NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

May 26, 2022

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

RE: Exempt Modification Application
157 Chestnut Hill Road, Stafford Springs, CT 06076
Latitude: 41.977900
Longitude: -72.383333
Site #: CT13617-A _CT11530B_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 157 Chestnut Hill Road, Stafford Springs, CT 06076. T-Mobile currently maintains six (6) antennas at the 177-foot level of the existing 180-foot self-support tower. The property is owned by Troiano Realty Corp., and the tower is owned by SBA. T-Mobile now intends to replace (3) antennas and install (3) antennas. The new antennas would be installed at the 177-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

T-Mobile Planned Modifications:
Remove:
(2) COAX 1-5/8"
(3) HCS Fiber Cable 1-5/8"

Remove and Replace:
(3) RFS Antennas (REMOVE) - (3) ERICSSON AIR6449 B41 Antennas (REPLACE)

Install New:
(3) ERICSSON 4460 B25+B66 RRU
(4) HCS Fiber Cable 1.9"

Existing to Remain:
(3) RFS APXVAARR24-43-U-NA20 Antennas
(3) ERICSSON 4449 B71+B85 RRU
(3) ERICSSON KRY 112/489/2 TMAs *
(3) KATHREIN 782 11056 Bias Ts *
(7) COAX 1-5/8" *

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

The facility was approved by the Town of Stafford Planning & Zoning Commission on September 11, 2001. 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.SA. § 16-SOj-73, a copy of this letter is being sent to Sal P. Titus, First Selectman and David Perkins, Zoning Enforcement Officer for the Town of Stafford, 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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Sal P. Titus, First Selectman
Warren Memorial Town Hall
1 Main Street
Stafford Springs, CT 06076

David Perkins, Zoning Enforcement Officer
Warren Memorial Town Hall
1 Main Street
Stafford Springs, CT 06076

Troiano Realty Corp. - Property Owner
777 Enfield Street
Enfield, CT 06082

SBA - Tower Owner

Exhibit A

Original Facility Approval

SITE NAME: TROIANO REALTY SITE ID: CT13617-A

Transaction: Light Tower

ZONING/PERMITTING COMPLETION FORM

Address: 157 Chestnut Mtn. Rd., ~~Tolland~~ Stafford, CT 06076

Jurisdiction: Conn. Siting Council, Town of Stafford Zoning District:

Zoning Approval Type: CSC / Special Use Permit Case #:

Approval Date: 9/11/01 Approved Height: 180' Tower Build Date:

If tower is destroyed or drop/swap required, tower can likely be rebuilt? ☐ YES ☐ NO

Conditions of Approval:

	Yes	No	N/A
Removal Bond	☐	☑	☐
Site Plan Submittal	☐	☑	☐
Fall Zone	☐	☑	☐
Periodic Inspections	☐	☑	☐
Periodic Reporting	☐	☑	☐
Approval Renewal	☐	☑	☐
Additional Conditions	☑	☑	☐

Utilities be placed underground

JURISDICTION POC/DEPT.

Planning/Zoning: M. J. (Town of Stafford)

Phone: 860-684-1775 Fax:

Bldg./Code Enforcement:

Phone: Fax:

Submitted by: Patches Estes Date: 9/23/08
Zoning Compliance

TO BE COMPLETED BY CORPORATE

	Yes	No	N/A	
Zoning Approval Attached (required)	☑	☐	☐	
Ordinance Attached (required)	☐	☑	☐	
Building Permit Attached (required) Town of Stafford 8691	☑	☐	☐	Date Recd 12/11/2001
Certificate of Occupancy or Compliance (CO) attached (required)	☑	☐	☐	3/11/2002

Zoning Manager Approval: D E Borchardt Date 9/23/2008
Diane E. Borchardt, AICP

Town of Stafford
The Stafford Planning & Zoning Commission

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

(860) 684-7444
FAX 684-9845

TOWN OF STAFFORD
LEGAL NOTICE

Notice is hereby given that the Stafford Planning & Zoning Commission at a regularly scheduled meeting held on September 11, 2001, at 7:00 p.m. in the Veterans Meeting Room, Warren Memorial Town Hall, Stafford, CT rendered the following:

1. Approved, with condition, Special Use Permit Application of Tower Ventures, Inc. to construct 180 foot telecommunication tower within a 75' x 75' fenced compound for ground equipment. Location: 157 Chestnut Hill, Assessor's Map #34, Lot #32, AAA Zone.

John Mocko
Chairman

Journal Inquirer
September 14, 2001

Town of Stafford
The Stafford Planning & Zoning Commission

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

Telephone: (860) 684-1775
Fax: (860) 684-1768

AGENDA
STAFFORD PLANNING & ZONING COMMISSION
Meeting Date: September 11, 2001
7:00 p.m.
Veterans Meeting Room
Warren Memorial Town Hall
Stafford Springs, CT

COPY

PUBLIC HEARING

1. Special Use Permit Application of Tower Ventures, Inc., to construct 180 foot telecommunication tower within a 75' x 75' fenced compound for ground equipment. Location: 157 Chestnut Hill, Assessor's Map #34, Lot #32, AAA Zone.

AGENDA

1. Review of minutes of August 28, 2001 regular meeting.

2. Discussion - Special Use Permit application of Tower Ventures, for telecommuncation tower. Location: 157 Chestnut Hill, Assessors' Map #34, Lot #32, AAA Zone.

3. Adjournment.

Wendell Avery
Zoning Enforcement Officer

Agenda Closed: 9/7/01

COPY

Town of Stafford
Planning & Zoning Commission
Regular Meeting
September 11, 2001
7:00 p.m. - Veterans Meeting Room

Members Present: Jack Mocko, Chairman
Roger Pelizari
Nancy Ravetto
Peter Rossi

Also Present: Wendell Avery, Zoning Enforcement Officer

Meeting Agenda:

1. Review minutes of August 28, 2001 regular meeting.
2. Discussion - Special Use Permit application for Tower Ventures, Inc. to construct 180-foot telecommunication tower. Location 157 Chestnut Hill, Assessor's Map #34, Lot #32, AAA Zone.
3. Adjournment.

A Public hearing was held prior to the regular meeting re Item #3, Tower Ventures, Inc., tape-recorded and filed in the office of the Town Clerk.

Chairman Mocko called the regular meeting to order at 8:20 p.m. following the public hearing.

1. **Review minutes of August 28, 2001 regular meeting.**
   Peter Rossi made a motion to accept the minutes of the August 28, 2001 meeting as presented. Second by Nancy Ravetto. Motion for approval passed unanimously.

2. **Discussion - Special Use Permit application for Tower Ventures, Inc. to construct 180-foot telecommunication tower. Location 157 Chestnut Hill.**
   Attorney Chris Smith of Pullman & Comley and David Vivian of Tower Ventures, Inc. made their presentation for the proposed cell tower to be located at 157 Chestnut Hill Road. The Board was in agreement that the Town regulations for cell towers were adhered to and took the following action on the Special Use Permit for Tower Ventures, Inc. Nancy Ravetto made a motion to approve the Special Use Permit Application of Tower Ventures Inc., to construct a 180 foot telecommunication tower within a 75' x 75' fenced compound for ground equipment with condition that utilities be placed underground. Location: 157 Chestnut Hill, Assessor's Map #34, Lot #32, AAA Zone. Second by Roger Pelizari. Motion for approval passed 3-0.

3. **Adjournment.**
   There being no further business to come before the Board, Roger Pelizari made a motion for adjournment, seconded by Nancy Ravetto. Regular meeting adjourned at 8:30 p.m.

Respectfully submitted,

Mary Jane LaMorte

Mary Jane LaMorte
Recording Secretary

Exhibit B

Property Card

157 CHESTNUT HILL

Location	157 CHESTNUT HILL	**Mblu**	34/ / 32/ /
Acct#	00167400	**Owner**	TROIANO REALTY CORP
Assessment	$313,530	**Appraisal**	$447,900
PID	1896	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$46,400	$401,500	$447,900
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$32,480	$281,050	$313,530

Owner of Record

Owner	TROIANO REALTY CORP
Co-Owner	%ANTONIO TROIANO
Address	777 ENFIELD ST ENFIELD, CT 06082

Sale Price	$0
Certificate	1
Book & Page	0110/0503
Sale Date	01/27/1961
Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
TROIANO REALTY CORP	$0	1	0110/0503	00	01/27/1961

Building Information

Building 1 : Section 1

Year Built:	1985
Living Area:	1,008
Replacement Cost:	$51,862
Building Percent Good:	77
Replacement Cost Less Depreciation:	$39,900

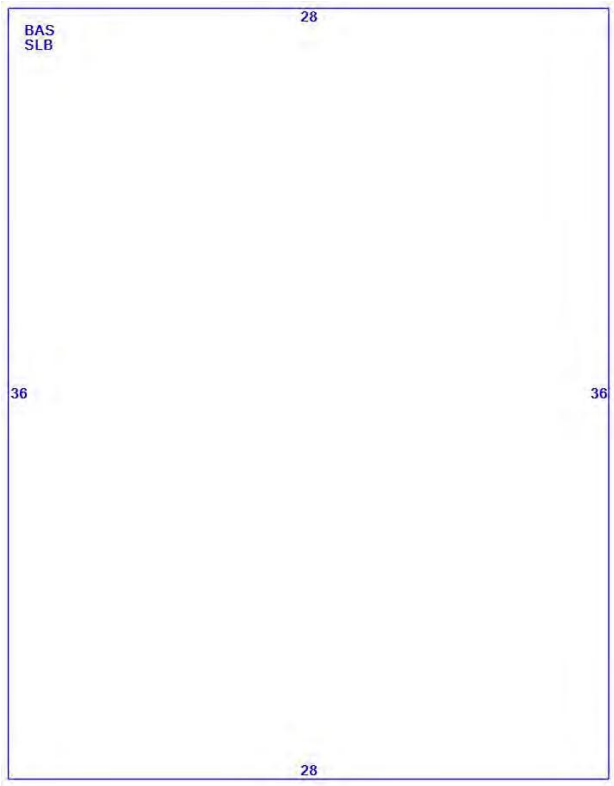
Building Attributes

Field	Description
STYLE	Warehouse
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Forced Hot Air
AC Type	Central
Struct Class	
Bldg Use	Industrial
Total Bedrooms	
Total Baths	
1st Floor Use:	
Heat/AC	Heat/AC Pkg.
Frame Type	Masonary
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	12.00
Num Fixtures	

Building Photo

(http://images.vgsi.com/photos2/StaffordCTPhotos//\00\01\13\65.jpg)

Building Layout



(ParcelSketch.ashx?pid=1896&bid=1896)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,008	1,008
SLB	Slab	1,008	0
		2,016	1,008

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	301
Description	Industrial
Zone	AAA
Neighborhood	502
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	50.00
Frontage	
Depth	
Assessed Value	$281,050
Appraised Value	$401,500

Outbuildings

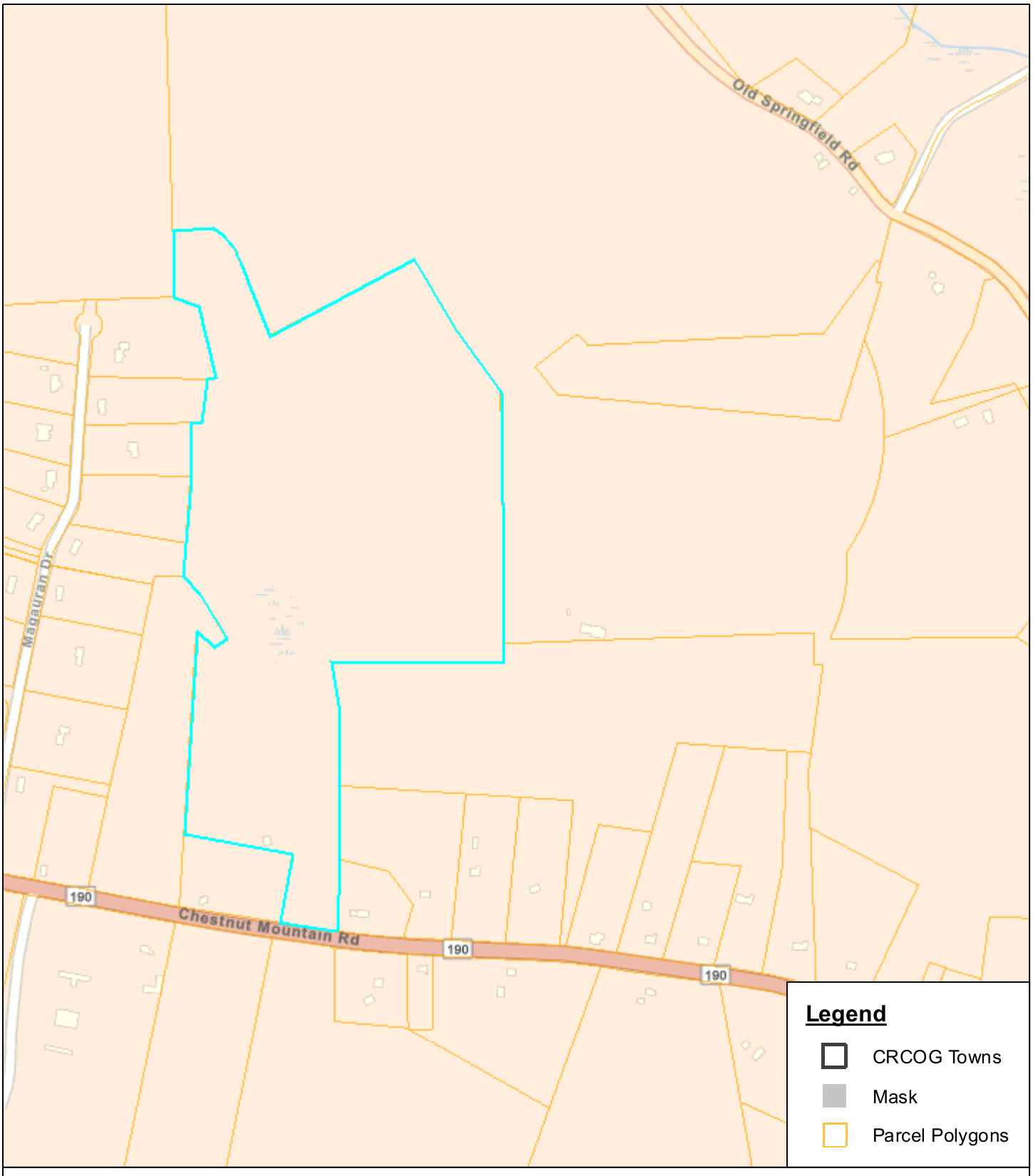
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN3	FENCE-6' CHAIN			300.00 L.F.	$1,400	1
FN4	FENCE-8' CHAIN			360.00 L.F.	$2,000	1
SHD1	Shed	MS	Masonry	160.00 S.F.	$1,300	1
SHD1	Shed	MS	Masonry	220.00 S.F.	$1,800	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$47,400	$426,000	$473,400
2018	$47,400	$426,000	$473,400
2017	$47,400	$426,000	$473,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$33,180	$298,200	$331,380
2018	$33,180	$298,200	$331,380
2017	$33,180	$298,200	$331,380

157 CHESTNUT HILL ROAD



N
W E
S

CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

Scale
1:9,028
Created: 5/26/2022

Exhibit C

Construction Drawings

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).

TOWER VENTURES - STAFFORD

157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076
TOLLAND COUNTY

SITE NO.: CT11530B

SITE TYPE: 180'± SELF-SUPPORT TOWER

RF DESIGN GUIDELINE: 67D5D998E 6160

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 3 TMA'S
- 3 HYBRID CABLES
- ALL COAX CABLES
- 1 RBS 6201 ODE
- 1 BATTERY CABINET

INSTALL:
- 3 ANTENNAS
- 3 RADIOS
- 1 B160 BATTERY CABINET
- 1 6160 CABINET
- 1 SLACKBOX
- 4 HYBRID CABLES

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - 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.

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

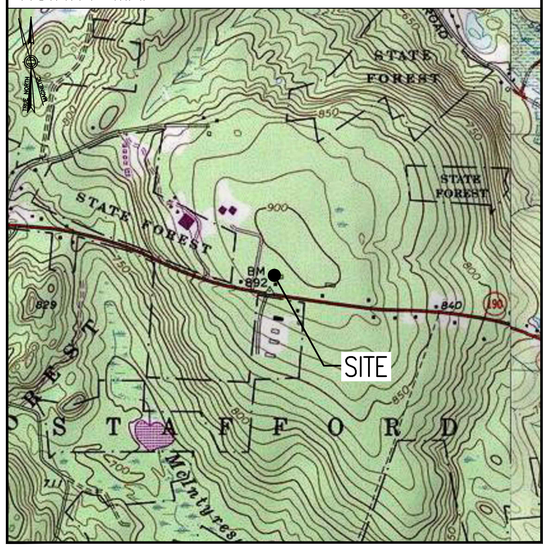
GENERAL NOTES

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

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

HEAD NORTHEAST TOWARD COMMERCE WAY. TURN LEFT ONTO SOUTH WASHINGTON STREET. TURN RIGHT ONTO MA-123 EAST. TURN LEFT TO MERGE ONTO I-495 NORTH. TAKE EXIT 58 TOWARD I-90 WEST. CONTINUE ONTO I-90 WEST. TAKE EXIT 78 TOWARD I-84. TAKE EXIT 73 FOR CT-190 WEST. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO MAIN STREET. CONTINUE ONTO WEST STAFFORD ROAD. AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO CT-190 WEST. SITE IS LOCATED ON THE RIGHT SIDE.

SHEET INDEX

SHT. NO.	DESCRIPTION	VER.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLAN	0
A-2	TOWER ELEVATIONS & ANTENNA PLAN	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.

PROJECT SUMMARY

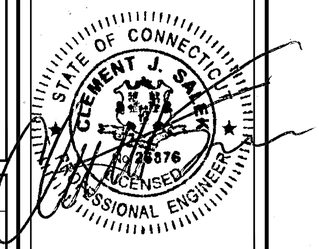
SITE NUMBER:	CT11530B
SITE NAME:	TOWER VENTURES - STAFFORD
SBA SITE NUMBER:	CT13617-A
SBA SITE NAME:	TROIANO REALTY
SITE ADDRESS:	157 CHESTNUT HILL ROAD STAFFORD SPRINGS, CT 06076
PROPERTY OWNER:	TROIANO REALTY CORP & ANTONIO TROIANO 777 ENFIELD STREET ENFIELD, CT 06082
TOWER OWNER:	SBA TOWERS V, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	TOLLAND
ZONING DISTRICT:	AAA (INDUSTRIAL)
STRUCTURE TYPE:	SELF-SUPPORT TOWER
STRUCTURE HEIGHT:	180'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.977300° N.41°58'38.28" LONGITUDE W.72.383000° W.72°22'58.80"

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.469

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – T–MOBILE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

7. CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying

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

STATE OF CONNECTICUT
CLEMENT J. SAMI
No. 26876
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
GENERAL NOTES

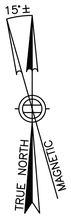
SHEET NUMBER
GN-1

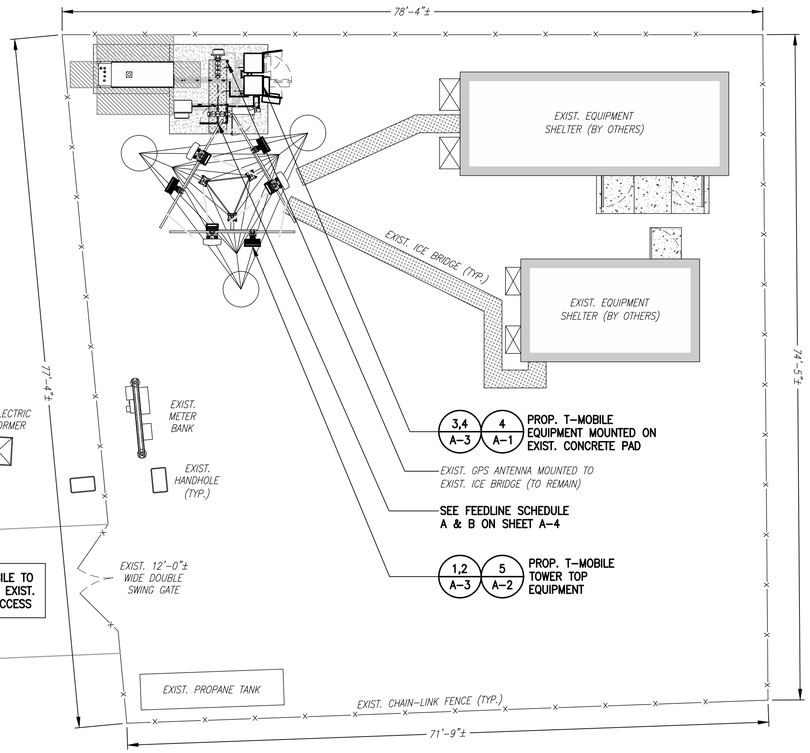
1815.469

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.

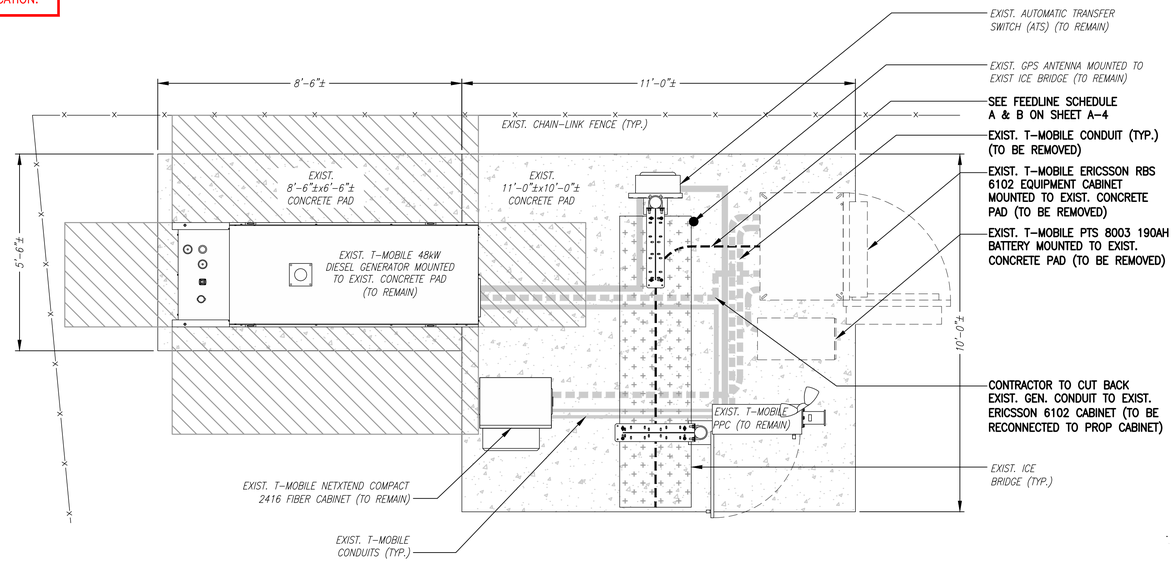
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED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

EXISTING EQUIPMENT PHOTO (2 / A-1)
SCALE: N.T.S.



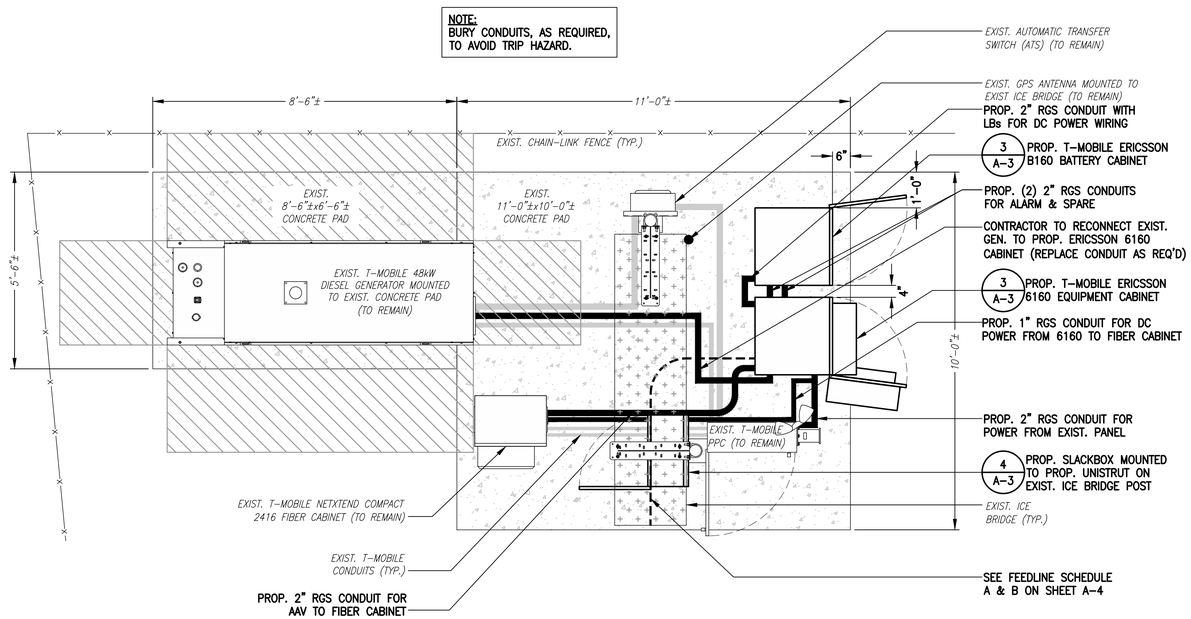


COMPOUND PLAN (1 / A-1)
SCALE: 1/8" = 1'-0"
0 8'-0" 16'-0 24'-0"



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

NOTE:
BURY CONDUITS, AS REQUIRED, TO AVOID TRIP HAZARD.

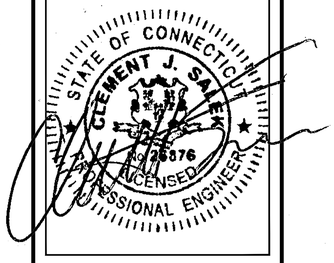


PROPOSED EQUIPMENT PLAN (4 / A-1)
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 6'-0"
NORTH

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

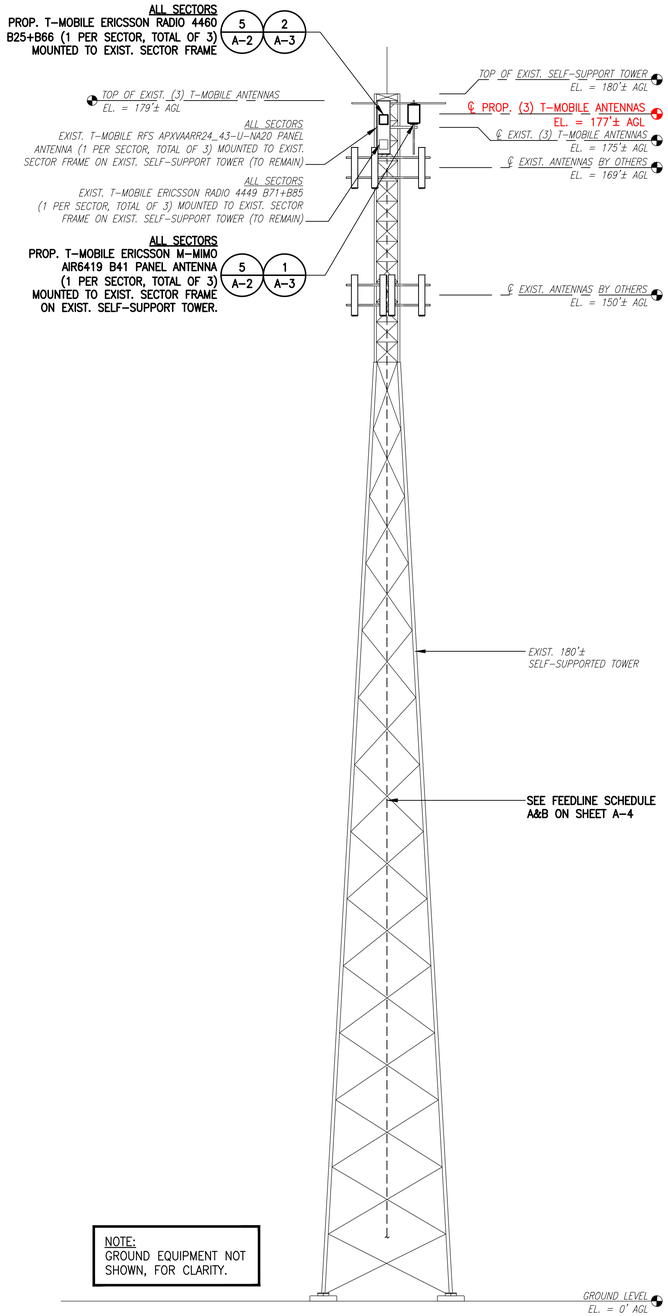
1815.469

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).

