81.9	89.0	318.5
178.00		0.2813	19.690	17.577	845.1	16.62	70.01	81.9	82.9	182.6

**36577.3**



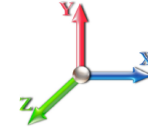
## Wind Loading - Shaft

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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:** 1.2D + 1.6W 105 mph Wind

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



**Iterations** 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	441.48	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	432.76	1.000	0.000	5.00	24.879	24.88	821.8	0.0	1879.4
10.00		1.00	0.70	18.769	20.65	424.05	1.000	0.000	5.00	24.383	24.38	805.5	0.0	1841.6
15.00		1.00	0.70	18.769	20.65	415.33	1.000	0.000	5.00	23.887	23.89	789.1	0.0	1803.8
20.00		1.00	0.70	18.769	20.65	406.62	1.000	0.000	5.00	23.391	23.39	772.7	0.0	1766.0
25.00		1.00	0.70	18.769	20.65	397.90	1.000	0.000	5.00	22.895	22.89	756.3	0.0	1728.2
30.00		1.00	0.70	18.785	20.66	389.35	1.000	0.000	5.00	22.399	22.40	740.5	0.0	1690.4
32.83	Bot - Section 2	1.00	0.72	19.275	21.20	389.40	1.000	0.000	2.83	12.473	12.47	423.1	0.0	941.1
35.00		1.00	0.73	19.631	21.59	389.11	1.000	0.000	2.17	9.606	9.61	331.9	0.0	1391.5
40.00	Top - Section 1	1.00	0.76	20.394	22.43	387.52	1.000	0.000	5.00	21.811	21.81	782.9	0.0	3158.6
45.00		1.00	0.79	21.092	23.20	392.39	1.000	0.000	5.00	21.315	21.32	791.3	0.0	1508.3
50.00		1.00	0.81	21.737	23.91	388.96	1.000	0.000	5.00	20.819	20.82	796.5	0.0	1472.9
55.00		1.00	0.83	22.337	24.57	384.79	1.000	0.000	5.00	20.323	20.32	799.0	0.0	1437.4
60.00		1.00	0.85	22.899	25.19	379.97	1.000	0.000	5.00	19.827	19.83	799.1	0.0	1402.0
65.00		1.00	0.87	23.429	25.77	374.61	1.000	0.000	5.00	19.331	19.33	797.1	0.0	1366.6
70.00		1.00	0.89	23.930	26.32	368.75	1.000	0.000	5.00	18.835	18.84	793.3	0.0	1331.1
75.00		1.00	0.91	24.406	26.85	362.47	1.000	0.000	5.00	18.339	18.34	787.8	0.0	1295.7
77.92	Bot - Section 3	1.00	0.92	24.674	27.14	358.62	1.000	0.000	2.92	10.481	10.48	455.1	0.0	740.3
80.00		1.00	0.93	24.861	27.35	355.80	1.000	0.000	2.08	7.520	7.52	329.0	0.0	1016.1
84.00	Top - Section 2	1.00	0.94	25.210	27.73	350.20	1.000	0.000	4.00	14.231	14.23	631.4	0.0	1922.3
85.00		1.00	0.94	25.295	27.82	356.47	1.000	0.000	1.00	3.494	3.49	155.5	0.0	230.4
90.00		1.00	0.96	25.711	28.28	349.19	1.000	0.000	5.00	17.229	17.23	779.6	0.0	1136.2
95.00		1.00	0.97	26.112	28.72	341.62	1.000	0.000	5.00	16.733	16.73	769.0	0.0	1103.1
100.00		1.00	0.99	26.497	29.15	333.78	1.000	0.000	5.00	16.237	16.24	757.2	0.0	1070.0
105.00		1.00	1.00	26.869	29.56	325.69	1.000	0.000	5.00	15.741	15.74	744.4	0.0	1037.0
110.00		1.00	1.02	27.229	29.95	317.36	1.000	0.000	5.00	15.245	15.24	730.6	0.0	1003.9
115.00		1.00	1.03	27.577	30.33	308.82	1.000	0.000	5.00	14.749	14.75	715.8	0.0	970.8
120.00		1.00	1.04	27.914	30.71	300.08	1.000	0.000	5.00	14.253	14.25	700.2	0.0	937.7
124.08	Bot - Section 4	1.00	1.05	28.182	31.00	292.79	1.000	0.000	4.08	11.272	11.27	559.1	0.0	741.3
125.00	Appurtenance(s)	1.00	1.05	28.242	31.07	291.14	1.000	0.000	0.92	2.529	2.53	125.7	0.0	270.8
126.00	Appurtenance(s)	1.00	1.06	28.306	31.14	289.33	1.000	0.000	1.00	2.740	2.74	136.5	0.0	293.4
129.00	Top - Section 3	1.00	1.06	28.497	31.35	283.86	1.000	0.000	3.00	8.102	8.10	406.4	0.0	867.1
130.00		1.00	1.07	28.560	31.42	287.29	1.000	0.000	1.00	2.661	2.66	133.8	0.0	113.0
135.00	Appurtenance(s)	1.00	1.08	28.869	31.76	278.03	1.000	0.000	5.00	13.007	13.01	660.9	0.0	552.3
140.00		1.00	1.09	29.171	32.09	268.61	1.000	0.000	5.00	12.511	12.51	642.3	0.0	531.1
145.00	Appurtenance(s)	1.00	1.10	29.465	32.41	259.05	1.000	0.000	5.00	12.015	12.02	623.1	0.0	509.8
150.00		1.00	1.11	29.752	32.73	249.33	1.000	0.000	5.00	11.519	11.52	603.2	0.0	488.6
152.50	Appurtenance(s)	1.00	1.11	29.893	32.88	244.42	1.000	0.000	2.50	5.574	5.57	293.2	0.0	236.3
155.00	Appurtenance(s)	1.00	1.12	30.032	33.03	239.48	1.000	0.000	2.50	5.450	5.45	288.0	0.0	231.0
160.00		1.00	1.13	30.305	33.34	229.49	1.000	0.000	5.00	10.527	10.53	561.5	0.0	446.0
165.00	Appurtenance(s)	1.00	1.14	30.573	33.63	219.38	1.000	0.000	5.00	10.031	10.03	539.8	0.0	424.8
170.00		1.00	1.15	30.835	33.92	209.15	1.000	0.000	5.00	9.535	9.54	517.5	0.0	403.5
175.00		1.00	1.16	31.091	34.20	198.80	1.000	0.000	5.00	9.039	9.04	494.6	0.0	382.3
178.00		1.00	1.17	31.243	34.37	192.54	1.000	0.000	3.00	5.185	5.19	285.1	0.0	219.1
<b>Totals:</b>									<b>178.00</b>			<b>25,426.4</b>		<b>43,892.8</b>

## Discrete Appurtenance Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

**Topography:** 1

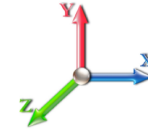
**Code:** TIA-222-G  
**Exposure:** B  
**Crest Height:** 0.00  
**Site Class:** D - Stiff Soil  
**Struct Class:** II

4/8/2022  
 Page: 10



**Load Case:** 1.2D + 1.6W 105 mph Wind

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



**Iterations** 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	165.00	Ericsson 4449 B71 + B85	3	30.573	33.630	0.50	0.75	2.97	255.60	0.000	0.000	159.80	0.00	0.00	
2	165.00	Platform w/ Hand Rails	1	30.573	33.630	1.00	1.00	40.00	2400.00	0.000	0.000	2152.34	0.00	0.00	
3	165.00	RFS	3	30.573	33.630	0.52	0.75	31.88	442.08	0.000	0.000	1715.31	0.00	0.00	
4	165.00	Ericsson KRY 112 489/2	6	30.573	33.630	0.50	0.75	1.96	110.88	0.000	0.000	105.45	0.00	0.00	
5	165.00	Reinf. Kit (SitePro1	3	30.573	33.630	0.75	1.00	7.88	342.00	0.000	0.000	423.74	0.00	0.00	
6	165.00	(3) SFS-H-L (V-Braces)	1	30.573	33.630	1.00	1.00	6.70	276.00	0.000	0.000	360.52	0.00	0.00	
7	165.00	Ericsson AIR6419 B41	3	30.573	33.630	0.57	0.75	6.50	237.96	0.000	0.000	349.65	0.00	0.00	
8	165.00	Ericsson 4460 B25 + B66	3	30.573	33.630	0.50	0.75	4.30	392.40	0.000	0.000	231.18	0.00	0.00	
9	165.00	Kathrein 782 11056	3	30.573	33.630	0.58	0.75	0.23	6.48	0.000	0.000	12.28	0.00	0.00	
10	155.00	KMW AM-X-CD-17-65-00T	1	30.032	33.035	0.56	0.75	2.81	36.96	0.000	0.000	148.66	0.00	0.00	
11	155.00	Powerwave 7770	6	30.032	33.035	0.54	0.75	17.95	194.40	0.000	0.000	948.74	0.00	0.00	
12	155.00	Powerwave	1	30.032	33.035	0.56	0.75	6.43	70.80	0.000	0.000	340.13	0.00	0.00	
13	155.00	Platform w/ Hand Rails	1	30.032	33.035	1.00	1.00	40.00	2400.00	0.000	0.000	2114.24	0.00	0.00	
14	155.00	Powerwave LGP21401	6	30.032	33.035	0.50	0.75	3.89	101.52	0.000	0.000	205.58	0.00	0.00	
15	155.00	Kathrein 800 10764	1	30.032	33.035	0.56	0.75	3.31	48.96	0.000	0.000	174.82	0.00	0.00	
16	155.00	Nokia CS72188.01	1	30.032	33.035	0.50	0.75	0.66	23.76	0.000	0.000	35.06	0.00	0.00	
17	155.00	Powerwave LGP21903	6	30.032	33.035	0.50	0.75	0.81	39.60	0.000	0.000	43.03	0.00	0.00	
18	152.50	Ring Mount (Part No	1	29.893	32.882	1.00	1.00	5.00	180.00	0.000	0.000	263.05	0.00	0.00	
19	152.50	Raycap DC2-48-60-18-8F	1	29.893	32.882	0.90	0.90	1.32	39.36	0.000	0.000	69.60	0.00	0.00	
20	152.50	Ericsson RRUS11 RRUs	6	29.893	32.882	0.60	0.90	11.79	367.20	0.000	0.000	620.53	0.00	0.00	
21	145.00	PRK-1245 (kicker kit)	1	29.465	32.411	1.00	1.00	9.50	557.89	0.000	0.000	492.65	0.00	0.00	
22	145.00	(3) SFS-H-L (V-Braces)	1	29.465	32.411	1.00	1.00	6.70	276.00	0.000	0.000	347.45	0.00	0.00	
23	145.00	NNVV-65B-R4	3	29.465	32.411	0.55	0.75	20.43	278.64	0.000	0.000	1059.44	0.00	0.00	
24	145.00	APXVTM14-C-I20	3	29.465	32.411	0.58	0.75	10.98	202.32	0.000	0.000	569.61	0.00	0.00	
25	145.00	ALU TD-RRH8x20-25-	3	29.465	32.411	0.50	0.75	6.11	252.00	0.000	0.000	316.61	0.00	0.00	
26	145.00	ALU 800 Mhz- RRUs	6	29.465	32.411	0.50	0.75	7.51	381.60	0.000	0.000	389.32	0.00	0.00	
27	145.00	ALU 1900 Mhz- RRUs	3	29.465	32.411	0.50	0.75	4.18	216.00	0.000	0.000	216.55	0.00	0.00	
28	145.00	Platform w/ Hand Rails	1	29.465	32.411	1.00	1.00	40.00	2400.00	0.000	0.000	2074.33	0.00	0.00	
29	135.00	TA08025-B604	3	28.869	31.756	0.50	0.75	2.95	230.04	0.000	0.000	150.13	0.00	0.00	
30	135.00	TA08025-B605	3	28.869	31.756	0.50	0.75	2.95	270.00	0.000	0.000	150.13	0.00	0.00	
31	135.00	MC-PK8-DSH	1	28.869	31.756	1.00	1.00	37.59	2072.40	0.000	0.000	1909.96	0.00	0.00	
32	135.00	MX08FRO665-21	3	28.869	31.756	0.55	0.75	20.80	232.20	0.000	0.000	1056.64	0.00	0.00	
33	135.00	RDIDC-9181-PF-48	1	28.869	31.756	1.00	1.00	2.01	26.22	0.000	0.000	102.13	0.00	0.00	
34	126.00	GPS	1	28.306	31.137	1.00	1.00	1.00	4.80	0.000	0.000	49.82	0.00	0.00	
35	125.00	RFS DB-T1-6Z-8AB-OZ	2	28.242	31.066	0.80	0.80	6.56	105.60	0.000	0.000	326.07	0.00	0.00	
36	125.00	Antel	6	28.242	31.066	0.56	0.75	8.73	86.40	0.000	0.000	433.75	0.00	0.00	
37	125.00	Low Profile Platform	1	28.242	31.066	1.00	1.00	25.00	1440.00	0.000	0.000	1242.63	0.00	0.00	
38	125.00	VZWSMART	1	28.242	31.066	1.00	1.00	2.50	180.72	0.000	0.000	124.26	0.00	0.00	
39	125.00	VZWSMART	1	28.242	31.066	1.00	1.00	9.50	557.89	0.000	0.000	472.20	0.00	0.00	
40	125.00	Handrail Kit (P2 1/2 STD)	1	28.242	31.066	1.00	1.00	6.75	314.06	0.000	0.000	335.51	0.00	0.00	
41	125.00	RF4440d-13A	3	28.242	31.066	0.50	0.75	2.20	253.19	0.000	0.000	109.40	0.00	0.00	
42	125.00	RF4439d-25A	3	28.242	31.066	0.50	0.75	2.20	268.92	0.000	0.000	109.40	0.00	0.00	
43	125.00	MT6407-77A	3	28.242	31.066	0.52	0.75	7.39	313.56	0.000	0.000	367.16	0.00	0.00	
44	125.00	MX06FRO660-03	6	28.242	31.066	0.65	0.75	38.64	432.00	0.000	0.000	1920.66	0.00	0.00	
<b>Totals:</b>									<b>19,318.42</b>						<b>24,799.54</b>

## Total Applied Force Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 11

**Load Case:** 1.2D + 1.6W 105 mph Wind

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



**Iterations** 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		821.84	1997.89	0.00	0.00
10.00		805.45	2098.25	0.00	0.00
15.00		789.07	2060.45	0.00	0.00
20.00		772.68	2022.66	0.00	0.00
25.00		756.30	1984.86	0.00	0.00
30.00		740.54	1947.06	0.00	0.00
32.83		423.13	1086.56	0.00	0.00
35.00		331.87	1502.67	0.00	0.00
40.00		782.89	3415.21	0.00	0.00
45.00		791.27	1764.96	0.00	0.00
50.00		796.47	1729.53	0.00	0.00
55.00		798.96	1694.09	0.00	0.00
60.00		799.08	1658.66	0.00	0.00
65.00		797.12	1623.23	0.00	0.00
70.00		793.28	1587.79	0.00	0.00
75.00		787.77	1552.36	0.00	0.00
77.92		455.14	890.19	0.00	0.00
80.00		329.02	1122.88	0.00	0.00
84.00		631.43	2127.82	0.00	0.00
85.00		155.53	281.59	0.00	0.00
90.00		779.64	1392.82	0.00	0.00
95.00		768.98	1359.75	0.00	0.00
100.00		757.20	1326.68	0.00	0.00
105.00		744.37	1293.61	0.00	0.00
110.00		730.56	1260.54	0.00	0.00
115.00		715.83	1227.46	0.00	0.00
120.00		700.22	1194.39	0.00	0.00
124.08		559.09	950.89	0.00	0.00
125.00	(27) attachments	5566.77	4270.24	0.00	0.00
126.00	(1) attachments	186.34	332.96	0.00	0.00
129.00		406.35	971.43	0.00	0.00
130.00		133.75	147.79	0.00	0.00
135.00	(11) attachments	4029.89	3557.05	0.00	0.00
140.00		642.34	698.93	0.00	0.00
145.00	(21) attachments	6089.07	5242.12	0.00	0.00
150.00		603.18	633.52	0.00	0.00
152.50	(8) attachments	1246.42	895.34	0.00	0.00
155.00	(23) attachments	4298.29	3219.47	0.00	0.00
160.00		561.50	509.87	0.00	0.00
165.00	(26) attachments	6050.04	4952.01	0.00	0.00
170.00		517.47	403.51	0.00	0.00
175.00		494.63	382.25	0.00	0.00
178.00		285.13	219.15	0.00	0.00
<b>Totals:</b>		<b>50,225.90</b>	<b>70,590.51</b>	<b>0.00</b>	<b>0.00</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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



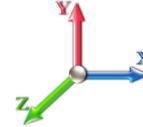
Page: 12

**Load Case:** 1.2D + 1.6W 105 mph Wind

**Iterations** 25

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



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 5/8" Coax	Yes	2.00	0.000	2.00	0.33	0.00	0.013	0.000	18.769	0.00	27.46
5.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	18.769	0.00	5.28
5.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	18.769	0.00	0.38
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.034	0.000	18.769	0.00	68.64
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	13.20
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	0.96
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	18.769	0.00	68.64
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	18.769	0.00	13.20
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	18.769	0.00	0.96
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	18.769	0.00	68.64
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	13.20
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	0.96
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	18.769	0.00	68.64
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	13.20
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	0.96
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	18.785	0.00	68.64
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	18.785	0.00	13.20
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	18.785	0.00	0.96
32.83	1 5/8" Coax	Yes	2.83	0.000	2.00	0.47	0.00	0.038	0.000	19.275	0.00	38.90
32.83	1 5/8" Fiber	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	19.275	0.00	7.48
32.83	1/2" Coax	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	19.275	0.00	0.54
35.00	1 5/8" Coax	Yes	2.17	0.000	2.00	0.36	0.00	0.038	0.000	19.631	0.00	29.74
35.00	1 5/8" Fiber	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	19.631	0.00	5.72
35.00	1/2" Coax	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	19.631	0.00	0.42
40.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	20.394	0.00	68.64
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	20.394	0.00	13.20
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	20.394	0.00	0.96
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	21.092	0.00	68.64
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	21.092	0.00	13.20
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	21.092	0.00	0.96
50.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	21.737	0.00	68.64
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	21.737	0.00	13.20
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	21.737	0.00	0.96
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	22.337	0.00	68.64
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	22.337	0.00	13.20
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	22.337	0.00	0.96
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	22.899	0.00	68.64
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	22.899	0.00	13.20
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	22.899	0.00	0.96
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	23.429	0.00	68.64
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	23.429	0.00	13.20
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	23.429	0.00	0.96
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	23.930	0.00	68.64
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	23.930	0.00	13.20
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	23.930	0.00	0.96
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	24.406	0.00	68.64
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	24.406	0.00	13.20

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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



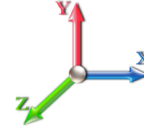
Page: 13

**Load Case:** 1.2D + 1.6W 105 mph Wind

**Iterations** 25

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



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)
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	24.406	0.00	0.96
77.92	1 5/8" Coax	Yes	2.92	0.000	2.00	0.49	0.00	0.046	0.000	24.674	0.00	40.09
77.92	1 5/8" Fiber	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	24.674	0.00	7.71
77.92	1/2" Coax	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	24.674	0.00	0.56
80.00	1 5/8" Coax	Yes	2.08	0.000	2.00	0.35	0.00	0.047	0.000	24.861	0.00	28.55
80.00	1 5/8" Fiber	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	24.861	0.00	5.49
80.00	1/2" Coax	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	24.861	0.00	0.40
84.00	1 5/8" Coax	Yes	4.00	0.000	2.00	0.67	0.00	0.048	0.000	25.210	0.00	54.96
84.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	25.210	0.00	10.57
84.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	25.210	0.00	0.77
85.00	1 5/8" Coax	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	25.295	0.00	13.68
85.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	25.295	0.00	2.63
85.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	25.295	0.00	0.19
90.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	25.711	0.00	68.64
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	25.711	0.00	13.20
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	25.711	0.00	0.96
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	26.112	0.00	68.64
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	26.112	0.00	13.20
95.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	26.112	0.00	0.96
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	26.497	0.00	68.64
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	26.497	0.00	13.20
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	26.497	0.00	0.96
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	26.869	0.00	68.64
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	26.869	0.00	13.20
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	26.869	0.00	0.96
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.055	0.000	27.229	0.00	68.64
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	27.229	0.00	13.20
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	27.229	0.00	0.96
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	27.577	0.00	68.64
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	27.577	0.00	13.20
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	27.577	0.00	0.96
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	27.914	0.00	68.64
120.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	27.914	0.00	13.20
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	27.914	0.00	0.96
124.08	1 5/8" Coax	Yes	4.08	0.000	2.00	0.68	0.00	0.060	0.000	28.182	0.00	56.06
124.08	1 5/8" Fiber	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	28.182	0.00	10.78
124.08	1/2" Coax	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	28.182	0.00	0.78
125.00	1 5/8" Coax	Yes	0.92	0.000	2.00	0.15	0.00	0.061	0.000	28.242	0.00	12.58
125.00	1 5/8" Fiber	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	28.242	0.00	2.42
125.00	1/2" Coax	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	28.242	0.00	0.18
<b>Totals:</b>											<b>0.0</b>	<b>2,020.3</b>

## Calculated Forces

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 14



**Load Case:** 1.2D + 1.6W 105 mph Wind

**Iterations** 25

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



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-70.49	-50.36	0.00	-6083.3	0.00	6083.35	6109.19	3054.60	14553.3	7187.37	0.00	0.000	0.000	0.858
5.00	-68.31	-49.79	0.00	-5831.5	0.00	5831.56	6042.67	3021.34	14105.8	6966.35	0.12	-0.214	0.000	0.849
10.00	-66.03	-49.23	0.00	-5582.6	0.00	5582.60	5973.91	2986.96	13659.5	6745.94	0.46	-0.432	0.000	0.839
15.00	-63.79	-48.67	0.00	-5336.4	0.00	5336.46	5902.91	2951.46	13214.8	6526.30	1.03	-0.654	0.000	0.829
20.00	-61.58	-48.11	0.00	-5093.1	0.00	5093.12	5829.67	2914.84	12771.9	6307.60	1.83	-0.879	0.000	0.818
25.00	-59.42	-47.56	0.00	-4852.5	0.00	4852.55	5754.19	2877.10	12331.3	6089.98	2.88	-1.108	0.000	0.807
30.00	-57.34	-46.97	0.00	-4614.7	0.00	4614.73	5676.47	2838.24	11893.2	5873.62	4.16	-1.341	0.000	0.796
32.83	-56.17	-46.63	0.00	-4481.6	0.00	4481.67	5631.44	2815.72	11646.2	5751.63	5.00	-1.477	0.000	0.789
35.00	-54.53	-46.43	0.00	-4380.6	0.00	4380.63	5596.51	2798.26	11457.9	5658.66	5.70	-1.582	0.000	0.784
40.00	-50.95	-45.76	0.00	-4148.4	0.00	4148.49	5104.93	2552.47	10419.5	5145.84	7.48	-1.823	0.000	0.816
45.00	-49.02	-45.12	0.00	-3919.7	0.00	3919.70	5033.50	2516.75	10032.9	4954.92	9.52	-2.067	0.000	0.801
50.00	-47.13	-44.46	0.00	-3694.1	0.00	3694.11	4959.83	2479.91	9648.87	4765.22	11.82	-2.315	0.000	0.785
55.00	-45.28	-43.79	0.00	-3471.7	0.00	3471.79	4883.92	2441.96	9267.55	4576.90	14.38	-2.566	0.000	0.768
60.00	-43.46	-43.11	0.00	-3252.8	0.00	3252.83	4805.76	2402.88	8889.36	4390.12	17.20	-2.820	0.000	0.750
65.00	-41.69	-42.42	0.00	-3037.2	0.00	3037.28	4725.37	2362.69	8514.61	4205.04	20.29	-3.076	0.000	0.731
70.00	-39.97	-41.72	0.00	-2825.1	0.00	2825.18	4642.74	2321.37	8143.62	4021.83	23.65	-3.334	0.000	0.711
75.00	-38.32	-40.98	0.00	-2616.5	0.00	2616.59	4557.87	2278.94	7776.72	3840.63	27.28	-3.594	0.000	0.690
77.92	-37.36	-40.55	0.00	-2496.9	0.00	2496.94	4507.27	2253.64	7564.46	3735.80	29.53	-3.749	0.000	0.677
80.00	-36.15	-40.25	0.00	-2412.5	0.00	2412.59	4470.76	2235.38	7414.22	3661.61	31.18	-3.860	0.000	0.667
84.00	-33.98	-39.55	0.00	-2251.4	0.00	2251.46	4079.95	2039.98	6768.85	3342.88	34.51	-4.070	0.000	0.682
85.00	-33.60	-39.47	0.00	-2212.0	0.00	2212.04	4064.53	2032.27	6704.51	3311.11	35.36	-4.124	0.000	0.677
90.00	-32.10	-38.73	0.00	-2014.6	0.00	2014.69	3985.82	1992.91	6384.01	3152.82	39.82	-4.383	0.000	0.647
95.00	-30.63	-38.00	0.00	-1821.0	0.00	1821.02	3904.88	1952.44	6067.57	2996.54	44.54	-4.640	0.000	0.616
100.00	-29.21	-37.26	0.00	-1631.0	0.00	1631.03	3803.39	1901.70	5727.93	2828.81	49.53	-4.894	0.000	0.585
105.00	-27.83	-36.53	0.00	-1444.7	0.00	1444.73	3683.99	1842.00	5371.89	2652.97	54.79	-5.141	0.000	0.553
110.00	-26.50	-35.79	0.00	-1262.1	0.00	1262.11	3564.59	1782.30	5027.27	2482.78	60.30	-5.381	0.000	0.516
115.00	-25.21	-35.06	0.00	-1083.1	0.00	1083.15	3445.19	1722.60	4694.07	2318.23	66.05	-5.610	0.000	0.475
120.00	-23.98	-34.32	0.00	-907.86	0.00	907.86	3325.79	1662.90	4372.30	2159.32	72.03	-5.826	0.000	0.428
124.08	-23.03	-33.71	0.00	-767.71	0.00	767.71	3228.28	1614.14	4118.00	2033.73	77.08	-5.991	0.000	0.385
125.00	-19.35	-27.74	0.00	-736.81	0.00	736.81	3206.39	1603.20	4061.96	2006.05	78.23	-6.027	0.000	0.374
126.00	-19.00	-27.54	0.00	-709.08	0.00	709.08	3182.51	1591.26	4001.26	1976.07	79.50	-6.066	0.000	0.365
129.00	-18.05	-27.06	0.00	-626.45	0.00	626.45	1872.41	936.20	2368.25	1169.59	83.34	-6.176	0.000	0.546
130.00	-17.85	-26.95	0.00	-599.40	0.00	599.40	1864.30	932.15	2340.16	1155.72	84.63	-6.212	0.000	0.529
135.00	-14.67	-22.61	0.00	-464.64	0.00	464.64	1822.43	911.21	2200.41	1086.70	91.26	-6.444	0.000	0.436
140.00	-13.98	-21.94	0.00	-351.59	0.00	351.59	1778.31	889.16	2062.08	1018.38	98.10	-6.644	0.000	0.354
145.00	-9.45	-15.30	0.00	-241.91	0.00	241.91	1731.96	865.98	1925.47	950.92	105.14	-6.808	0.000	0.260
150.00	-8.87	-14.64	0.00	-165.42	0.00	165.42	1683.36	841.68	1790.92	884.47	112.32	-6.935	0.000	0.193
152.50	-8.12	-13.30	0.00	-128.83	0.00	128.83	1658.23	829.11	1724.52	851.67	115.96	-6.987	0.000	0.156
155.00	-5.45	-8.64	0.00	-95.59	0.00	95.59	1632.53	816.27	1658.75	819.19	119.62	-7.030	0.000	0.120
160.00	-5.00	-8.03	0.00	-52.37	0.00	52.37	1571.93	785.97	1521.98	751.65	127.00	-7.091	0.000	0.073
165.00	-0.84	-1.41	0.00	-12.23	0.00	12.23	1495.17	747.59	1376.14	679.62	134.43	-7.121	0.000	0.019
170.00	-0.50	-0.85	0.00	-5.17	0.00	5.17	1418.42	709.21	1237.64	611.22	141.87	-7.131	0.000	0.009
175.00	-0.18	-0.31	0.00	-0.93	0.00	0.93	1341.66	670.83	1106.49	546.45	149.32	-7.134	0.000	0.002
178.00	0.00	-0.29	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	153.79	-7.135	0.000	0.000



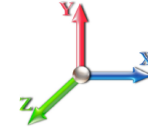
## Wind Loading - Shaft

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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:** 0.9D + 1.6W 105 mph Wind

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



**Iterations** 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	441.48	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	432.76	1.000	0.000	5.00	24.879	24.88	821.8	0.0	1409.5
10.00		1.00	0.70	18.769	20.65	424.05	1.000	0.000	5.00	24.383	24.38	805.5	0.0	1381.2
15.00		1.00	0.70	18.769	20.65	415.33	1.000	0.000	5.00	23.887	23.89	789.1	0.0	1352.8
20.00		1.00	0.70	18.769	20.65	406.62	1.000	0.000	5.00	23.391	23.39	772.7	0.0	1324.5
25.00		1.00	0.70	18.769	20.65	397.90	1.000	0.000	5.00	22.895	22.89	756.3	0.0	1296.2
30.00		1.00	0.70	18.785	20.66	389.35	1.000	0.000	5.00	22.399	22.40	740.5	0.0	1267.8
32.83	Bot - Section 2	1.00	0.72	19.275	21.20	389.40	1.000	0.000	2.83	12.473	12.47	423.1	0.0	705.8
35.00		1.00	0.73	19.631	21.59	389.11	1.000	0.000	2.17	9.606	9.61	331.9	0.0	1043.6
40.00	Top - Section 1	1.00	0.76	20.394	22.43	387.52	1.000	0.000	5.00	21.811	21.81	782.9	0.0	2368.9
45.00		1.00	0.79	21.092	23.20	392.39	1.000	0.000	5.00	21.315	21.32	791.3	0.0	1131.2
50.00		1.00	0.81	21.737	23.91	388.96	1.000	0.000	5.00	20.819	20.82	796.5	0.0	1104.7
55.00		1.00	0.83	22.337	24.57	384.79	1.000	0.000	5.00	20.323	20.32	799.0	0.0	1078.1
60.00		1.00	0.85	22.899	25.19	379.97	1.000	0.000	5.00	19.827	19.83	799.1	0.0	1051.5
65.00		1.00	0.87	23.429	25.77	374.61	1.000	0.000	5.00	19.331	19.33	797.1	0.0	1024.9
70.00		1.00	0.89	23.930	26.32	368.75	1.000	0.000	5.00	18.835	18.84	793.3	0.0	998.4
75.00		1.00	0.91	24.406	26.85	362.47	1.000	0.000	5.00	18.339	18.34	787.8	0.0	971.8
77.92	Bot - Section 3	1.00	0.92	24.674	27.14	358.62	1.000	0.000	2.92	10.481	10.48	455.1	0.0	555.2
80.00		1.00	0.93	24.861	27.35	355.80	1.000	0.000	2.08	7.520	7.52	329.0	0.0	762.1
84.00	Top - Section 2	1.00	0.94	25.210	27.73	350.20	1.000	0.000	4.00	14.231	14.23	631.4	0.0	1441.7
85.00		1.00	0.94	25.295	27.82	356.47	1.000	0.000	1.00	3.494	3.49	155.5	0.0	172.8
90.00		1.00	0.96	25.711	28.28	349.19	1.000	0.000	5.00	17.229	17.23	779.6	0.0	852.1
95.00		1.00	0.97	26.112	28.72	341.62	1.000	0.000	5.00	16.733	16.73	769.0	0.0	827.3
100.00		1.00	0.99	26.497	29.15	333.78	1.000	0.000	5.00	16.237	16.24	757.2	0.0	802.5
105.00		1.00	1.00	26.869	29.56	325.69	1.000	0.000	5.00	15.741	15.74	744.4	0.0	777.7
110.00		1.00	1.02	27.229	29.95	317.36	1.000	0.000	5.00	15.245	15.24	730.6	0.0	752.9
115.00		1.00	1.03	27.577	30.33	308.82	1.000	0.000	5.00	14.749	14.75	715.8	0.0	728.1
120.00		1.00	1.04	27.914	30.71	300.08	1.000	0.000	5.00	14.253	14.25	700.2	0.0	703.3
124.08	Bot - Section 4	1.00	1.05	28.182	31.00	292.79	1.000	0.000	4.08	11.272	11.27	559.1	0.0	556.0
125.00	Appurtenance(s)	1.00	1.05	28.242	31.07	291.14	1.000	0.000	0.92	2.529	2.53	125.7	0.0	203.1
126.00	Appurtenance(s)	1.00	1.06	28.306	31.14	289.33	1.000	0.000	1.00	2.740	2.74	136.5	0.0	220.0
129.00	Top - Section 3	1.00	1.06	28.497	31.35	283.86	1.000	0.000	3.00	8.102	8.10	406.4	0.0	650.3
130.00		1.00	1.07	28.560	31.42	287.29	1.000	0.000	1.00	2.661	2.66	133.8	0.0	84.8
135.00	Appurtenance(s)	1.00	1.08	28.869	31.76	278.03	1.000	0.000	5.00	13.007	13.01	660.9	0.0	414.3
140.00		1.00	1.09	29.171	32.09	268.61	1.000	0.000	5.00	12.511	12.51	642.3	0.0	398.3
145.00	Appurtenance(s)	1.00	1.10	29.465	32.41	259.05	1.000	0.000	5.00	12.015	12.02	623.1	0.0	382.4
150.00		1.00	1.11	29.752	32.73	249.33	1.000	0.000	5.00	11.519	11.52	603.2	0.0	366.4
152.50	Appurtenance(s)	1.00	1.11	29.893	32.88	244.42	1.000	0.000	2.50	5.574	5.57	293.2	0.0	177.2
155.00	Appurtenance(s)	1.00	1.12	30.032	33.03	239.48	1.000	0.000	2.50	5.450	5.45	288.0	0.0	173.2
160.00		1.00	1.13	30.305	33.34	229.49	1.000	0.000	5.00	10.527	10.53	561.5	0.0	334.5
165.00	Appurtenance(s)	1.00	1.14	30.573	33.63	219.38	1.000	0.000	5.00	10.031	10.03	539.8	0.0	318.6
170.00		1.00	1.15	30.835	33.92	209.15	1.000	0.000	5.00	9.535	9.54	517.5	0.0	302.6
175.00		1.00	1.16	31.091	34.20	198.80	1.000	0.000	5.00	9.039	9.04	494.6	0.0	286.7
178.00		1.00	1.17	31.243	34.37	192.54	1.000	0.000	3.00	5.185	5.19	285.1	0.0	164.4
<b>Totals:</b>									<b>178.00</b>			<b>25,426.4</b>		<b>32,919.6</b>

