NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

July 21, 2022

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

RE: Exempt Modification Application
113 Brush Hill Road, Goshen, CT 06756
Latitude: 41.797169
Longitude: -73.221669
Site #: CT12210-A _CTNH548A_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 113 Brush Hill Road, Goshen, CT 06756. T-Mobile currently maintains six (6) antennas at the 160-foot level of the existing 194-foot monopole tower. The property is owned by Woodbridge Sewer District, and the tower is owned by SBA. T-Mobile now intends to replace three (3) antennas. The new antennas would be installed at the 160-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

T-Mobile Planned Modifications:
Remove:
None

Remove and Replace:
(3) COMMSCOPE LNX-6515DS-A1M Antennas (REMOVE) - (3) RFS APXVAALL24_43-U_NA20 Antennas (REPLACE)

Install New:
(3) ERICSSON 4480 B71+B85 RRU
(1) Hybrid Line – 1.9"

Existing to Remain:
(3) RFS APX16DWV Antennas
(3) 96" x 15.6" x 9" Antennas *
(3) ERICSSON RRUS-11 B4
(3) ERICSSON RRUS-11 B12 *
(3) ERICSSON RRUS-11 B2
(2) Hybrid Line – 1-5/8"
(1) GPS Antenna @ 50' AGL and (1) ½" Coax

*Equipment shown for entitlement purposes only

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The facility was approved by the Connecticut Siting Council, Docket No. 260 on November 20, 2003. 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 Todd Carusillo, First Selectman and Martin Connor, Enforcement Officer for the Town of Goshen, 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: Todd Carusillo, First Selectman
Town of Goshen
42A North Street
Goshen, CT 06756

Martin Connor, AICP - Enforcement Officer
Town of Goshen
42A North Street
Goshen, CT 06756

Woodbridge Sewer District – Property Owner
113 Brush Hill Road
Goshen, CT 06756

SBA - Tower Owner

Exhibit A

Original Facility Approval

Connecticut Siting Council (/CSC)

DOCKET NO. 260 – Bay Communications Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Goshen, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		November 20, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum, L.P. (Sprint) for the construction, maintenance and operation of a wireless telecommunications facility at a site located at 113 Brush Hill Road, Goshen, Connecticut. The Council denies certification of the site located at 416 Old Middle Street, Goshen, Connecticut.

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

1. The tower shall be constructed as a monopole not to exceed a height of 195 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:

a) a detailed site development plan that depicts the location of the access road, compound, tower, and utility line;

b) specifications for the tower, tower foundation, antennas, equipment building, and security fence;

c) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power densities of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. Upon request, the Certificate Holder shall provide space on its tower for Town of Goshen antennas at no cost to the Town.

6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

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

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

Pursuant to General Statutes **§** 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Waterbury Republican and in the Torrington Register Citizen.

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Sprint Spectrum, L.P. d/b/a Sprint PCS	Thomas J. Regan, Esquire Brown Rudnick Berlack Israels LLP CityPlace I, 38th Floor 185 Asylum Street Hartford, CT 06103-3402

Exhibit B

Property Card

Town of Goshen, CT

Property Listing Report

Map Block Lot	04-006-007-00	Building #	1	PID	232	Account	00023400

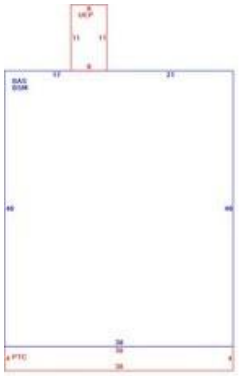
Property Information

Property Location	113 BRUSH HILL ROAD
Owner	WOODRIDGE SEWER DIST
Co-Owner	na
Mailing Address	113 BRUSH HILL RD GOSHEN CT 06756
Land Use	937 Sewer Treatmnt
Land Class	E
Zoning Code	RA5
Census Tract	

Neighborhood	C2
Acreage	114.67
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Book / Page	0055/0121
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1974
Building Desc.	Sewer Treatmnt
Building Style	Commercial
Building Grade	C
Stories	1
Occupancy	1.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	Vinyl Siding
Roof Style	Flat
Roof Cover	T & G/Rubber
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	NA

Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	Commercial
Building Condition	G
Sprinkler %	NA
Heat / AC	None
Frame Type	Masonry
Baths / Plumbing	Average
Ceiling / Wall	Sus-Ceil/Mn Wa
Rooms / Prtns	Average
Wall Height	10.00
First Floor Use	NA
Foundation	NA

Report Created On 7/21/2022

Town of Goshen, CT

Property Listing Report

Map Block Lot	04-006-007-00	Building #	1	PID	232	Account	00023400

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	65200	45640
Extras	0	0
Improvements		
Outbuildings	664700	465290
Land	657560	460300
Total	1387460	971230

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1748	1748
Basement	1748	0
Patio - Concrete	152	0
Unfinished Enclosed Porch	66	0
Total Area	3714	1748

Outbuilding and Extra Features

Type	Description
Fence 8'	1125.00 L.F.
Paving Asph.	3000.00 S.F.
Light (1)	1.00 UNITS
Light (2)	2.00 UNITS
Garage	1496.00 S.F.
Sewer Plant	100000.00 GALS
Paving Asph.	5000.00 S.F.
Pump House Comm	308.00 S.F.

Sales History

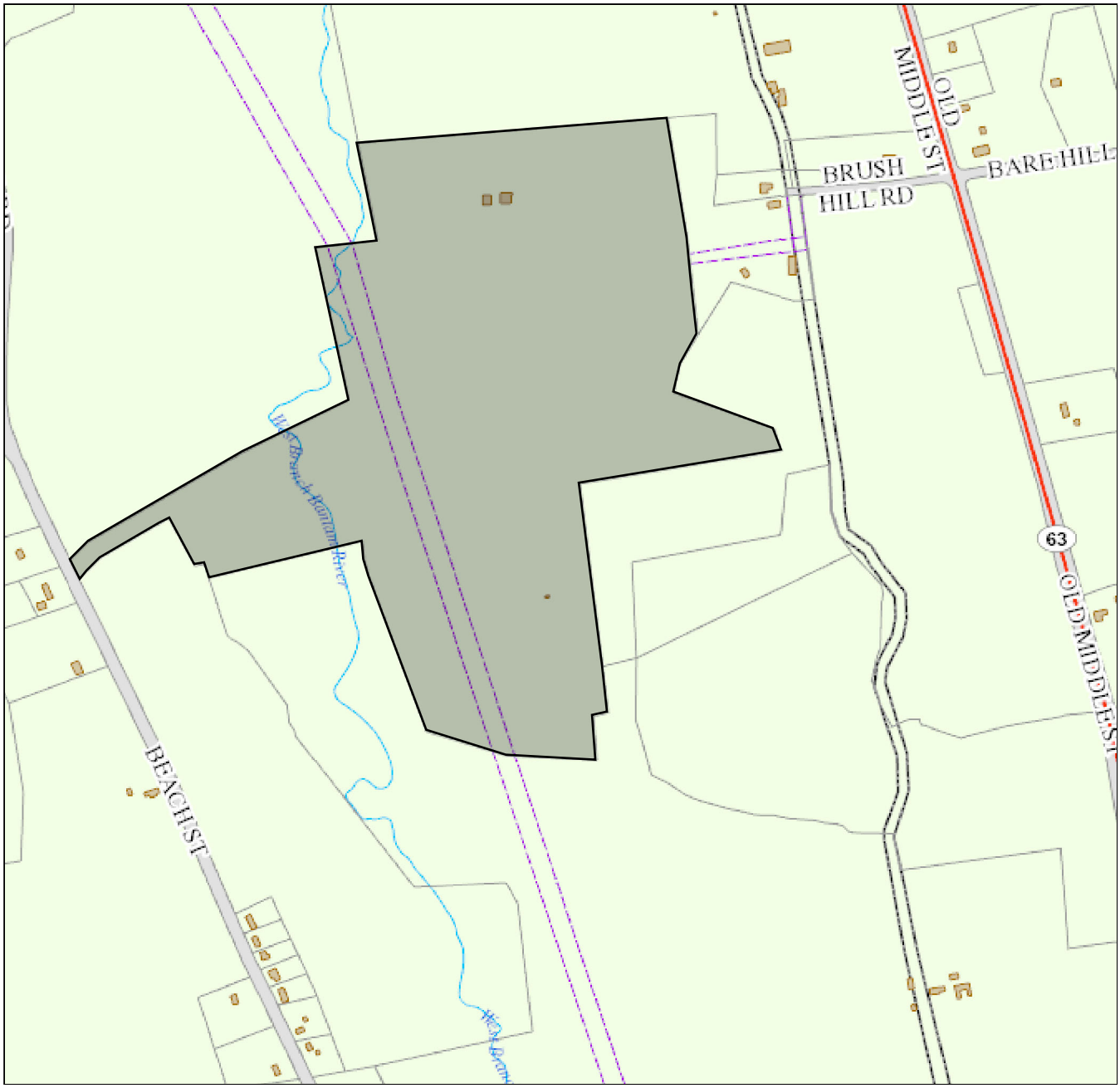
Owner of Record	Book/ Page	Sale Date	Sale Price
WOODRIDGE SEWER DIST	0055/0121	12/15/1975	0

Report Created On 7/21/2022

Town of Goshen

Geographic Information System (GIS)

Date Printed: 7/21/2022



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Goshen and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 800 feet

0 800 Feet

N W E S

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).

SBA APPROVED

By Stephen Roth at 3:46:45 PM, 7/18/2022

CTNH548A

113 BRUSH HILL ROAD
GOSHEN, CT 06756
LITCHFIELD COUNTY

SITE NO.: CTNH548A

SITE TYPE: 195'± MONOPOLE

RF DESIGN GUIDELINE: 67E07C 6160

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 3 RRUs
- 1 100A-2P BREAKER

INSTALL:
- 3 ANTENNAS
- 3 RRUs
- 1 HYBRID CABLES
- 1 125A-2P BREAKER

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

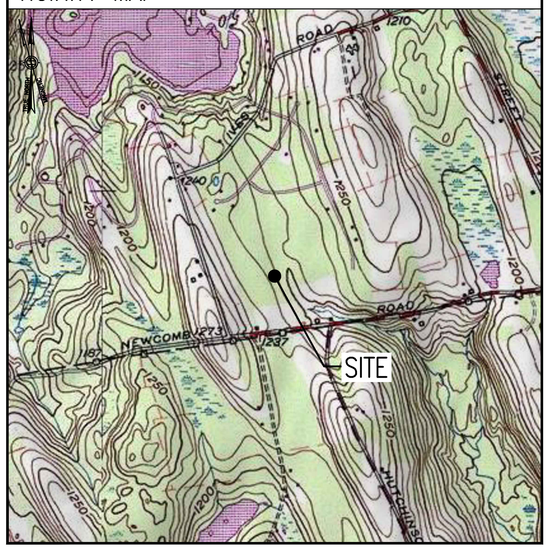
GENERAL NOTES

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

MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. TAKE EXIT 58 FOR I-90 WEST TOWARD ALBANY. USE RIGHT 2 LANES FOR EXIT 78 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY. CONTINUE ONTO I-84. TAKE EXIT 39 TOWARD FARMINGTON. CONTINUE ONTO STATE HWY 508. SLIGHT RIGHT ONTO CT-4 WEST. TURN RIGHT ONTO CT-177 NORTH. SLIGHT LEFT ONTO CT-4 WEST. TURN LEFT TO STAY ON CT-4. CONTINUE ONTO CT-118 WEST. SLIGHT RIGHT ONTO EAST STREET. TURN RIGHT ONTO NORTH STREET. CONTINUE ONTO GOSHEN ROAD. TURN LEFT ONTO BRUSH HILL ROAD. SITE IS LOCATED ON THE LEFT HAND 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, 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:	CTNH548A
SITE NAME:	CTNH548A
SBA SITE NUMBER:	CT12210-A
SBA SITE NAME:	GOSHEN 3, CT
SITE ADDRESS:	113 BRUSH HILL ROAD GOSHEN, CT 06756
PROPERTY OWNER:	WOODRIDGE SEWER DIST. 113 BRUSH HILL ROAD GOSHEN, CT 06756
TOWER OWNER:	SBA TOWERS V, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	LICHFIELD
ZONING DISTRICT:	RA5 (RESIDENTIAL)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	195'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.797170° N41°47'49.81" LONGITUDE: -73.221670° W73°13'18.01"

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
7/15/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.480

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.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
7/15/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

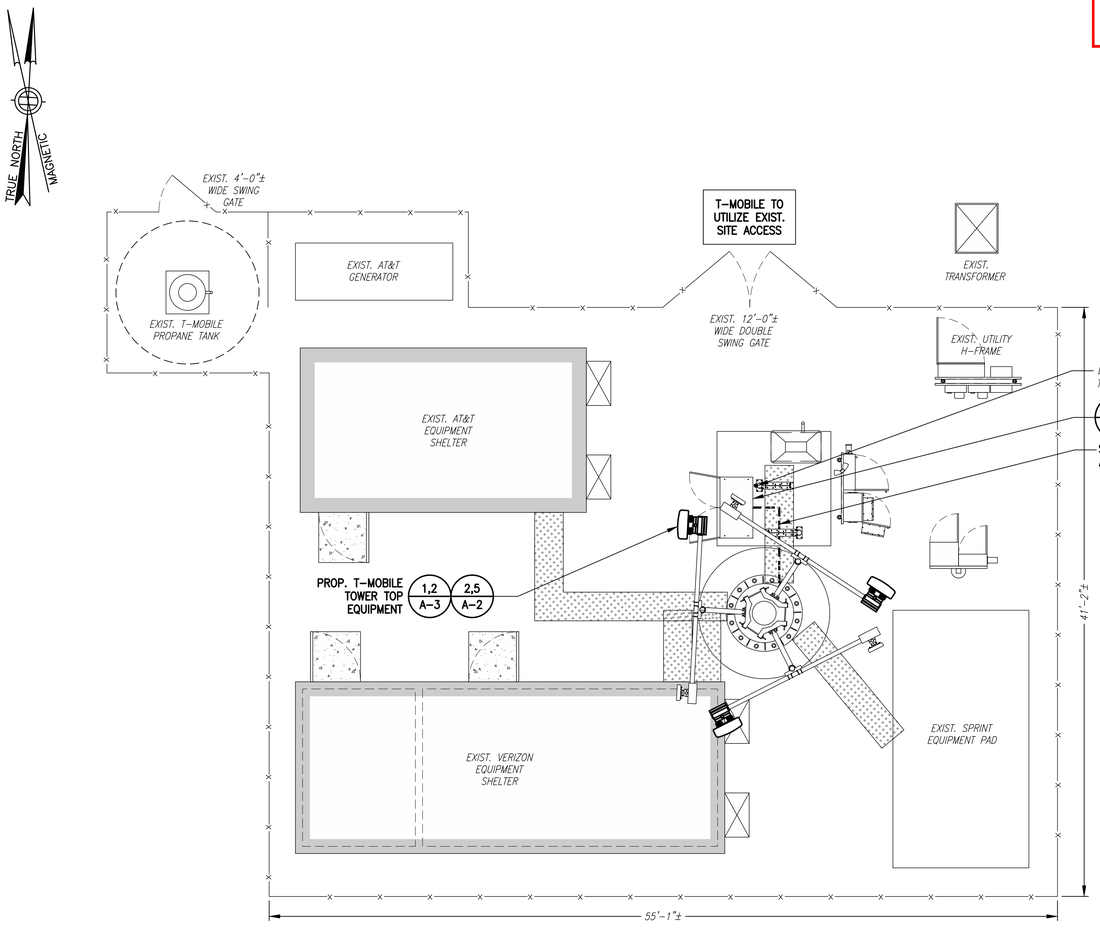
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

1815.480

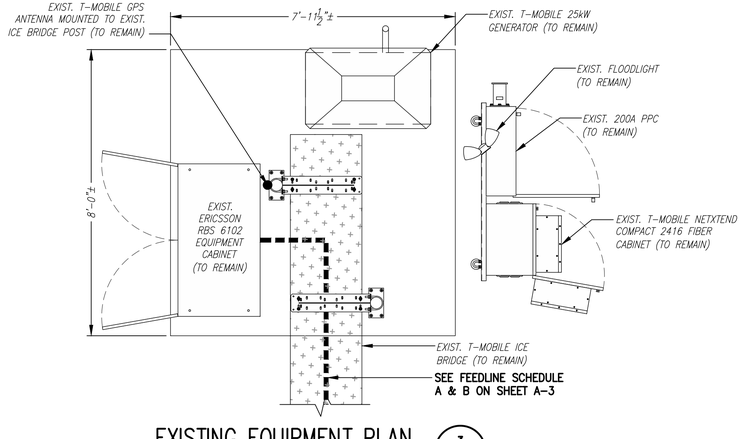
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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

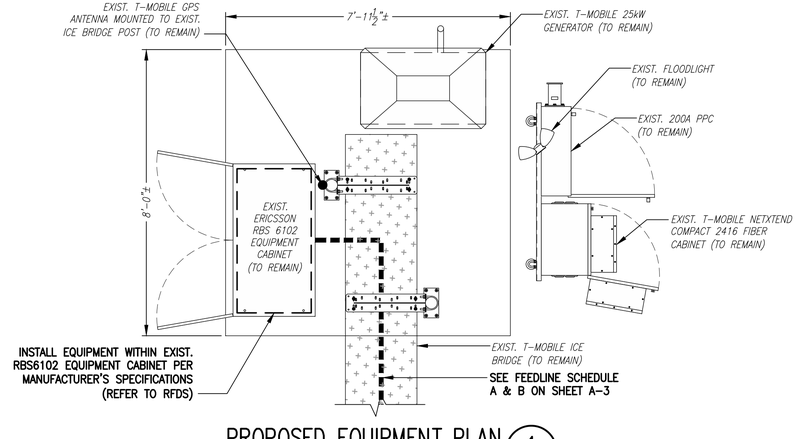


COMPOUND PLAN (1 / A-1)
SCALE: 1" = 5'-0"
0 5'-0" 10'-0 15'-0"

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



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



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

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7/15/2022

CHECKED BY:	JMT
APPROVED BY:	JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

SHEET TITLE
COMPOUND & EQUIPMENT PLANS

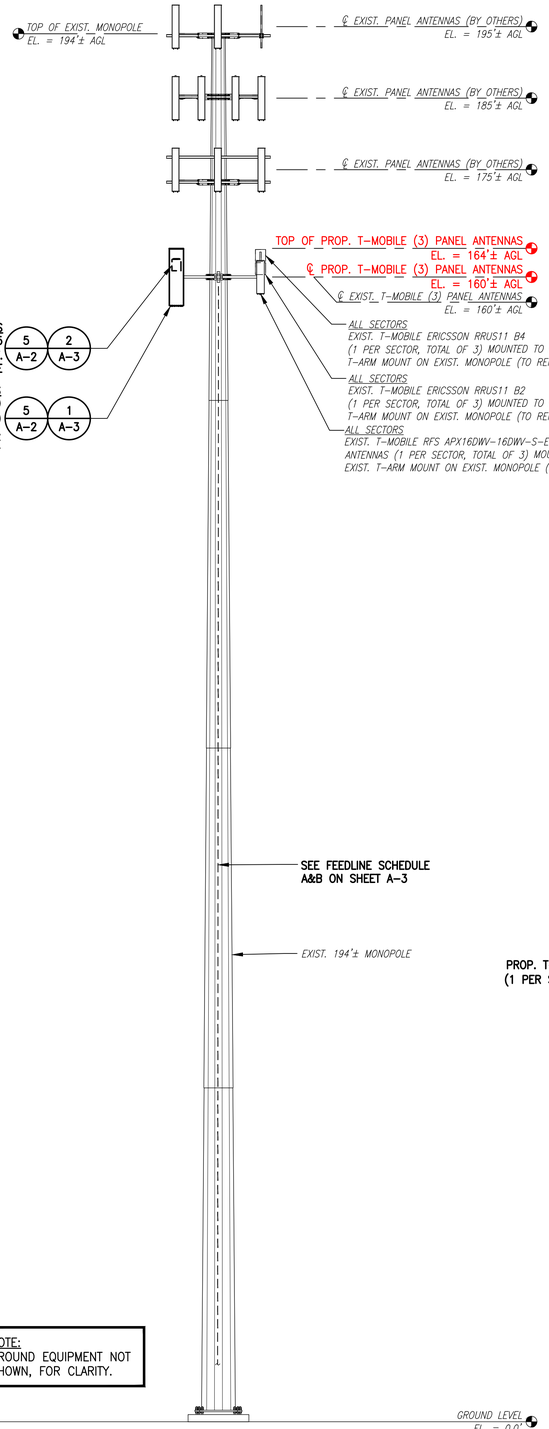
SHEET NUMBER
A-1

1815.480

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
N.T.S.



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION 2 A–2
SCALE: 1" =10'–0"
0 10' 20' 30'

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

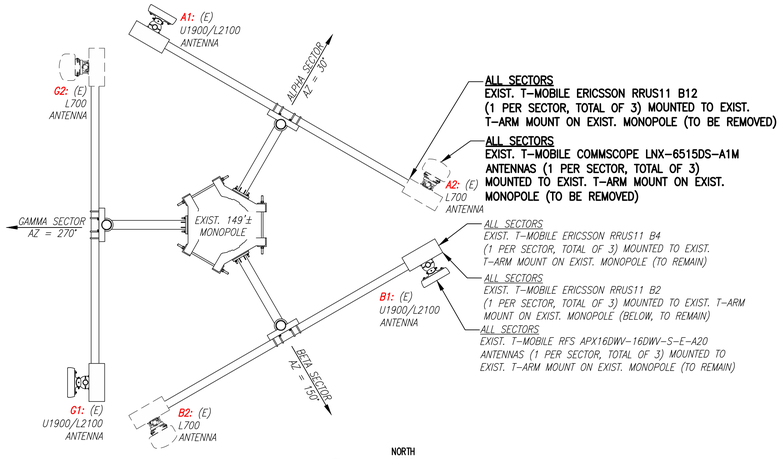
EXISTING ANTENNA PHOTO 3 A–2
N.T.S.

ANTENNA STATUS LEGEND:

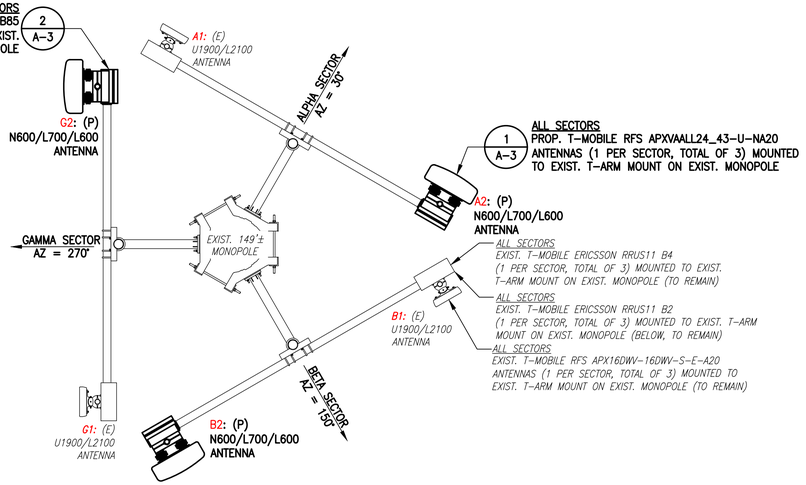
EMPTY – EMPTY PIPE

(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

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APPROVED BY:	JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

SHEET NUMBER
A-2

1815.480

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 RFS APX16DWV-16DWV-S-E-A20	160'± AGL	30°	0°	2°	U1900	RRUS11 B2	(3) 1-5/8"ø COAX CABLES (1) 1-5/8" (9x18) HCS FIBER CABLE (1) 2" (6x24) HCS FIBER CABLE
						L2100	RRUS11 B4	
	A2 RFS APXVAALL24_43-U-NA20	160'± AGL	30°	0°	0°	L700/L600/N600	RADIO 4480 B71+B85	
BETA	B1 RFS APX16DWV-16DWV-S-E-A20	160'± AGL	150°	0°	2°	U1900	RRUS11 B2	
						L2100	RRUS11 B4	
	B2 RFS APXVAALL24_43-U-NA20	160'± AGL	150°	0°	0°	L700/L600/N600	RADIO 4480 B71+B85	
GAMMA	G1 RFS APX16DWV-16DWV-S-E-A20	160'± AGL	270°	0°	2°	U1900	RRUS11 B2	
						L2100	RRUS11 B4	
	G2 RFS APXVAALL24_43-U-NA20	160'± AGL	270°	0°	0°	L700/L600/N600	RADIO 4480 B71+B85	

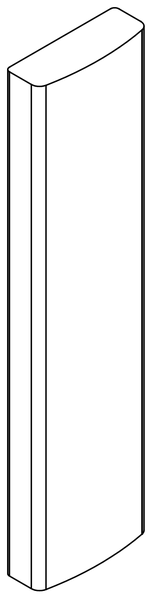
CABLE NOTE: SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV3 – 03/09/22

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) ½" COAX CABLE FOR GPS ANTENNA (3) 1-5/8"ø COAX CABLES (1) 1-5/8" (9x18) HCS FIBER CABLE EXISTING TO BE REMOVED: NONE	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 2" (6x24) HCS FIBER CABLE	

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



RFS APXVAALL24_43-U-NA20 ANTENNA
DIMENSIONS: 95.9"H x 24.0"W x 8.5"D
WEIGHT: 122.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

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

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

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

SBA COMMUNICATIONS CORP.
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CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
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201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
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www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED PROFESSIONAL CIVIL ENGINEER
7/19/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

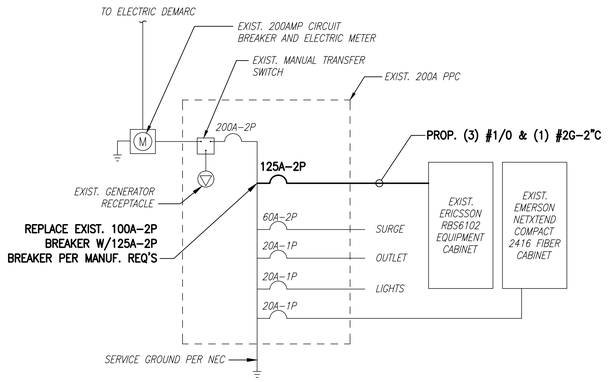
SHEET TITLE
SITE DETAILS, ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-3

1815.480

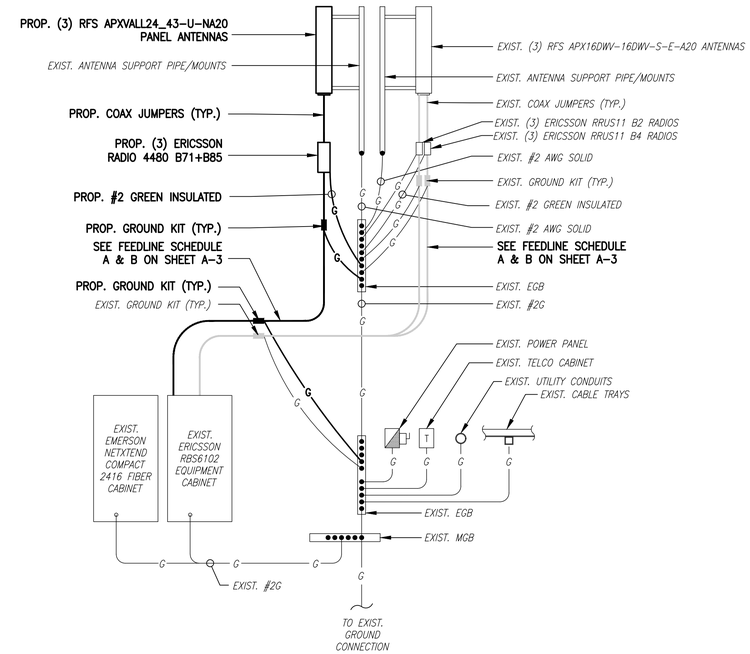
EXISTING POWER PANEL PHOTOS (1 / E-1)

SCALE: NOT TO SCALE



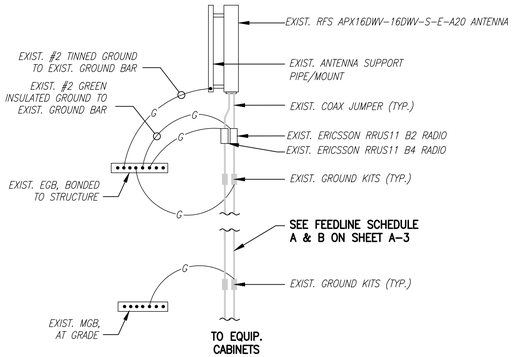
ONE LINE DIAGRAM (2 / E-1)

SCALE: NOT TO SCALE

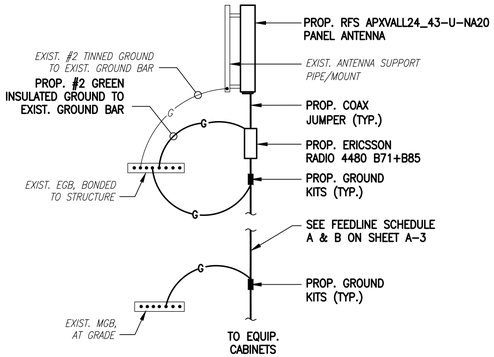


GROUNDING RISER DIAGRAM (3 / E-1)

SCALE: NOT TO SCALE



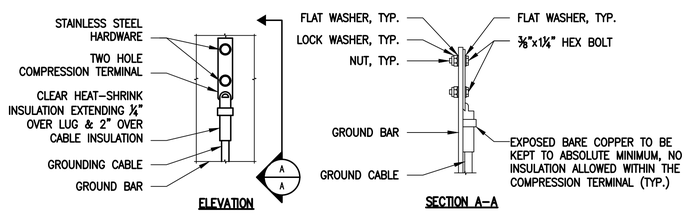
U1900/L2100 ANTENNAS



L700/L600/N600 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (4 / E-1)

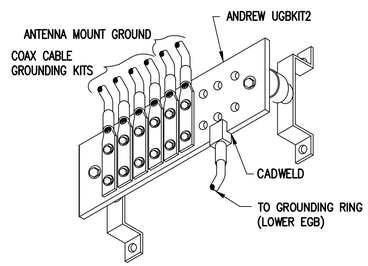
SCALE: NOT TO SCALE



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 (5 / E-1)

SCALE: NOT TO SCALE



GROUND BAR (EGB) (6 / E-1)

SCALE: NOT TO SCALE

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 8" 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.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
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LICENSED PROFESSIONAL CIVIL ENGINEER
7/15/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/25/22	ISSUED FOR CONSTRUCTION	JRV

SITE NUMBER:
CTNH548A

SITE ADDRESS:
113 BRUSH HILL ROAD
GOSHEN, CT 06756

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.480

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 194 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT12210-A

Customer Site Name: Goshen 3, CT

Carrier Name: T-Mobile (App#: 198730-1)

Carrier Site ID / Name: CTNH548A / CTNH548A

Site Location: 113 Brush Hill Road

Goshen, Connecticut

Litchfield County

Latitude: 41.797172

Longitude: -73.221674

Analysis Result:

Max Structural Usage: 83.0% [Pass]

Max Foundation Usage: 63.0% [Pass]

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

Report Prepared By: Kevin Azisllari

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

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

Report Prepared By: Kevin Azisllari

Introduction

The purpose of this report is to summarize the analysis results on the 194 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Engineered Endeavors Incorporated Project #12782, Drawing #GS55363, Dated 07/28/04
Foundation Drawing	Engineered Endeavors Incorporated Project #12782, Drawing #12782-195, Dated 07/28/04
Geotechnical Report	Dr. Clarence Welti, PE, PC Geotechnical Report, Dated 12/18/03
Modification Drawings	N/A
Mount Analysis	GeoStructural, Project: L600, dated 05/12/2022

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 115.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 89.0 mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.182, S_1 = 0.065

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	196.0	3	RFS - APXVTM14-C-120 - Panel	Low Profile Platform	(4) 1-1/4" Hybrid	Sprint
2		3	RFS - APXVSPP18-C-A20 - Panel			
3		4	RFS - ACU-A20-N - RET			
4		3	ALU - TD-RRH8x20-25 - RRU			
5		3	ALU - 1900MHz RRH – RRU			
6		3	ALU - 800 MHz RRH – RRU			
7		3	ALU - 800 MHz Filter			
8	186.0	1	Andrew - FPA5250 - Dish	Modified Platform W/ (1) support rail kit & (1) kicker kit	(17) 1 5/8" (1) 1 5/8" Hybrid (2) 1/2"	Verizon
9	185.0	6	Commscope NHH-65C-R2B - Panel			
10		3	Samsung MT6407-77A - Panel			
11		3	Commscope TD-850B-LTE78-43-Diplexer			
12		3	Samsung RFV01U-D2A RRU			
13		3	Samsung RFV01U-D1A RRU			
14		1	RFS DB-C1-12C-24AB-0Z-OVP			
15	172.5	6	Cci DMP65R-BU6DA - Panel	14.5' Platform W/ Site Pro 1 # HRK14	(1) 7/16" Fiber (6) 1 5/8" (1) 3" Innerduct* (4) 3/4" DC	AT&T
16		3	Powerwave 7770- Panel			
17		3	Ericsson RRUS 4478 B14			
18		3	Ericsson RRUS 8843 B2 B66A			
19		3	Ericsson RRUS 4449 B5/B12			
20		3	Raycap DC6-48-60-18-8F			
21		1	Commscope ABT-DFM-ADBH			
-	160.0	3	RFS - APX16DWV-16DWVS-E-A20 - Panel	(3) T-Arm	(2) 1 5/8" Hybrid	T-Mobile
-		3	Commscope - LNX-6515DS-A1M - Panel			
-		3	96”x15.6”x9” Panel (180 lb) - Panel			
-		3	15”x14”x7.5” RRU (70 lb) – RRU			
-		3	Ericsson - RRUS 11 - RRU			
-		3	Ericsson - RRUS 11 (Band 12) - RRU			
-		3	Ericsson - RRUS 11 (Band 4) - RRU			
-	50.0	1	Symmetricom - 58532A - GPS	Direct	(1) 1/2"	