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.

EXISTING TOWER PHOTO (1 / A-2)
SCALE: N.T.S.

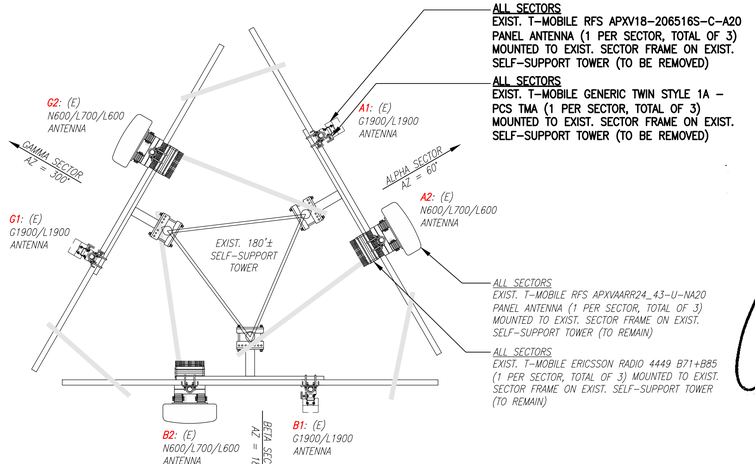


TOWER ELEVATION (2 / A-2)
SCALE: 3/32" = 1'-0"
0 10'-8" 21'-4" 32'-0"

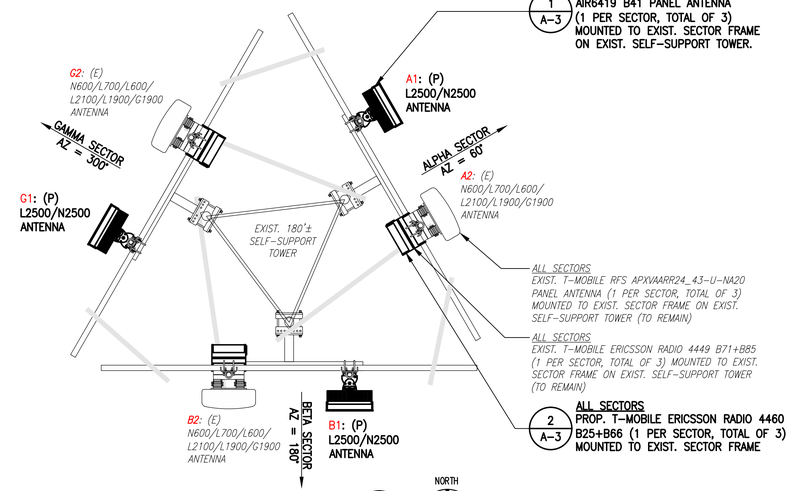
EXISTING ANTENNA PHOTO (3 / A-2)
SCALE: N.T.S.

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

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



EXISTING ANTENNA PLAN (4 / A-2)
SCALE: 3/8" = 1'-0"
NORTH



PROPOSED ANTENNA PLAN (5 / A-2)
SCALE: 3/8" = 1'-0"
NORTH

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT · CLEMENT J. SAMEK · No. 26876 · LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

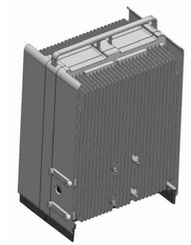
SHEET NUMBER
A-2

1815.469

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

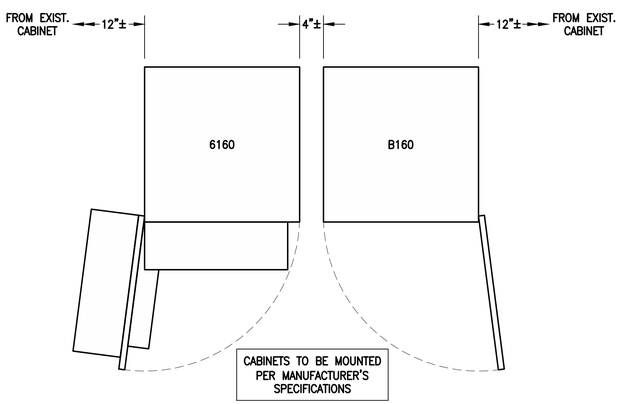
ANTENNA DETAILS (1 / A-3)
SCALE: N.T.S.



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



ERICSSON 6160 SITE SUPPORT CABINET

DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
WEIGHT: 680.0 lbs
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET

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

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

SLACKBOX – HOFFMAN 32FH91 NEMA 3R ENCLOSURE

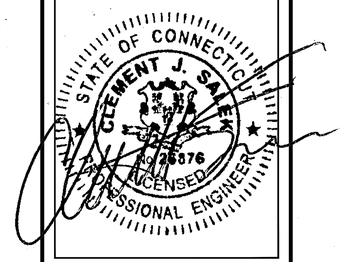
DIMENSIONS: 24.0"H x 24.0"W x 12.0"D
QUANTITY: TOTAL OF 1

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

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.469

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 ERICSSON M-MIMO AIR6419 B41	177'± AGL	60°	0°	0°	L2500/N2500	–	(4) 2" (6x24) HCS FIBER CABLES
	A2 *RFS APXVAARR24_43-U-NA20*	*175'± AGL*	*60°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
						L2100/L1900/G1900	RADIO 4460 B25+B66	
BETA	B1 ERICSSON M-MIMO AIR6419 B41	177'± AGL	180°	0°	0°	L2500/N2500	–	
	B2 *RFS APXVAARR24_43-U-NA20*	*175'± AGL*	*180°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
						L2100/L1900/G1900	RADIO 4460 B25+B66	
GAMMA	G1 ERICSSON M-MIMO AIR6419 B41	177'± AGL	300°	0°	0°	L2500/N2500	–	
	G2 *RFS APXVAARR24_43-U-NA20*	*175'± AGL*	*300°*	*0°*	*0°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
						L2100/L1900/G1900	RADIO 4460 B25+B66	

CABLE NOTE: ALL COAX CABLES & (3) 1-⅝" (6x12) HCS FIBER CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV4 – 03/10/22

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) ½" COAX CABLE FOR GPS ANTENNA*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(3) 1⅝" (6x12) HCS FIBER CABLES* *ALL COAX CABLES*	
B	PROPOSED:	(4) 2" (6x24) HCS FIBER CABLES	

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

T-MOBILE NORTHEAST LLC
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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAVINI
No. 26876
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

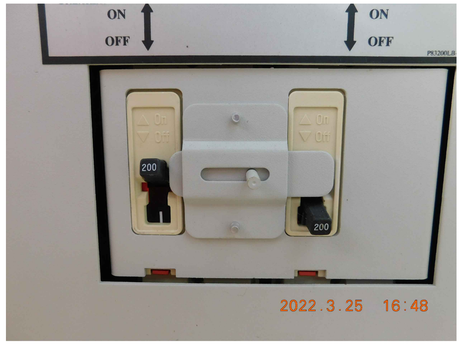
SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

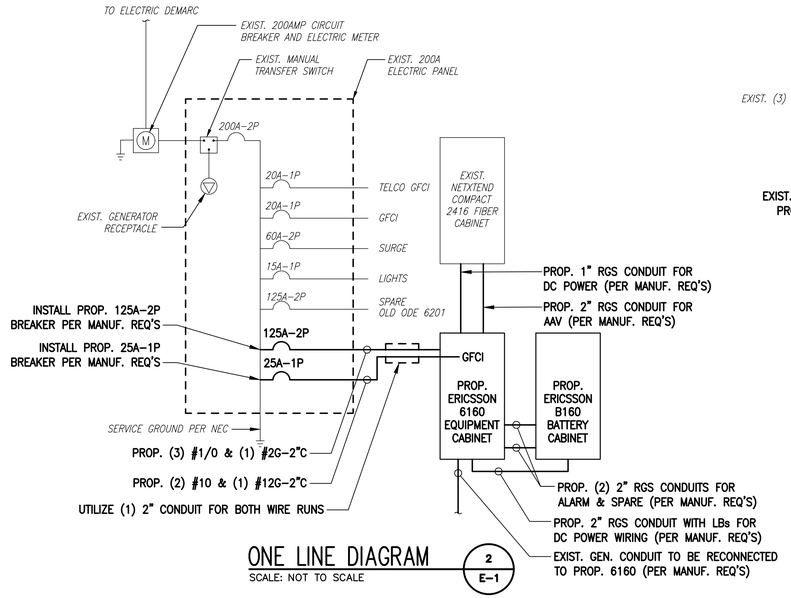
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

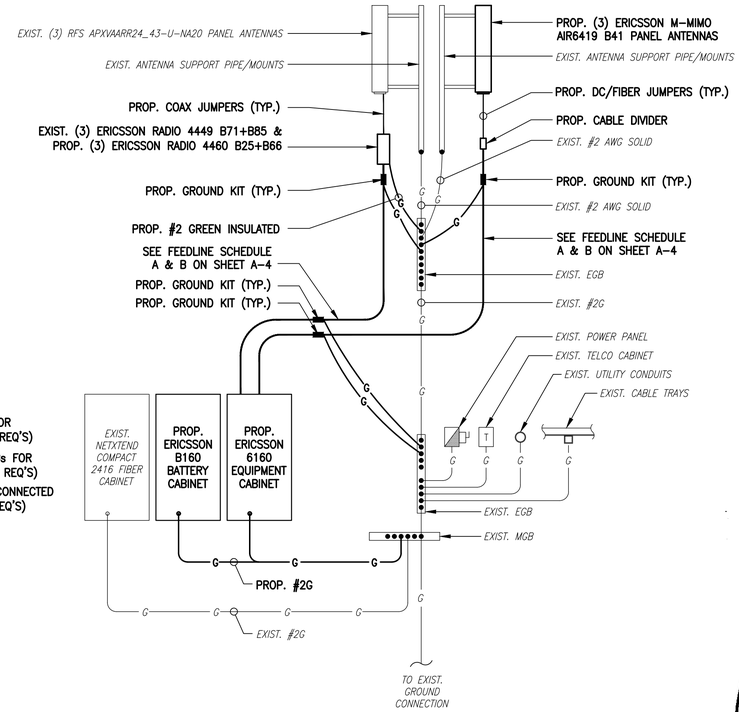
1815.469



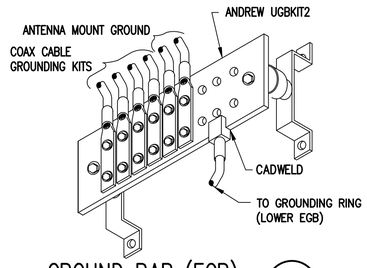
EXISTING POWER PANEL PHOTOS
SCALE: NOT TO SCALE
1 E-1



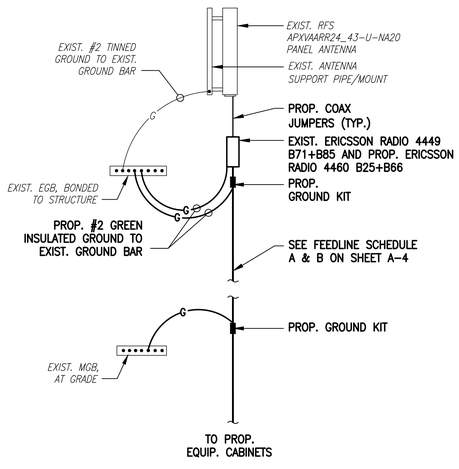
ONE LINE DIAGRAM
SCALE: NOT TO SCALE
2 E-1



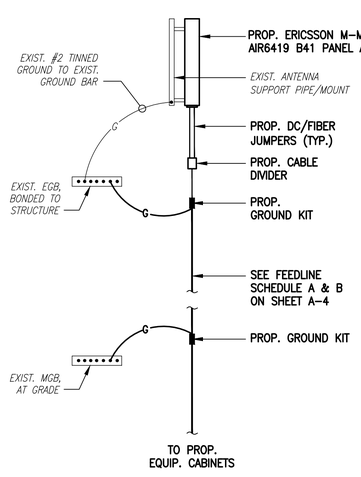
GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE
3 E-1



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

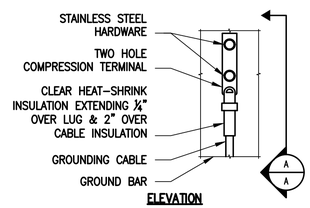


N600/L700/L600/L2100/L1900/G1900 ANTENNA

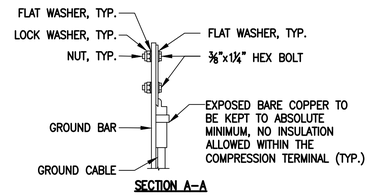


L2500/N2500 ANTENNA

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



ELEVATION



SECTION A-A

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

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

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. 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.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. 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.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. 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.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. 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.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. 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.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. 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
NORTON, MA 02766
(508) 286-2700

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAMEK
No. 26876
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/01/22	ISSUED FOR REVIEW	NWC

SITE NUMBER:
CT11530B

SITE ADDRESS:
157 CHESTNUT HILL ROAD
STAFFORD SPRINGS, CT 06076

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.469

Exhibit D

Structural Analysis Report

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

Structural Analysis Report

Existing 180 ft Rohn Self Supporting Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT13617-A
Customer Site Name: Troiano Realty
Carrier Name: T-Mobile (App#: 194456-1)
Carrier Site ID / Name: CT11530B / Troiano Realty
Site Location: 157 Chestnut Hill Road
Stafford Springs, Connecticut
Tolland County
Latitude: 41.977416
Longitude: -72.383305

5/2/22

Analysis Result:

Max Structural Usage: 94.7% [Pass]
Max Foundation Usage: 66.0% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Samnang Chay

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

Structural Analysis Report

Existing 180 ft Rohn Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13617-A

Customer Site Name: Troiano Realty

Carrier Name: T-Mobile (App#: 194456-1)

Carrier Site ID / Name: CT11530B / Troiano Realty

Site Location: 157 Chestnut Hill Road

Stafford Springs, Connecticut

Tolland County

Latitude: 41.977416

Longitude: -72.383305

Analysis Result:

Max Structural Usage: 94.7% [Pass]

Max Foundation Usage: 66.0% [Pass]

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

Report Prepared By: Samnang Chay

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft Rohn Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Eng. File # 49944AE, Dwg. # C011522, dated 12/17/2001
Foundation Drawing	Rohn Eng. File # 49944AE, Dwg. # A012939, dated 12/17/2001
Geotechnical Report	Jaworski Geotech Project # 01659G, dated 10/19/2001
Modification Drawings	N/A
Mount Analysis	TES Project #127389

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 **TESTowers,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.173, S_1 = 0.064

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	177.0	3	RFS - APXV18-206516S-C-A20 - Panel	(3) T-Arms (Commscope SF-HPM3-96)	(9) 1 5/8" (3) 1 5/8" Fiber	T-Mobile
-		3	Ericsson - KRY 112 489/2 - TMA			
-		3	Ericsson - Radio 4449 B71+B12 - RRU			
-		3	Kathrein - 782 11056 - Bias T			
-	175.0	3	RFS - APXVAARR24_43-U-NA20 - Panel			
7	167.0	1	CCI - OPA65R-BU4DA - Panel	(3) Sector Frame SitePro 1 VFA12-WLL-30120	(12) 1 5/8" (2) 1" DC Cables (1) 1/2"	AT&T
8		2	CCI - DMP65R-BU8DA - Panel			
9		1	CCI - DMP65R-BU4DA - Panel			
10		12	ADC/Cleargain CT-1900W800 TMA			
11		3	Ericsson 4449 B5/B12			
12		3	Ericsson RRUS 8843 B2 B66A			
13		1	Raycap DC6-48-60-18-8F ("Squid")			
14		6	Powerwave - P65-17-XLH-RR - Panel			
15		2	CCI - OPA65R-BU8DA - Panel			
16	150.0	4	Antel LPA-80080-4CF-EDIN-0 - Panel	(3) Modified Sector Frames (Site Pro VFA12-HD) W/ (3) Commscope BSAMNT-SBS-1-2	(12) 1 5/8" (2) 1 5/8" Hybrid	Verizon
17		2	Antel - LPA-80063-4CF-EDIN-5 - Panel			
18		6	Commscope SBNHH-1D65B- Panel			
19		3	Samsung MT6407-77A - Panel			
20		3	Samsung RF4440d-13A - RRU			
21		3	Samsung RF4439d-25A - RRU			
22		2	RFS DB-B1-6C-12AB-0Z- OVP			
23	140.0	3	JMA Wireless - MX08FRO665-21 - Panel	(3) Commscope MTC3975083	(1) 1.6" Hybrid	Dish Wireless
24		3	Fujitsu - TA08025-B604			
25		3	Fujitsu - TA08025-B605			
26		1	Raycap - RDIDC-9181-PF-48 - OVP			

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	177.0	3	Ericsson - KRY 112 489/2 – TMA	(3) T-Arms (Commscope SF-HPM3-96)	(7) 1 5/8" (4) 1.9" Fiber	T-Mobile
2		3	Ericsson - Radio 4449 B71+B85 - RRU			
3		3	Kathrein - 782 11056 - Bias T – TMA			
4		3	Ericsson AIR 6419 B41 - Panel – Panel			
5		3	Ericsson 4460 B25+B66 – RRU			
6	175.0	3	RFS - APXVAARR24_43-U-NA20 - Panel			

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:

Tower Component	Legs	Diagonals	Horizontals
Max. Usage:	**94.7%**	**89.3%**	**5.5%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	315.9	278.3	28.9

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.4199 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.

Structure: CT13617-A-SBA

Site Name:	Troiano Realty			**Code:**	TIA-222-G	5/2/2022
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	97.00	
Height:	180.00 (ft)	**Base Width:**	18.99	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	4.64	**Operational WS:**	60.00	Page: 1

IES Tower Engineering Solutions

Section Properties

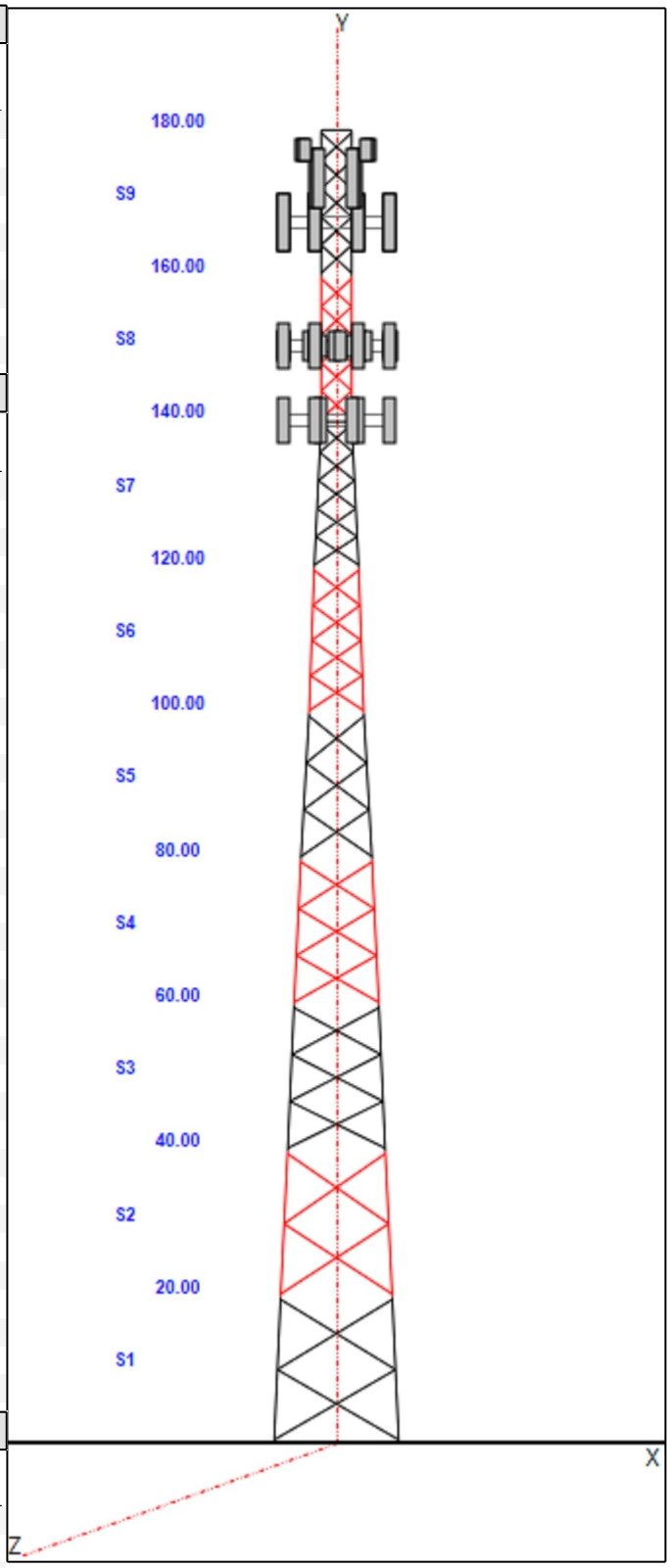
Sect	Leg Members	Diagonal Members	Horizontal Members
1	PX 8" DIA PIPE	SAE 3.5X3.5X0.25	
2	PSP ROHN 8 EHS	SAE 3X3X0.25	
3	PX 6" DIA PIPE	SAE 2.5X2.5X0.25	
4	PSP ROHN 6 EHS	SAE 2.5X2.5X0.1875	
5	PX 5" DIA PIPE	SAE 2.5X2.5X0.1875	
6	PX 5" DIA PIPE	SAE 2X2X0.1875	
7	PX 4" DIA PIPE	SAE 2X2X0.1875	SAE 1.75X1.75X0.125
8	PST 3" DIA PIPE	SAE 2X2X0.25	
9	PST 2-1/2" DIA PIPE	SAE 1.75X1.75X0.1875	SAE 1.75X1.75X0.125

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.00	180.00	1	Lightning Rod
180.00	180.00	1	Beacon
177.00	177.00	1	MC-K12M-12-96
177.00	177.00	3	KRY 112 89/4
177.00	177.00	3	4449
177.00	177.00	3	782 10254
177.00	177.00	3	Ericsson AIR 6419 B41 - Panel
177.00	177.00	3	Ericsson 4460 B25+B66
175.00	173.00	3	APXVAARR24_43-U-NA20
167.00	167.00	6	P65-17-XLH-RR
167.00	167.00	2	OPA65R-BU8DA
167.00	167.00	1	OPA65R-BU4DA
167.00	167.00	2	DMP65R-BU8DA
167.00	167.00	1	DMP65R-BU4DA
167.00	167.00	12	ADC/Cleargain CT-1900W800
167.00	167.00	3	Ericsson 4449 B5/B12
167.00	167.00	3	Ericsson RRUS 8843 B2 B66A
167.00	167.00	1	RaycaDC6-48-60-18-8F ("Squid")
167.00	167.00	3	VFA12-WLL-30120
150.00	150.00	1	(3) VFA12-HD
150.00	150.00	6	SBNHH-1D65B
150.00	150.00	4	LPA-80080-4CF-EDIN-0
150.00	150.00	2	LPA-80063-4CF-EDIN-5
150.00	150.00	2	RFS DB-B1-6C-12AB-0Z
150.00	150.00	3	Samsung MT6407-77A
150.00	150.00	3	Commscope BSAMNT-SBS-1-2
150.00	150.00	3	Samsung RF4440d-13A
150.00	150.00	3	Samsung RF4439d-25A
140.00	140.00	3	MX08FRO665-21
140.00	140.00	3	TA08025-B604
140.00	140.00	3	TA08025-B605
140.00	140.00	1	RDIDC-9181-PF-48
140.00	140.00	1	(3) Commscope MTC3975083

Linear Appurtenances

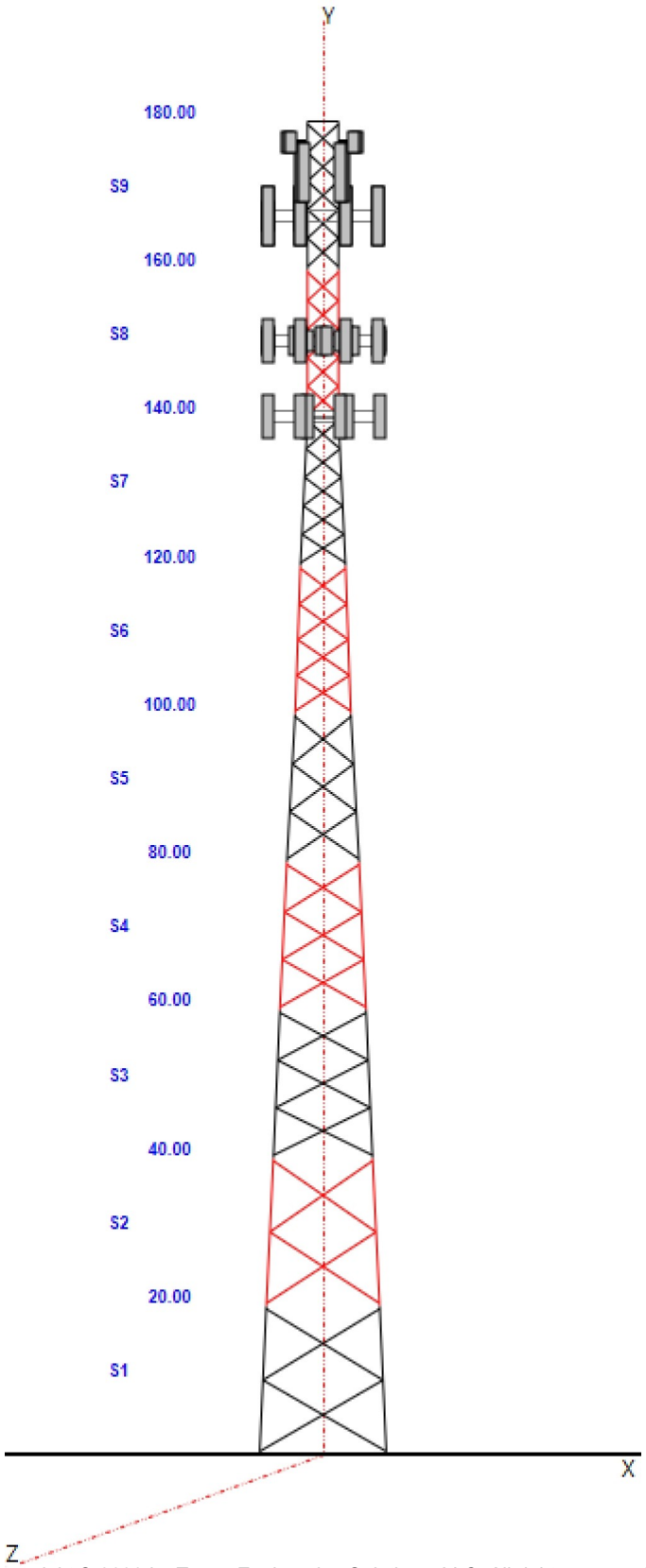
Elev From (ft)	Elev To (ft)	Qty	Description
0.00	180.00	1	Safety Cable
0.00	180.00	1	Step bolts (ladder)
0.00	177.00	7	1 5/8" Coax
0.00	177.00	4	1.9" Fiber