## Discrete Appurtenance Forces

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 16

**Load Case:** 0.9D + 1.6W 105 mph Wind

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



**Iterations** 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	165.00	Ericsson 4449 B71 + B85	3	30.573	33.630	0.50	0.75	2.97	191.70	0.000	0.000	159.80	0.00	0.00	
2	165.00	Platform w/ Hand Rails	1	30.573	33.630	1.00	1.00	40.00	1800.00	0.000	0.000	2152.34	0.00	0.00	
3	165.00	RFS	3	30.573	33.630	0.52	0.75	31.88	331.56	0.000	0.000	1715.31	0.00	0.00	
4	165.00	Ericsson KRY 112 489/2	6	30.573	33.630	0.50	0.75	1.96	83.16	0.000	0.000	105.45	0.00	0.00	
5	165.00	Reinf. Kit (SitePro1	3	30.573	33.630	0.75	1.00	7.88	256.50	0.000	0.000	423.74	0.00	0.00	
6	165.00	(3) SFS-H-L (V-Braces)	1	30.573	33.630	1.00	1.00	6.70	207.00	0.000	0.000	360.52	0.00	0.00	
7	165.00	Ericsson AIR6419 B41	3	30.573	33.630	0.57	0.75	6.50	178.47	0.000	0.000	349.65	0.00	0.00	
8	165.00	Ericsson 4460 B25 + B66	3	30.573	33.630	0.50	0.75	4.30	294.30	0.000	0.000	231.18	0.00	0.00	
9	165.00	Kathrein 782 11056	3	30.573	33.630	0.58	0.75	0.23	4.86	0.000	0.000	12.28	0.00	0.00	
10	155.00	KMW AM-X-CD-17-65-00T	1	30.032	33.035	0.56	0.75	2.81	27.72	0.000	0.000	148.66	0.00	0.00	
11	155.00	Powerwave 7770	6	30.032	33.035	0.54	0.75	17.95	145.80	0.000	0.000	948.74	0.00	0.00	
12	155.00	Powerwave	1	30.032	33.035	0.56	0.75	6.43	53.10	0.000	0.000	340.13	0.00	0.00	
13	155.00	Platform w/ Hand Rails	1	30.032	33.035	1.00	1.00	40.00	1800.00	0.000	0.000	2114.24	0.00	0.00	
14	155.00	Powerwave LGP21401	6	30.032	33.035	0.50	0.75	3.89	76.14	0.000	0.000	205.58	0.00	0.00	
15	155.00	Kathrein 800 10764	1	30.032	33.035	0.56	0.75	3.31	36.72	0.000	0.000	174.82	0.00	0.00	
16	155.00	Nokia CS72188.01	1	30.032	33.035	0.50	0.75	0.66	17.82	0.000	0.000	35.06	0.00	0.00	
17	155.00	Powerwave LGP21903	6	30.032	33.035	0.50	0.75	0.81	29.70	0.000	0.000	43.03	0.00	0.00	
18	152.50	Ring Mount (Part No	1	29.893	32.882	1.00	1.00	5.00	135.00	0.000	0.000	263.05	0.00	0.00	
19	152.50	Raycap DC2-48-60-18-8F	1	29.893	32.882	0.90	0.90	1.32	29.52	0.000	0.000	69.60	0.00	0.00	
20	152.50	Ericsson RRUS11 RRUs	6	29.893	32.882	0.60	0.90	11.79	275.40	0.000	0.000	620.53	0.00	0.00	
21	145.00	PRK-1245 (kicker kit)	1	29.465	32.411	1.00	1.00	9.50	418.42	0.000	0.000	492.65	0.00	0.00	
22	145.00	(3) SFS-H-L (V-Braces)	1	29.465	32.411	1.00	1.00	6.70	207.00	0.000	0.000	347.45	0.00	0.00	
23	145.00	NNVV-65B-R4	3	29.465	32.411	0.55	0.75	20.43	208.98	0.000	0.000	1059.44	0.00	0.00	
24	145.00	APXVTM14-C-I20	3	29.465	32.411	0.58	0.75	10.98	151.74	0.000	0.000	569.61	0.00	0.00	
25	145.00	ALU TD-RRH8x20-25-	3	29.465	32.411	0.50	0.75	6.11	189.00	0.000	0.000	316.61	0.00	0.00	
26	145.00	ALU 800 Mhz- RRUs	6	29.465	32.411	0.50	0.75	7.51	286.20	0.000	0.000	389.32	0.00	0.00	
27	145.00	ALU 1900 Mhz- RRUs	3	29.465	32.411	0.50	0.75	4.18	162.00	0.000	0.000	216.55	0.00	0.00	
28	145.00	Platform w/ Hand Rails	1	29.465	32.411	1.00	1.00	40.00	1800.00	0.000	0.000	2074.33	0.00	0.00	
29	135.00	TA08025-B604	3	28.869	31.756	0.50	0.75	2.95	172.53	0.000	0.000	150.13	0.00	0.00	
30	135.00	TA08025-B605	3	28.869	31.756	0.50	0.75	2.95	202.50	0.000	0.000	150.13	0.00	0.00	
31	135.00	MC-PK8-DSH	1	28.869	31.756	1.00	1.00	37.59	1554.30	0.000	0.000	1909.96	0.00	0.00	
32	135.00	MX08FRO665-21	3	28.869	31.756	0.55	0.75	20.80	174.15	0.000	0.000	1056.64	0.00	0.00	
33	135.00	RDIDC-9181-PF-48	1	28.869	31.756	1.00	1.00	2.01	19.67	0.000	0.000	102.13	0.00	0.00	
34	126.00	GPS	1	28.306	31.137	1.00	1.00	1.00	3.60	0.000	0.000	49.82	0.00	0.00	
35	125.00	RFS DB-T1-6Z-8AB-OZ	2	28.242	31.066	0.80	0.80	6.56	79.20	0.000	0.000	326.07	0.00	0.00	
36	125.00	Antel	6	28.242	31.066	0.56	0.75	8.73	64.80	0.000	0.000	433.75	0.00	0.00	
37	125.00	Low Profile Platform	1	28.242	31.066	1.00	1.00	25.00	1080.00	0.000	0.000	1242.63	0.00	0.00	
38	125.00	VZWSMART	1	28.242	31.066	1.00	1.00	2.50	135.54	0.000	0.000	124.26	0.00	0.00	
39	125.00	VZWSMART	1	28.242	31.066	1.00	1.00	9.50	418.42	0.000	0.000	472.20	0.00	0.00	
40	125.00	Handrail Kit (P2 1/2 STD)	1	28.242	31.066	1.00	1.00	6.75	235.55	0.000	0.000	335.51	0.00	0.00	
41	125.00	RF4440d-13A	3	28.242	31.066	0.50	0.75	2.20	189.89	0.000	0.000	109.40	0.00	0.00	
42	125.00	RF4439d-25A	3	28.242	31.066	0.50	0.75	2.20	201.69	0.000	0.000	109.40	0.00	0.00	
43	125.00	MT6407-77A	3	28.242	31.066	0.52	0.75	7.39	235.17	0.000	0.000	367.16	0.00	0.00	
44	125.00	MX06FRO660-03	6	28.242	31.066	0.65	0.75	38.64	324.00	0.000	0.000	1920.66	0.00	0.00	
<b>Totals:</b>									<b>14,488.81</b>						<b>24,799.54</b>



## Total Applied Force Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 17

**Load Case:** 0.9D + 1.6W 105 mph Wind

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



**Iterations** 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		821.84	1498.42	0.00	0.00
10.00		805.45	1573.69	0.00	0.00
15.00		789.07	1545.34	0.00	0.00
20.00		772.68	1516.99	0.00	0.00
25.00		756.30	1488.65	0.00	0.00
30.00		740.54	1460.30	0.00	0.00
32.83		423.13	814.92	0.00	0.00
35.00		331.87	1127.00	0.00	0.00
40.00		782.89	2561.41	0.00	0.00
45.00		791.27	1323.72	0.00	0.00
50.00		796.47	1297.15	0.00	0.00
55.00		798.96	1270.57	0.00	0.00
60.00		799.08	1243.99	0.00	0.00
65.00		797.12	1217.42	0.00	0.00
70.00		793.28	1190.84	0.00	0.00
75.00		787.77	1164.27	0.00	0.00
77.92		455.14	667.64	0.00	0.00
80.00		329.02	842.16	0.00	0.00
84.00		631.43	1595.86	0.00	0.00
85.00		155.53	211.19	0.00	0.00
90.00		779.64	1044.62	0.00	0.00
95.00		768.98	1019.81	0.00	0.00
100.00		757.20	995.01	0.00	0.00
105.00		744.37	970.21	0.00	0.00
110.00		730.56	945.40	0.00	0.00
115.00		715.83	920.60	0.00	0.00
120.00		700.22	895.79	0.00	0.00
124.08		559.09	713.16	0.00	0.00
125.00	(27) attachments	5566.77	3202.68	0.00	0.00
126.00	(1) attachments	186.34	249.72	0.00	0.00
129.00		406.35	728.57	0.00	0.00
130.00		133.75	110.84	0.00	0.00
135.00	(11) attachments	4029.89	2667.79	0.00	0.00
140.00		642.34	524.20	0.00	0.00
145.00	(21) attachments	6089.07	3931.59	0.00	0.00
150.00		603.18	475.14	0.00	0.00
152.50	(8) attachments	1246.42	671.51	0.00	0.00
155.00	(23) attachments	4298.29	2414.60	0.00	0.00
160.00		561.50	382.41	0.00	0.00
165.00	(26) attachments	6050.04	3714.01	0.00	0.00
170.00		517.47	302.63	0.00	0.00
175.00		494.63	286.69	0.00	0.00
178.00		285.13	164.36	0.00	0.00
<b>Totals:</b>		<b>50,225.90</b>	<b>52,942.88</b>	<b>0.00</b>	<b>0.00</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 18

**Load Case:** 0.9D + 1.6W 105 mph Wind

**Iterations** 25

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



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 5/8" Coax	Yes	2.00	0.000	2.00	0.33	0.00	0.013	0.000	18.769	0.00	20.59
5.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	18.769	0.00	3.96
5.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	18.769	0.00	0.29
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.034	0.000	18.769	0.00	51.48
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	9.90
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	0.72
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	18.769	0.00	51.48
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	18.769	0.00	9.90
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	18.769	0.00	0.72
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	18.769	0.00	51.48
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	9.90
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	0.72
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	18.769	0.00	51.48
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	9.90
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	18.769	0.00	0.72
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	18.785	0.00	51.48
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	18.785	0.00	9.90
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	18.785	0.00	0.72
32.83	1 5/8" Coax	Yes	2.83	0.000	2.00	0.47	0.00	0.038	0.000	19.275	0.00	29.17
32.83	1 5/8" Fiber	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	19.275	0.00	5.61
32.83	1/2" Coax	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	19.275	0.00	0.41
35.00	1 5/8" Coax	Yes	2.17	0.000	2.00	0.36	0.00	0.038	0.000	19.631	0.00	22.31
35.00	1 5/8" Fiber	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	19.631	0.00	4.29
35.00	1/2" Coax	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	19.631	0.00	0.31
40.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	20.394	0.00	51.48
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	20.394	0.00	9.90
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	20.394	0.00	0.72
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	21.092	0.00	51.48
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	21.092	0.00	9.90
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	21.092	0.00	0.72
50.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	21.737	0.00	51.48
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	21.737	0.00	9.90
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	21.737	0.00	0.72
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	22.337	0.00	51.48
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	22.337	0.00	9.90
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	22.337	0.00	0.72
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	22.899	0.00	51.48
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	22.899	0.00	9.90
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	22.899	0.00	0.72
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	23.429	0.00	51.48
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	23.429	0.00	9.90
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	23.429	0.00	0.72
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	23.930	0.00	51.48
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	23.930	0.00	9.90
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	23.930	0.00	0.72
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	24.406	0.00	51.48
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	24.406	0.00	9.90

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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

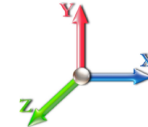


Page: 19

**Load Case:** 0.9D + 1.6W 105 mph Wind

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

**Iterations** 25



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	24.406	0.00	0.72
77.92	1 5/8" Coax	Yes	2.92	0.000	2.00	0.49	0.00	0.046	0.000	24.674	0.00	30.06
77.92	1 5/8" Fiber	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	24.674	0.00	5.78
77.92	1/2" Coax	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	24.674	0.00	0.42
80.00	1 5/8" Coax	Yes	2.08	0.000	2.00	0.35	0.00	0.047	0.000	24.861	0.00	21.42
80.00	1 5/8" Fiber	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	24.861	0.00	4.12
80.00	1/2" Coax	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	24.861	0.00	0.30
84.00	1 5/8" Coax	Yes	4.00	0.000	2.00	0.67	0.00	0.048	0.000	25.210	0.00	41.22
84.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	25.210	0.00	7.93
84.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	25.210	0.00	0.58
85.00	1 5/8" Coax	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	25.295	0.00	10.26
85.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	25.295	0.00	1.97
85.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	25.295	0.00	0.14
90.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	25.711	0.00	51.48
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	25.711	0.00	9.90
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	25.711	0.00	0.72
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	26.112	0.00	51.48
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	26.112	0.00	9.90
95.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	26.112	0.00	0.72
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	26.497	0.00	51.48
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	26.497	0.00	9.90
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	26.497	0.00	0.72
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	26.869	0.00	51.48
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	26.869	0.00	9.90
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	26.869	0.00	0.72
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.055	0.000	27.229	0.00	51.48
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	27.229	0.00	9.90
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	27.229	0.00	0.72
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	27.577	0.00	51.48
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	27.577	0.00	9.90
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	27.577	0.00	0.72
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	27.914	0.00	51.48
120.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	27.914	0.00	9.90
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	27.914	0.00	0.72
124.08	1 5/8" Coax	Yes	4.08	0.000	2.00	0.68	0.00	0.060	0.000	28.182	0.00	42.04
124.08	1 5/8" Fiber	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	28.182	0.00	8.08
124.08	1/2" Coax	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	28.182	0.00	0.59
125.00	1 5/8" Coax	Yes	0.92	0.000	2.00	0.15	0.00	0.061	0.000	28.242	0.00	9.44
125.00	1 5/8" Fiber	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	28.242	0.00	1.82
125.00	1/2" Coax	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	28.242	0.00	0.13
<b>Totals:</b>											<b>0.0</b>	<b>1,515.2</b>

## Calculated Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

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

4/8/2022  
 Page: 20



**Load Case:** 0.9D + 1.6W 105 mph Wind

**Iterations** 25

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



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.85	-50.33	0.00	-6000.1	0.00	6000.18	6109.19	3054.60	14553.3	7187.37	0.00	0.000	0.000	0.844
5.00	-51.17	-49.69	0.00	-5748.5	0.00	5748.56	6042.67	3021.34	14105.8	6966.35	0.11	-0.211	0.000	0.834
10.00	-49.41	-49.06	0.00	-5500.1	0.00	5500.11	5973.91	2986.96	13659.5	6745.94	0.45	-0.426	0.000	0.824
15.00	-47.69	-48.44	0.00	-5254.8	0.00	5254.80	5902.91	2951.46	13214.8	6526.30	1.01	-0.644	0.000	0.814
20.00	-46.00	-47.83	0.00	-5012.5	0.00	5012.58	5829.67	2914.84	12771.9	6307.60	1.81	-0.866	0.000	0.803
25.00	-44.33	-47.23	0.00	-4773.4	0.00	4773.43	5754.19	2877.10	12331.3	6089.98	2.84	-1.092	0.000	0.792
30.00	-42.74	-46.59	0.00	-4537.3	0.00	4537.30	5676.47	2838.24	11893.2	5873.62	4.10	-1.321	0.000	0.780
32.83	-41.84	-46.23	0.00	-4405.3	0.00	4405.30	5631.44	2815.72	11646.2	5751.63	4.93	-1.454	0.000	0.774
35.00	-40.59	-45.99	0.00	-4305.1	0.00	4305.13	5596.51	2798.26	11457.9	5658.66	5.61	-1.558	0.000	0.768
40.00	-37.86	-45.29	0.00	-4075.1	0.00	4075.17	5104.93	2552.47	10419.5	5145.84	7.37	-1.794	0.000	0.800
45.00	-36.38	-44.61	0.00	-3848.7	0.00	3848.70	5033.50	2516.75	10032.9	4954.92	9.38	-2.033	0.000	0.784
50.00	-34.92	-43.92	0.00	-3625.6	0.00	3625.65	4959.83	2479.91	9648.87	4765.22	11.64	-2.277	0.000	0.768
55.00	-33.50	-43.21	0.00	-3406.0	0.00	3406.06	4883.92	2441.96	9267.55	4576.90	14.15	-2.524	0.000	0.751
60.00	-32.11	-42.50	0.00	-3190.0	0.00	3190.01	4805.76	2402.88	8889.36	4390.12	16.93	-2.773	0.000	0.734
65.00	-30.75	-41.77	0.00	-2977.5	0.00	2977.53	4725.37	2362.69	8514.61	4205.04	19.97	-3.024	0.000	0.715
70.00	-29.42	-41.05	0.00	-2768.6	0.00	2768.67	4642.74	2321.37	8143.62	4021.83	23.27	-3.277	0.000	0.695
75.00	-28.17	-40.29	0.00	-2563.4	0.00	2563.43	4557.87	2278.94	7776.72	3840.63	26.84	-3.531	0.000	0.674
77.92	-27.44	-39.86	0.00	-2445.7	0.00	2445.79	4507.27	2253.64	7564.46	3735.80	29.04	-3.683	0.000	0.661
80.00	-26.51	-39.55	0.00	-2362.8	0.00	2362.88	4470.76	2235.38	7414.22	3661.61	30.67	-3.791	0.000	0.652
84.00	-24.88	-38.86	0.00	-2204.5	0.00	2204.57	4079.95	2039.98	6768.85	3342.88	33.94	-3.997	0.000	0.666
85.00	-24.57	-38.76	0.00	-2165.8	0.00	2165.83	4064.53	2032.27	6704.51	3311.11	34.78	-4.050	0.000	0.661
90.00	-23.42	-38.01	0.00	-1972.0	0.00	1972.03	3985.82	1992.91	6384.01	3152.82	39.15	-4.304	0.000	0.632
95.00	-22.30	-37.26	0.00	-1781.9	0.00	1781.97	3904.88	1952.44	6067.57	2996.54	43.79	-4.556	0.000	0.601
100.00	-21.21	-36.52	0.00	-1595.6	0.00	1595.66	3803.39	1901.70	5727.93	2828.81	48.69	-4.804	0.000	0.570
105.00	-20.16	-35.78	0.00	-1413.0	0.00	1413.07	3683.99	1842.00	5371.89	2652.97	53.85	-5.046	0.000	0.538
110.00	-19.14	-35.04	0.00	-1234.1	0.00	1234.18	3564.59	1782.30	5027.27	2482.78	59.25	-5.280	0.000	0.503
115.00	-18.17	-34.31	0.00	-1058.9	0.00	1058.97	3445.19	1722.60	4694.07	2318.23	64.90	-5.505	0.000	0.462
120.00	-17.23	-33.58	0.00	-887.41	0.00	887.41	3325.79	1662.90	4372.30	2159.32	70.77	-5.716	0.000	0.417
124.08	-16.53	-32.98	0.00	-750.28	0.00	750.28	3228.28	1614.14	4118.00	2033.73	75.72	-5.877	0.000	0.374
125.00	-13.89	-27.13	0.00	-720.05	0.00	720.05	3206.39	1603.20	4061.96	2006.05	76.85	-5.912	0.000	0.364
126.00	-13.63	-26.93	0.00	-692.92	0.00	692.92	3182.51	1591.26	4001.26	1976.07	78.09	-5.950	0.000	0.355
129.00	-12.92	-26.47	0.00	-612.13	0.00	612.13	1872.41	936.20	2368.25	1169.59	81.86	-6.058	0.000	0.531
130.00	-12.76	-26.35	0.00	-585.66	0.00	585.66	1864.30	932.15	2340.16	1155.72	83.13	-6.093	0.000	0.514
135.00	-10.46	-22.10	0.00	-453.89	0.00	453.89	1822.43	911.21	2200.41	1086.70	89.63	-6.319	0.000	0.424
140.00	-9.94	-21.43	0.00	-343.41	0.00	343.41	1778.31	889.16	2062.08	1018.38	96.34	-6.515	0.000	0.343
145.00	-6.70	-14.95	0.00	-236.26	0.00	236.26	1731.96	865.98	1925.47	950.92	103.24	-6.674	0.000	0.253
150.00	-6.28	-14.30	0.00	-161.53	0.00	161.53	1683.36	841.68	1790.92	884.47	110.28	-6.799	0.000	0.187
152.50	-5.75	-12.99	0.00	-125.77	0.00	125.77	1658.23	829.11	1724.52	851.67	113.85	-6.850	0.000	0.151
155.00	-3.86	-8.44	0.00	-93.30	0.00	93.30	1632.53	816.27	1658.75	819.19	117.44	-6.892	0.000	0.116
160.00	-3.54	-7.83	0.00	-51.12	0.00	51.12	1571.93	785.97	1521.98	751.65	124.68	-6.951	0.000	0.070
165.00	-0.59	-1.38	0.00	-11.95	0.00	11.95	1495.17	747.59	1376.14	679.62	131.96	-6.980	0.000	0.018
170.00	-0.35	-0.83	0.00	-5.05	0.00	5.05	1418.42	709.21	1237.64	611.22	139.26	-6.990	0.000	0.009
175.00	-0.13	-0.30	0.00	-0.91	0.00	0.91	1341.66	670.83	1106.49	546.45	146.56	-6.994	0.000	0.002
178.00	0.00	-0.29	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	150.94	-6.994	0.000	0.000

## Wind Loading - Shaft

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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



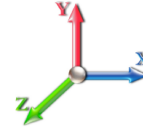
Page: 21

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

**Iterations** 25

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.656	5.00	26.259	31.51	147.5	630.1	2509.5
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.775	5.00	25.862	31.03	145.3	663.4	2505.0
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.848	5.00	25.427	30.51	142.8	678.0	2481.8
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.902	5.00	24.976	29.97	140.3	684.2	2450.2
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.945	5.00	24.516	29.42	137.7	685.7	2413.9
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.981	5.00	24.050	28.86	135.2	684.0	2374.4
32.83	Bot - Section 2	1.00	0.72	4.371	4.81	0.00	1.200	1.999	2.83	13.417	16.10	77.4	386.4	1327.6
35.00		1.00	0.73	4.451	4.90	0.00	1.200	2.012	2.17	10.332	12.40	60.7	300.0	1691.4
40.00	Top - Section 1	1.00	0.76	4.625	5.09	0.00	1.200	2.039	5.00	23.510	28.21	143.5	686.7	3845.2
45.00		1.00	0.79	4.783	5.26	0.00	1.200	2.063	5.00	23.035	27.64	145.4	679.7	2188.0
50.00		1.00	0.81	4.929	5.42	0.00	1.200	2.085	5.00	22.557	27.07	146.8	671.7	2144.6
55.00		1.00	0.83	5.065	5.57	0.00	1.200	2.105	5.00	22.077	26.49	147.6	662.7	2100.1
60.00		1.00	0.85	5.193	5.71	0.00	1.200	2.123	5.00	21.597	25.92	148.0	652.9	2054.9
65.00		1.00	0.87	5.313	5.84	0.00	1.200	2.140	5.00	21.115	25.34	148.1	642.4	2009.0
70.00		1.00	0.89	5.426	5.97	0.00	1.200	2.156	5.00	20.632	24.76	147.8	631.3	1962.5
75.00		1.00	0.91	5.534	6.09	0.00	1.200	2.171	5.00	20.149	24.18	147.2	619.7	1915.4
77.92	Bot - Section 3	1.00	0.92	5.595	6.15	0.00	1.200	2.179	2.92	11.541	13.85	85.2	357.8	1098.1
80.00		1.00	0.93	5.637	6.20	0.00	1.200	2.185	2.08	8.277	9.93	61.6	257.9	1274.1
84.00	Top - Section 2	1.00	0.94	5.717	6.29	0.00	1.200	2.196	4.00	15.696	18.84	118.4	488.5	2410.8
85.00		1.00	0.94	5.736	6.31	0.00	1.200	2.198	1.00	3.859	4.63	29.2	121.1	351.5
90.00		1.00	0.96	5.830	6.41	0.00	1.200	2.211	5.00	19.071	22.89	146.8	594.8	1731.0
95.00		1.00	0.97	5.921	6.51	0.00	1.200	2.223	5.00	18.585	22.30	145.3	581.6	1684.7
100.00		1.00	0.99	6.008	6.61	0.00	1.200	2.234	5.00	18.099	21.72	143.5	568.1	1638.1
105.00		1.00	1.00	6.093	6.70	0.00	1.200	2.245	5.00	17.612	21.13	141.6	554.3	1591.3
110.00		1.00	1.02	6.174	6.79	0.00	1.200	2.256	5.00	17.125	20.55	139.6	540.2	1544.1
115.00		1.00	1.03	6.253	6.88	0.00	1.200	2.266	5.00	16.637	19.96	137.3	525.9	1496.7
120.00		1.00	1.04	6.330	6.96	0.00	1.200	2.276	5.00	16.149	19.38	134.9	511.3	1449.0
124.08	Bot - Section 4	1.00	1.05	6.391	7.03	0.00	1.200	2.283	4.08	12.826	15.39	108.2	407.7	1149.0
125.00	Appurtenance(s)	1.00	1.05	6.404	7.04	0.00	1.200	2.285	0.92	2.878	3.45	24.3	92.6	363.4
126.00	Appurtenance(s)	1.00	1.06	6.419	7.06	0.00	1.200	2.287	1.00	3.121	3.75	26.4	100.4	393.8
129.00	Top - Section 3	1.00	1.06	6.462	7.11	0.00	1.200	2.292	3.00	9.248	11.10	78.9	295.7	1162.8
130.00		1.00	1.07	6.476	7.12	0.00	1.200	2.294	1.00	3.043	3.65	26.0	98.0	211.0
135.00	Appurtenance(s)	1.00	1.08	6.546	7.20	0.00	1.200	2.303	5.00	14.926	17.91	129.0	474.7	1027.0
140.00		1.00	1.09	6.615	7.28	0.00	1.200	2.311	5.00	14.437	17.32	126.1	459.3	990.4
145.00	Appurtenance(s)	1.00	1.10	6.681	7.35	0.00	1.200	2.319	5.00	13.948	16.74	123.0	443.7	953.6
150.00		1.00	1.11	6.746	7.42	0.00	1.200	2.327	5.00	13.458	16.15	119.9	428.0	916.6
152.50	Appurtenance(s)	1.00	1.11	6.778	7.46	0.00	1.200	2.331	2.50	6.545	7.85	58.6	210.0	446.4
155.00	Appurtenance(s)	1.00	1.12	6.810	7.49	0.00	1.200	2.335	2.50	6.422	7.71	57.7	206.1	437.1
160.00		1.00	1.13	6.872	7.56	0.00	1.200	2.342	5.00	12.479	14.97	113.2	396.1	842.1
165.00	Appurtenance(s)	1.00	1.14	6.933	7.63	0.00	1.200	2.349	5.00	11.989	14.39	109.7	379.9	804.7
170.00		1.00	1.15	6.992	7.69	0.00	1.200	2.356	5.00	11.499	13.80	106.1	363.6	767.1
175.00		1.00	1.16	7.050	7.76	0.00	1.200	2.363	5.00	11.008	13.21	102.4	347.1	729.4
178.00		1.00	1.17	7.085	7.79	0.00	1.200	2.367	3.00	6.369	7.64	59.6	202.3	421.5
<b>Totals:</b>									<b>178.00</b>			<b>4,814.0</b>	<b>63,858.6</b>	

## Discrete Appurtenance Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

**Topography:** 1

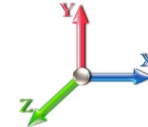
**Code:** TIA-222-G  
**Exposure:** B  
**Crest Height:** 0.00  
**Site Class:** D - Stiff Soil  
**Struct Class:** II

4/8/2022  
 Page: 22



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

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



**Iterations** 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	165.00	Ericsson 4449 B71 + B85	3	6.933	7.626	0.50	0.75	4.08	430.37	0.000	0.000	31.12	0.00	0.00	
2	165.00	Platform w/ Hand Rails	1	6.933	7.626	1.00	1.00	68.19	4619.09	0.000	0.000	520.02	0.00	0.00	
3	165.00	RFS	3	6.933	7.626	0.52	0.75	35.96	2244.65	0.000	0.000	274.22	0.00	0.00	
4	165.00	Ericsson KRY 112 489/2	6	6.933	7.626	0.50	0.75	4.44	223.19	0.000	0.000	33.89	0.00	0.00	
5	165.00	Reinf. Kit (SitePro1	3	6.933	7.626	0.75	1.00	32.08	1145.49	0.000	0.000	244.67	0.00	0.00	
6	165.00	(3) SFS-H-L (V-Braces)	1	6.933	7.626	1.00	1.00	16.14	607.26	0.000	0.000	123.11	0.00	0.00	
7	165.00	Ericsson AIR6419 B41	3	6.933	7.626	0.57	0.75	8.33	558.38	0.000	0.000	63.52	0.00	0.00	
8	165.00	Ericsson 4460 B25 + B66	3	6.933	7.626	0.50	0.75	5.67	631.78	0.000	0.000	43.20	0.00	0.00	
9	165.00	Kathrein 782 11056	3	6.933	7.626	0.58	0.75	0.92	9.89	0.000	0.000	7.00	0.00	0.00	
10	155.00	KMW AM-X-CD-17-65-00T	1	6.810	7.491	0.56	0.75	4.22	154.58	0.000	0.000	31.63	0.00	0.00	
11	155.00	Powerwave 7770	6	6.810	7.491	0.54	0.75	27.20	915.57	0.000	0.000	203.77	0.00	0.00	
12	155.00	Powerwave	1	6.810	7.491	0.56	0.75	8.87	298.55	0.000	0.000	66.44	0.00	0.00	
13	155.00	Platform w/ Hand Rails	1	6.810	7.491	1.00	1.00	68.02	4601.52	0.000	0.000	509.50	0.00	0.00	
14	155.00	Powerwave LGP21401	6	6.810	7.491	0.50	0.75	7.26	259.59	0.000	0.000	54.38	0.00	0.00	
15	155.00	Kathrein 800 10764	1	6.810	7.491	0.56	0.75	4.92	183.04	0.000	0.000	36.85	0.00	0.00	
16	155.00	Nokia CS72188.01	1	6.810	7.491	0.50	0.75	1.23	54.31	0.000	0.000	9.18	0.00	0.00	
17	155.00	Powerwave LGP21903	6	6.810	7.491	0.50	0.75	2.42	92.84	0.000	0.000	18.11	0.00	0.00	
18	152.50	Ring Mount (Part No	1	6.778	7.456	1.00	1.00	9.66	47.82	0.000	0.000	72.04	0.00	0.00	
19	152.50	Raycap DC2-48-60-18-8F	1	6.778	7.456	0.90	0.90	2.16	104.23	0.000	0.000	16.14	0.00	0.00	
20	152.50	Ericsson RRUS11 RRUs	6	6.778	7.456	0.60	0.90	17.99	846.89	0.000	0.000	134.10	0.00	0.00	
21	145.00	PRK-1245 (kicker kit)	1	6.681	7.350	1.00	1.00	22.72	894.07	0.000	0.000	166.97	0.00	0.00	
22	145.00	(3) SFS-H-L (V-Braces)	1	6.681	7.350	1.00	1.00	16.02	601.71	0.000	0.000	117.76	0.00	0.00	
23	145.00	NNVV-65B-R4	3	6.681	7.350	0.55	0.75	23.65	1219.61	0.000	0.000	173.83	0.00	0.00	
24	145.00	APXVTM14-C-I20	3	6.681	7.350	0.58	0.75	13.60	884.92	0.000	0.000	99.96	0.00	0.00	
25	145.00	ALU TD-RRH8x20-25-	3	6.681	7.350	0.50	0.75	7.78	723.16	0.000	0.000	57.15	0.00	0.00	
26	145.00	ALU 800 Mhz- RRUs	6	6.681	7.350	0.50	0.75	12.09	844.68	0.000	0.000	88.85	0.00	0.00	
27	145.00	ALU 1900 Mhz- RRUs	3	6.681	7.350	0.50	0.75	6.72	476.91	0.000	0.000	49.37	0.00	0.00	
28	145.00	Platform w/ Hand Rails	1	6.681	7.350	1.00	1.00	67.83	4582.89	0.000	0.000	498.51	0.00	0.00	
29	135.00	TA08025-B604	3	6.546	7.201	0.50	0.75	4.07	394.14	0.000	0.000	29.31	0.00	0.00	
30	135.00	TA08025-B605	3	6.546	7.201	0.50	0.75	4.07	439.22	0.000	0.000	29.31	0.00	0.00	
31	135.00	MC-PK8-DSH	1	6.546	7.201	1.00	1.00	99.91	3926.26	0.000	0.000	719.44	0.00	0.00	
32	135.00	MX08FRO665-21	3	6.546	7.201	0.55	0.75	24.01	1181.89	0.000	0.000	172.92	0.00	0.00	
33	135.00	RDIDC-9181-PF-48	1	6.546	7.201	1.00	1.00	2.76	118.16	0.000	0.000	19.87	0.00	0.00	
34	126.00	GPS	1	6.419	7.060	1.00	1.00	1.93	6.17	0.000	0.000	13.65	0.00	0.00	
35	125.00	RFS DB-T1-6Z-8AB-OZ	2	6.404	7.044	0.80	0.80	8.24	730.01	0.000	0.000	58.04	0.00	0.00	
36	125.00	Antel	6	6.404	7.044	0.56	0.75	12.66	796.05	0.000	0.000	89.17	0.00	0.00	
37	125.00	Low Profile Platform	1	6.404	7.044	1.00	1.00	52.42	2510.95	0.000	0.000	369.26	0.00	0.00	
38	125.00	VZWSMART	1	6.404	7.044	1.00	1.00	5.93	389.71	0.000	0.000	41.75	0.00	0.00	
39	125.00	VZWSMART	1	6.404	7.044	1.00	1.00	22.52	887.71	0.000	0.000	158.67	0.00	0.00	
40	125.00	Handrail Kit (P2 1/2 STD)	1	6.404	7.044	1.00	1.00	15.39	982.43	0.000	0.000	108.39	0.00	0.00	
41	125.00	RF4440d-13A	3	6.404	7.044	0.50	0.75	3.17	435.59	0.000	0.000	22.35	0.00	0.00	
42	125.00	RF4439d-25A	3	6.404	7.044	0.50	0.75	3.17	475.95	0.000	0.000	22.35	0.00	0.00	
43	125.00	MT6407-77A	3	6.404	7.044	0.52	0.75	9.37	814.14	0.000	0.000	65.99	0.00	0.00	
44	125.00	MX06FRO660-03	6	6.404	7.044	0.65	0.75	45.81	2646.06	0.000	0.000	322.72	0.00	0.00	
<b>Totals:</b>									<b>44,991.42</b>						<b>5,988.49</b>