*(Housing (2) 3/4" DC power & (1) 7/16" Fiber cables)

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
22	160.0	3	RFS APX16DWV-16DWVS-E-A20 - Panel	(3) T-Arm	(2) 1 5/8" Hybrid (2) 1.9" Hybrid	T-Mobile
23		3	Ericsson RRUS 11 Band 4 - RRUs			
24		3	Ericsson RRUS 11 Band 12 - RRUs			
25		3	Ericsson RRUS11 B2 - RRUs			
26		3	Unknown 96" x 15.6" x 9" - Panel			
27		3	RFS APXVAALL24_43-U-NA20 - Panel			
28		3	Ericsson 4480 B71 + B85 - RRUs			
29	50.0	1	Symmetricom 58532A - GPS	Direct	(1) 1/2"	

All transmission lines are considered running inside of the pole shafts.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**73.7%**	**63.3%**	**83.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4719.0	51.5
Analysis Reactions	5180.9	35.3
Factored Reactions*	6370.7	69.5
% of Design Reactions	81.3%	50.8%

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

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 2.2464 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

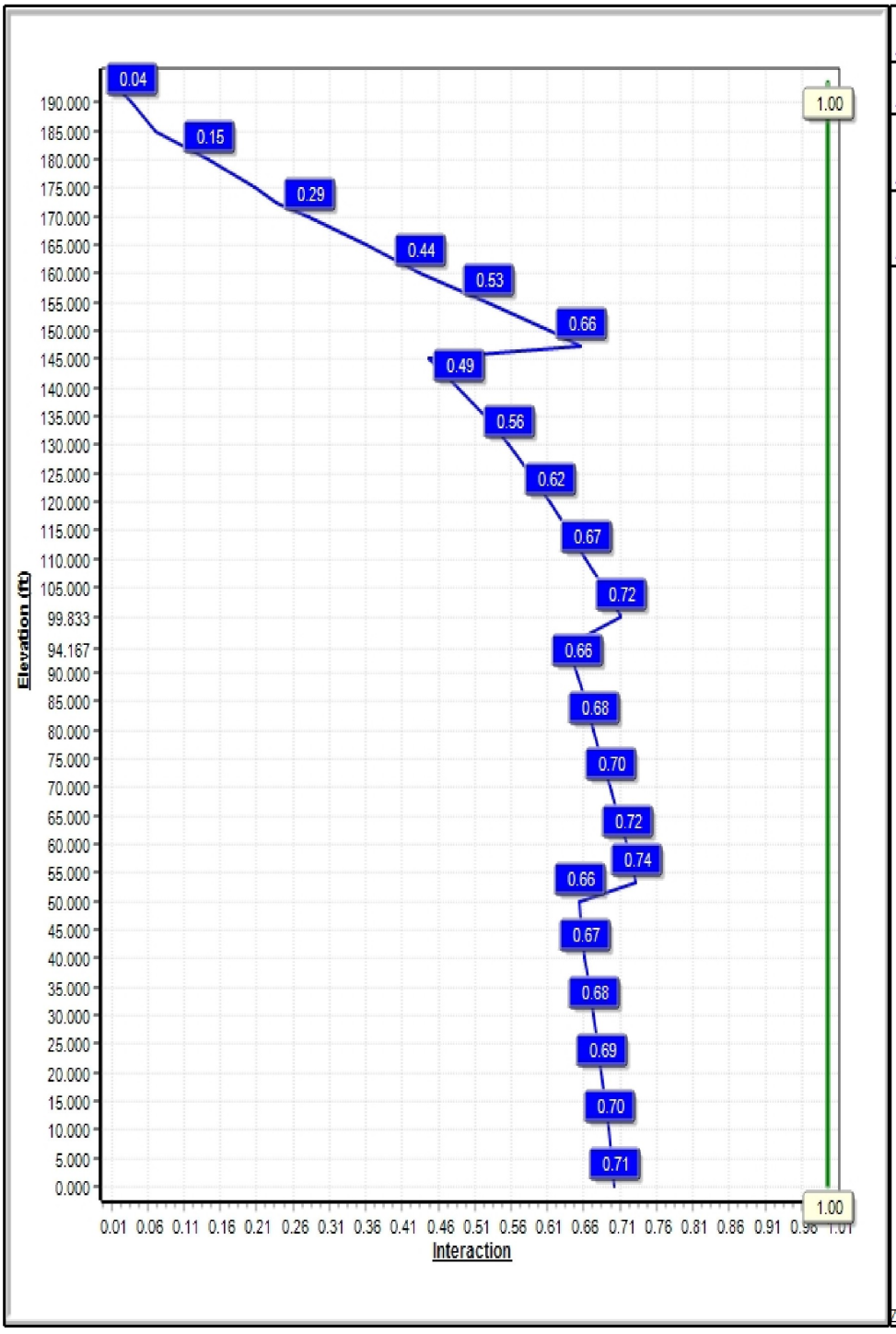
Usage Diagram - Max Ratio 73.66% at 53.3ft

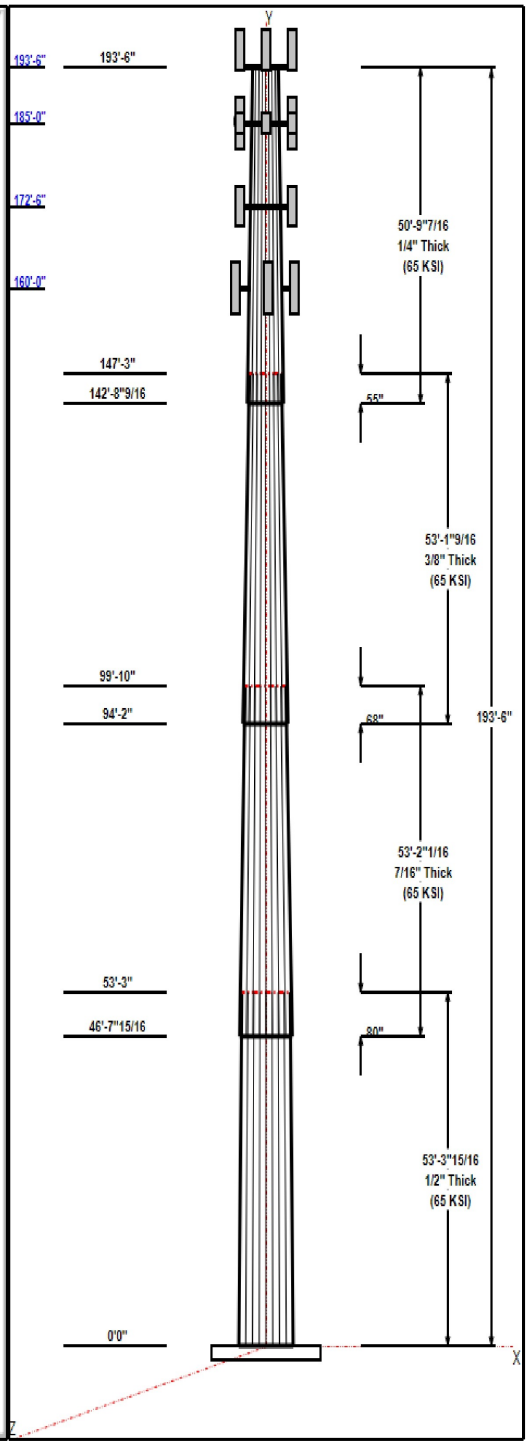
Structure:	CT12210-A-SBA	**Code:**	EIA/TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT	**Exposure:**	C	
Height:	193.50 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	27
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 89 mph Wind





Structure: CT12210-A-SBA

Type: Tapered
Site Name: Goshen 3, CT
Height: 193.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18928

5/18/2022

Tower Engineering Solutions

Shaft Properties

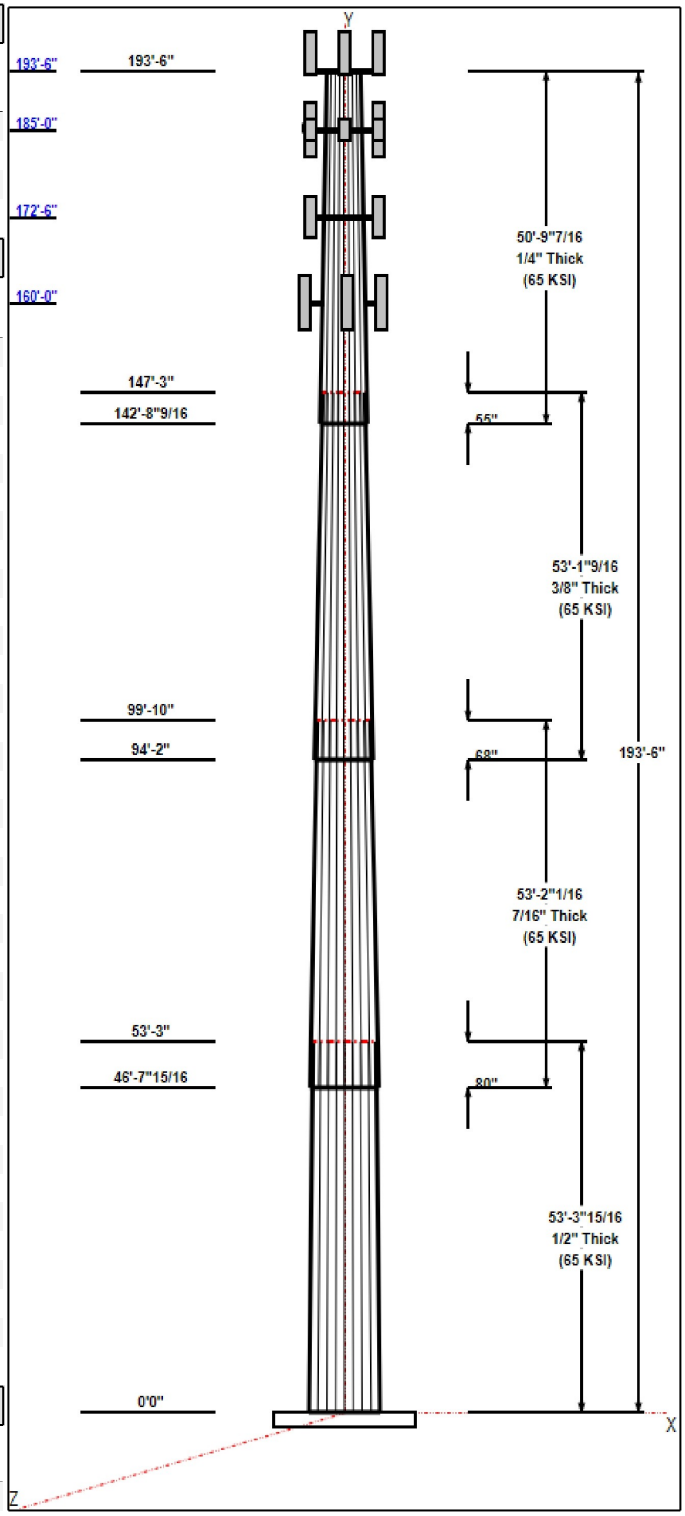
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.33	46.91	57.00	0.500		0.18928	65
2	53.17	38.98	49.04	0.438	Slip	0.18928	65
3	53.13	30.75	40.80	0.375	Slip	0.18928	65
4	50.79	22.50	32.11	0.250	Slip	0.18928	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
193.50	195.00	1	Low Profile Platform	Sprint
193.50	196.00	3	APXVSPP18-C-A20	Sprint
193.50	196.00	3	APXVTM14-C-120	Sprint
193.50	196.00	3	1900MHz RRH	Sprint
193.50	196.00	3	800 MHz RRH	Sprint
193.50	196.00	3	TD-RRH8x20-25	Sprint
193.50	195.00	3	800 MHz Filter	Sprint
193.50	195.00	4	ACU-A20-N	Sprint
185.00	185.00	1	Low Profile	Verizon
185.00	186.00	1	FPA5250	Verizon
185.00	185.00	1	GPS	Verizon
185.00	185.00	6	Commscope	Verizon
185.00	185.00	3	Samsung MT6407-77A	Verizon
185.00	185.00	3	Commscope	Verizon
185.00	185.00	3	Samsung RFV01U-D2A	Verizon
185.00	185.00	3	Samsung RFV01U-D1A	Verizon
185.00	185.00	1	RFS	Verizon
185.00	185.00	1	support rail kit	Verizon
185.00	185.00	1	kicker kit	Verizon
172.50	172.50	6	DMP65R-BU6DA	AT&T
172.50	172.50	1	HRK14	AT&T
172.50	172.50	1	14.5' Platform	AT&T
172.50	172.50	3	RRUS 4478 B14	AT&T
172.50	172.50	3	RRUS 8843 B2 B66A	AT&T
172.50	172.50	3	RRUS 4449 B5/B12	AT&T
172.50	172.50	3	DC6-48-60-18-8F	AT&T
172.50	172.50	1	ABT-DMDF-ADBH	AT&T
160.00	160.00	3	T-Arms	T-Mobile
160.00	160.00	3	RFS	T-Mobile
160.00	160.00	3	Ericsson RRUS 11 Band 4	T-Mobile
160.00	160.00	3	Ericsson RRUS 11 Band	T-Mobile
160.00	160.00	3	Ericsson RRUS11 B2	T-Mobile
160.00	160.00	3	UKN 96" x 15.6" x 9"	T-Mobile
160.00	160.00	3	RFS	T-Mobile
160.00	160.00	3	Ericsson 4480 B71 + B85	T-Mobile
50.00	50.00	1	Symmetricom 58532A -	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	193.50	Inside	1-1/4" Hybrid	Sprint
0.00	185.00	Inside	1 5/8"	Verizon
0.00	185.00	Inside	1 5/8" Hybrid	Verizon
0.00	185.00	Inside	1/2"	Verizon
0.00	172.50	Inside	1 5/8"	AT&T
0.00	172.50	Inside	3" Innerduct	AT&T



0.00	172.50	Inside	3/4" DC	AT&T
0.00	172.50	Inside	7/16" Fiber	AT&T
0.00	160.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	160.00	Inside	1.9" Hybrid	T-Mobile
0.00	50.00	Inside	1/2"	T-Mobile

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	72.0	60.0	Round

Reactions

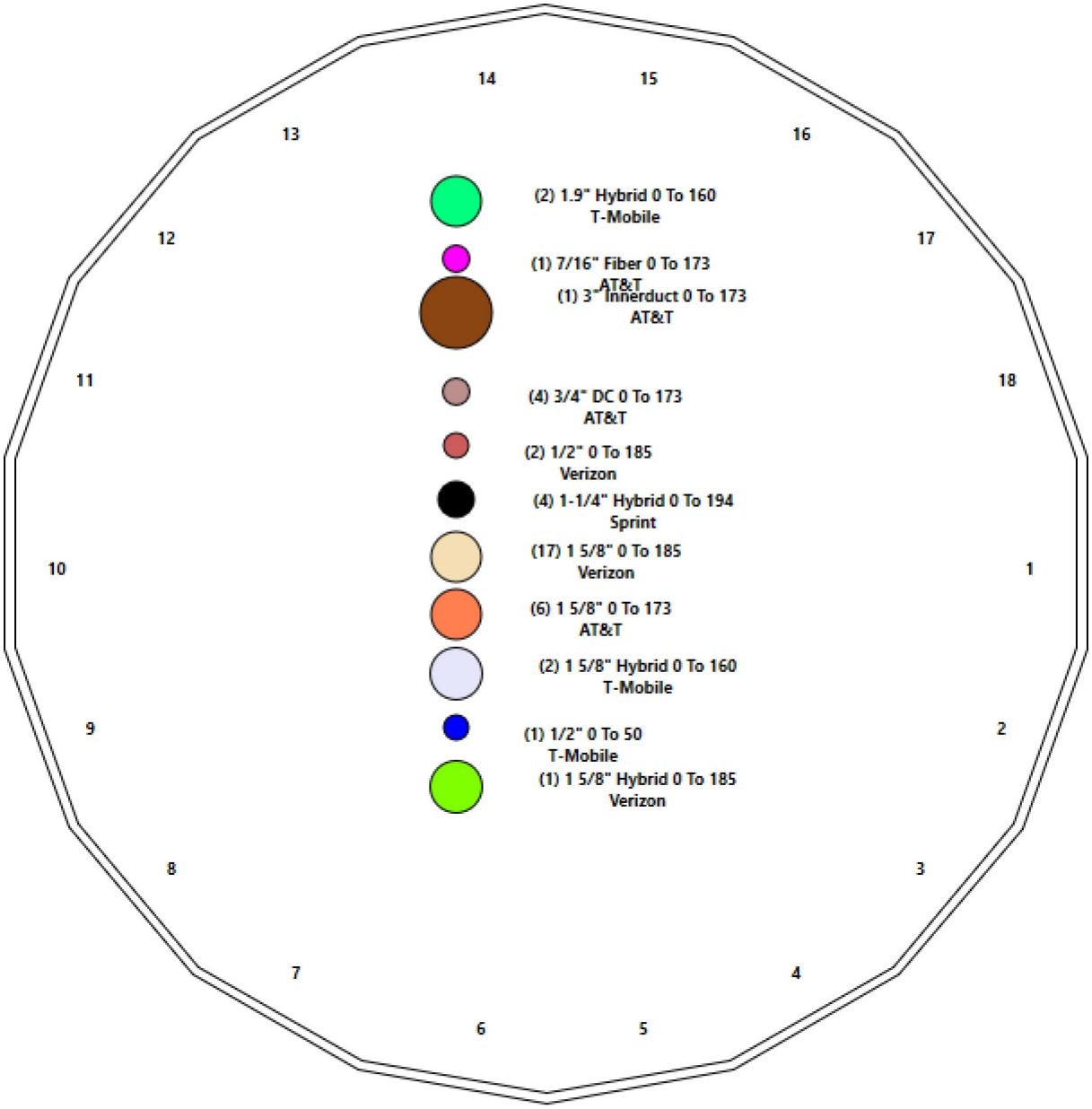
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 89 mph Wind	5180.9	35.3	66.4
0.9D + 1.6W 89 mph Wind	5085.1	35.3	49.8
1.2D + 1.0Di + 1.0Wi 40 mph Wind	1214.2	7.9	109.0
1.2D + 1.0E	397.6	2.7	66.4
0.9D + 1.0E	389.8	2.7	49.8
1.0D + 1.0W 60 mph Wind	1457.8	10.0	55.4

Structure: CT12210-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Goshen 3, CT
Height: 193.50 (ft)

5/18/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.330	0.5000	65		0.00	14,818
2	18	53.170	0.4375	65	Slip	80.00	10,947
3	18	53.130	0.3750	65	Slip	68.00	7,617
4	18	50.787	0.2500	65	Slip	55.00	3,710
					Total Shaft Weight:		**37,091**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	57.00	0.00	89.66	36162.61	18.69	114.00	46.91	53.33	73.64	20037.0	15.13	93.81	0.189276
2	49.04	46.66	67.49	20145.19	18.36	112.10	38.98	99.83	53.52	10043.9	14.30	89.09	0.189276
3	40.80	94.17	48.12	9935.12	17.77	108.80	30.75	147.30	36.15	4212.30	13.05	81.99	0.189276
4	32.11	142.7	25.28	3242.90	21.24	128.45	22.50	193.50	17.65	1104.27	14.46	90.00	0.189276

Load Summary

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	193.50	Low Profile Platform	1	1200.00	25.00	1.00	2632.18	53.644	1.00	0.00	1.50
2	193.50	APXVSPP18-C-A20	3	55.00	8.02	0.83	283.12	11.841	0.86	0.00	2.50
3	193.50	APXVTM14-C-120	3	57.00	6.34	0.79	286.45	7.896	0.82	0.00	2.50
4	193.50	1900MHz RRH	3	60.00	3.80	0.67	263.60	5.701	0.67	0.00	2.50
5	193.50	800 MHz RRH	3	53.00	2.49	0.67	154.16	4.054	0.67	0.00	2.50
6	193.50	TD-RRH8x20-25	3	70.00	4.05	0.67	210.55	5.199	0.67	0.00	2.50
7	193.50	800 MHz Filter	3	8.80	0.42	1.00	26.76	0.891	1.00	0.00	1.50
8	193.50	ACU-A20-N	4	1.00	0.14	0.67	6.88	0.546	0.67	0.00	1.50
9	185.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3282.20	46.048	1.00	0.00	0.00
10	185.00	FPA5250	1	10.00	1.20	1.00	39.88	2.190	1.00	0.00	1.00
11	185.00	GPS	1	10.00	1.00	1.00	49.92	1.970	1.00	0.00	0.00
12	185.00	Commscope NHH-65C-R2B	6	51.60	11.39	0.84	433.20	13.668	0.84	0.00	0.00
13	185.00	Samsung MT6407-77A	3	79.40	4.69	0.70	254.79	6.002	0.70	0.00	0.00
14	185.00	Commscope TD-850B-LTE78-43	3	7.90	1.48	0.50	64.96	2.684	0.50	0.00	0.00
15	185.00	Samsung RFV01U-D2A RRU	3	70.30	1.88	0.67	136.52	2.631	0.67	0.00	0.00
16	185.00	Samsung RFV01U-D1A RRU	3	84.40	1.88	0.67	154.19	2.631	0.67	0.00	0.00
17	185.00	RFS DB-C1-12C-24AB-0Z-OVP	1	32.00	4.06	1.00	187.12	5.179	1.00	0.00	0.00
18	185.00	support rail kit	1	514.00	12.25	1.00	1344.55	28.551	1.00	0.00	0.00
19	185.00	kicker kit	1	146.00	8.00	1.00	423.55	19.406	1.00	0.00	0.00
20	172.50	DMP65R-BU6DA	6	63.30	12.71	0.73	472.24	14.754	0.73	0.00	0.00
21	172.50	HRK14	1	302.36	8.13	1.00	787.53	18.873	1.00	0.00	0.00
22	172.50	14.5' Platform	1	2000.00	24.80	1.00	4359.70	31.407	1.00	0.00	0.00
23	172.50	RRUS 4478 B14	3	59.40	1.65	0.67	115.47	2.351	0.67	0.00	0.00
24	172.50	RRUS 8843 B2 B66A	3	70.00	1.64	0.67	132.17	2.338	0.67	0.00	0.00
25	172.50	RRUS 4449 B5/B12	3	71.00	1.97	0.67	143.18	2.710	0.67	0.00	0.00
26	172.50	DC6-48-60-18-8F	3	31.80	0.92	1.00	115.39	1.512	1.00	0.00	0.00
27	172.50	ABT-DMDF-ADBH	1	1.10	0.05	0.98	4.12	0.310	0.98	0.00	0.00
28	160.00	T-Arms	3	350.00	8.00	0.75	677.88	17.368	0.75	0.00	0.00
29	160.00	RFS APX16DWV-16DWVS-E-A20	3	40.70	6.61	0.62	197.79	9.533	0.62	0.00	0.00
30	160.00	Ericsson RRUS 11 Band 4	3	44.00	2.52	0.67	127.68	3.370	0.67	0.00	0.00
31	160.00	Ericsson RRUS 11 Band 12	3	44.00	2.52	0.67	127.68	3.370	0.67	0.00	0.00
32	160.00	Ericsson RRUS11 B2	3	51.00	2.52	0.67	147.99	3.370	0.67	0.00	0.00
33	160.00	UKN 96" x 15.6" x 9"	3	180.00	14.17	0.82	648.88	16.474	0.82	0.00	0.00
34	160.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	721.51	22.823	0.73	0.00	0.00
35	160.00	Ericsson 4480 B71 + B85	3	93.00	2.85	0.67	189.53	3.755	0.67	0.00	0.00
36	50.00	Symmetricom 58532A - GPS	1	0.40	0.22	1.00	9.96	0.662	1.00	0.00	0.00
		Totals:	**93**	**11,519.76**			**34,121.53**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	193.50	(4) 1-1/4" Hybrid	0.00	Inside
0.00	185.00	(17) 1 5/8"	0.00	Inside
0.00	185.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	185.00	(2) 1/2"	0.00	Inside
0.00	172.50	(6) 1 5/8"	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	172.50	(1) 3" Innerduct			0.00	Inside					
0.00	172.50	(4) 3/4" DC			0.00	Inside					
0.00	172.50	(1) 7/16" Fiber			0.00	Inside					
0.00	160.00	(2) 1 5/8" Hybrid			0.00	Inside					
0.00	160.00	(2) 1.9" Hybrid			0.00	Inside					
0.00	50.00	(1) 1/2"			0.00	Inside					

Shaft Section Properties

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	57.000	89.662	36162.6	18.69	114.00	79.4	1249.	0.0
5.00		0.5000	56.054	88.160	34375.7	18.36	112.11	79.8	1207.	1512.7
10.00		0.5000	55.107	86.659	32648.6	18.02	110.21	80.2	1166.	1487.2
15.00		0.5000	54.161	85.157	30980.4	17.69	108.32	80.6	1126.	1461.6
20.00		0.5000	53.214	83.655	29370.0	17.36	106.43	81.0	1087.	1436.1
25.00		0.5000	52.268	82.153	27816.4	17.02	104.54	81.4	1048.	1410.5
30.00		0.5000	51.322	80.651	26318.6	16.69	102.64	81.8	1010.	1385.0
35.00		0.5000	50.375	79.149	24875.5	16.35	100.75	82.2	972.6	1359.4
40.00		0.5000	49.429	77.647	23486.1	16.02	98.86	82.5	935.9	1333.9
45.00		0.5000	48.483	76.146	22149.5	15.69	96.97	82.5	899.8	1308.3
46.66	Bot - Section 2	0.5000	48.168	75.646	21716.4	15.58	96.34	82.5	888.0	429.6
50.00		0.5000	47.536	74.644	20864.6	15.35	95.07	82.5	864.5	1614.5
53.33	Top - Section 1	0.4375	47.781	65.740	18616.6	17.85	109.21	0.0	0.0	1590.0
55.00		0.4375	47.465	65.301	18246.2	17.72	108.49	80.6	757.2	372.3
60.00		0.4375	46.518	63.987	17166.7	17.34	106.33	81.0	726.8	1099.8
65.00		0.4375	45.572	62.673	16130.5	16.96	104.16	81.5	697.2	1077.5
70.00		0.4375	44.626	61.359	15137.0	16.57	102.00	81.9	668.1	1055.1
75.00		0.4375	43.679	60.044	14185.1	16.19	99.84	82.4	639.6	1032.8
80.00		0.4375	42.733	58.730	13274.0	15.81	97.68	82.5	611.8	1010.4
85.00		0.4375	41.786	57.416	12402.7	15.43	95.51	82.5	584.6	988.1
90.00		0.4375	40.840	56.102	11570.5	15.05	93.35	82.5	558.0	965.7
94.17	Bot - Section 3	0.4375	40.051	55.007	10906.0	14.73	91.55	82.5	536.3	787.7
95.00		0.4375	39.894	54.788	10776.3	14.67	91.19	82.5	532.0	291.8
99.83	Top - Section 2	0.3750	39.729	46.839	9165.1	17.27	105.94	0.0	0.0	1669.9
100.00		0.3750	39.697	46.802	9143.1	17.26	105.86	81.1	453.6	26.6
105.00		0.3750	38.751	45.675	8498.7	16.81	103.34	81.6	432.0	786.7
110.00		0.3750	37.805	44.549	7885.3	16.37	100.81	82.2	410.8	767.5
115.00		0.3750	36.858	43.423	7302.2	15.92	98.29	82.5	390.2	748.4
120.00		0.3750	35.912	42.296	6748.6	15.48	95.76	82.5	370.1	729.2
125.00		0.3750	34.965	41.170	6223.6	15.03	93.24	82.5	350.6	710.0
130.00		0.3750	34.019	40.043	5726.7	14.59	90.72	82.5	331.6	690.9
135.00		0.3750	33.073	38.917	5256.9	14.14	88.19	82.5	313.1	671.7
140.00		0.3750	32.126	37.791	4813.5	13.70	85.67	82.5	295.1	652.5
142.71	Bot - Section 4	0.3750	31.613	37.179	4583.7	13.45	84.30	82.5	285.6	346.1
145.00		0.3750	31.180	36.664	4395.8	13.25	83.15	82.5	277.7	482.7
147.30	Top - Section 3	0.2500	31.245	24.594	2985.2	20.63	124.98	0.0	0.0	478.1
150.00		0.2500	30.734	24.188	2839.7	20.27	122.93	77.6	182.0	224.4
155.00		0.2500	29.787	23.437	2583.4	19.60	119.15	78.3	170.8	405.1
160.00		0.2500	28.841	22.686	2342.9	18.93	115.36	79.1	160.0	392.4
165.00		0.2500	27.894	21.935	2117.9	18.26	111.58	79.9	149.5	379.6
170.00		0.2500	26.948	21.184	1907.7	17.60	107.79	80.7	139.4	366.8
172.50		0.2500	26.475	20.809	1808.1	17.26	105.90	81.1	134.5	178.6
175.00		0.2500	26.002	20.433	1712.0	16.93	104.01	81.5	129.7	175.4
180.00		0.2500	25.055	19.682	1530.1	16.26	100.22	82.3	120.3	341.3
185.00		0.2500	24.109	18.931	1361.5	15.59	96.44	82.5	111.2	328.5
190.00		0.2500	23.162	18.180	1205.9	14.93	92.65	82.5	102.5	315.7
193.50		0.2500	22.500	17.655	1104.3	14.46	90.00	82.5	96.7	213.4
										37091.4