0.00	175.00	1	W/G Ladder
0.00	167.00	12	1 5/8" Coax
0.00	167.00	2	1" DC Cables
0.00	167.00	1	1/2" Coax
0.00	167.00	1	W/G Ladder
0.00	150.00	12	1 5/8" Coax
0.00	150.00	2	1 5/8" Hybrid
0.00	150.00	1	W/G Ladder
0.00	140.00	1	1.6" Hybrid
0.00	140.00	1	W/G Ladder
0.00	40.00	2	Step bolts (ladder)

Base Reactions

Leg			Overturning		
Max Uplift:	-278.28	(kips	Moment:	4928.92	(ft-kips)
Max Down:	315.91	(kips	Total Down:	48.60	(kips)
Max Shear:	28.93	(kips	Total Shear:	45.67	(kips)

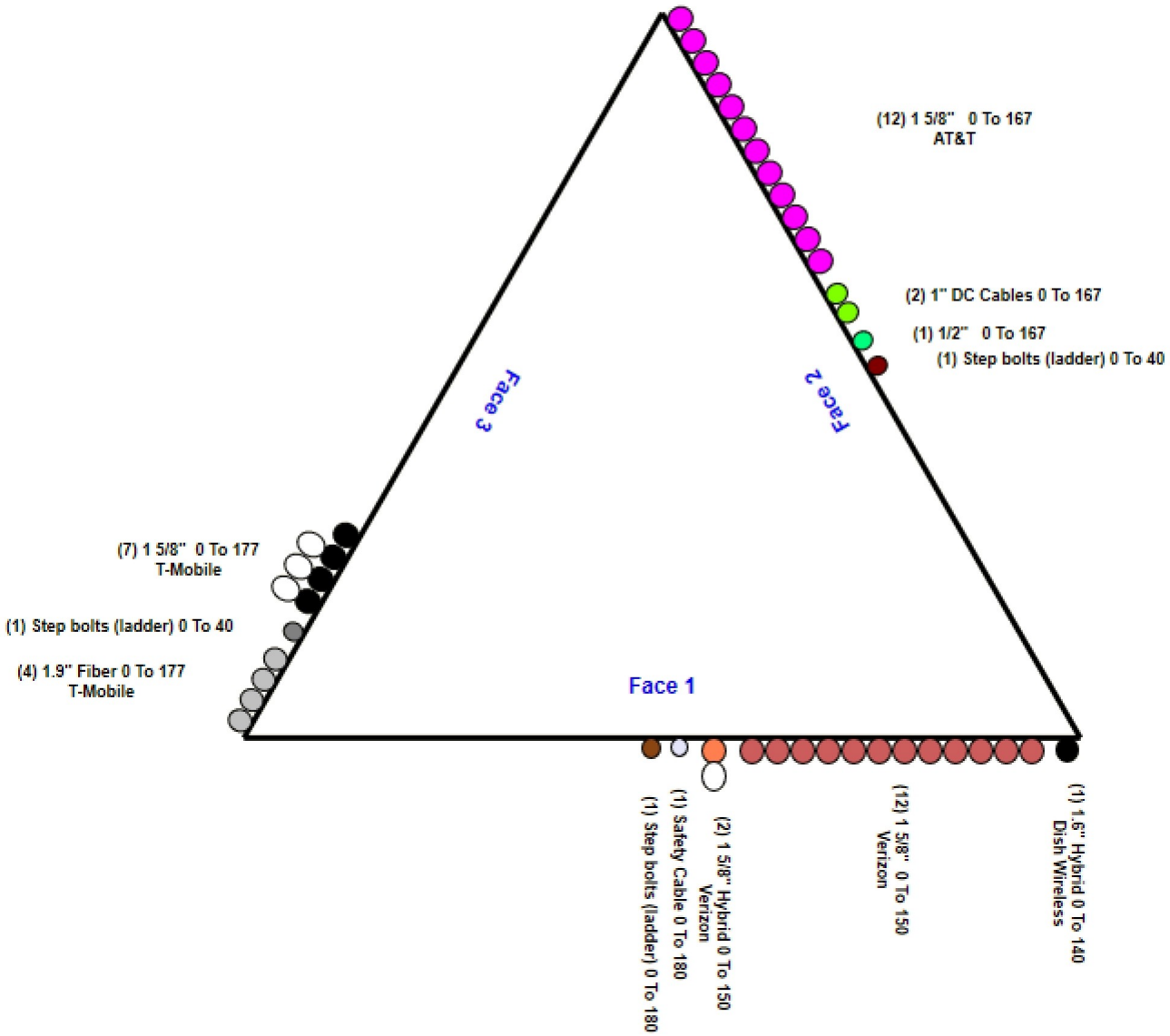


Structure: CT13617-A-SBA - Coax Line Placement

Type: Self Support
Site Name: Troiano Realty
Height: 180.00 (ft)

5/2/2022

Tower Engineering Solutions



Loading Summary

Structure:	CT13617-A-SBA		**Code:**	TIA-222-G	5/2/2022
Site Name:	Troiano Realty		**Exposure:**	B	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	Ice Weight (lb)	Ice CaAa (sf)	Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
180.00	Lightning Rod	1	5.00	0.500	33.28	2.856	72.000	1.000	1.000	1.00	1.00	0.000
180.00	Beacon	1	36.00	2.720	215.83	4.002	28.000	17.500	17.500	1.00	1.00	0.000
177.00	MC-K12M-12-96	1	550.00	22.000	1275.73	59.323	0.000	0.000	0.000	0.75	1.00	0.000
177.00	KRY 112 89/4	3	15.40	0.650	39.19	1.476	11.000	6.100	3.900	0.80	0.50	0.000
177.00	4449	3	75.00	1.650	216.38	2.428	15.000	13.200	9.300	0.80	0.67	0.000
177.00	782 10254	3	2.90	0.130	8.29	0.524	4.300	3.000	1.700	0.80	0.50	0.000
177.00	Ericsson AIR 6419 B41 - Panel	3	88.00	4.130	333.52	7.740	36.300	20.900	9.000	0.80	0.85	0.000
177.00	Ericsson 4460 B25+B66	3	104.00	2.850	196.63	3.761	21.800	15.700	7.500	0.80	0.67	0.000
175.00	APXVAARR24_43-U-NA20	3	128.00	20.240	762.93	22.834	95.900	24.000	7.800	0.80	0.70	-2.000
167.00	P65-17-XLH-RR	6	59.00	11.440	351.44	15.807	96.000	12.000	6.000	0.80	0.82	0.000
167.00	OPA65R-BU8DA	2	76.50	18.090	459.65	20.903	96.000	21.000	7.800	0.80	0.82	0.000
167.00	OPA65R-BU4DA	1	52.50	8.440	315.44	9.752	48.200	21.000	7.800	0.80	1.00	0.000
167.00	DMP65R-BU8DA	2	95.70	17.870	575.01	20.649	96.000	20.700	7.700	0.80	0.82	0.000
167.00	DMP65R-BU4DA	1	67.90	8.280	407.98	9.568	48.000	20.700	7.700	0.80	1.00	0.000
167.00	ADC/Cleargain CT-1900W800	12	15.40	1.100	125.73	1.890	11.700	11.300	2.800	0.80	0.67	0.000
167.00	Ericsson 4449 B5/B12	3	73.20	1.970	151.16	2.739	17.900	13.200	10.600	0.80	0.67	0.000
167.00	Ericsson RRUS 8843 B2 B66A	3	72.00	1.640	135.25	2.311	14.900	13.200	10.900	0.80	0.67	0.000
167.00	RaycaDC6-48-60-18-8F ("Squid")	1	31.80	0.920	115.27	1.511	24.000	11.000	11.000	0.80	1.00	0.000
167.00	VFA12-WLL-30120	3	774.00	18.900	1795.30	50.964	0.000	0.000	0.000	0.75	0.75	0.000
150.00	(3) VFA12-HD	1	2322.0	50.700	5347.78	135.64	0.000	0.000	0.000	0.75	1.00	0.000
150.00	SBNHH-1D65B	6	50.71	8.080	396.97	9.847	72.000	11.900	7.100	0.80	0.83	0.000
150.00	LPA-80080-4CF-EDIN-0	4	12.00	2.610	166.16	3.808	47.200	5.500	13.200	0.80	1.70	0.000
150.00	LPA-80063-4CF-EDIN-5	2	20.00	6.150	263.92	8.674	47.400	15.200	13.100	0.80	0.93	0.000
150.00	RFS DB-B1-6C-12AB-0Z	2	18.90	4.800	180.34	7.034	24.000	24.000	10.000	0.80	0.71	0.000
150.00	Samsung MT6407-77A	3	79.40	4.690	250.17	5.973	35.100	16.100	5.500	0.80	0.70	0.000
150.00	Commscope BSAMNT-SBS-1-2	3	25.35	0.000	48.95	0.000	0.000	0.000	0.000	1.00	1.00	0.000
150.00	Samsung RF4440d-13A	3	70.30	1.850	176.12	2.659	15.000	15.000	9.100	0.80	0.67	0.000
150.00	Samsung RF4439d-25A	3	74.70	1.880	135.19	2.615	15.000	15.000	10.000	0.80	0.67	0.000
140.00	MX08FRO665-21	3	64.50	12.490	446.82	14.415	72.000	20.000	8.000	0.80	0.74	0.000
140.00	TA08025-B604	3	63.90	1.960	130.45	2.697	15.800	15.000	7.900	0.80	0.67	0.000
140.00	TA08025-B605	3	75.00	1.960	143.75	2.697	15.800	15.000	9.100	0.80	0.67	0.000
140.00	RDIDC-9181-PF-48	1	21.90	2.010	91.89	2.757	16.600	14.600	8.500	1.00	1.00	0.000
140.00	(3) Commscope MTC3975083	1	1242.0	28.050	2837.45	74.377	0.000	0.000	0.000	0.75	1.00	0.000
	Totals:	**93**	**10,999.31**		**35,172.52**						**Number of Appurtenances :**	**33**

Loading Summary

Structure:	CT13617-A-SBA		**Code:**	TIA-222-G	5/2/2022
Site Name:	Troiano Realty		**Exposure:**	B	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 6

Tower Engineering Solutions

Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	180.00	Safety Cable	1	0.38	0.27	100.00	1	Individual NR		N	1.00	1.00	
0.00	180.00	Step bolts (ladder)	1	0.63	1.04	100.00	1	Individual NR		N	1.00	1.00	
0.00	177.00	1 5/8" Coax	7	1.98	1.04	50.00	3	Block		N	0.50	0.80	
0.00	177.00	1.9" Fiber	4	1.90	0.50	100.00	3	Individual IR		N	0.50	0.67	
0.00	175.00	W/G Ladder	1	2.00	6.00	100.00	3	Individual NR		N	0.50	1.00	
0.00	167.00	1 5/8" Coax	12	1.98	1.04	100.00	2	Individual IR		N	0.50	1.00	
0.00	167.00	1" DC Cables	2	1.00	0.40	100.00	2	Individual IR		N	0.50	1.00	
0.00	167.00	1/2" Coax	1	0.65	0.16	100.00	2	Individual NR		N	0.50	1.00	0
0.00	167.00	W/G Ladder	1	0.10	6.00	100.00	1	Individual NR		N	0.50	1.00	
0.00	150.00	1 5/8" Coax	12	1.98	1.04	100.00	1	Individual IR		N	0.50	0.39	
0.00	150.00	1 5/8" Hybrid	2	2.00	1.10	50.00	1	Block		N	0.50	1.00	0
0.00	150.00	W/G Ladder	1	0.10	6.00	100.00	1	Individual NR		N	0.50	1.00	
0.00	140.00	1.6" Hybrid	1	1.60	1.82	100.00	1	Individual NR		N	1.00	1.00	
0.00	140.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
0.00	40.00	Step bolts (ladder)	2	0.63	1.04	100.00	2,3	Individual NR		N	1.00	1.00	

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W Normal Wind — 1.2D + 1.6W 97 mph Wind at Normal To Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	1.00	1.00	0.00	35.64	128.73	0.00	6,448.6	0.0	1955.48	1811.34	3,766.82
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	1.00	1.00	0.00	30.59	128.73	0.00	5,311.5	0.0	1675.20	1812.87	3,488.07
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	1.00	1.00	0.00	29.25	126.65	0.00	4,977.3	0.0	1853.59	2063.88	3,917.48
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	1.00	1.00	0.00	26.86	126.65	0.00	4,105.0	0.0	1839.85	2272.14	4,111.99
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	1.00	1.00	0.00	23.41	126.65	0.00	3,827.5	0.0	1706.46	2441.29	4,147.75
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	1.00	1.00	0.00	20.91	126.65	0.00	3,689.1	0.0	1561.50	2585.35	4,146.85
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	1.00	1.00	0.00	19.85	126.65	0.00	3,272.0	0.0	1493.26	2711.74	4,205.00
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	1.00	1.00	0.00	16.30	99.10	0.00	2,365.0	0.0	1282.73	2197.68	3,480.41
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	1.00	1.00	0.00	14.58	43.74	0.00	1,405.0	0.0	1226.12	1039.23	2,265.36
														35,401.0	**0.0**			**33,529.72**

Load Case: 1.2D + 1.6W 60° Wind — 1.2D + 1.6W 97 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	0.80	1.00	0.00	31.05	128.73	0.00	6,448.6	0.0	1703.45	1811.34	3,514.79
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	0.80	1.00	0.00	27.01	128.73	0.00	5,311.5	0.0	1479.23	1812.87	3,292.10
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	0.80	1.00	0.00	25.57	126.65	0.00	4,977.3	0.0	1620.00	2063.88	3,683.88
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	0.80	1.00	0.00	23.62	126.65	0.00	4,105.0	0.0	1618.11	2272.14	3,890.25
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	0.80	1.00	0.00	20.64	126.65	0.00	3,827.5	0.0	1504.63	2441.29	3,945.92
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	0.80	1.00	0.00	18.64	126.65	0.00	3,689.1	0.0	1392.41	2585.35	3,977.77
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	0.80	1.00	0.00	17.55	126.65	0.00	3,272.0	0.0	1320.52	2711.74	4,032.26
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	0.80	1.00	0.00	14.39	99.10	0.00	2,365.0	0.0	1132.16	2197.68	3,329.84
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	0.80	1.00	0.00	12.76	43.74	0.00	1,405.0	0.0	1073.24	1039.23	2,112.47
														35,401.0	**0.0**			**31,779.28**

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 90° Wind — 1.2D + 1.6W 97 mph Wind at 90° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	0.85	1.00	0.00	32.20	128.73	0.00	6,448.6	0.0	1766.46	1811.34	3,577.80
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	0.85	1.00	0.00	27.90	128.73	0.00	5,311.5	0.0	1528.22	1812.87	3,341.09
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	0.85	1.00	0.00	26.49	126.65	0.00	4,977.3	0.0	1678.40	2063.88	3,742.28
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	0.85	1.00	0.00	24.43	126.65	0.00	4,105.0	0.0	1673.54	2272.14	3,945.68
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	0.85	1.00	0.00	21.34	126.65	0.00	3,827.5	0.0	1555.08	2441.29	3,996.38
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	0.85	1.00	0.00	19.21	126.65	0.00	3,689.1	0.0	1434.69	2585.35	4,020.04
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.13	126.65	0.00	3,272.0	0.0	1363.70	2711.74	4,075.45
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	0.85	1.00	0.00	14.87	99.10	0.00	2,365.0	0.0	1169.80	2197.68	3,367.48
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	0.85	1.00	0.00	13.22	43.74	0.00	1,405.0	0.0	1111.46	1039.23	2,150.69
														35,401.0	**0.0**			**32,216.89**

Load Case: 0.9D + 1.6W Normal Wind — 0.9D + 1.6W 97 mph Wind at Normal To Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	1.00	1.00	0.00	35.64	128.73	0.00	4,836.5	0.0	1955.48	1811.34	3,766.82
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	1.00	1.00	0.00	30.59	128.73	0.00	3,983.6	0.0	1675.20	1812.87	3,488.07
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	1.00	1.00	0.00	29.25	126.65	0.00	3,733.0	0.0	1853.59	2063.88	3,917.48
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	1.00	1.00	0.00	26.86	126.65	0.00	3,078.7	0.0	1839.85	2272.14	4,111.99
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	1.00	1.00	0.00	23.41	126.65	0.00	2,870.6	0.0	1706.46	2441.29	4,147.75
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	1.00	1.00	0.00	20.91	126.65	0.00	2,766.8	0.0	1561.50	2585.35	4,146.85
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	1.00	1.00	0.00	19.85	126.65	0.00	2,454.0	0.0	1493.26	2711.74	4,205.00
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	1.00	1.00	0.00	16.30	99.10	0.00	1,773.7	0.0	1282.73	2197.68	3,480.41
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	1.00	1.00	0.00	14.58	43.74	0.00	1,053.7	0.0	1226.12	1039.23	2,265.36
														26,550.7	**0.0**			**33,529.72**

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 60° Wind — 0.9D + 1.6W 97 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	0.80	1.00	0.00	31.05	128.73	0.00	4,836.5	0.0	1703.45	1811.34	3,514.79
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	0.80	1.00	0.00	27.01	128.73	0.00	3,983.6	0.0	1479.23	1812.87	3,292.10
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	0.80	1.00	0.00	25.57	126.65	0.00	3,733.0	0.0	1620.00	2063.88	3,683.88
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	0.80	1.00	0.00	23.62	126.65	0.00	3,078.7	0.0	1618.11	2272.14	3,890.25
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	0.80	1.00	0.00	20.64	126.65	0.00	2,870.6	0.0	1504.63	2441.29	3,945.92
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	0.80	1.00	0.00	18.64	126.65	0.00	2,766.8	0.0	1392.41	2585.35	3,977.77
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	0.80	1.00	0.00	17.55	126.65	0.00	2,454.0	0.0	1320.52	2711.74	4,032.26
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	0.80	1.00	0.00	14.39	99.10	0.00	1,773.7	0.0	1132.16	2197.68	3,329.84
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	0.80	1.00	0.00	12.76	43.74	0.00	1,053.7	0.0	1073.24	1039.23	2,112.47
														26,550.7	**0.0**			**31,779.28**

Load Case: 0.9D + 1.6W 90° Wind — 0.9D + 1.6W 97 mph Wind at 90° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	14.33	22.969	28.80	0.00	0.14	2.81	0.85	1.00	0.00	32.20	128.73	0.00	4,836.5	0.0	1766.46	1811.34	3,577.80
1 2	30.0	14.34	17.891	28.80	0.00	0.14	2.81	0.85	1.00	0.00	27.90	128.73	0.00	3,983.6	0.0	1528.22	1812.87	3,341.09
1 3	50.0	16.60	18.433	22.12	0.00	0.14	2.81	0.85	1.00	0.00	26.49	126.65	0.00	3,733.0	0.0	1678.40	2063.88	3,742.28
1 4	70.0	18.27	16.186	22.12	0.00	0.15	2.76	0.85	1.00	0.00	24.43	126.65	0.00	3,078.7	0.0	1673.54	2272.14	3,945.68
1 5	90.0	19.63	13.845	18.59	0.00	0.16	2.73	0.85	1.00	0.00	21.34	126.65	0.00	2,870.6	0.0	1555.08	2441.29	3,996.38
1 6	110.0	20.79	11.319	18.56	0.00	0.19	2.64	0.85	1.00	0.00	19.21	126.65	0.00	2,766.8	0.0	1434.69	2585.35	4,020.04
1 7	130.0	21.81	11.480	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.13	126.65	0.00	2,454.0	0.0	1363.70	2711.74	4,075.45
1 8	150.0	22.72	9.569	11.67	0.00	0.22	2.55	0.85	1.00	0.00	14.87	99.10	0.00	1,773.7	0.0	1169.80	2197.68	3,367.48
1 9	170.0	23.55	9.091	9.58	0.00	0.19	2.63	0.85	1.00	0.00	13.22	43.74	0.00	1,053.7	0.0	1111.46	1039.23	2,150.69
														26,550.7	**0.0**			**32,216.89**

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	3.81	22.969	64.80	36.00	0.23	2.50	1.00	1.00	1.77	60.59	209.56	35.50	15,482.	9033.4	489.50	569.69	1,059.19
1 2	30.0	3.81	17.891	66.61	37.81	0.25	2.44	1.00	1.00	1.98	56.84	216.43	39.62	14,992.	9681.0	449.42	596.15	1,045.57
1 3	50.0	4.41	18.433	67.93	45.82	0.29	2.32	1.00	1.00	2.08	58.96	217.81	27.80	14,946.	9968.9	512.11	647.57	1,159.68
1 4	70.0	4.86	16.186	65.64	43.51	0.32	2.24	1.00	1.00	2.16	55.92	220.19	28.75	14,117.	10012.5	517.92	719.98	1,237.91
1 5	90.0	5.22	13.845	58.89	40.29	0.35	2.17	1.00	1.00	2.21	50.11	222.02	29.48	13,554.	9726.8	482.85	778.19	1,261.03
1 6	110.0	5.52	11.319	60.55	41.98	0.43	2.01	1.00	1.00	2.26	50.62	223.51	30.08	13,379.	9690.8	477.79	784.73	1,262.53
1 7	130.0	5.79	11.480	58.46	43.43	0.54	1.85	1.00	1.00	2.29	52.88	224.78	30.59	13,048.	9776.2	482.38	665.85	1,148.23
1 8	150.0	6.04	9.569	50.58	38.91	0.56	1.83	1.00	1.00	2.33	46.09	174.36	23.27	10,242.	7877.2	432.75	530.06	962.80
1 9	170.0	6.26	9.091	50.81	41.23	0.57	1.83	1.00	1.00	2.36	45.86	76.86	18.46	6,665.5	5260.6	445.72	283.01	728.73
														116,428.4	**81027.4**			**9,865.67**

Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	3.81	22.969	64.80	36.00	0.23	2.50	0.80	1.00	1.77	55.99	209.56	35.50	15,482.	9033.4	452.38	569.69	1,022.08
1 2	30.0	3.81	17.891	66.61	37.81	0.25	2.44	0.80	1.00	1.98	53.26	216.43	39.62	14,992.	9681.0	421.13	596.15	1,017.28
1 3	50.0	4.41	18.433	67.93	45.82	0.29	2.32	0.80	1.00	2.08	55.27	217.81	27.80	14,946.	9968.9	480.09	647.57	1,127.66
1 4	70.0	4.86	16.186	65.64	43.51	0.32	2.24	0.80	1.00	2.16	52.68	220.19	28.75	14,117.	10012.5	487.94	719.98	1,207.92
1 5	90.0	5.22	13.845	58.89	40.29	0.35	2.17	0.80	1.00	2.21	47.34	222.02	29.48	13,554.	9726.8	456.16	778.19	1,234.35
1 6	110.0	5.52	11.319	60.55	41.98	0.43	2.01	0.80	1.00	2.26	48.35	223.51	30.08	13,379.	9690.8	456.43	784.73	1,241.16
1 7	130.0	5.79	11.480	58.46	43.43	0.54	1.85	0.80	1.00	2.29	50.59	224.78	30.59	13,048.	9776.2	461.43	665.85	1,127.29
1 8	150.0	6.04	9.569	50.58	38.91	0.56	1.83	0.80	1.00	2.33	44.17	174.36	23.27	10,242.	7877.2	414.78	530.06	944.83
1 9	170.0	6.26	9.091	50.81	41.23	0.57	1.83	0.80	1.00	2.36	44.04	76.86	18.46	6,665.5	5260.6	428.05	283.01	711.06
														116,428.4	**81027.4**			**9,633.62**

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	3.81	22.969	64.80	36.00	0.23	2.50	0.85	1.00	1.77	57.14	209.56	35.50	15,482.	9033.4	461.66	569.69	1,031.35
1 2	30.0	3.81	17.891	66.61	37.81	0.25	2.44	0.85	1.00	1.98	54.16	216.43	39.62	14,992.	9681.0	428.21	596.15	1,024.36
1 3	50.0	4.41	18.433	67.93	45.82	0.29	2.32	0.85	1.00	2.08	56.19	217.81	27.80	14,946.	9968.9	488.10	647.57	1,135.66
1 4	70.0	4.86	16.186	65.64	43.51	0.32	2.24	0.85	1.00	2.16	53.49	220.19	28.75	14,117.	10012.5	495.44	719.98	1,215.42
1 5	90.0	5.22	13.845	58.89	40.29	0.35	2.17	0.85	1.00	2.21	48.03	222.02	29.48	13,554.	9726.8	462.83	778.19	1,241.02
1 6	110.0	5.52	11.319	60.55	41.98	0.43	2.01	0.85	1.00	2.26	48.92	223.51	30.08	13,379.	9690.8	461.77	784.73	1,246.50
1 7	130.0	5.79	11.480	58.46	43.43	0.54	1.85	0.85	1.00	2.29	51.16	224.78	30.59	13,048.	9776.2	466.67	665.85	1,132.52
1 8	150.0	6.04	9.569	50.58	38.91	0.56	1.83	0.85	1.00	2.33	44.65	174.36	23.27	10,242.	7877.2	419.27	530.06	949.33
1 9	170.0	6.26	9.091	50.81	41.23	0.57	1.83	0.85	1.00	2.36	44.50	76.86	18.46	6,665.5	5260.6	432.47	283.01	715.47
														116,428.4	**81027.4**			**9,691.64**

Load Case: 1.0D + 1.0W Normal Wind — 1.0D + 1.0W 60 mph Wind at Normal To Face

Wind Load Factor: 1.00
Dead Load Factor: 1.00
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	5.48	22.969	28.80	0.00	0.14	2.81	1.00	1.00	0.00	38.72	128.73	0.00	5,373.9	0.0	507.97	433.15	941.12
1 2	30.0	5.49	17.891	28.80	0.00	0.14	2.81	1.00	1.00	0.00	33.65	128.73	0.00	4,426.3	0.0	440.69	433.52	874.21
1 3	50.0	6.35	18.433	22.12	0.00	0.14	2.81	1.00	1.00	0.00	30.97	126.65	0.00	4,147.8	0.0	469.20	493.54	962.74
1 4	70.0	6.99	16.186	22.12	0.00	0.15	2.76	1.00	1.00	0.00	28.75	126.65	0.00	3,420.8	0.0	470.95	543.34	1,014.29
1 5	90.0	7.51	13.845	18.59	0.00	0.16	2.73	1.00	1.00	0.00	24.42	126.65	0.00	3,189.6	0.0	425.64	583.79	1,009.43
1 6	110.0	7.96	11.319	18.56	0.00	0.19	2.64	1.00	1.00	0.00	21.94	126.65	0.00	3,074.2	0.0	391.90	618.24	1,010.15
1 7	130.0	8.34	11.480	15.03	0.00	0.22	2.54	1.00	1.00	0.00	20.16	126.65	0.00	2,726.7	0.0	362.78	648.47	1,011.25
1 8	150.0	8.69	9.569	11.67	0.00	0.22	2.55	1.00	1.00	0.00	16.30	99.10	0.00	1,970.8	0.0	306.74	525.54	832.28
1 9	170.0	9.01	9.091	9.58	0.00	0.19	2.63	1.00	1.00	0.00	14.58	43.74	0.00	1,170.8	0.0	293.21	248.51	541.72
														29,500.8	**0.0**			**8,197.18**

Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60° Wind — 1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	5.48	22.969	28.80	0.00	0.14	2.81	0.80	1.00	0.00	34.12	128.73	0.00	5,373.9	0.0	447.70	433.15	880.85
1 2	30.0	5.49	17.891	28.80	0.00	0.14	2.81	0.80	1.00	0.00	30.07	128.73	0.00	4,426.3	0.0	393.83	433.52	827.34
1 3	50.0	6.35	18.433	22.12	0.00	0.14	2.81	0.80	1.00	0.00	27.28	126.65	0.00	4,147.8	0.0	413.34	493.54	906.88
1 4	70.0	6.99	16.186	22.12	0.00	0.15	2.76	0.80	1.00	0.00	25.51	126.65	0.00	3,420.8	0.0	417.92	543.34	961.27
1 5	90.0	7.51	13.845	18.59	0.00	0.16	2.73	0.80	1.00	0.00	21.65	126.65	0.00	3,189.6	0.0	377.38	583.79	961.17
1 6	110.0	7.96	11.319	18.56	0.00	0.19	2.64	0.80	1.00	0.00	19.68	126.65	0.00	3,074.2	0.0	351.47	618.24	969.71
1 7	130.0	8.34	11.480	15.03	0.00	0.22	2.54	0.80	1.00	0.00	17.87	126.65	0.00	2,726.7	0.0	321.47	648.47	969.94
1 8	150.0	8.69	9.569	11.67	0.00	0.22	2.55	0.80	1.00	0.00	14.39	99.10	0.00	1,970.8	0.0	270.74	525.54	796.27
1 9	170.0	9.01	9.091	9.58	0.00	0.19	2.63	0.80	1.00	0.00	12.76	43.74	0.00	1,170.8	0.0	256.65	248.51	505.16
														29,500.8	**0.0**			**7,778.59**

Load Case: 1.0D + 1.0W 90° Wind — 1.0D + 1.0W 60 mph Wind at 90° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1 1	10.0	5.48	22.969	28.80	0.00	0.14	2.81	0.85	1.00	0.00	35.27	128.73	0.00	5,373.9	0.0	462.77	433.15	895.92
1 2	30.0	5.49	17.891	28.80	0.00	0.14	2.81	0.85	1.00	0.00	30.97	128.73	0.00	4,426.3	0.0	405.54	433.52	839.06
1 3	50.0	6.35	18.433	22.12	0.00	0.14	2.81	0.85	1.00	0.00	28.20	126.65	0.00	4,147.8	0.0	427.30	493.54	920.84
1 4	70.0	6.99	16.186	22.12	0.00	0.15	2.76	0.85	1.00	0.00	26.32	126.65	0.00	3,420.8	0.0	431.18	543.34	974.52
1 5	90.0	7.51	13.845	18.59	0.00	0.16	2.73	0.85	1.00	0.00	22.34	126.65	0.00	3,189.6	0.0	389.44	583.79	973.24
1 6	110.0	7.96	11.319	18.56	0.00	0.19	2.64	0.85	1.00	0.00	20.24	126.65	0.00	3,074.2	0.0	361.58	618.24	979.82
1 7	130.0	8.34	11.480	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.44	126.65	0.00	2,726.7	0.0	331.80	648.47	980.27
1 8	150.0	8.69	9.569	11.67	0.00	0.22	2.55	0.85	1.00	0.00	14.87	99.10	0.00	1,970.8	0.0	279.74	525.54	805.27
1 9	170.0	9.01	9.091	9.58	0.00	0.19	2.63	0.85	1.00	0.00	13.22	43.74	0.00	1,170.8	0.0	265.79	248.51	514.30
														29,500.8	**0.0**			**7,883.24**

Force/Stress Compression Summary

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	PX - 8" DIA PIPE	-309.45	1.2D + 1.6W Normal Wind	9.64	100	100	100	40.20	50.00	510.21	60.7	Member X
2	40	PSP - ROHN 8 EHS	-284.49	1.2D + 1.6W Normal Wind	9.64	100	100	100	39.63	50.00	389.94	73.0	Member X
3	60	PX - 6" DIA PIPE	-260.19	1.2D + 1.6W Normal Wind	6.43	100	100	100	35.21	50.00	345.23	75.4	Member X
4	80	PSP - ROHN 6 EHS	-230.55	1.2D + 1.6W Normal Wind	6.43	100	100	100	34.67	50.00	276.67	83.3	Member X
5	100	PX - 5" DIA PIPE	-203.02	1.2D + 1.6W Normal Wind	6.43	100	100	100	41.96	50.00	241.74	84.0	Member X
6	120	PX - 5" DIA PIPE	-177.94	1.2D + 1.6W Normal Wind	4.82	100	100	100	31.42	50.00	255.81	69.6	Member X
7	140	PX - 4" DIA PIPE	-135.05	1.2D + 1.6W Normal Wind	3.86	100	100	100	31.27	50.00	184.75	73.1	Member X
8	160	PST - 3" DIA PIPE	-84.66	1.2D + 1.6W Normal Wind	3.85	100	100	100	39.83	50.00	89.36	94.7	Member X
9	180	PST - 2-1/2" DIA PIPE	-27.51	1.2D + 1.6W Normal Wind	0.38	100	100	100	4.75	50.00	76.55	35.9	Member X

Splices

Sect	Top Elev	Top Splice Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Bottom Splice Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	1.2D + 1.6W Normal Wind	291.64	0.00	0.0			1.2D + 1.6W Normal Wind	316.61	0.00			
2	40	1.2D + 1.6W Normal Wind	266.18	0.00	0.0			1.2D + 1.6W Normal Wind	291.64	0.00		1 A325	8
3	60	1.2D + 1.6W Normal Wind	236.13	0.00	0.0			1.2D + 1.6W Normal Wind	266.18	0.00		1 A325	8
4	80	1.2D + 1.6W Normal Wind	207.35	0.00	0.0			1.2D + 1.6W Normal Wind	236.13	0.00		1 A325	6
5	100	1.2D + 1.6W Normal Wind	184.62	0.00	0.0			1.2D + 1.6W Normal Wind	207.35	0.00		1 A325	6
6	120	1.2D + 1.6W Normal Wind	139.31	0.00	0.0			1.2D + 1.6W Normal Wind	184.62	0.00		1 A325	4
7	140	1.2D + 1.6W Normal Wind	95.09	0.00	0.0			1.2D + 1.6W Normal Wind	139.31	0.00		1 A325	4
8	160	1.2D + 1.6W Normal Wind	27.62	0.00	0.0			1.2D + 1.6W Normal Wind	95.09	0.00		7/8 A325	4
9	180	1.2D + 1.0Di + 1.0Wi 60° Wind	0.50	0.00	0.0			1.2D + 1.6W Normal Wind	27.62	0.00		3/4 A325	4

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20										0.00	0	0				
2	40										0.00	0	0				
3	60										0.00	0	0				
4	80										0.00	0	0				
5	100										0.00	0	0				
6	120										0.00	0	0				
7	140	SAE - 1.75X1.75X0.125	-0.11	1.2D + 1.0Di + 1.0Wi 60° Wind	4.64	100	100	100	160.63	36.00	3.68	1	1	12.43	5.22	3	Member Z
8	160										0.00	0	0				
9	180	SAE - 1.75X1.75X0.125	-0.20	1.2D + 1.6W 90° Wind	4.64	100	100	100	160.63	36.00	3.68	1	1	12.43	5.22	6	Member Z

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20	SAE - 3.5X3.5X0.25	-7.39	0.9D + 1.6W 90° Wind	19.98	50	50	50	172.75	36.00	12.79	1	1	17.89	12.6	59	Bolt Bear
2	40	SAE - 3X3X0.25	-6.41	0.9D + 1.6W 90° Wind	19.05	50	50	50	193.07	36.00	8.73	1	1	17.89	12.6	73	Member Z
3	60	SAE - 2.5X2.5X0.25	-6.39	0.9D + 1.6W 90° Wind	15.86	50	50	50	193.85	36.00	7.15	1	1	12.43	10.4	89	Member Z
4	80	SAE - 2.5X2.5X0.1875	-5.56	0.9D + 1.6W 90° Wind	14.09	50	50	50	170.79	36.00	6.99	1	1	12.43	7.84	80	Member Z
5	100	SAE - 2.5X2.5X0.1875	-4.17	1.2D + 1.6W Normal Wind	10.88	50	50	50	131.83	36.00	11.71	1	1	12.43	7.84	53	Bolt Bear
6	120	SAE - 2X2X0.1875	-6.25	1.2D + 1.6W 90° Wind	8.48	50	50	50	129.10	36.00	9.57	1	1	12.43	7.84	80	Bolt Bear
7	140	SAE - 2X2X0.1875	-5.53	1.2D + 1.6W Normal Wind	6.22	50	50	50	101.08	36.00	13.43	1	1	12.43	7.84	71	Bolt Bear
8	160	SAE - 2X2X0.25	-7.52	1.2D + 1.6W 90° Wind	6.03	50	50	50	99.43	36.00	18.10	1	1	12.43	10.4	72	Bolt Bear
9	180	SAE - 1.75X1.75X0.1875	-4.31	1.2D + 1.6W 90° Wind	6.03	50	50	50	109.15	36.00	10.73	1	1	12.43	7.84	55	Bolt Bear

Force/Stress Compression Summary

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 14	

IES
Tower Engineering Solutions

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls

Force/Stress Tension Summary

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	PX - 8" DIA PIPE	279.64	0.9D + 1.6W 60° Wind	50	574.20	48.7	Member
2	40	PSP - ROHN 8 EHS	258.50	0.9D + 1.6W 60° Wind	50	437.40	59.1	Member
3	60	PX - 6" DIA PIPE	237.16	0.9D + 1.6W 60° Wind	50	378.00	62.7	Member
4	80	PSP - ROHN 6 EHS	211.45	0.9D + 1.6W 60° Wind	50	302.09	70.0	Member
5	100	PX - 5" DIA PIPE	186.30	0.9D + 1.6W 60° Wind	50	274.95	67.8	Member
6	120	PX - 5" DIA PIPE	166.50	0.9D + 1.6W 60° Wind	50	274.95	60.6	Member
7	140	PX - 4" DIA PIPE	125.04	0.9D + 1.6W 60° Wind	50	198.45	63.0	Member
8	160	PST - 3" DIA PIPE	84.15	0.9D + 1.6W 60° Wind	50	100.35	83.9	Member
9	180	PST - 2-1/2" DIA PIPE	23.20	0.9D + 1.6W 60° Wind	50	76.68	30.3	Member

Splices

		Top Splice					Bottom Splice				
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.6W 60° Wind	258.16	0.00	0.0			0.9D + 1.6W 60° Wind	279.6	0.00			
2	40	0.9D + 1.6W 60° Wind	236.89	0.00	0.0			0.9D + 1.6W 60° Wind	258.1	424.08	60.9	1 A325	8
3	60	0.9D + 1.6W 60° Wind	211.19	0.00	0.0			0.9D + 1.6W 60° Wind	236.8	424.08	55.9	1 A325	8
4	80	0.9D + 1.6W 60° Wind	186.05	0.00	0.0			0.9D + 1.6W 60° Wind	211.1	318.06	66.4	1 A325	6
5	100	0.9D + 1.6W 60° Wind	166.47	0.00	0.0			0.9D + 1.6W 60° Wind	186.0	318.06	58.5	1 A325	6
6	120	0.9D + 1.6W 60° Wind	124.81	0.00	0.0			0.9D + 1.6W 60° Wind	166.4	212.04	78.5	1 A325	4
7	140	0.9D + 1.6W 60° Wind	83.88	0.00	0.0			0.9D + 1.6W 60° Wind	124.8	212.04	58.9	1 A325	4
8	160	0.9D + 1.6W 60° Wind	23.12	0.00	0.0			0.9D + 1.6W 60° Wind	83.88	166.24	50.5	7/8 A325	4
9	180		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	23.12	120.40	19.2	3/4 A325	4

HORIZONTAL MEMBERS

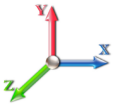
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	140	SAE - 1.75X1.75X0.125			36	0.00	0	0					
8	160	-			36	0.00	0	0					
9	180	SAE - 1.75X1.75X0.125	0.21	0.9D + 1.6W 60° Wind	36	10.64	1	1	12.43	5.22	4.56	4.7	Blck Shear

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	SAE - 3.5X3.5X0.25	7.19	0.9D + 1.6W 90° Wind	36	48.00	1	1	17.89	12.62	21.48	57.0	Bolt Bear
2	40	SAE - 3X3X0.25	6.22	0.9D + 1.6W 90° Wind	36	39.84	1	1	17.89	12.62	16.04	49.3	Bolt Bear
3	60	SAE - 2.5X2.5X0.25	6.43	0.9D + 1.6W 90° Wind	36	32.71	1	1	12.43	10.45	13.19	61.5	Bolt Bear
4	80	SAE - 2.5X2.5X0.1875	5.49	1.2D + 1.6W 90° Wind	36	24.84	1	1	12.43	7.84	9.89	70.1	Bolt Bear
5	100	SAE - 2.5X2.5X0.1875	3.67	0.9D + 1.6W 60° Wind	36	24.84	1	1	12.43	7.84	9.89	46.9	Bolt Bear
6	120	SAE - 2X2X0.1875	6.14	1.2D + 1.6W 90° Wind	36	18.58	1	1	12.43	7.84	7.85	78.4	Bolt Bear
7	140	SAE - 2X2X0.1875	5.11	0.9D + 1.6W 90° Wind	36	18.58	1	1	12.43	7.84	7.85	65.3	Bolt Bear
8	160	SAE - 2X2X0.25	7.23	1.2D + 1.6W 90° Wind	36	24.55	1	1	12.43	10.45	10.47	69.2	Bolt Bear
9	180	SAE - 1.75X1.75X0.1875	4.37	1.2D + 1.6W 90° Wind	36	15.64	1	1	12.43	7.84	6.83	64.0	Blck Shear

Seismic Section Forces

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 16	



IES
Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Dead Load Factor	1.20	**Sds**	0.184	**Ss**	0.1730	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.102	**S1**	0.0640	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.138	**R**	3.0000	**Vs**	2.2350	**f1**	1.3466

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	10.00	5373.8	0.01	0.05	0.03	21.68
2	30.00	4426.2	0.05	0.07	0.04	35.37
3	50.00	4147.7	0.15	0.07	0.03	49.77
4	70.00	3420.8	0.29	0.05	0.01	57.90
5	90.00	3189.6	0.47	-0.01	0.01	67.29
6	110.00	3074.2	0.71	-0.09	0.03	75.28
7	130.00	4600.7	0.99	-0.11	0.12	149.85
8	150.00	5472.1	1.31	0.14	0.35	308.26
9	170.00	6794.6	1.69	1.07	0.79	723.24

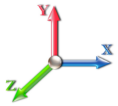
Load Case: 0.9D + 1.0E

Dead Load Factor	0.90	**Sds**	0.184	**Ss**	0.1730	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.102	**S1**	0.0640	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.138	**R**	3.0000	**Vs**	2.2350	**f1**	1.3466

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	10.00	5373.8	0.01	0.05	0.03	21.68
2	30.00	4426.2	0.05	0.07	0.04	35.37
3	50.00	4147.7	0.15	0.07	0.03	49.77
4	70.00	3420.8	0.29	0.05	0.01	57.90
5	90.00	3189.6	0.47	-0.01	0.01	67.29
6	110.00	3074.2	0.71	-0.09	0.03	75.28
7	130.00	4600.7	0.99	-0.11	0.12	149.85
8	150.00	5472.1	1.31	0.14	0.35	308.26
9	170.00	6794.6	1.69	1.07	0.79	723.24

Support Forces Summary

Structure:	CT13617-A-SBA	**Code:**	TIA-222-G	5/2/2022	
Site Name:	Troiano Realty	**Exposure:**	B		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 17	



IES Tower Engineering Solutions

Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	-0.01	315.91	-28.93	
	1a	10.20	-133.66	-8.36	
	1b	-10.20	-133.65	-8.37	
1.2D + 1.6W 60° Wind	1	-1.95	161.61	-14.48	
	1a	-13.52	161.81	5.55	
	1b	-22.56	-274.82	-13.03	
1.2D + 1.6W 90° Wind	1	-2.32	16.20	-1.00	
	1a	-21.82	270.21	11.29	
	1b	-20.21	-237.82	-10.29	
0.9D + 1.6W Normal Wind	1	-0.01	311.25	-28.66	
	1a	10.42	-137.40	-8.50	
	1b	-10.42	-137.39	-8.51	
0.9D + 1.6W 60° Wind	1	-1.96	157.26	-14.21	
	1a	-13.29	157.46	5.41	
	1b	-22.78	-278.28	-13.16	
0.9D + 1.6W 90° Wind	1	-2.34	12.15	-0.74	
	1a	-21.59	265.64	11.15	
	1b	-20.43	-241.35	-10.41	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	137.68	-8.65	
	1a	2.82	5.75	-2.31	
	1b	-2.81	5.80	-2.31	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.57	93.14	-4.50	
	1a	-4.18	93.18	1.76	
	1b	-6.53	-37.09	-3.77	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.66	49.73	-0.49	
	1a	-6.63	125.21	3.45	
	1b	-5.79	-25.71	-2.96	
1.2D + 1.0E	1	0.00	29.01	3.96	
	1a	4.68	9.80	-2.71	
	1b	-4.68	9.80	-2.71	
0.9D + 1.0E	1	0.00	24.93	4.22	
	1a	4.91	5.76	-2.84	
	1b	-4.91	5.76	-2.84	
1.0D + 1.0W Normal Wind	1	0.00	85.63	-7.66	
	1a	1.92	-22.57	-1.72	
	1b	-1.92	-22.56	-1.72	
1.0D + 1.0W 60° Wind	1	-0.49	48.51	-4.14	
	1a	-3.84	48.56	1.65	
	1b	-4.92	-56.57	-2.84	
1.0D + 1.0W 90° Wind	1	-0.58	13.50	-0.87	
	1a	-5.85	74.64	3.05	
	1b	-4.35	-47.64	-2.17	

Max Reactions

Leg			Overturning		
Max Uplift:	-278.28	(kips)	Moment:	4928.92	(ft-kips)
Max Down:	315.91	(kips)	Total Down:	48.60	(kips)
Max Shear:	28.93	(kips)	Total Shear:	45.67	(kips)

Max Reactions

Leg			Overturning		
Max Uplift:	-278.28	(kips)	Moment:	4928.92	(ft-kips)
Max Down:	315.91	(kips)	Total Down:	48.60	(kips)
Max Shear:	28.93	(kips)	Total Shear:	45.67	(kips)

Anchor Bolts

Bolt Size (in.):	1.00	Number Bolts:	8
Yield Strength (Ksi):	109.00	Tensile Strength (Ksi):	125.00
Detail Type:	C		

Interaction Ratio: 0.68

Max Usages

Max Leg: 94.7% (1.2D + 1.6W Normal Wind - Sect 8)
Max Diag: 89.3% (0.9D + 1.6W 90° Wind - Sect 3)
Max Horiz: 5.5% (1.2D + 1.6W 90° Wind - Sect 9)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0E - Normal To Face	140.00	0.0637	-0.0022	0.0789
	148.07	0.0749	-0.0021	0.0881
	168.07	0.1092	-0.0018	0.1054
	175.78	0.1233	-0.0017	0.1050
	180.00	0.1312	-0.0017	0.1095
0.9D + 1.6W 97 mph Wind at 60° From Face	140.00	1.2305	-0.0919	1.3790
	148.07	1.4220	-0.1091	1.4506
	168.07	1.9718	-0.1716	1.6674
	175.78	2.1932	-0.2032	1.6983
	180.00	2.3147	-0.2065	1.6312
0.9D + 1.6W 97 mph Wind at 90° From Face	140.00	1.2383	-0.0652	1.3741
	148.07	1.4309	-0.0651	1.4650
	168.07	1.9847	-0.0651	1.6783
	175.78	2.2079	-0.0651	1.7523
	180.00	2.3300	-0.0651	1.6243
0.9D + 1.6W 97 mph Wind at Normal To Face	140.00	1.2586	0.0560	1.4103
	148.07	1.4529	0.0567	1.4752
	168.07	2.0119	0.0560	1.6799
	175.78	2.2360	0.0562	1.5883
	180.00	2.3587	-0.0553	1.7147
1.0D + 1.0W 60 mph Wind at 60° From Face	140.00	0.2956	-0.0151	0.3319
	148.07	0.3414	-0.0159	0.3471
	168.07	0.4733	-0.0191	0.4004
	175.78	0.5263	-0.0208	0.4066
	180.00	0.5554	-0.0209	0.3912

1.0D + 1.0W 60 mph Wind at 90° From Face	140.00	0.2975	-0.0152	0.3296
	148.07	0.3436	-0.0150	0.3513
	168.07	0.4764	-0.0146	0.4029
	175.78	0.5298	-0.0145	0.4199
	180.00	0.5591	-0.0145	0.3892
1.0D + 1.0W 60 mph Wind at Normal To Face	140.00	0.3025	0.0133	0.3371
	148.07	0.3491	0.0132	0.3546
	168.07	0.4832	0.0128	0.4021
	175.78	0.5369	0.0127	0.3812
	180.00	0.5663	-0.0124	0.4109
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	140.00	0.3685	-0.0186	0.4162
	148.07	0.4256	-0.0194	0.4347
	168.07	0.5901	-0.0226	0.5015
	175.78	0.6564	-0.0243	0.5019
	180.00	0.6928	-0.0245	0.4923
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	140.00	0.3695	-0.0193	0.4119
	148.07	0.4268	-0.0192	0.4373
	168.07	0.5919	-0.0189	0.5024
	175.78	0.6585	-0.0189	0.5128
	180.00	0.6950	-0.0189	0.4897
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	140.00	0.3718	0.0167	0.4150
	148.07	0.4293	0.0166	0.4399
	168.07	0.5951	0.0163	0.4982
	175.78	0.6618	0.0163	0.4819
	180.00	0.6983	-0.0160	0.5062
1.2D + 1.0E - Normal To Face	140.00	0.0639	-0.0022	0.0791
	148.07	0.0752	-0.0021	0.0886
	168.07	0.1096	-0.0018	0.1059
	175.78	0.1238	-0.0018	0.1054
	180.00	0.1317	-0.0017	0.1097
1.2D + 1.6W 97 mph Wind at 60° From Face	140.00	1.2346	-0.0924	1.3851
	148.07	1.4269	-0.1096	1.4569
	168.07	1.9792	-0.1724	1.6754
	175.78	2.2017	-0.2041	1.7059
	180.00	2.3237	-0.2074	1.6389
1.2D + 1.6W 97 mph Wind at 90° From Face	140.00	1.2425	-0.0655	1.3799
	148.07	1.4358	-0.0654	1.4715
	168.07	1.9922	-0.0654	1.6863
	175.78	2.2164	-0.0654	1.7600
	180.00	2.3391	-0.0654	1.6320
1.2D + 1.6W 97 mph Wind at Normal To Face	140.00	1.2627	0.0563	1.4162
	148.07	1.4579	0.0570	1.4820
	168.07	2.0195	0.0563	1.6876
	175.78	2.2446	0.0565	1.5962
	180.00	2.3679	-0.0556	1.7224

Mat Foundation Design for Self Supporting Tower

			Date: 5/2/2022
Customer Name:	SBA Communications Corp	EIA/TIA Standard:	TIA-222-G
Site Name:		Structure Height (Ft.):	180
Site Nmber:	CT13617-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	128549	Engineer Login ID:	

Foundation Info Obtained from: Drawings/Calculations

Analysis or Design? Analysis

Number of Tower Legs: 3 Legs

Base Reactions (Factored):

(1). Individual Leg:

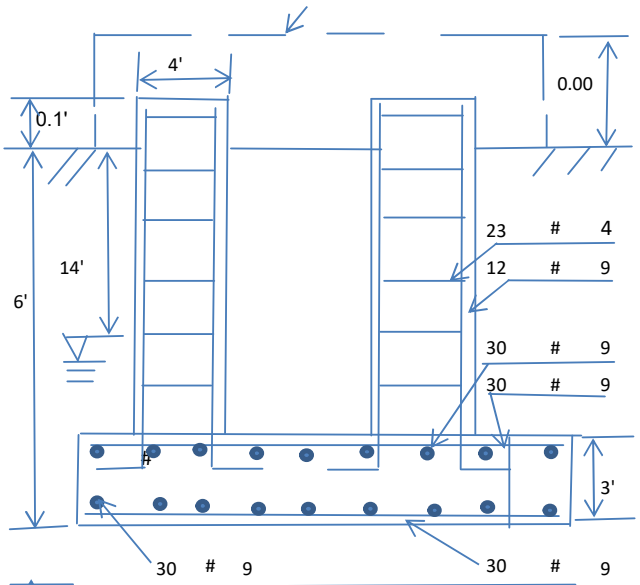
Axial Load (Kips):	315.9	Uplift Force (Kips):	278.3
Shear Force (Kips):	28.9		

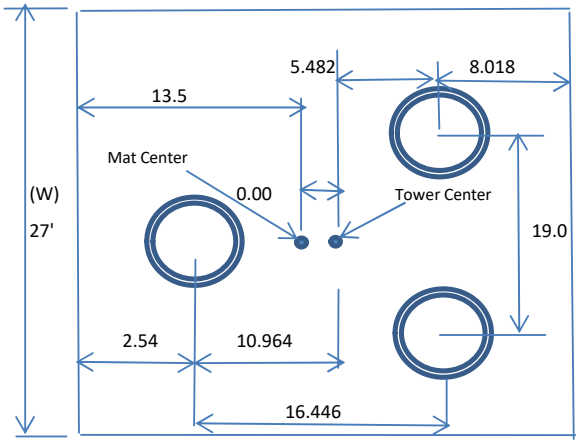
(2). Tower Base:

Total Vertical Load (Kips):	48.6	Total Shear Force (Kips):	45.7
Moment (Kips-ft):	4928.9		

Foundation Geometries:

Leg distance (Center-to-Center ft.):		19.0	Mods required -Yes/No ?:	No	
Diameter of Pier (ft.):	Round	4.0	Pier Height A. G. (ft.):	0.00	
Tower center to mat center (ft):		0	Depth of Base BG (ft.):	6.0	
Length of Pad (ft.):		27	Width of Pad (ft.):	27	
Thickness of Pad (ft):		3.00			





Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	12	Tie Spacing (in):	3.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

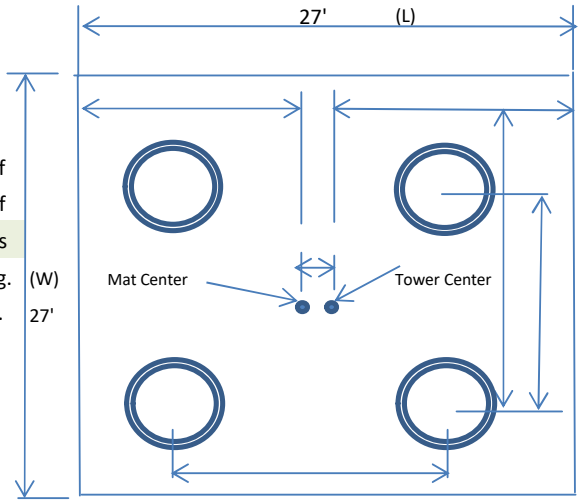
Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	14.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	16000	Consider ties in concrete shear strength:	Yes	
Consider Soil Lateral Resistance ?	Yes	Enter soil C (psf) or Phi (deg.):	30.0	Deg.
		Depth to ignor lateral resistance	1.0	Ft.