## Total Applied Force Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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

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

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



**Iterations** 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		147.52	2724.80	0.00	0.00
10.00		145.29	3023.36	0.00	0.00
15.00		142.85	3012.51	0.00	0.00
20.00		140.31	2990.22	0.00	0.00
25.00		137.73	2961.33	0.00	0.00
30.00		135.22	2928.08	0.00	0.00
32.83		77.41	1643.11	0.00	0.00
35.00		60.71	1933.69	0.00	0.00
40.00		143.52	4409.12	0.00	0.00
45.00		145.42	2756.25	0.00	0.00
50.00		146.76	2716.66	0.00	0.00
55.00		147.60	2675.82	0.00	0.00
60.00		148.03	2633.91	0.00	0.00
65.00		148.07	2591.09	0.00	0.00
70.00		147.78	2547.47	0.00	0.00
75.00		147.19	2503.14	0.00	0.00
77.92		85.24	1442.24	0.00	0.00
80.00		61.59	1519.60	0.00	0.00
84.00		118.44	2885.01	0.00	0.00
85.00		29.22	469.69	0.00	0.00
90.00		146.77	2325.98	0.00	0.00
95.00		145.26	2281.94	0.00	0.00
100.00		143.54	2237.47	0.00	0.00
105.00		141.64	2192.62	0.00	0.00
110.00		139.57	2147.40	0.00	0.00
115.00		137.33	2101.86	0.00	0.00
120.00		134.93	2056.00	0.00	0.00
124.08		108.19	1645.83	0.00	0.00
125.00	(27) attachments	1283.02	11143.59	0.00	0.00
126.00	(1) attachments	40.09	434.69	0.00	0.00
129.00		78.88	1267.14	0.00	0.00
130.00		26.02	245.76	0.00	0.00
135.00	(11) attachments	1099.84	7260.53	0.00	0.00
140.00		126.06	1158.22	0.00	0.00
145.00	(21) attachments	1375.41	11349.36	0.00	0.00
150.00		119.85	1061.53	0.00	0.00
152.50	(8) attachments	280.84	1517.77	0.00	0.00
155.00	(23) attachments	987.60	7069.53	0.00	0.00
160.00		113.20	905.97	0.00	0.00
165.00	(26) attachments	1450.46	11338.62	0.00	0.00
170.00		106.13	767.10	0.00	0.00
175.00		102.45	729.39	0.00	0.00
178.00		59.56	421.47	0.00	0.00
<b>Totals:</b>		<b>10,802.54</b>	<b>124,026.90</b>	<b>0.00</b>	<b>0.00</b>

## Linear Appurtenance Segment Forces (Factored)

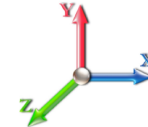
<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



Page: 24

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

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



**Iterations** 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	2.00	0.000	2.00	0.89	0.00	0.013	0.000	4.256	0.00	97.46
5.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	4.256	0.00	23.62
5.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	4.256	0.00	8.83
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.31	0.00	0.034	0.000	4.256	0.00	256.21
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	4.256	0.00	63.39
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	4.256	0.00	24.87
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.37	0.00	0.035	0.000	4.256	0.00	264.06
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	4.256	0.00	66.16
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	4.256	0.00	26.68
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.42	0.00	0.036	0.000	4.256	0.00	269.87
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	4.256	0.00	68.24
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	4.256	0.00	28.05
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.45	0.00	0.036	0.000	4.256	0.00	274.51
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	4.256	0.00	69.91
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	4.256	0.00	29.17
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.48	0.00	0.037	0.000	4.260	0.00	278.40
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	4.260	0.00	71.33
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	4.260	0.00	30.12
32.83	1 5/8" Coax	Yes	2.83	0.000	2.00	1.42	0.00	0.038	0.000	4.371	0.00	158.87
32.83	1 5/8" Fiber	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	4.371	0.00	40.82
32.83	1/2" Coax	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	4.371	0.00	17.34
35.00	1 5/8" Coax	Yes	2.17	0.000	2.00	1.09	0.00	0.038	0.000	4.451	0.00	122.10
35.00	1 5/8" Fiber	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	4.451	0.00	31.44
35.00	1/2" Coax	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	4.451	0.00	13.41
40.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.53	0.00	0.039	0.000	4.625	0.00	284.72
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	4.625	0.00	73.65
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	4.625	0.00	31.68
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.55	0.00	0.039	0.000	4.783	0.00	287.37
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	4.783	0.00	74.63
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	4.783	0.00	32.35
50.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.57	0.00	0.040	0.000	4.929	0.00	289.77
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	4.929	0.00	75.52
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	4.929	0.00	32.96
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.59	0.00	0.041	0.000	5.065	0.00	291.98
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	5.065	0.00	76.34
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	5.065	0.00	33.52
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.60	0.00	0.042	0.000	5.193	0.00	294.01
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	5.193	0.00	77.10
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	5.193	0.00	34.04
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.62	0.00	0.043	0.000	5.313	0.00	295.90
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	5.313	0.00	77.81
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	5.313	0.00	34.53
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.63	0.00	0.044	0.000	5.426	0.00	297.67
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	5.426	0.00	78.48
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	5.426	0.00	34.99
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.64	0.00	0.045	0.000	5.534	0.00	299.32
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	5.534	0.00	79.11



## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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

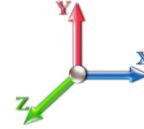


Page: 25

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

**Iterations** 25

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



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	5.534	0.00	35.42
77.92	1 5/8" Coax	Yes	2.92	0.000	2.00	1.55	0.00	0.046	0.000	5.595	0.00	175.35
77.92	1 5/8" Fiber	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	5.595	0.00	46.40
77.92	1/2" Coax	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	5.595	0.00	20.83
80.00	1 5/8" Coax	Yes	2.08	0.000	2.00	1.10	0.00	0.047	0.000	5.637	0.00	125.17
80.00	1 5/8" Fiber	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	5.637	0.00	33.15
80.00	1/2" Coax	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	5.637	0.00	14.90
84.00	1 5/8" Coax	Yes	4.00	0.000	2.00	2.13	0.00	0.048	0.000	5.717	0.00	241.87
84.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	5.717	0.00	64.17
84.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	5.717	0.00	28.94
85.00	1 5/8" Coax	Yes	1.00	0.000	2.00	0.53	0.00	0.048	0.000	5.736	0.00	60.27
85.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	5.736	0.00	16.00
85.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	5.736	0.00	7.22
90.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.68	0.00	0.048	0.000	5.830	0.00	303.78
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	5.830	0.00	80.80
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	5.830	0.00	36.59
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.69	0.00	0.050	0.000	5.921	0.00	305.12
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	5.921	0.00	81.31
95.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	5.921	0.00	36.94
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.70	0.00	0.051	0.000	6.008	0.00	306.40
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	6.008	0.00	81.80
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	6.008	0.00	37.28
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.70	0.00	0.053	0.000	6.093	0.00	307.62
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	6.093	0.00	82.27
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	6.093	0.00	37.61
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.71	0.00	0.055	0.000	6.174	0.00	308.80
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	6.174	0.00	82.72
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	6.174	0.00	37.93
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.72	0.00	0.057	0.000	6.253	0.00	309.92
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	6.253	0.00	83.15
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	6.253	0.00	38.23
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.73	0.00	0.058	0.000	6.330	0.00	311.01
120.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	6.330	0.00	83.57
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	6.330	0.00	38.52
124.08	1 5/8" Coax	Yes	4.08	0.000	2.00	2.23	0.00	0.060	0.000	6.391	0.00	254.69
124.08	1 5/8" Fiber	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	6.391	0.00	68.52
124.08	1/2" Coax	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	6.391	0.00	31.65
125.00	1 5/8" Coax	Yes	0.92	0.000	2.00	0.50	0.00	0.061	0.000	6.404	0.00	57.21
125.00	1 5/8" Fiber	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	6.404	0.00	15.40
125.00	1/2" Coax	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	6.404	0.00	7.11
<b>Totals:</b>											<b>0.0</b>	<b>9,817.9</b>

## Calculated Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

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

4/8/2022  
 Page: 26



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

**Iterations** 25

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



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-124.0	-10.86	0.00	-1447.3	0.00	1447.39	6109.19	3054.60	14553.3	7187.37	0.00	0.000	0.000	0.222
5.00	-121.2	-10.82	0.00	-1393.1	0.00	1393.10	6042.67	3021.34	14105.8	6966.35	0.03	-0.051	0.000	0.220
10.00	-118.2	-10.78	0.00	-1339.0	0.00	1339.00	5973.91	2986.96	13659.5	6745.94	0.11	-0.103	0.000	0.218
15.00	-115.2	-10.74	0.00	-1285.1	0.00	1285.11	5902.91	2951.46	13214.8	6526.30	0.25	-0.156	0.000	0.216
20.00	-112.2	-10.70	0.00	-1231.4	0.00	1231.43	5829.67	2914.84	12771.9	6307.60	0.44	-0.211	0.000	0.214
25.00	-109.2	-10.65	0.00	-1177.9	0.00	1177.95	5754.19	2877.10	12331.3	6089.98	0.69	-0.266	0.000	0.212
30.00	-106.3	-10.58	0.00	-1124.7	0.00	1124.70	5676.47	2838.24	11893.2	5873.62	1.00	-0.323	0.000	0.210
32.83	-104.6	-10.55	0.00	-1094.7	0.00	1094.71	5631.44	2815.72	11646.2	5751.63	1.20	-0.356	0.000	0.209
35.00	-102.7	-10.55	0.00	-1071.8	0.00	1071.85	5596.51	2798.26	11457.9	5658.66	1.37	-0.382	0.000	0.208
40.00	-98.32	-10.48	0.00	-1019.0	0.00	1019.08	5104.93	2552.47	10419.5	5145.84	1.80	-0.441	0.000	0.217
45.00	-95.55	-10.41	0.00	-966.67	0.00	966.67	5033.50	2516.75	10032.9	4954.92	2.29	-0.501	0.000	0.214
50.00	-92.83	-10.34	0.00	-914.60	0.00	914.60	4959.83	2479.91	9648.87	4765.22	2.85	-0.562	0.000	0.211
55.00	-90.14	-10.27	0.00	-862.89	0.00	862.89	4883.92	2441.96	9267.55	4576.90	3.47	-0.625	0.000	0.207
60.00	-87.50	-10.19	0.00	-811.56	0.00	811.56	4805.76	2402.88	8889.36	4390.12	4.16	-0.688	0.000	0.203
65.00	-84.90	-10.10	0.00	-760.64	0.00	760.64	4725.37	2362.69	8514.61	4205.04	4.92	-0.752	0.000	0.199
70.00	-82.34	-10.01	0.00	-710.14	0.00	710.14	4642.74	2321.37	8143.62	4021.83	5.74	-0.817	0.000	0.194
75.00	-79.83	-9.90	0.00	-660.08	0.00	660.08	4557.87	2278.94	7776.72	3840.63	6.63	-0.882	0.000	0.189
77.92	-78.38	-9.84	0.00	-631.18	0.00	631.18	4507.27	2253.64	7564.46	3735.80	7.18	-0.921	0.000	0.186
80.00	-76.86	-9.81	0.00	-610.72	0.00	610.72	4470.76	2235.38	7414.22	3661.61	7.59	-0.949	0.000	0.184
84.00	-73.97	-9.68	0.00	-571.47	0.00	571.47	4079.95	2039.98	6768.85	3342.88	8.41	-1.002	0.000	0.189
85.00	-73.49	-9.70	0.00	-561.82	0.00	561.82	4064.53	2032.27	6704.51	3311.11	8.62	-1.016	0.000	0.188
90.00	-71.16	-9.59	0.00	-513.35	0.00	513.35	3985.82	1992.91	6384.01	3152.82	9.72	-1.082	0.000	0.181
95.00	-68.87	-9.48	0.00	-465.41	0.00	465.41	3904.88	1952.44	6067.57	2996.54	10.89	-1.148	0.000	0.173
100.00	-66.63	-9.36	0.00	-418.03	0.00	418.03	3803.39	1901.70	5727.93	2828.81	12.12	-1.212	0.000	0.165
105.00	-64.43	-9.24	0.00	-371.23	0.00	371.23	3683.99	1842.00	5371.89	2652.97	13.43	-1.276	0.000	0.157
110.00	-62.27	-9.12	0.00	-325.02	0.00	325.02	3564.59	1782.30	5027.27	2482.78	14.80	-1.338	0.000	0.148
115.00	-60.17	-8.99	0.00	-279.42	0.00	279.42	3445.19	1722.60	4694.07	2318.23	16.23	-1.397	0.000	0.138
120.00	-58.11	-8.86	0.00	-234.46	0.00	234.46	3325.79	1662.90	4372.30	2159.32	17.72	-1.452	0.000	0.126
124.08	-56.46	-8.73	0.00	-198.30	0.00	198.30	3228.28	1614.14	4118.00	2033.73	18.98	-1.495	0.000	0.115
125.00	-45.35	-7.16	0.00	-190.30	0.00	190.30	3206.39	1603.20	4061.96	2006.05	19.27	-1.504	0.000	0.109
126.00	-44.92	-7.13	0.00	-183.13	0.00	183.13	3182.51	1591.26	4001.26	1976.07	19.59	-1.514	0.000	0.107
129.00	-43.65	-7.03	0.00	-161.75	0.00	161.75	1872.41	936.20	2368.25	1169.59	20.55	-1.543	0.000	0.162
130.00	-43.40	-7.02	0.00	-154.72	0.00	154.72	1864.30	932.15	2340.16	1155.72	20.87	-1.552	0.000	0.157
135.00	-36.17	-5.76	0.00	-119.60	0.00	119.60	1822.43	911.21	2200.41	1086.70	22.53	-1.612	0.000	0.130
140.00	-35.01	-5.63	0.00	-90.81	0.00	90.81	1778.31	889.16	2062.08	1018.38	24.25	-1.663	0.000	0.109
145.00	-23.70	-3.93	0.00	-62.67	0.00	62.67	1731.96	865.98	1925.47	950.92	26.02	-1.706	0.000	0.080
150.00	-22.64	-3.79	0.00	-43.00	0.00	43.00	1683.36	841.68	1790.92	884.47	27.82	-1.739	0.000	0.062
152.50	-21.14	-3.47	0.00	-33.52	0.00	33.52	1658.23	829.11	1724.52	851.67	28.73	-1.752	0.000	0.052
155.00	-14.10	-2.27	0.00	-24.84	0.00	24.84	1632.53	816.27	1658.75	819.19	29.66	-1.764	0.000	0.039
160.00	-13.20	-2.13	0.00	-13.50	0.00	13.50	1571.93	785.97	1521.98	751.65	31.51	-1.779	0.000	0.026
165.00	-1.91	-0.33	0.00	-2.85	0.00	2.85	1495.17	747.59	1376.14	679.62	33.38	-1.787	0.000	0.005
170.00	-1.15	-0.20	0.00	-1.21	0.00	1.21	1418.42	709.21	1237.64	611.22	35.25	-1.789	0.000	0.003
175.00	-0.42	-0.07	0.00	-0.22	0.00	0.22	1341.66	670.83	1106.49	546.45	37.13	-1.790	0.000	0.001
178.00	0.00	-0.06	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	38.25	-1.790	0.000	0.000

## Seismic Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 27

<b>Load Case:</b> 1.2D + 1.0E				<b>Iterations</b> 22
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.27	<b>SA</b> 0.03
				<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		1566.1	0.00	0.03	0.02	28.60	
10.00		1534.6	0.01	0.05	0.03	40.68	
15.00		1503.1	0.01	0.06	0.03	46.30	
20.00		1471.6	0.02	0.07	0.04	48.78	
25.00		1440.1	0.04	0.07	0.04	49.68	
30.00		1408.6	0.05	0.07	0.04	49.85	
32.83	Bot - Section 2	784.27	0.06	0.07	0.04	28.09	
35.00		1159.5	0.07	0.07	0.04	41.89	
40.00	Top - Section 1	2632.1	0.10	0.07	0.04	97.06	
45.00		1256.9	0.12	0.07	0.03	47.33	
50.00		1227.3	0.15	0.07	0.03	47.12	
55.00		1197.8	0.18	0.07	0.03	46.59	
60.00		1168.3	0.21	0.06	0.02	45.41	
65.00		1138.8	0.25	0.05	0.02	43.11	
70.00		1109.2	0.29	0.05	0.01	39.18	
75.00		1079.7	0.34	0.04	0.01	33.02	
77.92	Bot - Section 3	616.92	0.36	0.03	0.01	16.39	
80.00		846.76	0.38	0.02	0.01	19.54	
84.00	Top - Section 2	1601.9	0.42	0.01	0.01	23.89	
85.00		192.02	0.43	0.01	0.01	2.42	
90.00		946.81	0.48	-0.01	0.01	-0.17	
95.00		919.25	0.54	-0.03	0.01	-12.58	
100.00		891.69	0.60	-0.05	0.01	-23.10	
105.00		864.13	0.66	-0.07	0.02	-30.46	
110.00		836.57	0.72	-0.09	0.03	-34.23	
115.00		809.01	0.79	-0.11	0.05	-34.61	
120.00		781.45	0.86	-0.12	0.07	-32.00	
124.08	Bot - Section 4	617.74	0.92	-0.12	0.09	-22.76	
125.00	Appurtenance(s)	3519.3	0.93	-0.12	0.10	-125.31	
126.00	Appurtenance(s)	248.49	0.95	-0.12	0.11	-8.48	
129.00	Top - Section 3	722.59	0.99	-0.11	0.13	-20.89	
130.00		94.18	1.01	-0.11	0.14	-2.53	
135.00	Appurtenance(s)	2819.3	1.09	-0.08	0.18	-42.06	
140.00		442.56	1.17	-0.02	0.23	0.15	
145.00	Appurtenance(s)	4228.5	1.25	0.06	0.30	79.78	
150.00		407.13	1.34	0.18	0.37	16.58	
152.50	Appurtenance(s)	685.72	1.39	0.26	0.42	36.29	
155.00	Appurtenance(s)	2622.4	1.43	0.35	0.47	173.01	
160.00		371.69	1.53	0.57	0.58	35.19	
165.00	Appurtenance(s)	4073.4	1.62	0.85	0.70	516.99	
170.00		336.26	1.72	1.22	0.85	54.73	
175.00		318.54	1.83	1.66	1.02	64.45	
178.00		182.62	1.89	1.98	1.14	41.61	
<b>Totals:</b>		<b>52,676.0</b>				<b>1,424.5</b>	<b>Total Wind: 50,225.9</b>

## Calculated Forces

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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:** 1.2D + 1.0E

**Iterations** 22

**Gust Response Factor** 1.10

**Sds** 0.18

**Ss** 0.17

**Dead Load Factor** 1.20

**Seismic Load Factor** 1.00

**Sd1** 0.10

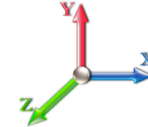
**S1** 0.06

**Wind Load Factor** 0.00

**Structure Frequency (f1)** 0.27

**SA** 0.03

**Seismic Importance Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-70.59	-1.82	0.00	-210.89	0.00	210.89	6109.19	3054.60	14553.3	7187.37	0.00	0.00	0.00	0.041
5.00	-68.59	-1.80	0.00	-201.81	0.00	201.81	6042.67	3021.34	14105.8	6966.35	0.00	-0.01	0.040	
10.00	-66.49	-1.77	0.00	-192.82	0.00	192.82	5973.91	2986.96	13659.5	6745.94	0.02	-0.01	0.040	
15.00	-64.43	-1.73	0.00	-183.99	0.00	183.99	5902.91	2951.46	13214.8	6526.30	0.04	-0.02	0.039	
20.00	-62.41	-1.69	0.00	-175.36	0.00	175.36	5829.67	2914.84	12771.9	6307.60	0.06	-0.03	0.039	
25.00	-60.43	-1.64	0.00	-166.93	0.00	166.93	5754.19	2877.10	12331.3	6089.98	0.10	-0.04	0.038	
30.00	-58.48	-1.60	0.00	-158.71	0.00	158.71	5676.47	2838.24	11893.2	5873.62	0.14	-0.05	0.037	
32.83	-57.39	-1.57	0.00	-154.18	0.00	154.18	5631.44	2815.72	11646.2	5751.63	0.17	-0.05	0.037	
35.00	-55.89	-1.54	0.00	-150.77	0.00	150.77	5596.51	2798.26	11457.9	5658.66	0.20	-0.05	0.037	
40.00	-52.47	-1.44	0.00	-143.09	0.00	143.09	5104.93	2552.47	10419.5	5145.84	0.26	-0.06	0.038	
45.00	-50.71	-1.40	0.00	-135.88	0.00	135.88	5033.50	2516.75	10032.9	4954.92	0.33	-0.07	0.037	
50.00	-48.98	-1.36	0.00	-128.87	0.00	128.87	4959.83	2479.91	9648.87	4765.22	0.41	-0.08	0.037	
55.00	-47.28	-1.32	0.00	-122.07	0.00	122.07	4883.92	2441.96	9267.55	4576.90	0.50	-0.09	0.036	
60.00	-45.63	-1.28	0.00	-115.48	0.00	115.48	4805.76	2402.88	8889.36	4390.12	0.59	-0.10	0.036	
65.00	-44.00	-1.24	0.00	-109.10	0.00	109.10	4725.37	2362.69	8514.61	4205.04	0.70	-0.11	0.035	
70.00	-42.41	-1.20	0.00	-102.91	0.00	102.91	4642.74	2321.37	8143.62	4021.83	0.82	-0.12	0.035	
75.00	-40.86	-1.17	0.00	-96.90	0.00	96.90	4557.87	2278.94	7776.72	3840.63	0.94	-0.13	0.034	
77.92	-39.97	-1.16	0.00	-93.47	0.00	93.47	4507.27	2253.64	7564.46	3735.80	1.02	-0.13	0.034	
80.00	-38.85	-1.14	0.00	-91.07	0.00	91.07	4470.76	2235.38	7414.22	3661.61	1.08	-0.14	0.034	
84.00	-36.72	-1.11	0.00	-86.51	0.00	86.51	4079.95	2039.98	6768.85	3342.88	1.20	-0.14	0.035	
85.00	-36.44	-1.11	0.00	-85.40	0.00	85.40	4064.53	2032.27	6704.51	3311.11	1.23	-0.15	0.035	
90.00	-35.05	-1.12	0.00	-79.83	0.00	79.83	3985.82	1992.91	6384.01	3152.82	1.39	-0.16	0.034	
95.00	-33.69	-1.12	0.00	-74.25	0.00	74.25	3904.88	1952.44	6067.57	2996.54	1.56	-0.17	0.033	
100.00	-32.36	-1.12	0.00	-68.65	0.00	68.65	3803.39	1901.70	5727.93	2828.81	1.74	-0.18	0.033	
105.00	-31.07	-1.12	0.00	-63.05	0.00	63.05	3683.99	1842.00	5371.89	2652.97	1.93	-0.19	0.032	
110.00	-29.80	-1.12	0.00	-57.44	0.00	57.44	3564.59	1782.30	5027.27	2482.78	2.13	-0.20	0.031	
115.00	-28.58	-1.12	0.00	-51.82	0.00	51.82	3445.19	1722.60	4694.07	2318.23	2.34	-0.21	0.031	
120.00	-27.38	-1.12	0.00	-46.20	0.00	46.20	3325.79	1662.90	4372.30	2159.32	2.57	-0.22	0.030	
124.08	-26.43	-1.12	0.00	-41.60	0.00	41.60	3228.28	1614.14	4118.00	2033.73	2.76	-0.23	0.029	
125.00	-22.16	-1.11	0.00	-40.57	0.00	40.57	3206.39	1603.20	4061.96	2006.05	2.80	-0.23	0.027	
126.00	-21.83	-1.11	0.00	-39.46	0.00	39.46	3182.51	1591.26	4001.26	1976.07	2.85	-0.23	0.027	
129.00	-20.86	-1.11	0.00	-36.14	0.00	36.14	1872.41	936.20	2368.25	1169.59	3.00	-0.24	0.042	
130.00	-20.71	-1.11	0.00	-35.04	0.00	35.04	1864.30	932.15	2340.16	1155.72	3.05	-0.24	0.041	
135.00	-17.15	-1.10	0.00	-29.50	0.00	29.50	1822.43	911.21	2200.41	1086.70	3.31	-0.25	0.037	
140.00	-16.45	-1.10	0.00	-24.02	0.00	24.02	1778.31	889.16	2062.08	1018.38	3.58	-0.27	0.033	
145.00	-11.21	-0.99	0.00	-18.53	0.00	18.53	1731.96	865.98	1925.47	950.92	3.87	-0.28	0.026	
150.00	-10.58	-0.98	0.00	-13.56	0.00	13.56	1683.36	841.68	1790.92	884.47	4.16	-0.29	0.022	
152.50	-9.68	-0.94	0.00	-11.12	0.00	11.12	1658.23	829.11	1724.52	851.67	4.32	-0.29	0.019	
155.00	-6.46	-0.75	0.00	-8.78	0.00	8.78	1632.53	816.27	1658.75	819.19	4.47	-0.30	0.015	
160.00	-5.95	-0.71	0.00	-5.05	0.00	5.05	1571.93	785.97	1521.98	751.65	4.79	-0.30	0.011	
165.00	-1.00	-0.17	0.00	-1.50	0.00	1.50	1495.17	747.59	1376.14	679.62	5.11	-0.31	0.003	
170.00	-0.60	-0.11	0.00	-0.67	0.00	0.67	1418.42	709.21	1237.64	611.22	5.43	-0.31	0.002	
175.00	-0.22	-0.04	0.00	-0.13	0.00	0.13	1341.66	670.83	1106.49	546.45	5.75	-0.31	0.000	
178.00	0.00	-0.04	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	5.94	-0.31	0.000	

## Seismic Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 29

<b>Load Case:</b> 0.9D + 1.0E		<b>Iterations</b> 22
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b> 0.90	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.27	<b>SA</b> 0.03
		<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		1566.1	0.00	0.03	0.02	28.60	
10.00		1534.6	0.01	0.05	0.03	40.68	
15.00		1503.1	0.01	0.06	0.03	46.30	
20.00		1471.6	0.02	0.07	0.04	48.78	
25.00		1440.1	0.04	0.07	0.04	49.68	
30.00		1408.6	0.05	0.07	0.04	49.85	
32.83	Bot - Section 2	784.27	0.06	0.07	0.04	28.09	
35.00		1159.5	0.07	0.07	0.04	41.89	
40.00	Top - Section 1	2632.1	0.10	0.07	0.04	97.06	
45.00		1256.9	0.12	0.07	0.03	47.33	
50.00		1227.3	0.15	0.07	0.03	47.12	
55.00		1197.8	0.18	0.07	0.03	46.59	
60.00		1168.3	0.21	0.06	0.02	45.41	
65.00		1138.8	0.25	0.05	0.02	43.11	
70.00		1109.2	0.29	0.05	0.01	39.18	
75.00		1079.7	0.34	0.04	0.01	33.02	
77.92	Bot - Section 3	616.92	0.36	0.03	0.01	16.39	
80.00		846.76	0.38	0.02	0.01	19.54	
84.00	Top - Section 2	1601.9	0.42	0.01	0.01	23.89	
85.00		192.02	0.43	0.01	0.01	2.42	
90.00		946.81	0.48	-0.01	0.01	-0.17	
95.00		919.25	0.54	-0.03	0.01	-12.58	
100.00		891.69	0.60	-0.05	0.01	-23.10	
105.00		864.13	0.66	-0.07	0.02	-30.46	
110.00		836.57	0.72	-0.09	0.03	-34.23	
115.00		809.01	0.79	-0.11	0.05	-34.61	
120.00		781.45	0.86	-0.12	0.07	-32.00	
124.08	Bot - Section 4	617.74	0.92	-0.12	0.09	-22.76	
125.00	Appurtenance(s)	3519.3	0.93	-0.12	0.10	-125.31	
126.00	Appurtenance(s)	248.49	0.95	-0.12	0.11	-8.48	
129.00	Top - Section 3	722.59	0.99	-0.11	0.13	-20.89	
130.00		94.18	1.01	-0.11	0.14	-2.53	
135.00	Appurtenance(s)	2819.3	1.09	-0.08	0.18	-42.06	
140.00		442.56	1.17	-0.02	0.23	0.15	
145.00	Appurtenance(s)	4228.5	1.25	0.06	0.30	79.78	
150.00		407.13	1.34	0.18	0.37	16.58	
152.50	Appurtenance(s)	685.72	1.39	0.26	0.42	36.29	
155.00	Appurtenance(s)	2622.4	1.43	0.35	0.47	173.01	
160.00		371.69	1.53	0.57	0.58	35.19	
165.00	Appurtenance(s)	4073.4	1.62	0.85	0.70	516.99	
170.00		336.26	1.72	1.22	0.85	54.73	
175.00		318.54	1.83	1.66	1.02	64.45	
178.00		182.62	1.89	1.98	1.14	41.61	
<b>Totals:</b>		<b>52,676.0</b>				<b>1,424.5</b>	<b>Total Wind: 50,225.9</b>