Wind Loading - Shaft

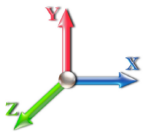
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	16.374	18.01	395.77	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	16.374	18.01	389.20	0.650	0.000	5.00	23.916	15.55	448.0	0.0	1815.3
10.00		1.00	0.85	16.374	18.01	382.63	0.650	0.000	5.00	23.516	15.29	440.5	0.0	1784.6
15.00		1.00	0.85	16.374	18.01	376.06	0.650	0.000	5.00	23.115	15.02	433.0	0.0	1753.9
20.00		1.00	0.90	17.374	19.11	380.59	0.650	0.000	5.00	22.715	14.76	451.5	0.0	1723.3
25.00		1.00	0.95	18.209	20.03	382.71	0.650	0.000	5.00	22.315	14.50	464.8	0.0	1692.6
30.00		1.00	0.98	18.922	20.81	383.06	0.650	0.000	5.00	21.914	14.24	474.4	0.0	1662.0
35.00		1.00	1.01	19.546	21.50	382.15	0.650	0.000	5.00	21.514	13.98	481.1	0.0	1631.3
40.00		1.00	1.04	20.103	22.11	380.28	0.650	0.000	5.00	21.113	13.72	485.6	0.0	1600.6
45.00		1.00	1.07	20.608	22.67	377.65	0.650	0.000	5.00	20.713	13.46	488.3	0.0	1570.0
46.66	Bot - Section 2	1.00	1.08	20.766	22.84	376.63	0.650	0.000	1.66	6.802	4.42	161.6	0.0	515.5
50.00	Appurtenance(s)	1.00	1.09	21.070	23.18	374.41	0.650	0.000	3.34	13.758	8.94	331.6	0.0	1937.4
53.33	Top - Section 1	1.00	1.11	21.358	23.49	371.96	0.650	0.000	3.33	13.553	8.81	331.1	0.0	1908.0
55.00		1.00	1.12	21.497	23.65	377.62	0.650	0.000	1.67	6.730	4.37	165.5	0.0	446.8
60.00		1.00	1.14	21.895	24.08	373.49	0.650	0.000	5.00	19.882	12.92	498.0	0.0	1319.8
65.00		1.00	1.16	22.267	24.49	368.99	0.650	0.000	5.00	19.481	12.66	496.3	0.0	1293.0
70.00		1.00	1.17	22.617	24.88	364.16	0.650	0.000	5.00	19.081	12.40	493.7	0.0	1266.2
75.00		1.00	1.19	22.948	25.24	359.03	0.650	0.000	5.00	18.681	12.14	490.4	0.0	1239.3
80.00		1.00	1.21	23.262	25.59	353.65	0.650	0.000	5.00	18.280	11.88	486.5	0.0	1212.5
85.00		1.00	1.22	23.561	25.92	348.03	0.650	0.000	5.00	17.880	11.62	481.9	0.0	1185.7
90.00		1.00	1.24	23.846	26.23	342.20	0.650	0.000	5.00	17.479	11.36	476.8	0.0	1158.8
94.17	Bot - Section 3	1.00	1.25	24.074	26.48	337.19	0.650	0.000	4.17	14.260	9.27	392.7	0.0	945.2
95.00		1.00	1.25	24.119	26.53	336.18	0.650	0.000	0.83	2.872	1.87	79.2	0.0	350.2
99.83	Top - Section 2	1.00	1.27	24.372	26.81	330.19	0.650	0.000	4.83	16.436	10.68	458.3	0.0	2003.9
100.00		1.00	1.27	24.381	26.82	336.33	0.650	0.000	0.17	0.560	0.36	15.6	0.0	31.9
105.00		1.00	1.28	24.632	27.10	330.01	0.650	0.000	5.00	16.596	10.79	467.7	0.0	944.0
110.00		1.00	1.29	24.875	27.36	323.53	0.650	0.000	5.00	16.195	10.53	460.9	0.0	921.0
115.00		1.00	1.30	25.109	27.62	316.91	0.650	0.000	5.00	15.795	10.27	453.7	0.0	898.0
120.00		1.00	1.32	25.335	27.87	310.16	0.650	0.000	5.00	15.394	10.01	446.2	0.0	875.0
125.00		1.00	1.33	25.553	28.11	303.28	0.650	0.000	5.00	14.994	9.75	438.3	0.0	852.0
130.00		1.00	1.34	25.765	28.34	296.30	0.650	0.000	5.00	14.593	9.49	430.1	0.0	829.1
135.00		1.00	1.35	25.971	28.57	289.20	0.650	0.000	5.00	14.193	9.23	421.7	0.0	806.1
140.00		1.00	1.36	26.170	28.79	282.00	0.650	0.000	5.00	13.793	8.97	412.9	0.0	783.1
142.71	Bot - Section 4	1.00	1.36	26.276	28.90	278.05	0.650	0.000	2.71	7.317	4.76	220.0	0.0	415.3
145.00		1.00	1.37	26.364	29.00	274.71	0.650	0.000	2.29	6.172	4.01	186.1	0.0	579.2
147.30	Top - Section 3	1.00	1.37	26.452	29.10	271.33	0.650	0.000	2.30	6.114	3.97	185.0	0.0	573.7
150.00		1.00	1.38	26.553	29.21	271.74	0.650	0.000	2.70	7.089	4.61	215.3	0.0	269.2
155.00		1.00	1.39	26.737	29.41	264.29	0.650	0.000	5.00	12.803	8.32	391.6	0.0	486.2
160.00	Appurtenance(s)	1.00	1.40	26.917	29.61	256.74	0.650	0.000	5.00	12.403	8.06	381.9	0.0	470.8
165.00		1.00	1.41	27.091	29.80	249.13	0.650	0.000	5.00	12.002	7.80	372.0	0.0	455.5
170.00		1.00	1.42	27.262	29.99	241.43	0.650	0.000	5.00	11.602	7.54	361.8	0.0	440.2
172.50	Appurtenance(s)	1.00	1.42	27.346	30.08	237.56	0.650	0.000	2.50	5.651	3.67	176.8	0.0	214.3
175.00		1.00	1.42	27.429	30.17	233.66	0.650	0.000	2.50	5.551	3.61	174.2	0.0	210.5
180.00		1.00	1.43	27.592	30.35	225.83	0.650	0.000	5.00	10.801	7.02	340.9	0.0	409.5
185.00	Appurtenance(s)	1.00	1.44	27.752	30.53	217.93	0.650	0.000	5.00	10.401	6.76	330.2	0.0	394.2
190.00		1.00	1.45	27.908	30.70	209.96	0.650	0.000	5.00	10.000	6.50	319.3	0.0	378.8
193.50	Appurtenance(s)	1.00	1.45	28.016	30.82	204.35	0.650	0.000	3.50	6.762	4.40	216.7	0.0	256.1

Wind Loading - Shaft

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Totals:	**193.50**	**16,929.8**	**44,509.7**

Discrete Appurtenance Forces

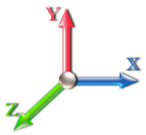
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	193.50	800 MHz Filter	3	28.061	30.867	1.00	1.00	1.26	31.68	0.000	1.500	62.23	0.00	93.34
2	193.50	TD-RRH8x20-25	3	28.091	30.901	0.67	1.00	8.14	252.00	0.000	2.500	402.47	0.00	1006.18
3	193.50	800 MHz RRH	3	28.091	30.901	0.67	1.00	5.00	190.80	0.000	2.500	247.45	0.00	618.62
4	193.50	1900MHz RRH	3	28.091	30.901	0.67	1.00	7.64	216.00	0.000	2.500	377.63	0.00	944.07
5	193.50	APXVTM14-C-120	3	28.091	30.901	0.79	1.00	15.03	205.20	0.000	2.500	742.89	0.00	1857.22
6	193.50	APXVSPP18-C-A20	3	28.091	30.901	0.83	1.00	19.97	198.00	0.000	2.500	987.33	0.00	2468.31
7	193.50	Low Profile Platform	1	28.061	30.867	1.00	1.00	25.00	1440.00	0.000	1.500	1234.69	0.00	1852.04
8	193.50	ACU-A20-N	4	28.061	30.867	0.67	1.00	0.38	4.80	0.000	1.500	18.53	0.00	27.80
9	185.00	support rail kit	1	27.752	30.527	1.00	1.00	12.25	616.80	0.000	0.000	598.33	0.00	0.00
10	185.00	kicker kit	1	27.752	30.527	1.00	1.00	8.00	175.20	0.000	0.000	390.75	0.00	0.00
11	185.00	Commscope	6	27.752	30.527	0.63	0.75	43.05	371.52	0.000	0.000	2102.91	0.00	0.00
12	185.00	GPS	1	27.752	30.527	1.00	1.00	1.00	12.00	0.000	0.000	48.84	0.00	0.00
13	185.00	FPA5250	1	27.783	30.562	1.00	1.00	1.20	12.00	0.000	1.000	58.68	0.00	58.68
14	185.00	RFS	1	27.752	30.527	1.00	1.00	4.06	38.40	0.000	0.000	198.30	0.00	0.00
15	185.00	Samsung MT6407-77A	3	27.752	30.527	0.52	0.75	7.39	285.84	0.000	0.000	360.79	0.00	0.00
16	185.00	Commscope	3	27.752	30.527	0.38	0.75	1.66	28.44	0.000	0.000	81.32	0.00	0.00
17	185.00	Samsung RFV01U-D2A	3	27.752	30.527	0.50	0.75	2.83	253.08	0.000	0.000	138.43	0.00	0.00
18	185.00	Samsung RFV01U-D1A	3	27.752	30.527	0.50	0.75	2.83	303.84	0.000	0.000	138.43	0.00	0.00
19	185.00	Low Profile	1	27.752	30.527	1.00	1.00	22.00	1800.00	0.000	0.000	1074.55	0.00	0.00
20	172.50	DC6-48-60-18-8F	3	27.346	30.081	1.00	1.00	2.76	114.48	0.000	0.000	132.84	0.00	0.00
21	172.50	RRUS 4449 B5/B12	3	27.346	30.081	0.50	0.75	2.97	255.60	0.000	0.000	142.93	0.00	0.00
22	172.50	RRUS 8843 B2 B66A	3	27.346	30.081	0.50	0.75	2.47	252.00	0.000	0.000	118.99	0.00	0.00
23	172.50	RRUS 4478 B14	3	27.346	30.081	0.50	0.75	2.49	213.84	0.000	0.000	119.72	0.00	0.00
24	172.50	14.5' Platform	1	27.346	30.081	1.00	1.00	24.80	2400.00	0.000	0.000	1193.61	0.00	0.00
25	172.50	HRK14	1	27.346	30.081	1.00	1.00	8.13	362.83	0.000	0.000	391.29	0.00	0.00
26	172.50	DMP65R-BU6DA	6	27.346	30.081	0.55	0.75	41.75	455.76	0.000	0.000	2009.51	0.00	0.00
27	172.50	ABT-DMDF-ADBH	1	27.346	30.081	0.73	0.75	0.04	1.32	0.000	0.000	1.77	0.00	0.00
28	160.00	RFS	3	26.917	29.608	0.50	0.80	9.84	146.52	0.000	0.000	465.95	0.00	0.00
29	160.00	Ericsson RRUS 11 Band 4	3	26.917	29.608	0.54	0.80	4.05	158.40	0.000	0.000	191.96	0.00	0.00
30	160.00	Ericsson RRUS 11 Band	3	26.917	29.608	0.54	0.80	4.05	158.40	0.000	0.000	191.96	0.00	0.00
31	160.00	T-Arms	3	26.917	29.608	0.56	0.75	13.50	1260.00	0.000	0.000	639.54	0.00	0.00
32	160.00	Ericsson 4480 B71 + B85	3	26.917	29.608	0.54	0.80	4.58	334.80	0.000	0.000	217.10	0.00	0.00
33	160.00	Ericsson RRUS11 B2	3	26.917	29.608	0.54	0.80	4.05	183.60	0.000	0.000	191.96	0.00	0.00
34	160.00	UKN 96" x 15.6" x 9"	3	26.917	29.608	0.66	0.80	27.89	648.00	0.000	0.000	1321.07	0.00	0.00
35	160.00	RFS	3	26.917	29.608	0.58	0.80	35.46	442.08	0.000	0.000	1679.87	0.00	0.00
36	50.00	Symmetricom 58532A -	1	21.070	23.177	1.00	1.00	0.22	0.48	0.000	0.000	8.16	0.00	0.00
							Totals:		**13,823.71**			**18,282.80**		

Total Applied Force Summary

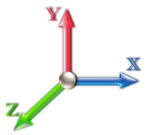
Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		448.00	2042.36	0.00	0.00
10.00		440.50	2011.70	0.00	0.00
15.00		433.00	1981.04	0.00	0.00
20.00		451.47	1950.37	0.00	0.00
25.00		464.85	1919.71	0.00	0.00
30.00		474.37	1889.05	0.00	0.00
35.00		481.06	1858.38	0.00	0.00
40.00		485.57	1827.72	0.00	0.00
45.00		488.32	1797.06	0.00	0.00
46.66		161.59	591.02	0.00	0.00
50.00	(1) attachments	339.78	2089.44	0.00	0.00
53.33		331.14	2058.62	0.00	0.00
55.00		165.50	522.32	0.00	0.00
60.00		498.00	1545.94	0.00	0.00
65.00		496.26	1519.11	0.00	0.00
70.00		493.70	1492.28	0.00	0.00
75.00		490.41	1465.45	0.00	0.00
80.00		486.47	1438.62	0.00	0.00
85.00		481.92	1411.79	0.00	0.00
90.00		476.83	1384.96	0.00	0.00
94.17		392.74	1133.64	0.00	0.00
95.00		79.23	387.90	0.00	0.00
99.83		458.26	2222.53	0.00	0.00
100.00		15.62	39.40	0.00	0.00
105.00		467.65	1170.17	0.00	0.00
110.00		460.86	1147.17	0.00	0.00
115.00		453.69	1124.17	0.00	0.00
120.00		446.17	1101.17	0.00	0.00
125.00		438.32	1078.18	0.00	0.00
130.00		430.15	1055.18	0.00	0.00
135.00		421.68	1032.18	0.00	0.00
140.00		412.94	1009.18	0.00	0.00
142.71		219.96	538.02	0.00	0.00
145.00		186.15	682.62	0.00	0.00
147.30		185.03	677.54	0.00	0.00
150.00		215.34	391.50	0.00	0.00
155.00		391.61	712.30	0.00	0.00
160.00	(24) attachments	5281.33	4028.77	0.00	0.00
165.00		371.98	644.54	0.00	0.00
170.00		361.84	629.21	0.00	0.00
172.50	(21) attachments	4287.43	4364.69	0.00	0.00
175.00		174.17	279.25	0.00	0.00
180.00		340.94	547.01	0.00	0.00
185.00	(24) attachments	5521.54	4428.80	0.00	58.68
190.00		319.27	401.74	0.00	0.00
193.50	(23) attachments	4289.93	2810.58	0.00	8867.59

Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Totals:	**35,212.60**	**66,434.38**	**0.00**	**8,926.27**

Calculated Forces

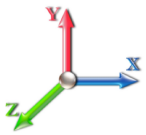
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-66.37	-35.33	0.00	-5180.9	0.00	5180.91	6408.64	3204.32	14863.6	7442.88	0.00	0.000	0.000	0.707
5.00	-64.21	-35.11	0.00	-5004.2	0.00	5004.27	6332.44	3166.22	14438.7	7230.12	0.11	-0.200	0.000	0.702
10.00	-62.07	-34.88	0.00	-4828.7	0.00	4828.75	6255.18	3127.59	14017.4	7019.15	0.43	-0.404	0.000	0.698
15.00	-59.97	-34.64	0.00	-4654.3	0.00	4654.37	6176.86	3088.43	13599.8	6810.05	0.96	-0.610	0.000	0.693
20.00	-57.90	-34.38	0.00	-4481.1	0.00	4481.15	6097.47	3048.74	13186.1	6602.88	1.71	-0.820	0.000	0.688
25.00	-55.86	-34.10	0.00	-4309.2	0.00	4309.25	6017.03	3008.51	12776.3	6397.69	2.68	-1.033	0.000	0.683
30.00	-53.85	-33.79	0.00	-4138.7	0.00	4138.78	5935.52	2967.76	12370.7	6194.55	3.88	-1.249	0.000	0.677
35.00	-51.88	-33.46	0.00	-3969.8	0.00	3969.84	5852.95	2926.48	11969.2	5993.52	5.31	-1.468	0.000	0.671
40.00	-49.94	-33.12	0.00	-3802.5	0.00	3802.53	5768.82	2884.41	11571.1	5794.16	6.96	-1.690	0.000	0.665
45.00	-48.07	-32.70	0.00	-3636.9	0.00	3636.92	5657.24	2828.62	11125.6	5571.07	8.85	-1.916	0.000	0.661
46.66	-47.42	-32.62	0.00	-3582.5	0.00	3582.52	5620.12	2810.06	10979.3	5497.83	9.53	-1.993	0.000	0.660
50.00	-45.25	-32.33	0.00	-3473.6	0.00	3473.69	5545.66	2772.83	10688.8	5352.37	10.98	-2.147	0.000	0.657
53.33	-43.15	-32.00	0.00	-3366.0	0.00	3366.05	4757.51	2378.75	9242.35	4628.04	12.53	-2.302	0.000	0.737
55.00	-42.54	-31.94	0.00	-3312.6	0.00	3312.60	4734.55	2367.28	9135.77	4574.68	13.35	-2.381	0.000	0.733
60.00	-40.88	-31.56	0.00	-3152.9	0.00	3152.90	4665.11	2332.55	8818.95	4416.03	15.98	-2.634	0.000	0.723
65.00	-39.24	-31.16	0.00	-2995.1	0.00	2995.13	4594.60	2297.30	8505.61	4259.13	18.87	-2.888	0.000	0.712
70.00	-37.64	-30.76	0.00	-2839.3	0.00	2839.32	4523.04	2261.52	8195.87	4104.03	22.03	-3.146	0.000	0.700
75.00	-36.07	-30.35	0.00	-2685.5	0.00	2685.51	4450.41	2225.20	7889.86	3950.80	25.47	-3.405	0.000	0.688
80.00	-34.53	-29.94	0.00	-2533.7	0.00	2533.75	4363.37	2181.68	7564.56	3787.90	29.17	-3.667	0.000	0.677
85.00	-33.01	-29.52	0.00	-2384.0	0.00	2384.07	4265.74	2132.87	7228.13	3619.44	33.15	-3.930	0.000	0.667
90.00	-31.54	-29.08	0.00	-2236.5	0.00	2236.50	4168.10	2084.05	6899.36	3454.81	37.40	-4.195	0.000	0.655
94.17	-30.37	-28.67	0.00	-2115.3	0.00	2115.35	4086.74	2043.37	6631.22	3320.54	41.16	-4.418	0.000	0.645
95.00	-29.92	-28.64	0.00	-2091.4	0.00	2091.46	4070.47	2035.23	6578.23	3294.01	41.94	-4.464	0.000	0.642
99.83	-27.67	-28.07	0.00	-1953.0	0.00	1953.04	3418.29	1709.14	5518.43	2763.32	46.58	-4.722	0.000	0.715
100.00	-27.56	-28.12	0.00	-1948.3	0.00	1948.36	3416.28	1708.14	5510.73	2759.46	46.75	-4.731	0.000	0.714
105.00	-26.29	-27.69	0.00	-1807.7	0.00	1807.74	3355.57	1677.79	5281.30	2644.58	51.85	-5.023	0.000	0.692
110.00	-25.06	-27.26	0.00	-1669.2	0.00	1669.27	3293.81	1646.90	5055.01	2531.26	57.26	-5.314	0.000	0.667
115.00	-23.85	-26.82	0.00	-1532.9	0.00	1532.99	3226.08	1613.04	4824.64	2415.91	62.98	-5.603	0.000	0.642
120.00	-22.66	-26.38	0.00	-1398.8	0.00	1398.89	3142.39	1571.20	4576.34	2291.57	68.99	-5.889	0.000	0.618
125.00	-21.51	-25.93	0.00	-1267.0	0.00	1267.01	3058.71	1529.35	4334.61	2170.52	75.29	-6.170	0.000	0.591
130.00	-20.39	-25.49	0.00	-1137.3	0.00	1137.35	2975.02	1487.51	4099.43	2052.76	81.89	-6.445	0.000	0.561
135.00	-19.30	-25.04	0.00	-1009.9	0.00	1009.92	2891.34	1445.67	3870.81	1938.28	88.77	-6.711	0.000	0.528
140.00	-18.26	-24.57	0.00	-884.73	0.00	884.73	2807.65	1403.83	3648.75	1827.09	95.92	-6.968	0.000	0.491
142.71	-17.70	-24.32	0.00	-818.07	0.00	818.07	2762.24	1381.12	3530.99	1768.12	99.91	-7.104	0.000	0.469
145.00	-17.00	-24.09	0.00	-762.45	0.00	762.45	2723.97	1361.98	3433.25	1719.18	103.33	-7.216	0.000	0.450
147.30	-16.31	-23.85	0.00	-707.13	0.00	707.13	1707.44	853.72	2174.15	1088.69	106.82	-7.326	0.000	0.660
150.00	-15.86	-23.65	0.00	-642.66	0.00	642.66	1688.50	844.25	2114.25	1058.70	110.99	-7.449	0.000	0.617
155.00	-15.09	-23.24	0.00	-524.43	0.00	524.43	1652.64	826.32	2004.58	1003.78	118.93	-7.741	0.000	0.532
160.00	-11.75	-17.50	0.00	-408.26	0.00	408.26	1615.71	807.86	1896.48	949.65	127.16	-7.998	0.000	0.438
165.00	-11.11	-17.08	0.00	-320.75	0.00	320.75	1577.73	788.87	1790.06	896.36	135.63	-8.219	0.000	0.365
170.00	-10.50	-16.66	0.00	-235.34	0.00	235.34	1538.69	769.34	1685.46	843.98	144.31	-8.406	0.000	0.286
172.50	-6.80	-11.78	0.00	-193.70	0.00	193.70	1518.77	759.38	1633.88	818.16	148.72	-8.486	0.000	0.241
175.00	-6.53	-11.58	0.00	-164.25	0.00	164.25	1498.58	749.29	1582.80	792.58	153.17	-8.556	0.000	0.212
180.00	-6.02	-11.17	0.00	-106.35	0.00	106.35	1457.41	728.71	1482.21	742.21	162.16	-8.669	0.000	0.148
185.00	-2.47	-5.04	0.00	-50.43	0.00	50.43	1406.50	703.25	1375.31	688.68	171.25	-8.742	0.000	0.075
190.00	-2.12	-4.67	0.00	-25.21	0.00	25.21	1350.71	675.36	1267.83	634.86	180.39	-8.781	0.000	0.041
193.50	0.00	-4.29	0.00	-8.87	0.00	8.87	1311.66	655.83	1195.19	598.48	186.81	-8.795	0.000	0.015

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Wind Loading - Shaft

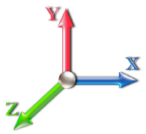
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	16.374	18.01	395.77	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	16.374	18.01	389.20	0.650	0.000	5.00	23.916	15.55	448.0	0.0	1361.5
10.00		1.00	0.85	16.374	18.01	382.63	0.650	0.000	5.00	23.516	15.29	440.5	0.0	1338.5
15.00		1.00	0.85	16.374	18.01	376.06	0.650	0.000	5.00	23.115	15.02	433.0	0.0	1315.5
20.00		1.00	0.90	17.374	19.11	380.59	0.650	0.000	5.00	22.715	14.76	451.5	0.0	1292.5
25.00		1.00	0.95	18.209	20.03	382.71	0.650	0.000	5.00	22.315	14.50	464.8	0.0	1269.5
30.00		1.00	0.98	18.922	20.81	383.06	0.650	0.000	5.00	21.914	14.24	474.4	0.0	1246.5
35.00		1.00	1.01	19.546	21.50	382.15	0.650	0.000	5.00	21.514	13.98	481.1	0.0	1223.5
40.00		1.00	1.04	20.103	22.11	380.28	0.650	0.000	5.00	21.113	13.72	485.6	0.0	1200.5
45.00		1.00	1.07	20.608	22.67	377.65	0.650	0.000	5.00	20.713	13.46	488.3	0.0	1177.5
46.66	Bot - Section 2	1.00	1.08	20.766	22.84	376.63	0.650	0.000	1.66	6.802	4.42	161.6	0.0	386.6
50.00	Appurtenance(s)	1.00	1.09	21.070	23.18	374.41	0.650	0.000	3.34	13.758	8.94	331.6	0.0	1453.1
53.33	Top - Section 1	1.00	1.11	21.358	23.49	371.96	0.650	0.000	3.33	13.553	8.81	331.1	0.0	1431.0
55.00		1.00	1.12	21.497	23.65	377.62	0.650	0.000	1.67	6.730	4.37	165.5	0.0	335.1
60.00		1.00	1.14	21.895	24.08	373.49	0.650	0.000	5.00	19.882	12.92	498.0	0.0	989.9
65.00		1.00	1.16	22.267	24.49	368.99	0.650	0.000	5.00	19.481	12.66	496.3	0.0	969.7
70.00		1.00	1.17	22.617	24.88	364.16	0.650	0.000	5.00	19.081	12.40	493.7	0.0	949.6
75.00		1.00	1.19	22.948	25.24	359.03	0.650	0.000	5.00	18.681	12.14	490.4	0.0	929.5
80.00		1.00	1.21	23.262	25.59	353.65	0.650	0.000	5.00	18.280	11.88	486.5	0.0	909.4
85.00		1.00	1.22	23.561	25.92	348.03	0.650	0.000	5.00	17.880	11.62	481.9	0.0	889.2
90.00		1.00	1.24	23.846	26.23	342.20	0.650	0.000	5.00	17.479	11.36	476.8	0.0	869.1
94.17	Bot - Section 3	1.00	1.25	24.074	26.48	337.19	0.650	0.000	4.17	14.260	9.27	392.7	0.0	708.9
95.00		1.00	1.25	24.119	26.53	336.18	0.650	0.000	0.83	2.872	1.87	79.2	0.0	262.7
99.83	Top - Section 2	1.00	1.27	24.372	26.81	330.19	0.650	0.000	4.83	16.436	10.68	458.3	0.0	1503.0
100.00		1.00	1.27	24.381	26.82	336.33	0.650	0.000	0.17	0.560	0.36	15.6	0.0	23.9
105.00		1.00	1.28	24.632	27.10	330.01	0.650	0.000	5.00	16.596	10.79	467.7	0.0	708.0
110.00		1.00	1.29	24.875	27.36	323.53	0.650	0.000	5.00	16.195	10.53	460.9	0.0	690.8
115.00		1.00	1.30	25.109	27.62	316.91	0.650	0.000	5.00	15.795	10.27	453.7	0.0	673.5
120.00		1.00	1.32	25.335	27.87	310.16	0.650	0.000	5.00	15.394	10.01	446.2	0.0	656.3
125.00		1.00	1.33	25.553	28.11	303.28	0.650	0.000	5.00	14.994	9.75	438.3	0.0	639.0
130.00		1.00	1.34	25.765	28.34	296.30	0.650	0.000	5.00	14.593	9.49	430.1	0.0	621.8
135.00		1.00	1.35	25.971	28.57	289.20	0.650	0.000	5.00	14.193	9.23	421.7	0.0	604.5
140.00		1.00	1.36	26.170	28.79	282.00	0.650	0.000	5.00	13.793	8.97	412.9	0.0	587.3
142.71	Bot - Section 4	1.00	1.36	26.276	28.90	278.05	0.650	0.000	2.71	7.317	4.76	220.0	0.0	311.5
145.00		1.00	1.37	26.364	29.00	274.71	0.650	0.000	2.29	6.172	4.01	186.1	0.0	434.4
147.30	Top - Section 3	1.00	1.37	26.452	29.10	271.33	0.650	0.000	2.30	6.114	3.97	185.0	0.0	430.3
150.00		1.00	1.38	26.553	29.21	271.74	0.650	0.000	2.70	7.089	4.61	215.3	0.0	201.9
155.00		1.00	1.39	26.737	29.41	264.29	0.650	0.000	5.00	12.803	8.32	391.6	0.0	364.6
160.00	Appurtenance(s)	1.00	1.40	26.917	29.61	256.74	0.650	0.000	5.00	12.403	8.06	381.9	0.0	353.1
165.00		1.00	1.41	27.091	29.80	249.13	0.650	0.000	5.00	12.002	7.80	372.0	0.0	341.6
170.00		1.00	1.42	27.262	29.99	241.43	0.650	0.000	5.00	11.602	7.54	361.8	0.0	330.1
172.50	Appurtenance(s)	1.00	1.42	27.346	30.08	237.56	0.650	0.000	2.50	5.651	3.67	176.8	0.0	160.8
175.00		1.00	1.42	27.429	30.17	233.66	0.650	0.000	2.50	5.551	3.61	174.2	0.0	157.9
180.00		1.00	1.43	27.592	30.35	225.83	0.650	0.000	5.00	10.801	7.02	340.9	0.0	307.1
185.00	Appurtenance(s)	1.00	1.44	27.752	30.53	217.93	0.650	0.000	5.00	10.401	6.76	330.2	0.0	295.6
190.00		1.00	1.45	27.908	30.70	209.96	0.650	0.000	5.00	10.000	6.50	319.3	0.0	284.1
193.50	Appurtenance(s)	1.00	1.45	28.016	30.82	204.35	0.650	0.000	3.50	6.762	4.40	216.7	0.0	192.1

Wind Loading - Shaft

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Totals:	**193.50**	**16,929.8**	**33,382.3**

Discrete Appurtenance Forces

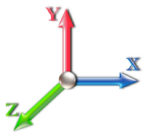
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	193.50	800 MHz Filter	3	28.061	30.867	1.00	1.00	1.26	23.76	0.000	1.500	62.23	0.00	93.34
2	193.50	TD-RRH8x20-25	3	28.091	30.901	0.67	1.00	8.14	189.00	0.000	2.500	402.47	0.00	1006.18
3	193.50	800 MHz RRH	3	28.091	30.901	0.67	1.00	5.00	143.10	0.000	2.500	247.45	0.00	618.62
4	193.50	1900MHz RRH	3	28.091	30.901	0.67	1.00	7.64	162.00	0.000	2.500	377.63	0.00	944.07
5	193.50	APXVTM14-C-120	3	28.091	30.901	0.79	1.00	15.03	153.90	0.000	2.500	742.89	0.00	1857.22
6	193.50	APXVSPP18-C-A20	3	28.091	30.901	0.83	1.00	19.97	148.50	0.000	2.500	987.33	0.00	2468.31
7	193.50	Low Profile Platform	1	28.061	30.867	1.00	1.00	25.00	1080.00	0.000	1.500	1234.69	0.00	1852.04
8	193.50	ACU-A20-N	4	28.061	30.867	0.67	1.00	0.38	3.60	0.000	1.500	18.53	0.00	27.80
9	185.00	support rail kit	1	27.752	30.527	1.00	1.00	12.25	462.60	0.000	0.000	598.33	0.00	0.00
10	185.00	kicker kit	1	27.752	30.527	1.00	1.00	8.00	131.40	0.000	0.000	390.75	0.00	0.00
11	185.00	Commscope	6	27.752	30.527	0.63	0.75	43.05	278.64	0.000	0.000	2102.91	0.00	0.00
12	185.00	GPS	1	27.752	30.527	1.00	1.00	1.00	9.00	0.000	0.000	48.84	0.00	0.00
13	185.00	FPA5250	1	27.783	30.562	1.00	1.00	1.20	9.00	0.000	1.000	58.68	0.00	58.68
14	185.00	RFS	1	27.752	30.527	1.00	1.00	4.06	28.80	0.000	0.000	198.30	0.00	0.00
15	185.00	Samsung MT6407-77A	3	27.752	30.527	0.52	0.75	7.39	214.38	0.000	0.000	360.79	0.00	0.00
16	185.00	Commscope	3	27.752	30.527	0.38	0.75	1.66	21.33	0.000	0.000	81.32	0.00	0.00
17	185.00	Samsung RFV01U-D2A	3	27.752	30.527	0.50	0.75	2.83	189.81	0.000	0.000	138.43	0.00	0.00
18	185.00	Samsung RFV01U-D1A	3	27.752	30.527	0.50	0.75	2.83	227.88	0.000	0.000	138.43	0.00	0.00
19	185.00	Low Profile	1	27.752	30.527	1.00	1.00	22.00	1350.00	0.000	0.000	1074.55	0.00	0.00
20	172.50	DC6-48-60-18-8F	3	27.346	30.081	1.00	1.00	2.76	85.86	0.000	0.000	132.84	0.00	0.00
21	172.50	RRUS 4449 B5/B12	3	27.346	30.081	0.50	0.75	2.97	191.70	0.000	0.000	142.93	0.00	0.00
22	172.50	RRUS 8843 B2 B66A	3	27.346	30.081	0.50	0.75	2.47	189.00	0.000	0.000	118.99	0.00	0.00
23	172.50	RRUS 4478 B14	3	27.346	30.081	0.50	0.75	2.49	160.38	0.000	0.000	119.72	0.00	0.00
24	172.50	14.5' Platform	1	27.346	30.081	1.00	1.00	24.80	1800.00	0.000	0.000	1193.61	0.00	0.00
25	172.50	HRK14	1	27.346	30.081	1.00	1.00	8.13	272.12	0.000	0.000	391.29	0.00	0.00
26	172.50	DMP65R-BU6DA	6	27.346	30.081	0.55	0.75	41.75	341.82	0.000	0.000	2009.51	0.00	0.00
27	172.50	ABT-DMDF-ADBH	1	27.346	30.081	0.73	0.75	0.04	0.99	0.000	0.000	1.77	0.00	0.00
28	160.00	RFS	3	26.917	29.608	0.50	0.80	9.84	109.89	0.000	0.000	465.95	0.00	0.00
29	160.00	Ericsson RRUS 11 Band 4	3	26.917	29.608	0.54	0.80	4.05	118.80	0.000	0.000	191.96	0.00	0.00
30	160.00	Ericsson RRUS 11 Band	3	26.917	29.608	0.54	0.80	4.05	118.80	0.000	0.000	191.96	0.00	0.00
31	160.00	T-Arms	3	26.917	29.608	0.56	0.75	13.50	945.00	0.000	0.000	639.54	0.00	0.00
32	160.00	Ericsson 4480 B71 + B85	3	26.917	29.608	0.54	0.80	4.58	251.10	0.000	0.000	217.10	0.00	0.00
33	160.00	Ericsson RRUS11 B2	3	26.917	29.608	0.54	0.80	4.05	137.70	0.000	0.000	191.96	0.00	0.00
34	160.00	UKN 96" x 15.6" x 9"	3	26.917	29.608	0.66	0.80	27.89	486.00	0.000	0.000	1321.07	0.00	0.00
35	160.00	RFS	3	26.917	29.608	0.58	0.80	35.46	331.56	0.000	0.000	1679.87	0.00	0.00
36	50.00	Symmetricom 58532A -	1	21.070	23.177	1.00	1.00	0.22	0.36	0.000	0.000	8.16	0.00	0.00
							Totals:		**10,367.78**			**18,282.80**		