Apply 1.35 for e/w per G/H: 1.35

Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75			
Total Dry Soil Volume (cu. Ft.):		2073.90	Total Dry Soil Weight (Kips):	248.87			
Total Buoyant Soil Volume (cu. Ft.):		0.00	Total Buoyant Soil Weight (Kips):	0.00			
Total Effective Soil Weight (Kips):		248.87	Weight from the Concrete Block at Top (K):	0.00			
Total Dry Concrete Volume (cu. Ft.):		2300.10	Total Dry Concrete Weight (Kips):	345.02			
Total Buoyant Concrete Volume (cu. Ft.):		0.00	Total Buoyant Concrete Weight (Kips):	0.00			
Total Effective Concrete Weight (Kips):		345.02	Total Vertical Load on Base (Kips):	642.48			
Check Soil Capacities:						Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):		2926.69	<	Allowable Factored Soil Bearing (psf):	12000	0.24	OK!
Allowable Foundation Overturning Resistance (kips-ft.):		7871.8	>	Design Factored Momont (kips-ft):	5179	0.66	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):		1.52	OK!				
Check the capacities of Reinforceing Concrete:							
Strength reduction factor (Flexure and axial tension):		0.90	Strength reduction factor (Shear):		0.75		
Strength reduction factor (Axial compresion):		0.65	Wind Load Factor on Concrete Design:		1.00		
(1) Concrete Pier:						Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):		1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):		661.5	>	Design Factored Moment (Mu, Kips-Ft):	85.3	0.13	OK!
Calculated Shear Capacity (Kips):		328.2	>	Design Factored Shear (Kips):	28.9	0.09	OK!
Calculated Tension Capacity (Tn, Kips):		648.0	>	Design Factored Tension (Tu Kips):	278.3	0.43	OK!
Calculated Compression Capacity (Pn, Kips):		2383.6	>	Design Factored Axial Load (Pu Kips):	315.9	0.13	OK!
Moment & Tension Strength Combination:		0.13	OK!	Check Tie Spacing (Design/Req'd):	0.25		
Pier Reinforcement Ratio:		0.007	Reinforcement Ratio is satisfied per ACI				
(2).Concrete Pad:							
One-Way Design Shear Capacity (L or W Direction, Kips):		863.5	>	One-Way Factored Shear (L/W-Dir Kips)	261.2	0.30	OK!
One-Way Design Shear Capacity (Diagonal Dir., Kips):		609.8	>	One-Way Factored Shear (Dia. Dir, Kips	194.8	0.32	OK!
Lower Steel Pad Reinforcement Ratio (L or W-Direct.):		0.0029		Lower Steel Reinf. Ratio (Dia. Dir.):	0.0028		
Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):		4232.0	>	Moment at Bottom (L-Direct. K-Ft):	1302.9	0.31	OK!
Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):		3838.3	>	Moment at Bottom (Dia. Dir. K-Ft):	1157.8	0.30	OK!
Upper Steel Pad Reinforcement Ratio (L or W -Direction):		0.0029		Upper Steel Reinf. Ratio (Dia. Dir.):	0.0028		
Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):		4232.0	>	Moment at the top (L-Dir Kips-Ft):	564.4	0.13	OK!
Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):		3838.3	>	Moment at the top (Dia. Dir., K-Ft):	353.3	0.09	OK!
Punching Failure Capacity (Kips):		997.9	>	Punch. Failure Factored Shear (K):	315.9	0.32	OK!

Exhibit E

Mount Analysis

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

Antenna Mount Analysis Report

Existing 182-Ft Self Support Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13617-A-SBA / Troiano Realty

Customer Site Name: Troiano Realty

Carrier Name: T-Mobile (App#: 194456, V#1)

Carrier Site ID / Name: CT11530B / Troiano Realty

Site Location: 157 Chestnut Hill Road

Stafford Springs, Connecticut

Tolland County

Latitude: 41.977416

Longitude: -72.383305

Analysis Result:

Max Structural Usage: 34.3% [Pass]

Report Prepared By: Osuba Gurung

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

Antenna Mount Analysis Report

Existing 182-Ft Self Support Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13617-A-SBA / Troiano Realty

Customer Site Name: Troiano Realty

Carrier Name: T-Mobile (App#: 194456, V#1)

Carrier Site ID / Name: CT11530B / Troiano Realty

Site Location: 157 Chestnut Hill Road

Stafford Springs, Connecticut

Tolland County

Latitude: 41.977416

Longitude: -72.383305

Analysis Result:

Max Structural Usage: 34.3% [Pass]

Report Prepared By: Osuba Gurung

Introduction

The purpose of this report is to summarize the analysis results on the (3) T frames at 177.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping info by Skytower LLC, Site name: Troiano Realty, Dated 05/01/2019
Antenna Loading	SBA, Application #: 194456, v1, Dated 04/06/2022
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
Exposure Category: B
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(3) T frames at 177.00' elevation

Final Antenna Configuration

3 Ericsson AIR6419 B41 @ 177'
3 RFS APXVAARR24_43-U-NA20 @ 175'
3 Ericsson KRY 112 489/2* @ 177'
3 Ericsson 4449 B71 + B85 @ 177'
3 Ericsson 4460 B25 + B66 @ 177'
3 Kathrein 782 11056* @ 177'

* Equipment to be flush mounted directly to the Face horizontal. They are not included in the antenna placement diagrams.

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 34.3%, which occurs in the Support rail. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.

2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.

4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.

5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.

7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.

8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.

9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.


30.04.20

Structure: CT13617-A-SBA - Troiano Realty

Sector: A

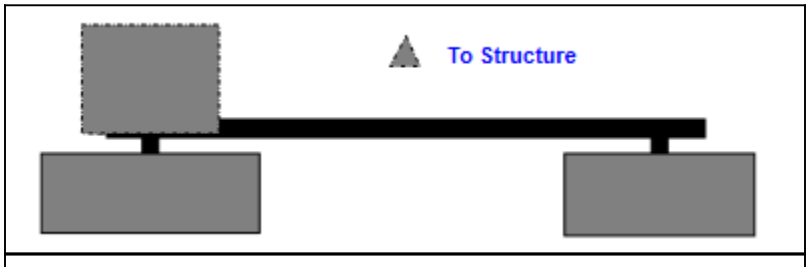
Structure Type: Self Support

Mount Elev: 177.00

4/27/2022

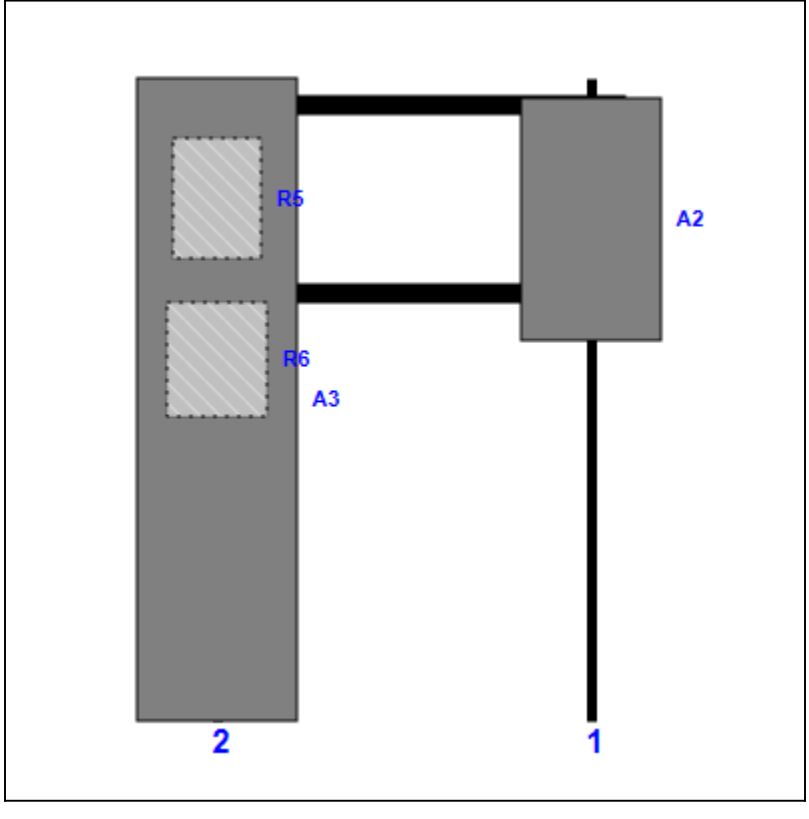
Tower Engineering Solutions

Plan View



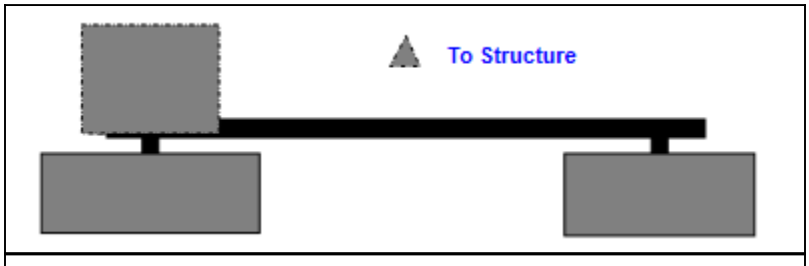
Front View

Looking Toward Structure



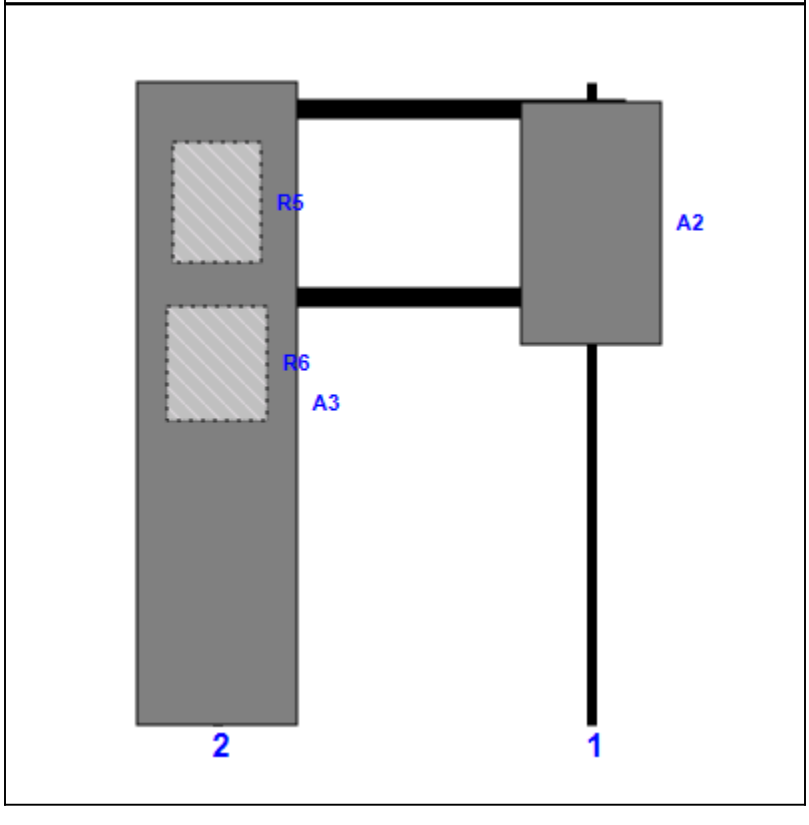
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	AIR6419 B41 @ 177'	36.30	20.90	61.00	1	a	Front	21.00			
A3	APXVAARR24_43-U-NA20 @ 175'	95.90	24.00	5.00	2	a	Front	48.00			
R5	4449 B71 + B85 @ 177'	17.90	13.10	5.00	2	a	Behind	18.00			
R6	4460 B25 + B66 @ 177'	17.00	15.10	5.00	2	a	Behind	42.00			

Plan View



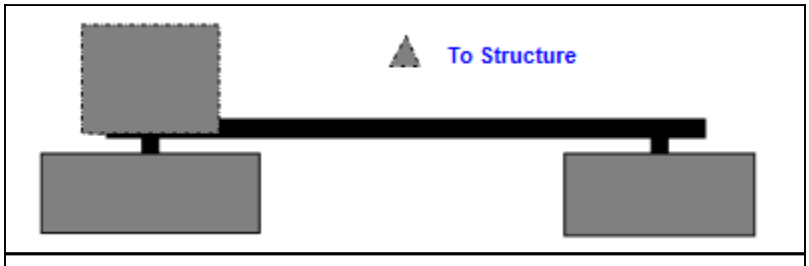
Front View

Looking Toward Structure



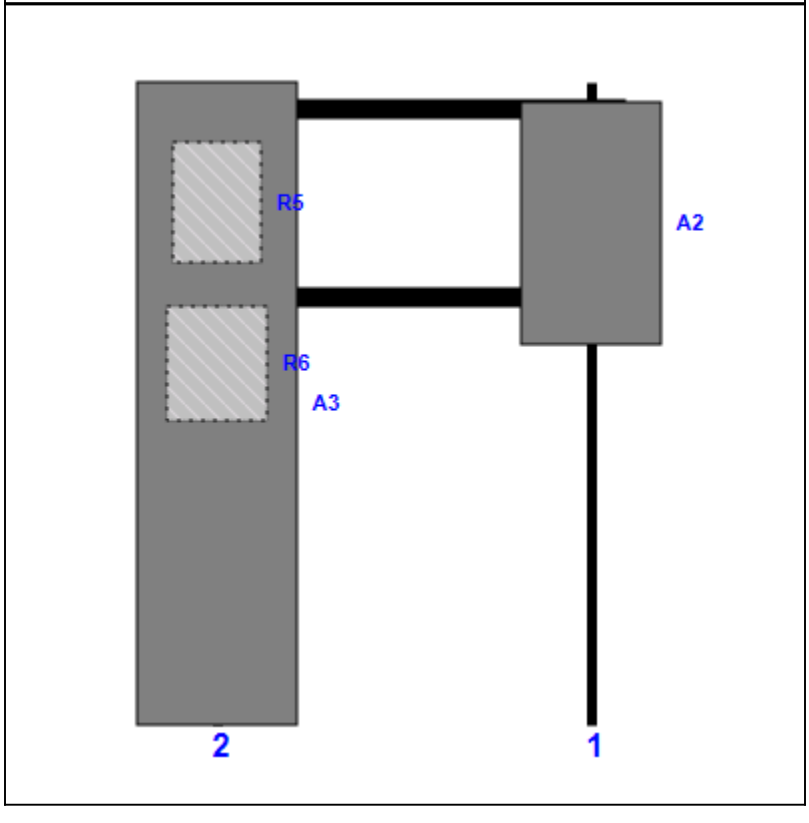
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	AIR6419 B41 @ 177'	36.30	20.90	61.00	1	a	Front	21.00			
A3	APXVAARR24_43-U-NA20 @ 175'	95.90	24.00	5.00	2	a	Front	48.00			
R5	4449 B71 + B85 @ 177'	17.90	13.10	5.00	2	a	Behind	18.00			
R6	4460 B25 + B66 @ 177'	17.00	15.10	5.00	2	a	Behind	42.00			

Plan View



Front View

Looking Toward Structure

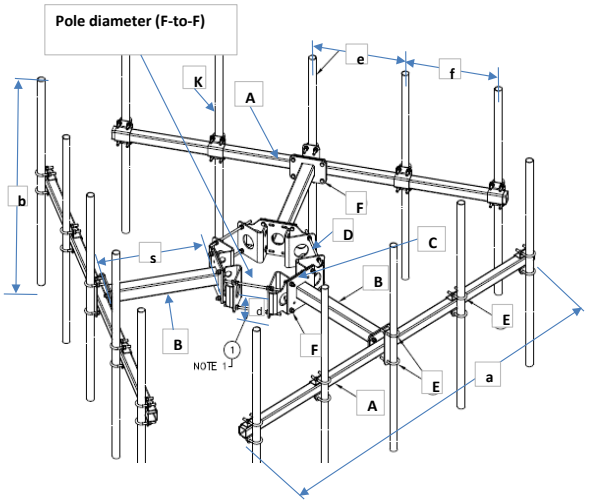


Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A2	AIR6419 B41 @ 177'	36.30	20.90	61.00	1	a	Front	21.00			
A3	APXVAARR24_43-U-NA20 @ 175'	95.90	24.00	5.00	2	a	Front	48.00			
R5	4449 B71 + B85 @ 177'	17.90	13.10	5.00	2	a	Behind	18.00			
R6	4460 B25 + B66 @ 177'	17.00	15.10	5.00	2	a	Behind	42.00			

Antenna Mount Type "MT-Y" Mapping Form (PATENT PENDING)

FCC # 1248715

Tower Owner:	SBA Corp.	**Mapping Date:**	5/1/19
Site Name:	Troiano Realty	**Structure Type:**	Monopole
Site Number or ID:	CT13617	**Structure Height (Ft.):**	182
Mapping Contractor:	SkyTower LLC	**Mount Height (Ft.):**	180



Geometries (Unit: inches)									
a	66	e	51	j		o		s	12
b	96	f	NA	k		p		t	54
c		g		m		q		u *	30
d	5.5	h		n		r		v *	66

Members/Bolts (Unit: inches) — *** - See Ant. Layout for "u", "v" and member "K" (pipe)**

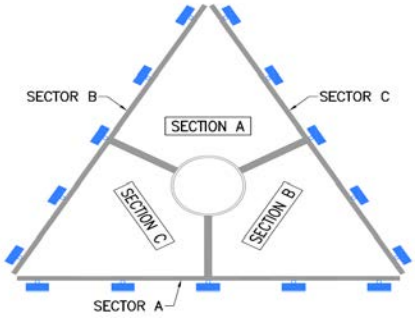
Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	Tubing 4x4x1/4	4	4	0.25	**F**	5/8" Bolt			
B	Tubing 4x4x3/16	4	4	0.1875	**G**				
C	1/2" Thick. Plate	0	0	0.5	**H**				
D	5/8" Bolt				**J**				
E	1/2" U-Bolt				**K* (pipe)**	2.875 OD x 0.203 Pipe	2.875	2.469	0.203

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

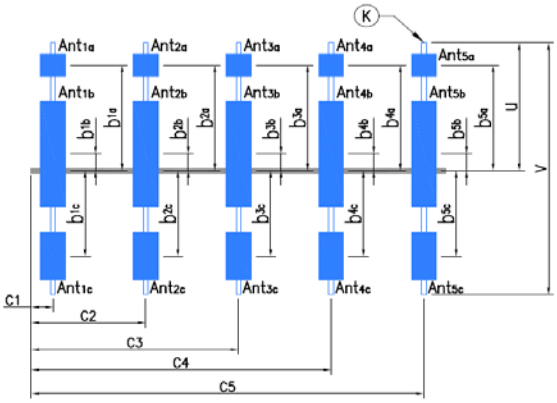
T Measurement is for tower face of self support, Tower leg is 2.87"

Stiff arm attached to mount: OD Pipe 2.37"x .18"x 84" using two 1/2 u-bolts

Carrier above is 32" away



Climbing ladder is , at 325 Degree Azimuth



Antenna Layout

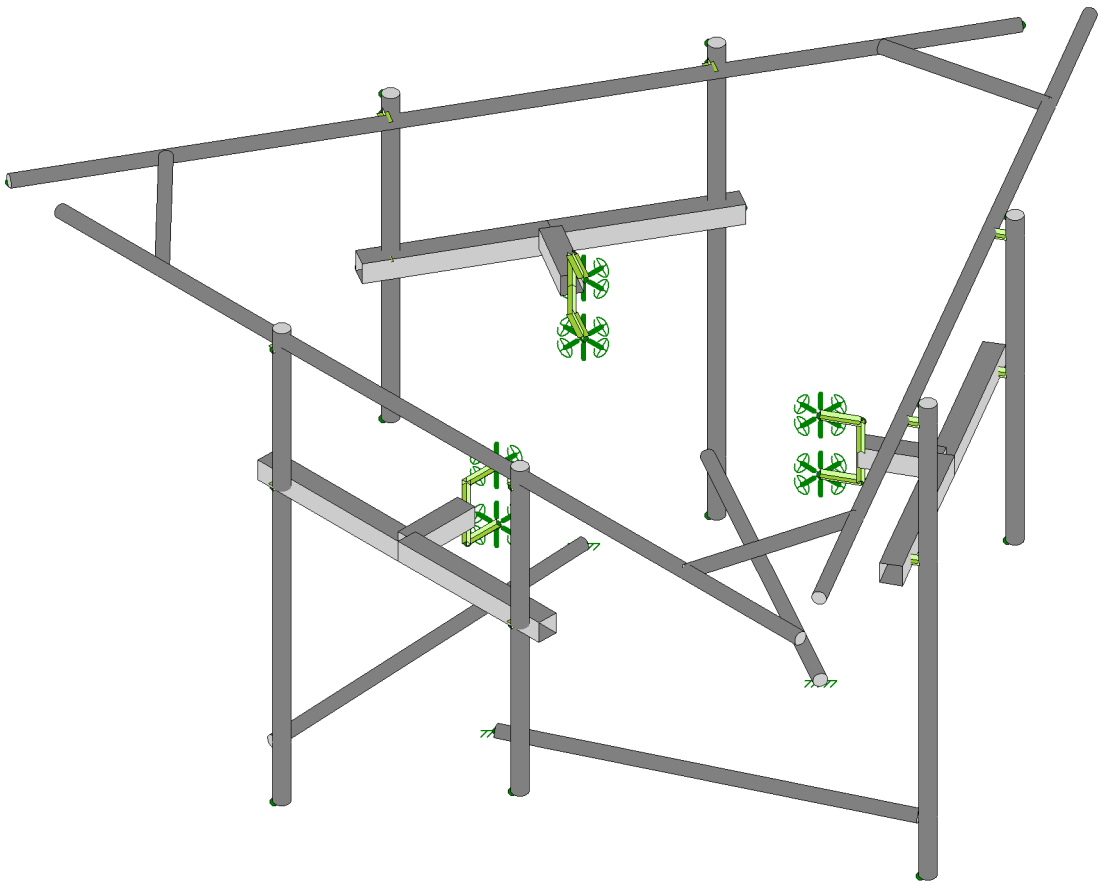
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Mounting Locations (Unit: inches)							Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photo Numbers
Sector A									
Ant_{1a}	APXV18-206516S	7	3.5	52		6	4	5	031-040
Ant_{1b}	ericsson TMA1900	6	3.5	11					
Ant_{1c}									
Ant_{2a}	LNX-6515DS-A1M	7.5	12	97		14	2.5	61	041-045
Ant_{2b}									
Ant_{2c}									
Ant_{3a}									
Ant_{3b}									
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									

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

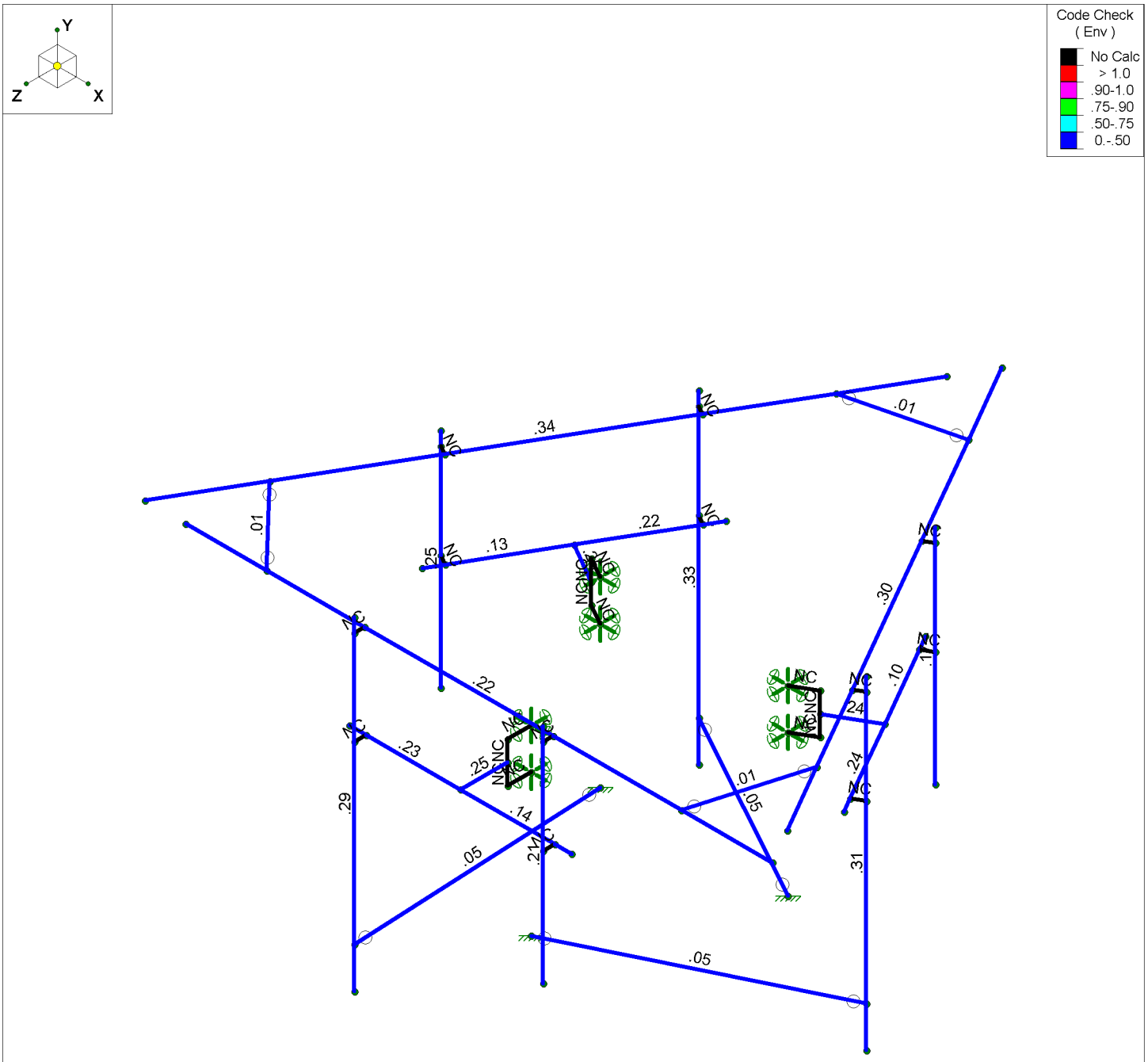
Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	65	Deg	
Sector B:	180	Deg	
Sector C:	340	Deg	
Climbing	325	Deg	
Climbing Facility	Corrosion Type:	Good condition	
	Access:	Climbing path was obstructed.	
	Condition:	N/A	

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

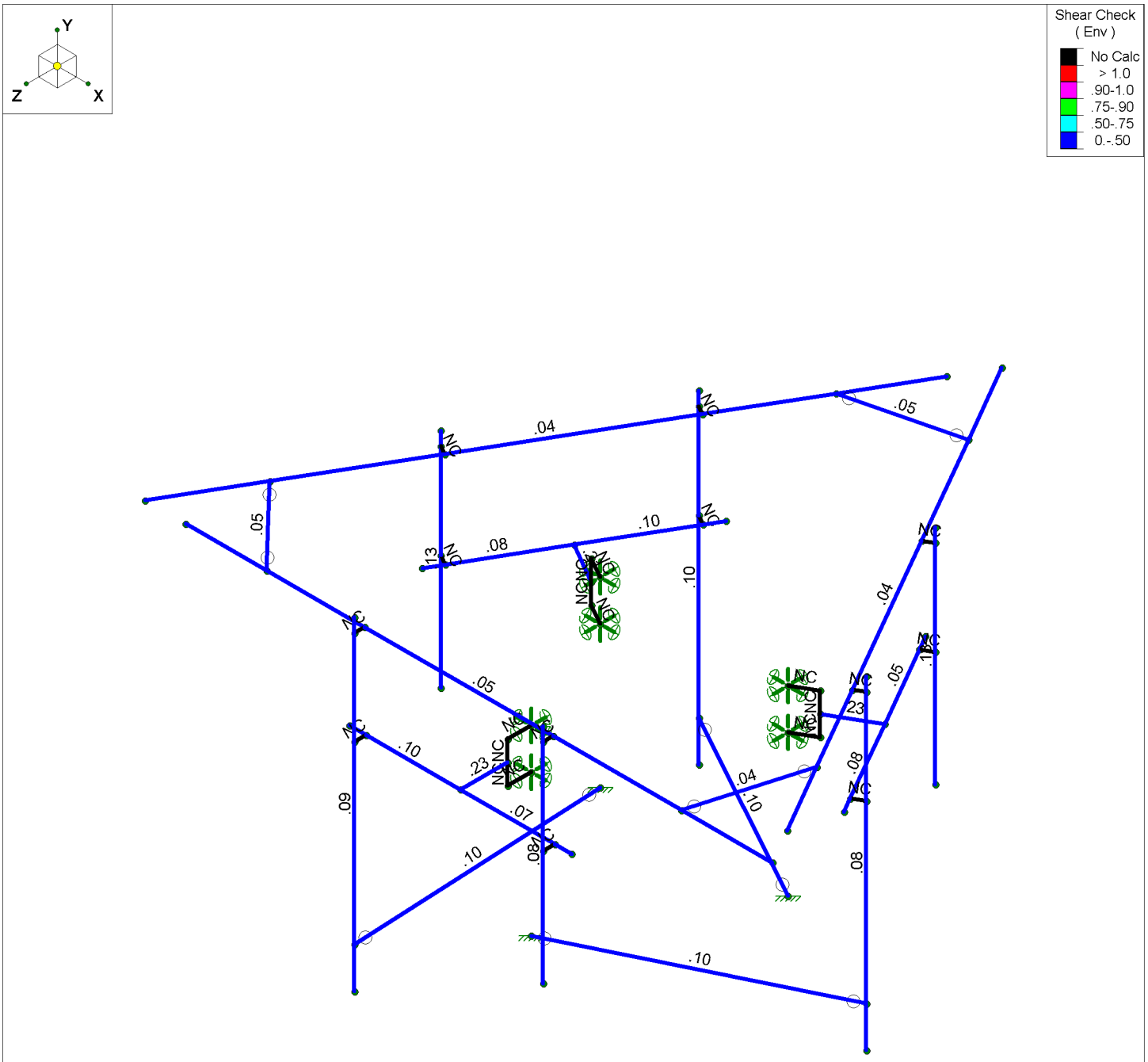


Tower Engineering Solutio...	CT13617-A-SBA_MT_LO_Loads Only_G	SK - 1
		Apr 27, 2022 at 1:19 PM
TES Project No. 127389		CT13617-A-SBA_127389_G_RISA_...