## Calculated Forces

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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> 22
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b> 0.90	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.27	<b>SA</b> 0.03
	<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	-52.94	-1.82	0.00	-207.84	0.00	207.84	6109.19	3054.60	14553.3	7187.37	0.00	0.00	0.00	0.038
5.00	-51.44	-1.79	0.00	-198.76	0.00	198.76	6042.67	3021.34	14105.8	6966.35	0.00	-0.01	0.037	
10.00	-49.87	-1.76	0.00	-189.79	0.00	189.79	5973.91	2986.96	13659.5	6745.94	0.02	-0.01	0.036	
15.00	-48.32	-1.72	0.00	-180.99	0.00	180.99	5902.91	2951.46	13214.8	6526.30	0.04	-0.02	0.036	
20.00	-46.81	-1.68	0.00	-172.40	0.00	172.40	5829.67	2914.84	12771.9	6307.60	0.06	-0.03	0.035	
25.00	-45.32	-1.63	0.00	-164.02	0.00	164.02	5754.19	2877.10	12331.3	6089.98	0.10	-0.04	0.035	
30.00	-43.86	-1.59	0.00	-155.86	0.00	155.86	5676.47	2838.24	11893.2	5873.62	0.14	-0.05	0.034	
32.83	-43.04	-1.56	0.00	-151.37	0.00	151.37	5631.44	2815.72	11646.2	5751.63	0.17	-0.05	0.034	
35.00	-41.92	-1.52	0.00	-147.99	0.00	147.99	5596.51	2798.26	11457.9	5658.66	0.19	-0.05	0.034	
40.00	-39.35	-1.43	0.00	-140.38	0.00	140.38	5104.93	2552.47	10419.5	5145.84	0.25	-0.06	0.035	
45.00	-38.03	-1.38	0.00	-133.25	0.00	133.25	5033.50	2516.75	10032.9	4954.92	0.32	-0.07	0.034	
50.00	-36.73	-1.34	0.00	-126.33	0.00	126.33	4959.83	2479.91	9648.87	4765.22	0.40	-0.08	0.034	
55.00	-35.46	-1.30	0.00	-119.62	0.00	119.62	4883.92	2441.96	9267.55	4576.90	0.49	-0.09	0.033	
60.00	-34.22	-1.26	0.00	-113.14	0.00	113.14	4805.76	2402.88	8889.36	4390.12	0.58	-0.10	0.033	
65.00	-33.00	-1.22	0.00	-106.86	0.00	106.86	4725.37	2362.69	8514.61	4205.04	0.69	-0.10	0.032	
70.00	-31.81	-1.18	0.00	-100.78	0.00	100.78	4642.74	2321.37	8143.62	4021.83	0.80	-0.11	0.032	
75.00	-30.65	-1.15	0.00	-94.89	0.00	94.89	4557.87	2278.94	7776.72	3840.63	0.93	-0.12	0.031	
77.92	-29.98	-1.13	0.00	-91.53	0.00	91.53	4507.27	2253.64	7564.46	3735.80	1.01	-0.13	0.031	
80.00	-29.14	-1.11	0.00	-89.18	0.00	89.18	4470.76	2235.38	7414.22	3661.61	1.06	-0.13	0.031	
84.00	-27.54	-1.09	0.00	-84.72	0.00	84.72	4079.95	2039.98	6768.85	3342.88	1.18	-0.14	0.032	
85.00	-27.33	-1.09	0.00	-83.64	0.00	83.64	4064.53	2032.27	6704.51	3311.11	1.21	-0.14	0.032	
90.00	-26.28	-1.09	0.00	-78.19	0.00	78.19	3985.82	1992.91	6384.01	3152.82	1.36	-0.15	0.031	
95.00	-25.26	-1.09	0.00	-72.74	0.00	72.74	3904.88	1952.44	6067.57	2996.54	1.53	-0.16	0.031	
100.00	-24.27	-1.09	0.00	-67.28	0.00	67.28	3803.39	1901.70	5727.93	2828.81	1.70	-0.17	0.030	
105.00	-23.30	-1.09	0.00	-61.81	0.00	61.81	3683.99	1842.00	5371.89	2652.97	1.89	-0.18	0.030	
110.00	-22.35	-1.10	0.00	-56.34	0.00	56.34	3564.59	1782.30	5027.27	2482.78	2.09	-0.19	0.029	
115.00	-21.43	-1.10	0.00	-50.86	0.00	50.86	3445.19	1722.60	4694.07	2318.23	2.30	-0.20	0.028	
120.00	-20.54	-1.10	0.00	-45.37	0.00	45.37	3325.79	1662.90	4372.30	2159.32	2.52	-0.22	0.027	
124.08	-19.82	-1.10	0.00	-40.90	0.00	40.90	3228.28	1614.14	4118.00	2033.73	2.71	-0.22	0.026	
125.00	-16.62	-1.08	0.00	-39.89	0.00	39.89	3206.39	1603.20	4061.96	2006.05	2.75	-0.23	0.025	
126.00	-16.37	-1.08	0.00	-38.81	0.00	38.81	3182.51	1591.26	4001.26	1976.07	2.80	-0.23	0.025	
129.00	-15.64	-1.08	0.00	-35.55	0.00	35.55	1872.41	936.20	2368.25	1169.59	2.94	-0.23	0.039	
130.00	-15.53	-1.08	0.00	-34.47	0.00	34.47	1864.30	932.15	2340.16	1155.72	2.99	-0.24	0.038	
135.00	-12.86	-1.08	0.00	-29.05	0.00	29.05	1822.43	911.21	2200.41	1086.70	3.25	-0.25	0.034	
140.00	-12.34	-1.08	0.00	-23.67	0.00	23.67	1778.31	889.16	2062.08	1018.38	3.51	-0.26	0.030	
145.00	-8.41	-0.98	0.00	-18.29	0.00	18.29	1731.96	865.98	1925.47	950.92	3.80	-0.27	0.024	
150.00	-7.93	-0.96	0.00	-13.39	0.00	13.39	1683.36	841.68	1790.92	884.47	4.09	-0.28	0.020	
152.50	-7.26	-0.92	0.00	-10.99	0.00	10.99	1658.23	829.11	1724.52	851.67	4.24	-0.29	0.017	
155.00	-4.85	-0.74	0.00	-8.68	0.00	8.68	1632.53	816.27	1658.75	819.19	4.39	-0.29	0.014	
160.00	-4.46	-0.70	0.00	-5.00	0.00	5.00	1571.93	785.97	1521.98	751.65	4.70	-0.30	0.009	
165.00	-0.75	-0.16	0.00	-1.49	0.00	1.49	1495.17	747.59	1376.14	679.62	5.01	-0.30	0.003	
170.00	-0.45	-0.11	0.00	-0.67	0.00	0.67	1418.42	709.21	1237.64	611.22	5.33	-0.30	0.001	
175.00	-0.16	-0.04	0.00	-0.13	0.00	0.13	1341.66	670.83	1106.49	546.45	5.65	-0.30	0.000	
178.00	0.00	-0.04	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	5.84	-0.30	0.000	



## Wind Loading - Shaft

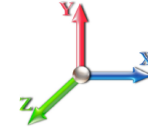
<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



Page: 31

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

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



**Iterations** 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	252.27	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	247.29	1.000	0.000	5.00	24.879	24.88	167.7	0.0	1566.2
10.00		1.00	0.70	6.129	6.74	242.31	1.000	0.000	5.00	24.383	24.38	164.4	0.0	1534.7
15.00		1.00	0.70	6.129	6.74	237.33	1.000	0.000	5.00	23.887	23.89	161.0	0.0	1503.2
20.00		1.00	0.70	6.129	6.74	232.35	1.000	0.000	5.00	23.391	23.39	157.7	0.0	1471.7
25.00		1.00	0.70	6.129	6.74	227.37	1.000	0.000	5.00	22.895	22.89	154.3	0.0	1440.2
30.00		1.00	0.70	6.134	6.75	222.49	1.000	0.000	5.00	22.399	22.40	151.1	0.0	1408.7
32.83	Bot - Section 2	1.00	0.72	6.294	6.92	222.51	1.000	0.000	2.83	12.473	12.47	86.4	0.0	784.3
35.00		1.00	0.73	6.410	7.05	222.35	1.000	0.000	2.17	9.606	9.61	67.7	0.0	1159.5
40.00	Top - Section 1	1.00	0.76	6.659	7.33	221.44	1.000	0.000	5.00	21.811	21.81	159.8	0.0	2632.1
45.00		1.00	0.79	6.887	7.58	224.22	1.000	0.000	5.00	21.315	21.32	161.5	0.0	1256.9
50.00		1.00	0.81	7.098	7.81	222.26	1.000	0.000	5.00	20.819	20.82	162.5	0.0	1227.4
55.00		1.00	0.83	7.294	8.02	219.88	1.000	0.000	5.00	20.323	20.32	163.1	0.0	1197.9
60.00		1.00	0.85	7.477	8.22	217.13	1.000	0.000	5.00	19.827	19.83	163.1	0.0	1168.3
65.00		1.00	0.87	7.650	8.42	214.06	1.000	0.000	5.00	19.331	19.33	162.7	0.0	1138.8
70.00		1.00	0.89	7.814	8.60	210.72	1.000	0.000	5.00	18.835	18.84	161.9	0.0	1109.3
75.00		1.00	0.91	7.969	8.77	207.12	1.000	0.000	5.00	18.339	18.34	160.8	0.0	1079.8
77.92	Bot - Section 3	1.00	0.92	8.057	8.86	204.92	1.000	0.000	2.92	10.481	10.48	92.9	0.0	616.9
80.00		1.00	0.93	8.118	8.93	203.31	1.000	0.000	2.08	7.520	7.52	67.1	0.0	846.8
84.00	Top - Section 2	1.00	0.94	8.232	9.05	200.11	1.000	0.000	4.00	14.231	14.23	128.9	0.0	1601.9
85.00		1.00	0.94	8.260	9.09	203.70	1.000	0.000	1.00	3.494	3.49	31.7	0.0	192.0
90.00		1.00	0.96	8.396	9.24	199.54	1.000	0.000	5.00	17.229	17.23	159.1	0.0	946.8
95.00		1.00	0.97	8.526	9.38	195.21	1.000	0.000	5.00	16.733	16.73	156.9	0.0	919.2
100.00		1.00	0.99	8.652	9.52	190.73	1.000	0.000	5.00	16.237	16.24	154.5	0.0	891.7
105.00		1.00	1.00	8.774	9.65	186.11	1.000	0.000	5.00	15.741	15.74	151.9	0.0	864.1
110.00		1.00	1.02	8.891	9.78	181.35	1.000	0.000	5.00	15.245	15.24	149.1	0.0	836.6
115.00		1.00	1.03	9.005	9.91	176.47	1.000	0.000	5.00	14.749	14.75	146.1	0.0	809.0
120.00		1.00	1.04	9.115	10.03	171.47	1.000	0.000	5.00	14.253	14.25	142.9	0.0	781.4
124.08	Bot - Section 4	1.00	1.05	9.202	10.12	167.31	1.000	0.000	4.08	11.272	11.27	114.1	0.0	617.7
125.00	Appurtenance(s)	1.00	1.05	9.222	10.14	166.37	1.000	0.000	0.92	2.529	2.53	25.7	0.0	225.7
126.00	Appurtenance(s)	1.00	1.06	9.243	10.17	165.33	1.000	0.000	1.00	2.740	2.74	27.9	0.0	244.5
129.00	Top - Section 3	1.00	1.06	9.305	10.24	162.21	1.000	0.000	3.00	8.102	8.10	82.9	0.0	722.6
130.00		1.00	1.07	9.326	10.26	164.16	1.000	0.000	1.00	2.661	2.66	27.3	0.0	94.2
135.00	Appurtenance(s)	1.00	1.08	9.427	10.37	158.87	1.000	0.000	5.00	13.007	13.01	134.9	0.0	460.3
140.00		1.00	1.09	9.525	10.48	153.49	1.000	0.000	5.00	12.511	12.51	131.1	0.0	442.6
145.00	Appurtenance(s)	1.00	1.10	9.621	10.58	148.03	1.000	0.000	5.00	12.015	12.02	127.2	0.0	424.8
150.00		1.00	1.11	9.715	10.69	142.47	1.000	0.000	5.00	11.519	11.52	123.1	0.0	407.1
152.50	Appurtenance(s)	1.00	1.11	9.761	10.74	139.67	1.000	0.000	2.50	5.574	5.57	59.8	0.0	196.9
155.00	Appurtenance(s)	1.00	1.12	9.806	10.79	136.84	1.000	0.000	2.50	5.450	5.45	58.8	0.0	192.5
160.00		1.00	1.13	9.896	10.89	131.14	1.000	0.000	5.00	10.527	10.53	114.6	0.0	371.7
165.00	Appurtenance(s)	1.00	1.14	9.983	10.98	125.36	1.000	0.000	5.00	10.031	10.03	110.2	0.0	354.0
170.00		1.00	1.15	10.069	11.08	119.51	1.000	0.000	5.00	9.535	9.54	105.6	0.0	336.3
175.00		1.00	1.16	10.152	11.17	113.60	1.000	0.000	5.00	9.039	9.04	100.9	0.0	318.5
178.00		1.00	1.17	10.202	11.22	110.02	1.000	0.000	3.00	5.185	5.19	58.2	0.0	182.6
<b>Totals:</b>									<b>178.00</b>			<b>5,189.1</b>		<b>36,577.3</b>

## Discrete Appurtenance Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

**Topography:** 1

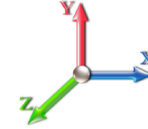
**Code:** TIA-222-G  
**Exposure:** B  
**Crest Height:** 0.00  
**Site Class:** D - Stiff Soil  
**Struct Class:** II

4/8/2022  
 Page: 32



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

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



**Iterations** 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	165.00	Ericsson 4449 B71 + B85	3	9.983	10.981	0.50	0.75	2.97	213.00	0.000	0.000	32.61	0.00	0.00	
2	165.00	Platform w/ Hand Rails	1	9.983	10.981	1.00	1.00	40.00	2000.00	0.000	0.000	439.25	0.00	0.00	
3	165.00	RFS	3	9.983	10.981	0.52	0.75	31.88	368.40	0.000	0.000	350.06	0.00	0.00	
4	165.00	Ericsson KRY 112 489/2	6	9.983	10.981	0.50	0.75	1.96	92.40	0.000	0.000	21.52	0.00	0.00	
5	165.00	Reinf. Kit (SitePro1	3	9.983	10.981	0.75	1.00	7.88	285.00	0.000	0.000	86.48	0.00	0.00	
6	165.00	(3) SFS-H-L (V-Braces)	1	9.983	10.981	1.00	1.00	6.70	230.00	0.000	0.000	73.58	0.00	0.00	
7	165.00	Ericsson AIR6419 B41	3	9.983	10.981	0.57	0.75	6.50	198.30	0.000	0.000	71.36	0.00	0.00	
8	165.00	Ericsson 4460 B25 + B66	3	9.983	10.981	0.50	0.75	4.30	327.00	0.000	0.000	47.18	0.00	0.00	
9	165.00	Kathrein 782 11056	3	9.983	10.981	0.58	0.75	0.23	5.40	0.000	0.000	2.51	0.00	0.00	
10	155.00	KMW AM-X-CD-17-65-00T	1	9.806	10.787	0.56	0.75	2.81	30.80	0.000	0.000	30.34	0.00	0.00	
11	155.00	Powerwave 7770	6	9.806	10.787	0.54	0.75	17.95	162.00	0.000	0.000	193.62	0.00	0.00	
12	155.00	Powerwave	1	9.806	10.787	0.56	0.75	6.43	59.00	0.000	0.000	69.41	0.00	0.00	
13	155.00	Platform w/ Hand Rails	1	9.806	10.787	1.00	1.00	40.00	2000.00	0.000	0.000	431.48	0.00	0.00	
14	155.00	Powerwave LGP21401	6	9.806	10.787	0.50	0.75	3.89	84.60	0.000	0.000	41.95	0.00	0.00	
15	155.00	Kathrein 800 10764	1	9.806	10.787	0.56	0.75	3.31	40.80	0.000	0.000	35.68	0.00	0.00	
16	155.00	Nokia CS72188.01	1	9.806	10.787	0.50	0.75	0.66	19.80	0.000	0.000	7.15	0.00	0.00	
17	155.00	Powerwave LGP21903	6	9.806	10.787	0.50	0.75	0.81	33.00	0.000	0.000	8.78	0.00	0.00	
18	152.50	Ring Mount (Part No	1	9.761	10.737	1.00	1.00	5.00	150.00	0.000	0.000	53.68	0.00	0.00	
19	152.50	Raycap DC2-48-60-18-8F	1	9.761	10.737	0.90	0.90	1.32	32.80	0.000	0.000	14.20	0.00	0.00	
20	152.50	Ericsson RRUS11 RRUs	6	9.761	10.737	0.60	0.90	11.79	306.00	0.000	0.000	126.64	0.00	0.00	
21	145.00	PRK-1245 (kicker kit)	1	9.621	10.583	1.00	1.00	9.50	464.91	0.000	0.000	100.54	0.00	0.00	
22	145.00	(3) SFS-H-L (V-Braces)	1	9.621	10.583	1.00	1.00	6.70	230.00	0.000	0.000	70.91	0.00	0.00	
23	145.00	NNVV-65B-R4	3	9.621	10.583	0.55	0.75	20.43	232.20	0.000	0.000	216.21	0.00	0.00	
24	145.00	APXVTM14-C-I20	3	9.621	10.583	0.58	0.75	10.98	168.60	0.000	0.000	116.25	0.00	0.00	
25	145.00	ALU TD-RRH8x20-25-	3	9.621	10.583	0.50	0.75	6.11	210.00	0.000	0.000	64.62	0.00	0.00	
26	145.00	ALU 800 Mhz- RRUs	6	9.621	10.583	0.50	0.75	7.51	318.00	0.000	0.000	79.45	0.00	0.00	
27	145.00	ALU 1900 Mhz- RRUs	3	9.621	10.583	0.50	0.75	4.18	180.00	0.000	0.000	44.19	0.00	0.00	
28	145.00	Platform w/ Hand Rails	1	9.621	10.583	1.00	1.00	40.00	2000.00	0.000	0.000	423.33	0.00	0.00	
29	135.00	TA08025-B604	3	9.427	10.369	0.50	0.75	2.95	191.70	0.000	0.000	30.64	0.00	0.00	
30	135.00	TA08025-B605	3	9.427	10.369	0.50	0.75	2.95	225.00	0.000	0.000	30.64	0.00	0.00	
31	135.00	MC-PK8-DSH	1	9.427	10.369	1.00	1.00	37.59	1727.00	0.000	0.000	389.79	0.00	0.00	
32	135.00	MX08FRO665-21	3	9.427	10.369	0.55	0.75	20.80	193.50	0.000	0.000	215.64	0.00	0.00	
33	135.00	RDIDC-9181-PF-48	1	9.427	10.369	1.00	1.00	2.01	21.85	0.000	0.000	20.84	0.00	0.00	
34	126.00	GPS	1	9.243	10.167	1.00	1.00	1.00	4.00	0.000	0.000	10.17	0.00	0.00	
35	125.00	RFS DB-T1-6Z-8AB-OZ	2	9.222	10.144	0.80	0.80	6.56	88.00	0.000	0.000	66.54	0.00	0.00	
36	125.00	Antel	6	9.222	10.144	0.56	0.75	8.73	72.00	0.000	0.000	88.52	0.00	0.00	
37	125.00	Low Profile Platform	1	9.222	10.144	1.00	1.00	25.00	1200.00	0.000	0.000	253.60	0.00	0.00	
38	125.00	VZWSMART	1	9.222	10.144	1.00	1.00	2.50	150.60	0.000	0.000	25.36	0.00	0.00	
39	125.00	VZWSMART	1	9.222	10.144	1.00	1.00	9.50	464.91	0.000	0.000	96.37	0.00	0.00	
40	125.00	Handrail Kit (P2 1/2 STD)	1	9.222	10.144	1.00	1.00	6.75	261.72	0.000	0.000	68.47	0.00	0.00	
41	125.00	RF4440d-13A	3	9.222	10.144	0.50	0.75	2.20	210.99	0.000	0.000	22.33	0.00	0.00	
42	125.00	RF4439d-25A	3	9.222	10.144	0.50	0.75	2.20	224.10	0.000	0.000	22.33	0.00	0.00	
43	125.00	MT6407-77A	3	9.222	10.144	0.52	0.75	7.39	261.30	0.000	0.000	74.93	0.00	0.00	
44	125.00	MX06FRO660-03	6	9.222	10.144	0.65	0.75	38.64	360.00	0.000	0.000	391.97	0.00	0.00	
<b>Totals:</b>									<b>16,098.68</b>						<b>5,061.13</b>



## Total Applied Force Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 33

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

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



**Iterations** 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		167.72	1664.91	0.00	0.00
10.00		164.38	1748.54	0.00	0.00
15.00		161.03	1717.05	0.00	0.00
20.00		157.69	1685.55	0.00	0.00
25.00		154.35	1654.05	0.00	0.00
30.00		151.13	1622.55	0.00	0.00
32.83		86.35	905.47	0.00	0.00
35.00		67.73	1252.22	0.00	0.00
40.00		159.77	2846.01	0.00	0.00
45.00		161.48	1470.80	0.00	0.00
50.00		162.55	1441.27	0.00	0.00
55.00		163.05	1411.75	0.00	0.00
60.00		163.08	1382.22	0.00	0.00
65.00		162.68	1352.69	0.00	0.00
70.00		161.89	1323.16	0.00	0.00
75.00		160.77	1293.63	0.00	0.00
77.92		92.89	741.82	0.00	0.00
80.00		67.15	935.73	0.00	0.00
84.00		128.86	1773.18	0.00	0.00
85.00		31.74	234.66	0.00	0.00
90.00		159.11	1160.69	0.00	0.00
95.00		156.93	1133.13	0.00	0.00
100.00		154.53	1105.57	0.00	0.00
105.00		151.91	1078.01	0.00	0.00
110.00		149.09	1050.45	0.00	0.00
115.00		146.09	1022.89	0.00	0.00
120.00		142.90	995.33	0.00	0.00
124.08		114.10	792.41	0.00	0.00
125.00	(27) attachments	1136.07	3558.54	0.00	0.00
126.00	(1) attachments	38.03	277.46	0.00	0.00
129.00		82.93	809.52	0.00	0.00
130.00		27.30	123.16	0.00	0.00
135.00	(11) attachments	822.43	2964.21	0.00	0.00
140.00		131.09	582.44	0.00	0.00
145.00	(21) attachments	1242.67	4368.44	0.00	0.00
150.00		123.10	527.93	0.00	0.00
152.50	(8) attachments	254.37	746.12	0.00	0.00
155.00	(23) attachments	877.20	2682.89	0.00	0.00
160.00		114.59	424.89	0.00	0.00
165.00	(26) attachments	1234.70	4126.68	0.00	0.00
170.00		105.61	336.26	0.00	0.00
175.00		100.95	318.54	0.00	0.00
178.00		58.19	182.62	0.00	0.00
<b>Totals:</b>		<b>10,250.18</b>	<b>58,825.42</b>	<b>0.00</b>	<b>0.00</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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

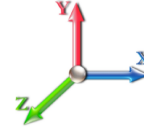


Page: 34

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

**Iterations** 24

**Dead Load Factor** 1.00  
**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 5/8" Coax	Yes	2.00	0.000	2.00	0.33	0.00	0.013	0.000	6.129	0.00	22.88
5.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	6.129	0.00	4.40
5.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.013	0.000	6.129	0.00	0.32
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.034	0.000	6.129	0.00	57.20
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	6.129	0.00	11.00
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	6.129	0.00	0.80
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	6.129	0.00	57.20
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	6.129	0.00	11.00
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	6.129	0.00	0.80
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	6.129	0.00	57.20
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	6.129	0.00	11.00
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	6.129	0.00	0.80
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	6.129	0.00	57.20
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	6.129	0.00	11.00
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	6.129	0.00	0.80
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	6.134	0.00	57.20
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	6.134	0.00	11.00
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.037	0.000	6.134	0.00	0.80
32.83	1 5/8" Coax	Yes	2.83	0.000	2.00	0.47	0.00	0.038	0.000	6.294	0.00	32.41
32.83	1 5/8" Fiber	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	6.294	0.00	6.23
32.83	1/2" Coax	Yes	2.83	0.000	0.00	0.00	0.00	0.038	0.000	6.294	0.00	0.45
35.00	1 5/8" Coax	Yes	2.17	0.000	2.00	0.36	0.00	0.038	0.000	6.410	0.00	24.79
35.00	1 5/8" Fiber	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	6.410	0.00	4.77
35.00	1/2" Coax	Yes	2.17	0.000	0.00	0.00	0.00	0.038	0.000	6.410	0.00	0.35
40.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	6.659	0.00	57.20
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	6.659	0.00	11.00
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	6.659	0.00	0.80
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	6.887	0.00	57.20
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	6.887	0.00	11.00
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.039	0.000	6.887	0.00	0.80
50.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	7.098	0.00	57.20
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	7.098	0.00	11.00
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.040	0.000	7.098	0.00	0.80
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	7.294	0.00	57.20
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	7.294	0.00	11.00
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.041	0.000	7.294	0.00	0.80
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	7.477	0.00	57.20
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	7.477	0.00	11.00
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.042	0.000	7.477	0.00	0.80
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	7.650	0.00	57.20
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	7.650	0.00	11.00
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.043	0.000	7.650	0.00	0.80
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	7.814	0.00	57.20
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	7.814	0.00	11.00
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.044	0.000	7.814	0.00	0.80
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	7.969	0.00	57.20
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	7.969	0.00	11.00

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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



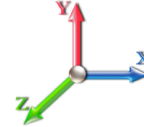
Page: 35

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

**Iterations** 24

**Dead Load Factor** 1.00

**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)
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.045	0.000	7.969	0.00	0.80
77.92	1 5/8" Coax	Yes	2.92	0.000	2.00	0.49	0.00	0.046	0.000	8.057	0.00	33.40
77.92	1 5/8" Fiber	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	8.057	0.00	6.42
77.92	1/2" Coax	Yes	2.92	0.000	0.00	0.00	0.00	0.046	0.000	8.057	0.00	0.47
80.00	1 5/8" Coax	Yes	2.08	0.000	2.00	0.35	0.00	0.047	0.000	8.118	0.00	23.80
80.00	1 5/8" Fiber	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	8.118	0.00	4.58
80.00	1/2" Coax	Yes	2.08	0.000	0.00	0.00	0.00	0.047	0.000	8.118	0.00	0.33
84.00	1 5/8" Coax	Yes	4.00	0.000	2.00	0.67	0.00	0.048	0.000	8.232	0.00	45.80
84.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	8.232	0.00	8.81
84.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.048	0.000	8.232	0.00	0.64
85.00	1 5/8" Coax	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	8.260	0.00	11.40
85.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	8.260	0.00	2.19
85.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.048	0.000	8.260	0.00	0.16
90.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	8.396	0.00	57.20
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	8.396	0.00	11.00
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.048	0.000	8.396	0.00	0.80
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	8.526	0.00	57.20
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	8.526	0.00	11.00
95.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.050	0.000	8.526	0.00	0.80
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	8.652	0.00	57.20
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	8.652	0.00	11.00
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.051	0.000	8.652	0.00	0.80
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	8.774	0.00	57.20
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	8.774	0.00	11.00
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.053	0.000	8.774	0.00	0.80
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.055	0.000	8.891	0.00	57.20
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	8.891	0.00	11.00
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.055	0.000	8.891	0.00	0.80
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	9.005	0.00	57.20
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	9.005	0.00	11.00
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.057	0.000	9.005	0.00	0.80
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	9.115	0.00	57.20
120.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	9.115	0.00	11.00
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	9.115	0.00	0.80
124.08	1 5/8" Coax	Yes	4.08	0.000	2.00	0.68	0.00	0.060	0.000	9.202	0.00	46.71
124.08	1 5/8" Fiber	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	9.202	0.00	8.98
124.08	1/2" Coax	Yes	4.08	0.000	0.00	0.00	0.00	0.060	0.000	9.202	0.00	0.65
125.00	1 5/8" Coax	Yes	0.92	0.000	2.00	0.15	0.00	0.061	0.000	9.222	0.00	10.49
125.00	1 5/8" Fiber	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	9.222	0.00	2.02
125.00	1/2" Coax	Yes	0.92	0.000	0.00	0.00	0.00	0.061	0.000	9.222	0.00	0.15
<b>Totals:</b>											<b>0.0</b>	<b>1,683.6</b>

## Calculated Forces

**Structure:** CT00594-S-SBA  
**Site Name:** Plainfield North  
**Height:** 178.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

**Topography:** 1

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

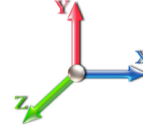
4/8/2022  
 Page: 36



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

**Iterations** 24

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



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.82	-10.27	0.00	-1232.7	0.00	1232.74	6109.19	3054.60	14553.3	7187.37	0.00	0.000	0.000	0.181
5.00	-57.15	-10.15	0.00	-1181.3	0.00	1181.38	6042.67	3021.34	14105.8	6966.35	0.02	-0.043	0.000	0.179
10.00	-55.39	-10.02	0.00	-1130.6	0.00	1130.64	5973.91	2986.96	13659.5	6745.94	0.09	-0.088	0.000	0.177
15.00	-53.67	-9.90	0.00	-1080.5	0.00	1080.52	5902.91	2951.46	13214.8	6526.30	0.21	-0.132	0.000	0.175
20.00	-51.98	-9.78	0.00	-1031.0	0.00	1031.01	5829.67	2914.84	12771.9	6307.60	0.37	-0.178	0.000	0.172
25.00	-50.31	-9.66	0.00	-982.10	0.00	982.10	5754.19	2877.10	12331.3	6089.98	0.58	-0.224	0.000	0.170
30.00	-48.69	-9.54	0.00	-933.79	0.00	933.79	5676.47	2838.24	11893.2	5873.62	0.84	-0.272	0.000	0.168
32.83	-47.78	-9.47	0.00	-906.77	0.00	906.77	5631.44	2815.72	11646.2	5751.63	1.01	-0.299	0.000	0.166
35.00	-46.52	-9.42	0.00	-886.26	0.00	886.26	5596.51	2798.26	11457.9	5658.66	1.15	-0.320	0.000	0.165
40.00	-43.67	-9.28	0.00	-839.16	0.00	839.16	5104.93	2552.47	10419.5	5145.84	1.52	-0.369	0.000	0.172
45.00	-42.19	-9.15	0.00	-792.76	0.00	792.76	5033.50	2516.75	10032.9	4954.92	1.93	-0.418	0.000	0.168
50.00	-40.74	-9.01	0.00	-747.03	0.00	747.03	4959.83	2479.91	9648.87	4765.22	2.39	-0.469	0.000	0.165
55.00	-39.32	-8.87	0.00	-702.00	0.00	702.00	4883.92	2441.96	9267.55	4576.90	2.91	-0.519	0.000	0.161
60.00	-37.93	-8.73	0.00	-657.66	0.00	657.66	4805.76	2402.88	8889.36	4390.12	3.48	-0.571	0.000	0.158
65.00	-36.58	-8.58	0.00	-614.03	0.00	614.03	4725.37	2362.69	8514.61	4205.04	4.11	-0.622	0.000	0.154
70.00	-35.25	-8.44	0.00	-571.13	0.00	571.13	4642.74	2321.37	8143.62	4021.83	4.79	-0.675	0.000	0.150
75.00	-33.95	-8.29	0.00	-528.94	0.00	528.94	4557.87	2278.94	7776.72	3840.63	5.52	-0.727	0.000	0.145
77.92	-33.20	-8.20	0.00	-504.75	0.00	504.75	4507.27	2253.64	7564.46	3735.80	5.98	-0.758	0.000	0.142
80.00	-32.27	-8.14	0.00	-487.70	0.00	487.70	4470.76	2235.38	7414.22	3661.61	6.31	-0.781	0.000	0.140
84.00	-30.49	-8.00	0.00	-455.12	0.00	455.12	4079.95	2039.98	6768.85	3342.88	6.99	-0.823	0.000	0.144
85.00	-30.25	-7.98	0.00	-447.15	0.00	447.15	4064.53	2032.27	6704.51	3311.11	7.16	-0.834	0.000	0.143
90.00	-29.09	-7.83	0.00	-407.26	0.00	407.26	3985.82	1992.91	6384.01	3152.82	8.06	-0.887	0.000	0.136
95.00	-27.95	-7.68	0.00	-368.11	0.00	368.11	3904.88	1952.44	6067.57	2996.54	9.02	-0.939	0.000	0.130
100.00	-26.84	-7.53	0.00	-329.72	0.00	329.72	3803.39	1901.70	5727.93	2828.81	10.03	-0.990	0.000	0.124
105.00	-25.76	-7.38	0.00	-292.07	0.00	292.07	3683.99	1842.00	5371.89	2652.97	11.09	-1.040	0.000	0.117
110.00	-24.70	-7.23	0.00	-255.16	0.00	255.16	3564.59	1782.30	5027.27	2482.78	12.21	-1.088	0.000	0.110
115.00	-23.68	-7.09	0.00	-219.00	0.00	219.00	3445.19	1722.60	4694.07	2318.23	13.37	-1.135	0.000	0.101
120.00	-22.68	-6.94	0.00	-183.57	0.00	183.57	3325.79	1662.90	4372.30	2159.32	14.59	-1.178	0.000	0.092
124.08	-21.89	-6.81	0.00	-155.24	0.00	155.24	3228.28	1614.14	4118.00	2033.73	15.61	-1.212	0.000	0.083
125.00	-18.36	-5.61	0.00	-148.99	0.00	148.99	3206.39	1603.20	4061.96	2006.05	15.84	-1.219	0.000	0.080
126.00	-18.08	-5.57	0.00	-143.39	0.00	143.39	3182.51	1591.26	4001.26	1976.07	16.10	-1.227	0.000	0.078
129.00	-17.27	-5.47	0.00	-126.69	0.00	126.69	1872.41	936.20	2368.25	1169.59	16.88	-1.249	0.000	0.118
130.00	-17.14	-5.45	0.00	-121.22	0.00	121.22	1864.30	932.15	2340.16	1155.72	17.14	-1.256	0.000	0.114
135.00	-14.19	-4.57	0.00	-93.97	0.00	93.97	1822.43	911.21	2200.41	1086.70	18.48	-1.303	0.000	0.094
140.00	-13.61	-4.44	0.00	-71.11	0.00	71.11	1778.31	889.16	2062.08	1018.38	19.87	-1.344	0.000	0.078
145.00	-9.27	-3.09	0.00	-48.93	0.00	48.93	1731.96	865.98	1925.47	950.92	21.30	-1.377	0.000	0.057
150.00	-8.75	-2.96	0.00	-33.46	0.00	33.46	1683.36	841.68	1790.92	884.47	22.75	-1.403	0.000	0.043
152.50	-8.01	-2.69	0.00	-26.06	0.00	26.06	1658.23	829.11	1724.52	851.67	23.49	-1.413	0.000	0.035
155.00	-5.35	-1.75	0.00	-19.33	0.00	19.33	1632.53	816.27	1658.75	819.19	24.23	-1.422	0.000	0.027
160.00	-4.92	-1.62	0.00	-10.59	0.00	10.59	1571.93	785.97	1521.98	751.65	25.73	-1.434	0.000	0.017
165.00	-0.83	-0.29	0.00	-2.47	0.00	2.47	1495.17	747.59	1376.14	679.62	27.23	-1.440	0.000	0.004
170.00	-0.50	-0.17	0.00	-1.05	0.00	1.05	1418.42	709.21	1237.64	611.22	28.74	-1.442	0.000	0.002
175.00	-0.18	-0.06	0.00	-0.19	0.00	0.19	1341.66	670.83	1106.49	546.45	30.25	-1.443	0.000	0.000
178.00	0.00	-0.06	0.00	0.00	0.00	0.00	1295.60	647.80	1031.32	509.33	31.16	-1.443	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> CT00594-S-SBA	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 37

### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	50.4	0.00	70.49	0.00	0.00	6083.35
0.9D + 1.6W 105 mph Wind	50.3	0.00	52.85	0.00	0.00	6000.18
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.9	0.00	124.02	0.00	0.00	1447.39
1.2D + 1.0E	1.8	0.00	70.59	0.00	0.00	210.89
0.9D + 1.0E	1.8	0.00	52.94	0.00	0.00	207.84
1.0D + 1.0W 60 mph Wind	10.3	0.00	58.82	0.00	0.00	1232.74

### Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-70.49	-50.36	0.00	-6083.3	0.00	-6083.3	6109.19	3054.6	14553.3	7187.37	0.00	0.858
0.9D + 1.6W 105 mph Wind	-52.85	-50.33	0.00	-6000.1	0.00	-6000.1	6109.19	3054.6	14553.3	7187.37	0.00	0.844
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-124.02	-10.86	0.00	-1447.3	0.00	-1447.3	6109.19	3054.6	14553.3	7187.37	0.00	0.222
1.2D + 1.0E	-20.86	-1.11	0.00	-36.14	0.00	-36.14	1872.41	936.20	2368.25	1169.59	129.00	0.042
0.9D + 1.0E	-15.64	-1.08	0.00	-35.55	0.00	-35.55	1872.41	936.20	2368.25	1169.59	129.00	0.039
1.0D + 1.0W 60 mph Wind	-58.82	-10.27	0.00	-1232.7	0.00	-1232.7	6109.19	3054.6	14553.3	7187.37	0.00	0.181

## Base Plate Summary

<b>Structure:</b> CT00594-S-SB	<b>Code:</b> TIA-222-G	4/8/2022
<b>Site Name:</b> Plainfield North	<b>Exposure:</b> B	
<b>Height:</b> 178.00 (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: 38



Reactions	Base Plate	Anchor Bolts
Original Design	<b>Yield (ksi):</b> 60.00	<b>Bolt Circle:</b> 66.81
<b>Moment (kip-ft):</b> 5595.92	<b>Width (in):</b> 72.81	<b>Number Bolts:</b> 24.00
<b>Axial (kip):</b> 50.66	<b>Style:</b> Polygon	<b>Bolt Type:</b> 2.25" 18J
<b>Shear (kip):</b> 45.22	<b>Polygon Sides:</b> 12.00	<b>Bolt Diameter (in):</b> 2.25
Analysis (1.2D + 1.6W)	<b>Clip Length (in):</b> 0.00	<b>Yield (ksi):</b> 75.00
<b>Moment (kip-ft):</b> 6083.35	<b>Effective Len (in):</b> 12.43	<b>Ultimate (ksi):</b> 100.00
<b>Axial (kip):</b> 70.49	<b>Moment (kip-in):</b> 801.54	<b>Arrangement:</b> Radial
<b>Shear (kip):</b> 50.36	<b>Allow Stress (ksi):</b> 81.00	<b>Cluster Dist (in):</b> 0.00
	<b>Applied Stress (ksi):</b> 42.93	<b>Start Angle (deg):</b> 15.00
	<b>Stress Ratio:</b> 0.53	Compression
		<b>Force (kip):</b> 187.28
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.74
		Tension
		<b>Force (kip):</b> 176.94
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.70



# Monopole Mat Foundation Design

Date

7/9/2021

<b>Customer Name:</b>	Verizon	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	178
<b>Site Number:</b>	CT00594-S-SBA	<b>Engineer Name:</b>	D. Zhou
<b>Engr. Number:</b>	116994	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Mapping Operation  
Monopole  
Analysis

**Structure Type:**

**Analysis or Design?**

**Base Reactions (Factored):**

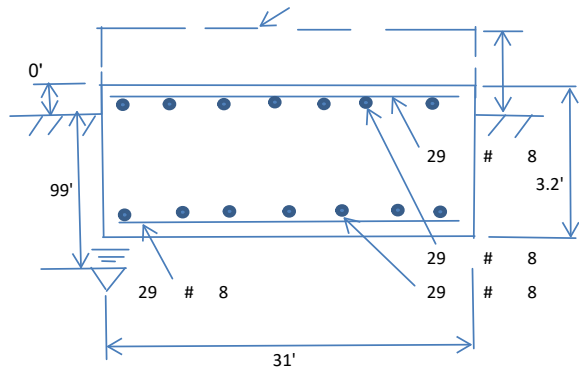
Axial Load (Kips):	70.5	Shear Force (Kips):	50.4
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6083.4

Allowable overstress %: 5.0%

**Foundation Geometries:**

Anchor Bolt Circle (ft.):	5.57	Depth of Base BG (ft.):	3.20	Mods required -Yes/No ?:	No
Thickness of Pad (ft):	3.20	Length of Pad (ft.):	31	Width of Pad (ft.):	31

Final Length of pad (ft) 31.0 Final width of pad (ft): 31.0



**Material Properties and Rebar Info:**

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

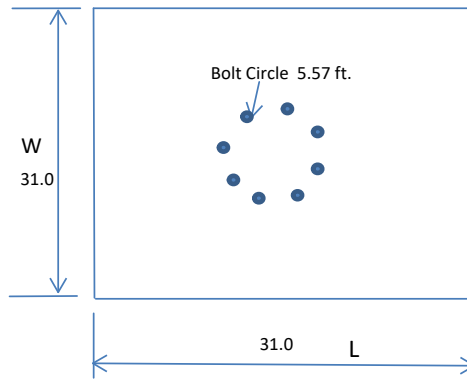
Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L): 29 Qty. of Rebar in Pad (W): 29

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L): 29 Qty. of Rebar in Pad (W): 29

Apply 1.35 factor for e/w Per G: 1.35



**Soil Design Parameters:**

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:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3075.20	Total Dry Concrete Weight (Kips):	461.28
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	461.28	Total Vertical Load on Base (Kips):	531.77

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	2824	<	Allowable Factored Soil Bearing (psf):	6000	0.47	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7527.5	>	Design Factored Momnt (kips-ft):	6247	0.83	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.20					OK!

Load/  
Capacity  
Ratio

**Check the capacities of Reinforcing Concrete:**

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

**Concrete Pad:**

One-Way Design Shear Capacity (L-Direction, Kips):	1066.6	>	One-Way Factored Shear (L-D. Kips):	412.2	0.39	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1066.6	>	One-Way Factored Shear (W-D., Kips)	412.2	0.39	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1299.6	>	One-Way Factored Shear (C-C, Kips):	652.2	0.50	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3523.3	>	Moment at Bottom ( L-Direct. K-Ft):	1969.8	0.56	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3523.3	>	Moment at Bottom ( W-Direct. K-Ft):	1969.8	0.56	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4965.7	>	Moment at Bottom ( C-C Dir. K-Ft):	2785.8	0.56	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct. ):	0.0018	OK!	Upper Steel Reinf. Ratio (W-Direct. ):	0.0018		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	3523.3	>	Moment at the top (L-Dir Kips-Ft):	544.4	0.15	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	3523.3	>	Moment at the top (W-Dir Kips-Ft):	544.4	0.15	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4965.7	>	Moment at the top (C-C Direc. K-Ft):	894.8	0.18	OK!



# Exhibit E

## **Mount Analysis**



## Mount Structural Analysis

SBA Site: Plainfield/ I-395 X90\_1  
T-Mobile Site Number: CT11155F  
Project: Anchor

Prepared For: T-Mobile

Mount Description: Platform w/ Handrails  
w/ Handrail V-Brace Augment

Site Location: 56 Roper Rd.  
Plainfield, CT 06354  
Windham County  
41.745990°, -71.880101°

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

Analysis Load Case: T-Mobile Final Configuration  
Analysis Result: adequate @ 56%  
**See Conclusion & Recommendations  
for installation requirements.**

Date Signed:  
3/14/2022



Revision 0  
March 14, 2022

CT11155F\_Mount\_Structural Analysis Report\_R0 2203 1539



## **1.0 Introduction**

GeoStructural LLC has completed a structural analysis for the existing T-Mobile mount assembly **with augments** located at the *CT11155F communications site* in Windham County, CT considering the final appurtenance loading configurations listed in Section 3.0.

## **2.0 Analysis Procedure & Design Criteria**

An elastic three-dimensional model of the structure has been analyzed pursuant to the following criteria:

- 2018 Connecticut State Building Code
- 2015 IBC – International Building Code
- ANSI/TIA-222 – Structural Standard for Antenna Supporting Structures and Antennas.
- ASCE 7 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- AISC – Steel Construction Manual.
- ANSI/AWS D1.1 – Structural Welding Code.

Wind w/o ice = 130 mph (3-sec gust Ultimate Wind Speed)	
Wind w/ ice = 50 mph (3-sec gust Basic) with 0.75" Design Ice (Escalated with Height) <sup>1</sup>	
Topographic Category 1;	Exposure Category B
Structure Class (Risk Category) II;	Ground Elevation = 308 ft (NAVD 88)
Gust Effect Factor = 1.0; Directionality Factor = 0.95;	
Seismic Design Parameters: Site Class D "Stiff Soil"; $S_s = 0.171$ , $S_1 = 0.061$ , $S_{DS} = 0.182$	
Maintenance Loads <sup>2</sup> :	
$L_m = 500$ lb @ Worst Case Mount Pipe (Concurrent with 30 mph Wind Speed)	
$L_v = 250$ lb @ Worst Case Member Location (Center Span or Cantilever)	
1. Ice loading has been ignored with Design Ice Thickness $\leq 0.5$ ".	
2. The face horizontal boom rails of T-Arm mount assemblies are not rated for rigging, hoisting or maintenance loading unless noted otherwise.	

GeoStructural has not conducted a site visit or independent study to verify existing structural conditions and the results of this analysis are based solely on the information provided. The following documents were obtained and/or provided:

- Previous CDs Site #: CT11155F, GeoStructural Mod Drawings, Dated 06/17/19
- Previous MMA Site #: CT11155F, GeoStructural, Dated 06/21/19
- RFDS Site #: CT11155F, Rev.4, Dated 03/08/22

The results of the analysis are illustrated in Section 4.0. If any of the existing or proposed conditions reported in this analysis are not accurately represented, please contact our office immediately to request an amended report.

### **3.0 Appurtenance Information**

**Table 3.1 - Final T-Mobile Appurtenance Configuration<sup>1,2</sup>**

COR	(Quantity) Appurtenance Make/Model	Mount Description
165'±	(3) RFS APXVAALL24_43-U-NA20	<i>Platform w/ Handrails w/ Handrail V-Brace Augment</i>
	(3) ERICSSON AIR 6419 B41	
	(3) RRH 4460 B25+B66	
	(3) RRH Ericsson 4449 B71 + B85	

1. Refer to antenna installation Construction Drawings (when applicable) for additional information regarding final antenna and equipment orientations.
2. *All RRH units must be installed on the back-to-back pipe mount assemblies installed on the pipe at location 1 in order for this analysis to be valid.*

## 4.0 Structural Analysis Results

**Table 4.1 – Mount Capacity**

Load Case	Governing Mount Component <sup>1</sup>	% Capacity <sup>2</sup>	Result
Final T-Mobile Configuration	Top Handrail	30%	Adequate
	Standoff	18%	
	Bottom Rail	35%	
	Mount Pipe	56%	
	Kickers	16%	
	Connection	56%	

1. Refer to the Calculations & Software Output portion of this report for mount component and structural information.
2. Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.2. 105% is an acceptable allowable stress percentage for mount components. Refer to Section 7.0 for additional member usage capacities.

**Table 4.2 – Structural Component Material Strengths**

Structural Component	Nominal Strength/Material <sup>1</sup>
Pipe	F <sub>y</sub> = 35 ksi (A53, Gr. B)
Tube	F <sub>y</sub> = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate & Bar	F <sub>y</sub> = 36 ksi (A36)
Uni-Strut (P1000, etc.)	F <sub>y</sub> = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F <sub>y</sub> = 57 ksi (Yield) & F <sub>u</sub> = 74 ksi (Tension)
	SAE J429 Grade 5 (1/4" to 1" Nominal φ) F <sub>y</sub> = 92 ksi (Yield) & F <sub>u</sub> = 120 ksi (Tension)
Welds	E70XX Electrodes

1. Strengths listed were assumed for this analysis and are based upon ASTM, AISC, RCSC, AWS and ACI preferred specification values. Values and materials are consistent with industry standards. Material strengths were taken from original design documents when available.

## **5.0 Conclusion & Recommendations**

Based on T-Mobile's final equipment loading configuration, the mount assembly will have sufficient capacity to support the loading considered with **the modification already successfully installed per GeoStructurals Mount Modification design, dated 06/17/2019**

Antennas shall be installed centered vertically on the mount main front boom rial (limit vertical installation eccentricity). All RRH units must be installed on the back-to-back pipe mount assemblies installed on the platform standoff members for this analysis to be valid. If this assumption is incorrect, the results of this analysis will be inaccurate and may result in a failing mount condition.

This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If any of the existing or proposed conditions (appurtenance loading, member sizes, etc.) reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

Prepared by:



Fathullah Zamani  
518.892.0471  
fathullah.zamani@geostructural.com

Reviewed and Approved by:



Gregory Durgin  
509.999.5278  
gregory.durgin@geostructural.com

## **6.0 Standard Conditions**

- All data required to complete our structural analysis was furnished by our client. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.
- The default Structure Classification is Class II in accordance with ANSI/TIA-222 §A.2.2 & §A.15.4 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.
- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222 §15.6 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.
- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.
- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.
- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.
- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.
- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

## **7.0 Attachments, Calculations & Software Output**

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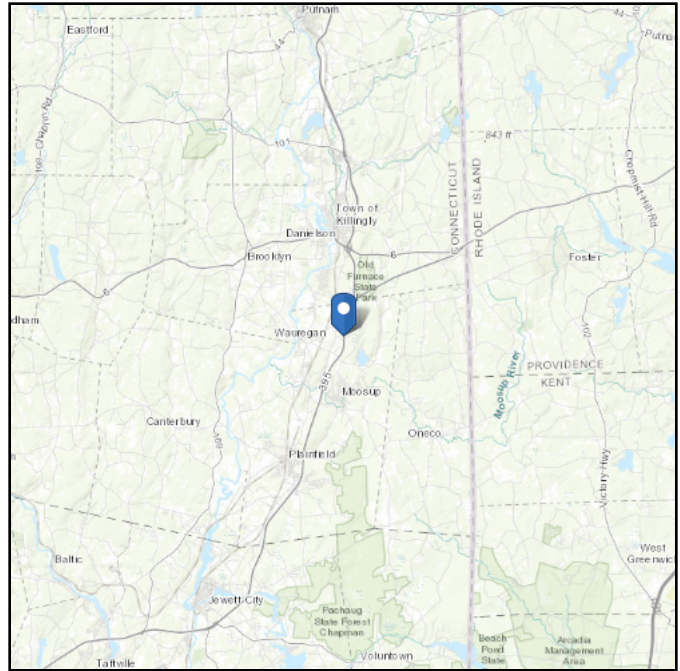
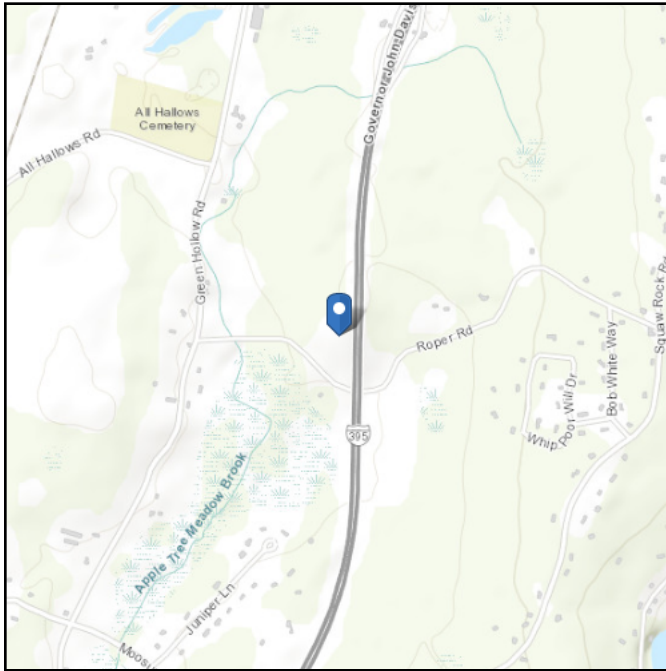


# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

**Standard:** ASCE/SEI 7-10  
**Risk Category:** II  
**Soil Class:** D - Stiff Soil

**Elevation:** 307.52 ft (NAVD 88)  
**Latitude:** 41.74599  
**Longitude:** -71.880101



## Wind

### Results:

Wind Speed	130 Vmph
10-year MRI	79 Vmph
25-year MRI	89 Vmph
50-year MRI	97 Vmph
100-year MRI	106 Vmph

**Data Source:** ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

**Date Accessed:** Mon Mar 14 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

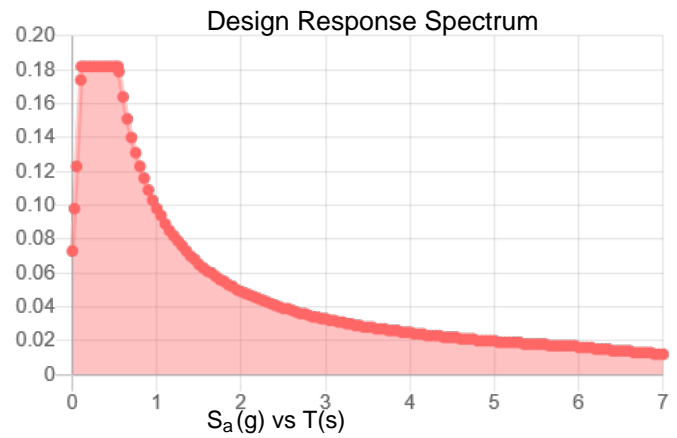
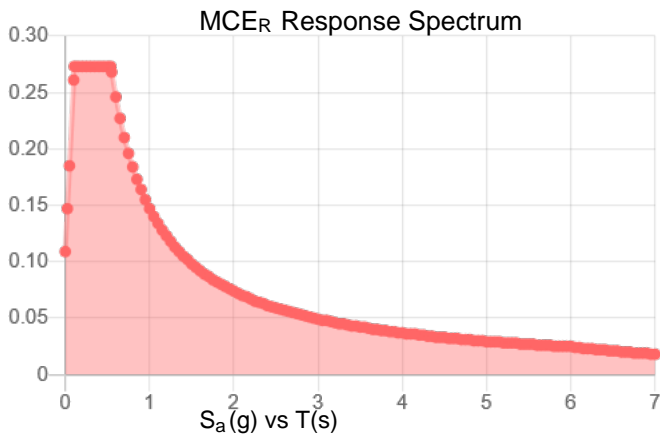
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

**Site Soil Class:** D - Stiff Soil

**Results:**

$S_s$ :	0.171	$S_{DS}$ :	0.182
$S_1$ :	0.061	$S_{D1}$ :	0.098
$F_a$ :	1.6	$T_L$ :	6
$F_v$ :	2.4	PGA :	0.085
$S_{MS}$ :	0.273	$PGA_M$ :	0.137
$S_{M1}$ :	0.147	$F_{PGA}$ :	1.6
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:** Mon Mar 14 2022

**Date Source:**

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

## Ice

---

**Results:**

Ice Thickness: 0.75 in.  
Concurrent Temperature: 15 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

**Date Accessed:** Mon Mar 14 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



## Design Wind Force on Appurtenances

ASCE 7-10 & IBC 2015

Wind Design Parameters:			
$V_{basic} =$	130	mph	Basic Ult Wind (§2.6.4)
$V_{ice} =$	50	mph	Basic Wind w/ ice (§2.6.4)
$t_{ice} =$	0.75	inch	Ice Thickness (§2.6.10)
$K_a =$	0.9		
$K_d =$	0.95		
$G_h =$	1		
$q_z =$	46	psf	Wind Load without Ice
$q_z =$	7	psf	Wind Load with Ice
$z =$	165.0	ft	COR (Height above ground level at the base of structure)
$H =$	0	ft	Height of crest above surrounding terrain (Topo Categories 2, 3 & 4)
$z_s =$	307.5	ft	Mean elevation of base of structure above sea level

Seismic Design Parameters:			
Site Class:	D	Occupancy Cat:	II
Seismic Design Cat:	B	z =	165
		h =	165
Amp. Factor, $a_p$ :	1	Response Factor, $R_p$ :	2.5
$S_{DS} =$	0.1824	$S_{D1} =$	0.098
(ASCE 7-10 13.3-3)	$F_{p,min} = 0.3 S_{DS} I_p W_p$	=	0.05472
(ASCE 7-10 13.3-1)	$F_p = \frac{0.4 a_p S_{DS} W_p}{\left(\frac{R_p}{I_p}\right)} \left(1 + 2 \frac{z}{h}\right)$	=	0.087552
(ASCE 7-10 13.3-2)	$F_{p,max} = 1.6 S_{DS} I_p W_p$	=	0.29184
		Use $F_p =$	0.088 $W_p$

### Importance Factor (§2, Table 2-3):

- I = 1.00 Wind Load without Ice
- I = 1.00 Wind Load with Ice
- I = 1.00 Ice Thickness
- I = 1.00 Earthquake



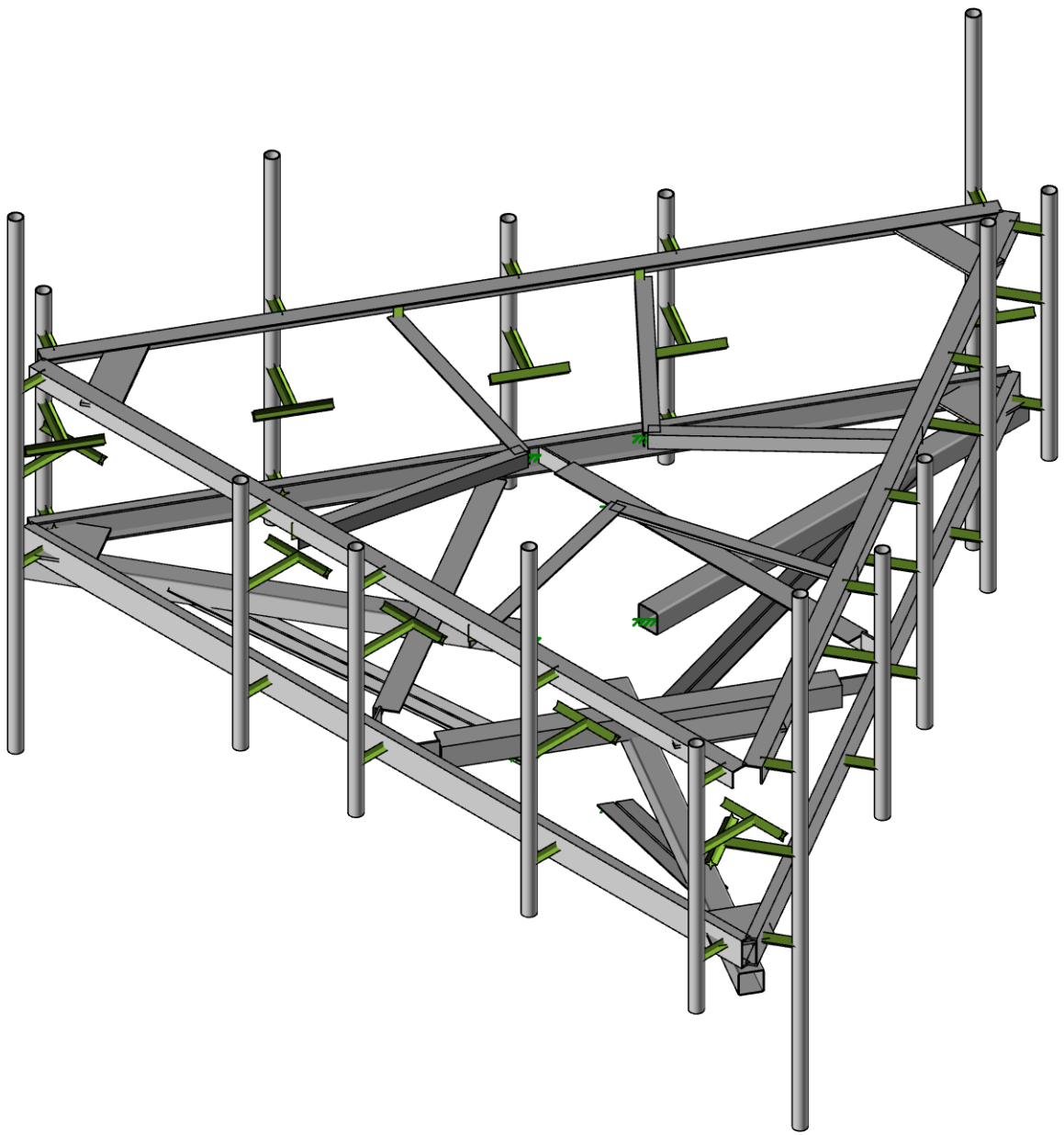
**Appurtenances**

RFS		APXVAALL24_43-U-NA20		
	FFRONT	FSIDE	WT	E
<i>No Ice</i>	<b>844.3</b>	<b>370.8</b>	<b>128.0</b>	<b>11.3</b>
<i>0.88 inch Ice</i>	<b>136.5</b>	<b>67.2</b>	<b>191.0</b>	

ERICSSON		AIR 6419 B41		
	FFRONT	FSIDE	WT	E
<i>No Ice</i>	<b>269.8</b>	<b>111.9</b>	<b>45.0</b>	<b>4.0</b>
<i>0.88 inch Ice</i>	<b>45.4</b>	<b>21.4</b>	<b>69.3</b>	

RRH		ERICSSON 4449 B71 B85		
	FFRONT	FSIDE	WT	E
<i>No Ice</i>	<b>82.2</b>	<b>58.8</b>	<b>75.0</b>	<b>6.6</b>
<i>0.88 inch Ice</i>	<b>15.1</b>	<b>11.3</b>	<b>30.3</b>	

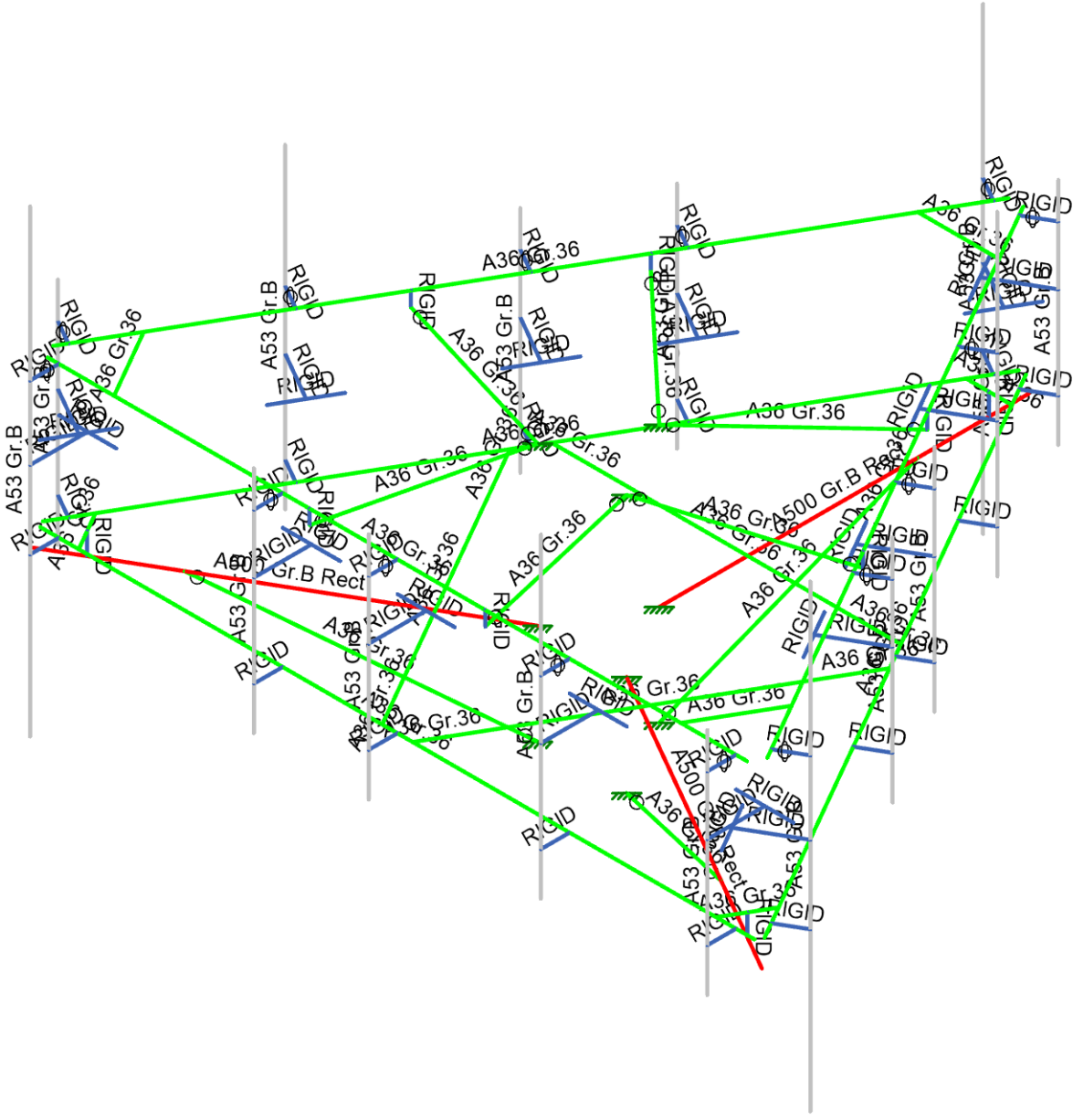
RRH		Ericsson 4460 B25+B66		
	FFRONT	FSIDE	WT	E
<i>No Ice</i>	<b>107.0</b>	<b>82.4</b>	<b>110.0</b>	<b>9.7</b>
<i>0.88 inch Ice</i>	<b>19.2</b>	<b>15.2</b>	<b>42.0</b>	



Envelope Only Solution		
GeoStructural, LLC	CT11155F	SK-1
Fathullah Zamani		Mar 14, 2022
Plainfield/ I-395 X90_1		CT11155F_Mount Analysis_R0.R3D



Member Material Sets	
<span style="color: blue;">■</span>	RIGID
<span style="color: green;">■</span>	A36 Gr.36
<span style="color: red;">■</span>	A500 Gr.B Rect
<span style="color: gray;">■</span>	A53 Gr.B

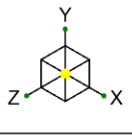


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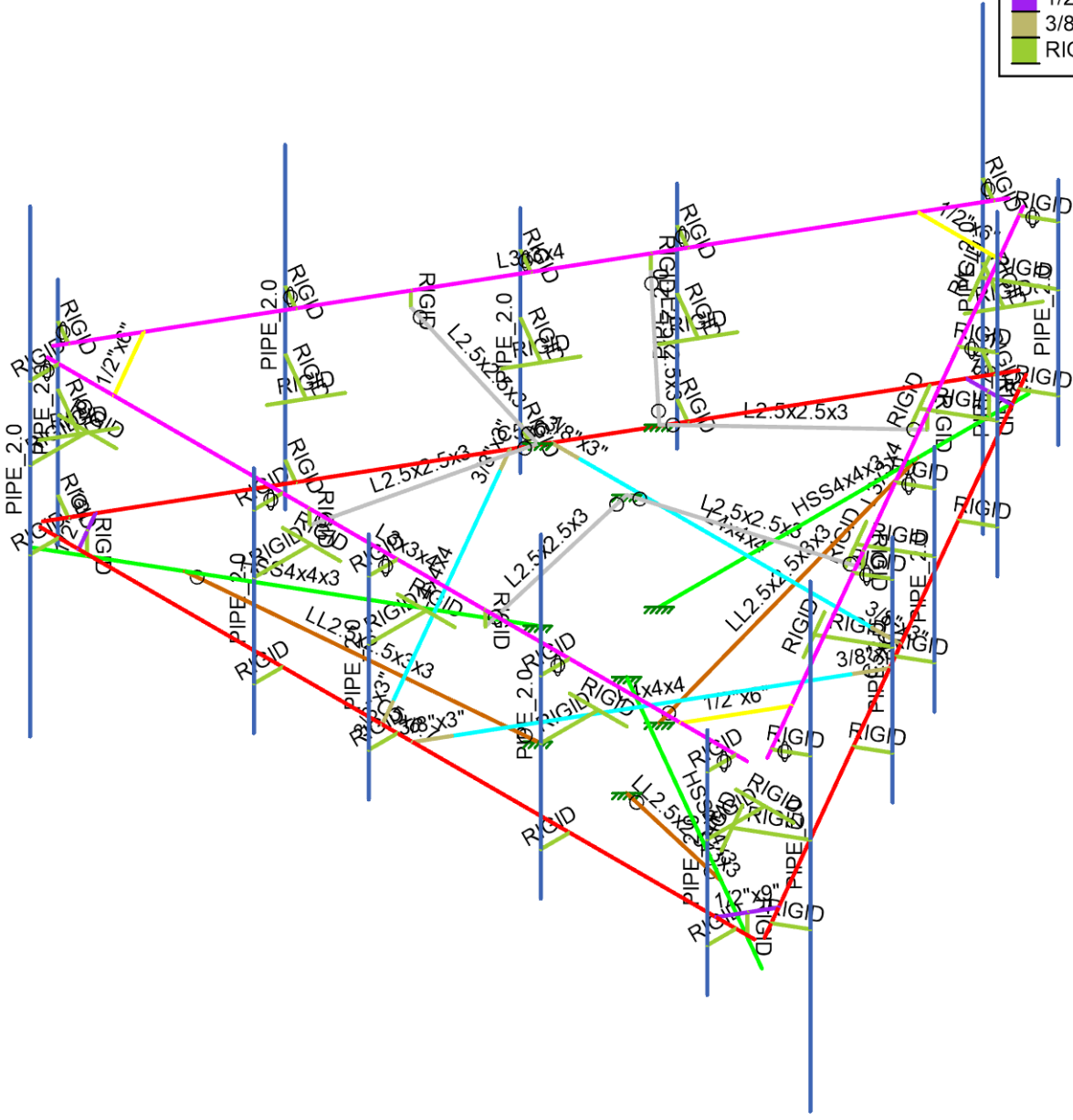
GeoStructural, LLC  
 Fathullah Zamani  
 Plainfield/ I-395 X90\_1