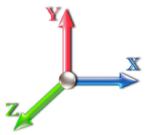
Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		448.00	1531.77	0.00	0.00
10.00		440.50	1508.77	0.00	0.00
15.00		433.00	1485.78	0.00	0.00
20.00		451.47	1462.78	0.00	0.00
25.00		464.85	1439.78	0.00	0.00
30.00		474.37	1416.79	0.00	0.00
35.00		481.06	1393.79	0.00	0.00
40.00		485.57	1370.79	0.00	0.00
45.00		488.32	1347.79	0.00	0.00
46.66		161.59	443.27	0.00	0.00
50.00	(1) attachments	339.78	1567.08	0.00	0.00
53.33		331.14	1543.96	0.00	0.00
55.00		165.50	391.74	0.00	0.00
60.00		498.00	1159.46	0.00	0.00
65.00		496.26	1139.33	0.00	0.00
70.00		493.70	1119.21	0.00	0.00
75.00		490.41	1099.09	0.00	0.00
80.00		486.47	1078.97	0.00	0.00
85.00		481.92	1058.84	0.00	0.00
90.00		476.83	1038.72	0.00	0.00
94.17		392.74	850.23	0.00	0.00
95.00		79.23	290.93	0.00	0.00
99.83		458.26	1666.89	0.00	0.00
100.00		15.62	29.55	0.00	0.00
105.00		467.65	877.62	0.00	0.00
110.00		460.86	860.38	0.00	0.00
115.00		453.69	843.13	0.00	0.00
120.00		446.17	825.88	0.00	0.00
125.00		438.32	808.63	0.00	0.00
130.00		430.15	791.38	0.00	0.00
135.00		421.68	774.14	0.00	0.00
140.00		412.94	756.89	0.00	0.00
142.71		219.96	403.52	0.00	0.00
145.00		186.15	511.97	0.00	0.00
147.30		185.03	508.16	0.00	0.00
150.00		215.34	293.63	0.00	0.00
155.00		391.61	534.22	0.00	0.00
160.00	(24) attachments	5281.33	3021.57	0.00	0.00
165.00		371.98	483.41	0.00	0.00
170.00		361.84	471.91	0.00	0.00
172.50	(21) attachments	4287.43	3273.52	0.00	0.00
175.00		174.17	209.44	0.00	0.00
180.00		340.94	410.26	0.00	0.00
185.00	(24) attachments	5521.54	3321.60	0.00	58.68
190.00		319.27	301.31	0.00	0.00
193.50	(23) attachments	4289.93	2107.93	0.00	8867.59

Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

Totals:	**35,212.60**	**49,825.78**	**0.00**	**8,926.27**

Calculated Forces

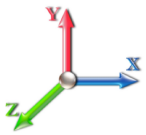
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.76	-35.30	0.00	-5085.1	0.00	5085.11	6408.64	3204.32	14863.6	7442.88	0.00	0.000	0.000	0.691
5.00	-48.11	-35.01	0.00	-4908.6	0.00	4908.62	6332.44	3166.22	14438.7	7230.12	0.11	-0.197	0.000	0.687
10.00	-46.48	-34.73	0.00	-4733.5	0.00	4733.55	6255.18	3127.59	14017.4	7019.15	0.42	-0.396	0.000	0.682
15.00	-44.88	-34.44	0.00	-4559.9	0.00	4559.90	6176.86	3088.43	13599.8	6810.05	0.94	-0.599	0.000	0.677
20.00	-43.30	-34.13	0.00	-4387.6	0.00	4387.68	6097.47	3048.74	13186.1	6602.88	1.68	-0.804	0.000	0.672
25.00	-41.74	-33.80	0.00	-4217.0	0.00	4217.03	6017.03	3008.51	12776.3	6397.69	2.63	-1.012	0.000	0.666
30.00	-40.21	-33.44	0.00	-4048.0	0.00	4048.05	5935.52	2967.76	12370.7	6194.55	3.80	-1.224	0.000	0.660
35.00	-38.71	-33.08	0.00	-3880.8	0.00	3880.83	5852.95	2926.48	11969.2	5993.52	5.20	-1.438	0.000	0.654
40.00	-37.22	-32.70	0.00	-3715.4	0.00	3715.45	5768.82	2884.41	11571.1	5794.16	6.82	-1.655	0.000	0.648
45.00	-35.81	-32.26	0.00	-3551.9	0.00	3551.97	5657.24	2828.62	11125.6	5571.07	8.67	-1.875	0.000	0.644
46.66	-35.31	-32.15	0.00	-3498.3	0.00	3498.31	5620.12	2810.06	10979.3	5497.83	9.34	-1.951	0.000	0.643
50.00	-33.67	-31.85	0.00	-3391.0	0.00	3391.03	5545.66	2772.83	10688.8	5352.37	10.76	-2.101	0.000	0.640
53.33	-32.08	-31.52	0.00	-3284.9	0.00	3284.99	4757.51	2378.75	9242.35	4628.04	12.28	-2.253	0.000	0.717
55.00	-31.60	-31.43	0.00	-3232.3	0.00	3232.35	4734.55	2367.28	9135.77	4574.68	13.08	-2.330	0.000	0.713
60.00	-30.33	-31.01	0.00	-3075.2	0.00	3075.20	4665.11	2332.55	8818.95	4416.03	15.65	-2.576	0.000	0.703
65.00	-29.09	-30.59	0.00	-2920.1	0.00	2920.14	4594.60	2297.30	8505.61	4259.13	18.48	-2.824	0.000	0.692
70.00	-27.86	-30.16	0.00	-2767.1	0.00	2767.18	4523.04	2261.52	8195.87	4104.03	21.57	-3.075	0.000	0.681
75.00	-26.66	-29.73	0.00	-2616.3	0.00	2616.37	4450.41	2225.20	7889.86	3950.80	24.92	-3.328	0.000	0.668
80.00	-25.48	-29.29	0.00	-2467.7	0.00	2467.72	4363.37	2181.68	7564.56	3787.90	28.54	-3.583	0.000	0.657
85.00	-24.33	-28.85	0.00	-2321.2	0.00	2321.25	4265.74	2132.87	7228.13	3619.44	32.43	-3.840	0.000	0.647
90.00	-23.21	-28.40	0.00	-2176.9	0.00	2176.98	4168.10	2084.05	6899.36	3454.81	36.58	-4.097	0.000	0.636
94.17	-22.32	-28.00	0.00	-2058.6	0.00	2058.63	4086.74	2043.37	6631.22	3320.54	40.25	-4.314	0.000	0.626
95.00	-21.97	-27.96	0.00	-2035.3	0.00	2035.30	4070.47	2035.23	6578.23	3294.01	41.01	-4.359	0.000	0.623
99.83	-20.28	-27.41	0.00	-1900.1	0.00	1900.18	3418.29	1709.14	5518.43	2763.32	45.55	-4.610	0.000	0.694
100.00	-20.18	-27.45	0.00	-1895.6	0.00	1895.62	3416.28	1708.14	5510.73	2759.46	45.71	-4.619	0.000	0.693
105.00	-19.21	-27.01	0.00	-1758.3	0.00	1758.37	3355.57	1677.79	5281.30	2644.58	50.69	-4.903	0.000	0.671
110.00	-18.26	-26.56	0.00	-1623.3	0.00	1623.35	3293.81	1646.90	5055.01	2531.26	55.98	-5.186	0.000	0.647
115.00	-17.34	-26.12	0.00	-1490.5	0.00	1490.55	3226.08	1613.04	4824.64	2415.91	61.55	-5.467	0.000	0.623
120.00	-16.44	-25.67	0.00	-1359.9	0.00	1359.97	3142.39	1571.20	4576.34	2291.57	67.42	-5.745	0.000	0.599
125.00	-15.56	-25.22	0.00	-1231.6	0.00	1231.63	3058.71	1529.35	4334.61	2170.52	73.57	-6.018	0.000	0.573
130.00	-14.71	-24.78	0.00	-1105.5	0.00	1105.50	2975.02	1487.51	4099.43	2052.76	80.00	-6.285	0.000	0.544
135.00	-13.88	-24.34	0.00	-981.61	0.00	981.61	2891.34	1445.67	3870.81	1938.28	86.71	-6.544	0.000	0.512
140.00	-13.09	-23.88	0.00	-859.93	0.00	859.93	2807.65	1403.83	3648.75	1827.09	93.68	-6.793	0.000	0.476
142.71	-12.67	-23.64	0.00	-795.13	0.00	795.13	2762.24	1381.12	3530.99	1768.12	97.58	-6.926	0.000	0.455
145.00	-12.14	-23.42	0.00	-741.07	0.00	741.07	2723.97	1361.98	3433.25	1719.18	100.91	-7.035	0.000	0.436
147.30	-11.61	-23.19	0.00	-687.29	0.00	687.29	1707.44	853.72	2174.15	1088.69	104.31	-7.141	0.000	0.639
150.00	-11.26	-22.98	0.00	-624.58	0.00	624.58	1688.50	844.25	2114.25	1058.70	108.38	-7.261	0.000	0.597
155.00	-10.68	-22.58	0.00	-509.66	0.00	509.66	1652.64	826.32	2004.58	1003.78	116.12	-7.545	0.000	0.515
160.00	-8.32	-16.97	0.00	-396.78	0.00	396.78	1615.71	807.86	1896.48	949.65	124.14	-7.795	0.000	0.423
165.00	-7.84	-16.57	0.00	-311.91	0.00	311.91	1577.73	788.87	1790.06	896.36	132.40	-8.010	0.000	0.353
170.00	-7.39	-16.16	0.00	-229.08	0.00	229.08	1538.69	769.34	1685.46	843.98	140.86	-8.192	0.000	0.277
172.50	-4.75	-11.45	0.00	-188.69	0.00	188.69	1518.77	759.38	1633.88	818.16	145.15	-8.269	0.000	0.234
175.00	-4.55	-11.26	0.00	-160.06	0.00	160.06	1498.58	749.29	1582.80	792.58	149.49	-8.338	0.000	0.205
180.00	-4.17	-10.87	0.00	-103.78	0.00	103.78	1457.41	728.71	1482.21	742.21	158.25	-8.448	0.000	0.143
185.00	-1.70	-4.92	0.00	-49.39	0.00	49.39	1406.50	703.25	1375.31	688.68	167.11	-8.519	0.000	0.073
190.00	-1.45	-4.56	0.00	-24.81	0.00	24.81	1350.71	675.36	1267.83	634.86	176.02	-8.558	0.000	0.040
193.50	0.00	-4.29	0.00	-8.87	0.00	8.87	1311.66	655.83	1195.19	598.48	182.28	-8.572	0.000	0.015

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Wind Loading - Shaft

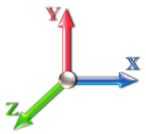
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	3.308	3.64	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.656	5.00	25.296	30.36	110.4	598.6	2413.9
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.775	5.00	24.995	29.99	109.1	632.4	2417.0
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.848	5.00	24.656	29.59	107.6	648.4	2402.4
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.902	5.00	24.300	29.16	112.6	656.7	2380.0
25.00		1.00	0.95	3.678	4.05	0.00	1.200	1.945	5.00	23.936	28.72	116.2	660.5	2353.1
30.00		1.00	0.98	3.822	4.20	0.00	1.200	1.981	5.00	23.565	28.28	118.9	661.3	2323.3
35.00		1.00	1.01	3.948	4.34	0.00	1.200	2.012	5.00	23.190	27.83	120.9	660.1	2291.4
40.00		1.00	1.04	4.061	4.47	0.00	1.200	2.039	5.00	22.812	27.37	122.3	657.2	2257.8
45.00		1.00	1.07	4.163	4.58	0.00	1.200	2.063	5.00	22.432	26.92	123.3	653.1	2223.0
46.66	Bot - Section 2	1.00	1.08	4.195	4.61	0.00	1.200	2.071	1.66	7.376	8.85	40.8	216.7	732.2
50.00	Appurtenance(s)	1.00	1.09	4.256	4.68	0.00	1.200	2.085	3.34	14.917	17.90	83.8	440.0	2377.4
53.33	Top - Section 1	1.00	1.11	4.314	4.75	0.00	1.200	2.098	3.33	14.717	17.66	83.8	436.5	2344.6
55.00		1.00	1.12	4.342	4.78	0.00	1.200	2.105	1.67	7.316	8.78	41.9	218.2	665.0
60.00		1.00	1.14	4.423	4.86	0.00	1.200	2.123	5.00	21.651	25.98	126.4	646.8	1966.6
65.00		1.00	1.16	4.498	4.95	0.00	1.200	2.140	5.00	21.265	25.52	126.3	639.5	1932.5
70.00		1.00	1.17	4.569	5.03	0.00	1.200	2.156	5.00	20.878	25.05	125.9	631.7	1897.8
75.00		1.00	1.19	4.635	5.10	0.00	1.200	2.171	5.00	20.490	24.59	125.4	623.4	1862.7
80.00		1.00	1.21	4.699	5.17	0.00	1.200	2.185	5.00	20.101	24.12	124.7	614.6	1827.1
85.00		1.00	1.22	4.759	5.24	0.00	1.200	2.198	5.00	19.712	23.65	123.8	605.5	1791.2
90.00		1.00	1.24	4.817	5.30	0.00	1.200	2.211	5.00	19.322	23.19	122.9	596.1	1754.9
94.17	Bot - Section 3	1.00	1.25	4.863	5.35	0.00	1.200	2.221	4.17	15.803	18.96	101.4	489.9	1435.1
95.00		1.00	1.25	4.872	5.36	0.00	1.200	2.223	0.83	3.180	3.82	20.5	99.5	449.7
99.83	Top - Section 2	1.00	1.27	4.923	5.42	0.00	1.200	2.234	4.83	18.236	21.88	118.5	567.5	2571.4
100.00		1.00	1.27	4.925	5.42	0.00	1.200	2.234	0.17	0.622	0.75	4.0	19.6	51.4
105.00		1.00	1.28	4.976	5.47	0.00	1.200	2.245	5.00	18.467	22.16	121.3	576.4	1520.4
110.00		1.00	1.29	5.025	5.53	0.00	1.200	2.256	5.00	18.075	21.69	119.9	565.8	1486.9
115.00		1.00	1.30	5.072	5.58	0.00	1.200	2.266	5.00	17.683	21.22	118.4	555.1	1453.1
120.00		1.00	1.32	5.117	5.63	0.00	1.200	2.276	5.00	17.291	20.75	116.8	544.1	1419.1
125.00		1.00	1.33	5.162	5.68	0.00	1.200	2.285	5.00	16.898	20.28	115.1	532.9	1384.9
130.00		1.00	1.34	5.204	5.72	0.00	1.200	2.294	5.00	16.505	19.81	113.4	521.5	1350.5
135.00		1.00	1.35	5.246	5.77	0.00	1.200	2.303	5.00	16.112	19.33	111.6	509.9	1316.0
140.00		1.00	1.36	5.286	5.81	0.00	1.200	2.311	5.00	15.718	18.86	109.7	498.2	1281.3
142.71	Bot - Section 4	1.00	1.36	5.308	5.84	0.00	1.200	2.315	2.71	8.364	10.04	58.6	266.9	682.2
145.00		1.00	1.37	5.325	5.86	0.00	1.200	2.319	2.29	7.056	8.47	49.6	225.7	804.9
147.30	Top - Section 3	1.00	1.37	5.343	5.88	0.00	1.200	2.323	2.30	7.004	8.40	49.4	224.2	797.9
150.00		1.00	1.38	5.364	5.90	0.00	1.200	2.327	2.70	8.137	9.76	57.6	260.4	529.6
155.00		1.00	1.39	5.401	5.94	0.00	1.200	2.335	5.00	14.748	17.70	105.1	469.4	955.6
160.00	Appurtenance(s)	1.00	1.40	5.437	5.98	0.00	1.200	2.342	5.00	14.354	17.23	103.0	457.1	928.0
165.00		1.00	1.41	5.472	6.02	0.00	1.200	2.349	5.00	13.960	16.75	100.8	444.7	900.2
170.00		1.00	1.42	5.507	6.06	0.00	1.200	2.356	5.00	13.565	16.28	98.6	432.2	872.3
172.50	Appurtenance(s)	1.00	1.42	5.524	6.08	0.00	1.200	2.360	2.50	6.634	7.96	48.4	212.9	427.3
175.00		1.00	1.42	5.541	6.09	0.00	1.200	2.363	2.50	6.535	7.84	47.8	209.8	420.3
180.00		1.00	1.43	5.574	6.13	0.00	1.200	2.370	5.00	12.776	15.33	94.0	406.7	816.3
185.00	Appurtenance(s)	1.00	1.44	5.606	6.17	0.00	1.200	2.376	5.00	12.381	14.86	91.6	393.9	788.0
190.00		1.00	1.45	5.637	6.20	0.00	1.200	2.383	5.00	11.986	14.38	89.2	380.9	759.7
193.50	Appurtenance(s)	1.00	1.45	5.659	6.22	0.00	1.200	2.387	3.50	8.154	9.79	60.9	260.2	516.3

Wind Loading - Shaft

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Totals:	**193.50**	**4,392.2**	**66,132.4**

Discrete Appurtenance Forces

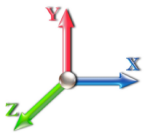
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	193.50	800 MHz Filter	3	5.668	6.235	1.00	1.00	2.67	71.45	0.000	1.500	16.67	0.00	25.00
2	193.50	TD-RRH8x20-25	3	5.674	6.242	0.67	1.00	10.45	607.66	0.000	2.500	65.22	0.00	163.05
3	193.50	800 MHz RRH	3	5.674	6.242	0.67	1.00	8.15	430.97	0.000	2.500	50.87	0.00	127.16
4	193.50	1900MHz RRH	3	5.674	6.242	0.67	1.00	11.46	781.20	0.000	2.500	71.53	0.00	178.82
5	193.50	APXVTM14-C-120	3	5.674	6.242	0.82	1.00	19.42	788.84	0.000	2.500	121.24	0.00	303.09
6	193.50	APXVSPP18-C-A20	3	5.674	6.242	0.86	1.00	30.55	727.85	0.000	2.500	190.68	0.00	476.71
7	193.50	Low Profile Platform	1	5.668	6.235	1.00	1.00	53.64	2572.18	0.000	1.500	334.47	0.00	501.70
8	193.50	ACU-A20-N	4	5.668	6.235	0.67	1.00	1.46	23.10	0.000	1.500	9.12	0.00	13.68
9	185.00	support rail kit	1	5.606	6.166	1.00	1.00	28.55	1961.35	0.000	0.000	176.06	0.00	0.00
10	185.00	kicker kit	1	5.606	6.166	1.00	1.00	19.41	388.75	0.000	0.000	119.66	0.00	0.00
11	185.00	Commscope	6	5.606	6.166	0.63	0.75	51.66	2661.10	0.000	0.000	318.58	0.00	0.00
12	185.00	GPS	1	5.606	6.166	1.00	1.00	1.97	43.92	0.000	0.000	12.14	0.00	0.00
13	185.00	FPA5250	1	5.612	6.173	1.00	1.00	2.19	35.68	0.000	1.000	13.52	0.00	13.52
14	185.00	RFS	1	5.606	6.166	1.00	1.00	5.18	164.92	0.000	0.000	31.94	0.00	0.00
15	185.00	Samsung MT6407-77A	3	5.606	6.166	0.52	0.75	9.45	812.01	0.000	0.000	58.29	0.00	0.00
16	185.00	Commscope	3	5.606	6.166	0.38	0.75	3.02	163.62	0.000	0.000	18.62	0.00	0.00
17	185.00	Samsung RFV01U-D2A	3	5.606	6.166	0.50	0.75	3.97	416.94	0.000	0.000	24.45	0.00	0.00
18	185.00	Samsung RFV01U-D1A	3	5.606	6.166	0.50	0.75	3.97	407.62	0.000	0.000	24.45	0.00	0.00
19	185.00	Low Profile	1	5.606	6.166	1.00	1.00	46.05	3282.20	0.000	0.000	283.95	0.00	0.00
20	172.50	DC6-48-60-18-8F	3	5.524	6.076	1.00	1.00	4.54	312.16	0.000	0.000	27.57	0.00	0.00
21	172.50	RRUS 4449 B5/B12	3	5.524	6.076	0.50	0.75	4.09	431.33	0.000	0.000	24.82	0.00	0.00
22	172.50	RRUS 8843 B2 B66A	3	5.524	6.076	0.50	0.75	3.52	404.62	0.000	0.000	21.42	0.00	0.00
23	172.50	RRUS 4478 B14	3	5.524	6.076	0.50	0.75	3.54	353.84	0.000	0.000	21.53	0.00	0.00
24	172.50	14.5' Platform	1	5.524	6.076	1.00	1.00	31.41	4259.70	0.000	0.000	190.83	0.00	0.00
25	172.50	HRK14	1	5.524	6.076	1.00	1.00	18.87	1150.36	0.000	0.000	114.68	0.00	0.00
26	172.50	DMP65R-BU6DA	6	5.524	6.076	0.55	0.75	48.47	2909.40	0.000	0.000	294.50	0.00	0.00
27	172.50	ABT-DMDF-ADBH	1	5.524	6.076	0.73	0.75	0.23	3.64	0.000	0.000	1.39	0.00	0.00
28	160.00	RFS	3	5.437	5.981	0.50	0.80	14.18	517.28	0.000	0.000	84.83	0.00	0.00
29	160.00	Ericsson RRUS 11 Band 4	3	5.437	5.981	0.54	0.80	5.42	366.23	0.000	0.000	32.41	0.00	0.00
30	160.00	Ericsson RRUS 11 Band	3	5.437	5.981	0.54	0.80	5.42	366.23	0.000	0.000	32.41	0.00	0.00
31	160.00	T-Arms	3	5.437	5.981	0.56	0.75	29.31	2033.65	0.000	0.000	175.29	0.00	0.00
32	160.00	Ericsson 4480 B71 + B85	3	5.437	5.981	0.54	0.80	6.04	573.40	0.000	0.000	36.11	0.00	0.00
33	160.00	Ericsson RRUS11 B2	3	5.437	5.981	0.54	0.80	5.42	426.56	0.000	0.000	32.41	0.00	0.00
34	160.00	UKN 96" x 15.6" x 9"	3	5.437	5.981	0.66	0.80	32.42	2054.63	0.000	0.000	193.89	0.00	0.00
35	160.00	RFS	3	5.437	5.981	0.58	0.80	39.98	2238.20	0.000	0.000	239.14	0.00	0.00
36	50.00	Symmetricom 58532A -	1	4.256	4.682	1.00	1.00	0.66	7.64	0.000	0.000	3.10	0.00	0.00
							Totals:		**34,750.25**			**3,467.77**		

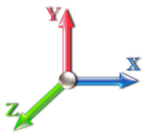
Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		110.44	2641.01	0.00	0.00
10.00		109.13	2644.09	0.00	0.00
15.00		107.64	2629.47	0.00	0.00
20.00		112.57	2607.08	0.00	0.00
25.00		116.21	2580.22	0.00	0.00
30.00		118.89	2550.40	0.00	0.00
35.00		120.86	2518.46	0.00	0.00
40.00		122.28	2484.92	0.00	0.00
45.00		123.26	2450.11	0.00	0.00
46.66		40.84	807.74	0.00	0.00
50.00	(1) attachments	86.91	2536.58	0.00	0.00
53.33		83.81	2495.16	0.00	0.00
55.00		41.93	740.56	0.00	0.00
60.00		126.40	2192.71	0.00	0.00
65.00		126.25	2158.61	0.00	0.00
70.00		125.90	2123.96	0.00	0.00
75.00		125.37	2088.83	0.00	0.00
80.00		124.68	2053.26	0.00	0.00
85.00		123.83	2017.31	0.00	0.00
90.00		122.85	1981.01	0.00	0.00
94.17		101.44	1623.57	0.00	0.00
95.00		20.45	487.35	0.00	0.00
99.83		118.50	2789.98	0.00	0.00
100.00		4.04	58.96	0.00	0.00
105.00		121.29	1746.56	0.00	0.00
110.00		119.88	1713.01	0.00	0.00
115.00		118.38	1679.24	0.00	0.00
120.00		116.80	1645.25	0.00	0.00
125.00		115.13	1611.06	0.00	0.00
130.00		113.39	1576.68	0.00	0.00
135.00		111.57	1542.12	0.00	0.00
140.00		109.68	1507.39	0.00	0.00
142.71		58.60	804.90	0.00	0.00
145.00		49.60	908.36	0.00	0.00
147.30		49.40	901.74	0.00	0.00
150.00		57.61	651.87	0.00	0.00
155.00		105.14	1181.72	0.00	0.00
160.00	(24) attachments	929.51	9730.28	0.00	0.00
165.00		100.84	1089.26	0.00	0.00
170.00		98.61	1061.38	0.00	0.00
172.50	(21) attachments	745.10	10346.83	0.00	0.00
175.00		47.80	489.01	0.00	0.00
180.00		93.99	953.75	0.00	0.00
185.00	(24) attachments	1173.27	11263.66	0.00	13.52
190.00		89.19	782.62	0.00	0.00
193.50	(23) attachments	920.70	6535.56	0.00	1789.22

Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

Totals:	**7,859.97**	**108,983.58**	**0.00**	**1,802.74**

Calculated Forces

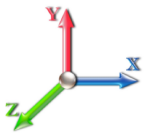
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-108.9	-7.91	0.00	-1214.1	0.00	1214.19	6408.64	3204.32	14863.6	7442.88	0.00	0.000	0.000	0.180
5.00	-106.3	-7.88	0.00	-1174.6	0.00	1174.66	6332.44	3166.22	14438.7	7230.12	0.03	-0.047	0.000	0.179
10.00	-103.6	-7.86	0.00	-1135.2	0.00	1135.26	6255.18	3127.59	14017.4	7019.15	0.10	-0.095	0.000	0.178
15.00	-101.0	-7.83	0.00	-1095.9	0.00	1095.98	6176.86	3088.43	13599.8	6810.05	0.23	-0.143	0.000	0.177
20.00	-98.43	-7.80	0.00	-1056.8	0.00	1056.83	6097.47	3048.74	13186.1	6602.88	0.40	-0.193	0.000	0.176
25.00	-95.85	-7.75	0.00	-1017.8	0.00	1017.86	6017.03	3008.51	12776.3	6397.69	0.63	-0.243	0.000	0.175
30.00	-93.29	-7.71	0.00	-979.09	0.00	979.09	5935.52	2967.76	12370.7	6194.55	0.91	-0.294	0.000	0.174
35.00	-90.76	-7.65	0.00	-940.56	0.00	940.56	5852.95	2926.48	11969.2	5993.52	1.25	-0.346	0.000	0.172
40.00	-88.27	-7.60	0.00	-902.28	0.00	902.28	5768.82	2884.41	11571.1	5794.16	1.64	-0.399	0.000	0.171
45.00	-85.82	-7.51	0.00	-864.30	0.00	864.30	5657.24	2828.62	11125.6	5571.07	2.08	-0.452	0.000	0.170
46.66	-85.01	-7.50	0.00	-851.80	0.00	851.80	5620.12	2810.06	10979.3	5497.83	2.25	-0.471	0.000	0.170
50.00	-82.47	-7.45	0.00	-826.77	0.00	826.77	5545.66	2772.83	10688.8	5352.37	2.59	-0.507	0.000	0.169
53.33	-79.97	-7.38	0.00	-801.97	0.00	801.97	4757.51	2378.75	9242.35	4628.04	2.95	-0.544	0.000	0.190
55.00	-79.23	-7.39	0.00	-789.64	0.00	789.64	4734.55	2367.28	9135.77	4574.68	3.15	-0.563	0.000	0.189
60.00	-77.03	-7.32	0.00	-752.71	0.00	752.71	4665.11	2332.55	8818.95	4416.03	3.77	-0.623	0.000	0.187
65.00	-74.86	-7.25	0.00	-716.12	0.00	716.12	4594.60	2297.30	8505.61	4259.13	4.45	-0.684	0.000	0.184
70.00	-72.73	-7.17	0.00	-679.88	0.00	679.88	4523.04	2261.52	8195.87	4104.03	5.20	-0.746	0.000	0.182
75.00	-70.64	-7.10	0.00	-644.02	0.00	644.02	4450.41	2225.20	7889.86	3950.80	6.02	-0.808	0.000	0.179
80.00	-68.58	-7.02	0.00	-608.53	0.00	608.53	4363.37	2181.68	7564.56	3787.90	6.90	-0.871	0.000	0.176
85.00	-66.56	-6.94	0.00	-573.44	0.00	573.44	4265.74	2132.87	7228.13	3619.44	7.84	-0.934	0.000	0.174
90.00	-64.57	-6.85	0.00	-538.77	0.00	538.77	4168.10	2084.05	6899.36	3454.81	8.86	-0.998	0.000	0.171
94.17	-62.94	-6.75	0.00	-510.24	0.00	510.24	4086.74	2043.37	6631.22	3320.54	9.75	-1.051	0.000	0.169
95.00	-62.45	-6.76	0.00	-504.62	0.00	504.62	4070.47	2035.23	6578.23	3294.01	9.93	-1.062	0.000	0.169
99.83	-59.66	-6.62	0.00	-471.94	0.00	471.94	3418.29	1709.14	5518.43	2763.32	11.04	-1.125	0.000	0.188
100.00	-59.60	-6.66	0.00	-470.83	0.00	470.83	3416.28	1708.14	5510.73	2759.46	11.08	-1.127	0.000	0.188
105.00	-57.85	-6.57	0.00	-437.55	0.00	437.55	3355.57	1677.79	5281.30	2644.58	12.30	-1.198	0.000	0.183
110.00	-56.13	-6.48	0.00	-404.70	0.00	404.70	3293.81	1646.90	5055.01	2531.26	13.59	-1.268	0.000	0.177
115.00	-54.45	-6.39	0.00	-372.28	0.00	372.28	3226.08	1613.04	4824.64	2415.91	14.96	-1.338	0.000	0.171
120.00	-52.80	-6.30	0.00	-340.32	0.00	340.32	3142.39	1571.20	4576.34	2291.57	16.40	-1.408	0.000	0.165
125.00	-51.18	-6.21	0.00	-308.82	0.00	308.82	3058.71	1529.35	4334.61	2170.52	17.91	-1.476	0.000	0.159
130.00	-49.60	-6.11	0.00	-277.79	0.00	277.79	2975.02	1487.51	4099.43	2052.76	19.49	-1.543	0.000	0.152
135.00	-48.06	-6.01	0.00	-247.26	0.00	247.26	2891.34	1445.67	3870.81	1938.28	21.14	-1.608	0.000	0.144
140.00	-46.55	-5.89	0.00	-217.22	0.00	217.22	2807.65	1403.83	3648.75	1827.09	22.86	-1.671	0.000	0.135
142.71	-45.74	-5.84	0.00	-201.23	0.00	201.23	2762.24	1381.12	3530.99	1768.12	23.82	-1.705	0.000	0.130
145.00	-44.83	-5.78	0.00	-187.89	0.00	187.89	2723.97	1361.98	3433.25	1719.18	24.64	-1.732	0.000	0.126
147.30	-43.93	-5.73	0.00	-174.61	0.00	174.61	1707.44	853.72	2174.15	1088.69	25.48	-1.759	0.000	0.186
150.00	-43.27	-5.69	0.00	-159.13	0.00	159.13	1688.50	844.25	2114.25	1058.70	26.49	-1.790	0.000	0.176
155.00	-42.09	-5.60	0.00	-130.70	0.00	130.70	1652.64	826.32	2004.58	1003.78	28.40	-1.862	0.000	0.156
160.00	-32.39	-4.38	0.00	-102.73	0.00	102.73	1615.71	807.86	1896.48	949.65	30.39	-1.927	0.000	0.128
165.00	-31.30	-4.27	0.00	-80.84	0.00	80.84	1577.73	788.87	1790.06	896.36	32.43	-1.982	0.000	0.110
170.00	-30.24	-4.15	0.00	-59.50	0.00	59.50	1538.69	769.34	1685.46	843.98	34.54	-2.029	0.000	0.090
172.50	-19.93	-3.04	0.00	-49.13	0.00	49.13	1518.77	759.38	1633.88	818.16	35.60	-2.050	0.000	0.073
175.00	-19.44	-2.99	0.00	-41.52	0.00	41.52	1498.58	749.29	1582.80	792.58	36.68	-2.068	0.000	0.065
180.00	-18.49	-2.86	0.00	-26.59	0.00	26.59	1457.41	728.71	1482.21	742.21	38.86	-2.096	0.000	0.049
185.00	-7.28	-1.28	0.00	-12.26	0.00	12.26	1406.50	703.25	1375.31	688.68	41.07	-2.114	0.000	0.023
190.00	-6.50	-1.16	0.00	-5.86	0.00	5.86	1350.71	675.36	1267.83	634.86	43.29	-2.123	0.000	0.014
193.50	0.00	-0.92	0.00	-1.79	0.00	1.79	1311.66	655.83	1195.19	598.48	44.85	-2.127	0.000	0.003

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Seismic Segment Forces (Factored)