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

Tower Engineering Solutio...	CT13617-A-SBA_MT_LO_Loads Only_G	SK - 2
		Apr 27, 2022 at 1:19 PM
TES Project No. 127389		CT13617-A-SBA_127389_G_RISA_...



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

Tower Engineering Solutio...	CT13617-A-SBA_MT_LO_Loads Only_G	SK - 3
		Apr 27, 2022 at 1:19 PM
TES Project No. 127389		CT13617-A-SBA_127389_G_RISA_...

Basic Load Cases

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

Load Combinations

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	FH	HSS4X4X4	Beam	Tube	A500 Gr.B ...	Typical	3.37	7.8	7.8	12.8
2	STABILIZER	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	SR	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	TB	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Properties

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

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	MP4A	N2	N1			FH	Beam	Tube	A500 Gr.B...	Typical
2	M2	N13	N1			HSS4X4X4	Beam	None	A500 Gr.B...	DR1
3	MP1A	N4	N5			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
4	MP2A	N6	N7			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
5	M5	N10	N24			STABILIZER	Beam	Pipe	A53 Gr.B	Typical
6	MP3A	N1	N3			FH	Beam	Tube	A500 Gr.B...	Typical
7	M7	N9	N12			RIGID	Beam	None	RIGID	DR1
8	M8	N8	N11			RIGID	Beam	None	RIGID	DR1
9	M9	N14	N13			RIGID	Beam	None	RIGID	DR1
10	M10	N13	N15			RIGID	Beam	None	RIGID	DR1
11	M11	N16	N14			RIGID	Beam	None	RIGID	DR1
12	M12	N17	N15			RIGID	Beam	None	RIGID	DR1
13	M13	N21	N19			RIGID	Beam	None	RIGID	DR1
14	M14	N20	N18			RIGID	Beam	None	RIGID	DR1
15	M15	N22	N23			SR	Beam	Pipe	A53 Gr.B	Typical
16	MP4C	N26	N25			FH	Beam	Tube	A500 Gr.B...	Typical
17	M17	N28	N25			HSS4X4X4	Beam	None	A500 Gr.B...	DR1
18	MP3C	N25	N27			FH	Beam	Tube	A500 Gr.B...	Typical
19	M19	N29	N28			RIGID	Beam	None	RIGID	DR1
20	M20	N28	N30			RIGID	Beam	None	RIGID	DR1
21	M21	N31	N29			RIGID	Beam	None	RIGID	DR1
22	M22	N32	N30			RIGID	Beam	None	RIGID	DR1
23	M23	N33	N34			SR	Beam	Pipe	A53 Gr.B	Typical
24	MP4B	N36	N35			FH	Beam	Tube	A500 Gr.B...	Typical
25	M25	N38	N35			HSS4X4X4	Beam	None	A500 Gr.B...	DR1
26	MP3B	N35	N37			FH	Beam	Tube	A500 Gr.B...	Typical
27	M27	N39	N38			RIGID	Beam	None	RIGID	DR1
28	M28	N38	N40			RIGID	Beam	None	RIGID	DR1
29	M29	N41	N39			RIGID	Beam	None	RIGID	DR1
30	M30	N42	N40			RIGID	Beam	None	RIGID	DR1
31	M31	N43	N44			SR	Beam	Pipe	A53 Gr.B	Typical
32	M32	N50	N45			TB	Beam	Pipe	A53 Gr.B	Typical
33	M33	N49	N48			TB	Beam	Pipe	A53 Gr.B	Typical
34	M34	N47	N46			TB	Beam	Pipe	A53 Gr.B	Typical
35	MP1C	N51	N52			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
36	MP2C	N53	N54			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
37	M37	N56	N58			RIGID	Beam	None	RIGID	DR1
38	M38	N55	N57			RIGID	Beam	None	RIGID	DR1
39	M39	N62	N60			RIGID	Beam	None	RIGID	DR1
40	M40	N61	N59			RIGID	Beam	None	RIGID	DR1
41	MP1B	N63	N64			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
42	MP2B	N65	N66			PIPE_2.5	Beam	Pipe	A53 Gr.B	DR1
43	M43	N68	N70			RIGID	Beam	None	RIGID	DR1
44	M44	N67	N69			RIGID	Beam	None	RIGID	DR1
45	M45	N74	N72			RIGID	Beam	None	RIGID	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
46	M46	N73	N71			RIGID	Beam	None	RIGID	DR1
47	M47	N75	N76			STABILIZER	Beam	Pipe	A53 Gr.B	Typical
48	M48	N77	N78			STABILIZER	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	MP4A						Yes				None
2	M2						Yes				None
3	MP1A						Yes		-z		None
4	MP2A						Yes		-z		None
5	M5	BenPIN	BenPIN				Yes				None
6	MP3A						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	MP4C						Yes				None
17	M17						Yes				None
18	MP3C						Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	MP4B						Yes				None
25	M25						Yes				None
26	MP3B						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes				None
31	M31						Yes				None
32	M32	BenPIN	BenPIN				Yes				None
33	M33	BenPIN	BenPIN				Yes				None
34	M34	BenPIN	BenPIN				Yes				None
35	MP1C						Yes		-z		None
36	MP2C						Yes		-z		None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	MP1B						Yes		-z		None
42	MP2B						Yes		-z		None
43	M43						Yes				None
44	M44						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
45	M45						Yes				None
46	M46						Yes				None
47	M47	BenPIN	BenPIN				Yes				None
48	M48	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	MP4A	FH	2.75			Lbyy						Lateral
2	M2	HSS4X4X4	1.167			Lbyy						Lateral
3	MP1A	PIPE_2.5	5.5			Lbyy						Lateral
4	MP2A	PIPE_2.5	8			Lbyy						Lateral
5	M5	STABILIZER	6.073			Lbyy						Lateral
6	MP3A	FH	2.75			Lbyy						Lateral
7	M15	SR	14.5			Lbyy						Lateral
8	MP4C	FH	2.75			Lbyy						Lateral
9	M17	HSS4X4X4	1.167			Lbyy						Lateral
10	MP3C	FH	2.75			Lbyy						Lateral
11	M23	SR	14.5			Lbyy						Lateral
12	MP4B	FH	2.75			Lbyy						Lateral
13	M25	HSS4X4X4	1.167			Lbyy						Lateral
14	MP3B	FH	2.75			Lbyy						Lateral
15	M31	SR	14.5			Lbyy						Lateral
16	M32	TB	2.702			Lbyy						Lateral
17	M33	TB	2.702			Lbyy						Lateral
18	M34	TB	2.702			Lbyy						Lateral
19	MP1C	PIPE_2.5	5.5			Lbyy						Lateral
20	MP2C	PIPE_2.5	8			Lbyy						Lateral
21	MP1B	PIPE_2.5	5.5			Lbyy						Lateral
22	MP2B	PIPE_2.5	8			Lbyy						Lateral
23	M47	STABILIZER	6.073			Lbyy						Lateral
24	M48	STABILIZER	6.073			Lbyy						Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N16	Reaction	Reaction	Reaction	Reaction		Reaction
2	N17	Reaction	Reaction	Reaction	Reaction		Reaction
3	N24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N31	Reaction	Reaction	Reaction	Reaction		Reaction
5	N32	Reaction	Reaction	Reaction	Reaction		Reaction
6	N41	Reaction	Reaction	Reaction	Reaction		Reaction
7	N42	Reaction	Reaction	Reaction	Reaction		Reaction
8	N76	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N78	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N16	max	1166.384	9	1337.98	6	771.888	1	-.108	2	0	11	.349	10
2		min	-607.014	10	204.874	1	-4956.416	6	-.407	5	0	1	-.672	9
3	N17	max	612.16	10	1333.258	5	4640.217	6	-.065	2	0	11	.348	10
4		min	-1166.807	9	178.27	2	247.557	1	-.418	5	0	1	-.672	9
5	N24	max	23.322	4	58.098	6	425.915	1	0	3	.009	3	.135	4
6		min	-23.365	3	-10.831	1	-416.665	2	0	4	-.007	4	-.167	3
7	N31	max	-310.562	4	1333.472	7	1405.276	5	.031	2	0	11	.66	5
8		min	-4357.912	7	198.054	4	-248.305	2	-.332	5	0	1	.134	2
9	N32	max	4317.598	5	1332.442	8	-27.085	4	.004	2	0	11	.66	8
10		min	394.634	2	188.859	3	-1274.894	7	-.324	5	0	1	.136	3
11	N41	max	3708.089	8	1321.075	8	3004.887	8	.656	6	0	11	.049	2
12		min	-1150.881	3	249.083	3	-169.496	3	.067	1	0	1	-.131	5
13	N42	max	189.428	3	1325.396	7	264.347	3	.649	6	0	11	.037	4
14		min	-3431.991	8	222.537	4	-3022.703	8	.09	1	0	1	-.125	7
15	N76	max	162.279	2	57.48	5	116.066	1	.118	2	.009	1	.084	1
16		min	-163.59	1	2.337	2	-112.438	2	-.147	1	-.007	2	-.068	2
17	N78	max	412.764	4	60.131	8	227.526	4	.145	2	.009	2	.084	2
18		min	-407.334	3	-12.507	3	-233.029	3	-.119	1	-.008	1	-.069	1
19	Totals:	max	3249.72	4	7854.059	8	3098.469	1						
20		min	-3249.715	3	2320.065	3	-3098.455	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	MP4A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
2			min	0	1	0	1	0	1	0	1	0	1	0	1
3		2	max	516.858	3	-448.826	2	463.628	2	1.025	2	.297	2	.556	3
4			min	-336.43	4	-1623.805	8	-454.585	1	-.728	1	-.256	1	-.658	4
5		3	max	516.858	3	-459.001	2	478.474	2	1.025	2	.621	2	1.082	7
6			min	-336.43	4	-1650.086	8	-469.432	1	-.728	1	-.574	1	-.314	4
7		4	max	519.586	3	-471.336	2	502.391	2	1.025	2	.96	2	2.228	7
8			min	-339.158	4	-1694.678	8	-493.349	1	-.728	1	-.907	1	.037	4
9		5	max	519.586	3	-481.511	2	517.238	2	1.025	2	1.311	2	3.395	7
10			min	-339.158	4	-1720.959	8	-508.195	1	-.728	1	-1.251	1	.396	4
11	M2	1	max	1019.445	1	2569.499	5	537.761	3	1.307	10	.314	3	4.097	6
12			min	-1036.522	2	736.085	2	-537.776	4	-2.511	9	-.314	4	-.413	1
13		2	max	1019.445	1	2558.35	5	531.462	3	1.307	10	.47	3	3.352	6
14			min	-1036.522	2	731.768	2	-531.478	4	-2.511	9	-.47	4	-.641	1
15		3	max	1019.445	1	2547.2	5	525.163	3	1.307	10	.624	3	2.611	6
16			min	-1036.522	2	727.452	2	-525.179	4	-2.511	9	-.624	4	-.867	1
17		4	max	1019.445	1	2536.051	5	518.865	3	1.307	10	.776	3	1.967	2
18			min	-1036.522	2	723.135	2	-518.881	4	-2.511	9	-.776	4	-1.093	1
19		5	max	1019.445	1	2524.901	5	512.566	3	1.307	10	.926	3	1.757	2
20			min	-1036.522	2	718.818	2	-512.582	4	-2.511	9	-.926	4	-1.317	1
21	MP1A	1	max	0	11	.011	7	.006	1	0	10	0	11	0	11
22			min	0	10	-.002	10	-.015	6	0	7	0	1	0	1
23		2	max	385.254	7	339.011	7	301.437	1	.172	3	.332	1	-.001	1
24			min	80.7	4	76.496	4	-309.946	2	-.22	4	-.319	2	-.132	10
25		3	max	-68.059	10	72.16	3	117.244	2	0	7	.058	1	.047	3
26			min	-233.083	5	-72.195	4	-117.191	1	0	10	-.058	2	-.047	4
27		4	max	-9.039	10	12.756	3	12.929	2	0	7	.009	1	.009	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
28			min	-29.868	5	-12.791	4	-12.876	1	0	10	-.009	2	-.009	4
29		5	max	0	10	.116	10	.397	6	0	7	0	11	0	11
30			min	0	9	-.233	7	-.07	1	0	10	0	1	0	1
31	MP2A	1	max	381.604	8	143.984	4	328.397	1	0	10	0	1	0	11
32			min	76.8	9	-143.853	3	-328.516	2	0	5	0	2	0	4
33		2	max	771.126	8	58.58	4	433.991	1	.224	3	.719	1	.394	7
34			min	188.582	3	-372.088	7	-433.694	2	-.185	4	-.679	2	-.074	4
35		3	max	-92.528	2	203.146	3	58.023	1	.007	3	.112	1	.548	3
36			min	-528.179	5	-203.626	4	-48.591	2	-.005	4	-.144	2	-.582	4
37		4	max	-79.38	2	184.52	3	76.649	1	.007	3	.247	1	.161	3
38			min	-484.735	5	-185	4	-67.217	2	-.005	4	-.259	2	-.194	4
39		5	max	-76.8	10	143.101	3	327.834	2	0	7	0	1	0	11
40			min	-381.605	7	-143.278	4	-327.715	1	0	4	0	2	0	1
41	M5	1	max	424.694	1	54.208	5	23.36	4	.135	4	0	4	0	11
42			min	-414.054	2	12.557	2	-23.36	3	-.167	3	0	3	0	1
43		2	max	424.987	1	27.104	5	11.68	4	.135	4	.027	4	-.014	2
44			min	-415.042	2	6.279	2	-11.68	3	-.167	3	-.027	3	-.062	5
45		3	max	425.281	1	0	1	0	11	.135	4	.035	4	-.019	2
46			min	-416.029	2	0	2	0	1	-.167	3	-.035	3	-.082	5
47		4	max	425.574	1	-6.279	2	11.68	3	.135	4	.027	4	-.014	2
48			min	-417.017	2	-27.104	5	-11.68	4	-.167	3	-.027	3	-.062	5
49		5	max	425.867	1	-12.558	2	23.36	3	.135	4	0	4	0	2
50			min	-418.004	2	-54.208	5	-23.36	4	-.167	3	0	3	0	1
51	MP3A	1	max	361.356	8	988.684	10	511.375	1	.589	1	1.324	2	2.139	10
52			min	7.048	3	217.016	4	-519.506	2	-.732	2	-1.274	1	.198	9
53		2	max	361.356	8	978.51	10	496.528	1	.589	1	.971	2	1.463	10
54			min	7.048	3	206.841	4	-504.659	2	-.732	2	-.927	1	.04	9
55		3	max	361.356	8	968.335	10	481.681	1	.589	1	.63	2	.794	10
56			min	7.048	3	196.666	4	-489.812	2	-.732	2	-.591	1	-.112	9
57		4	max	356.979	8	939.68	10	445.779	1	.589	1	.31	2	.142	10
58			min	18.873	3	168.011	4	-453.91	2	-.732	2	-.277	1	-.327	7
59		5	max	0	11	0	11	0	11	0	11	0	11	0	11
60			min	0	1	0	1	0	1	0	1	0	1	0	1
61	M7	1	max	439.537	1	1596.49	8	516.882	3	.796	8	.132	1	1.025	2
62			min	-448.219	2	436.556	2	-336.95	4	-.432	3	-.171	2	-.728	1
63		2	max	439.537	1	1596.49	8	516.882	3	.796	8	.138	1	.993	2
64			min	-448.219	2	436.556	2	-336.95	4	-.432	3	-.164	2	-.763	1
65		3	max	439.537	1	1596.49	8	516.882	3	.796	8	.143	1	.961	2
66			min	-448.219	2	436.556	2	-336.95	4	-.432	3	-.156	2	-.799	1
67		4	max	439.537	1	1596.49	8	516.882	3	.796	8	.149	1	.929	2
68			min	-448.219	2	436.556	2	-336.95	4	-.432	3	-.149	2	-.834	1
69		5	max	439.537	1	1596.49	8	516.882	3	.796	8	.156	3	.897	2
70			min	-448.219	2	436.556	2	-336.95	4	-.432	3	-.142	2	-.87	1
71	M8	1	max	431.009	1	648.032	7	-18.857	3	-.056	4	.186	2	.732	2
72			min	-439.381	2	157.824	4	-356.861	8	-.511	7	-.155	1	-.589	1
73		2	max	431.009	1	648.032	7	-18.857	3	-.056	4	.179	2	.719	2
74			min	-439.381	2	157.824	4	-356.861	8	-.511	7	-.165	4	-.602	1
75		3	max	431.009	1	648.032	7	-18.857	3	-.056	4	.177	3	.706	2
76			min	-439.381	2	157.824	4	-356.861	8	-.511	7	-.177	4	-.615	1
77		4	max	431.009	1	648.032	7	-18.857	3	-.056	4	.175	3	.693	2
78			min	-439.381	2	157.824	4	-356.861	8	-.511	7	-.189	4	-.628	1
79		5	max	431.009	1	648.032	7	-18.857	3	-.056	4	.174	3	.68	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
80			min	-439.381	2	157.824	4	-356.861	8	-.511	7	-.201	4	-.64	1
81	M9	1	max	-204.874	1	607.014	10	4956.416	6	.682	9	.013	1	.672	9
82			min	-1337.98	6	-1166.384	9	-771.888	1	-.353	10	-.378	6	-.349	10
83		2	max	-204.874	1	607.014	10	4956.416	6	.682	9	.242	6	.818	9
84			min	-1337.98	6	-1166.384	9	-771.888	1	-.353	10	-.083	1	-.425	10
85		3	max	-204.874	1	607.014	10	4956.416	6	.682	9	.861	6	.964	9
86			min	-1337.98	6	-1166.384	9	-771.888	1	-.353	10	-.18	1	-.5	10
87		4	max	-204.874	1	607.014	10	4956.416	6	.682	9	1.481	6	1.109	9
88			min	-1337.98	6	-1166.384	9	-771.888	1	-.353	10	-.276	1	-.576	10
89		5	max	-204.874	1	607.014	10	4956.416	6	.682	9	2.1	6	1.255	9
90			min	-1337.98	6	-1166.384	9	-771.888	1	-.353	10	-.373	1	-.652	10
91	M10	1	max	1333.258	5	612.16	10	4640.217	6	.683	9	.04	1	.655	10
92			min	178.27	2	-1166.807	9	247.557	1	-.356	10	-1.997	6	-1.255	9
93		2	max	1333.258	5	612.16	10	4640.217	6	.683	9	.071	1	.578	10
94			min	178.27	2	-1166.807	9	247.557	1	-.356	10	-1.417	6	-1.11	9
95		3	max	1333.258	5	612.16	10	4640.217	6	.683	9	.102	1	.501	10
96			min	178.27	2	-1166.807	9	247.557	1	-.356	10	-.837	6	-.964	9
97		4	max	1333.258	5	612.16	10	4640.217	6	.683	9	.132	1	.425	10
98			min	178.27	2	-1166.807	9	247.557	1	-.356	10	-.257	6	-.818	9
99		5	max	1333.258	5	612.16	10	4640.217	6	.683	9	.36	5	.348	10
100			min	178.27	2	-1166.807	9	247.557	1	-.356	10	.039	2	-.672	9
101	M11	1	max	771.888	1	1337.98	6	604.566	10	.349	10	0	1	.407	5
102			min	-4956.416	6	204.874	1	-1169.98	9	-.672	9	0	6	.108	2
103		2	max	771.888	1	1337.98	6	604.566	10	.349	10	.088	10	.227	5
104			min	-4956.416	6	204.874	1	-1169.98	9	-.672	9	-.171	9	.026	2
105		3	max	771.888	1	1337.98	6	604.566	10	.349	10	.176	10	.073	1
106			min	-4956.416	6	204.874	1	-1169.98	9	-.672	9	-.341	9	-.055	2
107		4	max	771.888	1	1337.98	6	604.566	10	.349	10	.264	10	.043	1
108			min	-4956.416	6	204.874	1	-1169.98	9	-.672	9	-.512	9	-.183	6
109		5	max	771.888	1	1337.98	6	604.566	10	.349	10	.353	10	.013	1
110			min	-4956.416	6	204.874	1	-1169.98	9	-.672	9	-.682	9	-.378	6
111	M12	1	max	4640.217	6	1333.258	5	1170.551	9	.348	10	0	11	.418	5
112			min	247.557	1	178.27	2	-609.609	10	-.672	9	0	5	.065	2
113		2	max	4640.217	6	1333.258	5	1170.551	9	.348	10	.171	9	.223	5
114			min	247.557	1	178.27	2	-609.609	10	-.672	9	-.089	10	.039	2
115		3	max	4640.217	6	1333.258	5	1170.551	9	.348	10	.341	9	.033	6
116			min	247.557	1	178.27	2	-609.609	10	-.672	9	-.178	10	.006	1
117		4	max	4640.217	6	1333.258	5	1170.551	9	.348	10	.512	9	-.013	2
118			min	247.557	1	178.27	2	-609.609	10	-.672	9	-.267	10	-.165	5
119		5	max	4640.217	6	1333.258	5	1170.551	9	.348	10	.683	9	-.039	2
120			min	247.557	1	178.27	2	-609.609	10	-.672	9	-.356	10	-.36	5
121	M13	1	max	169.357	4	-8.409	3	-24.868	3	.215	7	.242	4	.093	2
122			min	-173.606	3	-136.007	8	-343.844	8	0	4	-.215	3	-.076	1
123		2	max	169.357	4	-8.409	3	-24.868	3	.215	7	.232	4	.095	2
124			min	-173.606	3	-136.007	8	-343.844	8	0	4	-.217	3	-.074	1
125		3	max	169.357	4	-8.409	3	-24.868	3	.215	7	.222	4	.097	2
126			min	-173.606	3	-136.007	8	-343.844	8	0	4	-.218	3	-.072	1
127		4	max	169.357	4	-8.409	3	-24.868	3	.215	7	.213	4	.099	2
128			min	-173.606	3	-136.007	8	-343.844	8	0	4	-.22	3	-.07	1
129		5	max	169.357	4	-8.409	3	-24.868	3	.215	7	.203	4	.1	2
130			min	-173.606	3	-136.007	8	-343.844	8	0	4	-.221	3	-.068	1
131	M14	1	max	205.143	2	-21.565	4	354.594	7	-.052	2	.214	4	.056	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
132			min	-196.77	1	-181.867	7	16.362	4	-.303	5	-.232	3	-.065	4
133		2	max	205.143	2	-21.565	4	354.594	7	-.052	2	.215	4	.06	3
134			min	-196.77	1	-181.867	7	16.362	4	-.303	5	-.222	3	-.063	4
135		3	max	205.143	2	-21.565	4	354.594	7	-.052	2	.216	4	.064	3
136			min	-196.77	1	-181.867	7	16.362	4	-.303	5	-.212	3	-.062	4
137		4	max	205.143	2	-21.565	4	354.594	7	-.052	2	.217	4	.068	3
138			min	-196.77	1	-181.867	7	16.362	4	-.303	5	-.201	3	-.061	4
139		5	max	205.143	2	-21.565	4	354.594	7	-.052	2	.218	4	.072	3
140			min	-196.77	1	-181.867	7	16.362	4	-.303	5	-.191	3	-.059	4
141	M15	1	max	0	11	0	11	0	11	0	11	0	11	0	11
142			min	0	1	0	1	0	1	0	1	0	1	0	1
143		2	max	118.944	4	-19.91	3	132.357	4	.04	1	.215	4	.148	5
144			min	-118.691	3	-89.364	8	-131.693	3	-.055	2	-.214	3	-.021	2
145		3	max	-36.281	4	14.414	4	50.258	2	.075	4	.139	2	.014	1
146			min	-347.452	7	-27.537	7	-46.872	1	-.073	3	-.152	1	-.017	2
147		4	max	27.196	2	89.09	8	121.573	1	.011	4	.186	2	.191	7
148			min	-27.191	1	20.438	2	-126.759	2	-.017	3	-.179	1	-.002	4
149		5	max	0	11	0	11	0	11	0	11	0	11	0	11
150			min	0	1	0	1	0	1	0	1	0	1	0	1
151	MP4C	1	max	0	11	.003	7	.019	4	0	11	0	11	0	11
152			min	0	1	-.006	1	-.002	6	0	1	0	1	0	1
153		2	max	539.626	1	-430.158	1	652.256	3	.421	5	.321	3	.529	1
154			min	-348.554	2	-1625.665	6	-656.41	4	-.124	2	-.291	4	-.578	2
155		3	max	546.055	1	-440.333	1	663.391	3	.421	5	.773	3	1.143	5
156			min	-354.982	2	-1651.945	6	-667.546	4	-.124	2	-.747	4	-.219	2
157		4	max	556.219	1	-452.668	1	681.008	3	.421	5	1.236	3	2.282	5
158			min	-365.146	2	-1696.537	6	-685.162	4	-.124	2	-1.213	4	.147	2
159		5	max	562.647	1	-462.843	1	692.143	3	.421	5	1.708	3	3.441	5
160			min	-371.575	2	-1722.818	6	-696.297	4	-.124	2	-1.688	4	.521	2
161	M17	1	max	1016.452	4	2567.063	6	637.234	1	-.227	2	.372	1	3.701	5
162			min	-1017.672	3	749.278	1	-637.194	2	-2.259	5	-.372	2	.235	2
163		2	max	1013.725	4	2555.913	6	632.51	1	-.227	2	.557	1	2.956	5
164			min	-1014.945	3	744.961	1	-632.47	2	-2.259	5	-.557	2	.011	2
165		3	max	1010.997	4	2544.764	6	627.786	1	-.227	2	.741	1	2.215	5
166			min	-1012.217	3	740.645	1	-627.747	2	-2.259	5	-.741	2	-.212	2
167		4	max	1008.27	4	2533.614	6	623.062	1	-.227	2	.923	1	1.476	5
168			min	-1009.49	3	736.328	1	-623.023	2	-2.259	5	-.923	2	-.434	2
169		5	max	1005.543	4	2522.465	6	618.339	1	-.227	2	1.104	1	.94	1
170			min	-1006.763	3	732.011	1	-618.299	2	-2.259	5	-1.104	2	-.655	2
171	MP3C	1	max	400.076	6	818.211	5	349.53	2	.531	2	1.1	1	1.194	8
172			min	-57.707	1	204.175	3	-354.631	1	-.616	1	-1.07	2	.235	3
173		2	max	398.251	6	791.93	5	345.818	2	.531	2	.858	1	.641	8
174			min	-51.278	1	194	3	-350.92	1	-.616	1	-.831	2	.098	3
175		3	max	396.425	6	765.649	5	342.107	2	.531	2	.618	1	.106	8
176			min	-44.849	1	183.825	3	-347.208	1	-.616	1	-.595	2	-.032	3
177		4	max	390.521	6	681.57	5	331.328	2	.531	2	.384	1	-.081	4
178			min	-26.181	1	155.17	3	-336.43	1	-.616	1	-.365	2	-.401	7
179		5	max	0	11	.002	1	.002	6	0	11	0	11	0	11
180			min	0	1	-.001	7	-.023	4	0	1	0	1	0	1
181	M19	1	max	-198.054	4	4357.912	7	248.305	2	.624	6	.711	5	.13	3
182			min	-1333.472	7	310.562	4	-1405.275	5	.089	4	.064	2	-.131	4
183		2	max	-198.054	4	4357.912	7	248.305	2	.624	6	.543	8	-.023	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