CT11155F

SK-2  
 Mar 14, 2022  
 CT11155F\_Mount Analysis\_R0.R3D



Section Sets	
<span style="color: blue;">█</span>	PIPE_2.0
<span style="color: green;">█</span>	HSS4x4x3
<span style="color: red;">█</span>	C5x6.7
<span style="color: grey;">█</span>	L2.5x2.5x3
<span style="color: magenta;">█</span>	L3x3x4
<span style="color: cyan;">█</span>	L4x4x4
<span style="color: brown;">█</span>	LL2.5x2.5x3x3
<span style="color: yellow;">█</span>	1/2"x6"
<span style="color: purple;">█</span>	1/2"x9"
<span style="color: olive;">█</span>	3/8"x3"
<span style="color: lightgreen;">█</span>	RIGID



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 Plainfield/ I-395 X90\_1

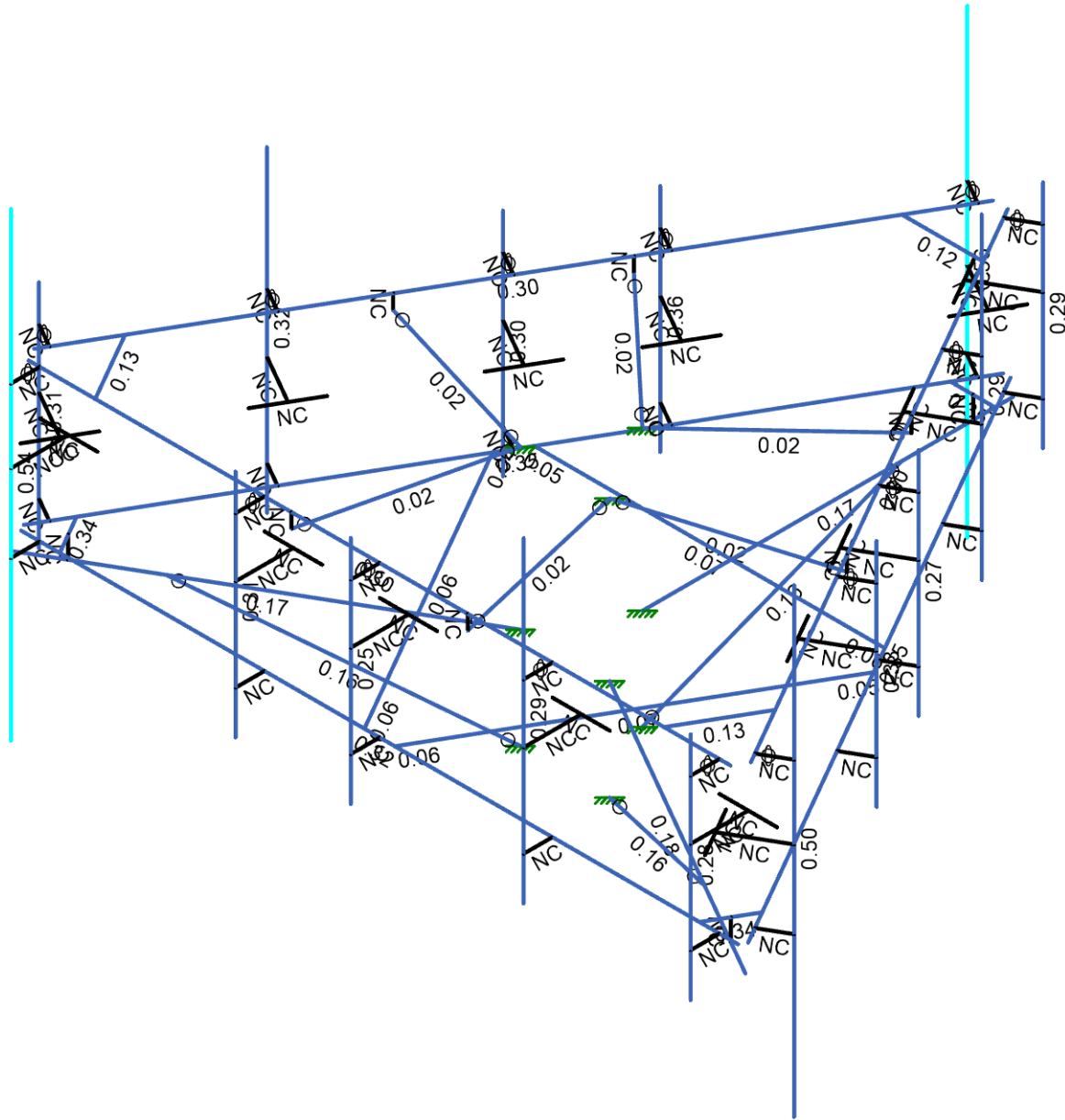
CT11155F

SK-3  
 Mar 14, 2022  
 CT11155F\_Mount Analysis\_R0.R3D





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)  
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Plainfield/ I-395 X90\_1

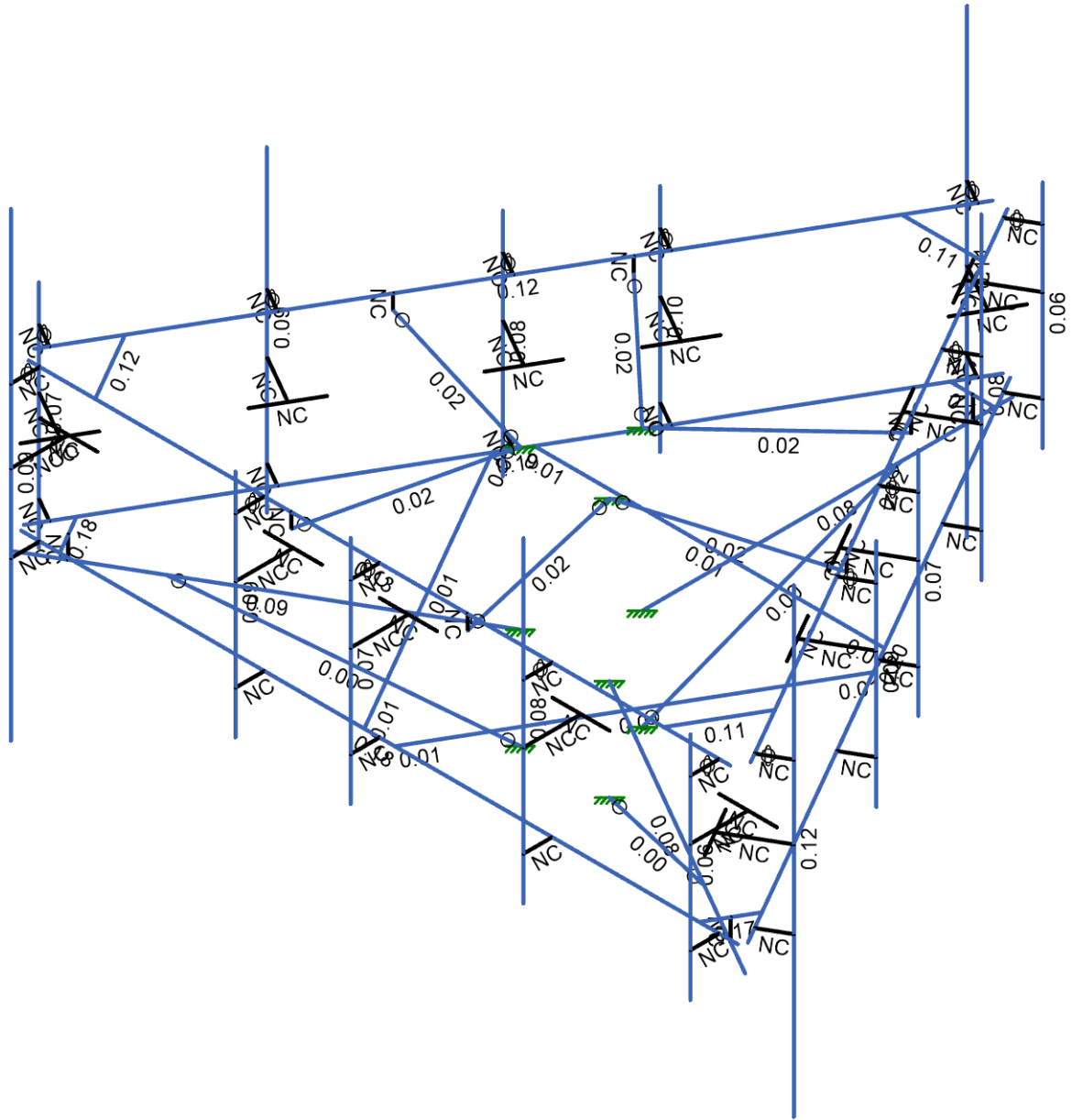
CT11155F

SK-4  
Mar 14, 2022  
CT11155F\_Mount Analysis\_R0.R3D



Shear Check (Env)

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



Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

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CT11155F

SK-5  
Mar 14, 2022  
CT11155F\_Mount Analysis\_R0.R3D



**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Distributed	Area(Member)
1	Self Weight	DL		-1.1		18		3
2	Wind Load AZI 000	WLZ				18	48	
3	Wind Load AZI 090	WLX				18	48	
4	Ice Weight	OL1				18	48	4
5	Wind + Ice Load AZI 000	OL2				18	48	
6	Wind + Ice Load AZI 090	OL3				18	48	
7	Service Lm1	LL				3		
8	Service Lm2	OL4				3		
9	Service Lm3	OL5				3		
10	Service Lm4	OL6				3		
11	Service Lm5	OL7				3		
12	Service Lv 1	OL8				3		
13	Service Lv 2	OL9				3		
14	Service Lv 3	OL10				3		
15	Seismic Load AZI 000	ELZ			-0.09	18		3
16	Seismic Load AZI 090	ELX	-0.09			18		3
17	BLC 1 Transient Area Loads	None					69	
18	BLC 4 Transient Area Loads	None					69	
19	BLC 15 Transient Area Loads	None					69	
20	BLC 16 Transient Area Loads	None					69	

**Load Combinations**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.0D	Yes	Y	DL	1						
2	0.6W AZI 000	Yes	Y	WLZ	0.6						
3	0.6W AZI 030	Yes	Y	WLZ	0.52	WLX	0.3				
4	0.6W AZI 060	Yes	Y	WLZ	0.3	WLX	0.52				
5	0.6W AZI 090	Yes	Y			WLX	0.6				
6	0.6W AZI 120	Yes	Y	WLZ	-0.3	WLX	0.52				
7	0.6W AZI 150	Yes	Y	WLZ	-0.52	WLX	0.3				
8	0.6W AZI 180	Yes	Y	WLZ	-0.6						
9	0.6W AZI 210	Yes	Y	WLZ	-0.52	WLX	-0.3				
10	0.6W AZI 240	Yes	Y	WLZ	-0.3	WLX	-0.52				
11	0.6W AZI 270	Yes	Y			WLX	-0.6				
12	0.6W AZI 300	Yes	Y	WLZ	0.3	WLX	-0.52				
13	0.6W AZI 330	Yes	Y	WLZ	0.52	WLX	-0.3				
14	0.7E AZI 000	Yes	Y	ELZ	0.7						
15	0.7E AZI 030	Yes	Y	ELZ	0.606	ELX	0.35				
16	0.7E AZI 060	Yes	Y	ELZ	0.35	ELX	0.606				
17	0.7E AZI 090	Yes	Y			ELX	0.7				
18	0.7E AZI 120	Yes	Y	ELZ	-0.35	ELX	0.606				
19	0.7E AZI 150	Yes	Y	ELZ	-0.606	ELX	0.35				
20	0.7E AZI 180	Yes	Y	ELZ	-0.7						
21	0.7E AZI 210	Yes	Y	ELZ	-0.606	ELX	-0.35				
22	0.7E AZI 240	Yes	Y	ELZ	-0.35	ELX	-0.606				
23	0.7E AZI 270	Yes	Y			ELX	-0.7				
24	0.7E AZI 300	Yes	Y	ELZ	0.35	ELX	-0.606				
25	0.7E AZI 330	Yes	Y	ELZ	0.606	ELX	-0.35				
26	1D + 0.6W AZI 000	Yes	Y	DL	1	WLZ	0.6				
27	1D + 0.6W AZI 030	Yes	Y	DL	1	WLZ	0.52	WLX	0.3		
28	1D + 0.6W AZI 060	Yes	Y	DL	1	WLZ	0.3	WLX	0.52		
29	1D + 0.6W AZI 090	Yes	Y	DL	1			WLX	0.6		
30	1D + 0.6W AZI 120	Yes	Y	DL	1	WLZ	-0.3	WLX	0.52		
31	1D + 0.6W AZI 150	Yes	Y	DL	1	WLZ	-0.52	WLX	0.3		



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
32	1D + 0.6W AZI 180	Yes	Y	DL	1	WLZ	-0.6				
33	1D + 0.6W AZI 210	Yes	Y	DL	1	WLZ	-0.52	WLX	-0.3		
34	1D + 0.6W AZI 240	Yes	Y	DL	1	WLZ	-0.3	WLX	-0.52		
35	1D + 0.6W AZI 270	Yes	Y	DL	1			WLX	-0.6		
36	1D + 0.6W AZI 300	Yes	Y	DL	1	WLZ	0.3	WLX	-0.52		
37	1D + 0.6W AZI 330	Yes	Y	DL	1	WLZ	0.52	WLX	-0.3		
38	0.6D + 0.6W AZI 000	Yes	Y	DL	0.6	WLZ	0.6				
39	0.6D + 0.6W AZI 030	Yes	Y	DL	0.6	WLZ	0.52	WLX	0.3		
40	0.6D + 0.6W AZI 060	Yes	Y	DL	0.6	WLZ	0.3	WLX	0.52		
41	0.6D + 0.6W AZI 090	Yes	Y	DL	0.6			WLX	0.6		
42	0.6D + 0.6W AZI 120	Yes	Y	DL	0.6	WLZ	-0.3	WLX	0.52		
43	0.6D + 0.6W AZI 150	Yes	Y	DL	0.6	WLZ	-0.52	WLX	0.3		
44	0.6D + 0.6W AZI 180	Yes	Y	DL	0.6	WLZ	-0.6				
45	0.6D + 0.6W AZI 210	Yes	Y	DL	0.6	WLZ	-0.52	WLX	-0.3		
46	0.6D + 0.6W AZI 240	Yes	Y	DL	0.6	WLZ	-0.3	WLX	-0.52		
47	0.6D + 0.6W AZI 270	Yes	Y	DL	0.6			WLX	-0.6		
48	0.6D + 0.6W AZI 300	Yes	Y	DL	0.6	WLZ	0.3	WLX	-0.52		
49	0.6D + 0.6W AZI 330	Yes	Y	DL	0.6	WLZ	0.52	WLX	-0.3		
50	1D + 1Di	Yes	Y	DL	1	OL1	1				
51	1D + 1Di + 1Wi AZI 000	Yes	Y	DL	1	OL1	1	OL2	1		
52	1D + 1Di + 1Wi AZI 030	Yes	Y	DL	1	OL1	1	OL2	0.866	OL3	0.5
53	1D + 1Di + 1Wi AZI 060	Yes	Y	DL	1	OL1	1	OL2	0.5	OL3	0.866
54	1D + 1Di + 1Wi AZI 090	Yes	Y	DL	1	OL1	1			OL3	1
55	1D + 1Di + 1Wi AZI 120	Yes	Y	DL	1	OL1	1	OL2	-0.5	OL3	0.866
56	1D + 1Di + 1Wi AZI 150	Yes	Y	DL	1	OL1	1	OL2	-0.866	OL3	0.5
57	1D + 1Di + 1Wi AZI 180	Yes	Y	DL	1	OL1	1	OL2	-1		
58	1D + 1Di + 1Wi AZI 210	Yes	Y	DL	1	OL1	1	OL2	-0.866	OL3	-0.5
59	1D + 1Di + 1Wi AZI 240	Yes	Y	DL	1	OL1	1	OL2	-0.5	OL3	-0.866
60	1D + 1Di + 1Wi AZI 270	Yes	Y	DL	1	OL1	1			OL3	-1
61	1D + 1Di + 1Wi AZI 300	Yes	Y	DL	1	OL1	1	OL2	0.5	OL3	-0.866
62	1D + 1Di + 1Wi AZI 330	Yes	Y	DL	1	OL1	1	OL2	0.866	OL3	-0.5
63	1D + 1.5LM1 + 0.053WL (30 mph) AZI 000	Yes	Y	DL	1	LL	1.5	WLZ	0.053		
64	1D + 1.5LM1 + 0.053WL (30 mph) AZI 030	Yes	Y	DL	1	LL	1.5	WLZ	0.046	WLX	0.027
65	1D + 1.5LM1 + 0.053WL (30 mph) AZI 060	Yes	Y	DL	1	LL	1.5	WLZ	0.027	WLX	0.046
66	1D + 1.5LM1 + 0.053WL (30 mph) AZI 090	Yes	Y	DL	1	LL	1.5			WLX	0.053
67	1D + 1.5LM1 + 0.053WL (30 mph) AZI 120	Yes	Y	DL	1	LL	1.5	WLZ	-0.027	WLX	0.046
68	1D + 1.5LM1 + 0.053WL (30 mph) AZI 150	Yes	Y	DL	1	LL	1.5	WLZ	-0.046	WLX	0.027
69	1D + 1.5LM1 + 0.053WL (30 mph) AZI 180	Yes	Y	DL	1	LL	1.5	WLZ	-0.053		
70	1D + 1.5LM1 + 0.053WL (30 mph) AZI 210	Yes	Y	DL	1	LL	1.5	WLZ	-0.046	WLX	-0.027
71	1D + 1.5LM1 + 0.053WL (30 mph) AZI 240	Yes	Y	DL	1	LL	1.5	WLZ	-0.027	WLX	-0.046
72	1D + 1.5LM1 + 0.053WL (30 mph) AZI 270	Yes	Y	DL	1	LL	1.5			WLX	-0.053
73	1D + 1.5LM1 + 0.053WL (30 mph) AZI 300	Yes	Y	DL	1	LL	1.5	WLZ	0.027	WLX	-0.046
74	1D + 1.5LM1 + 0.053WL (30 mph) AZI 330	Yes	Y	DL	1	LL	1.5	WLZ	0.046	WLX	-0.027
75	1D + 1.5LM2 + 0.053WL (30 mph) AZI 000	Yes	Y	DL	1	OL4	1.5	WLZ	0.053		
76	1D + 1.5LM2 + 0.053WL (30 mph) AZI 030	Yes	Y	DL	1	OL4	1.5	WLZ	0.046	WLX	0.027
77	1D + 1.5LM2 + 0.053WL (30 mph) AZI 060	Yes	Y	DL	1	OL4	1.5	WLZ	0.027	WLX	0.046
78	1D + 1.5LM2 + 0.053WL (30 mph) AZI 090	Yes	Y	DL	1	OL4	1.5			WLX	0.053
79	1D + 1.5LM2 + 0.053WL (30 mph) AZI 120	Yes	Y	DL	1	OL4	1.5	WLZ	-0.027	WLX	0.046
80	1D + 1.5LM2 + 0.053WL (30 mph) AZI 150	Yes	Y	DL	1	OL4	1.5	WLZ	-0.046	WLX	0.027
81	1D + 1.5LM2 + 0.053WL (30 mph) AZI 180	Yes	Y	DL	1	OL4	1.5	WLZ	-0.053		
82	1D + 1.5LM2 + 0.053WL (30 mph) AZI 210	Yes	Y	DL	1	OL4	1.5	WLZ	-0.046	WLX	-0.027
83	1D + 1.5LM2 + 0.053WL (30 mph) AZI 240	Yes	Y	DL	1	OL4	1.5	WLZ	-0.027	WLX	-0.046
84	1D + 1.5LM2 + 0.053WL (30 mph) AZI 270	Yes	Y	DL	1	OL4	1.5			WLX	-0.053
85	1D + 1.5LM2 + 0.053WL (30 mph) AZI 300	Yes	Y	DL	1	OL4	1.5	WLZ	0.027	WLX	-0.046
86	1D + 1.5LM2 + 0.053WL (30 mph) AZI 330	Yes	Y	DL	1	OL4	1.5	WLZ	0.046	WLX	-0.027



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
87	1D + 1.5LM3 + 0.053WL (30 mph) AZI 000	Yes	Y	DL	1	OL5	1.5	WLZ	0.053		
88	1D + 1.5LM3 + 0.053WL (30 mph) AZI 030	Yes	Y	DL	1	OL5	1.5	WLZ	0.046	WLX	0.027
89	1D + 1.5LM3 + 0.053WL (30 mph) AZI 060	Yes	Y	DL	1	OL5	1.5	WLZ	0.027	WLX	0.046
90	1D + 1.5LM3 + 0.053WL (30 mph) AZI 090	Yes	Y	DL	1	OL5	1.5			WLX	0.053
91	1D + 1.5LM3 + 0.053WL (30 mph) AZI 120	Yes	Y	DL	1	OL5	1.5	WLZ	-0.027	WLX	0.046
92	1D + 1.5LM3 + 0.053WL (30 mph) AZI 150	Yes	Y	DL	1	OL5	1.5	WLZ	-0.046	WLX	0.027
93	1D + 1.5LM3 + 0.053WL (30 mph) AZI 180	Yes	Y	DL	1	OL5	1.5	WLZ	-0.053		
94	1D + 1.5LM3 + 0.053WL (30 mph) AZI 210	Yes	Y	DL	1	OL5	1.5	WLZ	-0.046	WLX	-0.027
95	1D + 1.5LM3 + 0.053WL (30 mph) AZI 240	Yes	Y	DL	1	OL5	1.5	WLZ	-0.027	WLX	-0.046
96	1D + 1.5LM3 + 0.053WL (30 mph) AZI 270	Yes	Y	DL	1	OL5	1.5			WLX	-0.053
97	1D + 1.5LM3 + 0.053WL (30 mph) AZI 300	Yes	Y	DL	1	OL5	1.5	WLZ	0.027	WLX	-0.046
98	1D + 1.5LM3 + 0.053WL (30 mph) AZI 330	Yes	Y	DL	1	OL5	1.5	WLZ	0.046	WLX	-0.027
99	1D + 1.5LM4 + 0.053WL (30 mph) AZI 000	Yes	Y	DL	1	OL6	1.5	WLZ	0.053		
100	1D + 1.5LM4 + 0.053WL (30 mph) AZI 030	Yes	Y	DL	1	OL6	1.5	WLZ	0.046	WLX	0.027
101	1D + 1.5LM4 + 0.053WL (30 mph) AZI 060	Yes	Y	DL	1	OL6	1.5	WLZ	0.027	WLX	0.046
102	1D + 1.5LM4 + 0.053WL (30 mph) AZI 090	Yes	Y	DL	1	OL6	1.5			WLX	0.053
103	1D + 1.5LM4 + 0.053WL (30 mph) AZI 120	Yes	Y	DL	1	OL6	1.5	WLZ	-0.027	WLX	0.046
104	1D + 1.5LM4 + 0.053WL (30 mph) AZI 150	Yes	Y	DL	1	OL6	1.5	WLZ	-0.046	WLX	0.027
105	1D + 1.5LM4 + 0.053WL (30 mph) AZI 180	Yes	Y	DL	1	OL6	1.5	WLZ	-0.053		
106	1D + 1.5LM4 + 0.053WL (30 mph) AZI 210	Yes	Y	DL	1	OL6	1.5	WLZ	-0.046	WLX	-0.027
107	1D + 1.5LM4 + 0.053WL (30 mph) AZI 240	Yes	Y	DL	1	OL6	1.5	WLZ	-0.027	WLX	-0.046
108	1D + 1.5LM4 + 0.053WL (30 mph) AZI 270	Yes	Y	DL	1	OL6	1.5			WLX	-0.053
109	1D + 1.5LM4 + 0.053WL (30 mph) AZI 300	Yes	Y	DL	1	OL6	1.5	WLZ	0.027	WLX	-0.046
110	1D + 1.5LM4 + 0.053WL (30 mph) AZI 330	Yes	Y	DL	1	OL6	1.5	WLZ	0.046	WLX	-0.027
111	1D + 1.5LM5 + 0.053WL (30 mph) AZI 000	Yes	Y	DL	1	OL7	1.5	WLZ	0.053		
112	1D + 1.5LM5 + 0.053WL (30 mph) AZI 030	Yes	Y	DL	1	OL7	1.5	WLZ	0.046	WLX	0.027
113	1D + 1.5LM5 + 0.053WL (30 mph) AZI 060	Yes	Y	DL	1	OL7	1.5	WLZ	0.027	WLX	0.046
114	1D + 1.5LM5 + 0.053WL (30 mph) AZI 090	Yes	Y	DL	1	OL7	1.5			WLX	0.053
115	1D + 1.5LM5 + 0.053WL (30 mph) AZI 120	Yes	Y	DL	1	OL7	1.5	WLZ	-0.027	WLX	0.046
116	1D + 1.5LM5 + 0.053WL (30 mph) AZI 150	Yes	Y	DL	1	OL7	1.5	WLZ	-0.046	WLX	0.027
117	1D + 1.5LM5 + 0.053WL (30 mph) AZI 180	Yes	Y	DL	1	OL7	1.5	WLZ	-0.053		
118	1D + 1.5LM5 + 0.053WL (30 mph) AZI 210	Yes	Y	DL	1	OL7	1.5	WLZ	-0.046	WLX	-0.027
119	1D + 1.5LM5 + 0.053WL (30 mph) AZI 240	Yes	Y	DL	1	OL7	1.5	WLZ	-0.027	WLX	-0.046
120	1D + 1.5LM5 + 0.053WL (30 mph) AZI 270	Yes	Y	DL	1	OL7	1.5			WLX	-0.053
121	1D + 1.5LM5 + 0.053WL (30 mph) AZI 300	Yes	Y	DL	1	OL7	1.5	WLZ	0.027	WLX	-0.046
122	1D + 1.5LM5 + 0.053WL (30 mph) AZI 330	Yes	Y	DL	1	OL7	1.5	WLZ	0.046	WLX	-0.027
123	1D + 1.5Lv1	Yes	Y	DL	1	OL8	1.5				
124	1D + 1.5Lv2	Yes	Y	DL	1	OL9	1.5				
125	1D + 1.5Lv3	Yes	Y	DL	1	OL10	1.5				
126	(1.0+0.14Sds)D + 0.7E AZI 000	Yes	Y	DL	1.026	ELZ	0.7				
127	(1.0+0.14Sds)D + 0.7E AZI 030	Yes	Y	DL	1.026	ELZ	0.606	ELX	0.35		
128	(1.0+0.14Sds)D + 0.7E AZI 060	Yes	Y	DL	1.026	ELZ	0.35	ELX	0.606		
129	(1.0+0.14Sds)D + 0.7E AZI 090	Yes	Y	DL	1.026			ELX	0.7		
130	(1.0+0.14Sds)D + 0.7E AZI 120	Yes	Y	DL	1.026	ELZ	-0.35	ELX	0.606		
131	(1.0+0.14Sds)D + 0.7E AZI 150	Yes	Y	DL	1.026	ELZ	-0.606	ELX	0.35		
132	(1.0+0.14Sds)D + 0.7E AZI 180	Yes	Y	DL	1.026	ELZ	-0.7				
133	(1.0+0.14Sds)D + 0.7E AZI 210	Yes	Y	DL	1.026	ELZ	-0.606	ELX	-0.35		
134	(1.0+0.14Sds)D + 0.7E AZI 240	Yes	Y	DL	1.026	ELZ	-0.35	ELX	-0.606		
135	(1.0+0.14Sds)D + 0.7E AZI 270	Yes	Y	DL	1.026			ELX	-0.7		
136	(1.0+0.14Sds)D + 0.7E AZI 300	Yes	Y	DL	1.026	ELZ	0.35	ELX	-0.606		
137	(1.0+0.14Sds)D + 0.7E AZI 330	Yes	Y	DL	1.026	ELZ	0.606	ELX	-0.35		
138	(0.6-0.2Sds)D + 0.7E AZI 000	Yes	Y	DL	0.574	ELZ	0.7				
139	(0.6-0.2Sds)D + 0.7E AZI 030	Yes	Y	DL	0.574	ELZ	0.606	ELX	0.35		
140	(0.6-0.2Sds)D + 0.7E AZI 060	Yes	Y	DL	0.574	ELZ	0.35	ELX	0.606		
141	(0.6-0.2Sds)D + 0.7E AZI 090	Yes	Y	DL	0.574			ELX	0.7		



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
142	(0.6-0.2Sds)D + 0.7E AZI 120	Yes	Y	DL	0.574	ELZ	-0.35	ELX	0.606		
143	(0.6-0.2Sds)D + 0.7E AZI 150	Yes	Y	DL	0.574	ELZ	-0.606	ELX	0.35		
144	(0.6-0.2Sds)D + 0.7E AZI 180	Yes	Y	DL	0.574	ELZ	-0.7				
145	(0.6-0.2Sds)D + 0.7E AZI 210	Yes	Y	DL	0.574	ELZ	-0.606	ELX	-0.35		
146	(0.6-0.2Sds)D + 0.7E AZI 240	Yes	Y	DL	0.574	ELZ	-0.35	ELX	-0.606		
147	(0.6-0.2Sds)D + 0.7E AZI 270	Yes	Y	DL	0.574			ELX	-0.7		
148	(0.6-0.2Sds)D + 0.7E AZI 300	Yes	Y	DL	0.574	ELZ	0.35	ELX	-0.606		
149	(0.6-0.2Sds)D + 0.7E AZI 330	Yes	Y	DL	0.574	ELZ	0.606	ELX	-0.35		

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N15	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N23	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N133						
5	N134	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N151	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N152	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N153	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N246A						
10	N247A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N248A						
12	N249A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	PIPE 1.5	PIPE 1.5	Beam	None	A53 Gr.B	Typical	0.749	0.293	0.293	0.586
2	PIPE 2.0	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	PIPE 2.5	PIPE 2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	PIPE 3.0	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	PIPE 3.5	PIPE 3.5	Beam	None	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
6	PIPE 4.0	PIPE 4.0	Beam	None	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
7	PIPE 5.0	PIPE 5.0	Beam	None	A53 Gr.B	Typical	4.01	14.3	14.3	28.6
8	HSS2x2x3	HSS2X2X3	Beam	None	A500 Gr.B Rect	Typical	1.19	0.641	0.641	1.09
9	HSS3x3x3	HSS3X3X3	Beam	None	A500 Gr.B Rect	Typical	1.89	2.46	2.46	4.03
10	HSS4x4x3	HSS4X4X3	Beam	None	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
11	HSS4x4x4	HSS4X4X4	Beam	None	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
12	HSS5x5x4	HSS5X5X4	Beam	None	A500 Gr.B Rect	Typical	4.3	16	16	25.8
13	C3x3.5	C3X3.5	Beam	None	A36 Gr.36	Typical	1.09	0.169	1.57	0.023
14	C4x4.5	C4X4.5 HRA	Beam	None	A36 Gr.36	Typical	1.38	0.289	3.65	0.032
15	C5x6.7	C5X6.7	Beam	None	A36 Gr.36	Typical	1.97	0.47	7.48	0.055
16	L2.5x2.5x3	L2.5X2.5X3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
17	L2.5x2.5x4	L2.5X2.5X4	Beam	None	A36 Gr.36	Typical	1.19	0.692	0.692	0.026





**Hot Rolled Steel Section Sets (Continued)**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
18	L3x3x3	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	0.948	0.948	0.014
19	L3x3x4	L3X3X4	Beam	None	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
20	L3x3x6	L3X3X6	Beam	None	A36 Gr.36	Typical	2.11	1.75	1.75	0.101
21	L4x4x4	L4X4X4	Beam	None	A36 Gr.36	Typical	1.93	3	3	0.044
22	LL2.5x2.5x3x3	LL2.5X2.5X3X3	Beam	None	A36 Gr.36	Typical	1.8	2.46	1.07	0.023
23	1/2"x6"	1/2"X6"	Beam	None	A36 Gr.36	Typical	3	0.063	9	0.237
24	1/2"x9"	1/2"X9"	Beam	None	A36 Gr.36	Typical	4.5	0.094	30.375	0.362
25	3/8"x3"	3/8"X3"	Beam	None	A36 Gr.36	Typical	1.125	0.013	0.844	0.049
26	L6x3.5x5	L6X3.5X5	Beam	None	A36 Gr.36	Typical	2.89	2.84	10.9	0.099
27	L5x3.5x4	L5X3.5X4	Beam	None	A36 Gr.36	Typical	2.07	2.2	5.36	0.046
28	1/2"x3"	1/2"X3"	Beam	None	A36 Gr.36	Typical	1.5	0.031	1.125	0.112