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	25
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1512.7	0.00	0.03	0.01	28.92	
10.00		1487.1	0.01	0.04	0.03	41.54	
15.00		1461.6	0.01	0.06	0.03	47.77	
20.00		1436.0	0.02	0.06	0.04	50.79	
25.00		1410.5	0.03	0.07	0.04	52.11	
30.00		1384.9	0.05	0.07	0.04	52.56	
35.00		1359.4	0.06	0.07	0.04	52.65	
40.00		1333.8	0.08	0.07	0.04	52.63	
45.00		1308.3	0.10	0.07	0.04	52.63	
46.66	Bot - Section 2	429.57	0.11	0.07	0.04	17.39	
50.00	Appurtenance(s)	1614.9	0.13	0.07	0.03	66.26	
53.33	Top - Section 1	1590.0	0.14	0.07	0.03	66.05	
55.00		372.33	0.15	0.07	0.03	15.55	
60.00		1099.8	0.18	0.06	0.03	46.52	
65.00		1077.4	0.21	0.06	0.02	45.61	
70.00		1055.1	0.25	0.06	0.02	43.77	
75.00		1032.7	0.28	0.05	0.01	40.55	
80.00		1010.4	0.32	0.04	0.01	35.47	
85.00		988.05	0.36	0.03	0.01	28.06	
90.00		965.69	0.41	0.02	0.01	18.16	
94.17	Bot - Section 3	787.67	0.45	0.00	0.01	6.89	
95.00		291.84	0.46	0.00	0.01	1.91	
99.83	Top - Section 2	1669.9	0.50	-0.02	0.01	-11.33	
100.00		26.55	0.50	-0.02	0.01	-0.19	
105.00		786.70	0.56	-0.04	0.01	-16.39	
110.00		767.53	0.61	-0.06	0.02	-24.89	
115.00		748.37	0.67	-0.08	0.02	-30.62	
120.00		729.20	0.73	-0.09	0.04	-33.46	
125.00		710.04	0.79	-0.11	0.05	-33.60	
130.00		690.88	0.85	-0.12	0.07	-31.38	
135.00		671.71	0.92	-0.12	0.10	-27.12	
140.00		652.55	0.99	-0.11	0.13	-21.09	
142.71	Bot - Section 4	346.09	1.03	-0.10	0.15	-9.24	
145.00		482.67	1.06	-0.09	0.16	-10.29	
147.30	Top - Section 3	478.06	1.10	-0.07	0.18	-7.31	
150.00		224.37	1.14	-0.05	0.21	-1.66	
155.00		405.14	1.21	0.02	0.26	3.82	
160.00	Appurtenance(s)	3168.8	1.29	0.11	0.33	92.54	
165.00		379.59	1.37	0.24	0.41	19.73	
170.00		366.81	1.46	0.40	0.50	28.55	
172.50	Appurtenance(s)	3558.4	1.50	0.51	0.55	327.07	
175.00		175.42	1.55	0.62	0.60	18.73	
180.00		341.26	1.64	0.89	0.72	47.41	
185.00	Appurtenance(s)	3576.0	1.73	1.23	0.86	623.48	
190.00		315.71	1.82	1.64	1.02	67.27	

Seismic Segment Forces (Factored)

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

193.50	Appurtenance(s)	2328.7	1.89	1.98	1.14	564.04		
	Totals:	**48,611.2**				**2,397.8**	**Total Wind:**	**35,212.6**

Calculated Forces

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	25
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-66.43	-2.66	0.00	-397.61	0.00	397.61	6408.64	3204.32	14863.6	7442.88		0.00	0.00	0.064
5.00	-64.39	-2.65	0.00	-384.29	0.00	384.29	6332.44	3166.22	14438.7	7230.12		0.01	-0.02	0.063
10.00	-62.38	-2.63	0.00	-371.02	0.00	371.02	6255.18	3127.59	14017.4	7019.15		0.03	-0.03	0.063
15.00	-60.40	-2.60	0.00	-357.88	0.00	357.88	6176.86	3088.43	13599.8	6810.05		0.07	-0.05	0.062
20.00	-58.45	-2.56	0.00	-344.91	0.00	344.91	6097.47	3048.74	13186.1	6602.88		0.13	-0.06	0.062
25.00	-56.53	-2.52	0.00	-332.11	0.00	332.11	6017.03	3008.51	12776.3	6397.69		0.21	-0.08	0.061
30.00	-54.64	-2.48	0.00	-319.50	0.00	319.50	5935.52	2967.76	12370.7	6194.55		0.30	-0.10	0.061
35.00	-52.78	-2.44	0.00	-307.09	0.00	307.09	5852.95	2926.48	11969.2	5993.52		0.41	-0.11	0.060
40.00	-50.95	-2.40	0.00	-294.89	0.00	294.89	5768.82	2884.41	11571.1	5794.16		0.54	-0.13	0.060
45.00	-49.15	-2.35	0.00	-282.88	0.00	282.88	5657.24	2828.62	11125.6	5571.07		0.68	-0.15	0.059
46.66	-48.56	-2.34	0.00	-278.97	0.00	278.97	5620.12	2810.06	10979.3	5497.83		0.73	-0.15	0.059
50.00	-46.47	-2.28	0.00	-271.15	0.00	271.15	5545.66	2772.83	10688.8	5352.37		0.85	-0.17	0.059
53.33	-44.41	-2.21	0.00	-263.56	0.00	263.56	4757.51	2378.75	9242.35	4628.04		0.97	-0.18	0.066
55.00	-43.89	-2.21	0.00	-259.86	0.00	259.86	4734.55	2367.28	9135.77	4574.68		1.03	-0.18	0.066
60.00	-42.34	-2.17	0.00	-248.82	0.00	248.82	4665.11	2332.55	8818.95	4416.03		1.23	-0.20	0.065
65.00	-40.82	-2.13	0.00	-237.97	0.00	237.97	4594.60	2297.30	8505.61	4259.13		1.46	-0.22	0.065
70.00	-39.33	-2.10	0.00	-227.30	0.00	227.30	4523.04	2261.52	8195.87	4104.03		1.70	-0.24	0.064
75.00	-37.86	-2.07	0.00	-216.81	0.00	216.81	4450.41	2225.20	7889.86	3950.80		1.97	-0.27	0.063
80.00	-36.42	-2.04	0.00	-206.49	0.00	206.49	4363.37	2181.68	7564.56	3787.90		2.26	-0.29	0.063
85.00	-35.01	-2.01	0.00	-196.30	0.00	196.30	4265.74	2132.87	7228.13	3619.44		2.57	-0.31	0.062
90.00	-33.63	-2.00	0.00	-186.23	0.00	186.23	4168.10	2084.05	6899.36	3454.81		2.90	-0.33	0.062
94.17	-32.49	-1.99	0.00	-177.90	0.00	177.90	4086.74	2043.37	6631.22	3320.54		3.20	-0.35	0.062
95.00	-32.10	-2.00	0.00	-176.24	0.00	176.24	4070.47	2035.23	6578.23	3294.01		3.26	-0.35	0.061
99.83	-29.88	-1.99	0.00	-166.59	0.00	166.59	3418.29	1709.14	5518.43	2763.32		3.63	-0.37	0.069
100.00	-29.84	-1.99	0.00	-166.26	0.00	166.26	3416.28	1708.14	5510.73	2759.46		3.64	-0.38	0.069
105.00	-28.67	-2.00	0.00	-156.29	0.00	156.29	3355.57	1677.79	5281.30	2644.58		4.05	-0.40	0.068
110.00	-27.52	-2.00	0.00	-146.29	0.00	146.29	3293.81	1646.90	5055.01	2531.26		4.48	-0.43	0.066
115.00	-26.40	-2.01	0.00	-136.28	0.00	136.28	3226.08	1613.04	4824.64	2415.91		4.94	-0.45	0.065
120.00	-25.30	-2.01	0.00	-126.25	0.00	126.25	3142.39	1571.20	4576.34	2291.57		5.43	-0.48	0.063
125.00	-24.22	-2.01	0.00	-116.21	0.00	116.21	3058.71	1529.35	4334.61	2170.52		5.94	-0.50	0.061
130.00	-23.16	-2.01	0.00	-106.16	0.00	106.16	2975.02	1487.51	4099.43	2052.76		6.48	-0.53	0.060
135.00	-22.13	-2.01	0.00	-96.10	0.00	96.10	2891.34	1445.67	3870.81	1938.28		7.05	-0.55	0.057
140.00	-21.12	-2.01	0.00	-86.05	0.00	86.05	2807.65	1403.83	3648.75	1827.09		7.64	-0.58	0.055
142.71	-20.58	-2.01	0.00	-80.60	0.00	80.60	2762.24	1381.12	3530.99	1768.12		7.97	-0.59	0.053
145.00	-19.90	-2.00	0.00	-76.01	0.00	76.01	2723.97	1361.98	3433.25	1719.18		8.26	-0.60	0.052
147.30	-19.22	-2.00	0.00	-71.41	0.00	71.41	1707.44	853.72	2174.15	1088.69		8.55	-0.61	0.077
150.00	-18.83	-2.00	0.00	-66.00	0.00	66.00	1688.50	844.25	2114.25	1058.70		8.90	-0.63	0.073
155.00	-18.11	-2.00	0.00	-55.99	0.00	55.99	1652.64	826.32	2004.58	1003.78		9.57	-0.66	0.067
160.00	-14.08	-1.87	0.00	-45.99	0.00	45.99	1615.71	807.86	1896.48	949.65		10.28	-0.68	0.057
165.00	-13.44	-1.85	0.00	-36.65	0.00	36.65	1577.73	788.87	1790.06	896.36		11.01	-0.71	0.049
170.00	-12.81	-1.81	0.00	-27.42	0.00	27.42	1538.69	769.34	1685.46	843.98		11.76	-0.73	0.041
172.50	-8.45	-1.43	0.00	-22.89	0.00	22.89	1518.77	759.38	1633.88	818.16		12.15	-0.74	0.034
175.00	-8.17	-1.41	0.00	-19.31	0.00	19.31	1498.58	749.29	1582.80	792.58		12.54	-0.75	0.030
180.00	-7.62	-1.36	0.00	-12.26	0.00	12.26	1457.41	728.71	1482.21	742.21		13.33	-0.76	0.022
185.00	-3.20	-0.67	0.00	-5.48	0.00	5.48	1406.50	703.25	1375.31	688.68		14.13	-0.77	0.010
190.00	-2.80	-0.60	0.00	-2.11	0.00	2.11	1350.71	675.36	1267.83	634.86		14.94	-0.77	0.005
193.50	0.00	-0.56	0.00	0.00	0.00	0.00	1311.66	655.83	1195.19	598.48		15.51	-0.77	0.000

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Seismic Segment Forces (Factored)

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	25
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1512.7	0.00	0.03	0.01	28.92	
10.00		1487.1	0.01	0.04	0.03	41.54	
15.00		1461.6	0.01	0.06	0.03	47.77	
20.00		1436.0	0.02	0.06	0.04	50.79	
25.00		1410.5	0.03	0.07	0.04	52.11	
30.00		1384.9	0.05	0.07	0.04	52.56	
35.00		1359.4	0.06	0.07	0.04	52.65	
40.00		1333.8	0.08	0.07	0.04	52.63	
45.00		1308.3	0.10	0.07	0.04	52.63	
46.66	Bot - Section 2	429.57	0.11	0.07	0.04	17.39	
50.00	Appurtenance(s)	1614.9	0.13	0.07	0.03	66.26	
53.33	Top - Section 1	1590.0	0.14	0.07	0.03	66.05	
55.00		372.33	0.15	0.07	0.03	15.55	
60.00		1099.8	0.18	0.06	0.03	46.52	
65.00		1077.4	0.21	0.06	0.02	45.61	
70.00		1055.1	0.25	0.06	0.02	43.77	
75.00		1032.7	0.28	0.05	0.01	40.55	
80.00		1010.4	0.32	0.04	0.01	35.47	
85.00		988.05	0.36	0.03	0.01	28.06	
90.00		965.69	0.41	0.02	0.01	18.16	
94.17	Bot - Section 3	787.67	0.45	0.00	0.01	6.89	
95.00		291.84	0.46	0.00	0.01	1.91	
99.83	Top - Section 2	1669.9	0.50	-0.02	0.01	-11.33	
100.00		26.55	0.50	-0.02	0.01	-0.19	
105.00		786.70	0.56	-0.04	0.01	-16.39	
110.00		767.53	0.61	-0.06	0.02	-24.89	
115.00		748.37	0.67	-0.08	0.02	-30.62	
120.00		729.20	0.73	-0.09	0.04	-33.46	
125.00		710.04	0.79	-0.11	0.05	-33.60	
130.00		690.88	0.85	-0.12	0.07	-31.38	
135.00		671.71	0.92	-0.12	0.10	-27.12	
140.00		652.55	0.99	-0.11	0.13	-21.09	
142.71	Bot - Section 4	346.09	1.03	-0.10	0.15	-9.24	
145.00		482.67	1.06	-0.09	0.16	-10.29	
147.30	Top - Section 3	478.06	1.10	-0.07	0.18	-7.31	
150.00		224.37	1.14	-0.05	0.21	-1.66	
155.00		405.14	1.21	0.02	0.26	3.82	
160.00	Appurtenance(s)	3168.8	1.29	0.11	0.33	92.54	
165.00		379.59	1.37	0.24	0.41	19.73	
170.00		366.81	1.46	0.40	0.50	28.55	
172.50	Appurtenance(s)	3558.4	1.50	0.51	0.55	327.07	
175.00		175.42	1.55	0.62	0.60	18.73	
180.00		341.26	1.64	0.89	0.72	47.41	
185.00	Appurtenance(s)	3576.0	1.73	1.23	0.86	623.48	
190.00		315.71	1.82	1.64	1.02	67.27	

Seismic Segment Forces (Factored)

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

193.50	Appurtenance(s)	2328.7	1.89	1.98	1.14	564.04		
	Totals:	**48,611.2**				**2,397.8**	**Total Wind:**	**35,212.6**

Calculated Forces

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	25
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.83	-2.66	0.00	-389.80	0.00	389.80	6408.64	3204.32	14863.6	7442.88		0.00	0.00	0.060
5.00	-48.29	-2.65	0.00	-376.49	0.00	376.49	6332.44	3166.22	14438.7	7230.12		0.01	-0.02	0.060
10.00	-46.78	-2.62	0.00	-363.26	0.00	363.26	6255.18	3127.59	14017.4	7019.15		0.03	-0.03	0.059
15.00	-45.30	-2.58	0.00	-350.18	0.00	350.18	6176.86	3088.43	13599.8	6810.05		0.07	-0.05	0.059
20.00	-43.83	-2.54	0.00	-337.27	0.00	337.27	6097.47	3048.74	13186.1	6602.88		0.13	-0.06	0.058
25.00	-42.39	-2.50	0.00	-324.57	0.00	324.57	6017.03	3008.51	12776.3	6397.69		0.20	-0.08	0.058
30.00	-40.98	-2.46	0.00	-312.08	0.00	312.08	5935.52	2967.76	12370.7	6194.55		0.29	-0.09	0.057
35.00	-39.58	-2.41	0.00	-299.80	0.00	299.80	5852.95	2926.48	11969.2	5993.52		0.40	-0.11	0.057
40.00	-38.21	-2.37	0.00	-287.75	0.00	287.75	5768.82	2884.41	11571.1	5794.16		0.52	-0.13	0.056
45.00	-36.86	-2.32	0.00	-275.91	0.00	275.91	5657.24	2828.62	11125.6	5571.07		0.67	-0.14	0.056
46.66	-36.42	-2.31	0.00	-272.05	0.00	272.05	5620.12	2810.06	10979.3	5497.83		0.72	-0.15	0.056
50.00	-34.85	-2.24	0.00	-264.36	0.00	264.36	5545.66	2772.83	10688.8	5352.37		0.83	-0.16	0.056
53.33	-33.31	-2.18	0.00	-256.89	0.00	256.89	4757.51	2378.75	9242.35	4628.04		0.94	-0.17	0.063
55.00	-32.91	-2.17	0.00	-253.25	0.00	253.25	4734.55	2367.28	9135.77	4574.68		1.01	-0.18	0.062
60.00	-31.75	-2.13	0.00	-242.41	0.00	242.41	4665.11	2332.55	8818.95	4416.03		1.20	-0.20	0.062
65.00	-30.61	-2.09	0.00	-231.77	0.00	231.77	4594.60	2297.30	8505.61	4259.13		1.42	-0.22	0.061
70.00	-29.50	-2.05	0.00	-221.32	0.00	221.32	4523.04	2261.52	8195.87	4104.03		1.66	-0.24	0.060
75.00	-28.40	-2.02	0.00	-211.07	0.00	211.07	4450.41	2225.20	7889.86	3950.80		1.92	-0.26	0.060
80.00	-27.32	-1.99	0.00	-200.98	0.00	200.98	4363.37	2181.68	7564.56	3787.90		2.21	-0.28	0.059
85.00	-26.26	-1.96	0.00	-191.06	0.00	191.06	4265.74	2132.87	7228.13	3619.44		2.51	-0.30	0.059
90.00	-25.22	-1.95	0.00	-181.25	0.00	181.25	4168.10	2084.05	6899.36	3454.81		2.84	-0.32	0.059
94.17	-24.37	-1.94	0.00	-173.14	0.00	173.14	4086.74	2043.37	6631.22	3320.54		3.13	-0.34	0.058
95.00	-24.08	-1.94	0.00	-171.52	0.00	171.52	4070.47	2035.23	6578.23	3294.01		3.19	-0.34	0.058
99.83	-22.41	-1.94	0.00	-162.14	0.00	162.14	3418.29	1709.14	5518.43	2763.32		3.55	-0.37	0.065
100.00	-22.38	-1.94	0.00	-161.81	0.00	161.81	3416.28	1708.14	5510.73	2759.46		3.56	-0.37	0.065
105.00	-21.50	-1.94	0.00	-152.11	0.00	152.11	3355.57	1677.79	5281.30	2644.58		3.96	-0.39	0.064
110.00	-20.64	-1.95	0.00	-142.40	0.00	142.40	3293.81	1646.90	5055.01	2531.26		4.38	-0.42	0.063
115.00	-19.79	-1.95	0.00	-132.67	0.00	132.67	3226.08	1613.04	4824.64	2415.91		4.83	-0.44	0.061
120.00	-18.97	-1.95	0.00	-122.92	0.00	122.92	3142.39	1571.20	4576.34	2291.57		5.30	-0.46	0.060
125.00	-18.16	-1.95	0.00	-113.17	0.00	113.17	3058.71	1529.35	4334.61	2170.52		5.80	-0.49	0.058
130.00	-17.37	-1.95	0.00	-103.41	0.00	103.41	2975.02	1487.51	4099.43	2052.76		6.33	-0.51	0.056
135.00	-16.59	-1.95	0.00	-93.65	0.00	93.65	2891.34	1445.67	3870.81	1938.28		6.88	-0.54	0.054
140.00	-15.83	-1.95	0.00	-83.89	0.00	83.89	2807.65	1403.83	3648.75	1827.09		7.46	-0.56	0.052
142.71	-15.43	-1.95	0.00	-78.60	0.00	78.60	2762.24	1381.12	3530.99	1768.12		7.78	-0.58	0.050
145.00	-14.92	-1.95	0.00	-74.15	0.00	74.15	2723.97	1361.98	3433.25	1719.18		8.06	-0.59	0.049
147.30	-14.41	-1.94	0.00	-69.67	0.00	69.67	1707.44	853.72	2174.15	1088.69		8.34	-0.60	0.072
150.00	-14.11	-1.95	0.00	-64.42	0.00	64.42	1688.50	844.25	2114.25	1058.70		8.68	-0.61	0.069
155.00	-13.58	-1.94	0.00	-54.69	0.00	54.69	1652.64	826.32	2004.58	1003.78		9.34	-0.64	0.063
160.00	-10.56	-1.82	0.00	-44.97	0.00	44.97	1615.71	807.86	1896.48	949.65		10.02	-0.67	0.054
165.00	-10.07	-1.80	0.00	-35.86	0.00	35.86	1577.73	788.87	1790.06	896.36		10.74	-0.69	0.046
170.00	-9.60	-1.77	0.00	-26.86	0.00	26.86	1538.69	769.34	1685.46	843.98		11.47	-0.71	0.038
172.50	-6.33	-1.40	0.00	-22.44	0.00	22.44	1518.77	759.38	1633.88	818.16		11.85	-0.72	0.032
175.00	-6.12	-1.38	0.00	-18.94	0.00	18.94	1498.58	749.29	1582.80	792.58		12.23	-0.73	0.028
180.00	-5.71	-1.33	0.00	-12.03	0.00	12.03	1457.41	728.71	1482.21	742.21		13.00	-0.74	0.020
185.00	-2.40	-0.66	0.00	-5.39	0.00	5.39	1406.50	703.25	1375.31	688.68		13.78	-0.75	0.010
190.00	-2.10	-0.59	0.00	-2.07	0.00	2.07	1350.71	675.36	1267.83	634.86		14.57	-0.75	0.005
193.50	0.00	-0.56	0.00	0.00	0.00	0.00	1311.66	655.83	1195.19	598.48		15.13	-0.76	0.000

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

Wind Loading - Shaft

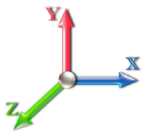
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	266.81	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	262.38	0.650	0.000	5.00	23.916	15.55	127.3	0.0	1512.7
10.00		1.00	0.85	7.442	8.19	257.95	0.650	0.000	5.00	23.516	15.29	125.1	0.0	1487.2
15.00		1.00	0.85	7.442	8.19	253.52	0.650	0.000	5.00	23.115	15.02	123.0	0.0	1461.6
20.00		1.00	0.90	7.896	8.69	256.58	0.650	0.000	5.00	22.715	14.76	128.2	0.0	1436.1
25.00		1.00	0.95	8.276	9.10	258.01	0.650	0.000	5.00	22.315	14.50	132.0	0.0	1410.5
30.00		1.00	0.98	8.600	9.46	258.24	0.650	0.000	5.00	21.914	14.24	134.7	0.0	1385.0
35.00		1.00	1.01	8.883	9.77	257.63	0.650	0.000	5.00	21.514	13.98	136.6	0.0	1359.4
40.00		1.00	1.04	9.137	10.05	256.37	0.650	0.000	5.00	21.113	13.72	137.9	0.0	1333.9
45.00		1.00	1.07	9.366	10.30	254.60	0.650	0.000	5.00	20.713	13.46	138.7	0.0	1308.3
46.66	Bot - Section 2	1.00	1.08	9.438	10.38	253.91	0.650	0.000	1.66	6.802	4.42	45.9	0.0	429.6
50.00	Appurtenance(s)	1.00	1.09	9.576	10.53	252.41	0.650	0.000	3.34	13.758	8.94	94.2	0.0	1614.5
53.33	Top - Section 1	1.00	1.11	9.707	10.68	250.76	0.650	0.000	3.33	13.553	8.81	94.1	0.0	1590.0
55.00		1.00	1.12	9.770	10.75	254.57	0.650	0.000	1.67	6.730	4.37	47.0	0.0	372.3
60.00		1.00	1.14	9.951	10.95	251.79	0.650	0.000	5.00	19.882	12.92	141.5	0.0	1099.8
65.00		1.00	1.16	10.120	11.13	248.76	0.650	0.000	5.00	19.481	12.66	141.0	0.0	1077.5
70.00		1.00	1.17	10.279	11.31	245.50	0.650	0.000	5.00	19.081	12.40	140.2	0.0	1055.1
75.00		1.00	1.19	10.430	11.47	242.04	0.650	0.000	5.00	18.681	12.14	139.3	0.0	1032.8
80.00		1.00	1.21	10.572	11.63	238.41	0.650	0.000	5.00	18.280	11.88	138.2	0.0	1010.4
85.00		1.00	1.22	10.708	11.78	234.63	0.650	0.000	5.00	17.880	11.62	136.9	0.0	988.1
90.00		1.00	1.24	10.838	11.92	230.70	0.650	0.000	5.00	17.479	11.36	135.4	0.0	965.7
94.17	Bot - Section 3	1.00	1.25	10.941	12.04	227.32	0.650	0.000	4.17	14.260	9.27	111.6	0.0	787.7
95.00		1.00	1.25	10.962	12.06	226.64	0.650	0.000	0.83	2.872	1.87	22.5	0.0	291.8
99.83	Top - Section 2	1.00	1.27	11.077	12.18	222.60	0.650	0.000	4.83	16.436	10.68	130.2	0.0	1669.9
100.00		1.00	1.27	11.081	12.19	226.74	0.650	0.000	0.17	0.560	0.36	4.4	0.0	26.6
105.00		1.00	1.28	11.195	12.31	222.48	0.650	0.000	5.00	16.596	10.79	132.8	0.0	786.7
110.00		1.00	1.29	11.305	12.44	218.11	0.650	0.000	5.00	16.195	10.53	130.9	0.0	767.5
115.00		1.00	1.30	11.412	12.55	213.65	0.650	0.000	5.00	15.795	10.27	128.9	0.0	748.4
120.00		1.00	1.32	11.514	12.67	209.09	0.650	0.000	5.00	15.394	10.01	126.7	0.0	729.2
125.00		1.00	1.33	11.614	12.78	204.46	0.650	0.000	5.00	14.994	9.75	124.5	0.0	710.0
130.00		1.00	1.34	11.710	12.88	199.75	0.650	0.000	5.00	14.593	9.49	122.2	0.0	690.9
135.00		1.00	1.35	11.803	12.98	194.97	0.650	0.000	5.00	14.193	9.23	119.8	0.0	671.7
140.00		1.00	1.36	11.894	13.08	190.11	0.650	0.000	5.00	13.793	8.97	117.3	0.0	652.5
142.71	Bot - Section 4	1.00	1.36	11.942	13.14	187.45	0.650	0.000	2.71	7.317	4.76	62.5	0.0	346.1
145.00		1.00	1.37	11.982	13.18	185.20	0.650	0.000	2.29	6.172	4.01	52.9	0.0	482.7
147.30	Top - Section 3	1.00	1.37	12.022	13.22	182.92	0.650	0.000	2.30	6.114	3.97	52.6	0.0	478.1
150.00		1.00	1.38	12.068	13.27	183.20	0.650	0.000	2.70	7.089	4.61	61.2	0.0	224.4
155.00		1.00	1.39	12.152	13.37	178.17	0.650	0.000	5.00	12.803	8.32	111.2	0.0	405.1
160.00	Appurtenance(s)	1.00	1.40	12.233	13.46	173.09	0.650	0.000	5.00	12.403	8.06	108.5	0.0	392.4
165.00		1.00	1.41	12.313	13.54	167.95	0.650	0.000	5.00	12.002	7.80	105.7	0.0	379.6
170.00		1.00	1.42	12.390	13.63	162.76	0.650	0.000	5.00	11.602	7.54	102.8	0.0	366.8
172.50	Appurtenance(s)	1.00	1.42	12.429	13.67	160.15	0.650	0.000	2.50	5.651	3.67	50.2	0.0	178.6
175.00		1.00	1.42	12.466	13.71	157.53	0.650	0.000	2.50	5.551	3.61	49.5	0.0	175.4
180.00		1.00	1.43	12.540	13.79	152.24	0.650	0.000	5.00	10.801	7.02	96.8	0.0	341.3
185.00	Appurtenance(s)	1.00	1.44	12.613	13.87	146.92	0.650	0.000	5.00	10.401	6.76	93.8	0.0	328.5
190.00		1.00	1.45	12.684	13.95	141.55	0.650	0.000	5.00	10.000	6.50	90.7	0.0	315.7
193.50	Appurtenance(s)	1.00	1.45	12.733	14.01	137.76	0.650	0.000	3.50	6.762	4.40	61.6	0.0	213.4

Wind Loading - Shaft

Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Totals:	**193.50**	**4,809.0**	**37,091.4**

Discrete Appurtenance Forces

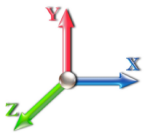
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	193.50	800 MHz Filter	3	12.753	14.029	1.00	1.00	1.26	26.40	0.000	1.500	17.68	0.00	26.51
2	193.50	TD-RRH8x20-25	3	12.767	14.044	0.67	1.00	8.14	210.00	0.000	2.500	114.32	0.00	285.81
3	193.50	800 MHz RRH	3	12.767	14.044	0.67	1.00	5.00	159.00	0.000	2.500	70.29	0.00	175.72
4	193.50	1900MHz RRH	3	12.767	14.044	0.67	1.00	7.64	180.00	0.000	2.500	107.27	0.00	268.17
5	193.50	APXVTM14-C-120	3	12.767	14.044	0.79	1.00	15.03	171.00	0.000	2.500	211.02	0.00	527.55
6	193.50	APXVSPP18-C-A20	3	12.767	14.044	0.83	1.00	19.97	165.00	0.000	2.500	280.45	0.00	701.14
7	193.50	Low Profile Platform	1	12.753	14.029	1.00	1.00	25.00	1200.00	0.000	1.500	350.72	0.00	526.08
8	193.50	ACU-A20-N	4	12.753	14.029	0.67	1.00	0.38	4.00	0.000	1.500	5.26	0.00	7.90
9	185.00	support rail kit	1	12.613	13.874	1.00	1.00	12.25	514.00	0.000	0.000	169.96	0.00	0.00
10	185.00	kicker kit	1	12.613	13.874	1.00	1.00	8.00	146.00	0.000	0.000	110.99	0.00	0.00
11	185.00	Commscope	6	12.613	13.874	0.63	0.75	43.05	309.60	0.000	0.000	597.34	0.00	0.00
12	185.00	GPS	1	12.613	13.874	1.00	1.00	1.00	10.00	0.000	0.000	13.87	0.00	0.00
13	185.00	FPA5250	1	12.627	13.890	1.00	1.00	1.20	10.00	0.000	1.000	16.67	0.00	16.67
14	185.00	RFS	1	12.613	13.874	1.00	1.00	4.06	32.00	0.000	0.000	56.33	0.00	0.00
15	185.00	Samsung MT6407-77A	3	12.613	13.874	0.52	0.75	7.39	238.20	0.000	0.000	102.49	0.00	0.00
16	185.00	Commscope	3	12.613	13.874	0.38	0.75	1.66	23.70	0.000	0.000	23.10	0.00	0.00
17	185.00	Samsung RFV01U-D2A	3	12.613	13.874	0.50	0.75	2.83	210.90	0.000	0.000	39.32	0.00	0.00
18	185.00	Samsung RFV01U-D1A	3	12.613	13.874	0.50	0.75	2.83	253.20	0.000	0.000	39.32	0.00	0.00
19	185.00	Low Profile	1	12.613	13.874	1.00	1.00	22.00	1500.00	0.000	0.000	305.23	0.00	0.00
20	172.50	DC6-48-60-18-8F	3	12.429	13.671	1.00	1.00	2.76	95.40	0.000	0.000	37.73	0.00	0.00
21	172.50	RRUS 4449 B5/B12	3	12.429	13.671	0.50	0.75	2.97	213.00	0.000	0.000	40.60	0.00	0.00
22	172.50	RRUS 8843 B2 B66A	3	12.429	13.671	0.50	0.75	2.47	210.00	0.000	0.000	33.80	0.00	0.00
23	172.50	RRUS 4478 B14	3	12.429	13.671	0.50	0.75	2.49	178.20	0.000	0.000	34.01	0.00	0.00
24	172.50	14.5' Platform	1	12.429	13.671	1.00	1.00	24.80	2000.00	0.000	0.000	339.05	0.00	0.00
25	172.50	HRK14	1	12.429	13.671	1.00	1.00	8.13	302.36	0.000	0.000	111.15	0.00	0.00
26	172.50	DMP65R-BU6DA	6	12.429	13.671	0.55	0.75	41.75	379.80	0.000	0.000	570.81	0.00	0.00
27	172.50	ABT-DMDF-ADBH	1	12.429	13.671	0.73	0.75	0.04	1.10	0.000	0.000	0.50	0.00	0.00
28	160.00	RFS	3	12.233	13.457	0.50	0.80	9.84	122.10	0.000	0.000	132.35	0.00	0.00
29	160.00	Ericsson RRUS 11 Band 4	3	12.233	13.457	0.54	0.80	4.05	132.00	0.000	0.000	54.53	0.00	0.00
30	160.00	Ericsson RRUS 11 Band	3	12.233	13.457	0.54	0.80	4.05	132.00	0.000	0.000	54.53	0.00	0.00
31	160.00	T-Arms	3	12.233	13.457	0.56	0.75	13.50	1050.00	0.000	0.000	181.66	0.00	0.00
32	160.00	Ericsson 4480 B71 + B85	3	12.233	13.457	0.54	0.80	4.58	279.00	0.000	0.000	61.67	0.00	0.00
33	160.00	Ericsson RRUS11 B2	3	12.233	13.457	0.54	0.80	4.05	153.00	0.000	0.000	54.53	0.00	0.00
34	160.00	UKN 96" x 15.6" x 9"	3	12.233	13.457	0.66	0.80	27.89	540.00	0.000	0.000	375.26	0.00	0.00
35	160.00	RFS	3	12.233	13.457	0.58	0.80	35.46	368.40	0.000	0.000	477.18	0.00	0.00
36	50.00	Symmetricom 58532A -	1	9.576	10.534	1.00	1.00	0.22	0.40	0.000	0.000	2.32	0.00	0.00
							Totals:		**11,519.76**			**5,193.32**		

Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

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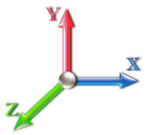
Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		127.26	1701.97	0.00	0.00
10.00		125.13	1676.42	0.00	0.00
15.00		123.00	1650.86	0.00	0.00
20.00		128.24	1625.31	0.00	0.00
25.00		132.04	1599.76	0.00	0.00
30.00		134.75	1574.21	0.00	0.00
35.00		136.65	1548.65	0.00	0.00
40.00		137.93	1523.10	0.00	0.00
45.00		138.71	1497.55	0.00	0.00
46.66		45.90	492.52	0.00	0.00
50.00	(1) attachments	96.52	1741.20	0.00	0.00
53.33		94.06	1715.51	0.00	0.00
55.00		47.01	435.27	0.00	0.00
60.00		141.46	1288.28	0.00	0.00
65.00		140.96	1265.93	0.00	0.00
70.00		140.24	1243.57	0.00	0.00
75.00		139.30	1221.21	0.00	0.00
80.00		138.18	1198.85	0.00	0.00
85.00		136.89	1176.49	0.00	0.00
90.00		135.45	1154.13	0.00	0.00
94.17		111.56	944.70	0.00	0.00
95.00		22.51	323.25	0.00	0.00
99.83		130.17	1852.10	0.00	0.00
100.00		4.44	32.83	0.00	0.00
105.00		132.84	975.14	0.00	0.00
110.00		130.91	955.97	0.00	0.00
115.00		128.87	936.81	0.00	0.00
120.00		126.74	917.64	0.00	0.00
125.00		124.51	898.48	0.00	0.00
130.00		122.19	879.32	0.00	0.00
135.00		119.78	860.15	0.00	0.00
140.00		117.30	840.99	0.00	0.00
142.71		62.48	448.35	0.00	0.00
145.00		52.88	568.85	0.00	0.00
147.30		52.56	564.62	0.00	0.00
150.00		61.17	326.25	0.00	0.00
155.00		111.24	593.58	0.00	0.00
160.00	(24) attachments	1500.19	3357.30	0.00	0.00
165.00		105.66	537.12	0.00	0.00
170.00		102.78	524.34	0.00	0.00
172.50	(21) attachments	1217.87	3637.24	0.00	0.00
175.00		49.47	232.71	0.00	0.00
180.00		96.85	455.84	0.00	0.00
185.00	(24) attachments	1568.42	3690.66	0.00	16.67
190.00		90.69	334.79	0.00	0.00
193.50	(23) attachments	1218.58	2342.15	0.00	2518.88