184			min	-1333.472	7	310.562	4	-1405.275	5	.089	4	.081	3	-.543	5
185		3	max	-198.054	4	4357.912	7	248.305	2	.624	6	.403	8	-.076	2
186			min	-1333.472	7	310.562	4	-1405.275	5	.089	4	-.007	3	-1.083	5
187		4	max	-198.054	4	4357.912	7	248.305	2	.624	6	.268	6	-.128	2
188			min	-1333.472	7	310.562	4	-1405.275	5	.089	4	-.094	3	-1.623	5
189		5	max	-198.054	4	4357.912	7	248.305	2	.624	6	.234	4	-.18	2
190			min	-1333.472	7	310.562	4	-1405.275	5	.089	4	-.181	3	-2.162	5
191	M20	1	max	1332.442	8	4317.598	5	-27.086	4	.676	5	.227	3	2.173	5
192			min	188.859	3	394.635	2	-1274.894	7	-.125	2	-.281	4	.137	2
193		2	max	1332.442	8	4317.598	5	-27.086	4	.676	5	.143	3	1.633	5
194			min	188.859	3	394.635	2	-1274.894	7	-.125	2	-.284	4	.088	2
195		3	max	1332.442	8	4317.598	5	-27.086	4	.676	5	.059	3	1.093	5
196			min	188.859	3	394.635	2	-1274.894	7	-.125	2	-.417	8	.038	2
197		4	max	1332.442	8	4317.598	5	-27.086	4	.676	5	-.026	3	.554	5
198			min	188.859	3	394.635	2	-1274.894	7	-.125	2	-.557	8	-.011	2
199		5	max	1332.442	8	4317.598	5	-27.086	4	.676	5	-.11	3	.061	1
200			min	188.859	3	394.635	2	-1274.894	7	-.125	2	-.697	8	-.06	2
201	M21	1	max	-238.552	2	1333.472	7	-153.238	4	-.041	2	0	5	.412	6
202			min	-4441.796	5	198.054	4	-1068.991	6	-.617	5	0	8	.11	4
203		2	max	-238.552	2	1333.472	7	-153.238	4	-.041	2	-.022	4	.228	6
204			min	-4441.796	5	198.054	4	-1068.991	6	-.617	5	-.156	6	.048	1
205		3	max	-238.552	2	1333.472	7	-153.238	4	-.041	2	-.045	4	.053	4
206			min	-4441.796	5	198.054	4	-1068.991	6	-.617	5	-.312	6	-.032	3
207		4	max	-238.552	2	1333.472	7	-153.238	4	-.041	2	-.067	4	.024	4
208			min	-4441.796	5	198.054	4	-1068.991	6	-.617	5	-.468	6	-.171	7
209		5	max	-238.552	2	1333.472	7	-153.238	4	-.041	2	-.089	4	-.005	4
210			min	-4441.796	5	198.054	4	-1068.991	6	-.617	5	-.624	6	-.366	7
211	M22	1	max	4333.015	5	1332.442	8	1158.158	5	-.08	2	0	4	.417	8
212			min	577.904	2	188.859	3	-213.668	2	-.606	5	0	1	.09	3
213		2	max	4333.015	5	1332.442	8	1158.158	5	-.08	2	.169	5	.226	6
214			min	577.904	2	188.859	3	-213.668	2	-.606	5	-.031	2	.052	1
215		3	max	4333.015	5	1332.442	8	1158.158	5	-.08	2	.338	5	.042	7
216			min	577.904	2	188.859	3	-213.668	2	-.606	5	-.062	2	-.014	4
217		4	max	4333.015	5	1332.442	8	1158.158	5	-.08	2	.507	5	.007	3
218			min	577.904	2	188.859	3	-213.668	2	-.606	5	-.093	2	-.166	8
219		5	max	4333.015	5	1332.442	8	1158.158	5	-.08	2	.676	5	-.02	3
220			min	577.904	2	188.859	3	-213.668	2	-.606	5	-.125	2	-.36	8
221	M23	1	max	0	11	.01	6	.016	4	0	11	0	11	0	11
222			min	0	1	-.01	8	-.008	7	0	1	0	1	0	1
223		2	max	56.377	3	-20.353	4	105.682	3	.027	4	.176	3	.145	8
224			min	-54.14	4	-89.34	7	-104.687	4	-.043	3	-.174	4	-.008	3
225		3	max	-49.55	3	26.801	3	64.863	1	.06	2	.115	1	.013	4
226			min	-362.27	8	-39.879	4	-62.623	2	-.059	1	-.122	2	-.018	3
227		4	max	26.233	1	89.233	6	174.742	2	.015	3	.246	1	.193	8
228			min	-27.551	2	20.363	1	-176.942	1	-.021	4	-.243	2	-.016	3
229		5	max	0	11	.007	6	.041	2	0	11	0	11	0	11
230			min	0	1	-.01	4	-.056	4	0	1	0	1	0	1
231	MP4B	1	max	0	11	.002	7	.028	4	0	11	0	11	0	11
232			min	0	1	-.006	2	-.002	5	0	1	0	1	0	1
233		2	max	531.759	2	-416.807	4	432.484	1	1.152	4	.186	1	.489	2
234			min	-349.994	1	-1634.57	7	-432.818	2	-.946	3	-.163	2	-.679	1
235		3	max	538.187	2	-426.982	4	436.196	1	1.152	4	.485	1	.91	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
236			min	-356.423	1	-1660.851	7	-436.53	2	-.946	3	-.462	2	-.328	1
237		4	max	548.351	2	-439.317	4	442.064	1	1.152	4	.787	1	2.055	6
238			min	-366.587	1	-1705.443	7	-442.398	2	-.946	3	-.765	2	.032	1
239		5	max	554.78	2	-449.491	4	445.776	1	1.152	4	1.092	1	3.221	6
240			min	-373.016	1	-1731.724	7	-446.11	2	-.946	3	-1.07	2	.398	1
241	M25	1	max	785.218	3	2569.836	7	627.575	2	-.083	1	.366	2	3.905	8
242			min	-788.22	4	733.611	4	-619.169	1	-1.905	6	-.361	1	-.824	3
243		2	max	782.491	3	2558.686	7	622.851	2	-.083	1	.549	2	3.161	8
244			min	-785.492	4	729.295	4	-614.445	1	-1.905	6	-.541	1	-1.052	3
245		3	max	779.764	3	2547.537	7	618.127	2	-.083	1	.73	2	2.433	4
246			min	-782.765	4	724.978	4	-609.721	1	-1.905	6	-.72	1	-1.28	3
247		4	max	777.036	3	2536.387	7	613.403	2	-.083	1	.909	2	2.222	4
248			min	-780.037	4	720.661	4	-604.998	1	-1.905	6	-.897	1	-1.506	3
249		5	max	774.309	3	2525.238	7	608.679	2	-.083	1	1.087	2	2.013	4
250			min	-777.31	4	716.345	4	-600.274	1	-1.905	6	-1.072	1	-1.731	3
251	MP3B	1	max	380.866	7	811.099	8	546.963	3	.785	3	1.564	4	1.33	8
252			min	-60.483	4	204.717	1	-549.609	4	-.861	4	-1.543	3	.285	3
253		2	max	379.041	7	784.818	8	535.828	3	.785	3	1.19	4	.782	8
254			min	-54.054	4	194.542	1	-538.474	4	-.861	4	-1.171	3	.148	3
255		3	max	377.216	7	758.537	8	524.693	3	.785	3	.823	4	.251	8
256			min	-47.625	4	184.367	1	-527.339	4	-.861	4	-.806	3	.017	3
257		4	max	372.702	7	674.458	8	497.321	3	.785	3	.474	4	-.033	4
258			min	-31.822	4	155.712	1	-499.968	4	-.861	4	-.458	3	-.257	7
259		5	max	0	11	.002	2	.001	5	0	11	0	11	0	11
260			min	0	1	0	7	-.023	4	0	1	0	1	0	1
261	M27	1	max	-249.083	3	1150.881	3	169.498	3	.53	7	.071	1	-.035	3
262			min	-1321.075	8	-3708.089	8	-3004.889	8	.046	4	-.289	6	-.567	8
263		2	max	-249.083	3	1150.881	3	169.498	3	.53	7	-.041	3	.094	4
264			min	-1321.075	8	-3708.089	8	-3004.889	8	.046	4	-.627	6	-.181	7
265		3	max	-249.083	3	1150.881	3	169.498	3	.53	7	-.02	3	.473	4
266			min	-1321.075	8	-3708.089	8	-3004.889	8	.046	4	-1	8	-.323	3
267		4	max	-249.083	3	1150.881	3	169.498	3	.53	7	.001	3	.853	4
268			min	-1321.075	8	-3708.089	8	-3004.889	8	.046	4	-1.376	8	-.467	3
269		5	max	-249.083	3	1150.881	3	169.498	3	.53	7	.022	3	1.287	8
270			min	-1321.075	8	-3708.089	8	-3004.889	8	.046	4	-1.751	8	-.611	3
271	M28	1	max	1325.396	7	189.428	3	264.346	3	.577	6	1.772	8	.265	3
272			min	222.537	4	-3431.992	8	-3022.703	8	-.16	1	-.108	3	-1.188	8
273		2	max	1325.396	7	189.428	3	264.346	3	.577	6	1.394	8	.242	3
274			min	222.537	4	-3431.992	8	-3022.703	8	-.16	1	-.075	3	-.759	8
275		3	max	1325.396	7	189.428	3	264.346	3	.577	6	1.016	8	.218	3
276			min	222.537	4	-3431.992	8	-3022.703	8	-.16	1	-.042	3	-.368	4
277		4	max	1325.396	7	189.428	3	264.346	3	.577	6	.638	8	.194	3
278			min	222.537	4	-3431.992	8	-3022.703	8	-.16	1	-.008	3	-.109	4
279		5	max	1325.396	7	189.428	3	264.346	3	.577	6	.268	6	.559	6
280			min	222.537	4	-3431.992	8	-3022.703	8	-.16	1	.005	1	.069	1
281	M29	1	max	1081.441	3	1321.075	8	-78.381	4	0	1	0	3	.415	7
282			min	-4713.743	8	249.083	3	-908.957	7	-.522	6	0	4	.097	4
283		2	max	1081.441	3	1321.075	8	-78.381	4	0	1	-.011	4	.233	7
284			min	-4713.743	8	249.083	3	-908.957	7	-.522	6	-.133	7	.023	4
285		3	max	1081.441	3	1321.075	8	-78.381	4	0	1	-.023	4	.073	3
286			min	-4713.743	8	249.083	3	-908.957	7	-.522	6	-.265	7	-.052	4
287		4	max	1081.441	3	1321.075	8	-78.381	4	0	1	-.034	4	.037	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
288			min	-4713.743	8	249.083	3	-908.957	7	-.522	6	-.398	7	-.174	8
289		5	max	1081.441	3	1321.075	8	-78.381	4	0	1	-.046	4	0	3
290			min	-4713.743	8	249.083	3	-908.957	7	-.522	6	-.53	7	-.367	8
291	M30	1	max	4483.543	8	1325.396	7	989.194	6	-.039	1	0	8	.424	7
292			min	-296.222	3	222.537	4	-274.533	1	-.511	6	0	1	.065	4
293		2	max	4483.543	8	1325.396	7	989.194	6	-.039	1	.144	6	.231	7
294			min	-296.222	3	222.537	4	-274.533	1	-.511	6	-.04	1	.032	4
295		3	max	4483.543	8	1325.396	7	989.194	6	-.039	1	.289	6	.04	5
296			min	-296.222	3	222.537	4	-274.533	1	-.511	6	-.08	1	-.006	2
297		4	max	4483.543	8	1325.396	7	989.194	6	-.039	1	.433	6	-.015	1
298			min	-296.222	3	222.537	4	-274.533	1	-.511	6	-.12	1	-.16	6
299		5	max	4483.543	8	1325.396	7	989.194	6	-.039	1	.577	6	-.057	1
300			min	-296.222	3	222.537	4	-274.533	1	-.511	6	-.16	1	-.35	6
301	M31	1	max	0	11	.01	3	.051	4	0	11	0	11	0	11
302			min	0	1	-.009	6	-.008	5	0	1	0	1	0	1
303		2	max	98.382	1	-20.131	2	135.137	1	.037	3	.221	1	.146	7
304			min	-96.119	2	-89.423	5	-135.651	2	-.053	4	-.222	2	-.018	4
305		3	max	-32.283	1	26.639	1	80.518	4	.062	1	.164	4	.006	2
306			min	-350.598	6	-37.628	4	-79.966	3	-.063	2	-.171	3	-.012	1
307		4	max	34.824	4	89.209	7	202.757	3	.016	1	.288	4	.194	6
308			min	-35.63	3	20.527	4	-202.569	4	-.022	2	-.288	3	-.02	1
309		5	max	0	11	.008	7	.018	3	0	11	0	11	0	11
310			min	0	1	-.01	2	-.022	2	0	1	0	1	0	1
311	M32	1	max	187.594	4	24.138	8	5.394	3	.058	1	0	11	0	11
312			min	-187.984	3	5.627	1	-5.394	4	-.08	2	0	1	0	1
313		2	max	184.998	4	12.069	8	2.697	3	.058	1	.003	3	-.003	10
314			min	-185.387	3	2.813	1	-2.697	4	-.08	2	-.003	4	-.012	5
315		3	max	182.401	4	0	11	0	11	.058	1	.004	3	-.004	10
316			min	-182.791	3	0	1	0	1	-.08	2	-.004	4	-.016	5
317		4	max	179.805	4	-2.813	10	2.697	4	.058	1	.003	3	-.003	10
318			min	-180.195	3	-12.069	5	-2.697	3	-.08	2	-.003	4	-.012	5
319		5	max	177.209	4	-5.627	10	5.394	4	.058	1	0	11	0	11
320			min	-177.598	3	-24.138	5	-5.394	3	-.08	2	0	1	0	1
321	M33	1	max	168.954	1	24.138	8	9.792	1	.053	3	0	11	0	11
322			min	-167.539	2	5.627	1	-9.792	2	-.076	4	0	1	0	1
323		2	max	170.166	1	12.069	8	4.896	1	.053	3	.005	1	-.003	10
324			min	-168.752	2	2.813	1	-4.896	2	-.076	4	-.005	2	-.012	5
325		3	max	171.379	1	0	11	0	11	.053	3	.007	1	-.004	10
326			min	-169.964	2	0	1	0	1	-.076	4	-.007	2	-.016	5
327		4	max	172.591	1	-2.813	10	4.896	2	.053	3	.005	1	-.003	10
328			min	-171.177	2	-12.069	5	-4.896	1	-.076	4	-.005	2	-.012	5
329		5	max	173.804	1	-5.627	10	9.792	2	.053	3	0	11	0	11
330			min	-172.39	2	-24.138	5	-9.792	1	-.076	4	0	1	0	1
331	M34	1	max	108.659	3	24.138	8	9.595	3	.039	4	0	11	0	11
332			min	-106.039	4	5.627	1	-9.595	4	-.062	3	0	1	0	1
333		2	max	107.275	3	12.069	8	4.797	3	.039	4	.005	3	-.003	10
334			min	-104.656	4	2.813	1	-4.797	4	-.062	3	-.005	4	-.012	5
335		3	max	105.892	3	0	11	0	11	.039	4	.006	3	-.004	10
336			min	-103.272	4	0	1	0	1	-.062	3	-.006	4	-.016	5
337		4	max	104.508	3	-2.813	10	4.797	4	.039	4	.005	3	-.003	10
338			min	-101.888	4	-12.069	5	-4.797	3	-.062	3	-.005	4	-.012	5
339		5	max	103.124	3	-5.627	10	9.595	4	.039	4	0	11	0	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
340			min	-100.504	4	-24.138	5	-9.595	3	-.062	3	0	1	0	1
341	MP1C	1	max	0	11	.004	2	.001	1	0	5	0	11	0	11
342			min	0	1	-.017	5	-.008	6	0	2	0	1	0	1
343		2	max	392.979	5	180.382	2	87.235	1	.331	1	.074	1	.216	1
344			min	67.971	3	-278.622	1	-350.565	6	-.357	2	-.112	2	-.198	2
345		3	max	-68.059	3	105.949	3	83.462	2	0	2	.05	1	.055	3
346			min	-233.083	8	-105.887	4	-83.447	1	0	5	-.05	2	-.055	4
347		4	max	-9.039	3	12.862	3	12.83	2	0	2	.009	1	.009	3
348			min	-29.868	8	-12.8	4	-12.815	1	0	5	-.009	2	-.009	4
349		5	max	0	11	.412	5	.103	8	0	2	0	11	0	11
350			min	0	1	-.041	2	-.018	3	0	5	0	1	0	1
351	MP2C	1	max	381.604	6	282.134	4	189.966	1	0	7	0	1	0	3
352			min	76.8	1	-282.293	3	-190.035	2	0	4	0	2	0	4
353		2	max	771.488	6	518.657	4	351.552	5	.155	4	.373	5	.589	3
354			min	175.38	4	-419.682	3	-71.309	2	-.135	3	-.145	2	-.729	4
355		3	max	-105.133	1	182.898	3	154.48	2	.029	1	.457	1	.742	3
356			min	-525.361	6	-190.179	4	-150.705	1	-.027	2	-.501	2	-.746	4
357		4	max	-91.984	1	164.272	3	135.854	2	.029	1	.174	1	.395	3
358			min	-481.918	6	-171.553	4	-132.079	1	-.027	2	-.21	2	-.384	4
359		5	max	-76.8	2	281.042	3	189.353	2	0	3	0	1	0	11
360			min	-381.605	5	-280.81	4	-189.264	1	0	8	0	2	0	1
361	M37	1	max	650.471	4	1598.37	6	533.433	1	.718	2	.113	4	.421	5
362			min	-638.934	3	418.806	1	-342.02	2	-.412	1	-.143	3	-.124	2
363		2	max	650.471	4	1598.37	6	533.433	1	.718	2	.15	4	.306	5
364			min	-638.934	3	418.806	1	-342.02	2	-.412	1	-.165	3	-.161	2
365		3	max	650.471	4	1598.37	6	533.433	1	.718	2	.186	4	.263	1
366			min	-638.934	3	418.806	1	-342.02	2	-.412	1	-.187	3	-.198	2
367		4	max	650.471	4	1598.37	6	533.433	1	.718	2	.223	4	.233	1
368			min	-638.934	3	418.806	1	-342.02	2	-.412	1	-.208	3	-.235	2
369		5	max	650.471	4	1598.37	6	533.433	1	.718	2	.26	4	.202	1
370			min	-638.934	3	418.806	1	-342.02	2	-.412	1	-.23	3	-.272	2
371	M38	1	max	328.07	2	655.623	5	18.323	1	-.132	2	.293	1	.616	1
372			min	-332.517	1	144.608	3	-388.382	6	-.583	7	-.275	2	-.531	2
373		2	max	328.07	2	655.623	5	18.323	1	-.132	2	.294	1	.6	1
374			min	-332.517	1	144.608	3	-388.382	6	-.583	7	-.29	2	-.542	2
375		3	max	328.07	2	655.623	5	18.323	1	-.132	2	.295	1	.585	1
376			min	-332.517	1	144.608	3	-388.382	6	-.583	7	-.305	2	-.552	2
377		4	max	328.07	2	655.623	5	18.323	1	-.132	2	.297	1	.57	1
378			min	-332.517	1	144.608	3	-388.382	6	-.583	7	-.32	2	-.563	2
379		5	max	328.07	2	655.623	5	18.323	1	-.132	2	.298	1	.554	1
380			min	-332.517	1	144.608	3	-388.382	6	-.583	7	-.336	2	-.574	2
381	M39	1	max	120.791	3	5.141	4	-72.641	1	.245	8	.165	3	.088	3
382			min	-124.589	4	-136.433	6	-361.087	8	-.064	3	-.148	4	-.073	4
383		2	max	120.791	3	5.141	4	-72.641	1	.245	8	.16	3	.092	3
384			min	-124.589	4	-136.433	6	-361.087	8	-.064	3	-.155	4	-.073	4
385		3	max	120.791	3	5.141	4	-72.641	1	.245	8	.154	3	.096	3
386			min	-124.589	4	-136.433	6	-361.087	8	-.064	3	-.161	4	-.074	4
387		4	max	120.791	3	5.141	4	-72.641	1	.245	8	.148	3	.099	3
388			min	-124.589	4	-136.433	6	-361.087	8	-.064	3	-.167	4	-.074	4
389		5	max	120.791	3	5.141	4	-72.641	1	.245	8	.142	3	.103	3
390			min	-124.589	4	-136.433	6	-361.087	8	-.064	3	-.173	4	-.074	4
391	M40	1	max	249.087	1	-8.68	3	354.709	5	-.027	1	.32	2	.052	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
392			min	-244.63	2	-189.47	5	62.649	2	-.309	6	-.329	1	-.059	2
393		2	max	249.087	1	-8.68	3	354.709	5	-.027	1	.324	2	.057	1
394			min	-244.63	2	-189.47	5	62.649	2	-.309	6	-.322	1	-.058	2
395		3	max	249.087	1	-8.68	3	354.709	5	-.027	1	.328	2	.061	1
396			min	-244.63	2	-189.47	5	62.649	2	-.309	6	-.314	1	-.058	2
397		4	max	249.087	1	-8.68	3	354.709	5	-.027	1	.332	2	.066	1
398			min	-244.63	2	-189.47	5	62.649	2	-.309	6	-.306	1	-.057	2
399		5	max	249.087	1	-8.68	3	354.709	5	-.027	1	.336	2	.071	1
400			min	-244.63	2	-189.47	5	62.649	2	-.309	6	-.298	1	-.057	2
401	MP1B	1	max	0	11	.009	8	.015	8	0	3	0	11	0	11
402			min	0	1	-.007	3	-.004	3	0	8	0	1	0	1
403		2	max	385.643	8	317.477	4	331.194	8	.291	4	.219	4	.319	3
404			min	68.425	1	-405.072	3	-69.923	3	-.32	3	-.185	3	-.293	4
405		3	max	-68.059	4	105.983	3	83.392	2	0	8	.05	1	.056	3
406			min	-233.083	7	-106.007	4	-83.439	1	0	3	-.05	2	-.056	4
407		4	max	-9.039	4	12.895	3	12.76	2	0	8	.009	1	.009	3
408			min	-29.868	7	-12.919	4	-12.807	1	0	3	-.009	2	-.009	4
409		5	max	0	11	.09	3	.044	3	0	8	0	11	0	11
410			min	0	1	-.231	8	-.319	8	0	3	0	1	0	1
411	MP2B	1	max	381.604	7	282.393	4	190.092	1	0	3	0	1	0	3
412			min	76.8	4	-282.356	3	-189.948	2	0	8	0	2	0	4
413		2	max	777.624	7	355.659	4	219.973	1	.224	2	.308	1	.437	3
414			min	178.062	4	-260.421	3	-378.553	2	-.201	1	-.499	2	-.519	4
415		3	max	-89.82	4	69.64	4	240.819	2	.04	3	.75	1	.058	2
416			min	-528.221	7	-64.12	3	-239.518	1	-.04	4	-.731	2	-.035	1
417		4	max	-76.671	4	88.266	4	226.151	4	.04	3	.29	1	.149	3
418			min	-484.777	7	-82.746	3	-231.683	3	-.04	4	-.268	2	-.131	4
419		5	max	-76.8	3	281.959	3	188.869	2	0	8	0	1	0	11
420			min	-381.605	8	-282.006	4	-189.077	1	0	3	0	2	0	1
421	M43	1	max	433.556	2	1607.471	7	528.722	2	.927	5	.078	3	1.152	4
422			min	-426.858	1	404.949	4	-341.456	1	-.369	2	-.105	4	-.946	3
423		2	max	433.556	2	1607.471	7	528.722	2	.927	5	.085	2	1.123	4
424			min	-426.858	1	404.949	4	-341.456	1	-.369	2	-.094	1	-.984	3
425		3	max	433.556	2	1607.471	7	528.722	2	.927	5	.123	2	1.093	4
426			min	-426.858	1	404.949	4	-341.456	1	-.369	2	-.119	1	-1.022	3
427		4	max	433.556	2	1607.471	7	528.722	2	.927	5	.162	2	1.064	4
428			min	-426.858	1	404.949	4	-341.456	1	-.369	2	-.143	1	-1.06	3
429		5	max	433.556	2	1607.471	7	528.722	2	.927	5	.2	2	1.034	4
430			min	-426.858	1	404.949	4	-341.456	1	-.369	2	-.168	1	-1.098	3
431	M44	1	max	488.309	3	648.306	6	19.654	4	-.093	4	.337	4	.861	4
432			min	-488.258	4	144.754	3	-370.58	7	-.436	7	-.323	3	-.785	3
433		2	max	488.309	3	648.306	6	19.654	4	-.093	4	.339	4	.846	4
434			min	-488.258	4	144.754	3	-370.58	7	-.436	7	-.338	3	-.795	3
435		3	max	488.309	3	648.306	6	19.654	4	-.093	4	.34	4	.83	4
436			min	-488.258	4	144.754	3	-370.58	7	-.436	7	-.353	3	-.806	3
437		4	max	488.309	3	648.306	6	19.654	4	-.093	4	.342	4	.815	4
438			min	-488.258	4	144.754	3	-370.58	7	-.436	7	-.368	3	-.816	3
439		5	max	488.309	3	648.306	6	19.654	4	-.093	4	.343	4	.8	4
440			min	-488.258	4	144.754	3	-370.58	7	-.436	7	-.383	3	-.827	3
441	M45	1	max	173.246	1	2.063	2	-63.963	2	.224	6	.206	1	.08	1
442			min	-176.659	2	-142.614	7	-343.141	8	-.044	1	-.193	2	-.065	2
443		2	max	173.246	1	2.063	2	-63.963	2	.224	6	.198	1	.084	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
444			min	-176.659	2	-142.614	7	-343.141	8	-.044	1	-.197	2	-.065	2
445		3	max	173.246	1	2.063	2	-63.963	2	.224	6	.191	1	.088	1
446			min	-176.659	2	-142.614	7	-343.141	8	-.044	1	-.201	2	-.065	2
447		4	max	173.246	1	2.063	2	-63.963	2	.224	6	.183	1	.092	1
448			min	-176.659	2	-142.614	7	-343.141	8	-.044	1	-.205	2	-.066	2
449		5	max	173.246	1	2.063	2	-63.963	2	.224	6	.176	1	.096	1
450			min	-176.659	2	-142.614	7	-343.141	8	-.044	1	-.209	2	-.066	2
451	M46	1	max	304.845	4	-7.915	3	342.11	6	-.009	4	.333	3	.04	2
452			min	-304.886	3	-182.091	6	48.263	1	-.329	7	-.338	4	-.046	1
453		2	max	304.845	4	-7.915	3	342.11	6	-.009	4	.339	3	.045	2
454			min	-304.886	3	-182.091	6	48.263	1	-.329	7	-.333	4	-.046	1
455		3	max	304.845	4	-7.915	3	342.11	6	-.009	4	.345	3	.049	2
456			min	-304.886	3	-182.091	6	48.263	1	-.329	7	-.328	4	-.045	1
457		4	max	304.845	4	-7.915	3	342.11	6	-.009	4	.351	3	.054	2
458			min	-304.886	3	-182.091	6	48.263	1	-.329	7	-.323	4	-.044	1
459		5	max	304.845	4	-7.915	3	342.11	6	-.009	4	.357	3	.059	2
460			min	-304.886	3	-182.091	6	48.263	1	-.329	7	-.318	4	-.044	1
461	M47	1	max	177.523	2	54.449	8	17.566	2	.136	2	0	11	0	11
462			min	-179.091	1	12.071	3	-17.566	1	-.169	1	0	1	0	1
463		2	max	182.218	2	27.225	8	8.783	2	.136	2	.02	2	-.014	3
464			min	-184.48	1	6.036	3	-8.783	1	-.169	1	-.02	1	-.062	8
465		3	max	186.912	2	0	11	0	11	.136	2	.027	2	-.018	3
466			min	-189.869	1	0	1	0	1	-.169	1	-.027	1	-.083	8
467		4	max	191.607	2	-6.036	3	8.783	1	.136	2	.02	2	-.014	3
468			min	-195.258	1	-27.225	8	-8.783	2	-.169	1	-.02	1	-.062	8
469		5	max	196.302	2	-12.071	3	17.566	1	.136	2	0	11	0	11
470			min	-200.647	1	-54.449	8	-17.566	2	-.169	1	0	1	0	1
471	M48	1	max	450.306	3	54.45	7	17.492	1	.138	1	0	11	0	11
472			min	-450.894	4	12.069	4	-17.492	2	-.167	2	0	1	0	1
473		2	max	455.042	3	27.225	7	8.746	1	.138	1	.02	1	-.014	4
474			min	-456.325	4	6.034	4	-8.746	2	-.167	2	-.02	2	-.062	7
475		3	max	459.778	3	0	11	0	11	.138	1	.027	1	-.018	4
476			min	-461.755	4	0	1	0	1	-.167	2	-.027	2	-.083	7
477		4	max	464.515	3	-6.034	4	8.746	2	.138	1	.02	1	-.014	4
478			min	-467.186	4	-27.225	7	-8.746	1	-.167	2	-.02	2	-.062	7
479		5	max	469.251	3	-12.069	4	17.492	2	.138	1	0	11	0	11
480			min	-472.616	4	-54.45	7	-17.492	1	-.167	2	0	1	0	1