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M125	N264	N265		RIGID	None	None	RIGID	DR1
2	M68	N143	N144		RIGID	None	None	RIGID	DR1
3	M67	N141	N142		RIGID	None	None	RIGID	DR1
4	M66	N139	N140		RIGID	None	None	RIGID	DR1
5	M104	N216	N217		RIGID	None	None	RIGID	DR1
6	M105	N218	N219		RIGID	None	None	RIGID	DR1
7	M106	N220	N221		RIGID	None	None	RIGID	DR1
8	M59	N124	N123		RIGID	None	None	RIGID	DR1
9	M69	N145	N146		RIGID	None	None	RIGID	DR1
10	M58	N121	N122		RIGID	None	None	RIGID	DR1
11	M56	N41	N118		RIGID	None	None	RIGID	DR1
12	M54	N113	N112		RIGID	None	None	RIGID	DR1
13	M53	N110	N111		RIGID	None	None	RIGID	DR1
14	M52	N108	N109		RIGID	None	None	RIGID	DR1
15	M51	N106	N107		RIGID	None	None	RIGID	DR1
16	M95	N194	N195		RIGID	None	None	RIGID	DR1
17	M48	N98	N99		RIGID	None	None	RIGID	DR1
18	M57	N119	N120		RIGID	None	None	RIGID	DR1
19	M70	N147	N148		RIGID	None	None	RIGID	DR1
20	M71	N149	N150		RIGID	None	None	RIGID	DR1
21	M102	N211	N210		RIGID	None	None	RIGID	DR1
22	M94	N192	N193		RIGID	None	None	RIGID	DR1
23	M92	N187	N186		RIGID	None	None	RIGID	DR1
24	M91	N184	N185		RIGID	None	None	RIGID	DR1
25	M90	N182	N183		RIGID	None	None	RIGID	DR1
26	M89	N180	N181		RIGID	None	None	RIGID	DR1
27	M87	N175	N174		RIGID	None	None	RIGID	DR1
28	M86	N172	N173		RIGID	None	None	RIGID	DR1
29	M85	N170	N171		RIGID	None	None	RIGID	DR1
30	M84	N168	N169		RIGID	None	None	RIGID	DR1
31	M82	N163	N162		RIGID	None	None	RIGID	DR1
32	M81	N160	N161		RIGID	None	None	RIGID	DR1
33	M80	N158	N159		RIGID	None	None	RIGID	DR1
34	M79	N156	N157		RIGID	None	None	RIGID	DR1
35	M97	N199	N198		RIGID	None	None	RIGID	DR1
36	M99	N204	N205		RIGID	None	None	RIGID	DR1
37	M100	N206	N207		RIGID	None	None	RIGID	DR1
38	M101	N208	N209		RIGID	None	None	RIGID	DR1
39	M47	N96	N97		RIGID	None	None	RIGID	DR1
40	M46	N94	N95		RIGID	None	None	RIGID	DR1
41	M49	N101	N100		RIGID	None	None	RIGID	DR1



**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
42	M44	N89	N88		RIGID	None	None	RIGID	DR1
43	M119A	N252A	N253A		RIGID	None	None	RIGID	DR1
44	M5	N9	N10		RIGID	None	None	RIGID	DR1
45	M6	N11	N12		RIGID	None	None	RIGID	DR1
46	M11	N25	N26		RIGID	None	None	RIGID	DR1
47	M12	N28	N27		RIGID	None	None	RIGID	DR1
48	M14	N31	N32		RIGID	None	None	RIGID	DR1
49	M117	N247	N246		RIGID	None	None	RIGID	DR1
50	M116	N244	N245		RIGID	None	None	RIGID	DR1
51	M115	N242	N243		RIGID	None	None	RIGID	DR1
52	M114	N240	N241		RIGID	None	None	RIGID	DR1
53	M112	N235	N234		RIGID	None	None	RIGID	DR1
54	M111	N232	N233		RIGID	None	None	RIGID	DR1
55	M110	N230	N231		RIGID	None	None	RIGID	DR1
56	M109	N228	N229		RIGID	None	None	RIGID	DR1
57	M107	N223	N222		RIGID	None	None	RIGID	DR1
58	M96	N196	N197		RIGID	None	None	RIGID	DR1
59	M36	N70	N71		RIGID	None	None	RIGID	DR1
60	M31	N58	N59		RIGID	None	None	RIGID	DR1
61	M43	N86	N87		RIGID	None	None	RIGID	DR1
62	M32	N60	N61		RIGID	None	None	RIGID	DR1
63	M33	N62	N63		RIGID	None	None	RIGID	DR1
64	M34	N65	N64		RIGID	None	None	RIGID	DR1
65	M39	N77	N76		RIGID	None	None	RIGID	DR1
66	M38	N74	N75		RIGID	None	None	RIGID	DR1
67	M42	N84	N85		RIGID	None	None	RIGID	DR1
68	M37	N72	N73		RIGID	None	None	RIGID	DR1
69	M41	N82	N83		RIGID	None	None	RIGID	DR1
70	M7	N15	N16	90	HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
71	M10	N23	N24	90	HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
72	M8	N19	N20	90	HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
73	M88	N178	N179	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
74	M4	N7	N8	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
75	M93	N190	N191	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
76	M103	N214	N215	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
77	M113	N238	N239	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
78	M50	N104	N105	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
79	M40	N80	N81	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
80	M30	N56	N57	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
81	M78	N154	N155	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
82	M98	N202	N203	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
83	M55	N116	N117	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
84	M45	N92	N93	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
85	M35	N68	N69	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
86	M108	N226	N227	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
87	M83	N166	N167	180	PIPE 2.0	Beam	None	A53 Gr.B	Typical
88	M117A	N248A	N249A		LL2.5x2.5x3x3	Beam	None	A36 Gr.36	Typical
89	M118A	N250A	N251A	90	1/2"x9"	Beam	None	A36 Gr.36	Typical
90	M116A	N246A	N247A		LL2.5x2.5x3x3	Beam	None	A36 Gr.36	Typical
91	M63	N133	N134		LL2.5x2.5x3x3	Beam	None	A36 Gr.36	Typical
92	M76	N153	N146	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
93	M2	N4	N6	180	L3x3x4	Beam	None	A36 Gr.36	Typical
94	M3	N5	N2	180	L3x3x4	Beam	None	A36 Gr.36	Typical
95	M9	N42	N43	90	L4x4x4	Beam	None	A36 Gr.36	Typical
96	M13	N29	N30	90	1/2"x9"	Beam	None	A36 Gr.36	Typical





**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
97	M19	N22	N43		3/8"x3"	Beam	None	A36 Gr.36	Typical
98	M20	N21	N42		3/8"x3"	Beam	None	A36 Gr.36	Typical
99	M21	N44	N45	90	L4x4x4	Beam	None	A36 Gr.36	Typical
100	M22	N14	N45		3/8"x3"	Beam	None	A36 Gr.36	Typical
101	M23	N13	N44		3/8"x3"	Beam	None	A36 Gr.36	Typical
102	M24	N46	N47	90	L4x4x4	Beam	None	A36 Gr.36	Typical
103	M25	N17	N47		3/8"x3"	Beam	None	A36 Gr.36	Typical
104	M26	N18	N46		3/8"x3"	Beam	None	A36 Gr.36	Typical
105	M27	N49	N48	180	C5x6.7	Beam	None	A36 Gr.36	Typical
106	M28	N50	N52	180	C5x6.7	Beam	None	A36 Gr.36	Typical
107	M29	N51	N53	180	C5x6.7	Beam	None	A36 Gr.36	Typical
108	M60	N127	N128	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
109	M61	N129	N130	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
110	M62	N131	N132	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
111	M124	N262	N263	90	1/2"x9"	Beam	None	A36 Gr.36	Typical
112	M72	N151	N150	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
113	M73	N151	N140	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
114	M74	N152	N142	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
115	M75	N152	N144	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
116	M77	N153	N148	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
117	M1	N1	N3	180	L3x3x4	Beam	None	A36 Gr.36	Typical

**Node Loads and Enforced Displacements (BLC 1 : Self Weight)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	Y	-0.064
2	N56	L	Y	-0.064
3	N54	L	Y	-0.023
4	N55	L	Y	-0.023
5	N64	L	Y	-0.075
6	N65	L	Y	-0.11
7	N117	L	Y	-0.064
8	N116	L	Y	-0.064
9	N114	L	Y	-0.023
10	N115	L	Y	-0.023
11	N124	L	Y	-0.075
12	N123	L	Y	-0.11
13	N93	L	Y	-0.064
14	N92	L	Y	-0.064
15	N90	L	Y	-0.023
16	N91	L	Y	-0.023
17	N101	L	Y	-0.075
18	N100	L	Y	-0.11

**Node Loads and Enforced Displacements (BLC 2 : Wind Load AZI 000)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	Z	-0.521
2	N56	L	Z	-0.521
3	N54	L	Z	-0.166
4	N55	L	Z	-0.166
5	N64	L	Z	-0.101
6	N65	L	Z	-0.132
7	N117	L	Z	-0.229
8	N116	L	Z	-0.229



**Node Loads and Enforced Displacements (BLC 2 : Wind Load AZI 000) (Continued)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
9	N114	L	Z	-0.069
10	N115	L	Z	-0.069
11	N124	L	Z	-0.073
12	N123	L	Z	-0.102
13	N93	L	Z	-0.229
14	N92	L	Z	-0.229
15	N90	L	Z	-0.069
16	N91	L	Z	-0.069
17	N101	L	Z	-0.073
18	N100	L	Z	-0.102

**Node Loads and Enforced Displacements (BLC 3 : Wind Load AZI 090)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	X	-0.229
2	N56	L	X	-0.229
3	N54	L	X	-0.069
4	N55	L	X	-0.069
5	N64	L	X	-0.073
6	N65	L	X	-0.102
7	N117	L	X	-0.521
8	N116	L	X	-0.521
9	N114	L	X	-0.166
10	N115	L	X	-0.166
11	N124	L	X	-0.101
12	N123	L	X	-0.132
13	N93	L	X	-0.521
14	N92	L	X	-0.521
15	N90	L	X	-0.166
16	N91	L	X	-0.166
17	N101	L	X	-0.101
18	N100	L	X	-0.132

**Node Loads and Enforced Displacements (BLC 4 : Ice Weight)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	Y	-0.095
2	N56	L	Y	-0.095
3	N54	L	Y	-0.035
4	N55	L	Y	-0.035
5	N64	L	Y	-0.03
6	N65	L	Y	-0.042
7	N117	L	Y	-0.095
8	N116	L	Y	-0.095
9	N114	L	Y	-0.035
10	N115	L	Y	-0.035
11	N124	L	Y	-0.03
12	N123	L	Y	-0.042
13	N93	L	Y	-0.095
14	N92	L	Y	-0.095
15	N90	L	Y	-0.035
16	N91	L	Y	-0.035
17	N101	L	Y	-0.03
18	N100	L	Y	-0.042



**Node Loads and Enforced Displacements (BLC 5 : Wind + Ice Load AZI 000)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	Z	-0.084
2	N56	L	Z	-0.084
3	N54	L	Z	-0.028
4	N55	L	Z	-0.028
5	N64	L	Z	-0.019
6	N65	L	Z	-0.024
7	N117	L	Z	-0.041
8	N116	L	Z	-0.041
9	N114	L	Z	-0.013
10	N115	L	Z	-0.013
11	N124	L	Z	-0.014
12	N123	L	Z	-0.019
13	N93	L	Z	-0.041
14	N92	L	Z	-0.041
15	N90	L	Z	-0.013
16	N91	L	Z	-0.013
17	N101	L	Z	-0.014
18	N100	L	Z	-0.019

**Node Loads and Enforced Displacements (BLC 6 : Wind + Ice Load AZI 090)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	X	-0.041
2	N56	L	X	-0.041
3	N54	L	X	-0.013
4	N55	L	X	-0.013
5	N64	L	X	-0.014
6	N65	L	X	-0.019
7	N117	L	X	-0.084
8	N116	L	X	-0.084
9	N114	L	X	-0.028
10	N115	L	X	-0.028
11	N124	L	X	-0.019
12	N123	L	X	-0.024
13	N93	L	X	-0.084
14	N92	L	X	-0.084
15	N90	L	X	-0.028
16	N91	L	X	-0.028
17	N101	L	X	-0.019
18	N100	L	X	-0.024

**Node Loads and Enforced Displacements (BLC 7 : Service Lm1)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N10	L	Y	-0.5
2	N107	L	Y	-0.5
3	N83	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 8 : Service Lm2)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N217	L	Y	-0.5
2	N241	L	Y	-0.5
3	N229	L	Y	-0.5



**Node Loads and Enforced Displacements (BLC 9 : Service Lm3)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N71	L	Y	-0.5
2	N169	L	Y	-0.5
3	N157	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 10 : Service Lm4)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N181	L	Y	-0.5
2	N205	L	Y	-0.5
3	N193	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 11 : Service Lm5)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N59	L	Y	-0.5
2	N118	L	Y	-0.5
3	N95	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 12 : Service Lv 1)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N48	L	Y	-0.25
2	N53	L	Y	-0.25
3	N52	L	Y	-0.25

**Node Loads and Enforced Displacements (BLC 13 : Service Lv 2)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N72	L	Y	-0.25
2	N170	L	Y	-0.25
3	N158	L	Y	-0.25

**Node Loads and Enforced Displacements (BLC 14 : Service Lv 3)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N49	L	Y	-0.25
2	N51	L	Y	-0.25
3	N50	L	Y	-0.25

**Node Loads and Enforced Displacements (BLC 15 : Seismic Load AZI 000)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	Z	-0.006
2	N56	L	Z	-0.006
3	N54	L	Z	-0.002
4	N55	L	Z	-0.002
5	N64	L	Z	-0.007
6	N65	L	Z	-0.01
7	N117	L	Z	-0.006
8	N116	L	Z	-0.006
9	N114	L	Z	-0.002
10	N115	L	Z	-0.002



**Node Loads and Enforced Displacements (BLC 15 : Seismic Load AZI 000) (Continued)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
11	N124	L	Z	-0.007
12	N123	L	Z	-0.01
13	N93	L	Z	-0.006
14	N92	L	Z	-0.006
15	N90	L	Z	-0.002
16	N91	L	Z	-0.002
17	N101	L	Z	-0.007
18	N100	L	Z	-0.01

**Node Loads and Enforced Displacements (BLC 16 : Seismic Load AZI 090)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N57	L	X	-0.006
2	N56	L	X	-0.006
3	N54	L	X	-0.002
4	N55	L	X	-0.002
5	N64	L	X	-0.007
6	N65	L	X	-0.01
7	N117	L	X	-0.006
8	N116	L	X	-0.006
9	N114	L	X	-0.002
10	N115	L	X	-0.002
11	N124	L	X	-0.007
12	N123	L	X	-0.01
13	N93	L	X	-0.006
14	N92	L	X	-0.006
15	N90	L	X	-0.002
16	N91	L	X	-0.002
17	N101	L	X	-0.007
18	N100	L	X	-0.01

**Member Distributed Loads (BLC 2 : Wind Load AZI 000)**

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M3	SZ	-0.05	-0.05	0	%100
2	M20	SZ	-0.05	-0.05	0	%100
3	M28	SZ	-0.05	-0.05	0	%100
4	M55	SZ	-0.05	-0.05	0	%100
5	M4	SZ	-0.05	-0.05	0	%100
6	M10	SZ	-0.05	-0.05	0	%100
7	M45	SZ	-0.05	-0.05	0	%100
8	M124	SZ	-0.05	-0.05	0	%100
9	M72	SZ	-0.05	-0.05	0	%100
10	M26	SZ	-0.05	-0.05	0	%100
11	M117A	SZ	-0.05	-0.05	0	%100
12	M77	SZ	-0.05	-0.05	0	%100
13	M2	SZ	-0.05	-0.05	0	%100
14	M108	SZ	-0.05	-0.05	0	%100
15	M63	SZ	-0.05	-0.05	0	%100
16	M73	SZ	-0.05	-0.05	0	%100
17	M9	SZ	-0.05	-0.05	0	%100
18	M19	SZ	-0.05	-0.05	0	%100
19	M50	SZ	-0.05	-0.05	0	%100
20	M30	SZ	-0.05	-0.05	0	%100
21	M116A	SZ	-0.05	-0.05	0	%100



**Member Distributed Loads (BLC 2 : Wind Load AZI 000) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
22	M61	SZ	-0.05	-0.05	0	%100
23	M13	SZ	-0.05	-0.05	0	%100
24	M8	SZ	-0.05	-0.05	0	%100
25	M103	SZ	-0.05	-0.05	0	%100
26	M118A	SZ	-0.05	-0.05	0	%100
27	M60	SZ	-0.05	-0.05	0	%100
28	M93	SZ	-0.05	-0.05	0	%100
29	M22	SZ	-0.05	-0.05	0	%100
30	M40	SZ	-0.05	-0.05	0	%100
31	M83	SZ	-0.05	-0.05	0	%100
32	M76	SZ	-0.05	-0.05	0	%100
33	M25	SZ	-0.05	-0.05	0	%100
34	M78	SZ	-0.05	-0.05	0	%100
35	M98	SZ	-0.05	-0.05	0	%100
36	M7	SZ	-0.05	-0.05	0	%100
37	M1	SZ	-0.05	-0.05	0	%100
38	M24	SZ	-0.05	-0.05	0	%100
39	M35	SZ	-0.05	-0.05	0	%100
40	M74	SZ	-0.05	-0.05	0	%100
41	M75	SZ	-0.05	-0.05	0	%100
42	M21	SZ	-0.05	-0.05	0	%100
43	M29	SZ	-0.05	-0.05	0	%100
44	M23	SZ	-0.05	-0.05	0	%100
45	M27	SZ	-0.05	-0.05	0	%100
46	M88	SZ	-0.05	-0.05	0	%100
47	M113	SZ	-0.05	-0.05	0	%100
48	M62	SZ	-0.05	-0.05	0	%100

**Member Distributed Loads (BLC 3 : Wind Load AZI 090)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M117A	SX	-0.05	-0.05	0	%100
2	M116A	SX	-0.05	-0.05	0	%100
3	M124	SX	-0.05	-0.05	0	%100
4	M113	SX	-0.05	-0.05	0	%100
5	M118A	SX	-0.05	-0.05	0	%100
6	M108	SX	-0.05	-0.05	0	%100
7	M7	SX	-0.05	-0.05	0	%100
8	M73	SX	-0.05	-0.05	0	%100
9	M103	SX	-0.05	-0.05	0	%100
10	M1	SX	-0.05	-0.05	0	%100
11	M88	SX	-0.05	-0.05	0	%100
12	M19	SX	-0.05	-0.05	0	%100
13	M8	SX	-0.05	-0.05	0	%100
14	M40	SX	-0.05	-0.05	0	%100
15	M77	SX	-0.05	-0.05	0	%100
16	M93	SX	-0.05	-0.05	0	%100
17	M29	SX	-0.05	-0.05	0	%100
18	M28	SX	-0.05	-0.05	0	%100
19	M2	SX	-0.05	-0.05	0	%100
20	M26	SX	-0.05	-0.05	0	%100
21	M63	SX	-0.05	-0.05	0	%100
22	M13	SX	-0.05	-0.05	0	%100
23	M23	SX	-0.05	-0.05	0	%100
24	M78	SX	-0.05	-0.05	0	%100
25	M72	SX	-0.05	-0.05	0	%100



**Member Distributed Loads (BLC 3 : Wind Load AZI 090) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
26	M25	SX	-0.05	-0.05	0	%100
27	M74	SX	-0.05	-0.05	0	%100
28	M83	SX	-0.05	-0.05	0	%100
29	M20	SX	-0.05	-0.05	0	%100
30	M62	SX	-0.05	-0.05	0	%100
31	M3	SX	-0.05	-0.05	0	%100
32	M10	SX	-0.05	-0.05	0	%100
33	M4	SX	-0.05	-0.05	0	%100
34	M22	SX	-0.05	-0.05	0	%100
35	M27	SX	-0.05	-0.05	0	%100
36	M9	SX	-0.05	-0.05	0	%100
37	M35	SX	-0.05	-0.05	0	%100
38	M75	SX	-0.05	-0.05	0	%100
39	M21	SX	-0.05	-0.05	0	%100
40	M30	SX	-0.05	-0.05	0	%100
41	M76	SX	-0.05	-0.05	0	%100
42	M60	SX	-0.05	-0.05	0	%100
43	M61	SX	-0.05	-0.05	0	%100
44	M24	SX	-0.05	-0.05	0	%100
45	M50	SX	-0.05	-0.05	0	%100
46	M45	SX	-0.05	-0.05	0	%100
47	M98	SX	-0.05	-0.05	0	%100
48	M55	SX	-0.05	-0.05	0	%100

**Member Distributed Loads (BLC 4 : Ice Weight)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M63	Y	-0.008	-0.008	0	%100
2	M73	Y	-0.008	-0.008	0	%100
3	M72	Y	-0.008	-0.008	0	%100
4	M20	Y	-0.008	-0.008	0	%100
5	M22	Y	-0.008	-0.008	0	%100
6	M27	Y	-0.008	-0.008	0	%100
7	M35	Y	-0.008	-0.008	0	%100
8	M50	Y	-0.008	-0.008	0	%100
9	M30	Y	-0.008	-0.008	0	%100
10	M23	Y	-0.008	-0.008	0	%100
11	M61	Y	-0.008	-0.008	0	%100
12	M3	Y	-0.008	-0.008	0	%100
13	M2	Y	-0.008	-0.008	0	%100
14	M40	Y	-0.008	-0.008	0	%100
15	M24	Y	-0.008	-0.008	0	%100
16	M25	Y	-0.008	-0.008	0	%100
17	M103	Y	-0.008	-0.008	0	%100
18	M98	Y	-0.008	-0.008	0	%100
19	M29	Y	-0.008	-0.008	0	%100
20	M60	Y	-0.008	-0.008	0	%100
21	M55	Y	-0.008	-0.008	0	%100
22	M19	Y	-0.008	-0.008	0	%100
23	M1	Y	-0.008	-0.008	0	%100
24	M88	Y	-0.008	-0.008	0	%100
25	M10	Y	-0.008	-0.008	0	%100
26	M9	Y	-0.008	-0.008	0	%100
27	M8	Y	-0.008	-0.008	0	%100
28	M4	Y	-0.008	-0.008	0	%100
29	M28	Y	-0.008	-0.008	0	%100



**Member Distributed Loads (BLC 4 : Ice Weight) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
30	M21	Y	-0.008	-0.008	0	%100
31	M26	Y	-0.008	-0.008	0	%100
32	M13	Y	-0.008	-0.008	0	%100
33	M62	Y	-0.008	-0.008	0	%100
34	M7	Y	-0.008	-0.008	0	%100
35	M45	Y	-0.008	-0.008	0	%100
36	M77	Y	-0.008	-0.008	0	%100
37	M74	Y	-0.008	-0.008	0	%100
38	M75	Y	-0.008	-0.008	0	%100
39	M76	Y	-0.008	-0.008	0	%100
40	M78	Y	-0.008	-0.008	0	%100
41	M83	Y	-0.008	-0.008	0	%100
42	M93	Y	-0.008	-0.008	0	%100
43	M108	Y	-0.008	-0.008	0	%100
44	M113	Y	-0.008	-0.008	0	%100
45	M116A	Y	-0.008	-0.008	0	%100
46	M117A	Y	-0.008	-0.008	0	%100
47	M118A	Y	-0.008	-0.008	0	%100
48	M124	Y	-0.008	-0.008	0	%100

**Member Distributed Loads (BLC 5 : Wind + Ice Load AZI 000)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M118A	SZ	-0.01	-0.01	0	%100
2	M93	SZ	-0.01	-0.01	0	%100
3	M124	SZ	-0.01	-0.01	0	%100
4	M117A	SZ	-0.01	-0.01	0	%100
5	M108	SZ	-0.01	-0.01	0	%100
6	M116A	SZ	-0.01	-0.01	0	%100
7	M78	SZ	-0.01	-0.01	0	%100
8	M83	SZ	-0.01	-0.01	0	%100
9	M113	SZ	-0.01	-0.01	0	%100
10	M9	SZ	-0.01	-0.01	0	%100
11	M22	SZ	-0.01	-0.01	0	%100
12	M35	SZ	-0.01	-0.01	0	%100
13	M25	SZ	-0.01	-0.01	0	%100
14	M23	SZ	-0.01	-0.01	0	%100
15	M76	SZ	-0.01	-0.01	0	%100
16	M7	SZ	-0.01	-0.01	0	%100
17	M72	SZ	-0.01	-0.01	0	%100
18	M73	SZ	-0.01	-0.01	0	%100
19	M10	SZ	-0.01	-0.01	0	%100
20	M30	SZ	-0.01	-0.01	0	%100
21	M40	SZ	-0.01	-0.01	0	%100
22	M27	SZ	-0.01	-0.01	0	%100
23	M63	SZ	-0.01	-0.01	0	%100
24	M61	SZ	-0.01	-0.01	0	%100
25	M28	SZ	-0.01	-0.01	0	%100
26	M4	SZ	-0.01	-0.01	0	%100
27	M45	SZ	-0.01	-0.01	0	%100
28	M50	SZ	-0.01	-0.01	0	%100
29	M98	SZ	-0.01	-0.01	0	%100
30	M8	SZ	-0.01	-0.01	0	%100
31	M2	SZ	-0.01	-0.01	0	%100
32	M3	SZ	-0.01	-0.01	0	%100
33	M75	SZ	-0.01	-0.01	0	%100





**Member Distributed Loads (BLC 5 : Wind + Ice Load AZI 000) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
34	M74	SZ	-0.01	0	%100
35	M77	SZ	-0.01	0	%100
36	M24	SZ	-0.01	0	%100
37	M62	SZ	-0.01	0	%100
38	M13	SZ	-0.01	0	%100
39	M19	SZ	-0.01	0	%100
40	M60	SZ	-0.01	0	%100
41	M88	SZ	-0.01	0	%100
42	M29	SZ	-0.01	0	%100
43	M20	SZ	-0.01	0	%100
44	M26	SZ	-0.01	0	%100
45	M1	SZ	-0.01	0	%100
46	M103	SZ	-0.01	0	%100
47	M55	SZ	-0.01	0	%100
48	M21	SZ	-0.01	0	%100

**Member Distributed Loads (BLC 6 : Wind + Ice Load AZI 090)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M116A	SX	-0.01	0	%100
2	M93	SX	-0.01	0	%100
3	M118A	SX	-0.01	0	%100
4	M124	SX	-0.01	0	%100
5	M75	SX	-0.01	0	%100
6	M76	SX	-0.01	0	%100
7	M83	SX	-0.01	0	%100
8	M117A	SX	-0.01	0	%100
9	M74	SX	-0.01	0	%100
10	M108	SX	-0.01	0	%100
11	M113	SX	-0.01	0	%100
12	M78	SX	-0.01	0	%100
13	M28	SX	-0.01	0	%100
14	M27	SX	-0.01	0	%100
15	M88	SX	-0.01	0	%100
16	M63	SX	-0.01	0	%100
17	M50	SX	-0.01	0	%100
18	M45	SX	-0.01	0	%100
19	M21	SX	-0.01	0	%100
20	M13	SX	-0.01	0	%100
21	M9	SX	-0.01	0	%100
22	M2	SX	-0.01	0	%100
23	M1	SX	-0.01	0	%100
24	M40	SX	-0.01	0	%100
25	M98	SX	-0.01	0	%100
26	M61	SX	-0.01	0	%100
27	M60	SX	-0.01	0	%100
28	M7	SX	-0.01	0	%100
29	M77	SX	-0.01	0	%100
30	M73	SX	-0.01	0	%100
31	M25	SX	-0.01	0	%100
32	M35	SX	-0.01	0	%100
33	M26	SX	-0.01	0	%100
34	M3	SX	-0.01	0	%100
35	M19	SX	-0.01	0	%100
36	M29	SX	-0.01	0	%100
37	M24	SX	-0.01	0	%100



**Member Distributed Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	M72	SX	-0.01	0	%100
39	M103	SX	-0.01	0	%100
40	M10	SX	-0.01	0	%100
41	M55	SX	-0.01	0	%100
42	M30	SX	-0.01	0	%100
43	M23	SX	-0.01	0	%100
44	M22	SX	-0.01	0	%100
45	M8	SX	-0.01	0	%100
46	M62	SX	-0.01	0	%100
47	M4	SX	-0.01	0	%100
48	M20	SX	-0.01	0	%100

**Member Distributed Loads (BLC 17 : BLC 1 Transient Area Loads)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M27	Y	-0.038	9.46	10.954
2	M27	Y	-0.024	10.954	12.447
3	M28	Y	-0.0008827	0	1.245
4	M28	Y	-0.017	1.245	2.489
5	M28	Y	-0.032	2.489	3.734
6	M28	Y	-0.029	3.734	4.979
7	M28	Y	-0.013	4.979	6.224
8	M124	Y	-0.006	0	0.159
9	M124	Y	-0.021	0.159	0.319
10	M124	Y	-0.017	0.319	0.478
11	M124	Y	-0.015	0.478	0.637
12	M124	Y	-0.018	0.637	0.796
13	M100	Y	-0.012	0	0.5
14	M9	Y	-0.005	0	1.017
15	M9	Y	-0.021	1.017	2.034
16	M9	Y	-0.032	2.034	3.051
17	M9	Y	-0.03	3.051	4.068
18	M9	Y	-0.021	4.068	5.085
19	M13	Y	-0.005	0	0.159
20	M13	Y	-0.02	0.159	0.319
21	M13	Y	-0.017	0.319	0.478
22	M13	Y	-0.015	0.478	0.637
23	M13	Y	-0.015	0.637	0.796
24	M19	Y	-0.005	0.061	0.439
25	M20	Y	-0.005	0.062	0.443
26	M28	Y	-0.001	6.224	7.468
27	M28	Y	-0.017	7.468	8.713
28	M28	Y	-0.036	8.713	9.958
29	M28	Y	-0.04	9.958	11.203
30	M28	Y	-0.022	11.203	12.447
31	M29	Y	-0.001	0	1.245
32	M29	Y	-0.017	1.245	2.489
33	M29	Y	-0.033	2.489	3.734
34	M29	Y	-0.031	3.734	4.979
35	M29	Y	-0.015	4.979	6.224
36	M90	Y	-0.012	0	0.5
37	M118A	Y	-0.005	0	0.159
38	M118A	Y	-0.02	0.159	0.319
39	M118A	Y	-0.017	0.319	0.478
40	M118A	Y	-0.015	0.478	0.637
41	M118A	Y	-0.015	0.637	0.796



**Member Distributed Loads (BLC 17 : BLC 1 Transient Area Loads) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
42	M21	Y	-0.005	-0.021	0	1.017
43	M21	Y	-0.021	-0.032	1.017	2.034
44	M21	Y	-0.032	-0.03	2.034	3.051
45	M21	Y	-0.03	-0.021	3.051	4.068
46	M21	Y	-0.021	-0.011	4.068	5.085
47	M22	Y	-0.005	-0.005	0.061	0.439
48	M23	Y	-0.005	-0.005	0.062	0.443
49	M27	Y	-0.001	-0.017	0	1.245
50	M27	Y	-0.017	-0.033	1.245	2.489
51	M27	Y	-0.033	-0.031	2.489	3.734
52	M27	Y	-0.031	-0.015	3.734	4.979
53	M27	Y	-0.015	-0.001	4.979	6.224
54	M29	Y	-0.001	-0.017	6.224	7.468
55	M29	Y	-0.017	-0.036	7.468	8.713
56	M29	Y	-0.036	-0.04	8.713	9.958
57	M29	Y	-0.04	-0.022	9.958	11.203
58	M29	Y	-0.022	-0.001	11.203	12.447
59	M95	Y	-0.008	-0.008	0	0.5
60	M24	Y	-0.009	-0.024	0	1.017
61	M24	Y	-0.024	-0.035	1.017	2.034
62	M24	Y	-0.035	-0.031	2.034	3.051
63	M24	Y	-0.031	-0.02	3.051	4.068
64	M24	Y	-0.02	-0.01	4.068	5.085
65	M25	Y	-0.002	-0.002	0	0.5
66	M26	Y	-0.005	-0.005	0.061	0.5
67	M27	Y	-0.0009152	-0.008	4.979	6.473
68	M27	Y	-0.008	-0.027	6.473	7.966
69	M27	Y	-0.027	-0.038	7.966	9.46

**Member Distributed Loads (BLC 18 : BLC 4 Transient Area Loads)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M90	Y	-0.002	-0.002	0	0.5
2	M118A	Y	-0.0008307	-0.003	0	0.159
3	M118A	Y	-0.003	-0.003	0.159	0.319
4	M118A	Y	-0.003	-0.002	0.319	0.478
5	M118A	Y	-0.002	-0.002	0.478	0.637
6	M118A	Y	-0.002	-0.0001831	0.637	0.796
7	M21	Y	-0.0008305	-0.003	0	1.017
8	M21	Y	-0.003	-0.005	1.017	2.034
9	M21	Y	-0.005	-0.005	2.034	3.051
10	M21	Y	-0.005	-0.003	3.051	4.068
11	M21	Y	-0.003	-0.002	4.068	5.085
12	M22	Y	-0.0008292	-0.0008292	0.061	0.439
13	M23	Y	-0.0007836	-0.0007836	0.062	0.443
14	M27	Y	-0.0001768	-0.003	0	1.245
15	M27	Y	-0.003	-0.005	1.245	2.489
16	M27	Y	-0.005	-0.005	2.489	3.734
17	M27	Y	-0.005	-0.002	3.734	4.979
18	M27	Y	-0.002	-0.0001768	4.979	6.224
19	M29	Y	-0.0001812	-0.003	6.224	7.468
20	M29	Y	-0.003	-0.006	7.468	8.713
21	M29	Y	-0.006	-0.006	8.713	9.958
22	M29	Y	-0.006	-0.004	9.958	11.203
23	M29	Y	-0.004	-0.0001812	11.203	12.447
24	M95	Y	-0.001	-0.001	0	0.5