Total Applied Force Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

Tower Engineering Solutions

Totals:	**10,002.32**	**55,361.98**	**0.00**	**2,535.55**

Calculated Forces

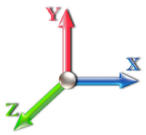
Structure:	CT12210-A-SBA	**Code:**	TIA-222-G	5/18/2022	
Site Name:	Goshen 3, CT	**Exposure:**	C		
Height:	193.50 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.36	-10.03	0.00	-1457.7	0.00	1457.77	6408.64	3204.32	14863.6	7442.88	0.00	0.000	0.000	0.205
5.00	-53.65	-9.95	0.00	-1407.6	0.00	1407.62	6332.44	3166.22	14438.7	7230.12	0.03	-0.056	0.000	0.203
10.00	-51.96	-9.88	0.00	-1357.8	0.00	1357.85	6255.18	3127.59	14017.4	7019.15	0.12	-0.114	0.000	0.202
15.00	-50.30	-9.80	0.00	-1308.4	0.00	1308.45	6176.86	3088.43	13599.8	6810.05	0.27	-0.172	0.000	0.200
20.00	-48.66	-9.72	0.00	-1259.4	0.00	1259.44	6097.47	3048.74	13186.1	6602.88	0.48	-0.231	0.000	0.199
25.00	-47.05	-9.63	0.00	-1210.8	0.00	1210.84	6017.03	3008.51	12776.3	6397.69	0.75	-0.290	0.000	0.197
30.00	-45.47	-9.54	0.00	-1162.6	0.00	1162.69	5935.52	2967.76	12370.7	6194.55	1.09	-0.351	0.000	0.195
35.00	-43.91	-9.44	0.00	-1115.0	0.00	1115.02	5852.95	2926.48	11969.2	5993.52	1.49	-0.413	0.000	0.194
40.00	-42.38	-9.33	0.00	-1067.8	0.00	1067.84	5768.82	2884.41	11571.1	5794.16	1.96	-0.475	0.000	0.192
45.00	-40.88	-9.21	0.00	-1021.1	0.00	1021.18	5657.24	2828.62	11125.6	5571.07	2.49	-0.538	0.000	0.191
46.66	-40.38	-9.18	0.00	-1005.8	0.00	1005.86	5620.12	2810.06	10979.3	5497.83	2.68	-0.560	0.000	0.190
50.00	-38.63	-9.10	0.00	-975.22	0.00	975.22	5545.66	2772.83	10688.8	5352.37	3.09	-0.603	0.000	0.189
53.33	-36.91	-9.01	0.00	-944.92	0.00	944.92	4757.51	2378.75	9242.35	4628.04	3.52	-0.647	0.000	0.212
55.00	-36.47	-8.98	0.00	-929.88	0.00	929.88	4734.55	2367.28	9135.77	4574.68	3.75	-0.669	0.000	0.211
60.00	-35.17	-8.87	0.00	-884.96	0.00	884.96	4665.11	2332.55	8818.95	4416.03	4.49	-0.740	0.000	0.208
65.00	-33.90	-8.75	0.00	-840.61	0.00	840.61	4594.60	2297.30	8505.61	4259.13	5.31	-0.811	0.000	0.205
70.00	-32.65	-8.64	0.00	-796.84	0.00	796.84	4523.04	2261.52	8195.87	4104.03	6.19	-0.884	0.000	0.201
75.00	-31.42	-8.52	0.00	-753.65	0.00	753.65	4450.41	2225.20	7889.86	3950.80	7.16	-0.956	0.000	0.198
80.00	-30.21	-8.40	0.00	-711.06	0.00	711.06	4363.37	2181.68	7564.56	3787.90	8.20	-1.030	0.000	0.195
85.00	-29.03	-8.28	0.00	-669.06	0.00	669.06	4265.74	2132.87	7228.13	3619.44	9.32	-1.104	0.000	0.192
90.00	-27.87	-8.15	0.00	-627.68	0.00	627.68	4168.10	2084.05	6899.36	3454.81	10.51	-1.178	0.000	0.188
94.17	-26.92	-8.04	0.00	-593.71	0.00	593.71	4086.74	2043.37	6631.22	3320.54	11.57	-1.241	0.000	0.185
95.00	-26.59	-8.03	0.00	-587.01	0.00	587.01	4070.47	2035.23	6578.23	3294.01	11.79	-1.254	0.000	0.185
99.83	-24.74	-7.87	0.00	-548.20	0.00	548.20	3418.29	1709.14	5518.43	2763.32	13.09	-1.326	0.000	0.206
100.00	-24.70	-7.89	0.00	-546.89	0.00	546.89	3416.28	1708.14	5510.73	2759.46	13.14	-1.329	0.000	0.205
105.00	-23.71	-7.76	0.00	-507.46	0.00	507.46	3355.57	1677.79	5281.30	2644.58	14.58	-1.411	0.000	0.199
110.00	-22.75	-7.64	0.00	-468.64	0.00	468.64	3293.81	1646.90	5055.01	2531.26	16.10	-1.492	0.000	0.192
115.00	-21.81	-7.52	0.00	-430.43	0.00	430.43	3226.08	1613.04	4824.64	2415.91	17.70	-1.573	0.000	0.185
120.00	-20.88	-7.39	0.00	-392.84	0.00	392.84	3142.39	1571.20	4576.34	2291.57	19.39	-1.654	0.000	0.178
125.00	-19.98	-7.27	0.00	-355.87	0.00	355.87	3058.71	1529.35	4334.61	2170.52	21.17	-1.733	0.000	0.171
130.00	-19.09	-7.15	0.00	-319.51	0.00	319.51	2975.02	1487.51	4099.43	2052.76	23.02	-1.810	0.000	0.162
135.00	-18.23	-7.02	0.00	-283.78	0.00	283.78	2891.34	1445.67	3870.81	1938.28	24.96	-1.885	0.000	0.153
140.00	-17.39	-6.89	0.00	-248.67	0.00	248.67	2807.65	1403.83	3648.75	1827.09	26.97	-1.957	0.000	0.142
142.71	-16.94	-6.83	0.00	-229.96	0.00	229.96	2762.24	1381.12	3530.99	1768.12	28.09	-1.995	0.000	0.136
145.00	-16.37	-6.76	0.00	-214.35	0.00	214.35	2723.97	1361.98	3433.25	1719.18	29.06	-2.027	0.000	0.131
147.30	-15.80	-6.70	0.00	-198.82	0.00	198.82	1707.44	853.72	2174.15	1088.69	30.04	-2.057	0.000	0.192
150.00	-15.47	-6.64	0.00	-180.71	0.00	180.71	1688.50	844.25	2114.25	1058.70	31.21	-2.092	0.000	0.180
155.00	-14.87	-6.53	0.00	-147.50	0.00	147.50	1652.64	826.32	2004.58	1003.78	33.45	-2.174	0.000	0.156
160.00	-11.57	-4.91	0.00	-114.85	0.00	114.85	1615.71	807.86	1896.48	949.65	35.77	-2.246	0.000	0.128
165.00	-11.03	-4.80	0.00	-90.28	0.00	90.28	1577.73	788.87	1790.06	896.36	38.15	-2.309	0.000	0.108
170.00	-10.51	-4.68	0.00	-66.29	0.00	66.29	1538.69	769.34	1685.46	843.98	40.60	-2.361	0.000	0.085
172.50	-6.92	-3.32	0.00	-54.59	0.00	54.59	1518.77	759.38	1633.88	818.16	41.84	-2.384	0.000	0.071
175.00	-6.69	-3.26	0.00	-46.30	0.00	46.30	1498.58	749.29	1582.80	792.58	43.10	-2.404	0.000	0.063
180.00	-6.24	-3.15	0.00	-30.00	0.00	30.00	1457.41	728.71	1482.21	742.21	45.63	-2.435	0.000	0.045
185.00	-2.62	-1.42	0.00	-14.25	0.00	14.25	1406.50	703.25	1375.31	688.68	48.19	-2.456	0.000	0.023
190.00	-2.29	-1.32	0.00	-7.13	0.00	7.13	1350.71	675.36	1267.83	634.86	50.77	-2.467	0.000	0.013
193.50	0.00	-1.22	0.00	-2.52	0.00	2.52	1311.66	655.83	1195.19	598.48	52.58	-2.471	0.000	0.004

Calculated Forces

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 44

Final Analysis Summary

Structure:	CT12210-A-SBA		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 89 mph Wind	35.3	0.00	66.37	0.00	0.00	5180.91
0.9D + 1.6W 89 mph Wind	35.3	0.00	49.76	0.00	0.00	5085.11
1.2D + 1.0Di + 1.0Wi 40 mph Wind	7.9	0.00	108.98	0.00	0.00	1214.19
1.2D + 1.0E	2.7	0.00	66.43	0.00	0.00	397.61
0.9D + 1.0E	2.7	0.00	49.83	0.00	0.00	389.80
1.0D + 1.0W 60 mph Wind	10.0	0.00	55.36	0.00	0.00	1457.77

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 89 mph Wind	-43.15	-32.00	0.00	-3366.0	0.00	-3366.0	4757.51	2378.7	9242.35	4628.04	53.33	0.737
0.9D + 1.6W 89 mph Wind	-32.08	-31.52	0.00	-3284.9	0.00	-3284.9	4757.51	2378.7	9242.35	4628.04	53.33	0.717
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-79.97	-7.38	0.00	-801.97	0.00	-801.97	4757.51	2378.7	9242.35	4628.04	53.33	0.190
1.2D + 1.0E	-19.22	-2.00	0.00	-71.41	0.00	-71.41	1707.44	853.72	2174.15	1088.69	147.30	0.077
0.9D + 1.0E	-14.41	-1.94	0.00	-69.67	0.00	-69.67	1707.44	853.72	2174.15	1088.69	147.30	0.072
1.0D + 1.0W 60 mph Wind	-36.91	-9.01	0.00	-944.92	0.00	-944.92	4757.51	2378.7	9242.35	4628.04	53.33	0.212

Base Plate Summary

Structure:	CT12210-A-SB		**Code:**	TIA-222-G	5/18/2022
Site Name:	Goshen 3, CT		**Exposure:**	C	
Height:	193.50 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	4719.00
Axial (kip):	33.60
Shear (kip):	51.50
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	5180.91
Axial (kip):	66.37
Shear (kip):	35.33

Base Plate	
Yield (ksi):	60.00
Width (in):	72.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	12.82
Moment (kip-in):	726.92
Allow Stress (ksi):	81.00
Applied Stress (ksi):	67.23
Stress Ratio:	0.83

Anchor Bolts	
Bolt Circle:	66.00
Number Bolts:	24.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	161.54
Allowable (kip):	260.00
Ratio:	0.63
Tension	
Force (kip):	152.46
Allowable (kip):	260.00
Ratio:	0.60

Monopole Mat Foundation Design

			Date: 5/18/2022
Customer Name:	T-Mobile	**TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	193.5
Site Number:	CT12210-A-SBA	**Engineer Name:**	K. Azisllari
Engr. Number:	129280	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

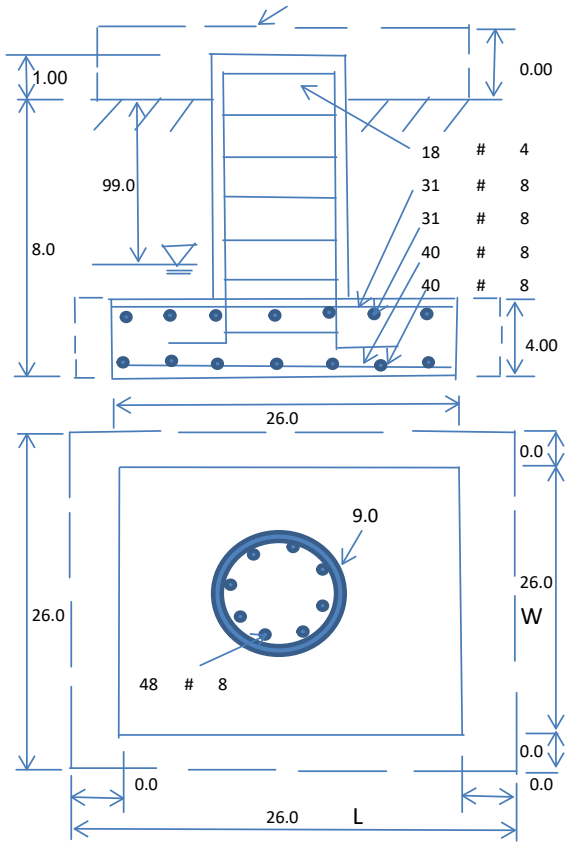
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	66.4	Shear Force (Kips):	35.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5180.9
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	9.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	26	Width of Pad (ft.):	26
Final Length of pad (ft)	26.0	Final width of pad (ft):	26.0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	48	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	40	Qty. of Rebar in Pad (W):	40	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	31	Qty. of Rebar in Pad (W):	31	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2449.53	Total Dry Soil Weight (Kips):	306.19
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	306.19	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3022.09	Total Dry Concrete Weight (Kips):	453.31
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	453.31	Total Vertical Load on Base (Kips):	825.90

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3338	<	Allowable Factored Soil Bearing (psf):	9000	0.37	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	9749.4	>	Design Factored Momont (kips-ft):	5499	0.56	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.77	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		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8510.3	>	Design Factored Moment (Mu, Kips-F	5357.4	0.63	OK!
Calculated Shear Capacity (Kips):	1214.7	>	Design Factored Shear (Kips):	35.3	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	2047.7	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	16129.4	>	Design Factored Axial Load (Pu Kips):	66.4	0.00	OK!
Moment & Axial Strength Combination:	0.63	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.004		Reinforcement Ratio is too small			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1317.2	>	One-Way Factored Shear (L-D. Kips):	253.5	0.19	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1317.2	>	One-Way Factored Shear (W-D., Kips)	253.5	0.19	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1031.1	>	One-Way Factored Shear (C-C, Kips):	241.5	0.23	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0023	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0023		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6200.8	>	Moment at Bottom (L-Dir. K-Ft):	1576.3	0.25	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6200.8	>	Moment at Bottom (W-Dir. K-Ft):	1576.3	0.25	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8711.0	>	Moment at Bottom (C-C Dir. K-Ft):	2229.2	0.26	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0018		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4827.8	>	Moment at the top (L-Dir K-Ft):	699.2	0.14	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4827.8	>	Moment at the top (W-Dir K-Ft):	699.2	0.14	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	6792.6	>	Moment at the top (C-C Dir. K-Ft):	664.3	0.10	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2072.4	k-ft.	Max. factored shear stress v_{u_CD}:		2.0	Psi
Max. factored shear stress v_{u_AB}:	6.9	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	6.9	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!

Exhibit E

Mount Analysis

Mount Structural Analysis

SBA Site:	**CTNH548A**
T-Mobile Site Number:	**CT12210-A**
Project:	L600
Prepared For:	T-Mobile
Mount Description:	T-Arms
Site Location:	113 BRUSH HILL RD Goshen, CT 06756 Litchfield County 41.797170°, -73.221670°
Design Codes:	ANSI/TIA-222-G 2015 IBC w/ 2018 Connecticut State Building Code
Analysis Load Case:	T-Mobile Final Configuration
Analysis Result:	**adequate @ 93%** **See Conclusion & Recommendations for installation requirements.**

Date Signed:
5/12/2022

Revision 0
May 12, 2022

1.0 Introduction

GeoStructural LLC has completed a structural analysis for the existing T-Mobile mount assembly located at the CT12210-A *communications site* in Litchfield County, CT considering the final appurtenance loading configurations listed in Section 3.0.

2.0 Analysis Procedure & Design Criteria

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

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

Wind w/o ice = 115 mph (3-sec gust Ultimate Wind Speed) Wind w/ ice = 50 mph (3-sec gust Basic) with 0.75" Design Ice (Escalated with Height) [1]
Topographic Category 1; Exposure Category C Structure Class (Risk Category) II; Ground Elevation = 1235 ft (NAVD 88) Gust Effect Factor = 1.0; Directionality Factor = 0.95;
Seismic Design Parameters: Site Class D "Stiff Soil"; S_s = 0.182, S_1 = 0.065, S_{DS} = 0.194
Maintenance Loads[2]: L_m = 500 lb @ Worst Case Mount Pipe (Concurrent with 30 mph Wind Speed) L_v = 250 lb @ Worst Case Member Location (Center Span or Cantilever)
1. Ice loading has been ignored with Design Ice Thickness ≤ 0.5". *2. The face horizontal boom rails of T-Arm mount assemblies are not rated for rigging, hoisting or maintenance loading unless noted otherwise.*

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

- Previous CDs Site #: CT12210-A, SMW Drawings, Dated 04/10/17
- Previous MMA Site #: CT12210-A, FDH, Dated 04/22/14
- RFDS Site #: CT12210-A, Rev.3, Dated 03/09/22

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

3.0 Appurtenance Information

Table 3.1 - Final T-Mobile Appurtenance Configuration[1,2]

COR	(Quantity) Appurtenance Make/Model	Mount Description
160'±	(3) RFS APX16DWV-16DWV-S-E-A20	*T-Arms*
	(3) RFS APXVAALL24_43-U-NA20	
	(3) RRH RRUS-11 B2	
	(3) RRH RRUS-11 B4	
	(3) RRH Ericsson 4480 B71 + B85	

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

4.0 Structural Analysis Results

Table 4.1 –Mount Capacity

Load Case	Governing Mount Component[1]	% Capacity[2]	Result
Final T-Mobile Configuration	Standoff	65%	Adequate
	Main Horizontal	93%	
	Mount Pipe	87%	
	Connection	54%	

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

Table 4.2 – Structural Component Material Strengths

Structural Component	Nominal Strength/Material[1]
Pipe	F_y = 35 ksi (A53, Gr. B)
Tube	F_y = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate & Bar	F_y = 36 ksi (A36)
Uni-Strut (P1000, etc.)	F_y = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F_y = 57 ksi (Yield) & F_u = 74 ksi (Tension)
	SAE J429 Grade 5 (¼" to 1" Nominal ϕ) F_y = 92 ksi (Yield) & F_u = 120 ksi (Tension)
Welds	E70XX Electrodes

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

5.0 Conclusion & Recommendations

Based on T-Mobile's final equipment loading configuration, the mount assembly has sufficient capacity to support the loading considered in this analysis pursuant to the listed standards.

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

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

Prepared by:

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Reviewed and Approved by:

Gregory Durgin
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6.0 Standard Conditions

- All data required to complete our structural analysis was furnished by our client. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.

- The default Structure Classification is Class II in accordance with ANSI/TIA-222 §A.2.2 & §A.15.3 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.

- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222 §15.6 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.

- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.

- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.

- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.

- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.

- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

7.0 Attachments, Calculations & Software Output

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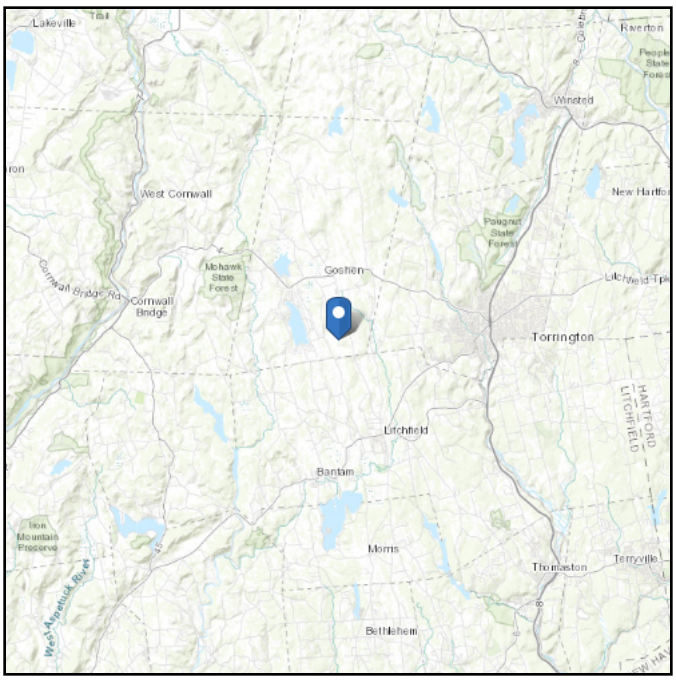
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 1235.03 ft (NAVD 88)
Latitude: 41.79717
Longitude: -73.22167



Wind

Results:

Wind Speed	115 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

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

Date Accessed: Wed May 11 2022

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

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

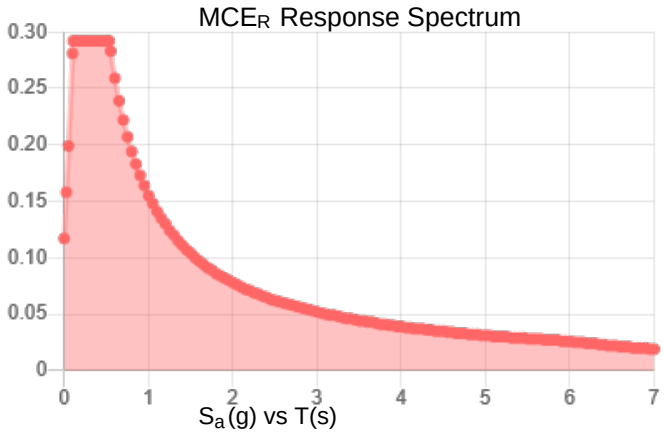
Seismic

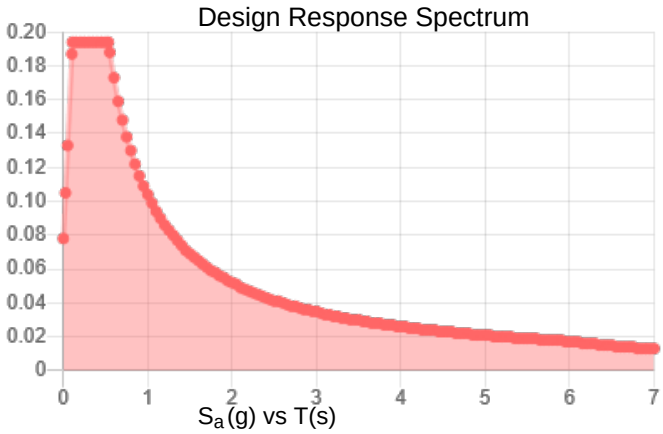
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.182	S_{DS} :	0.194
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.092
S_{MS} :	0.292	PGA_M :	0.147
S_{M1} :	0.155	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: **Wed May 11 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	5 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed May 11 2022

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

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

Design Wind Force on Appurtenances

ASCE 7-10 & IBC 2015

Wind Design Parmeters:

V_{basic} =	115	mph	*Basic Ult Wind (§2.6.4)*	C	*Exposure Category (§2.6.5.1.2)*		
V_{ice} =	50	mph	*Basic Wind w/ ice (§2.6.4)*	1	*Topographic Category (§2.6.6.2.1)*		
t_{ice} =	0.75	inch	*Ice Thickness (§2.6.10)*	II	*Risk Category (§2, Table 2-1)*		
K_a =	0.9			30	*mph*	Service Wind Speed	
K_d =	0.95						
G_h =	1						

q_z =	43	psf	*Wind Load without Ice*	t_{ice} =	0	inch
q_z =	8	psf	*Wind Load with Ice*	t_{ice} =	0.88	inch

z =	160.0	ft	*COR (Height above ground level at the base of structure)*
H =	0	ft	*Height of crest above surrounding terrain (Topo Categories 2, 3 & 4)*
z_s =	1235	ft	*Mean elevation of base of structure above sea level*

Seismic Design Parmeters:

Site Class:	D	**Occupancy Cat:**	II	**Seismic Design Cat:**	B	z =	160
						h =	160

Amp. Factor, ap: 1 Response Factor, Rp: 2.5

S_{DS} = 0.1941 S_{D1} = 0.104

(ASCE 7-10 13.3-3)	$F_{p,\min} = 0.3 S_{DS} I_p W_p$	= 0.05824	w_p	
(ASCE 7-10 13.3-1)	$F_p = \frac{0.4 a_p S_{DS} W_p}{\left(\frac{R_p}{I_p}\right)}\left(1+2\frac{z}{h}\right)$	= 0.093184	w_p	Use F_p = 0.093 Wp
(ASCE 7-10 13.3-2)	$F_{p,\max} = 1.6 S_{DS} I_p W_p$	= 0.310613	w_p	

Importance Factor (§2, Table 2-3):

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

Appurtenances

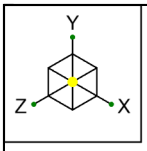
RFS	APX16DWV-16DWV-S-E-A20			
	FFRONT	FSIDE	WT	E
No Ice	249.8	83.2	40.7	3.8
0.88 inch Ice	55.3	25.3	53.7	

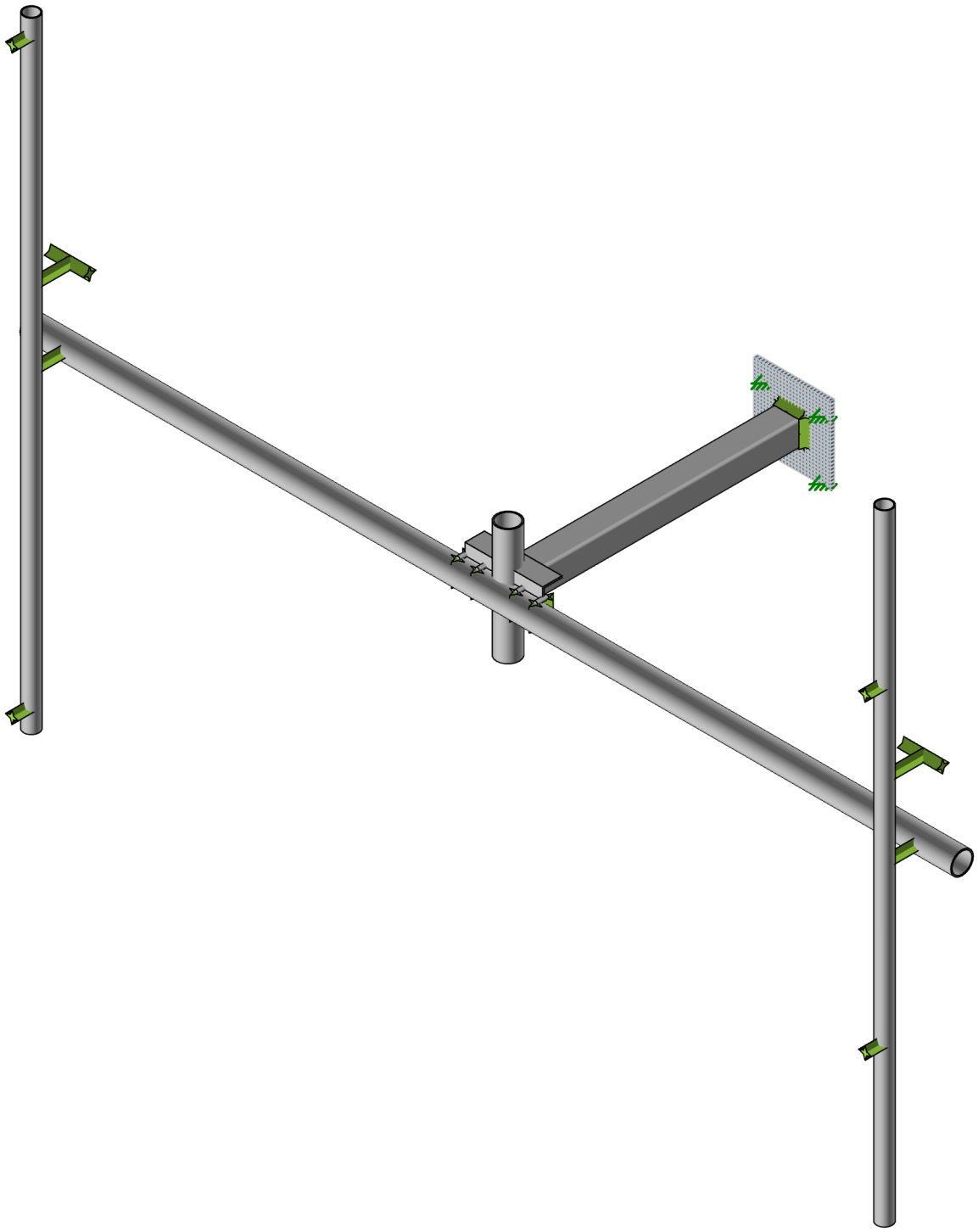
RFS	APXVAALL24_43-U-NA20			
	FFRONT	FSIDE	WT	E
No Ice	782.9	343.8	128.0	11.9
0.88 inch Ice	161.7	79.5	190.4	

RRH	RRUS-11 B2			
	FFRONT	FSIDE	WT	E
No Ice	79.8	19.5	22.0	2.0
0.88 inch Ice	18.6	6.2	20.2	

RRH	RRUS-11 B4			
	FFRONT	FSIDE	WT	E
No Ice	79.8	19.5	22.0	2.0
0.88 inch Ice	18.6	6.2	20.2	

RRH	Ericsson 4480 B71 + B85			
	FFRONT	FSIDE	WT	E
No Ice	108.2	52.9	93.0	0.0
0.88 inch Ice	24.6	13.4	34.8	





Envelope Only Solution

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Fathullah Zamani		May 12, 2022
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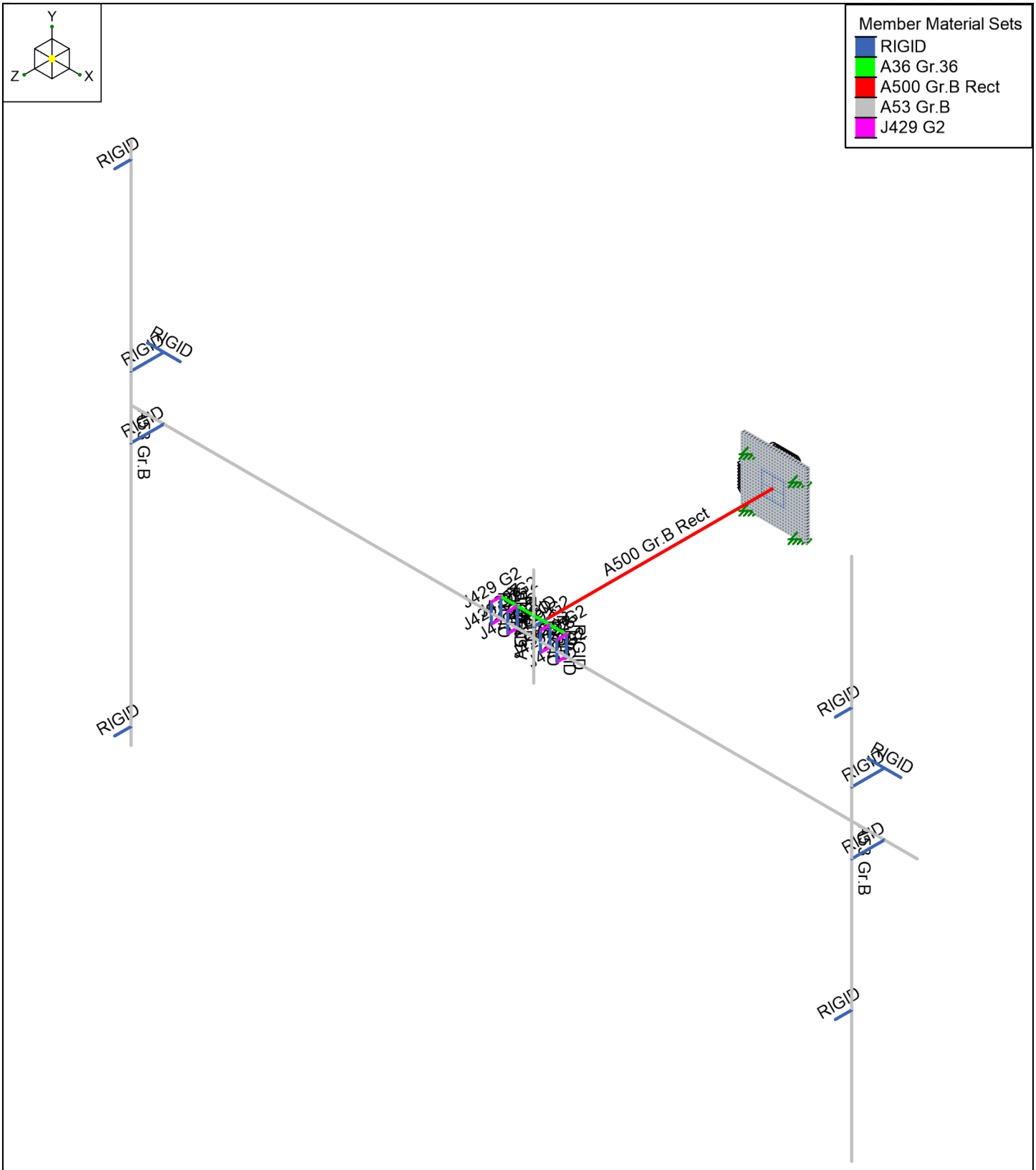