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M31	PIPE 2.0	.343	9.214	4	.043	9.062		2	4678.524	32130	1.872	1.872	2....	H1-1b
2	MP2B	PIPE 2.5	.332	2.667	1	.097	2.667		2	30038.4...	50715	3.596	3.596	2....	H1-1b
3	MP2C	PIPE 2.5	.315	2.667	3	.083	2.667		4	30038.4...	50715	3.596	3.596	1....	H1-1b
4	M23	PIPE 2.0	.297	9.214	1	.044	9.062		1	4678.524	32130	1.872	1.872	2....	H1-1b
5	MP2A	PIPE 2.5	.285	2.667	1	.091	2.667		3	30038.4...	50715	3.596	3.596	2....	H1-1b
6	M2	HSS4X4X4	.255	0	6	.225	0	y	7	138725....	139518	16.181	16.181	1....	H1-1b
7	M25	HSS4X4X4	.248	0	8	.206	0	y	6	138725....	139518	16.181	16.181	1....	H1-1b
8	MP1B	PIPE 2.5	.246	2.635	3	.129	2.635		3	39593.7...	50715	3.596	3.596	3....	H1-1b
9	MP4C	HSS4X4X4	.239	2.75	8	.075	2.75	y	5	135171....	139518	16.181	16.181	2....	H1-1b
10	M17	HSS4X4X4	.236	0	5	.232	0	y	5	138725....	139518	16.181	16.181	1....	H1-1b

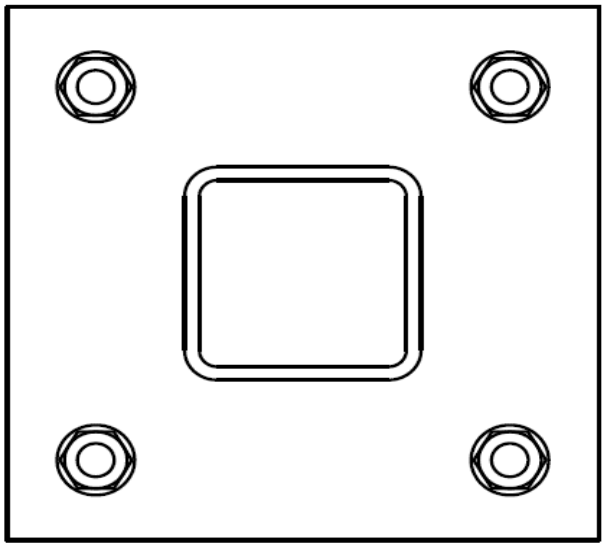
Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
11	MP4A	HSS4X4X4	.228	2.75	6	.096	2.75	y	6	135171....	139518	16.181	16.181	2....	H1-1b
12	M15	PIPE_2.0	.223	9.214	2	.050	4.531		4	4678.524	32130	1.872	1.872	2....	H1-1b
13	MP4B	HSS4X4X4	.217	2.75	6	.096	2.75	y	4	135171....	139518	16.181	16.181	2....	H1-1b
14	MP1A	PIPE_2.5	.205	2.635	2	.082	2.635		1	39593.7...	50715	3.596	3.596	3....	H1-1b
15	MP1C	PIPE_2.5	.170	2.635	2	.134	2.635		2	39593.7...	50715	3.596	3.596	3....	H1-1b
16	MP3A	HSS4X4X4	.139	0	10	.067	0	z	2	135171....	139518	16.181	16.181	2....	H1-1b
17	MP3B	HSS4X4X4	.126	0	4	.077	0	z	4	135171....	139518	16.181	16.181	2....	H1-1b
18	MP3C	HSS4X4X4	.098	0	5	.054	0	z	1	135171....	139518	16.181	16.181	2....	H1-1b
19	M48	PIPE_2.0	.047	3.036	7	.103	0		2	20647.5...	32130	1.872	1.872	1....	H1-1b
20	M5	PIPE_2.0	.046	3.036	5	.103	6.073		3	20647.5...	32130	1.872	1.872	1....	H1-1b
21	M47	PIPE_2.0	.046	3.036	6	.104	0		1	20647.5...	32130	1.872	1.872	1....	H1-1b
22	M33	PIPE_2.0	.010	1.351	5	.046	0		4	29437.3...	32130	1.872	1.872	1....	H1-1b
23	M34	PIPE_2.0	.010	1.351	7	.038	2.702		3	29437.3...	32130	1.872	1.872	1....	H1-1b
24	M32	PIPE_2.0	.010	1.351	8	.049	2.702		2	29437.3...	32130	1.872	1.872	1....	H1-1b

	Standoff Arm Flange Connection Check		Date
			4/27/2022
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	TMO	Mount Elev. [ft]:	177
Site Name:	Troiano Realty	Engineer Name:	
Site Number:	CT13617	Project #:	127389

NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.

RISA Member Label =	m2	
I or J End?	I	
Load Combination # =	6	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	0.5	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.5625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	6	[In]
Bolt Vertical Spacing, Sbv =	6	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



Typical Connection Detail

NOTES

Standoff and Stiffener welds are assumed 0.1875 in.

Capacity Checks:

Max Bolt Shear =	1.900	[Kips]
Bolt Shear Capacity =	11.18	[Kips]
Max Bolt Shear Usage =	17.0%	PASS
Max Bolt Tension =	4.17	[Kips]
Bolt Tension Capacity =	16.37	[Kips]
Max Bolt Tension Usage =	25.5%	PASS
Max Bolt Interaction =	30.6%	PASS
Max Plate Bending Moment =	8.33	[Kip-In]
Length of Yield Line =	5.85	[In]
Plate Moment Capacity =	11.85	[Kip-In]
Max Plate Usage =	58.0%	PASS
Max Weld Usage =	30.7%	PASS

	Standoff Arm Flange Connection Check		Date
			4/27/2022
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	TMO	Mount Elev. [ft]:	177
Site Name:	Troiano Realty	Engineer Name:	
Site Number:	CT13617	Project #:	127389

Results Summary Table

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M2	I	1	0.6389	0.1652	5.7%	1.0%	5.8%	2.3%	6.0%
M2	I	2	0.5058	2.8634	4.5%	17.5%	18.0%	39.8%	19.4%
M2	I	3	1.0753	1.3520	9.6%	8.3%	9.9%	18.8%	11.6%
M2	I	4	0.2331	1.4668	2.1%	9.0%	9.2%	20.4%	5.8%
M2	I	5	1.9391	3.2644	17.3%	19.9%	26.4%	45.4%	26.1%
M2	I	6	1.8998	4.1701	17.0%	25.5%	30.6%	58.0%	30.7%
M2	I	7	2.0522	3.8355	18.4%	23.4%	28.7%	53.3%	29.2%
M2	I	8	1.8269	3.7744	16.3%	23.1%	28.3%	52.5%	27.0%
M2	I	9	2.0568	1.8016	18.4%	11.0%	21.4%	25.1%	18.5%
M2	I	10	1.2202	1.7498	10.9%	10.7%	15.2%	24.3%	14.5%
M2	I	11	0.6688	1.2803	6.0%	7.8%	9.8%	17.8%	9.7%
M17	I	1	0.9960	2.2564	8.9%	13.8%	14.5%	31.4%	16.5%
M17	I	2	0.4099	0.5208	3.7%	3.2%	4.9%	7.2%	2.9%
M17	I	3	0.5002	2.0465	4.5%	12.5%	13.3%	28.5%	9.8%
M17	I	4	0.9001	0.6729	8.0%	4.1%	8.0%	9.4%	9.8%
M17	I	5	2.1214	3.8288	19.0%	23.4%	28.8%	53.2%	29.3%
M17	I	6	2.0070	3.2959	17.9%	20.1%	27.0%	45.8%	24.9%
M17	I	7	2.0260	3.7424	18.1%	22.9%	29.2%	52.0%	27.5%
M17	I	8	2.0924	3.3395	18.7%	20.4%	26.7%	46.4%	27.1%
M17	I	9	0.6294	1.1396	5.6%	7.0%	8.5%	15.8%	8.7%
M17	I	10	0.6596	1.1775	5.9%	7.2%	8.8%	16.4%	9.0%
M17	I	11	0.7115	1.1919	6.4%	7.3%	9.7%	16.6%	9.3%
M25	I	1	0.3035	1.4786	2.7%	9.0%	9.4%	20.6%	5.4%
M25	I	2	0.9527	1.2792	8.5%	7.8%	8.8%	17.8%	12.0%
M25	I	3	0.4708	0.9592	4.2%	5.9%	6.7%	13.3%	9.5%
M25	I	4	0.7337	3.3701	6.6%	20.6%	20.7%	46.9%	23.1%
M25	I	5	1.7349	3.5695	15.5%	21.8%	26.8%	49.6%	25.4%
M25	I	6	1.8768	3.5111	16.8%	21.4%	26.0%	48.8%	27.1%
M25	I	7	1.7944	3.0060	16.0%	18.4%	24.4%	41.8%	23.0%
M25	I	8	1.8094	4.0428	16.2%	24.7%	28.4%	56.2%	29.7%
M25	I	9	0.4933	1.0675	4.4%	6.5%	7.9%	14.8%	7.4%
M25	I	10	0.5234	1.0741	4.7%	6.6%	8.1%	14.9%	7.6%
M25	I	11	0.6223	1.1847	5.6%	7.2%	9.1%	16.5%	9.0%

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11530B

Tower Ventures -Stafford
157 Chestnut Road
Stafford, Connecticut 06076

May 22, 2022

EBI Project Number: 6222003376

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**23.91%**

May 22, 2022

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

Emissions Analysis for Site: CT11530B - Tower Ventures -Stafford

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **157 Chestnut Road** in **Stafford, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 157 Chestnut Road in Stafford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) 0 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 centerlines of the proposed antennas are 175 and 177 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 / 2500 MHz	Frequency Bands:	2500 MHz / 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):	177 feet	Height (AGL):	177 feet	Height (AGL):	177 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 %:	**3.81%**	Antenna B1 MPE %:	**3.81%**	Antenna C1 MPE %:	**3.81%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 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 / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	175 feet	Height (AGL):	175 feet	Height (AGL):	175 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):	18,052.03	ERP (W):	18,052.03	ERP (W):	18,052.03
Antenna A2 MPE %:	**2.98%**	Antenna B2 MPE %:	**2.98%**	Antenna C2 MPE %:	**2.98%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	6.79%
Dish	1.32%
Verizon	11.85%
AT&T	3.95%
Site Total MPE % :	23.91%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	6.79%
T-Mobile Sector B Total:	6.79%
T-Mobile Sector C Total:	6.79%
Site Total MPE % :	23.91%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	9619.47	177.0	11.83	2500 MHz LTE 1C & 2C Traffic	1000	1.18%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	717.84	177.0	0.88	2500 MHz LTE 1C & 2C Broadcast	1000	0.09%
T-Mobile 2500 MHz NR Traffic	1	19238.94	177.0	23.65	2500 MHz NR Traffic	1000	2.37%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	177.0	1.77	2500 MHz NR Broadcast	1000	0.18%
T-Mobile 600 MHz LTE	2	591.73	175.0	1.49	600 MHz LTE	400	0.37%
T-Mobile 600 MHz NR	1	1577.94	175.0	1.99	600 MHz NR	400	0.50%
T-Mobile 700 MHz LTE	2	648.82	175.0	1.63	700 MHz LTE	467	0.35%
T-Mobile 1900 MHz GSM	4	1101.85	175.0	5.55	1900 MHz GSM	1000	0.55%
T-Mobile 1900 MHz LTE	2	2203.69	175.0	5.55	1900 MHz LTE	1000	0.55%
T-Mobile 2100 MHz LTE	2	2589.11	175.0	6.52	2100 MHz LTE	1000	0.65%
						Total:	**6.79%**

• 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:

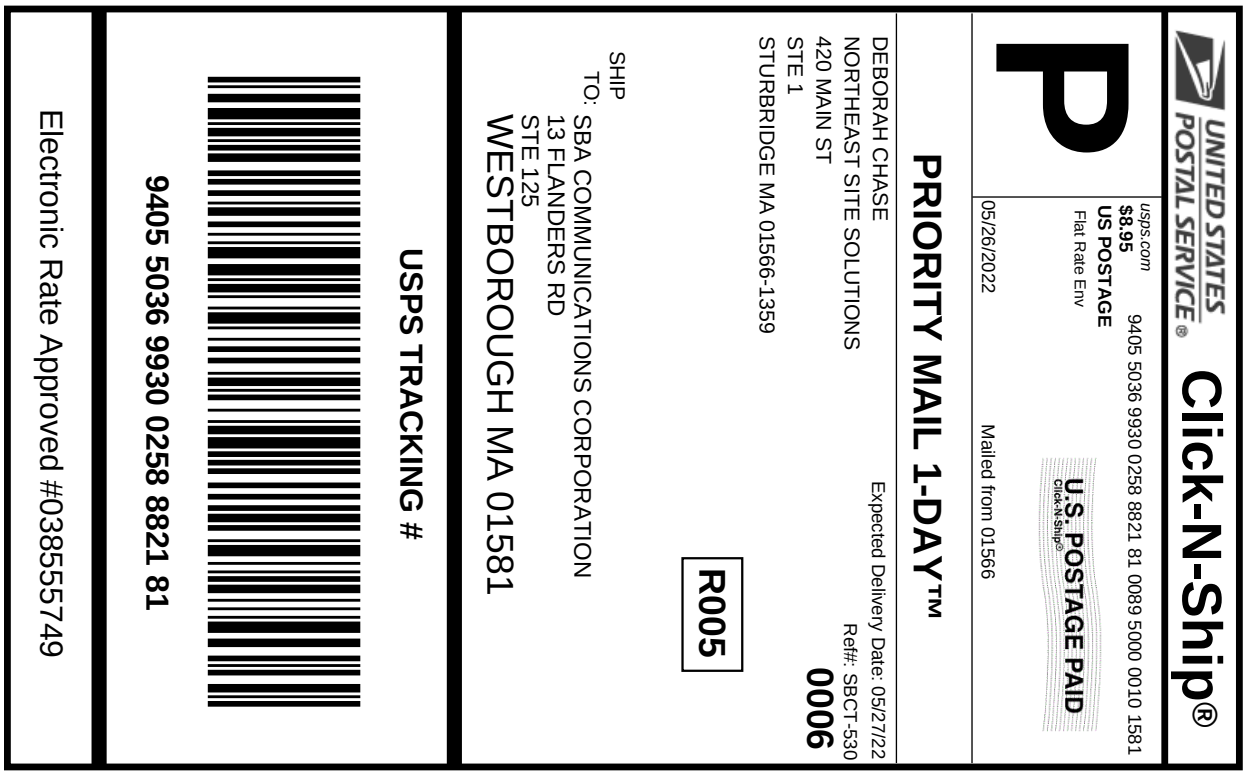
T-Mobile Sector	Power Density Value (%)
Sector A:	6.79%
Sector B:	6.79%
Sector C:	6.79%
T-Mobile Maximum MPE % (Sector A):	6.79%
Site Total:	23.91%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **23.91%** 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



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
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.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 8821 81

Trans. #:	564359219
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/27/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

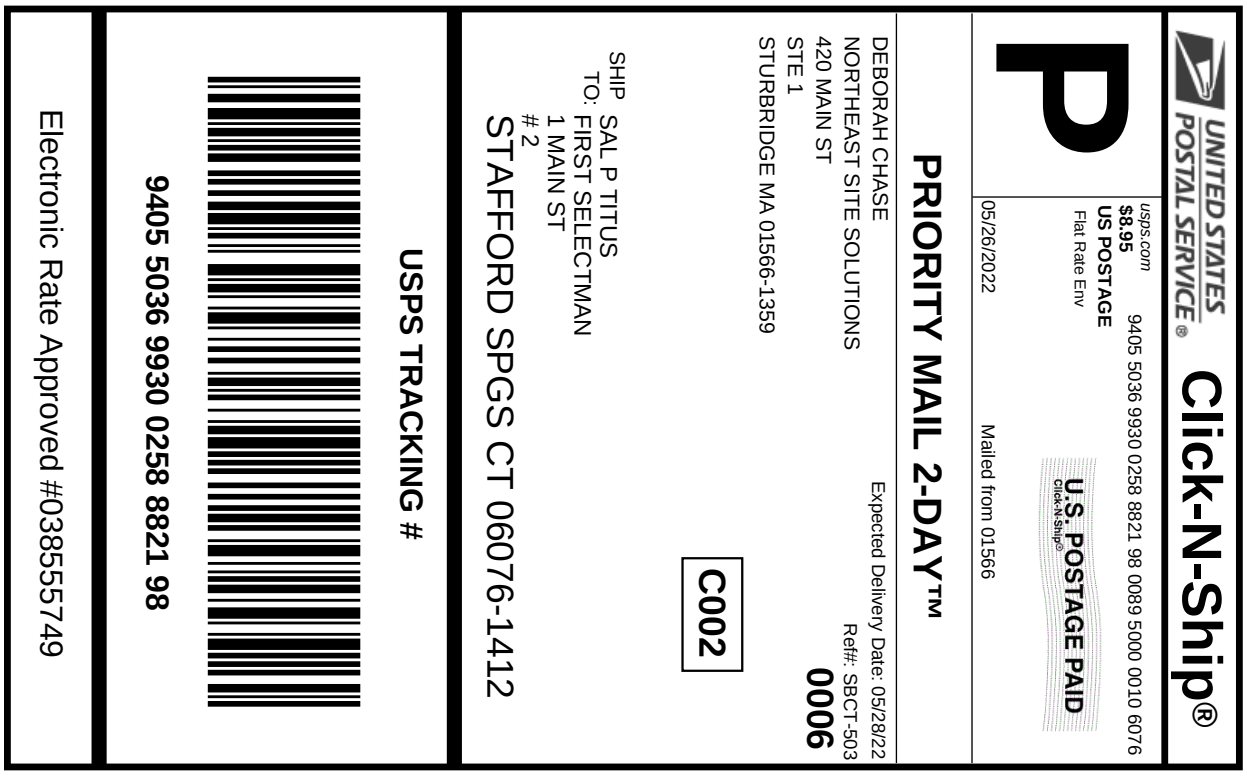
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-530

To: SBA COMMUNICATIONS CORPORATION
13 FLANDERS RD
STE 125
WESTBOROUGH MA 01581

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
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.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 8821 98

Trans. #:	564359219
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

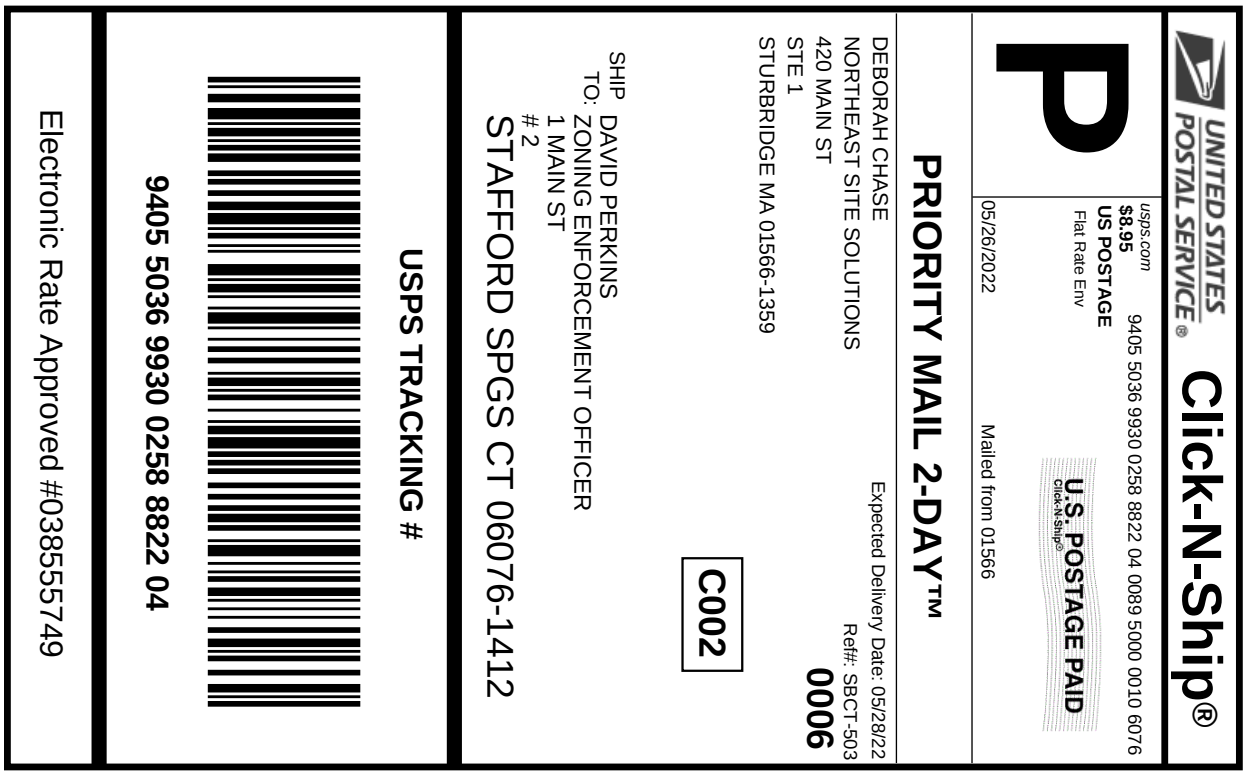
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-503

To: SAL P TITUS
FIRST SELECTMAN
1 MAIN ST
2
STAFFORD SPGS CT 06076-1412

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
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.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 8822 04

Trans. #:	564359219
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

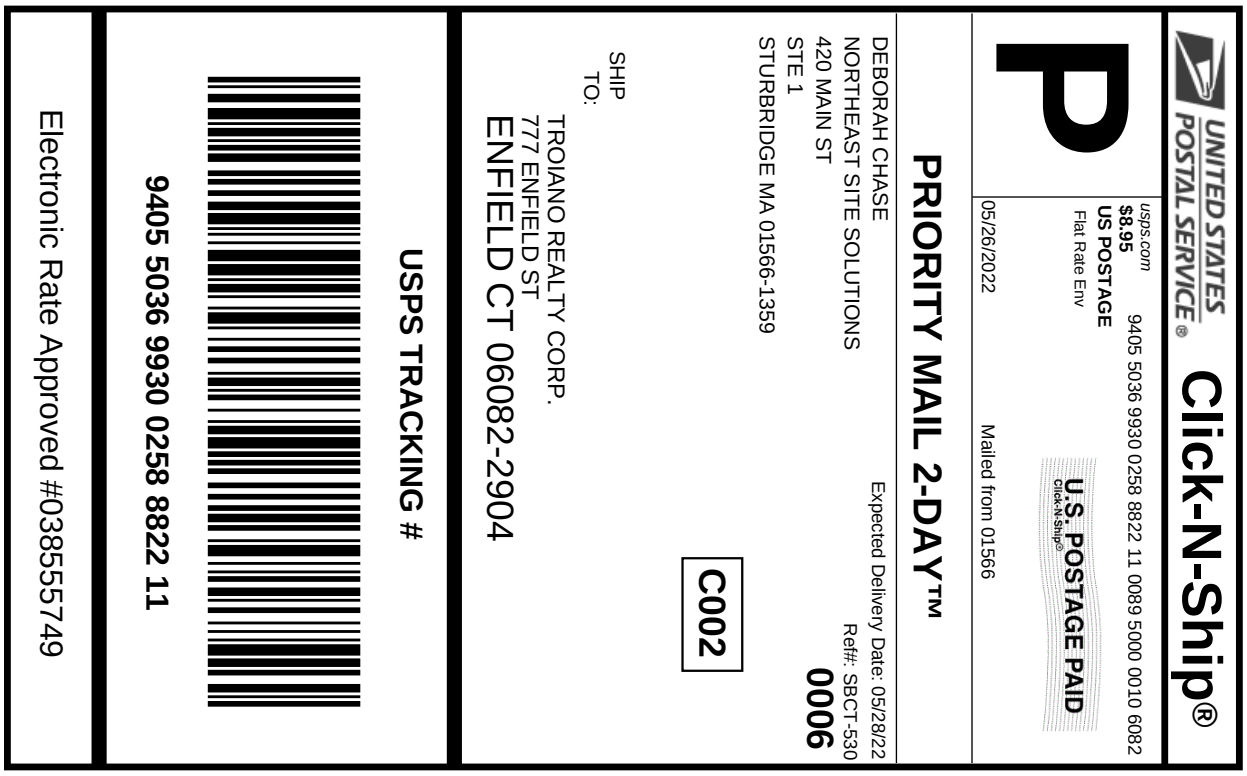
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-503

To: DAVID PERKINS
ZONING ENFORCEMENT OFFICER
1 MAIN ST
2
STAFFORD SPGS CT 06076-1412

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
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.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 8822 11

Trans. #:	564359219
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: SBCT-530

To: TROIANO REALTY CORP.
777 ENFIELD ST
ENFIELD CT 06082-2904

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

CT11530B
SGA-TMO

UNITED STATES POSTAL SERVICE.

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

05/27/2022 03:29 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 8821 81	1		$0.00
Prepaid Mail Stafford Springs, CT 06076 Weight: 0 lb 9.40 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 8821 98	1		$0.00
Prepaid Mail Stafford Springs, CT 06076 Weight: 0 lb 9.30 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 8822 04	1		$0.00
Prepaid Mail Enfield, CT 06082 Weight: 0 lb 9.30 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 8822 11	1		$0.00
Grand Total:			$0.00

****
Every household in the U.S. is now
eligible to receive a third set
of 8 free test kits.
Go to www.covidtests.gov
****

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,