**Member Distributed Loads (BLC 18 : BLC 4 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
25	M24	Y	-0.001	-0.004	0 1.017
26	M24	Y	-0.004	-0.006	1.017 2.034
27	M24	Y	-0.006	-0.005	2.034 3.051
28	M24	Y	-0.005	-0.003	3.051 4.068
29	M24	Y	-0.003	-0.002	4.068 5.085
30	M25	Y	-0.00035	-0.00035	0 0.5
31	M26	Y	-0.0008523	-0.0008523	0.061 0.5
32	M27	Y	-0.0001464	-0.001	4.979 6.473
33	M27	Y	-0.001	-0.004	6.473 7.966
34	M27	Y	-0.004	-0.006	7.966 9.46
35	M27	Y	-0.006	-0.004	9.46 10.954
36	M27	Y	-0.004	-0.0001464	10.954 12.447
37	M28	Y	-0.0001412	-0.003	0 1.245
38	M28	Y	-0.003	-0.005	1.245 2.489
39	M28	Y	-0.005	-0.005	2.489 3.734
40	M28	Y	-0.005	-0.002	3.734 4.979
41	M28	Y	-0.002	-0.0001412	4.979 6.224
42	M124	Y	-0.0008807	-0.003	0 0.159
43	M124	Y	-0.003	-0.003	0.159 0.319
44	M124	Y	-0.003	-0.002	0.319 0.478
45	M124	Y	-0.002	-0.003	0.478 0.637
46	M124	Y	-0.003	-0.001	0.637 0.796
47	M100	Y	-0.004	-0.004	0 0.5
48	M9	Y	-0.002	-0.007	0 1.017
49	M9	Y	-0.007	-0.01	1.017 2.034
50	M9	Y	-0.01	-0.01	2.034 3.051
51	M9	Y	-0.01	-0.007	3.051 4.068
52	M9	Y	-0.007	-0.004	4.068 5.085
53	M13	Y	-0.002	-0.007	0 0.159
54	M13	Y	-0.007	-0.005	0.159 0.319
55	M13	Y	-0.005	-0.005	0.319 0.478
56	M13	Y	-0.005	-0.005	0.478 0.637
57	M13	Y	-0.005	-0.0003674	0.637 0.796
58	M19	Y	-0.002	-0.002	0.061 0.439
59	M20	Y	-0.002	-0.002	0.062 0.443
60	M28	Y	-0.000365	-0.005	6.224 7.468
61	M28	Y	-0.005	-0.011	7.468 8.713
62	M28	Y	-0.011	-0.013	8.713 9.958
63	M28	Y	-0.013	-0.007	9.958 11.203
64	M28	Y	-0.007	-0.000365	11.203 12.447
65	M29	Y	-0.0003513	-0.005	0 1.245
66	M29	Y	-0.005	-0.011	1.245 2.489
67	M29	Y	-0.011	-0.01	2.489 3.734
68	M29	Y	-0.01	-0.005	3.734 4.979
69	M29	Y	-0.005	-0.0003513	4.979 6.224

**Member Distributed Loads (BLC 19 : BLC 15 Transient Area Loads)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M27	Z	-0.003	-0.005	7.966 9.46
2	M27	Z	-0.005	-0.003	9.46 10.954
3	M27	Z	-0.003	-0.0001098	10.954 12.447
4	M28	Z	-0.0001059	-0.002	0 1.245
5	M28	Z	-0.002	-0.004	1.245 2.489
6	M28	Z	-0.004	-0.003	2.489 3.734
7	M28	Z	-0.003	-0.002	3.734 4.979



**Member Distributed Loads (BLC 19 : BLC 15 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	M28	Z	-0.002	-0.0001059	4.979 6.224
9	M124	Z	-0.0006605	-0.002	0 0.159
10	M124	Z	-0.002	-0.002	0.159 0.319
11	M124	Z	-0.002	-0.002	0.319 0.478
12	M124	Z	-0.002	-0.002	0.478 0.637
13	M124	Z	-0.002	-0.0007541	0.637 0.796
14	M100	Z	-0.001	-0.001	0 0.5
15	M9	Z	-0.0006228	-0.003	0 1.017
16	M9	Z	-0.003	-0.004	1.017 2.034
17	M9	Z	-0.004	-0.004	2.034 3.051
18	M9	Z	-0.004	-0.002	3.051 4.068
19	M9	Z	-0.002	-0.001	4.068 5.085
20	M13	Z	-0.0006179	-0.002	0 0.159
21	M13	Z	-0.002	-0.002	0.159 0.319
22	M13	Z	-0.002	-0.002	0.319 0.478
23	M13	Z	-0.002	-0.002	0.478 0.637
24	M13	Z	-0.002	-0.001378	0.637 0.796
25	M19	Z	-0.0006215	-0.0006215	0.061 0.439
26	M20	Z	-0.0005876	-0.0005876	0.062 0.443
27	M28	Z	-0.0001369	-0.002	6.224 7.468
28	M28	Z	-0.002	-0.004	7.468 8.713
29	M28	Z	-0.004	-0.005	8.713 9.958
30	M28	Z	-0.005	-0.003	9.958 11.203
31	M28	Z	-0.003	-0.0001369	11.203 12.447
32	M29	Z	-0.0001318	-0.002	0 1.245
33	M29	Z	-0.002	-0.004	1.245 2.489
34	M29	Z	-0.004	-0.004	2.489 3.734
35	M29	Z	-0.004	-0.002	3.734 4.979
36	M29	Z	-0.002	-0.0001318	4.979 6.224
37	M90	Z	-0.001	-0.001	0 0.5
38	M118A	Z	-0.000623	-0.002	0 0.159
39	M118A	Z	-0.002	-0.002	0.159 0.319
40	M118A	Z	-0.002	-0.002	0.319 0.478
41	M118A	Z	-0.002	-0.002	0.478 0.637
42	M118A	Z	-0.002	-0.0001373	0.637 0.796
43	M21	Z	-0.0006229	-0.003	0 1.017
44	M21	Z	-0.003	-0.004	1.017 2.034
45	M21	Z	-0.004	-0.004	2.034 3.051
46	M21	Z	-0.004	-0.002	3.051 4.068
47	M21	Z	-0.002	-0.001	4.068 5.085
48	M22	Z	-0.0006219	-0.0006219	0.061 0.439
49	M23	Z	-0.0005877	-0.0005877	0.062 0.443
50	M27	Z	-0.0001326	-0.002	0 1.245
51	M27	Z	-0.002	-0.004	1.245 2.489
52	M27	Z	-0.004	-0.004	2.489 3.734
53	M27	Z	-0.004	-0.002	3.734 4.979
54	M27	Z	-0.002	-0.0001326	4.979 6.224
55	M29	Z	-0.0001359	-0.002	6.224 7.468
56	M29	Z	-0.002	-0.004	7.468 8.713
57	M29	Z	-0.004	-0.005	8.713 9.958
58	M29	Z	-0.005	-0.003	9.958 11.203
59	M29	Z	-0.003	-0.0001359	11.203 12.447
60	M95	Z	-0.0009144	-0.0009144	0 0.5
61	M24	Z	-0.001	-0.003	0 1.017
62	M24	Z	-0.003	-0.004	1.017 2.034



**Member Distributed Loads (BLC 19 : BLC 15 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
63	M24	Z	-0.004	-0.004	2.034 3.051
64	M24	Z	-0.004	-0.002	3.051 4.068
65	M24	Z	-0.002	-0.001	4.068 5.085
66	M25	Z	-0.0002625	-0.0002625	0 0.5
67	M26	Z	-0.0006392	-0.0006392	0.061 0.5
68	M27	Z	-0.0001098	-0.0009948	4.979 6.473
69	M27	Z	-0.0009948	-0.003	6.473 7.966

**Member Distributed Loads (BLC 20 : BLC 16 Transient Area Loads)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M90	X	-0.001	-0.001	0 0.5
2	M118A	X	-0.000623	-0.002	0 0.159
3	M118A	X	-0.002	-0.002	0.159 0.319
4	M118A	X	-0.002	-0.002	0.319 0.478
5	M118A	X	-0.002	-0.002	0.478 0.637
6	M118A	X	-0.002	-0.0001373	0.637 0.796
7	M21	X	-0.0006229	-0.003	0 1.017
8	M21	X	-0.003	-0.004	1.017 2.034
9	M21	X	-0.004	-0.004	2.034 3.051
10	M21	X	-0.004	-0.002	3.051 4.068
11	M21	X	-0.002	-0.001	4.068 5.085
12	M22	X	-0.0006219	-0.0006219	0.061 0.439
13	M23	X	-0.0005877	-0.0005877	0.062 0.443
14	M27	X	-0.0001326	-0.002	0 1.245
15	M27	X	-0.002	-0.004	1.245 2.489
16	M27	X	-0.004	-0.004	2.489 3.734
17	M27	X	-0.004	-0.002	3.734 4.979
18	M27	X	-0.002	-0.0001326	4.979 6.224
19	M29	X	-0.0001359	-0.002	6.224 7.468
20	M29	X	-0.002	-0.004	7.468 8.713
21	M29	X	-0.004	-0.005	8.713 9.958
22	M29	X	-0.005	-0.003	9.958 11.203
23	M29	X	-0.003	-0.0001359	11.203 12.447
24	M95	X	-0.0009144	-0.0009144	0 0.5
25	M24	X	-0.001	-0.003	0 1.017
26	M24	X	-0.003	-0.004	1.017 2.034
27	M24	X	-0.004	-0.004	2.034 3.051
28	M24	X	-0.004	-0.002	3.051 4.068
29	M24	X	-0.002	-0.001	4.068 5.085
30	M25	X	-0.0002625	-0.0002625	0 0.5
31	M26	X	-0.0006392	-0.0006392	0.061 0.5
32	M27	X	-0.0001098	-0.0009948	4.979 6.473
33	M27	X	-0.0009948	-0.003	6.473 7.966
34	M27	X	-0.003	-0.005	7.966 9.46
35	M27	X	-0.005	-0.003	9.46 10.954
36	M27	X	-0.003	-0.0001098	10.954 12.447
37	M28	X	-0.0001059	-0.002	0 1.245
38	M28	X	-0.002	-0.004	1.245 2.489
39	M28	X	-0.004	-0.003	2.489 3.734
40	M28	X	-0.003	-0.002	3.734 4.979
41	M28	X	-0.002	-0.0001059	4.979 6.224
42	M124	X	-0.0006605	-0.002	0 0.159
43	M124	X	-0.002	-0.002	0.159 0.319
44	M124	X	-0.002	-0.002	0.319 0.478
45	M124	X	-0.002	-0.002	0.478 0.637



**Member Distributed Loads (BLC 20 : BLC 16 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
46	M124	X	-0.002	-0.0007541	0.637 0.796
47	M100	X	-0.001	-0.001	0 0.5
48	M9	X	-0.0006228	-0.003	0 1.017
49	M9	X	-0.003	-0.004	1.017 2.034
50	M9	X	-0.004	-0.004	2.034 3.051
51	M9	X	-0.004	-0.002	3.051 4.068
52	M9	X	-0.002	-0.001	4.068 5.085
53	M13	X	-0.0006179	-0.002	0 0.159
54	M13	X	-0.002	-0.002	0.159 0.319
55	M13	X	-0.002	-0.002	0.319 0.478
56	M13	X	-0.002	-0.002	0.478 0.637
57	M13	X	-0.002	-0.0001378	0.637 0.796
58	M19	X	-0.0006215	-0.0006215	0.061 0.439
59	M20	X	-0.0005876	-0.0005876	0.062 0.443
60	M28	X	-0.0001369	-0.002	6.224 7.468
61	M28	X	-0.002	-0.004	7.468 8.713
62	M28	X	-0.004	-0.005	8.713 9.958
63	M28	X	-0.005	-0.003	9.958 11.203
64	M28	X	-0.003	-0.0001369	11.203 12.447
65	M29	X	-0.0001318	-0.002	0 1.245
66	M29	X	-0.002	-0.004	1.245 2.489
67	M29	X	-0.004	-0.004	2.489 3.734
68	M29	X	-0.004	-0.002	3.734 4.979
69	M29	X	-0.002	-0.0001318	4.979 6.224

**Member Area Loads (BLC 1 : Self Weight)**

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N49	N53	N14	N13	Y	Two Way	-0.025
2	N17	N48	N50	N18	Y	Two Way	-0.025
3	N22	N21	N51	N52	Y	Two Way	-0.025

**Member Area Loads (BLC 4 : Ice Weight)**

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N49	N53	N14	N13	Y	Two Way	-0.004
2	N17	N48	N50	N18	Y	Two Way	-0.004
3	N22	N21	N51	N52	Y	Two Way	-0.004
4	N22	N21	N51	N52	Y	Two Way	-0.004

**Member Area Loads (BLC 15 : Seismic Load AZI 000)**

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N49	N53	N14	N13	Z	Two Way	-0.003
2	N17	N48	N50	N18	Z	Two Way	-0.003
3	N22	N21	N51	N52	Z	Two Way	-0.003

**Member Area Loads (BLC 16 : Seismic Load AZI 090)**

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N49	N53	N14	N13	X	Two Way	-0.003
2	N17	N48	N50	N18	X	Two Way	-0.003
3	N22	N21	N51	N52	X	Two Way	-0.003





**Envelope Node Reactions**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N15	max	3.669	30	0.287	12	1.894	12	0.116	66	0.935	48	0.318	30
2		min	-2.937	12	-0.354	30	-2.333	30	-0.184	120	-0.94	30	-0.293	12
3	N19	max	3.055	4	0.283	4	1.82	4	0.223	119	0.631	12	0.288	28
4		min	-3.78	34	-0.349	34	-2.245	34	-0.148	4	-0.639	30	-0.251	10
5	N23	max	0.245	29	0.259	8	3.957	26	0.278	32	1.108	12	0.112	72
6		min	-0.242	36	-0.326	26	-3.112	8	-0.269	2	-1.117	30	-0.228	114
7	N134	max	0.015	5	2.522	51	1.4	8	0	149	0	121	0	6
8		min	-0.015	11	-0.549	8	-6.399	51	0	1	0	6	0	121
9	N151	max	0.178	29	0.038	55	0.17	37	0.002	28	0	149	0.003	31
10		min	-0.177	35	0	21	-0.163	7	-0.002	10	0	1	-0.002	13
11	N152	max	0.19	28	0.038	59	0.133	4	0.002	36	0	149	0.002	3
12		min	-0.187	10	0	19	-0.141	34	-0.002	6	0	1	-0.002	33
13	N153	max	0.119	5	0.038	51	0.208	2	0.002	8	0	149	0.003	35
14		min	-0.125	35	0	17	-0.209	32	-0.002	26	0	1	-0.003	5
15	N247A	max	1.345	12	2.49	55	3.159	55	0	67	0	121	0	121
16		min	-5.467	55	-0.61	12	-0.773	12	0	121	0	67	0	67
17	N249A	max	5.46	59	2.486	59	3.153	59	0	121	0	121	0	121
18		min	-1.339	4	-0.608	4	-0.771	4	0	6	0	6	0	6
19	Totals:	max	3.686	5	6.687	51	3.245	2						
20		min	-3.686	35	0	8	-3.245	32						

**Envelope AISC 14TH (360-10): LRFD Member Steel Code Checks**

Member	Shape	Code Check	Loc [ft]	LC	Shear	Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M55	PIPE 2.0	0.56	2.75	35	0.11	5.333	30	14.916	32.13	1.872	1.872	1	H1-1b	
2	M30	PIPE 2.0	0.536	2.75	26	0.085	5.333	35	14.916	32.13	1.872	1.872	1	H1-1b	
3	M45	PIPE 2.0	0.497	2.75	29	0.12	5.333	28	14.916	32.13	1.872	1.872	1	H1-1b	
4	M98	PIPE 2.0	0.362	0.75	37	0.101	0.75	37	26.521	32.13	1.872	1.872	1	H1-1b	
5	M29	C5X6.7	0.348	4.149	108	0.186	6.483	y 89	27.031	63.828	1.604	6.551	1.405	H1-1b	
6	M28	C5X6.7	0.348	4.149	105	0.202	0.648	y 35	27.031	63.828	1.604	6.536	1.401	H1-1b	
7	M13	1/2"X9"	0.346	0.398	62	0.175	0.796	y 89	110.855	145.8	1.519	27.338	1.335	H1-1b	
8	M124	1/2"X9"	0.34	0.398	59	0.174	0.796	y 96	110.855	145.8	1.519	27.338	1.339	H1-1b	
9	M118A	1/2"X9"	0.338	0.398	54	0.176	0.796	y 93	110.855	145.8	1.519	27.338	1.336	H1-1b	
10	M93	PIPE 2.0	0.33	0.75	34	0.092	0.75	34	26.521	32.13	1.872	1.872	1	H1-1b	
11	M113	PIPE 2.0	0.317	0.802	31	0.086	0.802	31	22.356	32.13	1.872	1.872	1	H1-1b	
12	M27	C5X6.7	0.317	4.149	101	0.185	6.483	y 93	27.031	63.828	1.604	7.48	1	H1-1b	
13	M88	PIPE 2.0	0.312	0.75	29	0.087	0.75	29	26.521	32.13	1.872	1.872	1	H1-1b	
14	M50	PIPE 2.0	0.311	0.75	31	0.067	0.75	31	26.521	32.13	1.872	1.872	1	H1-1b	
15	M2	L3X3X4	0.305	1.142	29	0.123	7.742	z 36	5.207	46.656	1.688	2.878	1.5	H2-1	
16	M3	L3X3X4	0.3	1.142	29	0.122	4.442	z 34	5.207	46.656	1.688	2.878	1.5	H2-1	
17	M1	L3X3X4	0.298	1.142	32	0.127	4.442	z 37	5.207	46.656	1.688	2.878	1.5	H2-1	
18	M83	PIPE 2.0	0.297	0.75	37	0.083	0.75	37	26.521	32.13	1.872	1.872	1	H1-1b	
19	M40	PIPE 2.0	0.287	0.75	28	0.058	0.75	27	26.521	32.13	1.872	1.872	1	H1-1b	
20	M108	PIPE 2.0	0.286	0.802	27	0.077	0.802	28	22.356	32.13	1.872	1.872	1	H1-1b	
21	M103	PIPE 2.0	0.285	0.802	35	0.076	0.802	35	22.356	32.13	1.872	1.872	1	H1-1b	
22	M4	PIPE 2.0	0.282	0.75	35	0.063	0.75	35	26.521	32.13	1.872	1.872	1	H1-1b	
23	M78	PIPE 2.0	0.268	0.75	34	0.074	0.75	34	26.521	32.13	1.872	1.872	1	H1-1b	
24	M35	PIPE 2.0	0.25	0.75	29	0.069	0.75	29	26.521	32.13	1.872	1.872	1	H1-1b	
25	M8	HSS4X4X3	0.176	5.699	54	0.084	4.559	z 119	90.409	106.812	12.662	12.662	1.338	H1-1b	
26	M7	HSS4X4X3	0.174	5.699	61	0.085	4.559	z 115	90.409	106.812	12.662	12.662	1.933	H1-1b	
27	M10	HSS4X4X3	0.173	5.699	57	0.084	4.559	z 112	90.409	106.812	12.662	12.662	1.62	H1-1b	
28	M63	LL2.5X2.5X3X3	0.161	4.828	51	0.003	4.828	y 62	42.8	58.32	3.954	2.55	1	H1-1b*	
29	M116A	LL2.5X2.5X3X3	0.159	4.828	55	0.003	4.828	y 60	42.8	58.32	3.954	2.55	1	H1-1b*	
30	M117A	LL2.5X2.5X3X3	0.158	4.828	59	0.003	4.828	y 61	42.8	58.32	3.954	2.55	1	H1-1b*	
31	M61	1/2"X6"	0.126	0	26	0.125	1.412	y 26	47.04	97.2	1.012	12.15	1.74	H1-1b	



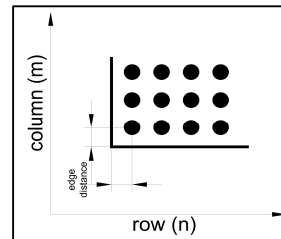


**Envelope AISC 14TH (360-10): LRFD Member Steel Code Checks (Continued)**

Member	Shape	Code Check	Loc [ft]	LC	Shear Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
32	M62	1/2"X6"	0.125	0	29	0.115	1.412	y	29	47.04	97.2	1.012	12.15	1.548	H1-1b
33	M60	1/2"X6"	0.116	0	34	0.111	1.412	y	34	47.04	97.2	1.012	12.15	1.83	H1-1b
34	M9	L4X4X4	0.07	2.543	57	0.007	5.085	z	62	42.591	62.532	3.138	6.134	1.118	H2-1
35	M24	L4X4X4	0.066	2.49	53	0.006	0	z	109	42.591	62.532	3.138	6.133	1.118	H2-1
36	M21	L4X4X4	0.064	2.542	61	0.006	5.085	z	102	42.591	62.532	3.138	6.133	1.117	H2-1
37	M23	3/8"X3"	0.062	0	35	0.009	0	y	104	31.007	36.45	0.285	2.278	2.155	H1-1b
38	M19	3/8"X3"	0.058	0	37	0.01	0	y	62	31.005	36.45	0.285	2.278	1.463	H1-1b
39	M25	3/8"X3"	0.056	0	30	0.009	0	y	106	31.005	36.45	0.285	2.278	2.145	H1-1b
40	M26	3/8"X3"	0.047	0	26	0.009	0	y	108	31.007	36.45	0.285	2.278	1.776	H1-1b
41	M20	3/8"X3"	0.046	0	31	0.009	0	y	53	31.007	36.45	0.285	2.278	1.986	H1-1b
42	M22	3/8"X3"	0.042	0.5	35	0.009	0	y	102	31.005	36.45	0.285	2.278	1.309	H1-1b
43	M74	L2.5X2.5X3	0.022	1.653	59	0.019	3.306	z	33	20.224	29.192	0.873	1.823	1.136	H2-1
44	M73	L2.5X2.5X3	0.022	1.653	55	0.021	3.306	y	31	20.224	29.192	0.873	1.823	1.136	H2-1
45	M76	L2.5X2.5X3	0.021	1.653	51	0.022	3.306	y	36	20.224	29.192	0.873	1.823	1.136	H2-1
46	M75	L2.5X2.5X3	0.021	1.653	58	0.02	3.306	z	35	20.224	29.192	0.873	1.823	1.136	H2-1
47	M72	L2.5X2.5X3	0.021	1.653	56	0.019	3.306	z	28	20.224	29.192	0.873	1.823	1.136	H2-1
48	M77	L2.5X2.5X3	0.021	1.653	59	0.021	3.306	z	28	20.224	29.192	0.873	1.823	1.136	H2-1

## Bolt Calculator

Capacity Input:	N	4/3 Increase	N
Analysis/Design:	Analysis		
ASD/LRFD:	ASD		



Data		Auto Calc Capacity
Bolt Properties		
Nominal Diameter (d)	5/8	inches
Steel Grade	A307	
Threads Excluded?	N	
Yield Strength (Fyb)	36	ksi
Ultimate Strength (Fub)	60	ksi
Threads/in (n)	11	
Gross Area (Agb)	0.307	in <sup>2</sup>
Net Area (Anb)	0.226	in <sup>2</sup>

Bolt Group Properties	
No. of Column	2
No. of Rows	3
Bolt Spacing per Row	3 inches
Bolt Spacing per Column	6 inches
Edge Distance	1 inches
Parallel along	Y-Axis

Pu_x	5460.0	lbs
Pu_y	2522.0	lbs
Pu_z	3957.0	lbs

Mu_x	278.0	lbs-ft
Mu_y	1108.0	lbs-ft
Mu_z	318.0	lbs-ft

Bolt Capacity ( 0.625 A307 Bolts)				
	Ult Load/ Bolt	Capacity	# of Bolts	Factor Joint Capacity
Shear	3129.3	3129.3	6	18775.9
Axial	6074.6	6074.6	6	36447.4

Interaction Check	
V / φVn	55.8%
T / φTn	12.9%
≤1.0	32.8%
Pass	

# 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: CT11155F

Plainfield/ I-395 X90\_1  
56 Roper Road  
Plainfield, Connecticut 06354

**April 28, 2022**

**EBI Project Number: 6222002868**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>24.97%</b>

April 28, 2022

T-Mobile

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

Emissions Analysis for Site: CT11155F - Plainfield/ I-395 X90\_I

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **56 Roper Road in Plainfield, 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 56 Roper Road in Plainfield, 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 IC 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 IC 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 Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative

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

- 14) The antenna mounting height centerline of the proposed antennas is 165 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:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 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):	165 feet	Height (AGL):	165 feet	Height (AGL):	165 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 A1 MPE %:	4.41%	Antenna B1 MPE %:	4.41%	Antenna C1 MPE %:	4.41%
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 / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	165 feet	Height (AGL):	165 feet	Height (AGL):	165 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A2 MPE %:	3.36%	Antenna B2 MPE %:	3.36%	Antenna C2 MPE %:	3.36%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	7.77%
Verizon	12.26%
AT&T	1.6%
Metro PCS	0.29%
Sprint	2.84%
Nextel	0.21%
Site Total MPE % :	24.97%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	7.77%
T-Mobile Sector B Total:	7.77%
T-Mobile Sector C Total:	7.77%
Site Total MPE % :	24.97%

### T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	9619.47	165.0	13.68	2500 MHz LTE IC & 2C Traffic	1000	1.37%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	717.84	165.0	1.02	2500 MHz LTE IC & 2C Broadcast	1000	0.10%
T-Mobile 2500 MHz NR Traffic	1	19238.94	165.0	27.36	2500 MHz NR Traffic	1000	2.74%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	165.0	2.04	2500 MHz NR Broadcast	1000	0.20%
T-Mobile 600 MHz LTE	2	591.73	165.0	1.68	600 MHz LTE	400	0.42%
T-Mobile 600 MHz NR	1	1577.94	165.0	2.24	600 MHz NR	400	0.56%
T-Mobile 700 MHz LTE	2	695.22	165.0	1.98	700 MHz LTE	467	0.42%
T-Mobile 1900 MHz GSM	4	1052.26	165.0	5.99	1900 MHz GSM	1000	0.60%
T-Mobile 1900 MHz LTE	2	2104.51	165.0	5.99	1900 MHz LTE	1000	0.60%
T-Mobile 2100 MHz LTE	2	2649.42	165.0	7.54	2100 MHz LTE	1000	0.75%
						<b>Total:</b>	<b>7.77%</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:	7.77%
Sector B:	7.77%
Sector C:	7.77%
T-Mobile Maximum MPE % (Sector A):	7.77%
Site Total:	24.97%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **24.97%** 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



**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com 9405 5036 9930 0238 2172 24 0079 0000 0010 6374  
**US POSTAGE**  
 Flat Rate Env  
**U.S. POSTAGE PAID**  
Click-N-Ship®

05/02/2022 Mailed from 01566

**PRIORITY MAIL 2-DAY™**


Expected Delivery Date: 05/05/22  
 Ref#: SBCT-155F  
**0006**

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

**C001**

SHIP TO: KEVIN M CUNNINGHAM  
 FIRST SELECTMAN  
 8 COMMUNITY AVE  
 PLAINFIELD CT 06374-1238

**USPS TRACKING #**



**9405 5036 9930 0238 2172 24**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

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2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0238 2172 24**

Trans. #: 562593428	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/02/2022	Total: <b>\$8.95</b>
Ship Date: 05/02/2022	
Expected Delivery Date: 05/05/2022	

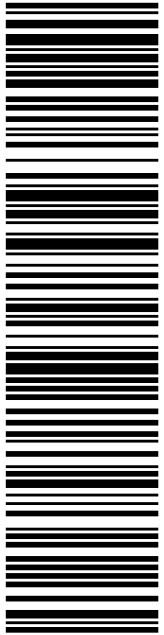
**From:** DEBORAH CHASE      Ref#: SBCT-155F  
 NORTHEAST SITE SOLUTIONS  
 420 MAIN ST  
 STE 1  
 STURBRIDGE MA 01566-1359

**To:** KEVIN M CUNNINGHAM  
 FIRST SELECTMAN  
 8 COMMUNITY AVE  
 PLAINFIELD CT 06374-1238

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**USPS TRACKING #**

**9405 5036 9930 0238 2172 31**

Electronic Rate Approved #038555749

**SHIP TO:** MARY ANN CHINATTI  
TOWN PLANNER- PLAINFIELD  
8 COMMUNITY AVE  
PLAINFIELD CT 06374-1238

**C001**

**P**

05/02/2022 Mailed from 01566

**USPS TRACKING #**  
**9405 5036 9930 0238 2172 31**

**US POSTAGE PAID**  
click-n-ship®



**US POSTAGE**  
Flat Rate Env  
\$8.95

usps.com 9405 5036 9930 0238 2172 31 0079 0000 0010 6374

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

**Expected Delivery Date: 05/05/22**  
**Ref#: SBCT-155F**  
**0006**

**PRIORITY MAIL 2-DAY™**



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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0238 2172 31**

Trans. #: 562593428	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/02/2022	Total: <b>\$8.95</b>
Ship Date: 05/02/2022	
Expected Delivery Date: 05/05/2022	

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

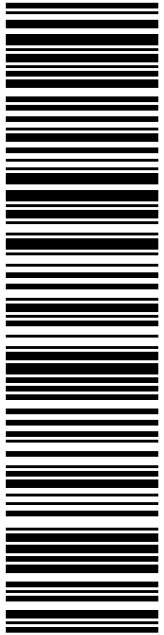
**To:** MARY ANN CHINATTI  
TOWN PLANNER- PLAINFIELD  
8 COMMUNITY AVE  
PLAINFIELD CT 06374-1238

Ref#: SBCT-155F

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**USPS TRACKING #**

**9405 5036 9930 0238 2172 48**

Electronic Rate Approved #038555749

**SHIP TO:** KRI PELLETIER  
SBA COMMUNICATIONS CORPORATION  
13 FLANDERS RD  
STE 125  
WESTBOROUGH MA 01581

**R005**

**P**

05/02/2022 Mailed from 01566


**USPS TRACKING #**  
**9405 5036 9930 0238 2172 48**

**US POSTAGE**  
Flat Rate Env  
**U.S. POSTAGE PAID**  
click-n-ship®

**PRIORITY MAIL 1-DAY™**

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

Expected Delivery Date: 05/03/22  
Ref#: SBCT-155F  
**0006**



**Click-N-Ship®**



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

## Click-N-Ship® Label Record

<b>USPS TRACKING # :</b>	
<b>9405 5036 9930 0238 2172 48</b>	
Trans. #: 562593428	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/02/2022	Total: <b>\$8.95</b>
Ship Date: 05/02/2022	
Expected Delivery Date: 05/03/2022	
<hr/>	
<b>From:</b> DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	Ref#: SBCT-155F
<hr/>	
<b>To:</b> KRI PELLETIER SBA COMMUNICATIONS CORPORATION 13 FLANDERS RD STE 125 WESTBOROUGH MA 01581	
<p><small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small></p>	



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**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com 9405 5036 9930 0238 2172 79 0079 0000 0010 6131  
**US POSTAGE**  
 Flat Rate Env  
**U.S. POSTAGE PAID**  
Click-N-Ship®

05/02/2022 Mailed from 01566

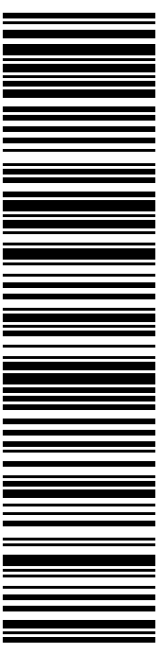
**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/05/22  
 Ref#: SBCT-155F  
**0006**

**B012**

SHIP TO:  
 TILCON, INC.  
 PO BOX 311228  
 NEWINGTON CT 06131-1228

**USPS TRACKING #**



**9405 5036 9930 0238 2172 79**

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 0238 2172 79**

Trans. #: 562593428	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/02/2022	Total: <b>\$8.95</b>
Ship Date: 05/02/2022	
Expected Delivery Date: 05/05/2022	

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

Ref#: SBCT-155F

**To:** TILCON, INC.  
 PO BOX 311228  
 NEWINGTON CT 06131-1228

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CT1155F SBA-TMO



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

05/02/2022 04:24 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 1.90 oz Acceptance Date: Mon 05/02/2022 Tracking #: 9405 5036 9930 0238 2172 48	1		\$0.00
Prepaid Mail Plainfield, CT 06374 Weight: 0 lb 6.70 oz Acceptance Date: Mon 05/02/2022 Tracking #: 9405 5036 9930 0238 2172 31	1		\$0.00
Prepaid Mail Newington, CT 06131 Weight: 0 lb 6.70 oz Acceptance Date: Mon 05/02/2022 Tracking #: 9405 5036 9930 0238 2172 79	1		\$0.00
Prepaid Mail Plainfield, CT 06374 Weight: 0 lb 6.70 oz Acceptance Date: Mon 05/02/2022 Tracking #: 9405 5036 9930 0238 2172 24	1		\$0.00

Grand Total: \$0.00

\*\*\*\*\*  
Every household in the U.S. is now  
eligible to receive a second set  
of 4 free test kits.  
Go to [www.covidtests.gov](http://www.covidtests.gov)  
\*\*\*\*\*