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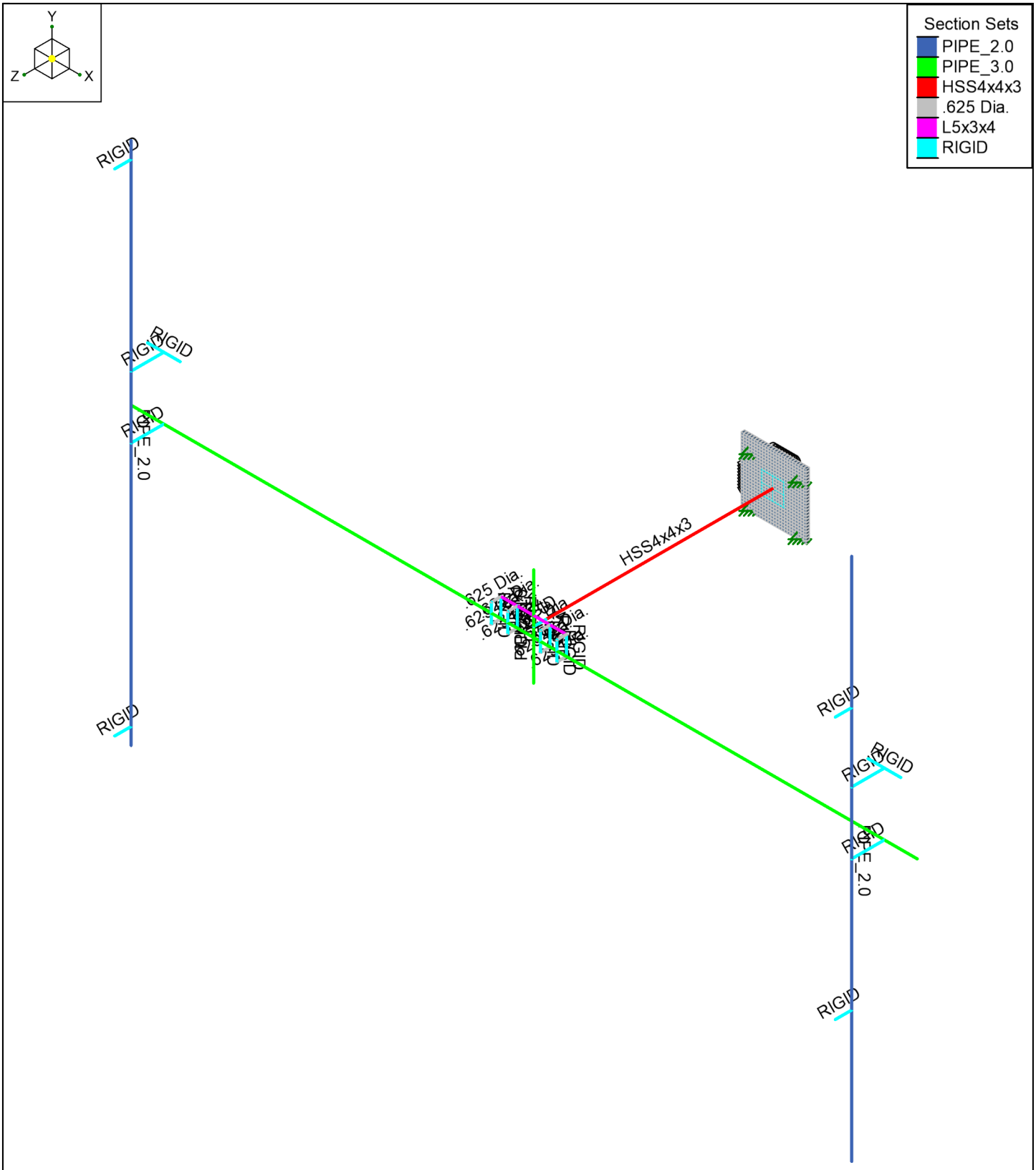

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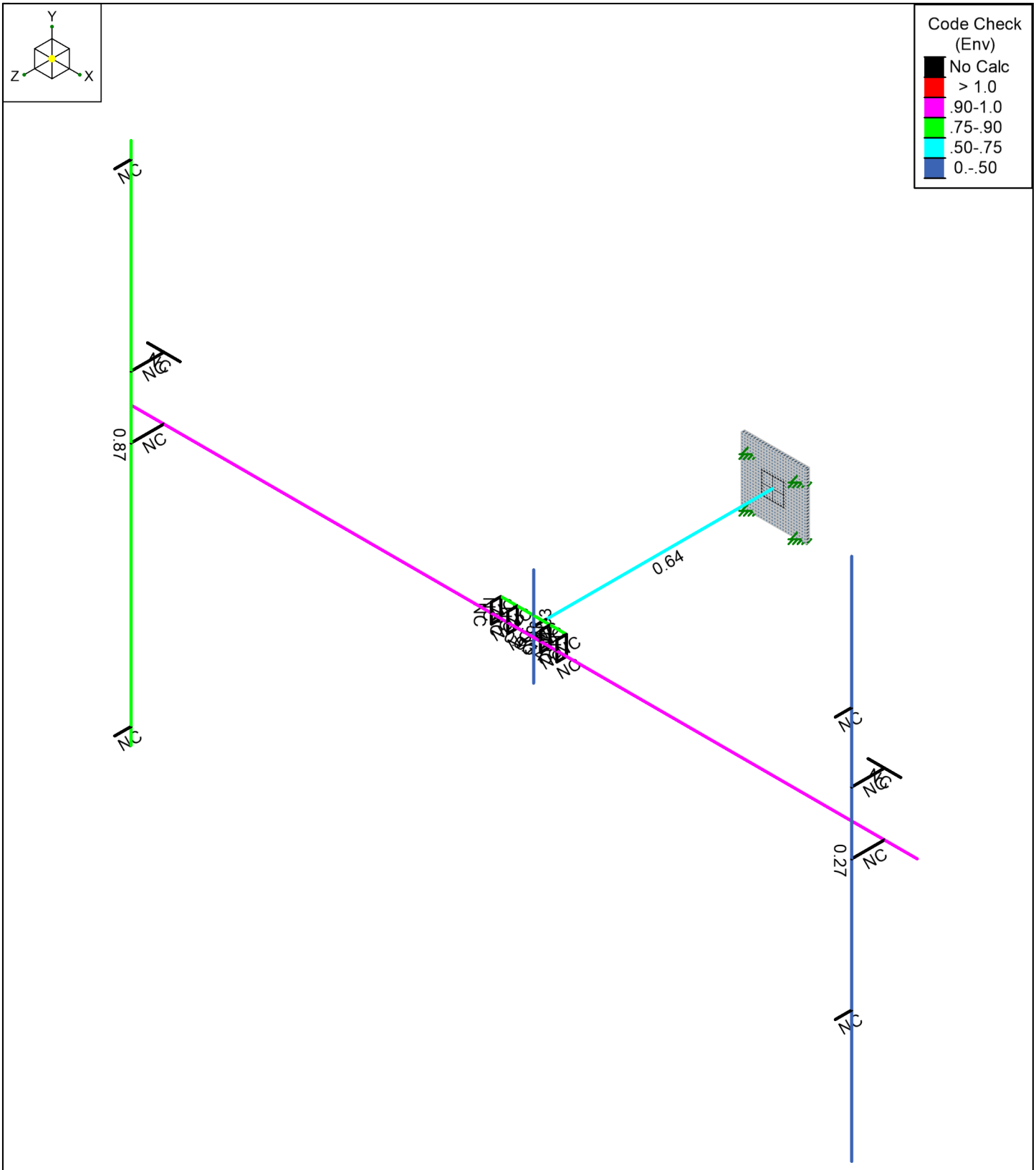

Member Code Checks Displayed (Enveloped)
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Fathullah Zamani		May 12, 2022
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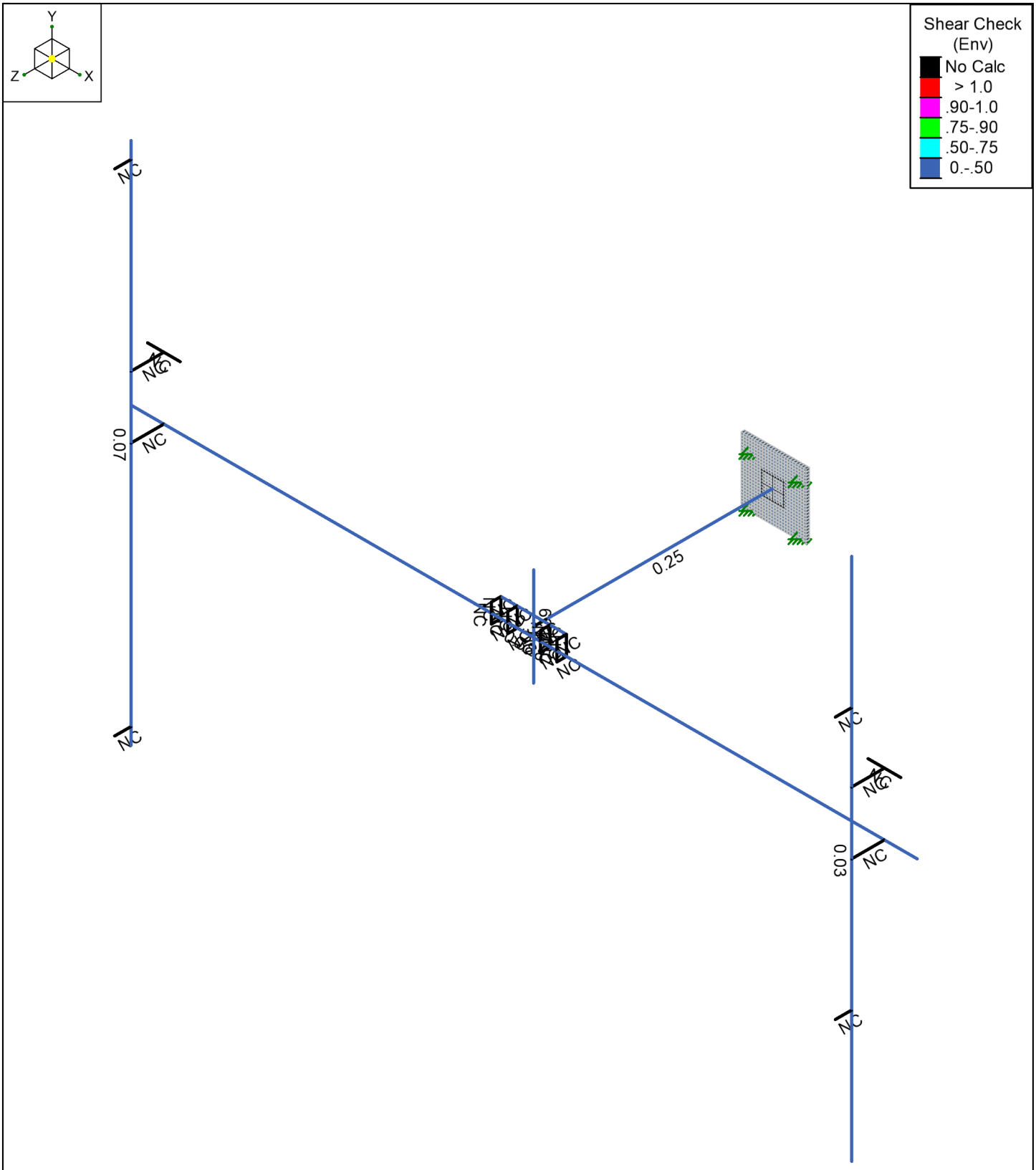


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

GeoStructural, LLC	CTNH548A	SK-5
Fathullah Zamani		May 12, 2022
CTNH548A		CTNH548A_ Mount Analysis_R0 2…

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Distributed
1	Self Weight	DL		-1.1		7	
2	Wind Load AZI 000	WLZ				7	74
3	Wind Load AZI 090	WLX				7	74
4	Ice Weight	OL1				7	74
5	Wind + Ice Load AZI 000	OL2				7	74
6	Wind + Ice Load AZI 090	OL3				7	74
7	Seismic Load AZI 000	ELZ			-0.09	7	
8	Seismic Load AZI 090	ELX	-0.09			7	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.0D	Yes	Y	DL	1						
2	0.6W AZI 000	Yes	Y	WLZ	0.6						
3	0.6W AZI 030	Yes	Y	WLZ	0.52	WLX	0.3				
4	0.6W AZI 060	Yes	Y	WLZ	0.3	WLX	0.52				
5	0.6W AZI 090	Yes	Y			WLX	0.6				
6	0.6W AZI 120	Yes	Y	WLZ	-0.3	WLX	0.52				
7	0.6W AZI 150	Yes	Y	WLZ	-0.52	WLX	0.3				
8	0.6W AZI 180	Yes	Y	WLZ	-0.6						
9	0.6W AZI 210	Yes	Y	WLZ	-0.52	WLX	-0.3				
10	0.6W AZI 240	Yes	Y	WLZ	-0.3	WLX	-0.52				
11	0.6W AZI 270	Yes	Y			WLX	-0.6				
12	0.6W AZI 300	Yes	Y	WLZ	0.3	WLX	-0.52				
13	0.6W AZI 330	Yes	Y	WLZ	0.52	WLX	-0.3				
14	0.7E AZI 000	Yes	Y	ELZ	0.7						
15	0.7E AZI 030	Yes	Y	ELZ	0.606	ELX	0.35				
16	0.7E AZI 060	Yes	Y	ELZ	0.35	ELX	0.606				
17	0.7E AZI 090	Yes	Y			ELX	0.7				
18	0.7E AZI 120	Yes	Y	ELZ	-0.35	ELX	0.606				
19	0.7E AZI 150	Yes	Y	ELZ	-0.606	ELX	0.35				
20	0.7E AZI 180	Yes	Y	ELZ	-0.7						
21	0.7E AZI 210	Yes	Y	ELZ	-0.606	ELX	-0.35				
22	0.7E AZI 240	Yes	Y	ELZ	-0.35	ELX	-0.606				
23	0.7E AZI 270	Yes	Y			ELX	-0.7				
24	0.7E AZI 300	Yes	Y	ELZ	0.35	ELX	-0.606				
25	0.7E AZI 330	Yes	Y	ELZ	0.606	ELX	-0.35				
26	1D + 0.6W AZI 000	Yes	Y	DL	1	WLZ	0.6				
27	1D + 0.6W AZI 030	Yes	Y	DL	1	WLZ	0.52	WLX	0.3		
28	1D + 0.6W AZI 060	Yes	Y	DL	1	WLZ	0.3	WLX	0.52		
29	1D + 0.6W AZI 090	Yes	Y	DL	1			WLX	0.6		
30	1D + 0.6W AZI 120	Yes	Y	DL	1	WLZ	-0.3	WLX	0.52		
31	1D + 0.6W AZI 150	Yes	Y	DL	1	WLZ	-0.52	WLX	0.3		
32	1D + 0.6W AZI 180	Yes	Y	DL	1	WLZ	-0.6				
33	1D + 0.6W AZI 210	Yes	Y	DL	1	WLZ	-0.52	WLX	-0.3		
34	1D + 0.6W AZI 240	Yes	Y	DL	1	WLZ	-0.3	WLX	-0.52		
35	1D + 0.6W AZI 270	Yes	Y	DL	1			WLX	-0.6		
36	1D + 0.6W AZI 300	Yes	Y	DL	1	WLZ	0.3	WLX	-0.52		
37	1D + 0.6W AZI 330	Yes	Y	DL	1	WLZ	0.52	WLX	-0.3		
38	0.6D + 0.6W AZI 000	Yes	Y	DL	0.6	WLZ	0.6				
39	0.6D + 0.6W AZI 030	Yes	Y	DL	0.6	WLZ	0.52	WLX	0.3		
40	0.6D + 0.6W AZI 060	Yes	Y	DL	0.6	WLZ	0.3	WLX	0.52		
41	0.6D + 0.6W AZI 090	Yes	Y	DL	0.6			WLX	0.6		
42	0.6D + 0.6W AZI 120	Yes	Y	DL	0.6	WLZ	-0.3	WLX	0.52		
43	0.6D + 0.6W AZI 150	Yes	Y	DL	0.6	WLZ	-0.52	WLX	0.3		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
44	0.6D + 0.6W AZI 180	Yes	Y	DL	0.6	WLZ	-0.6				
45	0.6D + 0.6W AZI 210	Yes	Y	DL	0.6	WLZ	-0.52	WLX	-0.3		
46	0.6D + 0.6W AZI 240	Yes	Y	DL	0.6	WLZ	-0.3	WLX	-0.52		
47	0.6D + 0.6W AZI 270	Yes	Y	DL	0.6			WLX	-0.6		
48	0.6D + 0.6W AZI 300	Yes	Y	DL	0.6	WLZ	0.3	WLX	-0.52		
49	0.6D + 0.6W AZI 330	Yes	Y	DL	0.6	WLZ	0.52	WLX	-0.3		
50	1D + 1Di	Yes	Y	DL	1	OL1	1				
51	1D + 1Di + 1Wi AZI 000	Yes	Y	DL	1	OL1	1	OL2	1		
52	1D + 1Di + 1Wi AZI 030	Yes	Y	DL	1	OL1	1	OL2	0.866	OL3	0.5
53	1D + 1Di + 1Wi AZI 060	Yes	Y	DL	1	OL1	1	OL2	0.5	OL3	0.866
54	1D + 1Di + 1Wi AZI 090	Yes	Y	DL	1	OL1	1			OL3	1
55	1D + 1Di + 1Wi AZI 120	Yes	Y	DL	1	OL1	1	OL2	-0.5	OL3	0.866
56	1D + 1Di + 1Wi AZI 150	Yes	Y	DL	1	OL1	1	OL2	-0.866	OL3	0.5
57	1D + 1Di + 1Wi AZI 180	Yes	Y	DL	1	OL1	1	OL2	-1		
58	1D + 1Di + 1Wi AZI 210	Yes	Y	DL	1	OL1	1	OL2	-0.866	OL3	-0.5
59	1D + 1Di + 1Wi AZI 240	Yes	Y	DL	1	OL1	1	OL2	-0.5	OL3	-0.866
60	1D + 1Di + 1Wi AZI 270	Yes	Y	DL	1	OL1	1			OL3	-1
61	1D + 1Di + 1Wi AZI 300	Yes	Y	DL	1	OL1	1	OL2	0.5	OL3	-0.866
62	1D + 1Di + 1Wi AZI 330	Yes	Y	DL	1	OL1	1	OL2	0.866	OL3	-0.5
63	(1.0+0.14Sds)D + 0.7E AZI 000	Yes	Y	DL	1.027	ELZ	0.7				
64	(1.0+0.14Sds)D + 0.7E AZI 030	Yes	Y	DL	1.027	ELZ	0.606	ELX	0.35		
65	(1.0+0.14Sds)D + 0.7E AZI 060	Yes	Y	DL	1.027	ELZ	0.35	ELX	0.606		
66	(1.0+0.14Sds)D + 0.7E AZI 090	Yes	Y	DL	1.027			ELX	0.7		
67	(1.0+0.14Sds)D + 0.7E AZI 120	Yes	Y	DL	1.027	ELZ	-0.35	ELX	0.606		
68	(1.0+0.14Sds)D + 0.7E AZI 150	Yes	Y	DL	1.027	ELZ	-0.606	ELX	0.35		
69	(1.0+0.14Sds)D + 0.7E AZI 180	Yes	Y	DL	1.027	ELZ	-0.7				
70	(1.0+0.14Sds)D + 0.7E AZI 210	Yes	Y	DL	1.027	ELZ	-0.606	ELX	-0.35		
71	(1.0+0.14Sds)D + 0.7E AZI 240	Yes	Y	DL	1.027	ELZ	-0.35	ELX	-0.606		
72	(1.0+0.14Sds)D + 0.7E AZI 270	Yes	Y	DL	1.027			ELX	-0.7		
73	(1.0+0.14Sds)D + 0.7E AZI 300	Yes	Y	DL	1.027	ELZ	0.35	ELX	-0.606		
74	(1.0+0.14Sds)D + 0.7E AZI 330	Yes	Y	DL	1.027	ELZ	0.606	ELX	-0.35		
75	(0.6-0.2Sds)D + 0.7E AZI 000	Yes	Y	DL	0.573	ELZ	0.7				
76	(0.6-0.2Sds)D + 0.7E AZI 030	Yes	Y	DL	0.573	ELZ	0.606	ELX	0.35		
77	(0.6-0.2Sds)D + 0.7E AZI 060	Yes	Y	DL	0.573	ELZ	0.35	ELX	0.606		
78	(0.6-0.2Sds)D + 0.7E AZI 090	Yes	Y	DL	0.573			ELX	0.7		
79	(0.6-0.2Sds)D + 0.7E AZI 120	Yes	Y	DL	0.573	ELZ	-0.35	ELX	0.606		
80	(0.6-0.2Sds)D + 0.7E AZI 150	Yes	Y	DL	0.573	ELZ	-0.606	ELX	0.35		
81	(0.6-0.2Sds)D + 0.7E AZI 180	Yes	Y	DL	0.573	ELZ	-0.7				
82	(0.6-0.2Sds)D + 0.7E AZI 210	Yes	Y	DL	0.573	ELZ	-0.606	ELX	-0.35		
83	(0.6-0.2Sds)D + 0.7E AZI 240	Yes	Y	DL	0.573	ELZ	-0.35	ELX	-0.606		
84	(0.6-0.2Sds)D + 0.7E AZI 270	Yes	Y	DL	0.573			ELX	-0.7		
85	(0.6-0.2Sds)D + 0.7E AZI 300	Yes	Y	DL	0.573	ELZ	0.35	ELX	-0.606		
86	(0.6-0.2Sds)D + 0.7E AZI 330	Yes	Y	DL	0.573	ELZ	0.606	ELX	-0.35		

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N18			
2	N40			
3	N41			
4	N42			
5	N43			
6	N138	Reaction	Reaction	Reaction
7	N120	Reaction	Reaction	Reaction
8	N569	Reaction	Reaction	Reaction
9	N586			

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
10	N587	Reaction	Reaction	Reaction
11	N696			
12	N2130			

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A500 Gr.B RND_1	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
8	A500 Gr.B Rect_1	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	J429 G2	29000	11154	0.3	0.65	0.49	57	1.5	75	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	PIPE_2.0	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	PIPE_3.0	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	PIPE_2.5	PIPE_2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	HSS4x4x3	HSS4X4X3	Beam	None	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
5	3/8"x2.5"	3/8"X2.5"	Beam	None	A36 Gr.36	Typical	0.938	0.011	0.488	0.04
6	LL2.5x2.5x3x3	LL2.5X2.5X3X3	Beam	None	A36 Gr.36	Typical	1.8	2.46	1.07	0.023
7	.625 Dia.	.625DIA.	Beam	None	J429 G2	Typical	0.307	0.007	0.007	0.015
8	3/8"x8"	3/8"X8"	Beam	None	A36 Gr.36	Typical	3	0.035	16	0.136
9	L2.5x2.5x3	L2.5X2.5X3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
10	L5x3x4	L5X3X4	Beam	None	A36 Gr.36	Typical	1.94	1.41	5.09	0.044

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N3	N1		L5x3x4	Beam	None	A36 Gr.36	Typical
2	M2	N7	N1		RIGID	None	None	RIGID	Typical
3	M3	N8	N3		RIGID	None	None	RIGID	Typical
4	M4	N5	N2		RIGID	None	None	RIGID	Typical
5	M5	N6	N4		RIGID	None	None	RIGID	Typical
6	M6	N1	N2		.625 Dia.	Beam	None	J429 G2	Typical
7	M7	N3	N4		.625 Dia.	Beam	None	J429 G2	Typical
8	M8	N7	N5		.625 Dia.	Beam	None	J429 G2	Typical
9	M9	N8	N6		.625 Dia.	Beam	None	J429 G2	Typical
10	M10	N7	N8	180	L5x3x4	Beam	None	A36 Gr.36	Typical
11	M11	N9	N19		RIGID	None	None	RIGID	Typical
12	M12	N10	N11		PIPE_3.0	Beam	None	A53 Gr.B	Typical
13	M13	N12	N13		PIPE_2.0	Beam	None	A53 Gr.B	Typical
14	M14	N14	N15		RIGID	None	None	RIGID	Typical
15	M15	N16	N17		PIPE_3.0	Beam	None	A53 Gr.B	Typical
16	M16	N18	N19		HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
17	M17	N26	N27		RIGID	None	None	RIGID	Typical
18	M18	N29	N28		RIGID	None	None	RIGID	Typical
19	M19	N32	N31		RIGID	None	None	RIGID	Typical
20	M20	N30	N31		.625 Dia.	Beam	None	J429 G2	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
21	M21	N33	N32		.625 Dia.	Beam	None	J429 G2	Typical
22	M22	N37	N36		RIGID	None	None	RIGID	Typical
23	M23	N35	N36		.625 Dia.	Beam	None	J429 G2	Typical
24	M24	N38	N37		.625 Dia.	Beam	None	J429 G2	Typical
25	M25	N33	N30		RIGID	None	None	RIGID	Typical
26	M26	N38	N35		RIGID	None	None	RIGID	Typical
27	M27	N664	N250		RIGID	None	None	RIGID	Typical
28	M28	N665	N251		RIGID	None	None	RIGID	Typical
29	M29	N666	N252		RIGID	None	None	RIGID	Typical
30	M30	N667	N253		RIGID	None	None	RIGID	Typical
31	M31	N668	N254		RIGID	None	None	RIGID	Typical
32	M32	N669	N255		RIGID	None	None	RIGID	Typical
33	M33	N670	N256		RIGID	None	None	RIGID	Typical
34	M34	N671	N257		RIGID	None	None	RIGID	Typical
35	M35	N672	N258		RIGID	None	None	RIGID	Typical
36	M36	N674	N283		RIGID	None	None	RIGID	Typical
37	M37	N676	N308		RIGID	None	None	RIGID	Typical
38	M38	N678	N333		RIGID	None	None	RIGID	Typical
39	M39	N680	N357		RIGID	None	None	RIGID	Typical
40	M40	N682	N382		RIGID	None	None	RIGID	Typical
41	M41	N684	N407		RIGID	None	None	RIGID	Typical
42	M42	N686	N432		RIGID	None	None	RIGID	Typical
43	M43	N695	N457		RIGID	None	None	RIGID	Typical
44	M44	N694	N456		RIGID	None	None	RIGID	Typical
45	M45	N693	N455		RIGID	None	None	RIGID	Typical
46	M46	N692	N454		RIGID	None	None	RIGID	Typical
47	M47	N691	N453		RIGID	None	None	RIGID	Typical
48	M48	N690	N452		RIGID	None	None	RIGID	Typical
49	M49	N689	N451		RIGID	None	None	RIGID	Typical
50	M50	N688	N450		RIGID	None	None	RIGID	Typical
51	M51	N687	N449		RIGID	None	None	RIGID	Typical
52	M52	N685	N424		RIGID	None	None	RIGID	Typical
53	M53	N683	N399		RIGID	None	None	RIGID	Typical
54	M54	N681	N374		RIGID	None	None	RIGID	Typical
55	M55	N679	N350		RIGID	None	None	RIGID	Typical
56	M56	N677	N325		RIGID	None	None	RIGID	Typical
57	M57	N675	N300		RIGID	None	None	RIGID	Typical
58	M58	N673	N275		RIGID	None	None	RIGID	Typical
59	M59	N664	N672		RIGID	None	None	RIGID	Typical
60	M60	N672	N695		RIGID	None	None	RIGID	Typical
61	M61	N695	N687		RIGID	None	None	RIGID	Typical
62	M62	N687	N664		RIGID	None	None	RIGID	Typical
63	M63	N696	N680		RIGID	None	None	RIGID	Typical
64	M64	N696	N668		RIGID	None	None	RIGID	Typical
65	M65	N696	N679		RIGID	None	None	RIGID	Typical
66	M66	N696	N691		RIGID	None	None	RIGID	Typical
67	M67	N697	N698		PIPE_2.0	Beam	None	A53 Gr.B	Typical
68	M68	N699	N700		RIGID	None	None	RIGID	Typical
69	M69	N703	N704		RIGID	None	None	RIGID	Typical
70	M70	N706	N705		RIGID	None	None	RIGID	Typical
71	M71	N709	N711		RIGID	None	None	RIGID	Typical
72	M72	N710	N714		RIGID	None	None	RIGID	Typical
73	M73	N707	N712		RIGID	None	None	RIGID	Typical
74	M74	N708	N713		RIGID	None	None	RIGID	Typical

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	Y	-0.02
2	N713	L	Y	-0.02
3	N709	L	Y	-0.064
4	N710	L	Y	-0.064
5	N28	L	Y	-0.022
6	N29	L	Y	-0.022
7	N705	L	Y	-0.093

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	Z	-0.125
2	N713	L	Z	-0.125
3	N709	L	Z	-0.391
4	N710	L	Z	-0.391
5	N28	L	Z	-0.08
6	N29	L	Z	-0.08
7	N705	L	Z	-0.108

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	X	-0.042
2	N713	L	X	-0.042
3	N709	L	X	-0.172
4	N710	L	X	-0.172
5	N28	L	X	-0.02
6	N29	L	X	-0.02
7	N705	L	X	-0.053

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	Y	-0.027
2	N713	L	Y	-0.027
3	N709	L	Y	-0.095
4	N710	L	Y	-0.095
5	N28	L	Y	-0.02
6	N29	L	Y	-0.02
7	N705	L	Y	-0.035

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	Z	-0.028
2	N713	L	Z	-0.028
3	N709	L	Z	-0.081
4	N710	L	Z	-0.081
5	N28	L	Z	-0.019
6	N29	L	Z	-0.019
7	N705	L	Z	-0.025

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	X	-0.013
2	N713	L	X	-0.013
3	N709	L	X	-0.04
4	N710	L	X	-0.04
5	N28	L	X	-0.006
6	N29	L	X	-0.006
7	N705	L	X	-0.013

Node Loads and Enforced Displacements (BLC 7 : Seismic Load AZI 000)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	Z	-0.002
2	N713	L	Z	-0.002
3	N709	L	Z	-0.006
4	N710	L	Z	-0.006
5	N28	L	Z	-0.002
6	N29	L	Z	-0.002
7	N705	L	Z	0

Node Loads and Enforced Displacements (BLC 8 : Seismic Load AZI 090)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	N712	L	X	-0.002
2	N713	L	X	-0.002
3	N709	L	X	-0.006
4	N710	L	X	-0.006
5	N28	L	X	-0.002
6	N29	L	X	-0.002
7	N705	L	X	0

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M4	PZ	-0.015	-0.015	0	%100
2	M74	PZ	-0.015	-0.015	0	%100
3	M73	PZ	-0.015	-0.015	0	%100
4	M2	PZ	-0.015	-0.015	0	%100
5	M63	PZ	-0.015	-0.015	0	%100
6	M71	PZ	-0.015	-0.015	0	%100
7	M13	PZ	-0.015	-0.015	0	%100
8	M70	PZ	-0.015	-0.015	0	%100
9	M69	PZ	-0.015	-0.015	0	%100
10	M18	PZ	-0.015	-0.015	0	%100
11	M17	PZ	-0.015	-0.015	0	%100
12	M68	PZ	-0.015	-0.015	0	%100
13	M66	PZ	-0.015	-0.015	0	%100
14	M65	PZ	-0.015	-0.015	0	%100
15	M60	PZ	-0.015	-0.015	0	%100
16	M57	PZ	-0.015	-0.015	0	%100
17	M54	PZ	-0.015	-0.015	0	%100
18	M51	PZ	-0.015	-0.015	0	%100
19	M49	PZ	-0.015	-0.015	0	%100
20	M64	PZ	-0.015	-0.015	0	%100
21	M47	PZ	-0.015	-0.015	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
22	M46	PZ	-0.015	-0.015	0	%100
23	M48	PZ	-0.015	-0.015	0	%100
24	M45	PZ	-0.015	-0.015	0	%100
25	M42	PZ	-0.015	-0.015	0	%100
26	M38	PZ	-0.015	-0.015	0	%100
27	M40	PZ	-0.015	-0.015	0	%100
28	M37	PZ	-0.015	-0.015	0	%100
29	M44	PZ	-0.015	-0.015	0	%100
30	M34	PZ	-0.015	-0.015	0	%100
31	M33	PZ	-0.015	-0.015	0	%100
32	M55	PZ	-0.015	-0.015	0	%100
33	M52	PZ	-0.015	-0.015	0	%100
34	M32	PZ	-0.015	-0.015	0	%100
35	M31	PZ	-0.015	-0.015	0	%100
36	M39	PZ	-0.015	-0.015	0	%100
37	M30	PZ	-0.015	-0.015	0	%100
38	M29	PZ	-0.015	-0.015	0	%100
39	M27	PZ	-0.015	-0.015	0	%100
40	M24	PZ	-0.015	-0.015	0	%100
41	M23	PZ	-0.015	-0.015	0	%100
42	M35	PZ	-0.015	-0.015	0	%100
43	M20	PZ	-0.015	-0.015	0	%100
44	M21	PZ	-0.015	-0.015	0	%100
45	M36	PZ	-0.015	-0.015	0	%100
46	M19	PZ	-0.015	-0.015	0	%100
47	M22	PZ	-0.015	-0.015	0	%100
48	M67	PZ	-0.015	-0.015	0	%100
49	M15	PZ	-0.015	-0.015	0	%100
50	M61	PZ	-0.015	-0.015	0	%100
51	M12	PZ	-0.015	-0.015	0	%100
52	M11	PZ	-0.015	-0.015	0	%100
53	M10	PZ	-0.015	-0.015	0	%100
54	M62	PZ	-0.015	-0.015	0	%100
55	M9	PZ	-0.015	-0.015	0	%100
56	M25	PZ	-0.015	-0.015	0	%100
57	M16	PZ	-0.015	-0.015	0	%100
58	M56	PZ	-0.015	-0.015	0	%100
59	M58	PZ	-0.015	-0.015	0	%100
60	M8	PZ	-0.015	-0.015	0	%100
61	M53	PZ	-0.015	-0.015	0	%100
62	M59	PZ	-0.015	-0.015	0	%100
63	M7	PZ	-0.015	-0.015	0	%100
64	M6	PZ	-0.015	-0.015	0	%100
65	M5	PZ	-0.015	-0.015	0	%100
66	M26	PZ	-0.015	-0.015	0	%100
67	M50	PZ	-0.015	-0.015	0	%100
68	M43	PZ	-0.015	-0.015	0	%100
69	M72	PZ	-0.015	-0.015	0	%100
70	M1	PZ	-0.015	-0.015	0	%100
71	M14	PZ	-0.015	-0.015	0	%100
72	M3	PZ	-0.015	-0.015	0	%100
73	M28	PZ	-0.015	-0.015	0	%100
74	M41	PZ	-0.015	-0.015	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M4	PX	-0.015	-0.015	0	%100
2	M74	PX	-0.015	-0.015	0	%100
3	M73	PX	-0.015	-0.015	0	%100
4	M72	PX	-0.015	-0.015	0	%100
5	M71	PX	-0.015	-0.015	0	%100
6	M13	PX	-0.015	-0.015	0	%100
7	M70	PX	-0.015	-0.015	0	%100
8	M69	PX	-0.015	-0.015	0	%100
9	M18	PX	-0.015	-0.015	0	%100
10	M17	PX	-0.015	-0.015	0	%100
11	M68	PX	-0.015	-0.015	0	%100
12	M66	PX	-0.015	-0.015	0	%100
13	M65	PX	-0.015	-0.015	0	%100
14	M60	PX	-0.015	-0.015	0	%100
15	M57	PX	-0.015	-0.015	0	%100
16	M54	PX	-0.015	-0.015	0	%100
17	M51	PX	-0.015	-0.015	0	%100
18	M49	PX	-0.015	-0.015	0	%100
19	M64	PX	-0.015	-0.015	0	%100
20	M47	PX	-0.015	-0.015	0	%100
21	M46	PX	-0.015	-0.015	0	%100
22	M48	PX	-0.015	-0.015	0	%100
23	M45	PX	-0.015	-0.015	0	%100
24	M42	PX	-0.015	-0.015	0	%100
25	M38	PX	-0.015	-0.015	0	%100
26	M40	PX	-0.015	-0.015	0	%100
27	M37	PX	-0.015	-0.015	0	%100
28	M44	PX	-0.015	-0.015	0	%100
29	M34	PX	-0.015	-0.015	0	%100
30	M33	PX	-0.015	-0.015	0	%100
31	M55	PX	-0.015	-0.015	0	%100
32	M52	PX	-0.015	-0.015	0	%100
33	M32	PX	-0.015	-0.015	0	%100
34	M31	PX	-0.015	-0.015	0	%100
35	M39	PX	-0.015	-0.015	0	%100
36	M30	PX	-0.015	-0.015	0	%100
37	M29	PX	-0.015	-0.015	0	%100
38	M27	PX	-0.015	-0.015	0	%100
39	M24	PX	-0.015	-0.015	0	%100
40	M23	PX	-0.015	-0.015	0	%100
41	M35	PX	-0.015	-0.015	0	%100
42	M20	PX	-0.015	-0.015	0	%100
43	M21	PX	-0.015	-0.015	0	%100
44	M36	PX	-0.015	-0.015	0	%100
45	M19	PX	-0.015	-0.015	0	%100
46	M22	PX	-0.015	-0.015	0	%100
47	M67	PX	-0.015	-0.015	0	%100
48	M15	PX	-0.015	-0.015	0	%100
49	M61	PX	-0.015	-0.015	0	%100
50	M12	PX	-0.015	-0.015	0	%100
51	M11	PX	-0.015	-0.015	0	%100
52	M10	PX	-0.015	-0.015	0	%100
53	M62	PX	-0.015	-0.015	0	%100
54	M9	PX	-0.015	-0.015	0	%100
55	M25	PX	-0.015	-0.015	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	M16	PX	-0.015	-0.015	0	%100
57	M56	PX	-0.015	-0.015	0	%100
58	M58	PX	-0.015	-0.015	0	%100
59	M8	PX	-0.015	-0.015	0	%100
60	M53	PX	-0.015	-0.015	0	%100
61	M59	PX	-0.015	-0.015	0	%100
62	M7	PX	-0.015	-0.015	0	%100
63	M6	PX	-0.015	-0.015	0	%100
64	M5	PX	-0.015	-0.015	0	%100
65	M26	PX	-0.015	-0.015	0	%100
66	M50	PX	-0.015	-0.015	0	%100
67	M43	PX	-0.015	-0.015	0	%100
68	M2	PX	-0.015	-0.015	0	%100
69	M1	PX	-0.015	-0.015	0	%100
70	M14	PX	-0.015	-0.015	0	%100
71	M3	PX	-0.015	-0.015	0	%100
72	M28	PX	-0.015	-0.015	0	%100
73	M63	PX	-0.015	-0.015	0	%100
74	M41	PX	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M57	PY	-0.004	-0.004	0	%100
2	M74	PY	-0.004	-0.004	0	%100
3	M73	PY	-0.004	-0.004	0	%100
4	M72	PY	-0.004	-0.004	0	%100
5	M71	PY	-0.004	-0.004	0	%100
6	M13	PY	-0.004	-0.004	0	%100
7	M69	PY	-0.004	-0.004	0	%100
8	M18	PY	-0.004	-0.004	0	%100
9	M17	PY	-0.004	-0.004	0	%100
10	M68	PY	-0.004	-0.004	0	%100
11	M47	PY	-0.004	-0.004	0	%100
12	M65	PY	-0.004	-0.004	0	%100
13	M60	PY	-0.004	-0.004	0	%100
14	M54	PY	-0.004	-0.004	0	%100
15	M51	PY	-0.004	-0.004	0	%100
16	M49	PY	-0.004	-0.004	0	%100
17	M64	PY	-0.004	-0.004	0	%100
18	M66	PY	-0.004	-0.004	0	%100
19	M46	PY	-0.004	-0.004	0	%100
20	M48	PY	-0.004	-0.004	0	%100
21	M45	PY	-0.004	-0.004	0	%100
22	M42	PY	-0.004	-0.004	0	%100
23	M38	PY	-0.004	-0.004	0	%100
24	M40	PY	-0.004	-0.004	0	%100
25	M37	PY	-0.004	-0.004	0	%100
26	M44	PY	-0.004	-0.004	0	%100
27	M34	PY	-0.004	-0.004	0	%100
28	M33	PY	-0.004	-0.004	0	%100
29	M55	PY	-0.004	-0.004	0	%100
30	M52	PY	-0.004	-0.004	0	%100
31	M32	PY	-0.004	-0.004	0	%100
32	M31	PY	-0.004	-0.004	0	%100
33	M39	PY	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
34	M30	PY	-0.004	-0.004	0	%100
35	M29	PY	-0.004	-0.004	0	%100
36	M27	PY	-0.004	-0.004	0	%100
37	M24	PY	-0.004	-0.004	0	%100
38	M23	PY	-0.004	-0.004	0	%100
39	M35	PY	-0.004	-0.004	0	%100
40	M20	PY	-0.004	-0.004	0	%100
41	M21	PY	-0.004	-0.004	0	%100
42	M36	PY	-0.004	-0.004	0	%100
43	M19	PY	-0.004	-0.004	0	%100
44	M22	PY	-0.004	-0.004	0	%100
45	M67	PY	-0.004	-0.004	0	%100
46	M15	PY	-0.004	-0.004	0	%100
47	M61	PY	-0.004	-0.004	0	%100
48	M12	PY	-0.004	-0.004	0	%100
49	M11	PY	-0.004	-0.004	0	%100
50	M10	PY	-0.004	-0.004	0	%100
51	M62	PY	-0.004	-0.004	0	%100
52	M9	PY	-0.004	-0.004	0	%100
53	M25	PY	-0.004	-0.004	0	%100
54	M16	PY	-0.004	-0.004	0	%100
55	M56	PY	-0.004	-0.004	0	%100
56	M58	PY	-0.004	-0.004	0	%100
57	M8	PY	-0.004	-0.004	0	%100
58	M53	PY	-0.004	-0.004	0	%100
59	M59	PY	-0.004	-0.004	0	%100
60	M7	PY	-0.004	-0.004	0	%100
61	M6	PY	-0.004	-0.004	0	%100
62	M5	PY	-0.004	-0.004	0	%100
63	M26	PY	-0.004	-0.004	0	%100
64	M50	PY	-0.004	-0.004	0	%100
65	M43	PY	-0.004	-0.004	0	%100
66	M2	PY	-0.004	-0.004	0	%100
67	M1	PY	-0.004	-0.004	0	%100
68	M14	PY	-0.004	-0.004	0	%100
69	M3	PY	-0.004	-0.004	0	%100
70	M28	PY	-0.004	-0.004	0	%100
71	M4	PY	-0.004	-0.004	0	%100
72	M63	PY	-0.004	-0.004	0	%100
73	M41	PY	-0.004	-0.004	0	%100
74	M70	PY	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M74	PZ	-0.004	-0.004	0	%100
2	M73	PZ	-0.004	-0.004	0	%100
3	M72	PZ	-0.004	-0.004	0	%100
4	M71	PZ	-0.004	-0.004	0	%100
5	M13	PZ	-0.004	-0.004	0	%100
6	M70	PZ	-0.004	-0.004	0	%100
7	M69	PZ	-0.004	-0.004	0	%100
8	M18	PZ	-0.004	-0.004	0	%100
9	M17	PZ	-0.004	-0.004	0	%100
10	M68	PZ	-0.004	-0.004	0	%100
11	M66	PZ	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	M65	PZ	-0.004	-0.004	0	%100
13	M60	PZ	-0.004	-0.004	0	%100
14	M57	PZ	-0.004	-0.004	0	%100
15	M54	PZ	-0.004	-0.004	0	%100
16	M51	PZ	-0.004	-0.004	0	%100
17	M49	PZ	-0.004	-0.004	0	%100
18	M64	PZ	-0.004	-0.004	0	%100
19	M47	PZ	-0.004	-0.004	0	%100
20	M46	PZ	-0.004	-0.004	0	%100
21	M48	PZ	-0.004	-0.004	0	%100
22	M45	PZ	-0.004	-0.004	0	%100
23	M42	PZ	-0.004	-0.004	0	%100
24	M38	PZ	-0.004	-0.004	0	%100
25	M40	PZ	-0.004	-0.004	0	%100
26	M37	PZ	-0.004	-0.004	0	%100
27	M44	PZ	-0.004	-0.004	0	%100
28	M34	PZ	-0.004	-0.004	0	%100
29	M33	PZ	-0.004	-0.004	0	%100
30	M55	PZ	-0.004	-0.004	0	%100
31	M52	PZ	-0.004	-0.004	0	%100
32	M32	PZ	-0.004	-0.004	0	%100
33	M31	PZ	-0.004	-0.004	0	%100
34	M39	PZ	-0.004	-0.004	0	%100
35	M30	PZ	-0.004	-0.004	0	%100
36	M29	PZ	-0.004	-0.004	0	%100
37	M27	PZ	-0.004	-0.004	0	%100
38	M24	PZ	-0.004	-0.004	0	%100
39	M23	PZ	-0.004	-0.004	0	%100
40	M35	PZ	-0.004	-0.004	0	%100
41	M20	PZ	-0.004	-0.004	0	%100
42	M21	PZ	-0.004	-0.004	0	%100
43	M36	PZ	-0.004	-0.004	0	%100
44	M19	PZ	-0.004	-0.004	0	%100
45	M22	PZ	-0.004	-0.004	0	%100
46	M67	PZ	-0.004	-0.004	0	%100
47	M15	PZ	-0.004	-0.004	0	%100
48	M61	PZ	-0.004	-0.004	0	%100
49	M12	PZ	-0.004	-0.004	0	%100
50	M11	PZ	-0.004	-0.004	0	%100
51	M10	PZ	-0.004	-0.004	0	%100
52	M62	PZ	-0.004	-0.004	0	%100
53	M9	PZ	-0.004	-0.004	0	%100
54	M25	PZ	-0.004	-0.004	0	%100
55	M16	PZ	-0.004	-0.004	0	%100
56	M56	PZ	-0.004	-0.004	0	%100
57	M58	PZ	-0.004	-0.004	0	%100
58	M8	PZ	-0.004	-0.004	0	%100
59	M53	PZ	-0.004	-0.004	0	%100
60	M59	PZ	-0.004	-0.004	0	%100
61	M7	PZ	-0.004	-0.004	0	%100
62	M6	PZ	-0.004	-0.004	0	%100
63	M5	PZ	-0.004	-0.004	0	%100
64	M26	PZ	-0.004	-0.004	0	%100
65	M50	PZ	-0.004	-0.004	0	%100
66	M43	PZ	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
67	M2	PZ	-0.004	-0.004	0	%100
68	M1	PZ	-0.004	-0.004	0	%100
69	M14	PZ	-0.004	-0.004	0	%100
70	M3	PZ	-0.004	-0.004	0	%100
71	M28	PZ	-0.004	-0.004	0	%100
72	M4	PZ	-0.004	-0.004	0	%100
73	M63	PZ	-0.004	-0.004	0	%100
74	M41	PZ	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M48	PX	-0.004	-0.004	0	%100
2	M45	PX	-0.004	-0.004	0	%100
3	M42	PX	-0.004	-0.004	0	%100
4	M38	PX	-0.004	-0.004	0	%100
5	M40	PX	-0.004	-0.004	0	%100
6	M37	PX	-0.004	-0.004	0	%100
7	M44	PX	-0.004	-0.004	0	%100
8	M34	PX	-0.004	-0.004	0	%100
9	M33	PX	-0.004	-0.004	0	%100
10	M55	PX	-0.004	-0.004	0	%100
11	M52	PX	-0.004	-0.004	0	%100
12	M32	PX	-0.004	-0.004	0	%100
13	M31	PX	-0.004	-0.004	0	%100
14	M39	PX	-0.004	-0.004	0	%100
15	M30	PX	-0.004	-0.004	0	%100
16	M29	PX	-0.004	-0.004	0	%100
17	M27	PX	-0.004	-0.004	0	%100
18	M24	PX	-0.004	-0.004	0	%100
19	M23	PX	-0.004	-0.004	0	%100
20	M35	PX	-0.004	-0.004	0	%100
21	M20	PX	-0.004	-0.004	0	%100
22	M21	PX	-0.004	-0.004	0	%100
23	M36	PX	-0.004	-0.004	0	%100
24	M19	PX	-0.004	-0.004	0	%100
25	M22	PX	-0.004	-0.004	0	%100
26	M67	PX	-0.004	-0.004	0	%100
27	M15	PX	-0.004	-0.004	0	%100
28	M61	PX	-0.004	-0.004	0	%100
29	M12	PX	-0.004	-0.004	0	%100
30	M11	PX	-0.004	-0.004	0	%100
31	M10	PX	-0.004	-0.004	0	%100
32	M62	PX	-0.004	-0.004	0	%100
33	M9	PX	-0.004	-0.004	0	%100
34	M25	PX	-0.004	-0.004	0	%100
35	M16	PX	-0.004	-0.004	0	%100
36	M56	PX	-0.004	-0.004	0	%100
37	M58	PX	-0.004	-0.004	0	%100
38	M8	PX	-0.004	-0.004	0	%100
39	M53	PX	-0.004	-0.004	0	%100
40	M59	PX	-0.004	-0.004	0	%100
41	M7	PX	-0.004	-0.004	0	%100
42	M6	PX	-0.004	-0.004	0	%100
43	M5	PX	-0.004	-0.004	0	%100
44	M26	PX	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	M50	PX	-0.004	-0.004	0	%100
46	M43	PX	-0.004	-0.004	0	%100
47	M2	PX	-0.004	-0.004	0	%100
48	M1	PX	-0.004	-0.004	0	%100
49	M14	PX	-0.004	-0.004	0	%100
50	M3	PX	-0.004	-0.004	0	%100
51	M63	PX	-0.004	-0.004	0	%100
52	M17	PX	-0.004	-0.004	0	%100
53	M41	PX	-0.004	-0.004	0	%100
54	M72	PX	-0.004	-0.004	0	%100
55	M65	PX	-0.004	-0.004	0	%100
56	M64	PX	-0.004	-0.004	0	%100
57	M70	PX	-0.004	-0.004	0	%100
58	M73	PX	-0.004	-0.004	0	%100
59	M51	PX	-0.004	-0.004	0	%100
60	M54	PX	-0.004	-0.004	0	%100
61	M60	PX	-0.004	-0.004	0	%100
62	M47	PX	-0.004	-0.004	0	%100
63	M13	PX	-0.004	-0.004	0	%100
64	M68	PX	-0.004	-0.004	0	%100
65	M4	PX	-0.004	-0.004	0	%100
66	M28	PX	-0.004	-0.004	0	%100
67	M69	PX	-0.004	-0.004	0	%100
68	M71	PX	-0.004	-0.004	0	%100
69	M49	PX	-0.004	-0.004	0	%100
70	M66	PX	-0.004	-0.004	0	%100
71	M18	PX	-0.004	-0.004	0	%100
72	M74	PX	-0.004	-0.004	0	%100
73	M46	PX	-0.004	-0.004	0	%100
74	M57	PX	-0.004	-0.004	0	%100

Member Area Loads

No Data to Print...

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N138	max	0.622	54	0.025	5	1.665	10	0	86	0	86	0	86
2		min	-0.164	11	-0.254	60	-3.162	53	0	1	0	1	0	1
3	N120	max	0.474	54	0.737	60	2.042	4	0	86	0	86	0	86
4		min	-0.164	11	-0.025	5	-3.409	34	0	1	0	1	0	1
5	N569	max	0.124	5	0.747	54	3.309	28	0	86	0	86	0	86
6		min	-0.464	60	-0.065	11	-1.943	10	0	1	0	1	0	1
7	N587	max	0.124	5	0.065	11	3.195	59	0	86	0	86	0	86
8		min	-0.612	60	-0.264	54	-1.764	4	0	1	0	1	0	1
9	Totals:	max	0.575	29	0.967	57	1.112	26						
10		min	-0.575	11	0	2	-1.112	8						

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

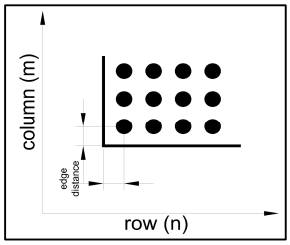
	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
1	M15	PIPE_3.0	0.932	5.5	32	0.376	5.5		32	20.07	43.383	3.825	3.825	1	H1-1b
2	M67	PIPE_2.0	0.866	4	26	0.069	4		27	9.924	21.377	1.245	1.245	1	H1-1b
3	M10	L5X3X4	0.834	0.5	32	0.314	0.25	z	32	33.163	41.82	1.29	3.678	1.273	H2-1
4	M1	L5X3X4	0.745	0.5	26	0.283	0.75	z	26	33.163	41.82	1.29	4.53	1.25	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
5	M16	HSS4X4X3	0.645	0.036	59	0.254	0.036	y	54	67.647	71.066	8.424	8.424	1.508	H3-6
6	M12	PIPE_3.0	0.328	0.75	32	0.393	0.75		32	42.864	43.383	3.825	3.825	1	H3-6
7	M13	PIPE_2.0	0.272	4	26	0.033	4		32	9.924	21.377	1.245	1.245	1	H1-1b

Bolt Calculator

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



Bolt Properties		
Nominal Diameter (d)	5/8	inches
Steel Grade	SAE Grade 5	
Threads Excluded?	N	
Yield Strength (Fyb)	#N/A	ksi
Ultimate Strength (Fub)	120	ksi
Threads/in (n)	11	
Gross Area (Agb)	0.307	in^2
Net Area (Anb)	0.226	in^2

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

Pu_x	622.0	lbs
Pu_y	747.0	lbs
Pu_z	3309.0	lbs

Mu_x	0.0	lbs-ft
Mu_y	0.0	lbs-ft
Mu_z	0.0	lbs-ft

Bolt Capacity (0.625 SAE Grade 5 Bolts)				
	Ult Load/ Bolt	Capacity	# of Bolts	Factor Joint Capacity
Shear	6258.6	6258.6	1	6258.6
Axial	12149.1	12149.1	1	12149.1

Interaction Check	
V /ϕVn	54%
T /ϕTn	5%
≤1.0	30%
	Pass

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CTNH548A

SBA Goshen 3
113 Brush Hill Road
Goshen, CT 06756

June 6, 2022

Fox Hill Telecom Project Number: 221295

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.84 %**

Fox Hill Telecom

June 6, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CTNH548A – SBA Goshen 3**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **113 Brush Hill Road, Goshen, CT**, 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 (μW/cm2). 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.

General population 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 & 700 MHz 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) and 2100 MHz (AWS) 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 performed for the proposed upgrades to the T-MOBILE antenna facility located at **113 Brush Hill Road, Goshen, CT**, 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	2100 MHz (AWS)	4	40
UMTS	1900 MHz (PCS)	1	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	160
A	2	RFS APX16DWV-16DWVS-E-A20	160
B	1	RFS APXVAALL24_43-U-NA20	160
B	2	RFS APX16DWV-16DWVS-E-A20	160
C	1	RFS APXVAALL24_43-U-NA20	160
C	2	RFS APX16DWV-16DWVS-E-A20	160

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.02
Antenna A2	RFS APX16DWV-16DWVS-E-A20	2100 MHz (AWS) / 1900 MHz (PCS)	15.9 / 15.9	5	200	7,780.90	1.18
						Sector A Composite MPE%	**2.20**
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.02
Antenna B2	RFS APX16DWV-16DWVS-E-A20	2100 MHz (AWS) / 1900 MHz (PCS)	15.9 / 15.9	5	200	7,780.90	1.18
						Sector B Composite MPE%	**2.20**
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.02
Antenna C2	RFS APX16DWV-16DWVS-E-A20	2100 MHz (AWS) / 1900 MHz (PCS)	15.9 / 15.9	5	200	7,780.90	1.18
						Sector C Composite MPE%	**2.20**

Table 3: T-MOBILE Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**2.20 %**
Sprint	1.49 %
Verizon Wireless	0.21 %
AT&T	2.94 %
Site Total MPE %:	**6.84 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.20 %
T-MOBILE Sector B Total:	2.20 %
T-MOBILE Sector C Total:	2.20 %
Site Total:	6.84 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	160	2.81	600 MHz	400	0.70%
T-Mobile 700 MHz LTE	2	485.32	160	1.47	700 MHz	467	0.32%
T-Mobile 2100 MHz (AWS) LTE	4	1,556.18	160	9.44	2100 MHz (AWS)	1000	0.94%
T-Mobile 1900 MHz (PCS) UMTS	1	1,556.18	160	2.36	1900 MHz (PCS)	1000	0.24%
						Total:	**2.20%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

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:	2.20 %
Sector B:	2.20 %
Sector C:	2.20 %
T-MOBILE Maximum Total (per sector):	2.20 %
Site Total:	6.84 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.84 %** 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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Recipient Mailings

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9405 5036 9930 0301 5737 07 0089 5000 0020 6756

usps.com
$8.95
US POSTAGE
Flat Rate Env

07/21/2022 Mailed from 01566

U.S. POSTAGE PAID
Click-N-Ship®

PRIORITY MAIL®

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

Expected Delivery Date: 07/23/22
Ref#: SBCT-NH548

0000

R001

TODD CARUSILLO
FIRST SELECTMAN-GOSHEN
42A NORTH ST
GOSHEN CT 06756-1543

USPS TRACKING #

9405 5036 9930 0301 5737 07

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 5737 07

Trans. #:	568038719
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/23/2022

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

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

Ref#: SBCT-NH548

To: TODD CARUSILLO
FIRST SELECTMAN-GOSHEN
42A NORTH ST
GOSHEN CT 06756-1543

* 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.

UNITED STATES POSTAL SERVICE®

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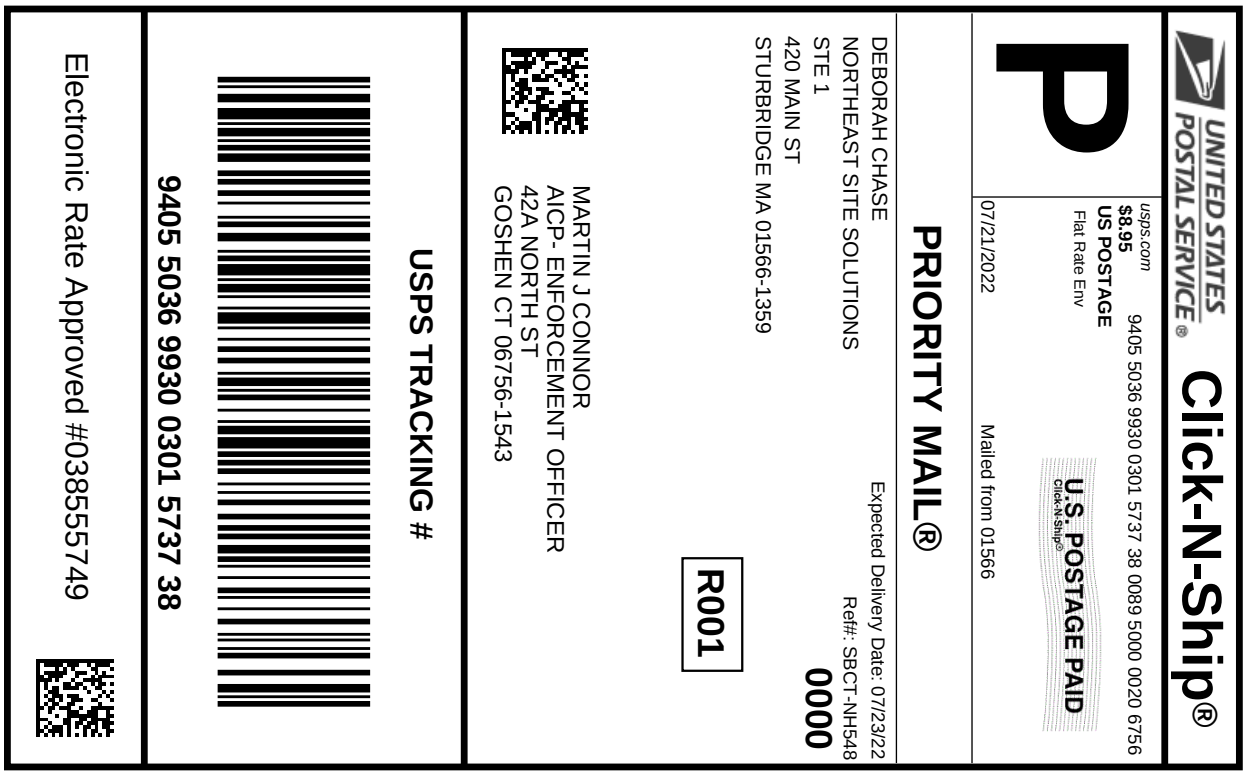

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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 5737 38

Trans. #:	568038719
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/23/2022

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

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

Ref#: SBCT-NH548

To: MARTIN J CONNOR
AICP- ENFORCEMENT OFFICER
42A NORTH ST
GOSHEN CT 06756-1543

* 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.

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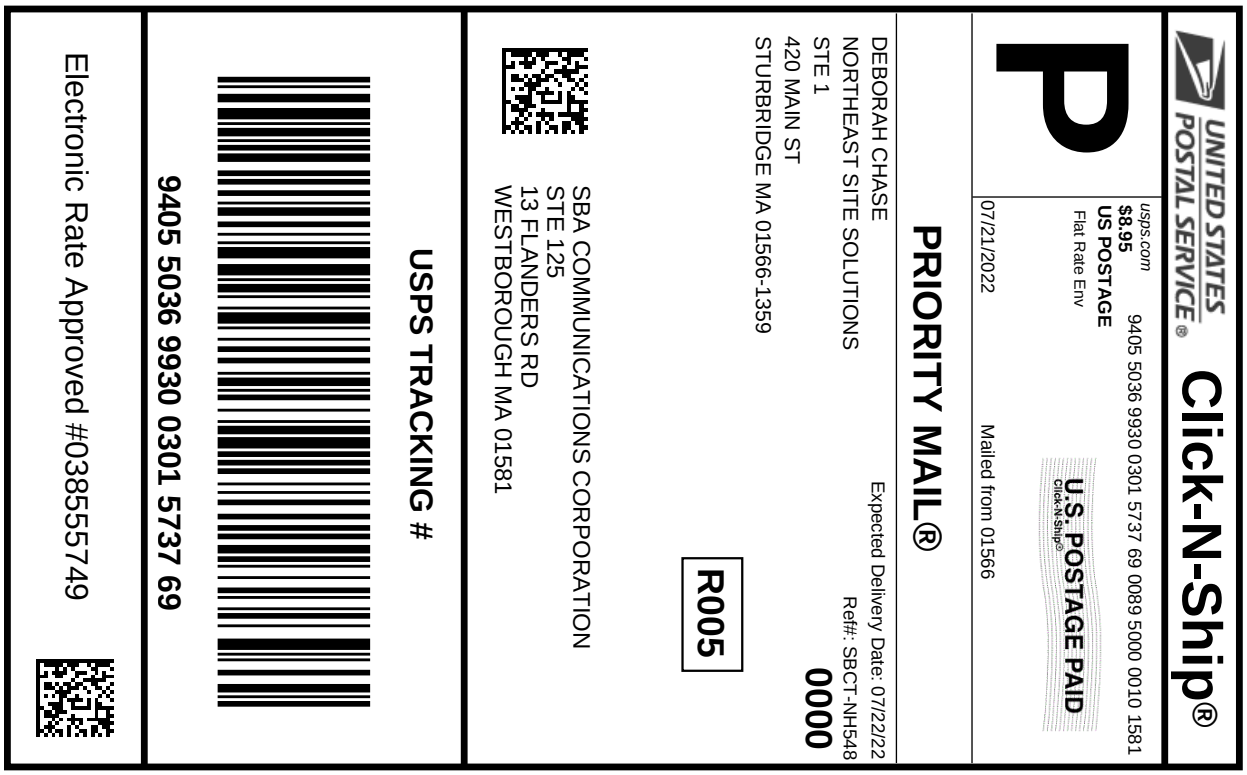
Check the status of your shipment on the USPS Tracking® page at usps.com



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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0301 5737 69

Trans. #:	568038719
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/22/2022

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

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

Ref#: SBCT-NH548

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

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

Expected Delivery Date: 07/23/22
Ref#: SBCT-NH548

0000

R001

WOODBRIDGE SEWER DISTRICT
113 BRUSH HILL RD
GOSHEN CT 06756-2208

USPS TRACKING #

9405 5036 9930 0301 5738 06

Electronic Rate Approved #038555749

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 0301 5738 06

Trans. #:	568038719
Print Date:	07/21/2022
Ship Date:	07/21/2022
Expected Delivery Date:	07/23/2022

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

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

Ref#: SBCT-NH548

To: WOODBRIDGE SEWER DISTRICT
113 BRUSH HILL RD
GOSHEN CT 06756-2208

* 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.

UNITED STATES POSTAL SERVICE®

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

CTNHS48A-SBA-TWO

LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

07/21/2022 03:43 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Thu 07/21/2022 Tracking #: 9405 5036 9930 0301 5737 69	1		$0.00
Prepaid Mail Goshen, CT 06756 Weight: 0 lb 12.40 oz Acceptance Date: Thu 07/21/2022 Tracking #: 9405 5036 9930 0301 5738 06	1		$0.00
Prepaid Mail Goshen, CT 06756 Weight: 0 lb 12.40 oz Acceptance Date: Thu 07/21/2022 Tracking #: 9405 5036 9930 0301 5737 38	1		$0.00
Prepaid Mail Goshen, CT 06756 Weight: 0 lb 12.30 oz Acceptance Date: Thu 07/21/2022 Tracking #: 9405 5036 9930 0301 5737 07	1		$0.00